

Did you know that IMS Company's Founder A. Reynolds "Ren" Morse was the designer of Van Dorn's very first injection molding machine?



A. Reynolds "Ren" Morse, Founder of IMS Company

In 1949, Mr. Morse started "Injection Molders Supply Co." Ever since those early days IMS Company has been an integral part in the development of the plastic injection molding industry. IMS assists molders by offering innovative process improving products with friendly service. We provide technical engineering expertise to help molders shorten shot cycle times, improve finished products, save set up time, reduce costs and solve difficult molding issues. We strive to continue to lead the molding community into the future.

IMS believes in being more than just a source for parts, supplies and equipment. We pride ourselves in offering well over 165 years of combined experience from our industry experts at no extra cost to our customers.

Choosing IMS Company to do business with is like choosing a molding partner that you can rely on, a partner that will be there for you when you need us most.

We welcome you to experience the IMS difference:

- · QUALITY parts, supplies and equipment
- Dedicated technical help line 866-467-9001
- World Class friendly and courteous sales group available by phone or email – bilingual in English and Spanish
- · Streamlined easy to navigate website with fast and simple ordering
- Full color catalog with recommendations and valuable information
- · Same day shipping on most orders, same day delivery available
- Hassle free 30 days from date of purchase returns policy and a solid 2-year equipment warranty
- Trust and ethics, you can depend on IMS to be your honest and principled business partner

Behind the name IMS Company, we are a family owned business with a dedicated staff and a long-established history of satisfying the needs of our customers. Furthermore, Ren Morse believed in always taking care of the molder above all else. We are not about to change that approach – you have our word on it!











IMS Company, Industrial Molding Supplies, aka Injection Molders Supply Company, has been the most trusted source of supplies, auxiliary machinery and experienced technical service for the entire plastics processing industry. First in innovation, first in service.

Quality products to fit demanding needs, while making the most of your operating budget. Thousands of products shipped on time daily, from our fully stocked warehouse.

Since 1949







Industrial Molding Supplies



Everything for the Plastics Processing Industry

Engineered Components & Supplies Pages 471 - 614



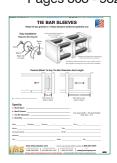


Industrial Equipment





Terms, Index & Forms Pages 803 - 932





Call: 800.537.5375 • www.imscompany.com

70+ years Serving the Plastics Industry

Table Of Contents

The most complete, user-friendly catalog serving the plastics industries.

Engineering & Machining Services

Custom Replacen	nent Parts Capa	abilities	16-17

Molding & Extrusion Supplies General Molding & Extrusion Supplies

Mold Handling Accessories	22-31
Hoist Ring Rack, Workstation & Maintenance Cart	32-36
Mold Clamps & Accessories	38-57
Mold Setup Tools & Tie-In Systems	58-69
Tie Bar Sleeves & Strain Gauges	70-72
Limit Switches	73-75
Process Timing & Monitoring	76-78
Maintenance & Setup Tools	79-85
Part Removal Tools	86-92
Leveling Mounts & Inspection Tools	93-95
Thermometers & Voltage Detectors	96-102
Date Code Insert	103
Extrusion Supplies	104-112

Mold Release & Maintenance Products

Mold Releases	114-130
Mold Cleaners	131-136
Mold Rust Preventives	137-139
Mold Polishes	140-141
Autosol® Metal and Mold Care	142-143
Original Formula® Mold Grease, WD-40®	146-147
Material Lubricants	148
Spray Systems	149-158
_	



Heaters & Temperature Control Products

. 160-189
. 190-193
. 194-197
. 199-205
. 206-212
. 214-228
. 229-233
. 234-240
. 242-262

Gate Cutters, Trimmers & Accessories

Gale Cullers	203-300
Special Application Gate Cutters	287-300
Heated Gate Cutter Accessories	301
Gate Cutter Repair Service	302
Air-Powered Gate Cutters and Repair Service	304-314
Knives, Trimmers & Flash Removal Tools	315-330



Fittings, Manifolds, Hose & Accessories

Mold Temperature Regulators	332-333
Mold Flow Regulators	334-339
Flowmeters	340-351
SWAP® Mold Water Purge Valves	352
Taco® Series Air Separators	353
Mold Water Manifolds	354
Waterline Fittings & Accessories	367-396
Thread & Pipe Sealant	397
Cam & Groove Couplings	400-401
Tubing, Waterline Hose & Accessories	402-408
Hopper Dryer Hose & Insulation	407-409
Loader Hose	410-413
Ultrasonic Leak Detector	415

General Industrial Supplies

Misc. Shop Accessories	418-421
Bench Top Scales	422-424
Stopwatches	425-427
Air Guns, Tips & Hose	428-432
Static Eliminators	433-444
Hand, Arm & Finger Protection	445-450
Hairnets, Ear Plugs & Respirators	451-452
Eye & Face Protection	453-454
Absorbent Products	455-456
Hand & Power Tools	458-461
Tape Measures	462-463
Part Removal Systems	464-468



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Table Of Contents

The most complete, user-friendly catalog serving the plastics industries.

Engineered Components

Nozzles, Nozzle Tips & Supplies

Standard Replacement Nozzles	472-481
Nozzle Thread Adapters	483-488
Nozzle Tips	489-497
Nozzle Tip Thread Adapters	498-499
Refacing Tools	500
Shutoff Tips & Nozzles	501-503
Color Mixing Nozzles	504-510
Gauges	511
Color Dispersion Plug	512-513
Melt Temperature & Pressure-Reading Nozzles	514
Heat Barrier Nozzles	515
Gas Assist Molding Equipment	516-517
Nozzle Accessories	518-521
Nozzle Leak Detector	522



Screw Tips, Screws & Barrels

Ball Check Screw Tips	524-533
Free Flow Screw Tips	534-550
Evolve™ Ball Valve	551
BRODY-ring® Seals	553-555
Screw Tips Wrenches	556-557
Feed Screw Repair Service	558-559
Feed Screws	560-573
Barrel Repair Service	574-579
End Cap Repair Service	580-583
IMS Exclusive SPIRAL™ System	584-585
Purgers & other Maintenance Products	586-592

Mold & Die Maintenance

Mold Bushings	594-596
Mold Bushings	597-603
Mold Supplies	604-605
Compression Springs	606-614

Industrial Equipment

Material Handling Equipment

Additive Feeder	.618-619
Resin Bins, Resin Bin Loading Stand	.620-623
Storage Hoppers, Surge Bins	.624-627
Tilters / Dumpers	.628-631
Material Mixers, Tumblers, Drums & Accessories	632-649
Hopper Loaders, Hoppers & Accessories	.650-683
Material Dryers, Desiccant, Drying Ovens & Accessories	.684-715
Magnet Housings, Metal Detection & Hopper Magnets	716-728

Production Equipment

Mold Temperature Controllers/Circulators7	730-750
Chillers	751-758
LIME BUSTER™ Mold Water Passage Cleaners	759-763



Post-Production Equipment

Drop Chutes, Skirts, Trays & Diverting Systems	.766-775
Part/Runner Conveyors & Separators	.776-783
Plastic Granulators, Accessories & Services	.784-800

Terms, Index & Forms

Process Trouble Shooting Guidelines	63, 236, 432, 766
Converting Fahrenheit to Celsius	198, 479, 736, 801
Converting Fractional In. To Dec. and MM	205, 330, 625
Terms & Conditions of Sale	803-806
Business Credit Application	807-808
Alphabetical Index	Yellow Pages
Item Number Index	Blue Pages
Request for Quote Forms & Index	879-994



phone order toll-free (USA & Canada) 1.800.537.5375

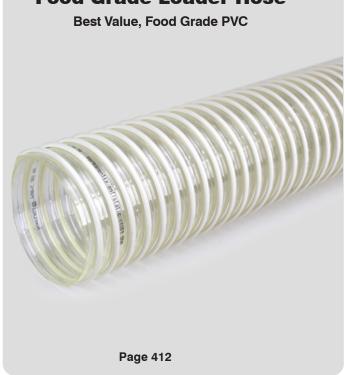
fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

New From IMS!

Food Grade Loader Hose



IMS Polyurethane Wired Hose

Heavy Duty, Microbe Resistant, with Ground Wire -Food Grade & Anti-Static



Page 413-414

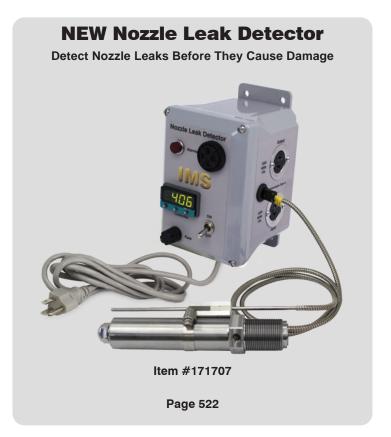
OHAUS Electronic Scales

For fast, accurate weighing of small parts (also for dry-color and additives)

2,200 gram capacity



See Page 424





New From IMS!





Shini Hopper Loader Systems

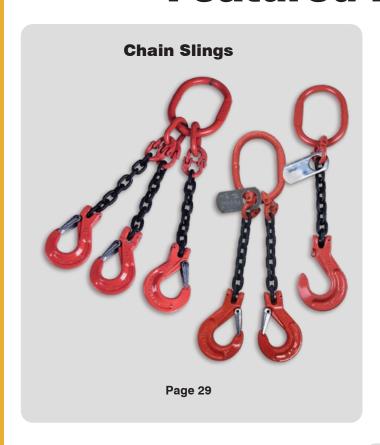






www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



IMS Hoist Ring Rack™



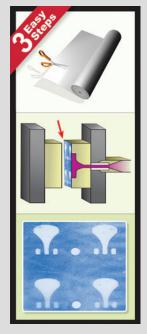
IMS Work Stations







Mold-Align® Pressure Sensitive Mold and Die Aligning Paper





- · Substantially Extend Life of Mold
- Very Economical
- Easy to Use
- Helps Reduce Flash and Improve Yield

Page 59

Mold Cycle Counters

Precisely monitor mold usage by tracking the activity for the life of the tool

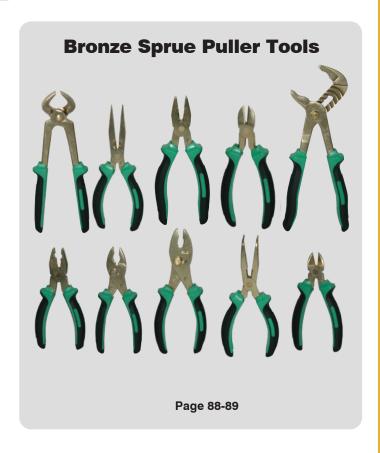


- Parting Line or External Mount
- Up to 10 Million Cycles
- Completely Mechanical (No Batteries Needed)
- Non-Resetable

Page 76

90° Pneumatic Die Grinder Kit







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001







#165730 3% Silicone

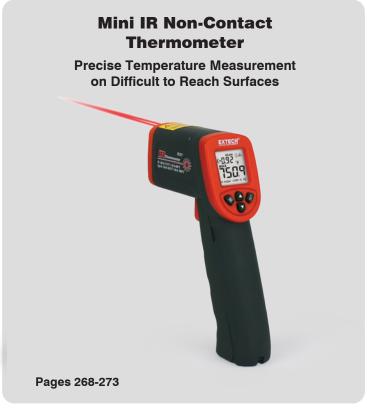
#165729 Paintable Mist

Pages 118, 121, 133

#165731 Blue Label









Page 144

IMS Brand Thermocouples • Type J & K · Flex Leads with Stainless Steel Braid Grounded • Spade Lug Terminals * 5 Styles Pages 222-223

Hot Runner Diagnostics





- · Check for Opens
- · Check for Shorts
- Check Heater Health
 - * Eliminate Downtime
- Check Pin and Wire Continuity
- · Check for Shorts
- · Check Wired Connectors

Page 237-240

Super Gate Cutters





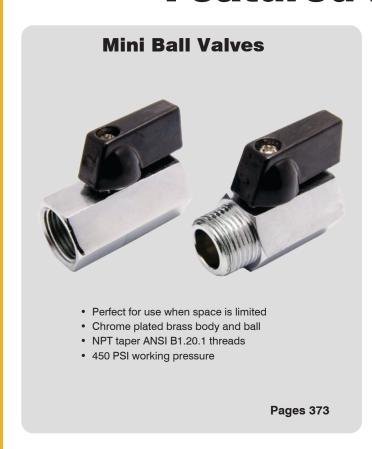


www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001





Two-Way Valved Mold Coolant Couplers and Plugs



- Automatic Shut-Off at mold minimizes mold coolant leaks
- For use with Water/Glycol (-90° F to 400° F)

Tough Polypropylene Extension Arm with 3 Adjustment Points Unique 360° Swivel Strong 2¾" dia. Magnetic Base

phone order toll-free (USA & Canada) 1.800.537.5375

Worklight

Page 380

www.imscompany.com

mpany.com

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

e-maii





Silencer Static Eliminating Air Gun

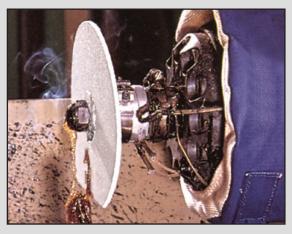
- More durable
- · Updated power supply



IMS Drool Disc™

Now Available in (Unperforated) Blanks Cut them to your exact needs!

Perforated Design Standard!



Item #168635

Page 520



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Mini-Tumbler with Timer & Optional Guard Enclosure



- · Corner-over-corner design efficiently blends dry or liquid materials
- Blending of ordinary pails reduces spills and prevents messy cleanups

See Page 640

Lo-Profile Drum Caddy



IMS Series Stainless Steel Loaders



* Now with No-Load Material Alarm

5 SIZES and 2 STYLES to choose from!

See Pages 653

IMS Horizontal to Incline **Conveyors**

· Direct drive / No belts or chains





www.imscompany.com

1.888.288.6900

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada)

1.866.467.9001

phone order toll-free (USA & Canada) 1.800.537.5375

Portable Dew Point Meter/Monitor Item #172020 Monitor and spot check the performance of your desiccant style drying equipment

SHINI Drying Hoppers



See Page 706-707

Hydra EQ & NQ Series Chillers

· Upgraded components

See Page 698-699

· Sophisticated controls

· Environmentally friendly • Up to 31 Tons

IMS Hydra Pressurized Mold Temperature Controller

NOW up to 70% More Flow without increased pump size!

- Maximum Performance
- Reliability
- · Ease of Use





See Pages 754-755

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Engineering & Fabricating Services

Many of the products in this catalog were brought to us by molders. In an effort to maintain their machines or solve problems, they find a solution that works.

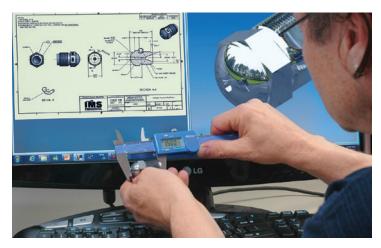
If this solution works for one it many work for someone else as well.

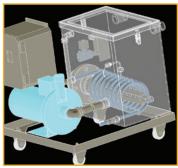
Bring your ideas to IMS – we welcome them! We will work with you to from development to implementation to engineer a solution.

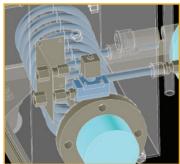
Call or email us to discuss your needs:

Call: 1.800.537.5375

Email: ems@imscompany.com







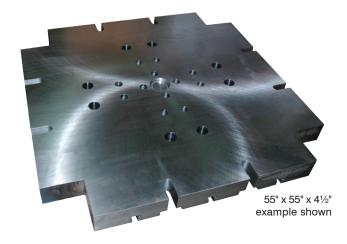
Custom Replacement Parts Capabilities

Molds and Mold Components

Molds and mold components can be built to any size or specification out of various materials. (Giant Spacer Plate shown)



Manifolds can be built to any custom size out of several material options with multiple ports and internal designs.







Engineering & Fabricating Services

Custom Replacement Parts Capabilities (continued)

Air Take-Off Boxes

Air take-off boxes can be fabricated to any dimensions out of multiple materials with any number of ports. Additional design features include adjustable air flow and custom mounting.



Mobile Blending Station

Portable unit allows blending of multiple materials on site, with easy access for conveying.



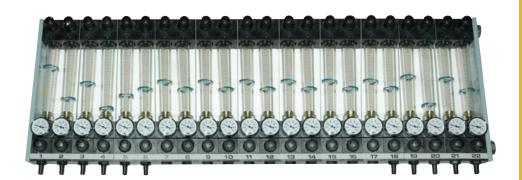
Hoppers

- Height
- Taper or Logarithmic Spiral
- Sight Glass
- Drain
- Hopper Slides
- Loader Mounts
- Extensions
- Slide Gates
- Capacity



Flow Regulators

Flow regulators can be made for any number of zones and flow rates.



There's Are Just a Few Examples of Our Capabilities – Call Us With Your Needs!



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001



Online ordering is easy with IMS!

Experience the IMS difference on your desktop, notebook, tablet or mobile phone!

Designed for Speed, Security and User Friendliness

Our website uses the latest technologies that deliver the best user experience on all devices and browsers

Fast Product Searching

We help you find what you need quickly using keywords and/or IMS items numbers

Product Information & Current Pricing

View product descriptions, specifications, images, SDS instruction manuals and catalog pages

Simple & Secure Online Ordering

Our easy four step checkout process lets you select billing and shipping options that suit your needs.

And much, much more!

Visit www.imscompany.com Today!



Since **1949**



Molding & Extrusion Supplies

Pages 22 - 112

Mold Release & Maintenance Products

Pages 114 - 158

Heaters & Temperature Control Products

Pages 160 - 262

Gate Cutters, Trimmers & Accessories

Pages 263 - 330

Fittings, Manifolds, Hose & Accessories

Pages 332 - 415

General Industrial Supplies

Pages 418 - 468



Table Of Contents

Industrial Molding & Extrusion Supplies

General Molding & Extrusion Supplies

Mold Handling Accessories	22-31
Hoist Ring Rack, Workstation & Maintenance Cart	32-36
Mold Clamps & Accessories	38-57
Mold Setup Tools & Tie-In Systems	58-69
Tie Bar Sleeves & Strain Gauges	70-72
Limit Switches	73-75
Process Timing & Monitoring	76-78
Maintenance & Setup Tools	79-85
Part Removal Tools	86-92
Leveling Mounts & Inspection Tools	93-95
Thermometers & Voltage Detectors	96-102
Date Code Insert	103
Extrusion Supplies	104-112



Mold Release & Maintenance Products

Mold Releases	114-130
Mold Cleaners	131-136
Mold Rust Preventives	137-139
Mold Polishes	140-141
Autosol® Metal and Mold Care	142-143
Original Formula® Mold Grease, WD-40®	146-147
Material Lubricants	148
Spray Systems	149-158

Heaters & Temperature Control Products

Heater Bands	. 160-189
Coil & Strip Heaters	. 190-193
Wire & Accessories	. 194-197
Barrel Insulation	. 199-205
Cartridge Heaters	. 206-212
Thermocouples	. 214-228
Thermometers	. 229-233
Hot Runner Alarms, Monitors and Testing Systems	. 234-240
Temperature & Voltage Controllers	. 242-262

Gate Cutters, Trimmers & Accessories

Gate Cutters	263-300
Special Application Gate Cutters	287-300
Heated Gate Cutter Accessories	301
Gate Cutter Repair Service	302
Air-Powered Gate Cutters and Repair Service	304-314
Knives, Trimmers & Flash Removal Tools	315-330

Fittings, Manifolds, Hose & Accessories

Mold Temperature Regulators	332-333
Mold Flow Regulators	334-339
Flowmeters	340-351
SWAP® Mold Water Purge Valves	352
Taco® Series Air Separators	353
Mold Water Manifolds	354
Waterline Fittings & Accessories	367-396
Thread & Pipe Sealant	
Cam & Groove Couplings	400-401
Tubing, Waterline Hose & Accessories	402-408
Hopper Dryer Hose & Insulation	407-409
Loader Hose	410-413
Ultrasonic Leak Detector	415



General Industrial Supplies

Misc. Shop Accessories	418-421
Bench Top Scales	422-424
Stopwatches	425-427
Air Guns, Tips & Hose	428-432
Static Eliminators	433-444
Hand, Arm & Finger Protection	445-450
Hairnets, Ear Plugs & Respirators	451-452
Eye & Face Protection	453-454
Absorbent Products	455-456
Hand & Power Tools	458-461
Tape Measures	462-463
Part Removal Systems	464-468



www.imscompany.com

001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



Since

Molding & Extrusion Supplies



Hoist Ring Rack, Workstation & Maintenance Cart

Mold Clamps & Accessories 38 – 57

Mold Setup Tools & Tie-In Systems
58 – 69

Tie Bar Sleeves & Strain Gauges 70 - 72

Limit Switches

Process Timing & Monitoring 76 – 78

Maintenance & Setup Tools 79 – 85

> Part Removal Tools 86 – 92

Leveling Mounts & Inspection Tools 93 – 95

Thermometers & Voltage Detectors 96 – 102

Date Code Insert

Extrusion Supplies 104 – 112

Most Items In Stock For Same Day Shipment



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888,288,6900 001,888,304,1307

tech support toll-free (USA & Canada) **1.866.467.9001**

Heavy Duty Hoist Rings

Use In Place Of Conventional Eyebolts To Maximize Lifting Safety

Pivot & Swivel to compensate for shifting and swaying loads



Hoist Rings retain their full rated load capacity regardless of lift angle!

A side load applied to a Hoist Ring is well distributed to the screw and the bottom of the hoist ring assembly.



Side or angular pulling forces stress conventional eyebolts. They weaken, can twist, bend or even break!

The load concentrates shear stress on a small portion of a conventional eyebolt.



Help prevent costly damage and injuries.

Minimum Safety Factor 5:1

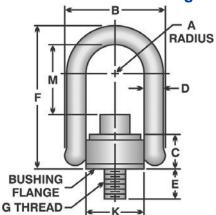
- Meet OSHA Standards
- Meets Military Standards MIL-STD1365 (11) or MIL-STD209C
- · Specified and used in Nuclear Energy Equipment
- · Destructive testing by outside independent laboratories

Material

- 4140 Aircraft Quality, High Strength Alloy Steel with Minimum Tensile Strength of 180,000 PSI
- · Certified Heat Treatment
- · 100% Magnetic Particle Inspected
- · Black Oxide Finish

U.S. Patent No.s 3,297,293 / 4,570,987 / 4,641,986 / 4,705,422 / 5,405,210 / Other patents pending

1 & 2 Standard and **Metric Size Hoist Rings**

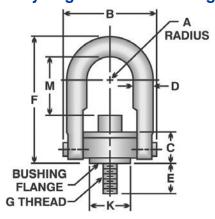


Pivot 180°



Swivel 360°

3 & 4 Standard and Metric Size **Safety Engineered Hoist Rings**





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

1. Standard Size Hoist Rings (See drawing on previous page)

Item #	Rated Load (lbs.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G	K (in.)	M (in.)	TL* (ft-lbs.)	Unit Price
115925	800	0.65	2.29	0.96	0.44	0.56	3,32	⁵ / ₁₆ " - 18	1.25	1.51	7	\$66.33
115924	1000	0.03	2.29	0.90	0.44	0.50	0.02	3/8" - 16	1.23	1.45	12	66.33
115932	2500	1.00	3.50	1.50	0.75	1.00	5.31	1⁄2" - 13	1.89	2.56	28	80.38
115931	2500	1.00	3.50	1.50	0.75	1.25	5.51	72 - 13	1.09	2.50	20	80.38
115927	4000	1.00	3.50	1.50	0.75	1.00	5.31	5/8" - 11	1.89	2.44	60	80.38
115953	4000	1.00	3.30	1.50	0.75	1.25	5.51	/8 - 11	1.09	2.44	00	80.38
115949	5000	1.00	3.50	1.50	0.75	1.00	5.31	3⁄4" - 10	1.89	2.31	100	83.53
115943	3000	1.00	3.30	1.50	0.73	1.50	5.51	74 - 10	1.09	2.01	100	83.53
115941	7000	1.40	5.10	2.05	1.00	1.20	7.00	3⁄4" - 10	2.81	3.20	100	181.78
115946	8000	1.40	3.10	2.03	1.00	1.20	7.00	⁷ / ₈ " - 9	2.01	3.07	160	181.78
115935	10,000	1.40	5.10	2.05	1.00	1.45	7.00	1" - 8	2.81	2.95	230	188.62
115963	10,000	1.40	5.10	2.05	1.00	1.20	7.00	1 - 0	2.01	2.90	200	188.62
115944	15,000	2.00	6.75	2.87	1.25	2.63	9.22	11/4"-7	3.88	3.74	470	280.72
115940	24,000	2.00	0.73	2.07	1.20	2.00	9.22	1½"-6	0.00	3.49	800	323.37

2. Metric Size Hoist Rings (See drawing on previous page)

Item #	Rated Load (kg.)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G	K (mm)	M (mm)	TL* (N-m)	Unit Price		
115951	400	16.5	58.2	24.4	11.1	16	82.0	M8 x 1.25	31.8	38.5	9.5	Inquire		
115948	400	10.5	30.2	27.7	11.1	21	02.0	1010 X 1.23	01.0	00.0	9.5	\$66.33		
115942	450	16.5	58.2	24.4	11.1	16	82.0	M10 x 1.5	31.8	36.5	16.0	Inquire		
115937	400	10.0	30.Z	27.7		26	02.0	WITO X 1.5	01.0	00.0	10.0	66.33		
115955	1,050	25.4	88.9	38.1	19.1	25	134.9	M12 x 1.75	48.0	65.0	37.0	80.38		
115950	1,000	25.7	00.9	00.1	19.1	32	104.9	W112 X 1.75	40.0	05.0	07.0	80.38		
115945	1,900	25.4	88.9	38.1	19.1	25	134.9	M16 x 2.0	48.0	62.0	80.0	80.38		
115934	1,900	25.4	00.9	50.1	19.1	32	104.9	134.9 W110 X 2.0	40.0	02.0	00.0	80.38		
115962	2,200	25.4	88.9	38.1	19.1	25	134.9	M20 x 2.5	48.0	58.7	135.0	83.53		
115957	2,200	25.7	00.9	50.1	19.1	38	104.9	WIZU X Z.5	40.0	40.0 30.7	36.7	133.0	100.0	83.53
115938	4,200	35.6	129.5	52.1	25.4	28	177.8	M24 x 3.0	71.4	76.3	311.0	Inquire		
115966	4,200	33.0	129.5	52.1	25.4	38	177.0	1VIZ4 X 0.0	71.4	70.5	311.0	181.78		
115961	4,500	35.6	129.5	52.1	25.4	38	177.8	M30 x 3.5	71.4	70.3	311.0	Inquire		
115956	4,500	55.0	129.5	JZ. I	25.4	48	177.0	1VIOU X 0.5	/ 1.4	70.0	311.0	188.62		
115964	7,000	50.8	171.5	72.9	31.8	67	234.2	M30 x 3.5	73.2	95.0	637.2	280.72		
115959	11,000	50.0	171.5	12.9	51.0	07	204.2	M36 x 4.0	70.2	88.6	1085.5	323.37		

^{*}Recommended torque load

Other Sizes Available — Inquire

continued on next page

See Hoist Ring Bolt Kits on page 23



Tech Tips

Useful Conversion Data (Approximation)										
To Convert From To Multiply By										
Length	Millimeter (mm)	Inch (in)	0.03973							
Force	Newton (N)	Pound-Force (lb)	0.22481							
Stress	Newton/mm2	Pound/Inch2	145.04							
Torque	Newton-Meter (Nm)	Pound-Foot (lbs-ft)	0.7376							
Weight	Kilogram (Kg)	Pound (lb)	2.204							



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001

phone order toll-free (Mexico)

tech support toll-free (USA & Canada)

3. Standard Size Safety Engineered Hoist Rings (See drawing on page 22)

IMS also carries Safety Engineered Hoist Rings with larger threads, a bigger radius and a pivot pin that goes completely through the head. Use this larger hoist ring to safely lift heavy loads.

	pin that goes completely through the nead. Ose this larger hoist mig to salely lift heavy loads.												
Item #	Rated	Α	В	С	D	Ε	F	G	K	M	TL*	Unit	
	Load (lbs.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)		(in.)	(in.)	(ft-lbs.)	Price	
162009	550	0.43	1.84	0.71	0.375	0.54	2.67	1⁄4" - 20	0.75	1.33	5	\$99.45	
162010	800	0.43	1.84	0.71	0.375	0.29	2.67	⁵ / ₁₆ " - 18	0.75	1.27	7	99.45	
162011	000	0.40	1.04	0.71	0.073	0.54	2.07	/16 - 10	0.75	1.21	,	99.45	
128230	1,000	0.43	1.84	0.71	0.375	0.54	2.67	3%" - 16	0.75	1.21	12	99.45	
162012		0.70	2.58	0.93	0.5	1.07	3.77	1/2" - 13	1.25	1.84	28	119.81	
127381	2,500					0.78						119.19	
162013	2,500	0.88	3.52	1.22	0.75	1.03	4.78	1⁄2" - 13	1.50	2.31	28	119.19	
162014						1.28						119.19	
162015						0.78						121.21	
127388	4,000	0.88	3.52	1.22	0.75	1.03	4.78	4.78	5⁄8 " - 11	1.50	2.18	60	133.33
162016						1.28						121.21	
127391	5,000	0.88	3.52	1.22	0.75	1.03	4.78	3/4" - 10	1.50	2.06	100	121.21	
162017	3,000	0.00	3.52	1.22	0.75	1.53	4.70	74 - 10	1.50	2.00	100	121.21	
162018	7,000	1.40	5.14	1.71	1.00	1.04	6.52	³ ⁄4" - 10	2.37	3.06	100	260.38	
162019	7,000	1.40	5.14	1.71	1.00	1.54	0.52	74 - 10	2.31	3.00	100	260.38	
162020	8,000	1.40	5.14	1.71	1.00	1.04	6.52	7/8" - 9	2.37	2.93	160	260.38	
162021						1.29						261.23	
127390	10,000	1.40	5.14	1.71	1.00	1.54	6.50	1" - 8	0.07	0.01	000	261.23	
162022	10,000	1.40	5.14	1.71	1.00	2,29	6.52		2.37	2.81	230	261.23	
162023						2.29		11/8" - 8				287.69	
162024	15,000	1.75	6.50	2.11	1.25	1.89	8.73	11/4" - 8	3.20	4.12	470	Inquire	
162025	24,000	2.25	8.55	2.81	1.75	2.70	12.47	1½" - 8	4.20	6.14	800	566.91	
127389	15,000	1.75	6.50	2.11	1.25	1.89	8.73	11/4" - 7	3.20	4.12	470	413.55	
128217	24,000	2.25	8.55	2.81	1.75	2.70	12.47	1½" - 6	4.20	6.14	800	540.44	
115958	30,000	2.25	8.55	2.81	1.75	2.96	12.47	2" - 41/2	4.20	6.14	1100	636.59	

4. Metric Size Safety Engineered Hoist Rings (See drawing on page 22)

Item #	Rated Load (kg.)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G	K (mm)	M (mm)	TL* (N-m)	Unit Price										
162026	400	10.9	46.7	18	9.5	17	67.8	M8 x 1.25	19.1	32.1	9.5	\$99.45										
162027	450	10.9	40.7	10	9.5	17	07.0	M10 x 1.5	19.1	30.2	16	99.45										
162028	1,050					19		M12 x 1.75		59.4	37	119.19										
162029	1,900	22.4	89.4	31	19	24	121.4	M16 x 2.0	38	55.4	80	119.19										
162030	2.200					30		M20 x 2.5		51.4	135	121.21										
162031	3,000	35.6	35.6	35.6	35.6	35.6	35.6 1									29		M20 x 2.5		77	135	260.38
162032	4,200							130.5	43.4	25.4	34	165.8	M24 x 3.0	58.7	73	311	260.38					
162033	4,500					54] [M30 x 3.5		67	311	261.23										
162034	7,000	44.5	165.1	53.6	31.8	46	221.7	M30 x 3.5	81.3	106.3	637.2	413.55										
162035	11,000					69		M36 x 4.0		164.8		540.44										
162036**	12,500	57.2	217.2	71.4	44.5	79	316.7	M42 x 4.5	106.7	158.8	1085.5	636.59										
162037**	13,500					79		M48 x 5.0		152.8		636.59										
162038**	22,000	76.2	296.4	104	57.2	102	428.5	M64 x 6.0	146.1	203.3	2847.5	1,325.05										
162039**	31,500	95.25	368.3	133.9	69.85	132	495.3	M72 x 6.0	184.15	215.39	5670	3,107.03										

^{*}Recommended torque load **Includes stud and nut to safely lift heavier loads



Hoist Ring Bolt Kits



Each Kit includes Bolt and Retaining Clip

Standard Heavy Duty Hoist Ring Bolt

Bolt Kit Item #	For Use With Hoist Ring #	Thread Size	Unit Price
167540	115925	⁵ / ₁₆ "-18	\$11.50
133172	115924	3/ ₈ "-16	10.05
118055	115932	1⁄2"-13	14.19
142732	115931	1/2"-13	13.00
123224	115927	5⁄ ₈ "- 11	15.11
122841	115953	5⁄ ₈ "-11	17.61
157730	115949	3/4"-10	22.05
123072	115941	3/4"-10	27.02
125101	115943	3/4"-10	24.55
167538	115946	⁷ / ₈ "-9	31.23
121745	115963	1"-8	36.26
122761	115935	1"-8	34.39
121519	115944	11/4"-7	90.75
167541	115940	1½"-6	159.80

Metric Heavy Duty Hoist Ring Bolt

	motrio floary buty floiot fining boil								
Bolt Kit Item #	For Use With Hoist Ring #	Thread Size	Unit Price						
123408	115951	M8 x 1.25	\$11.75						
167539	115942	M10 x 1.5	14.05						
123174	115937	M10 x 1.5	11.75						
147544	115955	M12 x 1.75	16.68						
122861	115950	M12 x 1.75	24.82						
167563	115945	M16 x 2.0	19.82						
123278	115934	M16 x 2.0	18.03						
167566	115962	M20 x 2.5	31.07						
122810	115957	M20 x 2.5	25.75						
167567	115938	M24 x 3.0	35.29						
123067	115966	M24 x 3.0	38.82						
167568	115961	M30 x 3.5	63.75						
122916	115956	M30 x 3.5	77.07						
167569	115964	M30 x 3.5	104.00						

Safety Engineered Hoist Ring Bolt Kits Available — Inquire



Forged Steel Eyebolts

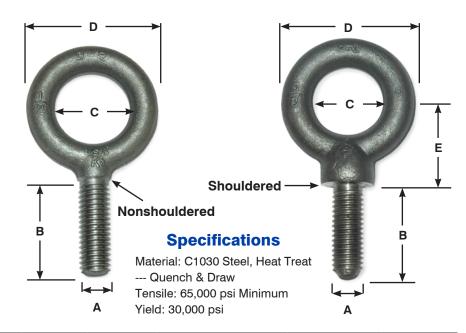
Notice

Load ratings are for vertical lifting only, with thread fully engaged

At 45° angle, load rating drops to 25% of listed rate

Do not use at an angle greater than 45° Discard immediately if twisted, bent or otherwise damaged.

For safer lifting at any angle see Heavy Duty Hoist Rings on pages 22-24



Item #	(A) Thread Size	(B) Shank Length	(C) Eye I.D.	(D) Eye O.D.	(E) Center Eye to Shoulder	Straight lift Capacity (lbs.)	Unit Price
			Standard	Size (Nonsh	ouldered)		
142207	1/4" - 20	1"	3/4"	1 3/ ₁₆ "		500	\$2.75
142208	⁵ / ₁₆ " - 18	1 ½"	7/8"	1 7/ ₁₆ "		900	4.95
101417	³⁄8" - 16	11/4"	1"	1 ¹¹ / ₁₆ "		1,300	2.92
101415	⁷ / ₁₆ " - 14	1 %"	1 ½16"	1 ¹³ / ₁₆ "		1,800	6.65
101423	1/2" - 13	11/2"	1 3/ ₁₆ "	21/8"		2,400	4.71
142209	% ₁₆ " - 12	1 5/8"	1 %2"	29/32"		3.200	8.66
101420	5/8" - 11	13/4"	1 3/ ₈ "	29/16"	NI/A	4,000	7.47
101419	3⁄4" - 10	2"	1 ½"	2 ¹³ / ₁₆ "	N/A	5,000	6.81
101425	7∕8 " - 9	21/4"	1 5/8"	3 ³ / ₁₆ "		7,000	12.18
101422	1" - 8	21/2"	13/4"	3 %16"		9,000	11.92
101421	11/8" - 7	23/4"	2"	4"		12,000	12.10
107961	11/4" - 7	3"	2 ³ / ₁₆ "	4 ⁷ / ₁₆ "		15,000	29.05
142210	1½" - 6	31/2"	21/2"	5¾ ₁₆ "		21,000	86.18
142211	1¾" - 5	3¾"	27/8"	6"		28,000	123.80
142212	2" - 41/2	4"	31/4"	67/8"		38,000	168.24
142213	21/2" - 4	5"	4"	81/2"		56,000	910.96
			Standar	d Size (Sho	uldered)		
142214	1/4" - 20	1"	3/4"	1 3/ ₁₆ "	3/4"	500	\$2.69
142215	⁵ / ₁₆ " - 18	11/8"	7/8"	1 7/ ₁₆ "	15/16"	900	4.95
138068	³⁄8" - 16	11/4"	1"	1 ¹ ¹ / ₁₆ "	11/8"	1,300	2.81
142216	⁷ / ₁₆ " - 14	13/8"	1 ½16"	1 13/16"	11/4"	1,800	6.65
109787	1/2" - 13	1½"	1 3/ ₁₆ "	21/8"	1 3/8"	2,400	5.20
142217	% ₁₆ " - 12	1¾"	1 3//8"	2 %16"	1 ²¹ / ₃₂ "	3,200	12.44
109781	5⁄8" - 11	1¾"	1 %"	2 % ₁₆ "	1 ²¹ / ₃₂ "	4,000	7.47
109794	3/4" - 10	2"	1 ½"	2 ¹³ / ₁₆ "	1 ¹³ ⁄ ₁₆ "	5,000	9.65

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-maii

Forged Steel Eyebolts (continued)

Item #	A Thread Size	B Shank Size	C Eye I.D.	D Eye O.D.	E Center Eye to Shoulder	Straight lift Capacity (lbs.)	Unit Price			
iteiii #	Tilleau Size	Silalik Size		lard Size (SI		Capacity (ibs.)	Office Price			
138069	⁷ / ₈ " - 9	21/4"	15%"	3 ³ / ₁₆ "	21/8"	7,000	10.10			
	ļ <u> </u>		-	+	-	7,000	12.18			
135690	1" - 8	21/2"	13/4"	3%16"	2 ⁵ ⁄ ₁₆ "	9,000	28.40			
142218	11/8" - 7	23/4"	2"	4"	211/16"	12,000	43.29			
137974	11/4" - 7	3"	213/16"	4 ⁷ / ₁₆ "	215/16"	15,000	35.00			
138829	1½" - 6	31/2"	21/2"	5 ³ / ₁₆ "	3 ⁵ ⁄ ₁₆ "	21,000	48.70			
142219	13⁄4" - 5	33/4"	27/8"	6"	4"	28,000	123.80			
138064	2" - 41/2	4"	31/4"	67/8"	43/8"	38,000	100.96			
	Metric Size (Shouldered)									
	mm	mm	mm	mm	mm	kg	Unit Price			
142220	M6 x 1.0	12	19	30	18.5	210	\$7.48			
142221	M7 x 1.0	14	22	36.5	23.2	370	8.57			
107516	M8 x 1.25	16	25	43	27.8	500	9.11			
107521	M10 x 1.5	20	27	46	30.9	740	10.00			
107520	M12 x 1.75	24	30	54	34	1,030	10.16			
142222	M14 x 2.0	28	33	58	40.9	1,600	12.86			
106724	M16 x 2.0	32	35	65	40.9	1,600	14.44			
106723	M18 x 2.5	36	38	71.5	44.7	2,140	16.94			
106720	M20 x 2.5	40	41	81	52.5	2,860	24.47			
106718	M24 x 3.0	48	45	90.4	57.1	3,850	24.26			
142223	M27 x 3.0	48	51	103	66.5	5,200	43.15			
108500	M30 x 3.5	60	55	112.7	72.7	6,400	56.55			
142224	M36 x 4.0	72	63	131.8	81.8	8,970	85.73			
142225	M42 x 4.5	84	73	152.4	101.6	11,960	139.38			
142226	M45 x 4.5	84	73	152.4	101.6	12,720	188.75			
140636	M48 x 5.0	96	82	174.6	111.0	16,400	213.42			
142227	M52 x 5.0	96	82	174.6	111.0	17,300	228.24			

Other Styles and Sizes Available — Inquire



Notice

Load ratings are for vertical lifting only, with thread fully engaged

At 45° angle, load rating drops to 25% of listed rate

Do not use at an angle greater than 45° Discard immediately if twisted, bent or otherwise damaged.

For safer lifting at any angle see Heavy Duty Hoist Rings on pages 22-24



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

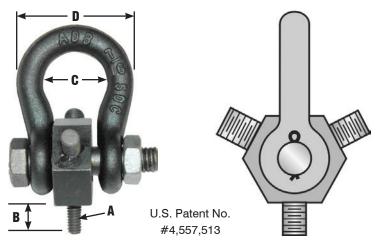
tech support toll-free (USA & Canada)

1.866.467.9001

Universal Lift Rings

Stronger, Safer, More Versatile

More economical than conventional eyebolts



Two Different Size Rings, each with 3 selectable thread sizes

Item #	(A) Thread Size	(B) Shank Length	(C) Eye I.D.	(D) Eye O.D.	Straight Lift Capacity (lbs.)	Unit Price
115939	1/4" - 20 5/ ₁₆ " - 18 3/ ₈ " - 16	1/2"	11/4"	21/8"	400 800 1,400	\$79.02
115967	½" - 13 ½" - 11 ½" - 10	3/4"	13⁄4"	3"	2,600 4,000 6,000	50.58

Hi-Strength Lifting Eye

- Maintain load ratings at lift angles of 90°
- Load ratings of 9,000 lbs to 15,000 lbs
- Safety Factor 5:1
- Made of Forged Carbon Steel

Purchasers also order:

- Heavy Duty Hoist Rings, pages 22-24
- Chain Slings, page 29
- Heavy Duty Lifting Slings, page 30
- Mold Handling Latches, page 31
- Copper Flake Thread Lube, page 521



Item #	Thread Size	Thread Length	Eye I.D.	Eye O.D.	Clevis	Capacity at 90°	Unit Price
121852	1" - 8	1 ½"	13/4"	33/4"	4 ²⁷ / ₃₂ "	9,000 lbs	\$56.47
121849	11/4" - 7	13/4"	21/2"	51/4"	65/8"	10,000 lbs	104.81
121847	11/2" - 6	2"	21/2"	51/4"	65/8"	15,000 lbs	175.64



Chain Slings

For More Versatile Help With Heavy Duty Lifting Applications



- Made of Grade 100 Alloy Steel for maximum abrasion and corrosion resistance
- Meets ASME B30.9 OSHA & NACM Standards
- Grade 100 has 25% greater work load limit than grade 80
- User can experience more work load limit with a smaller diameter chain based on the application
- Grade 100 reduces overall wear on the links and extends the life of the chain

Specific	Specifications									
	SINGLE LEG	2 LEG 3 LEG 4 LEG								
	Working Load	Working Load								
Chain	Limit	Limit at 60° Angle								
9/32"	4,300 lbs	7,400 lbs	11,200 lbs	11,200 lbs						
3/8"	8,800 lbs	15,200 lbs	22,900 lbs	22,900 lbs						
1/2"	15,000 lbs	26,000 lbs	39,000 lbs	39,000 lbs						
5/8"	22,600 lbs	39,100 lbs	58,700 lbs	58,700 lbs						

Spare Latch Kits Available — See Kit section below*









		Sinç	Single Leg - SOS		2 Leg - DOS		3 Leg - TOS			4 Leg - QOS			
Chain Size	Lgth.	Safety Without	Latch With	Unit Price	Safety Without	Latch With	Unit Price	Safety Without	Latch With	Unit Price	Safety Without	Latch With	Unit Price
	2'	170224	170225	\$87.89	170241	163922	\$175.46	170258	170259	\$257.71	170282	170283	352.18
9/32"	3'	170226	170227	94.46	170242	165295	172.64	170260	170261	295.00	161786	163214	375.00
	4'	170228	170229	101.01	170243	170244	202.00	170262	170263	315.00	170284	170285	400.00
	2'	159667	170219	\$127.14	159668	170245	\$252.60	170264	170265	\$387.30	170286	170287	\$512.97
3/8"	3'	170220	170221	118.39	170246	169057	216.14	170266	170267	425.00	170288	160747	512.97
	4'	170222	170223	146.46	170247	170248	284.00	170268	170269	455.00	170289	170290	565.00
	2'	170230	170232	\$205.16	138528	170249	\$407.94	170270	170271	\$550.00	170291	170292	\$674.00
1/2"	3'	161383	170233	221.48	170250	157726	403.51	170272	170273	592.00	170293	170294	881.28
	4'	170231	170234	237.80	159664	170251	402.00	170274	170275	636.00	170295	170296	792.00
	2'	170235	170236	\$321.29	170252	170253	\$512.00	170276	170277	\$874.00	170297	170298	\$1,054.00
5/8"	3'	170237	170238	345.42	170254	170255	661.86	170278	170279	934.00	170299	170300	1,134.00
	4'	170239	170240	369.54	170256	170257	595.00	170280	170281	994.00	170301	170302	1,516.51



*Spare Latch	*Spare Latch Kits include Latch, Pin and Spring							
#170303	⅓₂" Chain Safety Latch Kit	\$15.15						
#170304	³ % ["] Chain Safety Latch Kit	17.05						
#170305	½" Chain Safety Latch Kit	22.34						
#170306	5%" Chain Safety Latch Kit	31.89						



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

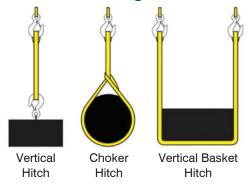
Heavy Duty Mold Lifting Slings

Avoid Damage to Molds, Barrels and Feed Screws From Chains and Cables

Rugged, Sewn, Woven Nylon Web, Double Ply Construction

Vertical Lift Capacity					
Sling Width	Holds Up To				
1"	3,200 lbs				
2"	6,400 lbs				
3"	8,800 lbs				
4"	11,500 lbs				

Hitch Configurations



- · Strength Various sizes to handle maximum load
- Convenience Can conform to any shape
- · Safety Adjusts to the load for a tight, non-slip grip
- Load Protection Will not mar, deface, or scratch
- Economy Low cost / Long life
- · Long Life Unaffected by mildew, rot, or bacteria / Excellent abrasion resistance
- Shock Absorbency Can absorb heavy shocks without damage
- Temperature Resistance Unaffected up to 180°F

Meets OSHA Standards

- · Sling is marked with rated capacities for vertical, choker and vertical basket hitch
- · Synthetic webbing is of uniform thickness and width

Note: Only use fittings with a minimum breaking strength equal to that of the sling.

> **Refer to OSHA Standards** for proper usage.



Item #	Width	Length	- Workin Vertical	g Load Lin Choker	nit (lbs) - V.Basket	Unit Price
170815		3 ft.				\$10.03
170392		4 ft.				11.10
170393	1"	6 ft.	3200	2560	6400	13.21
170394		8 ft.				15.36
170395		12 ft.				19.61
170816		3 ft.				\$15.21
170396		4 ft.				17.10
170397	2"	6 ft.	6400	5120	12800	20.90
170398		8 ft.				24.71
170399		12 ft.				32.32
170400		4 ft.		7040	17600	\$20.05
170717	3"	6 ft.	8800			26.74
170718		8 ft.	0000			33.44
170720		14 ft.				Inquire
170721		4 ft.				\$26.05
170722		6 ft.				35.13
170723	4"	8 ft.	11500	9200	23000	44.21
170724		10 ft.				53.29
170725		14 ft.				71.46



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



S Mold Handling Latch (G.A.I.M. T.O.I.™

(Pronounced Game Toy) T.O.I.™ (Tool Opening Interrupter) by G.A.I.M. Engineering



Keeps Mold Halves Together For Safe Handling

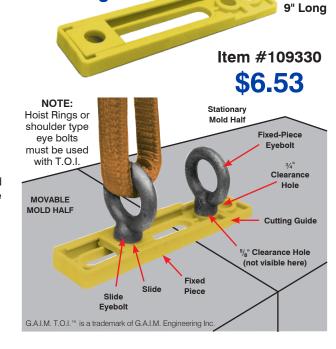
- Avoid costly damage to your molds during installation, removal, transporting or storage
- Cost much less than conventional, custom strapping systems
- · Can be moved from one mold to another

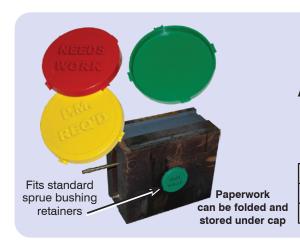
How It Works

The T.O.I.™ holds the mold closed for transporting, setup, teardown or storage. It consists of a fixed piece that bolts to the stationary mold half, and a slide that moves within a track on the fixed piece. The slide bolts to the movable mold half. As the mold is lifted, the slide wedges tightly to the fixed piece, preventing the mold from opening.

To prevent damage to the tooling and machine, if the installer forgets to remove the T.O.I. $^{\text{TM}}$ after installing the mold on the machine, the latch is designed to safely break apart when the machine opens the mold.

Made of 100% Recycled Reinforced Nylon
No tools necessary to install!





The Original Snap-On SMART CAPS™

A quick, easy way to:

- Indicate a mold's status ready to mold/needs work/P.M. required
- Attach work-orders, notes etc. to mold (under cap)

Help eliminate unnecessary downtime and confusion!

#137145	(Green: ready to mold)	\$2.15 ea.
#137146	(Red: needs work)	2.82 ea.
#137147	(Yellow: P.M. req'd)	2.15 ea.



SAFETY BONES™

Better and less expensive than mold safety straps

- Designed to fracture (not damage mold) if mold is opened with straps still in place
- · Cost a fraction of what you pay for metal straps
- Highly visible "safety yellow" color will not wear off or fade

#137149	(Small: 1" center spacing)	\$0.60 ea.
#137150	(Large: 21/2" center spacing)	0.61 ea.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

<u>''</u> ₁ 31



Convenient Storage and Portability!

The IMS Select® Hoist Ring Rack is ready when you are. Whether it's before, during or after the job, this handy rack will keep your commonly used Hoist Rings, Eyebolts and Lifting Chains organized and transportable.





- Mobile
- Versatile
- Space Saving
- Durable

Reduce Mold Setup Time!

Tech Tips

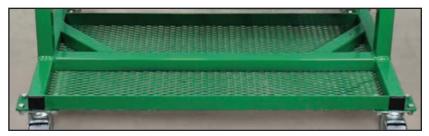
It is a good idea to keep the most common rigging products you use on this cart. You may want to affix user installed labels on your cart to be sure products are returned to their proper location.



Push Bar Grips



5" Locking Swivel Casters



Reinforced Mesh Utility Trays



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



2' long Push Bar with Grips

- enables you to guide cart with ease

25 Heavy Duty Steel Posts

- allows a sturdy method to safely organize tools and rigging products

9 Top (Front) Rack Posts:

- (2) 12" x 1"
- (5) 8" x 3/4"
- (2) 6" x 1/2"

3 Top (Back) Rack Posts:

- (2) 6" x 1/2"
- (1) 6" x 3/4"

5 Middle Rack Posts:

(5) 12" x 1"

8 Bottom Rack Posts:

- (4) 8" x 3/4"
- (4) 6" x 1/2"



- provides quick access to tools and accessories that do not require hanging (32" x 63/4" usable area per tray)

Four 5" Locking **Swivel Casters**

- allows for mobility and control

Accommodates a Wide Variety of: Hoist Rings, Eyebolts, Mold Clamps, Lifting Straps, Chain

Slings and Much More



Item No. 165874

\$1,172.01

Durable

Powder Coating

Specifications				
Dimensions	37"W x 24"L x 40"H			
Cart Structure	3" and 4" steel channel			
	14 and 16 gauge steel tube			
Weight Capacity	975 lbs			
Shipping Weight	175 lbs			
(Class 150 - must ship truck)				
Crated Dimensions	44"W x 38"L x 47"H			

Heavy Duty Welded Steel Construction



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 1.888.288.6900

tech support toll-free (USA & Canada) 1.866.467.9001





Made Expressly For Injection Machine Operators

The ideal solution when the molder is looking for a heavy duty work table that has options and adjustments to suit several applications throughout the shop. Whether it is beside the press, in the tool room, or for the general maintenance area, the IMS Workstation offers quality and strength in even the most demanding environments. Built to last and priced within the molders budget.

- Spacious 60" x 28" Workspace Top
- Sturdy Rugged Welded-Steel Construction
- Versatile Table Top Height Adjustable (30" to 40")
- Clean Look Easy to clean durable polyester powder coating
- Customizable Several upgrades and options to choose from to fit your shop needs









www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001











Hinged Sides (Both Ends)



Large, Versatile Steel Work Surface For Multiple Tasks

Item #	Description	Unit Price
168492	Deluxe Workstation - Includes Lighting Kit, Box Shelf and Caster Kit (Save +\$100)	\$1,385.68
168493	Pro Workstation - Includes Lighting Kit, Leveling Foot Pads	1,282.84
168111	Basic Workstation - Leveling Foot Pads	928.20
Optional Accessories		
168113	Complete Lighting Kit for IMS Workstation	\$354.64
168112	Light Post Kit for IMS Workstation, Use your own light fixture*	201.86
167418	Part Boxing/Utility Shelf for IMS Workstation	98.28
168494	Caster Kit - Includes (4) Swivel Locking Casters	50.00
121194	4', Fluorescent Light Fixture Only	185.26

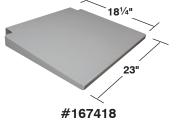
^{*} Requires 383/4" Distance Between Mounting Brackets



4' long, 120 volt / dust resistant with bottom safety cover. Includes Light Fixture, Light Posts, Light Post Mounting Brackets and Hardware

NOTE: Light Fixture does not include line cord or T8 type light bulbs





Optional Part Boxing/Utility Shelf



#168494 Optional Lockable Swivel Casters Set of 4 (Adds 4" to height)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001





Easy Access To All Your Maintenance Products

Item No. 163630 \$1,585.00

IMS Exclusive Product!

(Other Items Sold Separately)

Made expressly for holding water line hoses, fittings, clamps, tools, cleaners, greases, tool boxes, small molds, reels of hose, tubing, wire, etc.

Every Maintenance Department Needs This Cart!



Specifications				
Tray Sizes:				
Upper (3):	14"W x 30"L x 2"D			
Workspace Table:	14"W x 30"L x 2"D			
Lower:	30"W x 30"L x 2½"D			
Dimensions:	30"W x 30"L x 64"H			
Cart Structure:	11 gauge steel			
Weight Capacity:	350 lbs			
Shipping Weight (must ship truck):	150 lbs			

Aerosol Can Holders 1/4", 3/8" and 1/2" pre-fabbed fitting holders Rubber Coated Shelves & Trays Heavy Duty, Welded Steel Construction Work space table holds up to a 200 lb. mold Designed by a molder to help reduce maintenance time! 30"W x 30"L x 64"H 5" diameter Soft **Rubber Casters** (Swivel/Locking)

Tech Tips

Have a mobile mold setup cart with every tool, hose, and clamp necessary that is brought to the machine. This avoids hunting for stuff and wasting time.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Tech Tips



Quick Mold Change

Using a video camera, record at least two mold (more preferably) changeovers made by different technicians. Have a meeting with your team, discuss and list what procedures works the best. (Everyone has a trick or two up their sleeve that can be passed on.)

Here are but a few suggestions for discussion:

- 1. What can be done while the mold that is coming out is still running
- 2. List the steps to be done as soon as the order comes for the mold change
- 3. List the steps to be done as soon as the machine is shut down
- 4. What has nothing to do with the changeover such as coffee and bathroom breaks that could be taken care of before starting the changeover
- 5. Who's going to troubleshoot running machines while the changeover is in process

Examine the list. One third of the set up time can be saved in preparation.

Here are a few examples of places to shave some time off your set up time:

- 1. Have the mold being set ready at the machine before shutting down
- 2. Install FasTie Couplers on your ejector rods
- 3. Install Quick Change or Push On waterline fittings
- 4. Preheat the mold off line with a spare thermolator
- 5. Pre Dry your material in a Mobile Drying Hopper
- 6. Have an IMS Mobile Set Up Cart stocked and ready to go with eyebolts, straps, bolts, water fittings, etc.



IMS MAXX™ Mold Clamps

Quick Reference Price Chart

MAXX FC Forged, Closed-Toe Mold Clamps								
Description	Length Width Wide Slot Item # Page # Unit Price							
FC3	4 ¹ / ₁₆ "	11/4"	²¹ / ₃₂ "	103908	40	\$12.35		
FC4	51/4"	2"	²⁵ / ₃₂ "	103896	41	20.65		
FC5	5½"	2"	²⁵ / ₃₂ "	103884	42	21.45		
FC6	61/2"	2"	²⁵ /32"	103869	43	26.53		
FC7	7"	21/4"	²⁵ / ₃₂ "	103839	44	23.03		
FC8	7"	2"	11/16"	103903	45	34.55		
FC9	9"	31/4"	1 ⁵ / ₁₆ "	104122	46	45.81		
MAXX FO Forged, Open-Toe Mold Clamps								
Description	Length	Width	Wide Slot	Item #	Page #	Unit Price		
FO5	5"	2"	²⁵ /32"	103875	48	\$17.90		
FO7	7"	2"	²⁵ / ₃₂ "	103859	49	26.00		



Tech Tips

Molding Safety Checklist

Inspection

Inspect the press and surrounding areas including all auxiliary equipment for the following:

- Is the area clean and free of all potential hazards?
- Is other electrical equipment that could be hazardous during the operation locked out?
- Are the correct mold straps used to strap the mold together?
- Did you perform the daily inspection on the hoist/crane?

Holes in Platens

Are the holes in the platen in good condition? Will they be able to hold the mold?

Mold Clamps

- Are the clamps the correct size for the mold?
- Are the clamps cracked or bent?
- How many clamps are needed to hold the mold?
- Are the clamps spaced evenly? It is essential that the clamps are placed properly.

Clamp Installation

- Make sure the bolts for the clamps are the correct size and grade.
- Make sure you are using the proper grade of bolts.
- Are the bolts in good condition?
- Check the manufacturer's torque information to see how much torque needs to be placed on the bolts.
- Don't rely on air pressure to torque bolts properly!
- * It is NOT recommended to re-use bolts from a previous application



Maxx FC Forged, Closed-Toe Mold Clamps

Closed Toe for Maximum Holding Strength

Look For "MAXX" If You Want The Very Best!

Clamps

- · Closed toes provide maximum holding strength
- Made from durable forged 4140 tool steel
- Heat treated throughout, not just on the surface, optimizing tensile strength
- · Large slots for easy mold positioning
- · Black oxide, noncorrosive surface

Clamp bolts

- Made from durable forged 4140 tool steel
- · Oversized hex head prevents stripping of bolt head
- Extra large fillet under bolt heads
- · Strong rolled threads prevents pull out
- Heat treated for maximum tensile strength

Washers

- Extra thick hardened steel to prevent deformation under a heavy load
- · Black oxide, noncorrosive surface

MAXX™ is a trademark of IMS Company

Only from IMS!

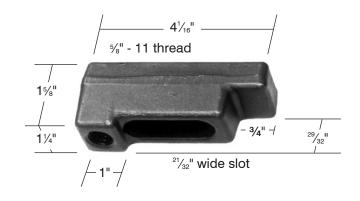


Tech Tips

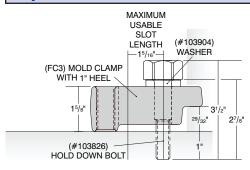
For basic applications use mold clamps that have a slot to accept the bolt. They never fall off the bolt.

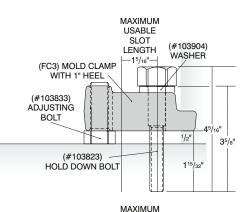


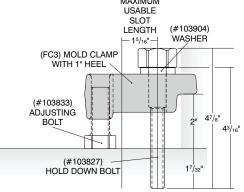
IMS MAXX™ FC3 Mold Clamps, Washers and Bolts



Specifications and Prices







For $^{29}\!\!/_{32}$ Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103908	FC3 Mold Clamp	4½6"L x 1½"W x 2½32" wide slot	\$12.35
103904	Washer	11/4" O.D., ²¹ / ₃₂ " I.D. x 1/4"	2.18
103826	Hold down bolt	5⁄8" - 11 THD, 2 ⁷ ⁄8"L	12.50

For $\frac{1}{2}$ "- $\frac{29}{32}$ " Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)		
103908	FC3 Mold Clamp	4½6"L x 1½"W x 2½2" wide slot	\$12.35		
103904	Washer	11/4" O.D., ²¹ / ₃₂ " I.D. x 1/4"	2.18		
103833	Adjusting bolt	5/8" - 11 THD, 13/4"L	5.30		
103823	Hold down bolt	5⁄8" - 11 THD, 35⁄8"L	11.30		

For 113/32"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103908	FC3 Mold Clamp	4½6"L x 1½"W x 2½32" wide slot	\$12.35
103904	Washer	11/4" O.D., 21/32" I.D. x 1/4"	2.18
103833	Adjusting bolt	5/8" - 11 THD, 13/4"L	5.30
103827	Hold down bolt	5⁄8" - 11 THD, 43∕ ₁₆ "L	8.48

Don't see what you need?
Call and ask a tech today: 866.467.9001



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

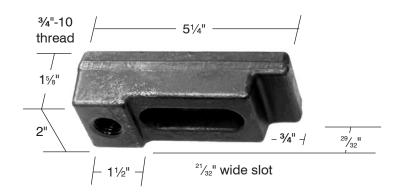
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

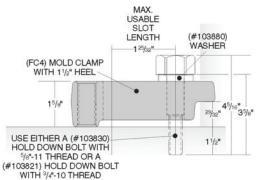
sales@imscompany.com

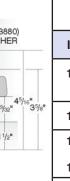
Please refer to imscompany.com for current pricing ©Copyright 2021 IMS Company. All rights reserved.

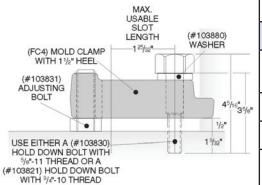
IMS MAXX™ FC4 Mold Clamps, Washers and Bolts

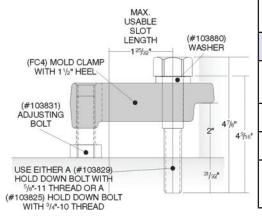


Specifications and Prices









For ²⁹/₃₂ Mold Flanges (requires one of each item)

Item #	Description Size		Unit Price (each)	
103896	FC4 Mold Clamp	51/4"L x 2"W x ²⁵ / ₃₂ " wide slot	\$19.35	
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74	
103830	Hold down bolt	5⁄8" - 11 THD, 35⁄8"L	11.40	
or 103821	Tiold down boil	¾" - 10 THD, 35⁄8"L	11.00	

For $\frac{1}{2}$ Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103896	FC4 Mold Clamp	5½"L x 2"W x ²⁵ ½2" wide slot	\$19.35
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103830		5⁄8" - 11 THD, 35⁄8"L	11.40
or 103821	Hold down bolt	¾" - 10 THD, 35⁄8"L	11.00

For 1¹³/₃₂"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103896	FC4 Mold Clamp	5½"L x 2"W x ²⁵ ½2" wide slot	\$19.35
103880	Washer	1½" O.D., ½" I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103829	Hold down bolt	5⁄8" - 11 THD, 4³∕ ₁₆ "L	12.87
or 103825	Hold down bolt	³ ⁄ ₄ " - 10 THD, 4 ³ ⁄ ₁₆ "L	12.90

Don't see what you need? Call and ask a tech today: 866.467.9001

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

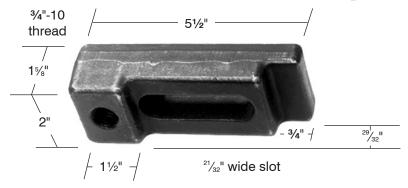


fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

e-mail sales@imscompany.com

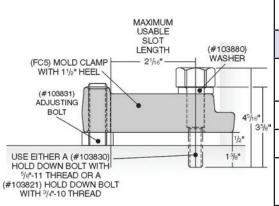
IMS MAXX™ FC5 Mold Clamps, Washers and Bolts



Specifications and Prices MAXIMUM USABLE (#103880) WASHER LENGTH 21/16" (FC5) MOLD CLAMP WITH 11/2" HEEL-35/8 USE EITHER A (#103830)

For ²⁹/₃₂ Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103884	FC5 Mold Clamp	5½"L x 2"W x ²⁵ ⁄ ₃₂ " wide slot	\$19.85
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74
103830	Hold down bolt	5%" - 11 THD, 35%"L	11.40
or 103821	Hold down bolt	¾" - 10 THD, 35/8"L	11.00



HOLD DOWN BOLT WITH 5/8"-11 THREAD OR A (#103821) HOLD DOWN BOLT WITH 3/4"-10 THREAD

For 1/2" - 29/32" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103884	FC5 Mold Clamp	5½"L x 2"W x ²⁵ ⁄ ₃₂ " wide slot	\$19.85
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103830	Hold down bolt	5%" - 11 THD, 35%"L	11.40
or 103821	Hold down bolt	3⁄4" - 10 THD, 35⁄8"L	11.00

_	MAXIMUM USABLE SLOT LENGTH —— 21/16"——	(#103880 WASHER	
(FC5) MOLD CLAMP WITH 11/2" HEEL			Ţ
(#103831) ADJUSTING BOLT		2"	4 ⁷ /8" 4 ³ /16"
USE EITHER A (#103829) HOLD DOWN BOLT WITH \$\frac{\psi}{\psi}\rightarrow\text{11 THREAD OR A}\$ #103825) HOLD DOWN BOLT WITH \$\frac{\psi}{\psi}\rightarrow\text{11 THREAD}\$			

For 113/32"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103884	FC5 Mold Clamp	5½"L x 2"W x ²⁵ ⁄ ₃₂ " wide slot	\$19.85
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103829 or	Hold down bolt	5/8" - 11 THD, 43/ ₁₆ "L	12.87
103825		¾" - 10 THD, 4¾ ₁₆ "L	12.90

Don't see what you need?

Call and ask a tech today: 866.467.9001



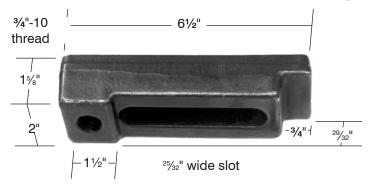
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

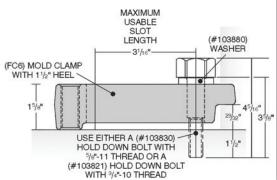
phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS MAXX™ FC6 Mold Clamps, Washers and Bolts



Specifications and Prices



For ²	29/32"	Mold	Fla	inges	(requires o	one o	f each item)	
								ı

Item #	Description	Size	Unit Price (each)
103869	FC6 Mold Clamp	6½"L x 2"W x ²⁵ ⁄ ₃₂ " wide slot	\$28.91
103880	Washer	1½" O.D., ½" I.D. x ½"	3.74
103830 or 103821	Hold down bolt	5%" - 11 THD, 35%"L 34" - 10 THD, 35%"L	11.40 11.00

USABLE SLOT LENGTH (#103880) 31/16" WASHER

(FC6) MOLD CLAMP WITH 11/2" HEEL (#103831) ADJUSTING BOLT 35/8 USE EITHER A (#103830) HOLD DOWN BOLT WITH 5/8"-11 THREAD OR A (#103821) HOLD DOWN BOLT WITH 3/4"-10 THREAD

MAXIMUM

For 1/2"- 29/32" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103869	FC6 Mold Clamp	6½"L x 2"W x ²⁵ ⁄ ₃₂ " wide slot	\$28.91
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103830		5⁄8" - 11 THD, 35⁄8"L	11.40
or 103821	Hold down bolt	3/4" - 10 THD, 35/8"L	11.00

For 1¹³/₃₂"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103869	FC6 Mold Clamp	6½"L x 2"W x ²⁵ ⁄ ₃₂ " wide slot	\$28.91
103880	Washer	1½" O.D., ½" I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103829 or 103825	Hold down bolt	⁵ / ₈ " - 11 THD, 4 ³ / ₁₆ "L ³ / ₄ " - 10 THD, 4 ³ / ₁₆ "L	12.87 12.90

USABLE (#103880) LENGTH WASHER (FC6) MOLD CLAMP WITH 11/2" HEEL (#103831) ADJUSTING BOLT 43/16 USE EITHER A (#103829) HOLD DOWN BOLT WITH 5/8"-11 THREAD OR A (103825) HOLD DOWN BOLT

WITH 3/4"-10 THREAD

MAXIMUM

Don't see what you need?

Call and ask a tech today: 866.467.9001



www.imscompany.com

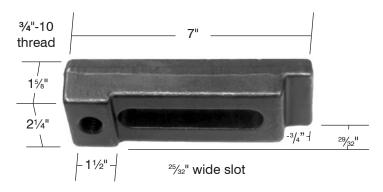
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS MAXX™ FC7 Mold Clamps, Washers and Bolts

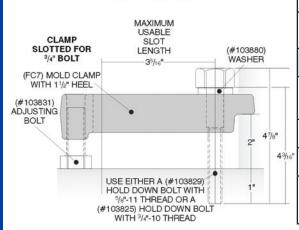


Specifications and Prices MAXIMUM USABLE CLAMP SLOT SLOTTED FOR (#103880) LENGTH 3/4" BOLT WASHER 35/16 (FC7) MOLD CLAMP WITH 11/2" HEEL 45/16 29/32 USE EITHER A (#103830) HOLD DOWN BOLT WITH

USE EITHER A (#103830) HOLD DOWN BOLT WITH \$\frac{\psi_0}{\psi_1}\text{11}/2^n\text{35/6}\end{array}}{35/6^n\text{11}/2^

USE EITHER A (#103830) HOLD DOWN BOLT WITH

5/6"-11 THREAD OR A (#103821) HOLD DOWN BOLT WITH 3/4"-10 THREAD



For ²⁹/₃₂ Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103839	FC7 Mold Clamp	7"L x 2½"W x ²⁵ ⁄32" wide slot	\$23.03
103880	Washer	1½" O.D., ½" I.D. x ½"	3.74
103830 or 103821	Hold down bolt	5%" - 11 THD, 35%"L 34" - 10 THD, 35%"L	11.40 11.00

For 1/2"- 29/32" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103839	FC7 Mold Clamp	7"L x 2½"W x ²⁵ ⁄ ₃₂ " wide slot	\$23.03
103880	Washer	1½" O.D., ¹³ / ₁₆ " I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103830 or	Hold down bolt	5%" - 11 THD, 35%"L	11.40
103821		¾" - 10 THD, 3%"L	11.00

For 1¹³/₃₂"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103839	FC7 Mold Clamp	7"L x 2½"W x ²⁵ ⁄32" wide slot	\$23.03
103880	Washer	1½" O.D., ½" I.D. x ½"	3.74
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103829	Hold down bolt	5⁄8" - 11 THD, 4¾ ₁₆ "L	12.87
or 103825	Hold down bolt	3⁄4" - 10 THD, 43⁄ ₁₆ "L	12.90

Don't see what you need?

Call and ask a tech today: 866.467.9001



1/2" 35/8

13/4

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

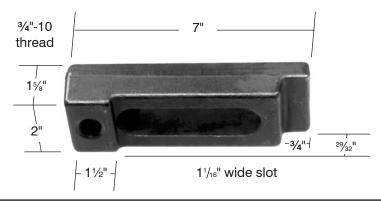
tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

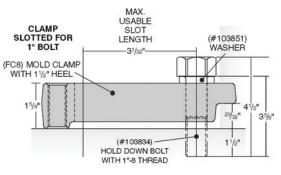
BOLT

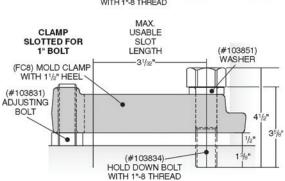
•

IMS MAXX™ FC8 Mold Clamps, Washers and Bolts



Specifications and Prices





For ²⁹ / ₃₂ " Mol	d Flanges	(requires one of each item)
---	-----------	-----------------------------

Item #	Description	Size	Unit Price (each)
103903	FC8 Mold Clamp	7"L x 2"W x 1½ ₁₆ " wide slot	\$34.55
103851	Washer	2" O.D., 1½" I.D. x ½"	5.71
103834	Hold down bolt	1" - 8 THD, 35%"L	16.00

For 1/2"- 29/32" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103903	FC8 Mold Clamp	7"L x 2"W x 1½ ₁₆ " wide slot	\$34.55
103851	Washer	2" O.D., 1½" I.D. x ½"	5.71
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103834	Hold down bolt	1" - 8 THD, 35%"L	16.00

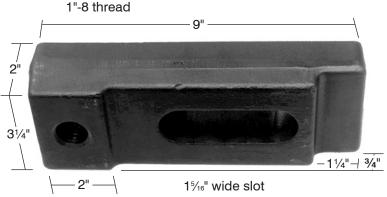
Don't see what you need?
Call and ask a tech today: 866.467.9001

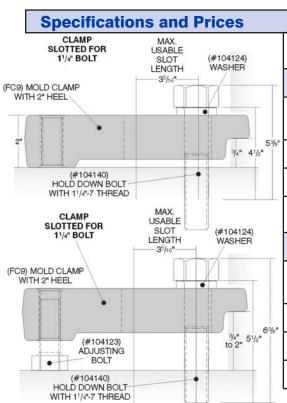
Tech Tips

Avoid "All-Purpose" Bolts and Washers. The most costly mistake you can make, is to use a bolt that is too short and strip the threads in a platen hole. Check clamp bolt engagement. It should enter the die plate at least 11/4 (preferably 11/2) times the bolt diameter. Commercial bolts, socket head screws and soft steel washers require frequent, costly replacement, as bolt heads are too small and conventional washers bend when used on injection molds. You can avoid damage to your mold, cut your setup time and save money wasted on makeshifts by using bolts and washers made expressly for injection plants.



IMS MAXX™ FC9 Mold Clamps, Washers and Bolts





For 3/4" Mold Flanges (requires one of each item)

- 1				
	Item #	Description	Size	Unit Price (each)
	104122	FC9 Mold Clamp	9"L x 3½"W x 1½6" wide slot	\$45.81
	104124	Washer	21/4" O.D., 15/16" I.D. x 7/16"	9.11
	104140	Hold down bolt	11⁄4" - 7 THD, 51⁄2"L	59.25

For 3/4" - 2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
104122	FC9 Mold Clamp	9"L x 3½"W x 1½6" wide slot	\$45.81
104124	Washer	2½" O.D., 1½16" I.D. x ½16"	9.11
104123	Adjusting bolt	1" - 8 THD, 2"L	11.03
104140	Hold down bolt	11/4" - 7 THD, 51/2"L	59.25

Don't see what you need?

Call and ask a tech today: 866.467.9001



Open-Toe for maximum positioning flexibility

Only from IMS!

Custom Clamps Not A Problem for IMS!

Clamps

- Open toes provide maximum positioning flexibility
- Made from durable forged 4140 tool steel
- Heat treated throughout, not just on the surface, optimizing tensile strength
- Black oxide, noncorrosive surface

Clamp bolts

- Made from durable forged 4140 tool steel
- Oversized hex head maximizes holding power
- Extra large fillet under bolt heads
- Strong rolled threads prevents pull out
- · Heat treated for maximum tensile strength

Washers

- Extra thick hardened steel to prevent deformation under a heavy load
- Black oxide, noncorrosive surface





Take great care when handling open-ended clamps. They may slip and fall to the floor or down the chute when the tech is trying to bolt it in.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

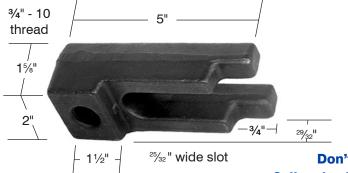
fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)

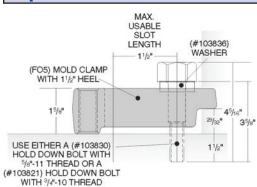
1.866.467.9001

IMS MAXX™ FO5 Mold Clamps, Washers and Bolts



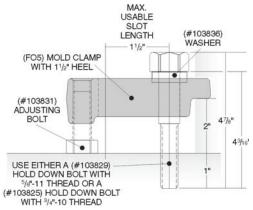
Don't see what you need? Call and ask a tech today: 866.467.9001

Specifications and Prices



MAX. USABLE SLOT LENGTH	(#103836) WASHER
	45/16" 29/32" 35/6"
	11/2"

(FO5) MOLE WITH 11/2' (#103831) ADJUSTING BOLT		MAX. USABLE SLOT LENGTH	(#103 WASH	45/16'	35/e"
USE EITHER A (HOLD DOWN BO 5/8"-11 THREAI #103821) HOLD E WITH 3/4"-10 T	OLT WITH D OR A OOWN BOLT		1:	3/8"	



For $^{29}\!\!/_{32}$ Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103875	F05 Mold Clamp	5"L x 2"W x ²⁵ / ₃₂ " wide slot	\$17.90
103836	Washer	²⁵ / ₃₂ " I.D. x ⁷ / ₁₆ "	3.75
103830 or 103821	Hold down bolt	5%" - 11 THD, 35%"L 34" - 10 THD, 35%"L	11.40 11.00

For 1/2"- 29/32" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103875	F05 Mold Clamp	5"L x 2"W x ²⁵ / ₃₂ " wide slot	\$17.90
103836	Washer	²⁵ / ₃₂ " I.D. x ⁷ / ₁₆ "	3.75
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103830	Hold down bolt	5⁄8" - 11 THD, 35⁄8"L	11.40
or 103821	TIOIG GOWIT BOIL	¾" - 10 THD, 35⁄8"L	11.00

For 113/32"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103875	F05 Mold Clamp	5"L x 2"W x ²⁵ / ₃₂ " wide slot	\$17.90
103836	Washer	²⁵ / ₃₂ " I.D. x ⁷ / ₁₆ "	3.75
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103829 or 103825	Hold down bolt	⁵ / ₈ " - 11 THD, 4 ³ / ₁₆ "L ³ / ₄ " - 10 THD, 4 ³ / ₁₆ "L	12.87 9.06

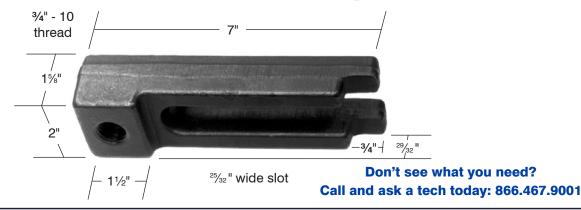


phone order toll-free (USA & Canada) 1.800.537.5375

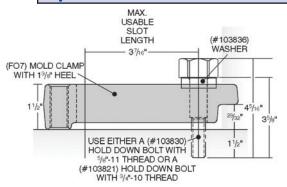
fax order toll-free (USA & Canada) 1.888.288.6900

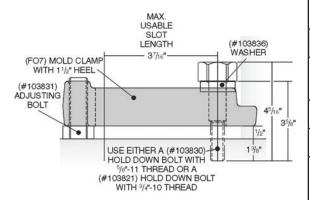
phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

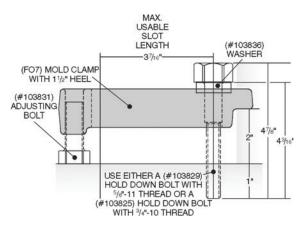
IMS MAXX™ FO7 Mold Clamps, Washers and Bolts



Specifications and Prices







For ²⁹/₃₂ Mold Flanges (requires one of each item)

Item #	Description Size		Unit Price (each)
103859	F07 Mold Clamp	7"L x 2"W x ²⁵ / ₃₂ " wide slot	\$26.00
103836	Washer	²⁵ / ₃₂ " I.D. x ⁷ / ₁₆ "	3.75
103830	Hold down bolt	5⁄8" - 11 THD, 35⁄8"L	11.40
or 103821	Hold down boil	¾" - 10 THD, 35⁄8"L	11.00

For 1/2"- 29/32" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103859	F07 Mold Clamp	7"L x 2"W x ²⁵ / ₃₂ " wide slot	\$26.00
103836	Washer	²⁵ / ₃₂ " I.D. x ⁷ / ₁₆ "	3.75
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103830 or 103821	Hold down bolt	5%" - 11 THD, 35%"L 34" - 10 THD, 35%"L	11.40 11.00

For 1¹³/₃₂"-2" Mold Flanges (requires one of each item)

Item #	Description	Size	Unit Price (each)
103859	F07 Mold Clamp	7"L x 2"W x ²⁵ / ₃₂ " wide slot	\$26.00
103836	Washer	²⁵ / ₃₂ " I.D. x ⁷ / ₁₆ "	3.75
103831	Adjusting bolt	¾" - 10 THD, 1¾"L	6.80
103829 or	Hold down bolt	5⁄8" - 11 THD, 43∕ ₁₆ "L	12.87
103825	Tield dewii beli	¾" - 10 THD, 4¾ ₁₆ "L	9.06



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order 1.888.288.6900 001.888

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

Machined Mold Clamps

Heat Treated Premium Quality Steel

- Carburized .020/.025 deep
- · Black oxide finish
- Available in both open and closed design

NOTE: No Turn washers recommended with open toe clamps



Туре	Item #	Length	Width	Thickness	Slot Length	Bolt Diameter	Adjusting Bolt Size	Unit Price
	141652	6"	13/4"	11/4"	25/8"	5/8"	5⁄8"- 11	\$34.70
	160989	71/2"	13/4"	11/4"	35/8"	5/8"	5/8"-11	38.70
	160990	61/2"	2"	11/2"	23/4"	3/4"	3⁄4"-10	50.60
Closed Toe	160991	8"	2"	11/2"	3¾"	3/4"	3/4"-10	55.00
010000 100	138051	8"	21/2"	13⁄4"	3"	1"	1"-8	60.49
	142932	91/2"	2"	11/2"	43/4"	3/4"	3/4"-10	59.40
	142392	11"	21/2"	13/4"	5"	1"	1"-8	74.30
	138054	13"	3"	13⁄4"	5½"	11/4"	11/2"-6	138.50
	161967	13½"	31/2"	13⁄4"	5¾"	11/2"	11/2"-6	193.10
	147811	4"	13/4"	1"	23/4"	5/8"	5/8"-11	\$22.75
	160977	5"	13/4"	1"	31/4"	5/8"	5%"-11	25.50
	160980	5"	2"	11/4"	33/8"	3/4"	3/4"-10	30.90
	160978	6"	13/4"	1"	3¾"	5/8"	5%"-11	28.20
	160981	6"	2"	11/4"	37/8"	3/4"	3/4"-10	33.60
	160983	6"	13/4"	11/4"	35/8"	5/8"	5%"-11	33.30
	160985	61/2"	2"	11/2"	4"	3/4"	3/4"-10	47.50
Open Toe	160979	7"	13/4"	1"	41/4"	5/8"	5/8"-11	30.90
Open loe	145665	7"	2"	11/4"	43/8"	3/4"	3/4"-10	36.30
	160984	71/2"	13/4"	11/4"	45/8"	5/8"	5%"-11	37.30
	160986	8"	2"	11/2"	5"	3/4"	3⁄4"-10	52.00
	160982	8"	2"	11/4"	53/8"	3/4"	3⁄4"-10	60.38
	160987	8"	21/2"	13/4"	43/8"	1"	1"-8	61.10
	142835	91/2"	2"	11/2"	6"	3/4"	3/4"-10	56.40
	145661	10"	21/2"	11/2"	6"	1"	1"-8	55.00
	160988	11"	21/2"	13/4"	63/8"	1"	1"-8	72.60
	143016	13"	3"	13⁄4"	71/4"	11/4"	1½"-6	Inquire



Standard Grade 5 Mold Clamp Adjustment Bolts

Lower Cost Alternative to Grade 8 Adjusting Bolts

· Black oxide finish

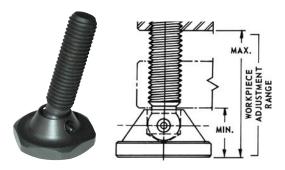


Item #	Thread Size	Length	Hex Head	Head Thickness	Unit Price
148769	1/2"-13	21/2"	3/4"	⁵ / ₁₆ "	\$2.80
141653	5%"-11	21/2"	7/8"	⁷ / ₁₆ "	2.80
138534	3⁄4"-10	21/2"	11/8"	1/2"	3.65
143019	1"-8	21/2"	11/2"	5/8"	8.10

Swivel Head Adjusting Bolts

Firm Footing When Clamp Angle is an Issue

- Heat treated premium steel
- Black oxide finish



Item #	Thread Size	Length	Hex Head	Head Thickness	Unit Price
141722	5%"-11	3"	13/4"	7/8"	\$15.30
141721	3⁄4"-10	31/2"	2"	7/8"	18.55
137693	1"-8	31/2"	21/2"	1 ⁵ ⁄ ₁₆ "	29.85
137692	1½"-6	55%"	3"	1 5%"	54.45

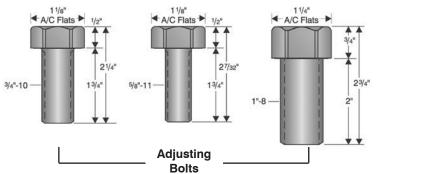


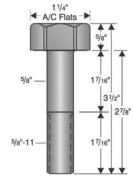
IMS MAXX™ Mold Clamp Bolts

Specially designed for mold clamp use

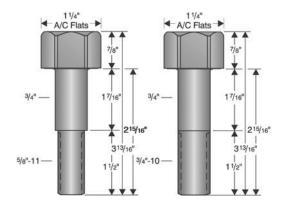
- Made from durable forged 4140 tool steel
- · Oversized hex head maximizes holding power
- Extra large fillet under bolt heads
- · Heat treated for maximum tensile strength

Specifications and Prices





Item #	Unit Price	Item #	Unit Price	Item #	Unit Price (each)	Item #	Unit Price (each)
103831	\$6.80	103833	\$5.30	104123	\$11.03	103826	\$10.35



Item #	Unit Price	Item #	Unit Price	
103824	\$10.50	103822	\$16.31	

Suggested Maximum Torque Value for IMS Heavy Duty Clamp Bolts						
Bolt Number	Torque	Thread				
#103833, #103826, #103824, #103830, #103823, #103829,	045 # ///-	5/11 4 4				
#103827 #103831, #103822, #103821, #103825	245 ft./lb. 425 ft./lb.	%"-11 3/4"-10				
#104123, #103834	591 ft./lb.	1"-8				
#104140	800 ft./lb.	11/4"-7				

continued on next page

Wrenches Available — See page 57 for details

Tech Tips

Check out www.imscompany.com for articles on proper bolt length and installation.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

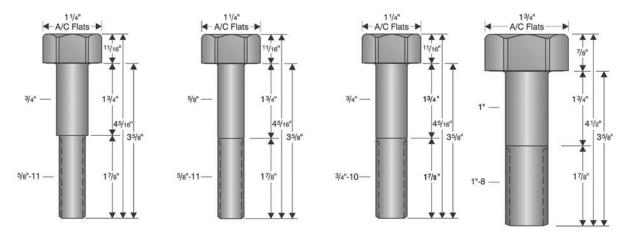
phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

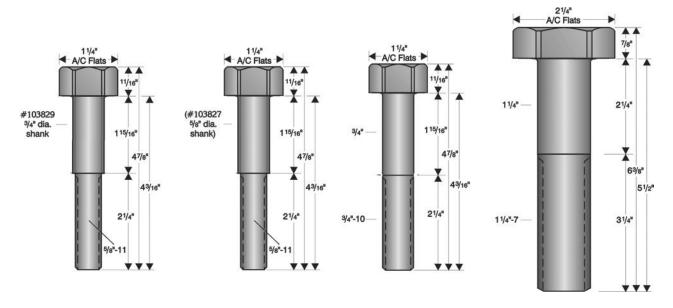
IMS MAXX™ Mold Clamp Bolts (continued)



Specifications and Prices



Item #	Unit Price						
103830	\$11.40	103823	\$11.30	103821	\$11.00	103834	\$16.00



Item #	Unit Price						
103829	\$12.06	103827	\$8.48	103825	\$8.78	104140	\$37.88

Wrenches see page 57

MAXX Washers see page 56 - 57

Tape Measures see page 462-463



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



Mold Clamp Bolts — Grade 8 Steel

- Hex head eases installation and inhibits stripping
- Tensile Strength: 150,000 psi (base steel)
- Specials available upon request

Purchasers also order:

- Washers, page 56-57
- Platen Hole Savers, page 60
- Copper Flake Thread Lube, page 521



Item #	Thread Size	Under Head Length	Thread Length	Hex Head	Shank Diameter	Unit Price				
	Standard Size									
103902	1/11 40	21/2"	41/11	2/11	1711	\$0.75				
103890	1/2"-13	31/2"	11/4"	3/4"	1/2"	0.58				
103862		3"	45/11			1.37				
103847		31/2"	15/8"			2.58				
103925	5/8"- 11	4"		¹⁵ / ₁₆ "	5/11	1.87				
103912	7 ₈ ~-11	41/2"	1½"	716	5/8"	1.50				
103900		5"	1 //2			1.75				
142306		6"				2.96				
103888		31/2"	17/8"		3/4"	2.58				
106340		13/4"	13/4"	11½"	NA	1.94				
103874	3⁄4"-10	4"				3.39				
103858		41/2"	17/8"		3/4"	3.66				
103844		5"				2.34				
103922		4"				5.48				
103909	1"-8	4½" 2¼" 1½"	1 ½"	1"	5.97					
103897	1 -0	5"				5.76				
131306		6"	2½"	1 ½"	1"	7.10				
			Metric Size							
103855	M-12 x 1.75	23/8"	1 ³ / ₁₆ "	19 mm	1/2"	\$0.55				
103841	WI-12 X 1.75	31/2"	1716	19 111111	72	0.92				
103881	M-16 x 2.0	31/2"	41/11	24 mm	5/11	2.02				
103893	IVI-10 X ∠.U	43/8"	11/2"	2 4 	5/8"	2.34				
103852	M 00 v 0 5	23/4"	4137 II	00	2/11	Inquire				
103867	- M-20 x 2.5	4"	113/16"	30 mm	3/4"	4.77				



T-Slot Head Style High Strength Bolts

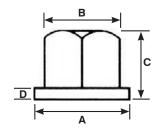


- AISI 1045
- · Black oxide finish
- · Unified coarse threads
- Heads sized to fit in table slot giving more bearing surface



Item #	Thread Size	Length	Thread Length	Head Diameter	Shank Diameter	Hex Nut	Unit Price
147164		4"	1 ½"				\$11.39
159972	5/ ₈ "-11	5"	11/2"	1½ ₆₄ " x 1½"	5/8"	159980	11.40
148608	/8 -11	6"	2"	1/64 X 1/8	/8	139900	12.23
159973		8"	3"				Inquire
159974		4"	11/2"				16.00
137697	³ / ₄ "-10	5"	11/2"	1½" x 1½"	3/4"	159981	14.76
140372	74 -10	6"	2"	174 X 178	74	139901	16.12
159975		8"	3"				18.58
159976		4"	2"				24.68
159977	1"-8	5"	2"	1 ²¹ / ₃₂ " x 1 ⁷ / ₈ "	1"	150359	27.54
137603	1 -0	6"	2"	1-732 X 178	'	130339	39.60
150358		8"	3"				36.11

Flanged Hex Nuts for T-Slot Bolts





Item #	Α	В	С	D	Thread Size	Unit Price
159979	11/8"	7/8"	¹¹ / ₁₆ "	⁵ / ₃₂ "	1/2"-13	\$5.57
159980	1%"	11/16"	¹³ / ₁₆ "	³ / ₁₆ "	5%"-11	3.98
159981	15/8"	11/4"	1"	1/4"	3/4"-10	8.87
150359	2"	15/8"	11/4"	1/4"	1"-8	10.89

Optional Accessory



T-Slot Cleaner

Eliminates the danger of removing chips with air or by hand Item No. 159978\$2.30



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



IMS MAXX™ Mold Clamp Washers

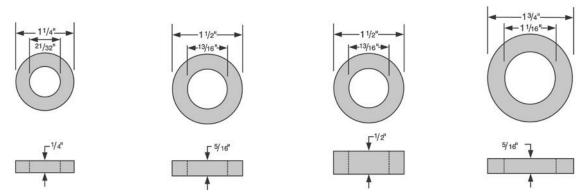
Specially Designed For Mold Clamp Use

- Extra thick hardened steel to prevent deformation under a heavy load
- · Black oxide, noncorrosive surface*

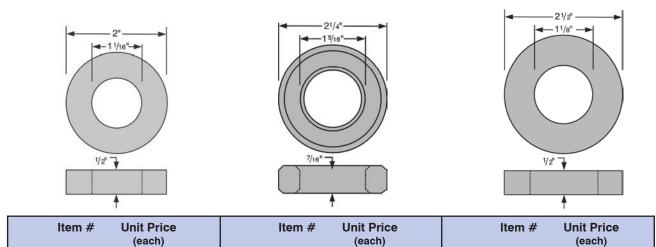
Only from IMS!

NOTE: IMS Hardened Steel Injection Mold Clamp Washers are 2 to 3 times thicker than ordinary washers; select bolts to make sure length of thread engagement is 1 to 11/2 times the bolt diameter. Washers made expressly for heavy duty mold clamping will outlast commercial types many times and cost you much less in the long run.

Specifications and Prices



Item #	Unit Price (each)						
103904	\$2.71	132419	\$3.05	103880	\$3.91	103866	\$5.70



*162632 is not black oxide coated

\$9.15

Maxx™ Mold Clamp Washer Quantity Discounts Order 11-49 - Deduct 5% Order 50+ - Deduct 10%

104124

\$5.35



103851

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

162632*

fax order toll-free (USA & Canada) 1.888.288.6900

\$6.27

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Washers and Nuts







Item #	I.D.	O.D.	Thickness	Unit Price
		C1010 Steel Washers		
103870	9/16"	11/16"	1/4"	\$1.38
103854	²¹ / ₃₂ "	1 ⁵ ⁄ ₁₆ "	1/4"	1.20
103840	²⁵ / ₃₂ "	1½"	1/4"	1.05
103918	1 ½32"	13/4"	1/4"	0.61
		Black Oxide Washers		
160012	1/2"	1½"	1/2"	\$5.40
141655	5/8"	11/4"	1/4"	2.40
144136	5/8"	13/4"	1/2"	5.00
137695	3/4"	2"	1/2"	6.10
136374	²⁵ / ₃₂ "	1½"	1/4"	2.87
144133	1"	2"	⁵ / ₁₆ "	4.26
137734	1"	2½"	5/8"	9.60
137694	11/4"	3"	5/8"	11.90
		No Turn/Rectangular Washers		
160906	1/2"	21/4" Long (13/4" between legs)	3/4"	\$8.50
141654	5/8"	21/4" Long (13/4" between legs)	3/4"	7.70
144180	3/4"	2½" Long (2" between legs)	3/4"	8.50
103836 (forged)	²⁵ / ₃₂ "	2 ⁵ / ₁₆ " Long (1 ²⁹ / ₃₂ " between legs)	7/16"	3.75
144181	1"	3" Long (2½" between legs)	1"	11.90
165551	11/4"	3½" Long (3" between legs)	1"	Inquire

Combination Wrenches

Heat Treated Chrome Vanadium Alloy Steel

Purchasers also order:

• Low Cost Mold Clamp Bolts, page 54

The Right Tool For Installing Nozzles, Mold Clamp Bolts and More



Item #	Fits Hex Size	Nominal OAL	Вох	Weight	Unit Price
109151	7/8"	11"	12 point	9 oz.	\$10.58
122201	1 ½16"	14"	12 point	11 oz.	35.52
149120	11/4"	16"	12 point	1.6 lbs.	48.88



www.imscompany.com

phone order toll-free (USA & Canada) $\boldsymbol{1.800.537.5375}$

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Plastic Locating Ring

The LOCATOR™ Ensures Proper Mold Installation



Prevent costly damage to molds and platens!

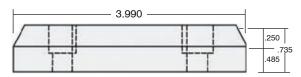
When installing a mold, the mold setter seldom knows anything is off center until he hears the sound of steel being crushed. By that time, the damage is done. Once damaged, a mold or platen is not serviced easily, and can prove very costly to repair.

The "LOCATOR™", with its unique micro-cellular structure, is forgiving. The sound of the thermoplastic ring cracking can alert setters to a misaligned mold BEFORE any damage is done to either the mold or the platens.

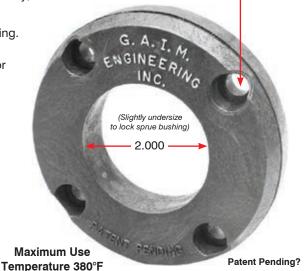
Features

- · Reduce mold setup and tear down costs
- Form-fits to worn platens
- Leaking plastic from nozzle & sprue bushing easily peels right off – won't stick
- · Costs much less than tapered, steel locator rings
- Mounting hole patterns are D-M-E® or National Tool standards

Designed & made by a molder for molders



Drilled & counterbored for 5/16" dia. socket head cap screw



Item #	Description	Unit Price
107960	Plastic Locating Ring	\$8.40

Steel Locating Rings Available Upon Request



	Pro	ocess Trouble-Shoo	ting Guidelines	
		IE MATERIALS		DUS MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	Gate Gize
Splay	Mold Release Spray	Gute 6/26	Screw Speed	
	Word Heleuse opidy		Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp	Ciamp i ressare	Mold Temp	Ciamp Freedaire
Flash	Injection Pressure		Injection Pressure	
1 10311	Hold Pressure Time		Injection Speed	
	Injection Speed		injection opera	
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time	,	Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
Marnaga	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
Warpage	Injection Pressure	joo.om rooduro	Injection Pressure	Coming Time
	joodon i rooduid		Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
	Moid fortip	Gate Size	Word fortip	Injection Pressure
		Injection Pressure		Hold Pressure Time
0:-1-		Hold Pressure Time	_	Injection Speed
Sinks		Injection Speed		Venting
		Cushion	_	venting
		Venting		Mark Tarra
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
Short		Gate Size		Gate Size
Shot		Injection Pressure		Injection Pressure
		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		14.11.7		Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
Glossiness		Injection Pressure		Injection Pressure
2		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
	<u> </u>			Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
Parts	Mold Temp		Mold Temp	
Sticking	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
	Mold Release Spray			
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
	Injection Speed		Injection Pressure	Venting
Marks		MALLET	Moisture Content	Mold Temp
	Melt Temp	Mold Temp		
Marks Delamination	Melt Temp Injection Speed	Gate Size		Gate Size
	· · · · · · · · · · · · · · · · · · ·	<u> </u>	Moisture Content	Gate Size Melt Temp
	Injection Speed	Gate Size	Moisture Content	
Delamination	Injection Speed	Gate Size Melt Temp	Moisture Content	Melt Temp
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp	Moisture Content	Melt Temp Mold Temp
Delamination	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size	Moisture Content	Melt Temp Mold Temp Gate Size
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time	Moisture Content	Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Moisture Content	Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed
Delamination Weld	Injection Speed Moisture Content	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting		Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Moisture Content Injection Speed	Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed



IMS Soft Steel Hole Savers

For easy repair of stripped platen holes

IMS Platen Hole Savers are made expressly for injection molders. There are many types of thread repair inserts offered for general use; many are hardened steel and are themselves NOT replaceable. When you damage those commercial inserts, you can't drill them out and repair them easily on the press.

Some molders repair stripped platen holes by drilling them out and making them larger. But then they need an odd size bolt, which means lost time at mold setups.

Stripped platen holes result from too-short or too-tight bolts, especially with adjustable clamps. Damaged platen holes waste hours of mold setup time and lead to bad mold-clamping habits.

If you have a stripped platen hole, repair it now with a soft steel Platen Hole Saver that is replaceable if the I.D. thread is damaged. Keep your mold clamps standardized. Avoid makeshift mold clamp setups, and save on mold-change costs.



Drill and tap out new hole. Install hole saver with hex at bottom of hole using appropriate size Allen Wrench. Peen the hole saver in place or drill through threads with a $\frac{1}{8}$ " drill and drive in a soft steel pin.

Specifications and Prices								
Bolt Thread Size	Drill Size	Hole Depth	Tap Size	Allen Wrench Size				
1/2"-13	²¹ / ₃₂ "	11/2"	3/4"-10	⁷ / ₁₆ "				
⁵ / ₈ "-11	7/8"	11/2"	1"-8	1/2"				
3/4"-10	13/23"	11/2"	11/4"-7	5/8"				
1"-8	1 13/ ₂₃ "	11/2"	11/2"-12	¾" square key				
11/4"-7	1 5/8"	11/2"	13⁄4"-8	11/8"				
12 mm-1.75 mm	²¹ / ₂₃ "	11/2"	3/4"-10	3/8"				
16 mm-2 mm	7/8"	11/2"	1"-8	1/2"				
20 mm-2.5 mm	13/23"	11/2"	11/4"-7	5/8"				
24 mm-3 0 mm	113/0"	1.80"	11//"-12	3/4"				

	Standard Sizes			Metric Sizes		
Item #	,	Size	Unit Price	Item # Size Unit Pri		Unit Price
103863	1/2	<u>2</u> " - 13	\$5.86	109836	12 mm-1.75 mm	\$8.50
103848	5/8	" - 11	4.63	109833	16 mm-2 mm	6.30
103926	3/2	ı" - 10	5.01	109827	20 mm-2.5 mm	6.00
103913		1" - 8	5.57	113147	24 mm-3.0 mm	6.60
137883	11	1/4" - 7	20.33			
			Optional A	Accessories		
		Drills*			Taps	
Item #	Bit Size	Shank Size	Unit Price	Item #	Size	Unit Price
113048	21/32"	1/2"	\$32.18			
113067	7/8"	1/2"	22.04	113066	1" - 8	35.41
113063	13/32"	1/2"	59.60	113061	11/4" - 7	120.71
113058	113/32"	1/2"	60.10	113055	1½" - 12	191.08
163375	15/8"	3/4"	116.70	137884	1¾" - 8	172.49



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone of the control of the con

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Ball-End Hex Key Set

- Standard Tip Sizes: $\frac{1}{20}$ ", $\frac{1}{16}$ ", $\frac{5}{64}$ ", $\frac{3}{32}$ ", $\frac{7}{64}$ ", $\frac{1}{8}$ ", $\frac{9}{64}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ", $\frac{7}{32}$ ", $\frac{1}{4}$ " and $\frac{5}{16}$ "
- Metric Tip Sizes: 1.5, 2, 2.5, 3, 4, 5, 6, 8 and 10
- Overall Length: (Standard) 2²⁹/₃₂" min and 6" max (Metric) 3³/₃₂" min and 5¹/₄" max
- Unique locking feature and marked slot for each key
- Material: Alloy steelIncludes plastic caddy

Item#	Description	Unit Price
162708	Standard Hex Key Set	\$40.22
162709	Metric Hex Key Set	43.89





KLEIN

5-Piece Long Folding Hex Key Set

Tip Sizes: ³/₁₆", ⁷/₃₂", ¹/₄", ⁵/₁₆" and ³/₈"
Overall Length: 2⁷/₁₆" min and 3¹/₄" max

Handle Length: 51/4"Material: Steel

• Finish: Black oxide with chrome plated handle













FasTie® Quick Ejector Tie-In System

In an injection molding press, the FASTIE system quickly "ties-in" the mold ejector plate to the press ejection system, dramatically reducing mold change time. The greatest time savings are realized in presses where space is limited and the ejector system is difficult to tie in using solid knock-out bars.

The FASTIE coupler may be permanently mounted to the press ejector plate. The quick-connect locking mechanism in the coupler snaps mechanically onto the mold-mounted stud during mold installation.

To release the ejectors, apply shop air to the coupler. The coupler opens to release the stud, disconnecting the press and tooling ejector plates. The coupler remains in the open position, ready for a new mold to be set.

For multiple ejector locations, an air manifold is recommended to release all couplers simultaneously. See inside catalog pages for installation examples.

Three FASTIE models are available: 1-inch original model for presses 500 tons and under, 1-inch High Strength FASTIE for center knock-out and high speed ejection, and 2-inch model for presses larger than 500 tons.

Allow Faster Mold Change



Includes Air Fitting

- FasTie installs easily into existing tapped holes, no additional machining is required.
- FasTie reduces mold setting time by quickly uncoupling, plus there are no loose parts to stow.
- FasTie remains coupled during mold cycling for increased "tie-in" reliability and reduced wear.

High Strength vs Original Coupler and Stud

High Strength FasTie works the same as the original FasTie. The difference is in the load-bearing surface area inside the coupler. Instead of six ball bearings to hold the FASTIE stud, there are three locking lugs to distribute the load more evenly. See below. Contact area is increased dramatically.

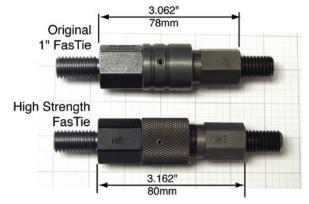
When coupler and stud are connected, the High Strength FASTIE assembled length is .10" (2.5mm) longer than the original version. The outside diameters are the same.

Mating High Strength Components must have "HS" stamped on the hex body. Production parts will have knurling on both components for easy identification. The new design significantly improves coupler life in demanding applications such as center knock-out.

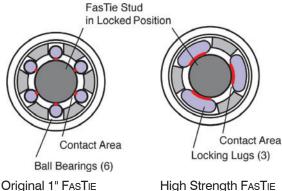
High Strength Couplers and Studs must NOT be used with the original FASTIE. Slight dimensional differences will cause malfunction if the versions are mixed in an installation. Standard Ejector Bars, Center Adapters and Air Manifolds may be used with the High Strength FASTIES.



High Strength FasTie Length Comparison



High Strength FASTIE End View



www.imscompanv.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

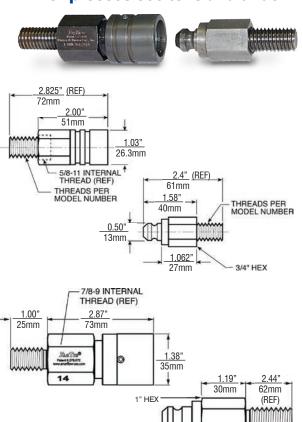
phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



FasTie® Quick Ejector Tie-In System

For presses 500 tons and under



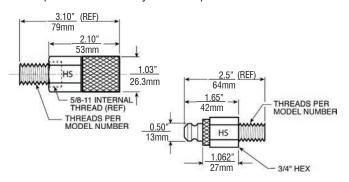
1" and 1%" Series Couplers & Studs

Original FASTIE® 1" Couplers and Studs			
Item #	Model #	Thread Size	Unit Price
Coupler ONLY			
143507	FTF-50	1⁄2" - 13	\$421.00
143509	FTF-63	5⁄8" - 11	421.00
147536	FTF-M12	M12 x 1.75	Inquire
147537	FTF-M16	M16 x 2	434.00
Studs ONLY			
143531	FTM-38	3⁄8" - 16	Inquire
143508	FTM-50	1⁄2" - 13	\$65.00
143510	FTM-63	5⁄8" - 11	65.00
143532	FTM-M12	M12 x 1.75	Inquire
143533	FTM-M16	M16 x 2	Inquire
147535	FTM-M20	M20 x 2.5	Inquire
Original FAST	IE® 1%" Couple	ers and Studs	
Item #	Model #	Thread Size	Unit Price
Coupler ONLY			
161395	FTF1.4-63	5⁄8" - 11	\$472.00
161401	FTF1.4-75	3⁄4" - 10	472.00
173424	FTF1.4-88x	⁷ ⁄ ₈ " - 9 Female	459.00
161402	FTF1.4-M16	M16 x 2	489.00
161403	FTF1.4-M20	M20 x 2.5	489.00
Studs ONLY			
161396	FTM1.4-63	5⁄8" - 11	\$84.00
161398	FTM1.4-75	3⁄4" - 10	84.00
161399	FTM1.4-M16	M16 x 2	106.00
161400	FTM1.4-M20	M20 x 2.5	106.00

High Strength FasTie Couplers & Studs

Do not use HS FASTIE Couplers in combination with original version (above). Damage to couplers will result.

Center knock-out, multiple and high speed ejection indicate the need for High Strength FASTIE Couplers and Studs. High Strength Couplers and Studs are longer than the original parts (see above), and are not to be used in combination with Original Couplers and Studs. All Accessories are compatible with both styles of Couplers and Studs.



High Strength FASTIE® 1" Couplers and Stud			
Item #	Model #	Thread Size	Unit Price
Coupler ONLY			
143511	FTFHS-50	1/2" - 13	\$383.00
143513	FTFHS-63	5⁄8" - 11	383.00
170636	FTFHS-63X	5⁄8" - 11 Female	356.00
147539	FTFHS-M12	M12 x 1.75	396.00
147540	FTFHS-M16	M16 x 2	396.00
172188	FTFHS-M20	M20 x 2.5	411.00
Studs ONLY			
143534	FTMHS-38	3/8" - 16	\$60.00
143512	FTMHS-50	1⁄2" - 13	60.00
143514	FTMHS-63	5⁄8" - 11	60.00
143535	FTMHS-M12	M12 x 1.75	77.00
143536	FTMHS-M16	M16 x 2	77.00
147538	FTMHS-M20	M20 x 2.5	85.00



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order to 1.888.288.6900 001.888.

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001





FasTie® Quick Ejector Tie-In System

2" Couplers and Studs For presses larger than 500 tons

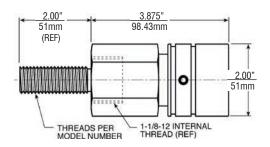


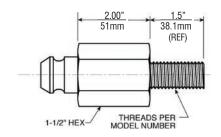


U.S. Patent No. 6,379,072

2" Series

Allow Faster Mold Change





- Couples mechanically
- · Disconnects with shop air
- Simplifies mold changes
- Adaptable to different types of machines and molds
- Made from hardened steel
- Installs without mold modification
- Saves up to 15-20 minutes per mold change
- · Stays coupled during cycles

FASTIE® 2" Couplers and Studs				
Item #	Model #	Model # Thread Size		
Coupler ONLY				
147523	FTF2-63	5/8" - 11	\$488.00	
144856	FTF2-75	³ ⁄ ₄ " - 10	488.00	
173576	FTF2-M20	M20 x 2.5	543.00	
175037	FTF2-113X	11/8" - 12 Female	470.00	
Studs ONLY				
147524	FTM2-63	5/8" - 11	\$112.00	
144855	FTM2-75	³ ⁄ ₄ " - 10	112.00	
147541	FTM2-M16	M16 x 2	134.00	
173577	FTM2-M20	M20 x 2.5	134.00	
147525	FTM2-M24	M24 x 3.0	Inquire	

FasTie® Quick Ejector Tie-In System Specifications

Allowable press tonnage: 1-inch	<u><</u> 500 tons
2-inch	<u>></u> 500 tons
Maximum operating temp	300°F (149°C)
Air pressure range	80 - 100 psi
Stud material	Hardened Steel (58-62 Rc)
Ejector bar and coupler material	High Strength Steel
Threaded Studs	B7 Alloy or Comparable
Air manifold material	Aluminum
Air tubing material	½" OD Nylon

Press requirements:

	Coup	ler Size
	1-inch	2-inch
Platen thru hole min.	ø1.063"	ø2.063"
Platen thru noie min.	ø27mm	ø52.4mm
Figetor plate thru halo min	ø0.512"	ø0.765"
Ejector plate thru hole min.	ø14mm	ø19.4mm
Ejector force per coupler max.	2.5 tons	7.5 tons

See FasTie Accessories on Page 66 - 67



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

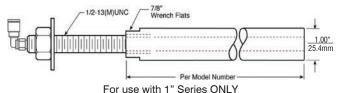
tech support toll-free (USA & Canada)
1.866.467.9001

	Pro	ocess Trouble-Shoo	ting Guidelines	
		IE MATERIALS		DUS MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	Gate Size
Splay	<u> </u>	Gate Size		
	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time	· · ·	Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
Warpage	<u> </u>	IIIJeonoli Fressule	<u>'</u>	Jooning Time
	Injection Pressure		Injection Pressure	
	NA LUT	MA II T	Back Pressure	0.1.0
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
		Injection Speed		Venting
		Cushion		
		Venting		
		Melt Temp	i	Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Short		Injection Pressure		Injection Pressure
Shot		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		Injection Speed	+	Venting
	Mala Dalana Cara	Malk Tarra	Mala Dalana Carrer	
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
Glossiness		Injection Pressure		Injection Pressure
Glossificss		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
				Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
_	Mold Temp		Mold Temp	
Parts	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
		venturig	Back Pressure	vendig
	Injection Pressure			
D. dulls	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
	Mold Release Spray			
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed		Injection Pressure	Venting
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp
Delamination	Injection Speed	Gate Size		Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
		Mold Temp		Mold Temp
	-	· · · · · · · · · · · · · · · · · · ·	+	
Weld		Gate Size	+	Gate Size
Lines		Injection Pressure	-	Injection Pressure
		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		Venting		Venting
	Injection Speed	Melt Temp	Injection Speed	Melt Temp
Jetting	Hold Pressure Time	Mold Temp		Mold Temp
3	Injection Pressure	Gate Size		Gate Size
	injection Pressure	Gate Size		Gate Size





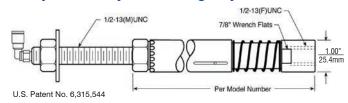
Fixed Length Ejector Bar



Ejector Bars for 2" FASTIE are special orders - INQUIRE

See next page to "Determine Ejector Bar Length"

SpeedBar Adjustable Length Ejector Bar



• Fixed Length Ejector Bar also provides an air passage through to the back of the press ejector plate. Several lengths are stocked with one blank end for on-site finishing.

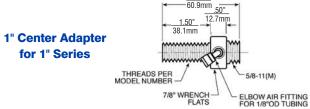
Fixed Length Ejector Bar (½"-13 threads)				
Item #	Model #	Length	Unit Price	
147526	FTBB-50-8	8"	\$145.00	
147527	FTBB-50-10	10"	151.00	
147528	FTBB-50-12	12"	158.00	
147529	FTBB-50-14	14"	164.00	

SpeedBar Adjustable Length Ejector Bar*

Adjustment sleeve is rotated without tools to shorten or lengthen the bar up to 1/2" in increments of 0.006". Once the desired length is set, the spring-loaded sleeve securely locks the adjustment. Provides air passage through the bar for air hook-up at the back of the press ejector plate.

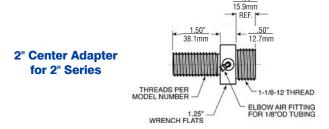
* 1-inch, 1/2-13 threaded only

Ask about Special Thread Sizes for Ejector Bars and Center Adapters



Center Adapter for 1" Series	7 150" 12.7mm 38.1mm 5/8-11(M)	
	7/8" WRENCH ELBOW AIR FITTING FOR 1/8"OD TUBING	





SPEEDBAR Adjustable Ejector Bar (1/2"-13 threads)
Item #	Model #	Length	Unit Price
143522	SBAB-50-6	5.5" to 6.5"	\$299.00
143523	SBAB-50-7	6.5" to 7.5"	312.00
143524	SBAB-50-8	7.5" to 8.5"	326.00
143525	SBAB-50-9	8.5" to 9.5"	339.00
143526	SBAB-50-10	9.5" to 10.5"	349.00
143527	SBAB-50-11	10.5" to 11.5"	362.00
143528	SBAB-50-12	11.5" to 12.5"	378.00
143529	SBAB-50-13	12.5" to 13.5"	387.00
143530	SBAB-50-14	13.5" to 14.5"	396.00

1" Center Adapter			
Item #	Model #	Thread Size	Unit Price
143645	FTCA-63	%"-11 male	\$79.00
147532	FTCA-M16	M16 x 2 male	90.00
147542	FTCA-M20	M20 x 2.5 male	131.00

13/8" Center Adapter					
Item #	Model # Thread Size Unit Price				
161397	FTCA1.4-63	5/₃"-11 male	\$112.00		
161404	FTCA1.4-75	3/4"-10 male	112.00		
161405	FTCA1.4-M16	M16 x 2 male	156.00		
161406	FTCA1.4-M20	M20 x 2.5 male	156.00		

2" Center Adapter			
Item #	Unit Price		
147533	FTCA2-75	3⁄4"-10 male	\$130.00
147534	FTCA2-M16	M16 x 2 male	187.00
143538	FTCA2-M20	M20 x 2.5 male	187.00

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

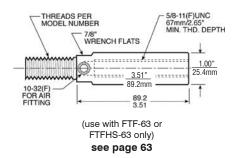
7/8-9 THREAD

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



FasTie® Accessories (continued)



 Center Ejector Bar and Center Adapter provide an air passage in front of the press ejector plate for center knockout. These can also be used for multiple knockouts.

Center Bar			
Item #	Model #	Thread Size	Unit Price
147530	FTCA-63-63	5%"-11	\$156.00
147531	FTCA-M16-63	M16 x 2	156.00

2.75"
101.6mm
1/4"NPT(F)
0.75"
19mm
1.00"
25.4mm

0.0154"
10-32(F)
3.9mm
4 PLCS

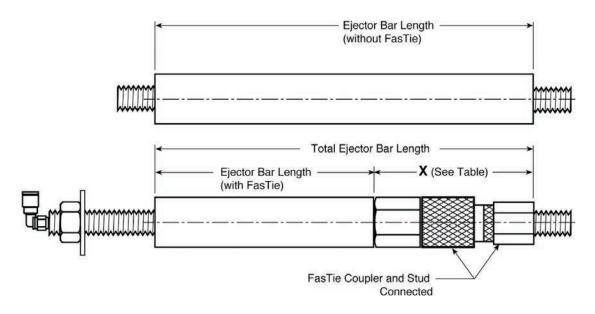
 Air Manifold splits single air supply into four circuits to aid air connection. Comes with 1/8" diameter tubing and pneumatic connectors.

Air Manifold Assembly			
Item #	Model #	Unit Price	
143537	FTAM-100	\$72.00	
148823	90° Air Fitting with 10-32 thd (for FTAM-100)	6.00	
149469	⅓" O.D. Nylon Tubing (for FTAM-100)	Inquire	

Determine Ejector Bar Length

- Determine length of Solid Ejector Bar
- Select Connected FasTie Length from table
- Subtract Connected FasTie Length from Solid Ejector Bar Length
- Subtract Center Adapter Length if needed
- Result is FasTie Ejector Bar Length

Connected FASTIE Lengths			
Description	Part Numbers	"X" Length	
Original 1" FASTIE	FTF-xx and FTM-xx	3.062"/77.8mm	
High Strength 1" FasTie	FTFHS-xx and FTMHS-xx	3.162"/80.3mm	
2" FASTIE	FTF2-xx and FTM2-xx	5.875"/149.2mm	





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

e-mail

FasTie® Installation Examples

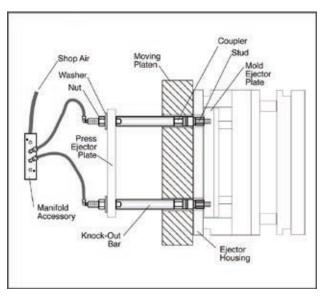
Typical Application for 2 or 4 Ejector Positions

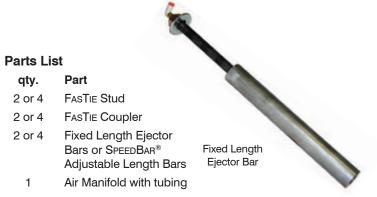
* This setup is designed for captive molders, or shops with tools using a standard thickness ejector housing.

Couplers are located at the end of the ejector bars mounted to the press ejector plate.

Studs are mounted to each mold in storage. Ejector connection is made without changing ejector bars. Ejector housing shown is

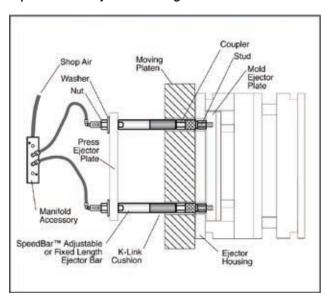
Air Manifold supplies compressed air to the end of each ejector bar for simultaneous coupler release. Fixed length bars are finished on site, cut to length and tapped with 1/2-13 female thread.





Alternate Application for 2 or 4 Ejector Positions

' This setup is designed for custom molders who use a variety of injection molds with different ejector patterns and ejector housing thicknesses.



Couplers are installed next to the Press Ejector Plate. Studs are placed at the end of the mold-mounted ejector bars for easy removal. Molds are changed quickly without accessing the back of the Press Ejector Plate.

For example, a press with 4 ejector positions may be running molds using only the horizontal positions, but the next mold may need the 2 vertical ejector positions. Ejector housing shown is 1.062" thick.

Air Manifold supplies air to the end of each ejector bar for simultaneous coupler release.

Parts List

Part qty. FASTIE Stud 2 or 4 FASTIE Coupler 2 or 4 2 or 4 Fixed Length Ejector Bars or SpeedBar® Adjustable Length Bars Air Manifold with tubing 1



Air Manifold

SMARTFLOW and FASTIE are registered trademarks of Burger & Brown Engineering, Inc.



phone order toll-free (USA & Canada) 1.800.537.5375

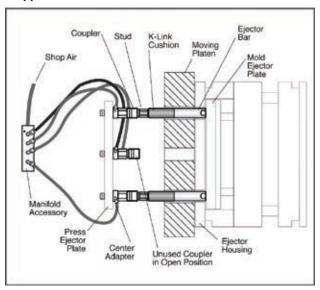
fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

FasTie® Installation Examples

Alternate Application for 2 or 4 Ejector Positions

 This setup is used where there is limited access to the back of the Press Ejector Plate. Custom molders using smaller presses will benefit from this application.



Couplers are installed next to the Press Ejector Plate. Studs are placed at the end of the mold-mounted ejector bars for easy removal. Molds are changed quickly without accessing the back of the Press Ejector Plate.

For example, a press with 4 ejector positions may be running molds using only the horizontal positions, but the next mold may need the 2 vertical ejector positions. Ejector housing shown is 1.062" thick.

Air Manifold supplies air to the mold side of the Press Ejector Plate with the use of adapters.

Parts List

qty.	Part
2 or 4	FASTIE Stud
2 or 4	FASTIE Coupler
2 or 4	Center Adapters
2 or 4	Fixed Length Ejector Bars or SpeedBar® Adjustable Length Ba

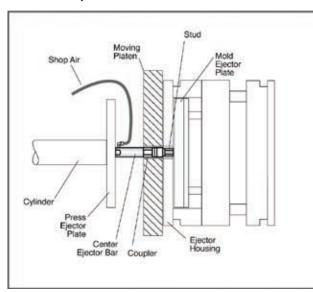


Center Adapter

1 Air Manifold with tubing

Center Ejector Position

 For small presses with a center ejector, replace the cylinder bolt with a Center Ejector Bar and FASTIE coupler.



Center Ejector Bar and Coupler are installed into the Press Ejector Plate, with the Coupler attached to the end. Stud is installed in the Mold Ejector Plate. Molds are changed quickly without accessing the back of the Press Ejector Plate. Ejector housing shown is 1.062" thick.

Shop air is supplied to the side of the center adapter. No Air Manifold is needed. Fully threaded Center Ejector Bar may be shortened to proper length on-site. In many small machines, there may not be room for an ejector bar.

Parts List

qty.	Part	attimone
1	FASTIE Stud	
1	FASTIE Coupler	The state of the s
1	Center Ejector E	Bar
		Center Ejector Bar

High Strength Couplers and Studs are recommended for 1" applications.





Tie Bar Sleeves

Inexpensive Method to Reduce Contamination of Molded Parts While Extending the Life of Tie Bars And Bushings

Shown In Extended Mold Open Position



Shown In Mold Closed Position



MAX Use Temp: 240° F

- · Prevent tie bar grease from contacting molded parts
- Protect tie bars and bushings from abrasive airborne particles
- Opens and closes with mold stroke to provide continuous protection
- · Provides a cleaner, more professional appearance at the press
- · Constructed of Neoprene Coated Nylon
- · Custom made to any tie bar diameter and length
- · Sized to the molding press, not individual molds

Tabs with Eyelets



Used with the magnetic mounting kit to connect to the mold

Air Vent



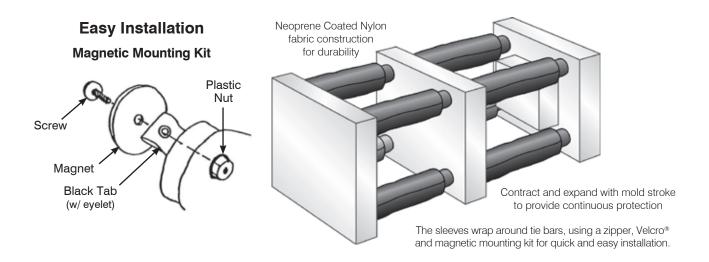
Allows air flow while mold is closing



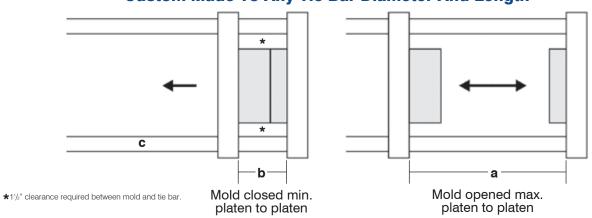
Tie Bar Sleeves



Keep Tie Bar Grease In / Keep Abrasive Airborne Particles Out



Custom Made To Any Tie Bar Diameter And Length



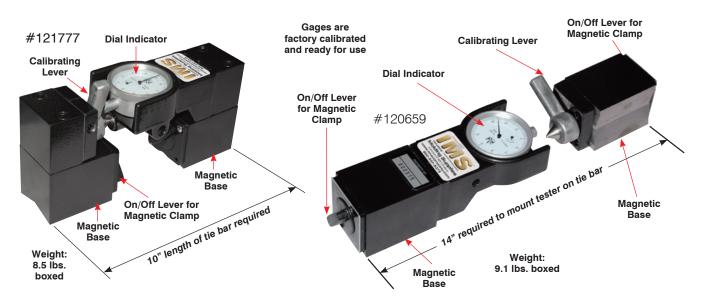
Specify:

a. Mold Open:						
b. Mold Closed:				max open length = 3X closed length (max ratio = 3:1)		
c. Tie Bar Diameter:						
d. Quantity:						
Date:	Quantity:	Phone: ()		Fax: (_)
Name:				Title:		
Company Name:						
Address:						
City:			State:			Zip:



Injection Machine Tie Bar Strain Gages

Help You Obtain Maximum, Uniform Press Clamping Pressure Without Overloading Toggles Or Tie Bars



1 Year Warranty

Avoid tie bar failures and cracked pins • Extend bushing life

Features

- Two super-power on-off magnets allow strain gage to be quickly moved to each tie bar
- Magnetic face angles designed for maximum grip on tie bars up to 2" (small gage), over 2" (large gage)
- Calibrating lever lets you set dial indicator to zero
- · Ruggedly constructed for injection plant use
- Chart inside case translates .001 of tie bar stretch on dial into tonnage of clamp pressure — Without Calculations

For Small Presses 25 To 100 Ton

Item No 121777

\$1,688.85 Wooden Case Included

These Unique Instruments Let You:

- 1.) Check for equal pressure on tie bars, eliminating breakage
- 2.) Verify actual tonnage your press is delivering

(Old presses may not meet rating. Newer presses can exceed rating and should NOT be operated at higher than rated clamp or you will wear out your toggles prematurely!)

For Large Presses 125 Ton & Up

Item No 120659

\$1,192.34 Wooden Case Included

Calibration and Repair Service available — Inquire

IMS can provide NIST Certification in both long and short form:

Long Form Calibration entails measuring and recording the tie bar gage performance at several different pressure settings as received. After disassembly, inspection, repair and calibration the gage is re-tested at those same pressure settings and the readings recorded.

Our standard Short Form Calibration skips the initial testing procedure and the performance is tested after completion at one pressure setting only.



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)
1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) **1.866.467.9001**

е-тап





VersaSwitch™ Limit Switch

Prevents Premature Movements of Machine Components

Smartflow VersaSwitch Limit Switches

- Over 1 million cycle life provides dependable service.
- 180°F (82°C) standard temperature rating allows installation into most molding applications.
- Adjustable operating point provides custom installation.
- In stock to provide same-day delivery.
- Stripped and tinned 6ft. wire leads make the switch ready to install without modification.
- Included mounting hardware installs the Versaswitch limit switch easily.

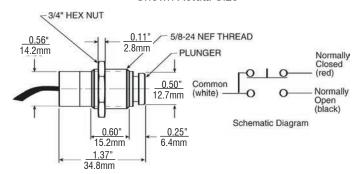
Smartflow® VersaSwitch™ Limit Switch installs into an injection mold to prevent premature movement of your machine components. By using the VersaSwitch to indicate location of the core the switch prevents equipment damage. The VersaSwitch limit switch also protects your profits by limiting downtime and loss of productivity.

The VersaSwitch® Limit Switch is easily installed into a 5/8"-24 female thread. The switch actuates when 3.5 lbs of force is applied to the plunger. Actuation height is adjusted by threading the switch to the correct position in the installation. The switch is held in place via a lockwasher and hex nut. SPDT snap action switch provides a simple, positive indication of the mold or core location.

Prevent Equipment Damage and Accidents



Shown Actual Size



The VersaSwitch™ Limit Switch is designed for use in very low power mold protection control circuits. It is not intended to switch heavy loads in power applications.

Specifications

Electrical	5 Amps Resistive 3 Amps Inductive
Operating Temperature	
Switching	SPDT
Operating Force	3.5 lbs (1.605 kg)
Pre-travel to operating point	0.06" (1.5mm)
Overtravel	0.01" (.25mm)
Enclosure	Watertight per IP68S
Materials	
Body	Anodized Aluminum/ Epoxy
Plunger	Stainless Steel
Lockwasher and Nut	Stainless Steel
Wire Leads	22ga stranded, 3-conductor, shielded cable, ong, ends stripped and tinned

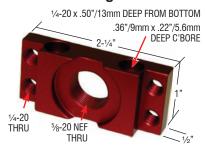
VERSASWITCH™ Limit Switch

INCLUDES: Switch, Lockwasher and Nut

Item #	Model #	Unit Price
144416	V-222	\$115.00

Optional Aluminum Mounting Bracket

The mounting bracket attaches to a mold with conveniently-located, threaded holes. The red anodized finish provides effective corrosion-protection.



Item #	Model #	Unit Price
144417	VB-222	\$39.00

SMARTFLOW is a registered trademark of Burger & Brown Engineering, Inc.
VERSASWITCH is a trademark of Burger & Brown Engineering, Inc.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001





Verify Ejector Plate Return Before Closing The Mold

SmartFlow ThinSwitch Limit Switches

- · Over 10 million cycle life
- 175°F (79.4°C) standard temperature rating
- 250°F (121°C) high temperature unit for higher temperature needs
- Adjustable actuation between .187" and .250" from the mold base.
- 3/16" thick design fits snugly behind the ejector plate between the rest buttons
- Stripped and tinned 6 ft. wire leads
- · Mounting screws and wire clips included

SmartFlow® ThinSwitch® is designed to verify ejector plate return. The ThinSwitch helps prevent accidental mold close in injection molding applications by providing a position switch that is tied to the injection molding machine control.

The ThinSwitch has been tested for reliability over 10 million cycles without failure. Two switches can be used in series for larger molds to ensure the ejector plate return, preventing costly mold damage.



Specifications

	5 Amps resistive / 4 Amps inductive 5 Amps resistive / 4 Amps inductive
Operating Temperature	
Standard Models	175°F max. (79.4°C max.)
High Temp Models	250°F max. (121°C max.)

Mount inside ejector housing and wire to machine controls. Use for core slides or any place where space is limited.

The Thinswitch® Limit Switch is designed for use in very low power mold protection control circuits. It is not intended to switch heavy loads in power applications such as relay or solenoid coils.

	Rated Co	urrent vs.	Steel Temperature		
Stan	dard Mo	dels	High Temp Models		
Amps	°F	°C	Amps	°F	°C
5.0	85	29.4	5.0	100	37.7
4.0	120	49.0	4.5	155	68.3
3.0	155	68.3	4.0	210	98.8
2.0	175	79.4	3.5	250	121.1

Switching	SPDT
Materials	
Body	
Dome	Polyurethane
Back Cover	Polyester film

Wire Leads 22ga stranded, 3-conductor, shielded cable,

ThinSwitch® Limit Switches INCLUDES: Switch, Wire Clips, Screws and Allen Wrench for adjustment		
Item #	Model #	Unit Price
143446	Standard Model (175° F Max) T-222	\$115.00
143448	Standard Model (250° F Max) HT-291	130.00
143447	Liquid Resistant Model (175° F Max) T-222-LR	154.00
143521	Liquid Resistant Model (250° F Max) HT-291-LR	169.00
SMARTFLOW and THINSWITCH are registered trademarks of Burger & Brown Engineering, Inc.		



www.imscompany.com

6 ft. (1.8m) long, ends stripped and tinned

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888,288,6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001





SmartLock® Slide Retainer and Limit Switch

Prevents Premature Slide Movement During Part Injection

SmartFlow SmartLock Limit Switches

- Over 10 million cycle life provides dependable service.
- 17 27 pounds holding force, adjustable
- Capture screw holds plunger in place to prevent loss.
- 175°F (79.4°C) standard temperature rating allows installation into most molding applications.
- 250°F (121°C) high temperature unit provides additional application flexibility.
- · Superior flush mount switch is protected by mounting inside a milled pocket.
- Stripped and tinned 6 ft. wire leads make the switch ready to install without modification.

SmartFlow SMARTLOCK slide retainer and limit switch is designed for injection molders to provide switching and a slide detent in one unique package. The SMARTLOCK locking function prevents premature slide movement during molded part ejection while the SPDT switch is simultaneously actuated.

The SMARTLOCK slide retainer and limit switch has been tested for reliability over 10 million cycles without failure. Two or more switches may be used for larger molds, or molds with multiple slides.

Increased safety and prevention of mold damage result when the SMARTLOCK slide retainer and limit switch is installed in a mold. A capture screw holds the plunger in the slide to prevent loss.

Specifications

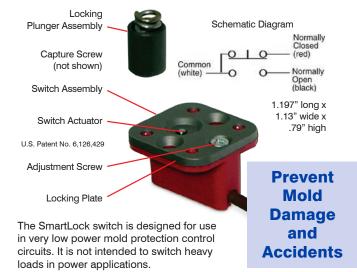
Electrical	250VAC / 28VDC 4 Amps Inductive / 5 Amps Resistive
Operating Temperature	
Standard Models	175°F (79.4°C) max.
High Temp Models	250°F (121°C) max

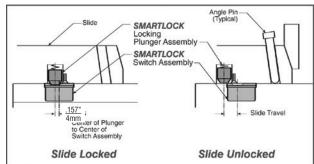
Rated Current vs. Steel Temperature Standard Models High Temp Models					
Amps	°F	°C	Amps	°Ė	°C
5.0	85	29.4	5.0	100	37.7
4.0	120	49.0	4.5	155	68.3
3.0	155	68.3	4.0	210	98.8
2.0	175	79.4	3.5	250	121.1

Switching	SPDT
Break Away Force*	17 to 27 lbs. (Adjustable)

Matarials

Materials	
Switch Body	Glass-reinforced nylon
Locking Plate	Hardened Steel
Locking Plunger .	Hardened Steel
Wire Leads	22ga stranded, 3-conductor, shielded cable,
	6 ft. (1.8m) long, ends stripped and tinned





Installed in the slide, the plunger moves into a recess in the locking plate of the switch assembly, which is installed in the mold plate. The switch actuator, located in the bottom of the recess, closes the normally open switch contacts when the plunger is seated in the locking plate recess. When the break away force is applied to the slide, the lock is released, and the switch returns to its normal state.

Sma	SmartLock® Slide Retainer and Limit Switches INCLUDES: Switch, Wire Clips and Screws		
Item #	Model #	Unit Price	
144412	With Captive Plunger (175°F Max) SL-222-S-C	174.00	
144413	With Captive Plunger (250°F Max) SL-291-S-C	171.00	
144414	With Small Plunger (175°F Max) SL-222-S-S	174.00	
144415	With Small Plunger (250°F Max) SL-291-S-S	189.00	



www.imscompanv.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900

001.888.304.1307

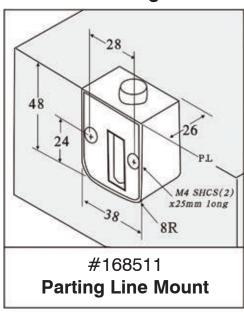
tech support toll-free (USA & Canada) 1.866.467.9001

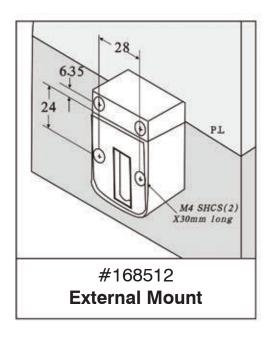
Mechanical Mold Cycle Counters

Precisely Monitor Mold Usage by Tracking The Activity For the Life of the Tool

Available in two mounting styles to accommodate your needs

Dimensional Diagrams:







- · Helps overall mold maintenance
- · Choose from Parting Line or External Mount
- · Non resettable
- · 7 Digit completely mechanical (No batteries to replace)
- · Counts up to 10 Million Cycles
- · Industry standard size
- Made from Durable Glass Filled Nylon with Stainless Steel Internal Parts
- · Includes mounting screws

Item #168511

Parting Line Mount Cycle Counter

\$32.00

Item #168512

External Mount Cycle Counter

\$44.00



Microprocessor Based Digital Timer

Help Older Presses with Less Accurate Mechanized Timers Perform Like Newer Solid-State Machines!



Specifications

RANGES:

Switch-selectable ranges of 0-9.99, 0-99.9 and 0-999 sec, min. or hrs.

REPEAT ACCURACY:

AC ± 0.01 sec on all ranges, synced to AC line.

TIMING MODES:

SINGLE CYCLE: Interval or delayed. REPEAT CYCLE: Pulse-clocked at 60 ms to 80 ms (will be constant for a given unit).

DISPLAY:

CYCLE PROGRESS:

3-digit display, 0.3 inch, high intensity, blue, programmable: DOWN and STOP, DOWN and GO, UP and STOP or UP and GO.

TIME-OUT: - display (left); energized at time-out.

TIMING BAR: - display (right); blinks once per second during cycle, rapidly after time-out.

TEMPERATURE RATING:

32-140° F (0 to 60° C).

LOAD RELAYS:

NUMBER: one instantaneous and one delayed.

TYPE: DPDT, Form C.

CONTACT RATINGS: 7A at 120, 240 or 24V AC, 1/6 HP.

3A at 24V DC, 1.5A at 48V DC, 500mA at 125V DC.

LIFE: 100 million operations (no load).

POWER REQUIREMENTS:

— STANDARD -

120V AC: 95-132V AC, 50 or 60 HZ.

Inrush — 300mA. Running — 60mA at 120V AC.

— OPTIONAL —

240V AC: 190-264V AC, 50 or 60 HZ. Inrush — 150mA.

Running — 30mA at 240V AC.

24V AC: 19.2-26.4V AC, 50 or 60 HZ.

Inrush — 1A.

Running — 250mA at 24V AC.

24V DC: 19.2-26.4V DC, 5% ripple Running — 120mA at 24V DC.

More Precise, Repeatable, Consistent Cycles

Means Improved Production and Part Quality

Replaces:

EAGLE HP-5 Cycle Flex, 12-terminal model reset on power interruption.

EAGLE HP-5 Cycle Flex, 15-terminal model reset on power interruption.

EAGLE CE-500 Analog if timing from closed start.

EAGLE CD-360 Digital Timer if timing from closed start. **EAGLE CT-530/531** if timing from closed start; also if

last two digits of model ends in 00.

Example: CT 5312A600. Also: ATC 305, 325 and 335 timers.

Microprocessor-Based, Digital Timers are the ultimate in accuracy and repeatability. They are designed to replace many old-style, mechanical EAGLE SIGNAL® and ATC Timers, which are less accurate and costly to maintain.

Every ½0th of a second variation in your press timers represents both lost profits and changes in your molded part quality.

No other retrofit product can touch this Digital Timer in speed of pay-back. And part quality improves because cycles are now 100% repeatable with every shot.

Every press user can gain immediate benefits from consistent, reliable press timer performance. Update all your old presses now! Save time and money!

Easy To Install

This timer requires only that you file out a slight clearance for the corners of the square casing. Easy to follow instructions and template are included. Simple rewiring to numbered posts is necessary and takes just a few minutes!

Item #104313

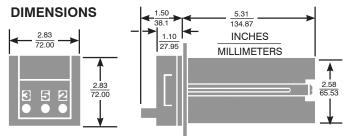
\$519.39 120 VOLT

Retrofit Kit #104229

(Required when replacing ATC Timers 305, 325 and 335 plus Eagle Signal® Flex HP-5 Timers) — **Inquire**

Other Voltages Available — Inquire

EAGLE SIGNAL® is a registered trademark of Danaher Controls



Cut-out opening: 2.64" sq. / Minimum spacing between timers: 3.63" o/c

www.imscompanv.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

77

	1	ocess Trouble-Shoo		IO MATERIAL O
Problem		IE MATERIALS	I	JS MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
Splay	Injection Speed	Gate Size	Injection Pressure	
Spiay	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
1 14011	Hold Pressure Time		Injection Speed	
	Injection Speed		'	
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids		Injection Pressure	Cooling Time	Injection Presure
	Cooling Time			<u> </u>
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time		Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
. 3	Injection Pressure		Injection Pressure	
			Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
Ollino		Injection Speed		Venting
		Cushion		venting
		Venting		Malt Taran
		Melt Temp		Melt Temp
Short Shot		Mold Temp		Mold Temp
		Gate Size		Gate Size
		Injection Pressure		Injection Pressure
		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
				Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
		Injection Pressure		Injection Pressure
Glossiness		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
		Venturig		Venting
	Malt Tames	Mald Dalages Carey	Molt Toron	
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
Parts	Mold Temp		Mold Temp	
Sticking	Injection Pressure		Injection Pressure	
Choking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
2	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
			word Herease Spray	
D	Mold Release Spray	Venting	Malt Tour	Cata O!
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed		Injection Pressure	Venting
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp
	Injection Speed	Gate Size		Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Weld		Injection Pressure		Injection Pressure
Lines		Hold Pressure Time	1	Hold Pressure Time
	-		+	
	-	Injection Speed	+	Injection Speed
	1	Venting	1	Venting
	Injection Speed	Melt Temp	Injection Speed	Melt Temp
Jetting	Hold Pressure Time	Mold Temp		Mold Temp

	Pro	ocess Trouble-Shoo	ting Guidelines	
		IE MATERIALS		DUS MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	Gate Gize
Splay	Mold Release Spray	Gute 6/26	Screw Speed	
	Word Heleuse opidy		Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp	Ciamp i ressare	Mold Temp	Ciamp Freedaire
Flash	Injection Pressure		Injection Pressure	
1 10311	Hold Pressure Time		Injection Speed	
	Injection Speed		injection opera	
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time		Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
Marnaga	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
Warpage	Injection Pressure	joo.om rooduro	Injection Pressure	Coming Time
	joodon i rooduid		Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
	Moid fortip	Gate Size	Word fortip	Injection Pressure
		Injection Pressure		Hold Pressure Time
0:-1-		Hold Pressure Time	-	Injection Speed
Sinks		Injection Speed		Venting
		Cushion		venting
		Venting		Mark Tarra
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
Short		Gate Size		Gate Size
Shot		Injection Pressure		Injection Pressure
		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		14.11.7		Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
Glossiness		Injection Pressure		Injection Pressure
2		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
	<u> </u>			Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
Parts	Mold Temp		Mold Temp	
Sticking	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
	Mold Release Spray			
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
	Injection Speed		Injection Pressure	Venting
Marks		MALLET	Moisture Content	Mold Temp
	Melt Temp	Mold Temp		
Marks Delamination	Melt Temp Injection Speed	Gate Size		Gate Size
	· · · · · · · · · · · · · · · · · · ·	<u> </u>	Moisture Content	Gate Size Melt Temp
	Injection Speed	Gate Size	Moisture Content	
Delamination	Injection Speed	Gate Size Melt Temp	Moisture Content	Melt Temp
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp	Moisture Content	Melt Temp Mold Temp
Delamination	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size	Moisture Content	Melt Temp Mold Temp Gate Size
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time	Moisture Content	Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Moisture Content	Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed
Delamination Weld	Injection Speed Moisture Content	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting		Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting
Delamination Weld	Injection Speed	Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Moisture Content Injection Speed	Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed

Pneumatic Die Grinder Kit

Great For Quick, Easy Mold Surface Enhancements



Specifications

Speed: 22,000 rpm
Collet Size: 1/4" and 1/6"
Air Inlet Size: 1/4" N.P.T.
Working Pressure: 90 psi

Overall Dimensions: 7" long x 15/8" dia.

Overall Weight: 1.2 lbs.

Item No. 134156

Kit includes 1/4" collet, five 1/4" grinding wheels, 1/8" collet, five 1/8" grinding wheels, 2 collet wrenches, 1/4" industrial plug & a plastic case

\$13.77

See next page for Optional Accessories



90° Pneumatic Die Grinder Kit

Ruggedly Built To Quickly Remove Stock

Made of durable alloy heat-treated steel and cast iron

1/4"-18 Industrial Plug



Rear exhaust directs air away from the work surface



1/8" Collet





Five 1/8" and five 1/4" grinding wheels



Price includes plastic storage carrying case

Specifications

Speed: 25,000 rpm
Collet Size: 1/4" and 1/6"
Air Inlet Size: 1/4" N.P.T.
Working Pressure: 90 psi max
Overall Dimensions: 61/4" long x 15/8" dia.

Overall Weight: 1 lb.

Item No. 166174

Kit includes 1/4" collet, five 1/4" grinding wheels, 1/8" collet, five 1/8" grinding wheels, 2 collet wrenches, 1/4" industrial plug & a plastic case

\$27.50



Optional Accessories for use on Grinder #134156 and #166174

3" Cut-Off Wheel for metal (3" dia. x $^{1}/_{16}$ " thick) 40 grit aluminum oxide / $^{3}/_{8}$ " arbor / 20,000 rpm MAX

Item No. 145547 \$3.21ea



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Soft Hammers

Make Mold Setup And Maintenance Quicker, Safer Eliminate Scratching And Denting — Non-Sparking



Brass

Item #	Weight	Handle Type	Handle Length	Unit Price
174775	1 lb.	Fiberglass	12"	\$38.63
174776	2 lb.	Fiberglass	14"	72.59

^{*}Wooden handle hammers available only while supplies last

Shock-absorbing Fiberglass Handles



Aluminum

Low Cost. Less Than Comparable Brass Hammers.

Item #	Weight	Unit Price
101010	½ lb.	\$7.55
101125	¾ lb.	8.23
101070	1 lb.	10.00
101042	1½ lb.	13.95
100978	2 lb.	18.15
100946	3 lb.	27.20

Warning: Protect your eyes. Wear safety goggles.

Caution: These soft hammers are meant only for light activities such as driving pins and positioning tight-fitting mold components.



Brass Mold Hole Cleaning Brushes



Use these brass bristle brushes to effectively remove scale, rust, and plastic residue within small-bore metal tubing and drilled orifices. They eliminate need for corrosive liquid cleaners and are available in a variety of sizes. Brass bristle brushes are perfect for reaching into areas such as condenser tubes, cartridge heater holes, ejector pin holes, mold cavity holes and mold coolant passages.

Brass Bristle Tube Brushes

LEEFEFFFFFFFF

- Sturdy, twisted wire handles
- Finger loops for comfortable grip
- · Easily apply reaming pressure to clean tubes
- 16 brush diameters available
- · Available in kit form

Power-Driven (Single Spiral) Brushes



- · Closely packed brass bristles
- · Effective mounted in power drill
- · Five brush diameters available
- · Available in kit form

Power-Driven (Double Spiral) Brushes

Santana and

- · Smooth, double stranded, heavy gauge wire for easy gripping
- Stronger shaft for use in power drills and drill presses
- · Five brush diameters available
- · Available in kit form

Condenser Cleaning Brushes



- · Stiffer brass bristles for maximum cleaning power
- Five brush diameters available
- Extensions and T-handle available
- Available in kit form
- $\frac{5}{16}$ "-18 female thread x $\frac{1}{8}$ " NPT male thread

				Brass Bristle	Tube Brushes	3								
Item #	Brush Dia.	Overall Length	Wire Size	Unit Price	Item #	Brush Dia.	Overall Length	Wire Size	Unit Price					
101006	1/16"	6"	.003	\$3.97	100990	5/8"					\$3.03			
101038	1/8"	0	.005	2.32	101137	11/16"	9"	.005	3.11					
101119	3/16"		.003	2.40	101104	3/4"			3.21					
101088	1/4"	7"	.000	2.56	101045	¹³ / ₁₆ "			3.86					
101029	⁵ / ₁₆ "		.004	2.48	100983	¹⁵ / ₁₆ "	10"	.005	3.53					
100998	3/8"			2.63	100974	1"			4.24					
100934	⁷ / ₁₆ "	8"	.006	2.26	101014	7/8"	13½"	.005	3.92					
101081	1/2"			2.40	112368		All 16 brushes		39.20					
101023	9/16"	9"	.005	3.08										
				Power Driven	(Single Spiral)								
101059	1/4"		.005	\$3.79	100958	5/8"	12"	.008	\$3.52					
100967	3/8"	12"	.005	3.52	101073	3/4"	12"	12	'-	12	12		.000	3.77
101053	1/2"		.006	3.53	112381		All 5 brushes		15.50					
			F	Power Driven	(Double Spira	l)								
100951	1/4"		.003	\$6.69	101066	5/8"	12"	.005	\$8.47					
101129	3/8"	12"	.003	6.81	101037	3/4"	12	.005	8.21					
101097	1/2"		.004	7.79	112370		All 5 brushes		37.01					
			C	Condenser Cl	eaning Brushe	es								
Item #	Brush Dia.	Brush Length	Overall Length	Unit Price	Item #		Description		Unit Price					
101015	3/8"			\$5.60	101128	Extension (¹⁵ / ₁₆ "-18 thread	24" length)	\$5.92					
100984	1/2"			5.66	101095	Extension (15/ ₁₆ "-18 thread	36" length)	6.61					
100952	5/8"	41/2"	7½"	6.11	101064		T-handle only		3.18					
101130	3/4"			6.18										
101306	1"			6.18]									



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900 001.8

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Brass Brushes

For Tough Spot Cleaning Without Scratching

Heavy Duty Models

Item #	Description	Unit Price
100973	1" bristle length; 13" long overall	\$8.19
101005	1" bristle length; 10" long overall	5.74
101087	½" bristle length; 7%" long overall	1.37
101058	11/16" bristle length; 85%" long overall	1.95
101118	Heavy Duty Brush Introductory Kit complete with one of each above	13.36

Hard, Maplewood Handles



Item #	Description	Unit Price
100942	34" bristle length; 2½" wide x 4½" long overall	11.53





Brass Mold Surface Cleaning Brushes

Designed to Operate at High Speeds, These Brass Brushes Effectively Clean Large Mold Surfaces, Producing Polished Results.

Item #	Description	Unit Price			
	Brass Utility Cup Brushes				
	Spindle: 1/4" dia. RPM: 13,000				
101044	2" dia.	\$11.10			
101013	2½" dia.	13.66			
	Brass Conflare Brushes Spindle: ½" dia. RPM: 20,000				
101282	2" dia.	\$9.42			
101266	2½" dia.	11.90			
101234	3" dia	11.37			
	Brass Copper Center Brushes RPM: 20,000				
101237	2" dia.; ½" arbor hole	\$6.45			
101217	3" dia.; ½" arbor hole	10.00			
101300	4" dia.; 5%" arbor hole	15.03			
101221	1/4" driver with 1" thread length; fits 1/2" arbor hole	5.97			
	Brass Pencil End Brushes RPM: 8,000				
101418	⁵ / ₁₆ " dia.	\$8.36			
	Brass Circular Flared End Brushes Spindle: 1/4" dia. RPM: up to 20,000				
100933	1¼" dia.	\$16.34			
101111	1½" dia.	20.74			
101080	2¾" dia.	28.82			
101052	3" dia.	27.97			
	Brass Solid End Brushes Spindle: 1/4" dia. RPM: 20,000				
100957	½" dia.	\$10.19			
101136	³ ⁄ ₄ " dia.	14.37			
101311	1" dia.	13.36			
	Heavy Duty Brass Wheel (use with bench mounted grinder) RPM: 6,000				
101065	6" dia.; 5%" arbor hole	\$57.79			





















For Removing Stuck Plastic Parts From The Mold!

• Non Scratching • Non Sparking • Non Magnetic Sharpened Front Edges



	Item #	Description	Length Overall	Blade Length	Unit Price
1	128196	11/4" Wide Scraper	73/4"	35/8"	\$10.50
2	128201	15/16" Wide, Long Handle Scraper	11¾"	35/8"	15.31
3	128197	2" Wide Scraper	73/4"	35/8"	9.42
4	128199	21/2" Wide, 5 in 1 Scraper	71/4"	45/8"	10.74
5	128198	3" Wide Scraper	8"	45/8"	12.63
6	128200	3" Wide, Long Handle Scraper	121/2"	41/4"	17.65

Order Today!

Heavy Duty and Bent Style Scrapers also available — see next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

е-тан

1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

Please refer to imscompany.com for current pricing ©Copyright 2021 IMS Company. All rights reserved.

IMS Heavy Duty Brass Scrapers

For Removing Even The Most Stubborn Plastic Parts From The Mold!

Non-Scratching • Non-Sparking • 0.125" Thick

Item #	Length	Blade Width	Unit Price		
	Flat Scraper (handle not included)				
106476	4"	1"	\$6.90		
106469	8"	1"	10.40		
127272	18"	1"	15.60		
		ent Scraper le not included)			
106463	7"	1"	\$17.45		
		Wide Scraper le not included)			
106460	4"	2"	\$13.10		
		Wide Scraper le not included)			
106456	3"	2"	\$18.75		
	Pla	stic Handle			
173944	5"L x 1"W x ¾" thick, 2"	blade slot, green	\$7.98		
108006	5"L x 1"W x ¾" thick, 2" 2 brass screws	blade slot, green, includes	8.76		
113749	Screw only: 1/4"-20 cour	ntersunk, ¾"L, brass	0.39		
	Specially F	Priced Short Set Kit			
117110		06463, #106460, #106456 nandle with 2 brass screws)	\$64.86		
		at Scraper dle and 2 brass screws)			
128193	7"	1"	\$15.65		
128192	11"	1"	19.13		
128191	21"	1"	24.36		
		ent Scraper dle and 2 brass screws)			
128190	10"	1"	\$26.18		
Flat, Wide Scraper (includes handle and 2 brass screws)					
128189	7"	2"	\$21.82		
		Wide Scraper dle and 2 brass screws)			
128188	6"	2"	\$27.49		











MS Bronze Sprue Puller Tools

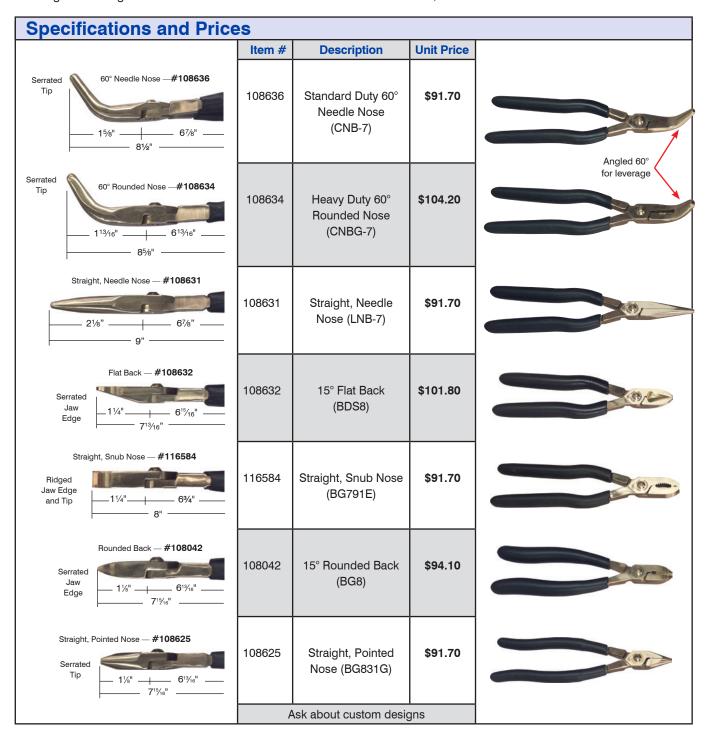
Allow Quick, Safe Sprue And Part Removal. **Specially Designed To Preserve Fine Mold Surfaces.**

An Absolute Must For Every Machine Operator, Maintenance Person and Mold Maker

The Superior Bronze Tool

- Made of polished, forged bronze (24 Rc Hardness)
- · Long-levered ergonomic handles

- Pre-lapped joints ensures long life and smooth operation
- · Extra thick, anti-static foam handle covers





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

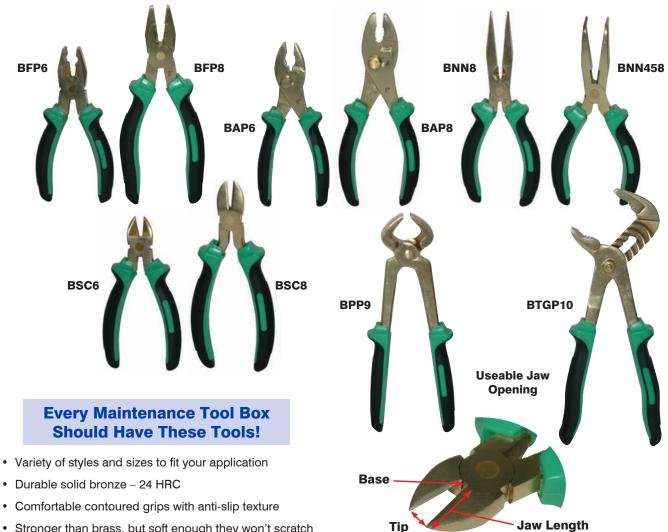
fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Economy Bronze Sprue Puller Tools

Good Quality Specialty Hand Tools For Use Around The Mold Or Areas Where Scratching And Sparking Are Concerns.



- · Stronger than brass, but soft enough they won't scratch

			Jaw O	pening	Jaw	Unit Price
Item #	Model #	Description	at Tip	at Base	Length	
165788	BFP6	6" Bronze Non-Adjustable Plier	1"	1/4"	11/8"	\$48.00
165789	BFP8	8" Bronze Non-Adjustable Plier	1%"	5/ ₁₆ "	1%"	50.50
165680	BAP6	6" Bronze Adjustable Plier	11/4"	3/4"	7/8"	43.55
165681	BAP8	8" Bronze Adjustable Plier	1 ½"	1"	1"	47.50
165682	BNN8	8" Bronze Needle Nose Plier	21/4"	1/4"	23/4"	46.91
165683	BNN458	8" Bronze Needle Nose 45° Plier	21/8"	1/4"	21/2"	51.50
165685	BSC6	6" Bronze Side Cutter	5/8"	3/ ₁₆ "	7/8"	44.36
165686	BSC8	8" Bronze Side Cutter	1"	1/4	11/8"	48.00
165684	BPP9	9" Bronze Pincer Plier	3/4"	N/A	3/4"*	56.62
165687	BTGP10	10" Bronze Tongue and Groove Plier	11/4"	N/A	1 ¾ ₁₆ "	87.50
165790	BSPK10	10 Piece Bronze Sprue Puller Kit (Includes one each	above - save	e \$29)	_	\$499.34

*Width



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

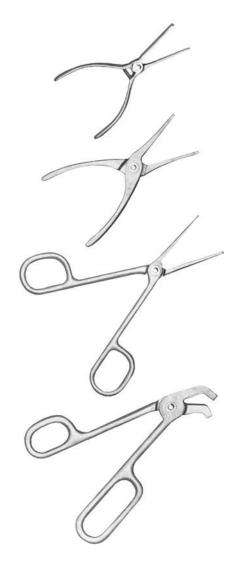
Soft Aluminum Part Removal Tools

Make Stuck Part Removal Quick, Safe And Easy!

- Lightweight, durable construction
- · Spring opened design
- · Protect mold and operator

Won't Scratch Molds!

Item Number	Description	Unit Price
110189	7" Lightweight, duckbill plier 2½" jaw length; 2 oz.	\$13.00
110186	8 ¹ / ₄ " Heavy duty, duckbill plier 2 ³ / ₄ " jaw length; 4 oz.	21.10
110198	10½" Duckbill plier with finger guard loops on both handles 3" jaw length; 6 oz.	24.21
110194	103/8" Heavy duty, right angle nose with finger guard loops 5/8" jaw length; 9 oz.	39.20
110605	Specially Priced Kit One of each above	86.30





90

Top Quality Brass Rods





Safe! Won't Scratch Molds!

Speeds removal of stuck sprues & runners



Oversized Plastic Grips For Easier Handling

	Item Number	Description	Length Overall	Unit Price
1	101144	1/8" dia. straight with point	13¾"	\$9.71 ea.
2	100965	1/8" dia. 90° bend with point	11"	10.48 ea.
3	101078	¾₁6" dia. straight with point	13¾"	11.29 ea.
4	101109	3/16" dia. 90° bend with point	111/4"	12.10 ea.
5	101020	⅓" dia. straight with point	13¾"	16.13 ea.
6	101050	3/8" dia. straight with flat head	13¾"	16.13 ea.

Brass Rod Kit

Includes one each of all six rods shown above. #100988: \$55.00 per set

Brass Screwdriver

#141788 3/8" dia., straight with flared tip: Only \$18.28 ea.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Sprue Pullers (with Replacement Brass Screws)

Expressly Made for the Injection Molder



All-Brass Replaceable Screws, Aluminum Grips - Won't Damage Your Mold

Item #	Description	Unit Price		
103980	Small Sprue Puller (2")	\$10.95		
103968	Large Sprue Puller (2½")	13.05		
Spare Parts				
103964	Extra screw (small)	\$0.35		
103958	Extra screw (large)	0.56		
103954	Extra set screw (small)	0.75		
103948	Extra set screw (large)	1.00		

Needle Nose Pliers

- · Pull small parts out of confined areas
- Multiple uses

Specifications and Prices

Item Number: 103938 Overall Length: 6" Blade Length: 111/16" Max. Opening at Tip: 21/2" Max. Opening at Base: %"

Spring Type: stainless steel twin leaf

Weight: 3 oz.

Purchasers also order:

Bronze Sprue Puller Tools, pages 86 - 87



Item #	Description	Unit Price
103938	Needle Nose Pliers	\$30.81



Heavy Duty Leveling Mounts

For Use With Any Injection Press



Reduce Noise

Control Vibration

Minimize Mechanical Stress To Floor, Machine Shafts And Bearings

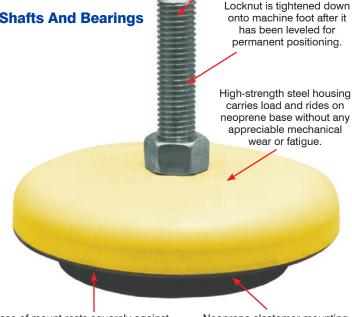
- Meet OSHA Safety Standard for anchorage
- Will not walk or creep (no lagging required)
- · Unaffected by oil or water

How To Order

Total Machine Weight

- → Number of Mounting Points
- = Mount Capacity (Refer to chart at right for maximum load capacity)

NOTE: Natural frequency is approximately 12 Hertz at maximum load.

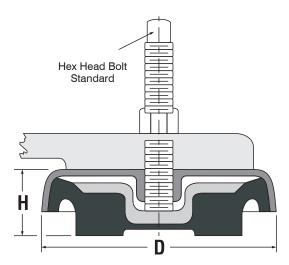


Base of mount rests squarely against floor surface with no creeping or walking.

Machine remains readily portable with no damage to the floor.

Neoprene elastomer mounting base controls deflections under vibration and shock loads with high isolation efficiency.

Turning leveling bolt raises height of metal housing and foot of machine as much as 1/2".



Designed for long-life!

Heavy duty leveling mounts

Item Number	Min. Load	Max. Load	Bolt Size & Length	Dimer D	nsions H	Unit Price
109828	30 lbs	150 lbs	3/8"-16 x 3"	31/8"	11/2"	\$35.91
109820	100 lbs	500 lbs	3%"-16 x 3"	31/8"	11/2"	Inquire
109838	400 lbs	1000 lbs	½"-13 x 5"	43/4"	11/2"	53.42
109835	500 lbs	4500 lbs	3⁄4"-10 x 5"	61/4"	1%"	63.15
112701*	4000 lbs	13000 lbs	1"-14 x 8"	9"	21/4"	141.44

^{*}Square head bolt

Other head styles and bolt sizes available — Inquire

Magnetic Pickup Tools and Inspection Mirrors

Handy and versatile tools for a variety of uses. These handy tools can be helpful to reach hard to see areas when inspecting parts, machines, tools and more.

- 3 lb Pull Pocket Magnetic Pickup Tool
- 7 lb Pull Pocket Inspection Mirror
- Circular Pocket Inspection Mirror
- Rectangular Inspection Mirror
- "LED" Lighted Circular Inspection Mirror
- "LED" Lighted Rectangular Inspection Mirror
- "LED" Lighted Rectangular Inspection Mirror

Pocket Magnetic Pickup Tools are great for grabbing dropped magnetic objects in hard to reach areas such as nuts, bolts, wrenches, sockets, etc.

- Choose from 3 or 7 pound lifting strength
- Permanent neodymium magnetic ends
- Telescoping handles with convenient pocket clips
- Inspection Mirrors are perfect for checking resin levels in hoppers from the shop floor or finding missing bolts that might have been dropped.
 - Choose from Circular or Rectangular Designs
 - Lighted and Non-Lighted
 - Comfortable Telescoping Handles (except pocket version #165407)
 - Full 360 Degree Swivel Double Ball Joint Heads
- Shatter resistant mirrors
- Lighted mirrors feature 2 extra bright LEDs (Batteries Included)
- A must for any Molding Shop

Item #	Description	Unit Price		
	Magnetic Pickup Tools	,		
165420	3 lb Pull Pocket Magnetic Pickup Tool with 25" Telescoping Handle	\$10.45		
165421	7 lb Pull Pocket Magnetic Pickup Tool with 23" Telescoping Handle	7.24		
	Inspection Mirrors			
165407	Circular Pocket Inspection Mirror - 11/4" Diameter with 8" Fixed Handle	\$7.00		
165410	Circular Inspection Mirror 21/4" Diameter with 111/2" to 16" Telescoping Handle	10.00		
165408	Rectangular Inspection Mirror 3½" x 2½", 11¼" to 15¼" Telescoping Handle	10.00		
165411	"LED" Lighted Circular Inspection Mirror 11/8" Diameter with 12" to 33" Telescoping Handle	19.19		
165409	"LED" Lighted Rectangular Inspection Mirror 3½" x 2" with 12" to 33" Telescoping Handle	20.40		



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

	Pro	ocess Trouble-Shoo	ting Guidelines		
CRYSTALLINE MATERIALS			AMORPHOUS MATERIALS		
Problem	Problem Lower/Reduce Raise/Increase		Lower/Reduce Raise/Increase		
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp	
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size	
Onlass	Injection Speed	Gate Size	Injection Pressure		
Splay	Mold Release Spray		Screw Speed		
			Hold Pressure Time		
			Venting		
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure	
	Mold Temp		Mold Temp		
Flash	Injection Pressure		Injection Pressure		
	Hold Pressure Time		Injection Speed		
	Injection Speed	NA 11 T	144.87	MILT	
	Melt Temp	Mold Temp	Melt Temp	Mold Temp	
Voids	Moisture Content Cooling Time	Gate Size Injection Pressure	Moisture Content Cooling Time	Gate Size Injection Presure	
	Cooling Time	Back Presure	Injection Speed	Back Pressure	
		Hold Pressure Time	Injection Speed	Hold Pressure Time	
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time	
147	Mold Temp	Injection Pressure	Mold Temp	Cooling Time	
Warpage	Injection Pressure	injection i ressure	Injection Pressure	Jooning Time	
	goodon i roddure		Back Pressure		
	Mold Temp	Melt Temp	Mold Temp	Gate Size	
		Gate Size		Injection Pressure	
		Injection Pressure		Hold Pressure Time	
Sinks		Hold Pressure Time		Injection Speed	
Ollika		Injection Speed		Venting	
		Cushion			
		Venting			
		Melt Temp		Melt Temp	
		Mold Temp		Mold Temp	
		Gate Size		Gate Size	
Short		Injection Pressure		Injection Pressure	
Shot		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
				Venting	
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp	
		Mold Temp		Mold Temp	
Glossiness		Injection Pressure		Injection Pressure	
01033111033		Injection Speed		Hold Pressure Time	
		Venting		Injection Speed	
	1		1	Venting	
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray	
Parts	Mold Temp		Mold Temp		
Sticking	Injection Pressure		Injection Pressure		
3	Hold Pressure Time		Hold Pressure Time Cooling Time		
	Cooling Time Injection Speed		Injection Speed		
	Melt Temp	Gate Size	Moisture Content	Gate Size	
	Moisture Content	Venting	Injection Pressure	Venting	
	Injection Pressure	voriding	Back Pressure	vortung	
	Back Pressure		Screw Speed		
Brittleness	Screw Speed		Hold Pressure Time		
	Hold Pressure Time		Cushion		
	Cushion		Regrind		
	Regrind		Mold Release Spray		
	Mold Release Spray				
Burn	Injection Pressure	Venting	Melt Temp	Gate Size	
Marks	Injection Speed		Injection Pressure	Venting	
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp	
	Injection Speed	Gate Size		Gate Size	
	Moisture Content	Melt Temp	Moisture Content	Melt Temp	
		Mold Temp		Mold Temp	
Weld		Gate Size		Gate Size	
vveid Lines		Injection Pressure		Injection Pressure	
LIHES		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
		Venting		Venting	
I - ut -	Injection Speed	Melt Temp	Injection Speed	Melt Temp	
Jetting	Hold Pressure Time	Mold Temp		Mold Temp	
	Injection Pressure	Gate Size		Gate Size	

Magnetic Surface Thermometers

Measure the temperature on almost any surface! (Manifolds, platens, piping etc.)

Sample temperature anyplace, anytime pinpoint hot or cold spots

No holes to drill or tap

Aluminum Case with Optically Clear Crystal Easy to Read Analog Dial (Blue marks on white background)



Alnico Magnet

Bi-metallic Sensina Element

> Alnico Magnet

Specifications and Prices

Sensing element: precision calibrated

bi-metal coil

Accuracy: within 2% of full scale Response Time: approx. 1 minute

Mounting: 2 alnico magnets on back Size: 2" diameter dial x 1/2" thick

Weight: 2 oz.

'	11	
Item #	Description	Unit Price
109647	Magnetic Surface Thermometer — 0° to 150° F (-20° to 65° C)	\$39.90
109645	Magnetic Surface Thermometer — 0° to 250° F (-20° to 120° C)	52.20
109643	Magnetic Surface Thermometer — 0° to 500° F (-20° to 260° C)	39.90
109640	Magnetic Surface Thermometer — 50° to 750° F (10° to 400° C)	42.65

Check Out These Other Useful IMS Products!

Heat Resistant Gloves

- · Reinforced sewn knuckle straps
- · Band topped cuff
- · One size fits all

24 oz **Hot Mill Gloves**

Item No. 136369



- Reinforced sewn knuckle straps
- · Band topped cuff
- One size fits all

30 oz **Hot Mill Gloves**

Item No. 136370



see page 447 for more info



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Digital Electronic Multimeter

Aids in troubleshooting

The Digital Electronic Multimeter will help you troubleshoot heaters and reduce downtime by quickly checking your electrical systems. Compact and portable, it has an easy-to-read backlit LCD screen with large 1" characters.

- Measurement functions include AC/DC voltage and current, resistance, diode, continuity and transistor
- Type K thermometer built-in for temperature measurements
- Low current capability: measure down to 0.1μA
- Input fuse protection and mis-connection warnings
- · Comes with a protective rubber boot
- · Automatically shuts off if unused
- · Complete with battery and test leads
- · Includes tilt stand and velcro strap for ease of use



Specifications and Prices

Display: 1" backlit Dimensions: 7.4" x 3.2" x 2"

Fuse Protection: 2A (A socket), 10A range not fused (187 mm x 81 mm x 50 mm)

Power Supply: 9V battery Weight: 0.75 lbs (342 g)

Temperature:	-4° F to 1382° F (-20° C to 750° C)	
Item #	Description	Unit Price
147976	Digital Electronic Multimeter complete with CAT III test leads, tilt stand, velcro strap, bead wire temp. probe, 9 volt battery and protective rubber boot	\$50.50

Check Out These Other Useful IMS Products!

White Board Mold Insulation



See Page 204 For More Information

UniVest Barrel Insulation System



See Page 199 - 202 For More Information



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone of 1.888.288.6900 001.88

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

True RMS Multimeter with Infrared Thermometer

Two Useful Instruments In One Compact Case At One Great Price!

1) It's a true RMS Multimeter

• Provides highly accurate voltage and current measurements

• Advanced Functions include:

- Frequency
- Capacitance
- Type K Temperature measurement

2) It's a Non Contact, Thermometer

· Built-in Laser Pointer helps ensure quick, safe and

accurate surface temperature measurement.

Audible and visual

input warnings

Big 1" digits and backlighting

for easy viewing

safety orange Protective Holster

Hiah

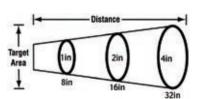
visibility,

Multi Position Tilt Stand with built-in Hanger Loop

> Velcro® Wrist Strap for easy

hanging

• 8:1 distance to target ratio allows for measurements in areas that are normally difficult or unsafe to reach. Fixed emissivity 0.95.



Just point laser at target surface and see temperature (°F or °C)



Patent Pending

Bead Wire temperature probe (40" long) (Not Shown)







Includes: Meter, Test Leads, Type K Temperature Probe, Protective Holster, 9V Battery and Three Year Limited Warranty

All for only \$217.74

Velcro® is a registered trademark of Velcro Companies

Specifications 400 Counts Backlit Display: Basic Accuracy: ±0.3% (VDC) DC/AC Voltage: 0.1mV to 600V DC/AC Current: $0.1\mu A$ to 20AResistance: 0.1W to 40MW Capacitance: 0.01nF to 100μF 0.001Hz to 10MHz Frequency: -4°F to 1382°F (-20°C to 750°C) Temperature (Type K): Temperature (IR with Laser): -4°F to 518°F (-20°C to 270°C) Diode/Continuity: Yes Size: 7.36"L x 3.2"W x 2.0"D Weight: 0.753 lbs



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Combination Mini Digital MultiMeter with Built-in, Non-contact AC Voltage Detector

Two Useful Instruments In One Compact Case At One Great Price!

1) It's a Multimeter

Functions include:

- AC and DC Voltage Measurements
- AC/DC Current Measurements
- Resistance Measurements
- Continuity Check
- Diode Test
- Capacitance Measurements
- Frequency Measurements
- % Duty Cycle
- Contact Temperature Measurements (°F/°C switchable)
- Relative Mode

2) It's a Non Contact AC Voltage Detector

Lets you safely check for the presence of AC Voltage before testing

 If voltage is present, indicator will flash a bright orange and an audible warning will sound





Specifications		
Display Counts:	4000	
Basic Accuracy:	0.5%	
NC Voltage Detector:	100 to 600VAC	
DC Voltage:	0.1mV to 600V	
AC Voltage:	0.1mV to 600V	
AC/DC Current:	0.1μA to 10A	
Resistance:	0.1W to 40MW	
Capacitance:	0.001nF to 200μF	
Frequency:	0.001Hz to 10MHz	
Temperature (Type K):	4°F to 1382°F (-20°C to 750°C)	
Duty Cycle:	0.1 to 99.9%	
Diode/Continuity:	Yes	
Size (including holster)	5.8"L x 2.9"W x 1.6"D (147 x 76 x 42mm)	
Weight (including holster)	9.17oz (260g)	

Item #141779

Includes: Meter, Test Leads, Bead Wire Temperature Probe, Protective Holster with Stand, two AAA Batteries and One Year Limited Warranty

Just \$85.38

Also available with NIST Certification - Inquire

IMS also stocks many other Thermometers, MultiMeters and Voltage/Current Detectors - INQUIRE



	Pro	ocess Trouble-Shoo	ting Guidelines	
		IE MATERIALS		JS MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	
Splay	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp	·	Mold Temp	·
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time		Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
••a.page	Injection Pressure	-	Injection Pressure	
			Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size	i i	Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
Olliks		Injection Speed		Venting
		Cushion	<u> </u>	veriang
		Venting		
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Short		Injection Pressure		Injection Pressure
Shot		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
	Malal Dalanas Carrer	Melt Temp	Mala Dalasas Octobri	Venting
	Mold Release Spray	· ·	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
Glossiness		Injection Pressure		Injection Pressure
		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
			1	Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
Parts	Mold Temp		Mold Temp	
Sticking	Injection Pressure		Injection Pressure	
Ottoking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Drittleness			Hold Pressure Time	
Brittleness	Screw Speed			
brillieriess	Hold Pressure Time		Cushion	
brillieriess	Hold Pressure Time Cushion		Regrind	
Drittleriess	Hold Pressure Time Cushion Regrind			
	Hold Pressure Time Cushion Regrind Mold Release Spray		Regrind Mold Release Spray	
Burn	Hold Pressure Time Cushion Regrind	Venting	Regrind	Gate Size
	Hold Pressure Time Cushion Regrind Mold Release Spray	Venting	Regrind Mold Release Spray	Gate Size Venting
Burn	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure	Venting Mold Temp	Regrind Mold Release Spray Melt Temp	
Burn Marks	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed		Regrind Mold Release Spray Melt Temp Injection Pressure	Venting
Burn Marks	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp	Mold Temp	Regrind Mold Release Spray Melt Temp Injection Pressure	Venting Mold Temp
Burn Marks	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size
Burn Marks Delamination	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size Melt Temp	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size Melt Temp
Burn Marks Delamination Weld	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size Melt Temp Mold Temp	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size Melt Temp Mold Temp
Burn Marks Delamination	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size Melt Temp Mold Temp Gate Size	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size
Burn Marks Delamination Weld	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time
Burn Marks Delamination Weld	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed
Burn Marks Delamination Weld	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed Moisture Content	Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content Moisture Content	Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting
Burn Marks Delamination Weld	Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed

Non-Contact AC Voltage and Current Detector

Great for detecting "live" circuits through shielded wires, conduits and metal junction boxes

The ONLY 2-in-1 voltage/current detector designed for electrical testing

Used it to:

- · Trace concealed wires in walls and floors
- Identify "HOT" conductors and terminals
- Trace current flow behind walls, in conduit etc. where voltage detectors do not work
- Sensitivity high enough to trip on low voltage HVAC or similar signal levels

Safer To Use

No need to touch probe to wiring

Lightweight, Compact fits in your pocket

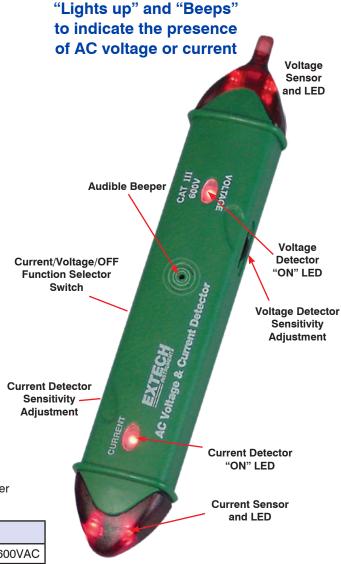
Great for use in tight spaces

(Even if you can't see it, you can hear it!)

Note

Sensitivity can be adjusted to increase or reduce sensor trigger threshold — to "hone in" on conductors.

Specifications	
Voltage Detection:	12V to 600VAC
Current Detection:	200mA to 1,000A
Current Sensitivity:	200mA (.2A) AC at .2"
(Detects current flow at much gr	eater distances for larger current flows)
Audible Indication:	Beeper (Voltage and Current)
Visual Indication:	Flashing LED (Voltage and Current)
Frequency Range:	50 to 500HZ
Operating Temperature:	14°F to 122°F (-10°C to 50°C)
Operating Humidity:	<80% RH
Altitude:	<2000m
Power Supply:	Four LR44 batteries or equivalent
Dimensions:	7.6"L x 1.2"W x 0.9"D(192 x 31 x 24 mm)
Weight	2.1 oz. (60g)





Item #133295

Includes: Four LR44 batteries and pocket clip and 1 Year Warranty

Only \$72.63



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

SuperHeat Psychrometer

Measures Dew Point (-90.4° to +122°F)PLUS Wet Bulb, **Humidity, Air Temperature and Differential Temperature**

All In One Compact, **Low Cost Instrument**

Perfect For*:

- 1. Differential measurements
- 2. Trend analysis of zone temperatures
- 3. Evaluating duct losses
- 4. Monitoring wet bulb, dew point, humidity and temperature
- 5. Mold prevention programs
- 6. Humidity monitoring in manufacturing or storage area

*NOT for use with hot air dryers



Unique sensor cap design twists to closed position for protection during storage

Lightweight / Portable / Easy to Use

(Eliminates the need for expensive chart recorders)

Specifications				
Function	Range & Resolution	Accuracy		
Humidity	0.0 to 100.0% RH	±3% RH (10 to 90%) @ 23°C		
Temperature (air)	-4.0 to 122.0°F (-20 to 50°C)	±1.8°F (±1°C)		
Temperature	-328 to 2,250°F	±0.3% rdg or		
(external) T1, T2	(-200 to 1,370°C)	±(1.8°F)1°C		
Display	Triple LCD			
Sensor Type	Humidity: Precision capacitance sensor Internal Temperature: Thermistor External Temperature: Type K Thermometer			
Response Time	60 seconds typical			
Dew Point	-90.4 to 122.0°F (-68 to 50°C) (calculatedfrom RH and air temperature measurements)			
Wet Bulb	-6.88 to 122.0°F (-21.6 to RH and air temperature n	, ,		
Low Battery Indicator	Yes			
Power Supply	4 x 1.5V 'AAA' Batteries			
Dimensions	9 x 2.2 x 1.7" (230 x 57 x	44mm)		
Weight	5.3 oz. (153g)			

Simultaneous Display of %RH plus Dew Point or Temperature, Wet Bulb or External Probe Temperatures and Date/Time

> Switchable °F/°C **Temperature Units** with 0.1° resolution **Auto Power OFF to** save battery life Retrieve Max/Min Readings with Date and Time + Average Function

Built-in RS-232 Interface - uses Windows® HyperTerminal to download data to a PC

> **Triple Display with** Backlighting

Real Time Clock

Recall/Data Hold (freezes current reading on display)

Built-in Memory of up to 99 Data Records

Differential Measurements: T1-T2, Air-T1, T1-Dewpoint

Dual Type K External Temperature Probe input (T1, T2)

Item #150232

Includes: Meter, two Type K Bead Wire Temperature Probes, 4 AAA Batteries and 1 Year Warranty

\$213.65



Item #151011

Same As Above Plus N.I.S.T. Certification

\$390.28



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



Date Code Insert

Run at up to 350°F, these inserts are not affected by heat or mold releases Made from pre-hardened 416 Stainless Steel

Meet your regulatory traceability requirements without costly secondary operations.



Easy Operation Without The Hassles

Standard Outer Styles Standard Inner Styles Arrow Blank Qtr/Yr Shift Custom **Blank** Month/Yr Arrow/Year Material Year

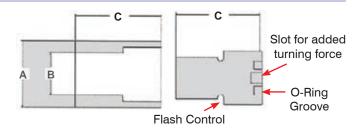
Attention rubber molders: You can make use of the rotating insert style. Flash is controlled and the insert is cleanable for less overall cost.

- · Flash control for rubber and thermoset molders
- · Turns with screwdriver in the arrow
- · Rear screwdriver slot for greater turning torque
- · O-ring slot for turning resistance for plastic molders
- · Precision clearances to give a seamless look
- · Multiple materials, lots, dates, etc. can be put on the outer ring to eliminate the need for any removals of center inserts. This saves time and money.
- · Engraving options are tailored to your needs.

Easy Installation

Drill and bore hole in mold to diameter (A) +0.0000"/-0.0004" and a depth of (C). Rear access holes at insert as follows: 4-6 mm inserts 0.057" diameter 8-20 mm inserts 0.125" diameter.

No O-ring groove on 4 or 6 mm styles.



Specifications and Prices					
	Diameter "A"	Diameter "B"	Height "C"	Unit Price	Replacement Inserts
DAB-4	4mm (0.1575")	0.0709"	0.2360"		
DAB-6	6mm (0.3262")	0.1417"	0.3150"		
DAB-8	8mm (0.3150")	0.1969"	0.3937"	Call For	Call For
DAB-10	10mm (0.3937")	0.2530"	0.4724"	Pricing	Pricing
DAB-12	12mm (0.4724")	0.2992"	0.4724"	g	
DAB-16	16mm (0.6300")	0.3930"	0.5510"		
DAB-20	20mm (0.7847")	0.5197"	0.6300"		

Check Out These Other Useful IMS Products!

Part Chute Guideskirts Drum and Gaylord Covers Gaylord Liners







Page 645 - 646

Page 644



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Rupture Disks Extruder Burst Plugs

Instantaneously rupture at a predetermined pressure

Provide emergency relief in applications where pressure build-up can be so rapid that the response time of relief valves is inadequate.

Features

- All stainless steel body
- · Inconel disk
- · Low installation and maintenance costs

Specifications

• Burst Pressures: 1,500 to 15,000 psi • Burst Pressure Accuracy: ± 5% • Maximum Melt Temperature: 750° F

1/2"-20 UNF mounting thread Standard

Other thread sizes available (5/8"-11, 3/4"-16 NC)

Shown: Models RD3H and RD6H with hex head



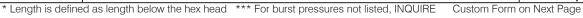


pecifications	s and Prices				
Item #	Mounting Thread	Length	Head Style	Burst Pressure at 600°F (psi) ***	Unit Price
140390				1,500	\$70.0
140391		1.82" *	Slotted	2,500	70.0
140392				3,500	70.0
140393				4,500	70.0
140394				5,500	70.0
140395	1/2"-20 UNF			6,500	70.0
140396	72 -20 ONI			7,500	70.0
140397				8,500	70.0
140398	1			9,500	70.0
140399	1			10,000	70.0
140400	1			12,500	70.0
140402				1,500	Inqui
140403		3" **	Hex	2,500	\$120.0
140404				3,500	120.0
140405				4,500	120.0
140406				5,500	120.0
140407	½"-20 UNF			6,500	120.0
140408	- 72 -20 UNF			7,500	120.0
140409				8,500	120.0
140410				9,500	120.0
140411				10,000	120.0
140412				12,500	118.
140414			Hex	1,500	\$152.0
140415	1	4" **		2,500	152.0
140416	7			3,500	152.0
140417	1/11 00 11115			4,500	152.0
140418	½"-20 UNF			5,500	152.0
140419	1			6,500	152.0
140420	7			7,500	152.0
140421	1			8,500	152.0

Thread dependent ** Length is defined as length below the hex head *** For burst pressures not listed, Inquire



Item #	Mounting Thread	Length	Head Style	Burst Pressure at 600°F (psi)*	Unit Price
140422				9,500	\$152.00
140423	1			10,000	152.00
140424	½"-20 UNF	4" **	Hex	12,500	152.00
140426				1,500	\$140.00
140427	_			2,500	140.00
140428		6" **	** Hex	3,500	140.00
140429	_			4,500	140.00
140430				5,500	140.00
140431	½"-20 UNF				140.00
				6,500	
140432				7,500	140.00
140433				8,500	140.00
140434				9,500	140.00
140435				10,000	140.00
140436				12,500	140.00
140438				1,500	\$152.00
140439				2,500	152.00
140440				3,500	152.00
140441				4,500	152.00
140442				5,500	152.00
140443	½"-20 UNF	7" **	Hex	6,500	152.00
140444				7,500	152.00
140445				8,500	152.00
140446				9,500	152.00
140447				10,000	152.00
140448				12,500	152.00
140450				1,500	\$192.00
140451		9" **	Hex	2,500	192.00
140452				3,500	192.00
140453				4,500	192.00
140454				5,500	192.00
140455				6,500	192.00
140456				7,500	192.00
140457				8,500	192.00
140458				9,500	192.00
140459				10,000	192.00
140460				12,500	192.00
140462				1,500	\$242.00
140462	-				242.00
140463	-	400 **	Hex	2,500	
140464	-			3,500	242.00
	-			4,500	242.00
140466	1/11 00 LINE			5,500	242.00
140467	½"-20 UNF	12" **		6,500	242.00
140468	-			7,500	242.00
140469	4			8,500	242.00
140470				9,500	242.00
140471	4			10,000	242.00
140472				12,500	242.00
_	I =		e Mounting Thre	eads	-
-5/ ₈		D4H and RD6H only)			Inquire
-3/4S -3/4	3/4"-16 UNF 2A short th 3/4"-16 UNF 2A full thre	thread			Inquire Inquire
-%4 -M18	M18 x 1.5 (RD6H only)				Inquire
WITO	T INTO X 1.0 (FIDOLI OHIY)		narge Connectio	n Threads	IIIquile
-1/4 NPT	1/4"-18 NPT	_ p D.301	30 0311103110	2000	Inquire
-½ NPT	½"-20 NPT				Inquire
	ed as length below the h	ev head *** Fo	r huret proceuroe	not listed, INQUIRE	





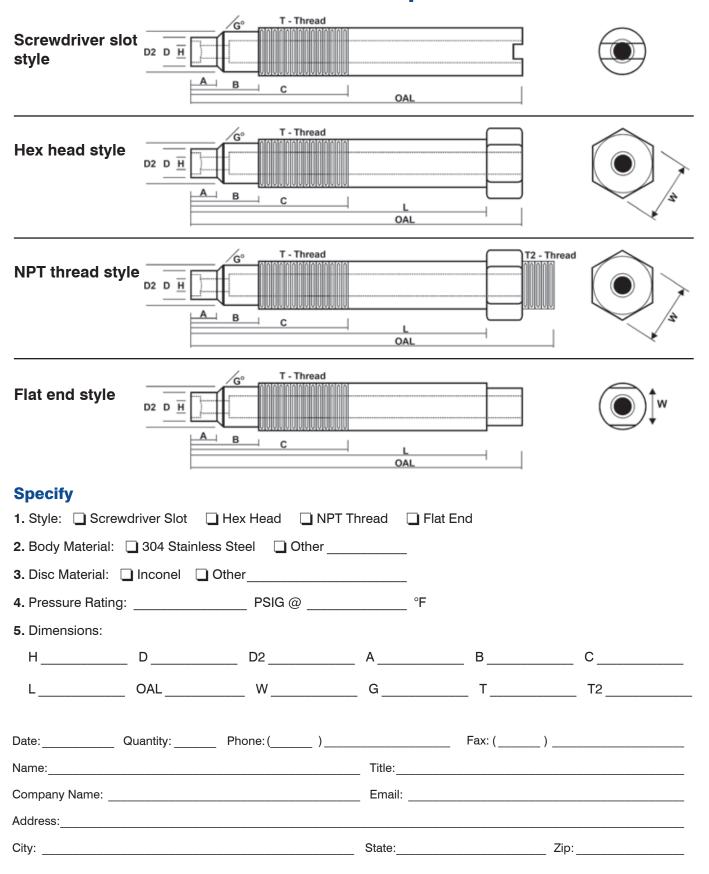
www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307 | 1.866.467.9001

tech support toll-free (USA & Canada)

Custom Melt Pressure Extruder Rupture Disk Quote Form





	Process Trouble-Shooting Guidelines					
		IE MATERIALS	_,-	JS MATERIALS		
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase		
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp		
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size		
	Injection Speed	Gate Size	Injection Pressure			
Splay	Mold Release Spray		Screw Speed			
			Hold Pressure Time			
			Venting			
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure		
	Mold Temp		Mold Temp			
Flash	Injection Pressure		Injection Pressure			
	Hold Pressure Time		Injection Speed			
	Injection Speed					
	Melt Temp	Mold Temp	Melt Temp	Mold Temp		
Voids	Moisture Content	Gate Size	Moisture Content	Gate Size		
voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure		
		Back Presure	Injection Speed	Back Pressure		
		Hold Pressure Time		Hold Pressure Time		
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time		
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time		
	Injection Pressure		Injection Pressure			
			Back Pressure			
	Mold Temp	Melt Temp	Mold Temp	Gate Size		
		Gate Size		Injection Pressure		
		Injection Pressure		Hold Pressure Time		
Sinks		Hold Pressure Time		Injection Speed		
		Injection Speed		Venting		
		Cushion				
		Venting				
		Melt Temp		Melt Temp		
		Mold Temp		Mold Temp		
Short		Gate Size		Gate Size		
Shot		Injection Pressure		Injection Pressure		
551		Hold Pressure Time		Hold Pressure Time		
		Injection Speed		Injection Speed		
				Venting		
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp		
		Mold Temp		Mold Temp		
Glossiness		Injection Pressure		Injection Pressure		
5555555		Injection Speed		Hold Pressure Time		
		Venting		Injection Speed		
	LACT.	MILEL	AA II T	Venting		
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray		
ъ.	Mold Town					
Parts	Mold Temp		Mold Temp			
Parts Sticking	Injection Pressure		Injection Pressure			
Parts Sticking	Injection Pressure Hold Pressure Time		Injection Pressure Hold Pressure Time			
	Injection Pressure Hold Pressure Time Cooling Time		Injection Pressure Hold Pressure Time Cooling Time			
	Injection Pressure Hold Pressure Time Cooling Time Injection Speed	Coto Si-c	Injection Pressure Hold Pressure Time Cooling Time Injection Speed	Coto Circ		
	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp	Gate Size	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content	Gate Size		
	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content	Gate Size Venting	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure	Gate Size Venting		
	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure			
Sticking	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed			
	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time			
Sticking	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion			
Sticking	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind			
Sticking	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion			
Sticking Brittleness	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray	Venting	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray	Venting		
Sticking Brittleness Burn	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure		Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp	Venting Gate Size		
Sticking Brittleness Burn Marks	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed	Venting	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure	Venting Gate Size Venting		
Sticking Brittleness Burn	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp	Venting Venting Venting Mold Temp	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp	Gate Size Venting Mold Temp		
Sticking Brittleness Burn Marks	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Mold Temp Gate Size	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size		
Sticking Brittleness Burn Marks	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp	Venting Venting Venting Mold Temp Gate Size Melt Temp	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure	Gate Size Venting Mold Temp Gate Size Melt Temp		
Sticking Brittleness Burn Marks	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Mold Temp Gate Size Melt Temp Mold Temp	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp		
Sticking Brittleness Burn Marks	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Wold Temp Gate Size Melt Temp Mold Temp Gate Size	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size		
Brittleness Burn Marks Delamination	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Wold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure		
Brittleness Burn Marks Delamination	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Wold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time		
Brittleness Burn Marks Delamination	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Wold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed		
Brittleness Burn Marks Delamination	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed Moisture Content	Venting Venting Venting Wold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed Venting		
Brittleness Burn Marks Delamination	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Melt Temp Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Injection Pressure Injection Speed Melt Temp Injection Speed	Venting Venting Venting Wold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed	Injection Pressure Hold Pressure Time Cooling Time Injection Speed Moisture Content Injection Pressure Back Pressure Screw Speed Hold Pressure Time Cushion Regrind Mold Release Spray Melt Temp Injection Pressure Moisture Content	Gate Size Venting Mold Temp Gate Size Melt Temp Mold Temp Gate Size Injection Pressure Hold Pressure Time Injection Speed		



Melt Pressure Transducers & Transmitters

Rapidly Becoming the Preferred Choice of Cost Conscious Plastic Processors!

Deliver Exceptional

- Functionality
- Accuracy
- Repeatability
- Reliability

Incorporate a tried and proven liquid filled capillary design which:

- · Provides an electronic signal which is proportional to the measured pressure
- · Allows the transducer to operate at process temperatures up to 750°F (400°C)

Fully compatible (without rewiring) with:

- · Industry standard wiring pattern and color coding
- Existing transducers utilizing a 6 pin bayonet connector
- Industry standard 80% output calibration

Mecury Free Sodium Potassium Filled

18" long armor-encased capillary allows electronics to be mounted away from heat and vibration



Standard Unit Specifications

Mechanical

Pressure Ranges: 0-15,000 psi

Mounting: 1/2"-20 UNF thread

Mounting Torque: 150 - 500 in-lbs max.

Diaphragm Material: Inconel

Overload Capacity: 2 times Full Scale Temperature Ratings: Diaphragm 1000°F

Electronics 250°F

Accuracy: General Purpose < .5% FSO

Repeatability: +/- 0.2%

Electrical

Type: Bonded Strain Gage,

4 Leg Wheatstone Bridge

Bridge Resistance: 350 ohm

Connector: 6 pin Bendix Style Bayonet

Output: 3.3mV/Volt

Excitation Voltage: mV/Volt-10VDC

4-20mA-24VDC 0-10VDC-24VDC

Internal Calibration: 80% of Full Scale Output

Two Styles

Rigid Style is the same as Classic Style features a 6" rigid the Classic, minus the capillary stem with 18" flex armor capillary Stainless Steel Sealed Construction Classic Style Transducer with thermocouple option

See next page for Standard Unit Prices, Options and Accessories



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888,288,6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Item #	Style	Rigid Stem Length	Output Type	Pressure Range	Thermocouple	Unit Price			
174900				0-3,000		\$740.00			
174901	Ī	_		0-5,000		690.00			
174902	Rigid	6" Stem	Transducer	0-7,500	-	690.00			
174903	1		3.3mV/Volt	0-10,000		690.00			
174904]			0-15,000		740.00			
174905				0-3,000		\$790.00			
174906]			0-5,000		740.00			
174907	Classic	6" Stem + 18" Flex Hose	Transducer	0-7,500	_	740.00			
174908]	11036	3.3mV/Volt	0-10,000		740.00			
174909				0-15,000		790.00			
174910				0-3,000		\$790.00			
174911]			0-5,000		740.00			
174912	Classic	6" Stem + 18" Flex Hose	Transmitter 4-20 mA	0-7,500	_	740.00			
174913]	11030	4-20 IIIA	0-10,000		740.00			
174914				0-15,000		790.00			
174915				0-3,000		\$790.00			
174916]		Transmitter 0-10 VDC	0-5,000	-	740.00			
174917	Classic	6" Stem + 18" Flex Hose		0-7,500		740.00			
174918		11000		0-10,000		740.00			
174919				0-15,000		790.00			
174920				0-3,000		\$900.00			
174921]	0, 0, 40, 5,	[0-5,000	Type J	850.00			
174922	Classic	6" Stem + 18" Flex Hose	Transducer 3.3mV/Volt	0-7,500		850.00			
174923		11000	3.5IIIV/VOIL	0-10,000		850.00			
174924				0-15,000		900.00			
174925				0-3,000		\$900.00			
174926		0 0		0-5,000		850.00			
174927	Classic	6" Stem + 18" Flex Hose	Transmitter 4-20 mA	0-7,500	Type J	850.00			
174928			4-20 IIIA	0-10,000		850.00			
174929				0-15,000		900.00			
174930				0-3,000		\$900.00			
174931	01	0 0 10 5	T	0-5,000	T	850.00			
174932	Classic	6" Stem + 18" Flex Hose	Transmitter 0-10 VDC	0-7,500	Type J	850.00			
174933]		0 10 100	0-10,000		850.00			
174934				0-15,000		900.00			
			Accessories						
132027	132027 25' Extension Cable with Mating Connector, 6 pin								
132028	50' Extension Cable with Mating Connector, 6 pin								

Special Order Options Available - Inquire for pricing

Connectors: 6 Pin screw, 8 Pin screw

Threads: M18 x 1.5, M10 x 1.0 Stem Lengths: 3", 4", 9", 12", 81"

Flex Hose Capillary Lengths: 24", 30", 60"

Diaphragms: Hastelloy, Titanium Aluminum Nitride





Air Wipe™

Provides a Uniform, 360° Stream of Air

Perfect for non-contact blow-off, cleaning, drying and cooling of extruded shapes, pipe, cable, hose etc.

Performs better, runs quieter and is much more efficient than conventional air nozzles in such applications

Helps reduce production costs

Use to:

- · Blow-off dust and dirt
- · Remove excess coatings
- · Dry after printing or plating
- · Cool hot, extruded shapes

Variable Velocity

Thickness of Plastic Shim between cap and body (.002" standard) determines force and flow of air stream. Thicker and thinner Shims (sets available below) can be used to increase or decrease airflow.

A pressure regulator on the compressed air supply provides infinite control of flow, force and air consumption. NOTE: Use of an Air Filter Separator is essential for proper operation.

Circular Styling

Directs a consistent flow of air over the entire surface

Quiet

Meets or exceeds OSHA noise requirements

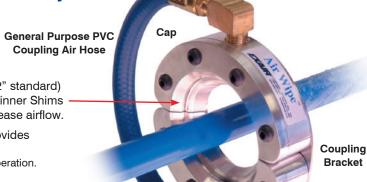
Split Design

Allows easy installation around the surface of the material moving through it

Low Air Consumption

Helps reduce production costs

5 Year Warranty



1/4" N.P.T. **Compressed Air Inlet**

Body



Can be supported by the compressed air supply pipe. Tapped holes (1/4"-20) on the bottom of the body can also be used for mounting.

2 Styles to Match Any Application

Standard Air Wipe

- The best in non-corrosive environments
- Designed to work where temperatures do not exceed 150°F (66°C)
- Complete package including a general purpose PVC hose sized up to 4" (120mm)

Perfect for Hundreds of Applications:

- Drying after paint, cleaning, plating or coating
- Cool hot extruded shapes
- Dry extruded profiles, rod & medical tubing
- · Blow excess water off auto door gaskets
- Dry tube, hose, wire, & fiber optics
- · Clean paint gun tips
- Clean strips or ribbons

Air Wipe™ is a Trademark of EXAIR Corp.

Super Air Wipe

- Ideal choice for corrosive environments
- Choose from Aluminum models rated up to 400°F (204°C) or Stainless Steel models rated to 800°F (427°C) depending on your operating temperatures
- · Constructed with high quality stainless steel screws, shims along with stainless steel wire braided coupling hose sizes up to 4" (120mm)
- · Blowoff of dust and contaminates
- · Uniformly wipe surfaces
- Eliminate solution carryover stop contamination
- · Remove excess coatings, water and oil
- Minimize solution loss due to drag-out
- Dry screen printed or in jetted surfaces

continued on next page



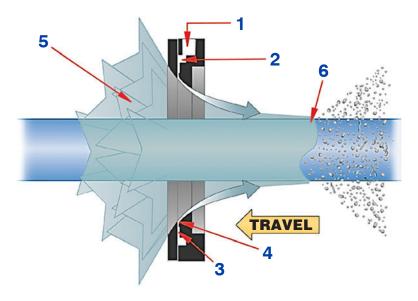
www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

How Does it Work?



Compressed air flows through an inlet (1) of the Air Wipe into an annular chamber. (2) It is then throttled through a small ring nozzle (3) at high velocity. This primary airstream adheres to the coanda profile (4), which directs it down the angled surface of the Air Wipe. A low pressure area is created at the center (5) inducing a high volume flow of surrounding air into the primary airstream. As the airflow leaves the Air Wipe, it creates a conical 360° ring of air that attaches itself to the surface of the material running through it (6), uniformly wiping the entire surface with the high velocity airflow.

No Moving Parts — Nothing to Wear Out or Break!

Air Wipe Includes: .002" thick plastic shim

	;	Standard	Air Wipe	•	Alur	ninum Sເ	ıper Air \	Vipe	Stainless Steel Air Wipe				
ID	Wipe Only	Price	Shim Kit*	Price	Wipe Only	Price	Shim Kit*	Price	Wipe Only	Price	Shim Kit*	Price	
1/2"	RF	Q	RF	Ö	147567	\$417.00	147568	\$22.10	N/A		N	N/A	
1"	133926	\$329.00	134255	\$34.00	144361	469.00	144383	23.10	144379	1,015.00	144383	\$22.00	
2"	133927	464.00	134256	40.00	144362	629.00	144371	26.30	144380	1,385.00	144371	25.00	
3"	133928	744.00	134257	47.00	144363	1,015.00	144372	30.50	144381	2,118.00	144372	29.00	
4"	133929	1,041.00	134258	54.00	144364	1,410.00	144373	33.60	144382	2,936.00	144373	32.00	
5"	144351	1,367.00	144661	67.00	144365	1,833.00	144374	38.90					
6"	144352	1,721.00	144662	74.00	144366	2,208.00	144375	43.10					
7"	144353	2.157.00	144663	80.00	144367	2.754.00	144376	52.50					

3,761.00

4,847.00

144377

144378

66.20

79.80

144664

144665

100.00

121.00

144368

144369

3,153.00

4,306.00

Optional Accessories								
Pr	essure Regulat	tor	Auto Drain Filter Separator					
104451	1⁄4" N.P.T.	\$71.00	104454	³⁄8" N.P.T.	\$140.00			
134259	½" N.P.T.	93.00	134260	½" N.P.T.	183.00			
104448	¾" N.P.T.	116.00	104452	¾" N.P.T.	236.00			



9"

11"

144354

144660

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

^{*}Kit Includes: 1", 3" and 4" thick plastic shims - 1 of each

Air-Chilling Cold Gun™

Ideal For Spot Cooling of Mold Cores, Cavities and Molded Parts

Reduce cycle time by effectively cooling precise points of heat build-up where water and other cooling media can't reach or are undesirable.

In the molding room:

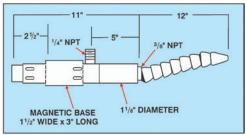
- · Stabilize Molded Part Dimensions
- Faster Cooling Often Means Stronger Plastic Parts
- · Minimize Sink Marks By Faster Cooling Of Thick Sections
- · Freeze Off A Nozzle Fast
- · Stop Drooling At Nozzle Changes

In the tool room:

- · Keep Cutting Edges Cool
- · Lengthen Tool Life
- Grind Faster

Specifications

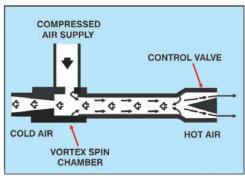
- · Air consumption: 15 scfm at 100 psig inlet air pressure (3-4 hp compressor on continuous use)
- Temperature Drop: 50° from compressed air temperature at 100 psig.



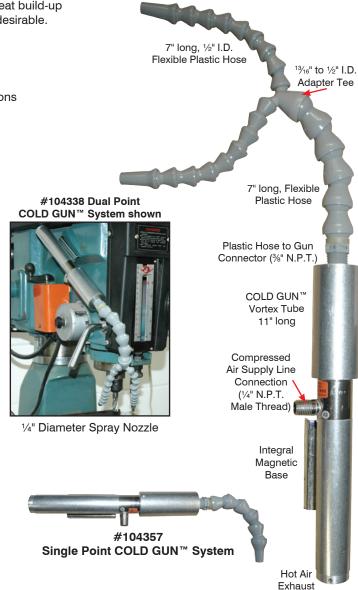
With its integral magnetic base, the COLD GUN™ is easily mounted to any machine, requiring only a source of compressed air.

How It Works

The COLD GUN™ works by spirally separating cold molecules of slower moving air from faster moving hot ones, found in all compressed air. Long a technical curiosity, the COLD GUN™ allows you to direct chilled air right to the cutting edge of a tool. Or in a mold core, it can chill a fountain far better than water.



COLD GUN™ is a trademark of EXAIR Corp.



#104357 Single Point COLD GUN™ System Includes: Gun, Single Point Hose Kit, Filter Separator and Instructions.	\$496.00
#104338 Dual Point COLD GUN™ System Includes: Gun, Dual Point Hose Kit, Filter Separator and Instructions.	510.00
Optional Accessories	
#104356 Single Point Hose Kit Includes: (1) Hose to Gun Connector, (1) 11" long, "%6" I.D. Flex Hose, (1) %" dia. Spray Nozzle and (1) 11/4" wide Fan Nozzle.	38.00
#104337 Dual Point Hose Kit Includes: (1) Hose to Gun Connector, (1) 7" long, ½" I.D. Flex Hose, (1) ½" I.D. to ½" I.D. Adapter Tee, (2) 7" long, ½" I.D. Flex Hoses, (2) ¼" dia. Spray Nozzles and (2) 1" wide Fan Nozzles.	53.00



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



Mold Cleaners

Mold Rust Preventives

Mold Release & Maintenance Products



Mold Polishes 140 - 143

Mold Lubricants 145 – 147

Material Lubricants
148

Spray Systems 149 – 158

Most Items In Stock For Same Day Shipment



www.imscompany.com



Mold Release Products

High-quality products with a focus on safety

IMS Company offers a selection of mold release products for a variety of applications. All are made from the purest, highest quality ingredients available.

Our focus is on worker safety. We go out of our way to find the least toxic options when we formulate our mold releases. Our labels list all significant ingredients. Our MSDS sheets fully disclose all ingredients and give detailed safety information. We respect you enough to tell you what we're selling you. You and your workers deserve nothing less. We've even changed to bilingual English/Spanish labels on many of our most common products, for added protection for Spanish-speaking workers.

Material safety data sheets

We include an SDS in every chemical shipment. Our SDS sheets are also available online at www.imscompany.com, or by calling us.

Nonflammable mold releases

For applications where non-flammability is needed, we offer a full line of Nonflammable mold releases in aerosol cans and aerosol tanks. All of our aerosol tanks are Nonflammable as a complete formula, and all contain no flammable gases. *NOTE ON NON-FLAMMABILITY: Beware of dimethyl ether in an aerosol tank (cylinder). It is a flammable gas — even if the final product is technically Nonflammable — and we do not believe it is legal to use in the so-called DOT-39 tanks used for mold release. We also believe the danger would be too great if there were an uncontrolled release due to the hose breaking or a solenoid valve sticking.

Aerosol tanks

We now offer two formulas. Our inexpensive A4 Series has been available since 2004, and it is working very well for many molders. Our high-end Speed Mist Plus formula contains no trichloro-ethylene, no dimethyl ether and no other flammable gas. Evaporation is much faster than trichloro-ethylene. The Speed Mist Plus formula is also very low toxicity.

Blanket order plans

Blanket orders let you set pricing based on your annual usage, to take advantage of the highest level of quantity discount available. They also provide a measure of price stability. Ask about blanket pricing for your large-volume chemical purchases.

Free samples

Often, the best way to determine which formula is best for your application is to sample various sprays. Free sample cans are available upon request. Simply contact the IMS Supplies Team at 1-800-537-5375 or sales@imscompany.com.

Bulk mold releases

IMS stocks several formulas of undiluted bulk mold release. Bulk releases offer money savings in applications where aerosol-thin applications are not strictly required

Spray systems

IMS stocks spray systems to enable automated application of mold release. Those systems are available for aerosol application using aerosol tanks or for bulk application.

Note: Prices are subject to change without notice.

Note: Warranties are not offered on application of mold release materials. All mold releases should be pretested on your material and mold.



Recognized under the component program of Underwriters Laboratories Inc.

Several stock mold releases have earned UL 94 approval indicating that they do not alter non-flammability of the plastics onto which they are applied.



Aerosol Mold Release Selection Guide



See individual product page for pricing, as well as more economical size aerosol tanks and bulk packaging (Review our website for the most up-to-date information on any product we sell)

- This list is a general guide based on reported results from our customers. It is not a guarantee of safety or effectiveness. Test the mold release with your mold and material before use.
- These products are intended for application to metal molds as a mold release. Some of these products contain solvents that are aggressive against some plastics. Do not apply directly to plastics without pretesting or without the recommendation of the manufacturer of the plastic. Allow full evaporation of the solvent before injection.

					Econ Silic 3% Sili	ouc		Blue Sun		one o			Eco Pair, Pair,	o Mist	Nevi dable 50		list		Ę.		Zinc Searan Division Ower
					8	Ů.	^	Je Je	8				intak	5	o _o	39/9;	Sanic Oil Ad S	۲۹۵٪	DAY SAW	THE WAY	A LA
			>		& & &	No.	"e:5.		φ. Θ.			,	S S	9/9/6	39/9 ₆ -7	saint.		9.7	į	Q § ;	ie Py
		o M:		, Q ,	7 . !!!		9/9/8		Ĭ		Mist	10 %			9/9 _e	14	NA NA		AA	integ	986 1
	٠	, S	.jo	O Mis	E .	É.	uue .	۶° .	,99e	9967	9/9/6	o Mis	N. N		amn.	, (0)	0,00		de de	a" !	7e9/8
Description	%	3% Suicone Mi	Sperione	, (O)	£ 603		S.e. Jahmable	1 8/10	, % &	Palp.	Spec Mist	, _(C)	(C)	% %	Neu Mammable 50	ş o	fs. Aste,	4	DAY	10/0	Zinc V
ABS			•		•		•		•		•	•	•		•		•		•		•
Acetal	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Acrylic PMMA	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Ероху															•	•	•	•	•	•	•
Nylon	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Polycarbonate	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Polyester		•	•				•	•	•	•	•	•	•	•		•	•	•	•	•	•
Polyethylene	٠	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Polypropylene	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Polystyrene	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Polysulfone	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•
Polyurethane															•	•	•	•	•	•	•
PPO (Noryl)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PVC								•	•									•	•	•	•
Rubber	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Paintable										•	•	•	•	•	•	•	•	•	•	•	•
FDA Approved	٠	•	•	•	•	•	•								•	•	•		•		•
UL	•1	•1		•						•1		•			•		•1				

₁Aerosol cans and A4-series aerosol tanks approved for this product. Mist tanks are not UL approved.

Rating relative to other mold release products, 1=most favorable, 2=moderately favorable, 3=least favorable

Evaporation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Toxicity to Workers	2	2	1	2	3	1	2	2	2	2	1	2	3	1	2	2	2	2	2	2	2
Flammability	2	2	1	2	3	1	2	2	2	2	1	2	3	1	2	2	2	2	2	2	2
Solvent-Sensitive*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cost	2	2	3	2	1	3	2	3	3	2	3	2	1	3	2	2	2	3	2	3	2

^{*}Compatibility with Solvent-Sensitive Plastics

Tech Tips

Wonder which mold release to use? Start with a silicone — unless there is a reason not to. The next most effective release is paintable mist.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**



IMS 1% Silicone Mist Mold Release

Low Residue Formula

Silicone Mist is our driest silicone release, for use where low residue is critical.

- Approved for food packaging: FDA 21 CFR 181.28
- Low Toxicity
- Recognized under the component program of Underwriters Laboratories Inc.

Effective	with:
-----------	-------

ABS Nylon Polypropylene PPHOX
Acetal Polycarbonate Polystyrene PPO
Acrylic PMMA Polyethylene Polysulfone Rubber

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113659	1% Silicone Mist	1-71	\$4.85
	Mold Release	72-143 (save 5%)	4.61
	(12 oz. fill)	144-863 (save 10%)	4.37

Purchasing in bulk? Call to inquire for more quantity discounts.





- Misting tip
- Moderate flammability



IMS 3% Silicone Spray Mold Release

Our Most Popular Silicone Spray



Silicone Spray is the ideal general-purpose mold release. Its 3% concentration forms a long-lasting film on the mold, yet is dry enough to leave little residue on the part.

- Approved for food packaging: FDA 21 CFR 181.28
- · Low Toxicity
- Recognized under the component program of Underwriters Laboratories Inc.

E	ff	ective	with:

ABS Polycarbonate Polystyrene Rubber

Acetal Polyester Polysulfone
Acrylic PMMA Polyethylene PPHOX
Nylon Polypropylene PPO





•	Moderate
	flammability

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113646	3% Silicone Mist Mold	1-71	\$4.55
	Release	72-143 (save 5%)	4.32
	(91/4 oz. fill)	144+ (save 10%)	4.10
113653	3% Silicone Mist Mold	1-71	\$4.83
	Release	72-143 (save 5%)	4.59
	(12 oz. fill)	144+ (save 10%)	4.35
170507	Nonflammable Speed Mist PLUS 3% Silicone Mold	1-71	\$17.09
	Release	72-143 (save 5%)	16.24
	(8 oz. fill)	144+ (save 10%)	15.38



. 81
E94408 (N)



 Moderate flammability



- Nonflammable
- Very Low Toxicity
- The Industry's Safest

Item #	Description	Unit Price
	3% Silicone Spray A4 Mold Release (Tank)	
131409	30 lb. / 21 lb. fill	\$257.40
131392	60 lb. / 42 lb. fill	470.50

Note: IMS Aerosol Tanks are not refillable and must be properly disposed of when empty.

For Tank Spray Systems and Accessories — see pages 150-157

continued on next page



NonflammableNo flammable gases



www.imscompany.com



IMS 3% Silicone Spray Mold Release

Continued



- · Extremely fast evaporating
- · Very low toxicity

- · No flammable ingredients
- The industry's safest

Speed Up Cycle Times

Item #	Description	Unit Price
1	Speed Mist 3% Silicone Spray Mold Release (Tank) (30 lb. / 21 lb. fill)	\$561.97

Note: IMS Aerosol Tanks are not refillable and must be properly disposed of when empty.

For Tank Spray Systems and Accessories — see pages 150-157

Ask About Larger Sizes

Note: Always pre-test before using any mold release. Be sure to test it thoroughly for compatibility with your molding materials and post-molding processes like painting or plating. Check for crazing, stress cracking and marking to be sure you have selected the right mold release for your plastic.



Speed Mist ™/Speed Mist PLUS™ are a trademarks of IMS Company

Check Out These Other Useful IMS Products!

IMS Automatic Bulk Spray System Item # 121983

Specially designed for use with less expensive bulk mold releases. In addition automatic programmed spraying:

- · Helps maintain consistent cycle times
- · Eliminates wasteful over-spray
- · Reduces health and accident claims

Save Money!
Uses Bulk Releases & Compressed Air

See Page 156 For More Details





www.imscompany.com

S-6 Silicone Spray Mold Release

Moderate Percentage Of Silicone



· Fast evaporating

· Moderate flammability

· Low toxicity

· Approved for food packaging: FDA 21 CFR 181.28

Effective with:

ABS Polycarbonate Polystyrene Rubber

Polysulfone Polyester Acetal Polyethylene **PPHOX** Acrylic PMMA PPO Polypropylene Nylon

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131968	S-6 Silicone Spray Mold	1-71	\$4.88
	Release (11 oz. fill)	72-143 (save 5%)	4.64
		144-863 (save 10%)	4.39

Purchasing in bulk? Call to inquire for more quantity discounts.



Economy Silicone Mist Mold Release



· General purpose, low cost spray

• Approved for food packaging: FDA 21 CFR 181.28

Effective with:

Polycarbonate Polystyrene Rubber **ABS**

Polyester Polysulfone Acetal **PPHOX** Polyethylene Acrylic PMMA **PPO** Polypropylene Nylon

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113718	Economy Silicone Mist	1-71	\$4.50
	Mold Release	72-143 (save 5%)	4.28
(12 oz. fill)	144-863 (save 10%)	4.05	
123491	Economy Silicone-50	1-71	\$3.62
	Mist Mold (9 oz. fill)	72-143 (save 5%)	3.44
		144-863 (save 10%)	3.26

Purchasing in bulk? Call to inquire for more quantity discounts.





- Moderate flammability
- · Low toxicity



Lowest cost



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

E94408 (N)

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



IMS 15% Silicone Spray Mold Release

Formulated For Tough Jobs

15% Silicone Spray is a general purpose release for low-draft molds. Higher concentration of silicone allows for more releases between sprays.

 Approved for food packaging: FDA 21 CFR 181.28 · Low toxicity

Effective with:

ABS Nylon Polyethylene Polysulfone Rubber

Acetal Polycarbonate Polypropylene PPHOX Acrylic PMMA Polyester Polystyrene PPO

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113717	15% Silicone Spray Mold	1-71	\$5.14
	Release (91/4 oz. fill)	72-143 (save 5%)	4.88
		144-863 (save 10%)	4.63

Purchasing in bulk? Call to inquire for more quantity discounts.





IMS Super 33% Silicone Spray Mold Release

Formulated For Tougher Jobs

Super 33% Silicone Spray Mold Release contains 33% silicone fluid for tough molding jobs.

Approved for food packaging:
 FDA 21 CFR 181.28

· Low toxicity

Effective with:

ABS Nylon Polyethylene Polysulfone Rubber

Acetal Polycarbonate Polypropylene PPHOX Acrylic PMMA Polyester Polystyrene PPO

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113712	Super 33% Silicone Spray	1-71	\$6.10
	Mold Release (91/4 oz. fill)	72-143 (save 5%)	5.80
		144-863 (save 10%)	5.49

Purchasing in bulk? Call to inquire for more quantity discounts.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Blue Label Silicone Spray Mold Release

More Releases Per Spray — Long Lasting



Developed by IMS, Blue Label Silicone is an exclusive blend of two different types of silicone. It forms a thin, tough film on the mold surface. It is the best spray anywhere for new molds.

Effective with:			
ABS	Polycarbonate	Polystyrene	Rubber
Acetal	Polyester	Polysulfone	
Acrylic PMMA	Polyethylene	PPO	
Nylon	Polypropylene	PVC	

Note: Blue Label Silicone Spray can cause a film buildup on warm molds if used too heavily. The buildup is easy to remove with a soft cloth and any IMS Mold Cleaner.

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113719	1 7	1-71	\$4.88
	Mold Release (91/4 oz. fill)	72-143 (save 5%)	4.64
		144-863 (save 10%)	4.39

Purchasing in bulk? Call to inquire for more quantity discounts.



Item #	Description	Unit Price per can
	Blue Label A4 Silicone Spray Mold Release (Tank)	
131401	(30 lb./21 lb. fill)	\$336.33
131394	(60 lb./42 lb. fill)	507.32

Note: IMS Aerosol tanks are not refillable and must be properly disposed of when empty.

For Tank Spray Systems and Accessories — see pages 150 - 157



Nonflammable



Lets You Run Jobs Others Can't

- · Extremely fast evaporating
- No flammable ingredients

Very low toxicity

• The industry's safest

Item #	Description	Unit Price per can
165731	Speed Mist™ Blue Label Silicone Spray Mold Release (Tank) (30 lb./21 lb. fill)	\$585.24

Note: IMS Aerosol tanks are not refillable and must be properly disposed of when empty.



Speed Mist™/Speed Mist PLUS™ are a trademarks of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



Gold Label Silicone Spray Mold Release

Formulated for the toughest jobs

Gold Label Silicone is a proprietary blend of 4 viscosities of polydimethylsiloxane. It offers the advantages of the heavier silicones without the greasiness.

Better coverage with minimal part marking

• More releases per spray

Blended to Handle the Toughest Jobs

ABS Polycarbonate Polystyrene Rubber Acetal Polyester Polysulfone Acrylic PMMA Polyethylene PPO Nylon Polypropylene PVC

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113716	Gold Label Silicone Spray	1-71	\$5.12
	Mold Release (91/4 oz. fill)	72-143 (save 5%)	4.86
		144-863 (save 10%)	4.61





IMS Pure Silicone Mold Release

- General-purpose mold release
- · 350 centistokes viscosity
- · Highest quality silicone
- Approved for food packaging: FDA 21 CFR 181.28

Effective with:

ABS Nylon Polystyrene
Acetal Polycarbonate Polysulfone
Acrylic PMMA Polyethylene Rubber

Item #	Description	Unit Price (Per Can)
	Pure Silicone Mold Release (Bulk)	
100579	(1-gal. can)	\$184.27
100536	(5-gal. can)	572.76

For Tank Spray Systems and Accessories — see pages 150 - 157





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

e-maii



SECONO-CUBE™ - Silicone Mold Release

For use with the IMS ECONO-CUBE™ Spray System



- 100% pure silicone
- Nontoxic
- No VOCs

- One-minute cube replacement time
- Minimal packaging disposal

Item #	Description	Unit Price (Per Can)
111967	Silicone Mold Release Econo-Cube™ (1 quart/956ml)	\$47.54
115348	Silicone Mist Mold Release Econo-Cube™ (1 quart/ 956ml) Thinner Viscosity	49.10
NOTE: ECONO-CUBE™ Silicones are not FDA approved.		·

For Tank Spray Systems and Accessories — see pages 150 - 157
For ECONO-CUBE™ - Paintable Mold Release — See page 155

Use Bulk to Save Money



ECONO-CUBE™ is a trademark of IMS Company

IMS Water-Emulsion Silicone Mold Release

For Rubber and Other Hot Molds



Water-Emulsion Silicone contains 35% Pure Silicone Solids. This 1,000-centistokeviscosity, pure silicone suspension is excellent for rubber molding. Dilute from 3 to 500 parts water to 1 part water-emulsion silicone depending on your application. It's best used for processes with mold temperature above 200°F.

- Effective as an assembly lubricant
- No VOCs, non-toxic

Effective with: Polyethylene and Rubber

Item #	Description	Unit Price (Per Can)
	Water-Emulsion Type Silicone Mold Release	
148854	(1-gal. jug)	\$156.98
148855	(5-gal. pail)	671.09

NOTE: NOT FDA approved.

For Tank Spray Systems and Accessories — see pages 150 - 157

Note: Always pre-test before using any mold release. Be sure to test it thoroughly for compatibility with your molding materials and post-molding processes like painting or plating. Check for crazing, stress cracking and marking to be sure you have selected the right mold release for your plastic.





www.imscompany.com



IMS Paintable Mist Mold Release

Low residue buildup

Use wherever molded parts are to be painted, plated, printed or stamped. Also use Paintable Releases if these processes will be done near the press, because any mold release can get into the air and deposit on parts even many feet away.

- · For molded parts to be painted, plated, printed, or ink stamped
- Wide range of applications
- Misting tip

· Recognized under the component program of Underwriters Laboratories Inc. (except Speed Mist)





Moderate flammability

Effective with:

ABS Nylon Polypropylene **PPO** Polycarbonate Polystyrene Rubber Acetal

Polyester Polysulfone Acrylic PMMA Polyethylene **PPHOX** Ероху

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113658	Paintable Mist Mold Release	1-71	\$4.74
	(91/4 oz. fill)	72-143 (save 5%)	4.50
		144-863 (save 10%)	4.27
113649	Paintable Mist Mold Release	1-71	\$4.99
	(12 oz. fill)	72-143 (save 5%)	4.74
		144-863 (save 10%)	4.49
170506	Nonflammable Speed Mist PLUS	1-71	\$17.40
	Paintable Mist Mold Release (8 oz. fill)	72-143 (save 5%)	16.53
		144-863 (save 10%)	15.66



 Moderate flammability





- Nonflammable
- Very Low Toxicity
- The Industry's Safest

Item #	Description	Unit Price (Per Can)
	Paintable Mist A4 Mold Release (tank)	
131404	(30 lb./21 lb. fill)	\$259.74
131396	_(60 lb./42 lb. fill)	474.75

Note: IMS Aerosol Tanks are not refillable and must be properly disposed of when empty.

For Tank Spray Systems and Accessories — see pages 150 - 157 continues on next page



Nonflammable



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Paintable Mist Mold Release

Continued

Evaporates Fast — Run Faster Cycles



- · Extremely fast evaporating
- No flammable ingredients

Nonflammable

· No dimethyl ether

Item #	tem # Description	
165729	Speed Mist [™] Paintable Mist Mold Release (Tank) (30 lb./21 lb. fill)	\$717.93

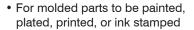
Note: IMS Aerosol Tanks are not refillable and must be properly disposed of when empty.

For Tank Spray Systems and Accessories — see pages 150 - 157 Ask about larger sizes



Replaces IMS Item Numbers 113962, 113993 and 134308

IMS Economy Paintable Mold Release



 Formulated with high grade paintable fluid



ABS Nylon Polypropylene PPO
Acetal Polycarbonate Polystyrene Rubber
Acrylic PMMA Polyester Polysulfone
Epoxy Polyethylene PPHOX

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
113711	Economy Paintable Mold Release (12 oz. fill)	1-71	\$4.92
		72-143 (save 5%)	4.67
		144-863 (save 10%)	4.43
123492	Economy Paintable-50	1-71	\$3.87
	Mold Release (9 oz. fill)	72-143 (save 5%)	3.68
		144-863 (save 10%)	3.48







Speed Mist™ is a trademark of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**



ECONO-CUBE™- Paintable Mold Release

For use with the IMS ECONO-CUBE™ Spray System

Go Bulk and Save Money

- 100% nonsilicone mineral oil
- · Minimal packaging disposal
- One-minute cube replacement time

Item #	Description	Unit Price (Per Can)
113133	Paintable Mold Release ECONO-CUBE™ (1quart/956 ml)	\$41.21

For ECONO-CUBE™ Spray Systems and Accessories — See page 154-155 For ECONO-CUBE™ - Silicone Mold Release — See page 123



ECONO-CUBE™ is a trademark of IMS Company



IMS Paintable Neutral Oil A4 Mold Release

Ideal for Polyethylene and Polypropylene

Neutral Oil is for use with most plastics, but especially polyolefins. It avoids most of the environmental stress cracking and crazing caused by silicone-type lubricants.

- · Formulated with mineral oil
- For molded parts to be painted, plated, printed, or ink stamped
- Recognized under the component program of Underwriters Laboratories Inc.
- Approved for food packaging: FDA 21 CFR 178.3620

Effective with:

ABS Polycarbonate Polyurethane
Acetal Polyethylene PPHOX
Epoxy Polypropylene PPO
Nylon Polystyrene Rubber

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131393	Mold Release (11 oz fill)	1-71	\$4.80
		72-143 (save 5%)	4.56
		144-863 (save 10%)	4.32

\$1 E94408 (N)



Note: Always pre-test before using any mold release. Be sure to test it thoroughly for compatibility with your molding materials and post-molding processes like painting or plating. Check for crazing, stress cracking and marking to be sure you have selected the right mold release for your plastic.



www.imscompany.com

phone order toll-free (USA & Canada) $\boldsymbol{1.800.537.5375}$

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Paintable Organic Oil A4 Mold Release

Heavier Lecithin in a Low-Concentration Spray



High-viscosity, vegetable-based release forms a thin, tough layer of mold release that lasts for many cycles. Many jobs respond well to this high-viscosity lecithin. Often used for epoxy resins. Minimizes environmental stress cracking and crazing on polyethylene.

- For molded parts to be painted, plated, printed, or ink stamped
- Approved for food packaging: FDA 21 CFR 184.1400 GRAS

Effective with:			
ABS	Nylon	Polypropylene	PPHOX
Acetal	Polycarbonate	Polystyrene	PPO
Acrylic PMMA	Polyester	Polysulfone	Rubber
Ероху	Polyethylene	Polyurethane	

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131395	Paintable Organic Oil A4 Mold Release (11 oz. fill)	1-71	\$4.83
		72-143 (save 5%)	4.59
		144-863 (save 10%)	4.35



L-6 Paintable Lecithin Mold Release





Thinner, oily lecithin spray provides best release for many jobs. Use where painting, plating, stamping or printing are done.

- Use where parts are to be painted, plated, printed or hot-stamped
- Approved for food packaging: FDA 21 CFR 184.1400, also GRAS

- · Fast evaporating
- · Low toxicity

ABS Nylon Polypropylene PPHOX
Acetal Polycarbonate Polystyrene PPO
Acrylic PMMA Polyester Polysulfone Rubber
Epoxy Polyethylene Polyurethane

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131969	L-6 Paintable Lecithin Mold Release (11 oz. fill)	1-71	\$5.25
		72-143 (save 5%)	4.99
		144-863 (save 10%)	4.73





www.imscompany.com



IMS Paintable Ester Spray A4 Mold Release

Water Washable, Non-Conductive Lecithin

Made of biodegradable ReleasaGen®, Ester Spray is an excellent all purpose mold release. Our heaviest lecithin — also our biggest selling lecithin.

- Non-conductive
- · Easily washed off with warm water or diluted detergent solution
- · For molded parts to be painted, plated, printed, or ink stamped
- · Highly effective for most materials
- Recognized under the component program of Underwriters Laboratories Inc.
- · Approved for food packaging: FDA 21 CFR 184.1400

Eff			

ABS Ероху Polyethylene Polyurethane Nylon Polypropylene **PPHOX** Acetal **PPO** Acrylic PMMA Polycarbonate Polystyrene Polyester Polysulfone Rubber Alkyd

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131400	Mold Pologoo (11 oz fill)	1-71	\$5.09
		72-143 (save 5%)	4.84
		144-863 (save 10%)	4.58





Note: Use sparingly. Mold buildup may occur if applied too liberally. Remove with IMS Mold Cleaner.

Item #	Description	Unit Price (Per Can)
131397	Paintable Ester Spray A4 Mold Release (Tank) (30 lb./21 lb. fill)	\$309.36

Note: IMS Aerosol Tanks are not refillable and must be properly disposed of when empty.

Note: May react with aluminum. Use White 2000 Mold Cleaner ONLY with Brass Spray Gun. See page 150

For Tank Spray Systems and Accessories — see pages 150 - 157

continues on next page



- No flammable gases
 - Nonflammable

ReleasaGen® is a registered trademark of ReleasaGen Mfg. Inc.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888,288,6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

IMS DRY-21 Paintable PTFE Powder Mold Release

Ideal Where Parts Will Be Painted, Plated or Ink-Stamped



IMS DRY-21 Mold Release is a paintable PTFE powder-based product that is suitable for incidental food contact. It forms a very dry layer on the mold for maximum release ability with minimal buildup.

- FDA Compliant for Incidental food contact - 21 CFR 177.1550, 184.100
- Excellent general-purpose release
- ICI 21 CFR 177.1550, 164.100
- No reportable VOCs

Low Residue

Effective with:			
ABS	Ероху	Polyethylene	Polyurethane
Acetal	Nylon	Polypropylene	PPO
Acrylic PMMA	Polycarbonate	Polystyrene	PVC
Alkyd	Polyester	Polysulfone	Rubber

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
170444	DRY-21 Paintable PTFE Powder	1-71	\$5.54
	Mold Release (16 oz. fill)	72-143 (save 5%)	5.26
		144-863 (save 10%)	4.99



IMS Paintable Dry Spray A4 Mold Release with PTFE



This mold release spray combines PTFE fluoropolymer resin — with its superior antistick properties — with a tough bonding agent formulated to keep the powder in place so its lubricating properties can be fully used.

- Inert dry powder with tough bonding agent
- · High fusion point

- For molded parts to be painted, plated, printed, or ink stamped
- Useful as multi-purpose lubricant

Effective with:

Polyethylene Polyurethane **ABS** Ероху Polypropylene **PPO** Nylon Acetal Acrylic PMMA Polycarbonate Polystyrene **PVC** Polysulfone Rubber Polyester Alkyd

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131399	Paintable Dry Spray A4 Mold	1-71	\$6.98
	Release with PTFE (10 oz. fill)	72-143 (save 5%)	6.63
		144-863 (save 10%)	6.28





www.imscompany.com



IMS Paintable Mold Release with DryFilm

DryFilm is a waxy, short-chain telomer of tetrafluoroethylene. Developed by DuPont, it shows excellent properties as a parting agent. It can be used on thermosets as well as thermoplastics.

- For molded parts to be painted, plated, printed, or ink stamped
- Excellent for acrylics and other engineered materials
- Fluorocarbon base

	ie						

ABS	Ероху	Polyethylene	Polyurethane
Acetal	Nylon	Polypropylene	PPO
Acrylic PMMA	Polycarbonate	Polystyrene	PVC
Alkyd	Polyester	Polysulfone	Rubber

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131410	Paintable A4 Mold Release	1-71	\$8.54
	with DryFilm (10 oz. fill)	72-143 (save 5%)	8.11
		144-863 (save 10%)	7.69





IMS Paintable Zinc Stearate A4 Mold Release

Dry Powder — Safe for Food Industry Applications

This Zinc Stearate aerosol is an ideal applicator for a time-proven lubricant. It puts powder right where it's needed, without waste. It is long-lasting and non-marking, quick, clean and handy.

- For molded parts to be painted, plated, printed, or ink stamped
- Approved for food packaging: FDA 21 CFR 182.5994
- · Long lasting, non-marking

Effective with:

ABS	Ероху	Polyethylene	Polyurethane
Acetal	Nylon	Polypropylene	PPO
Acrylic PMMA	Polycarbonate	Polystyrene	PVC
Alkyd	Polyester	Polysulfone	Rubber

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
131398	Paintable Zinc Stearate A4	1-71	\$4.40
	Mold Release (91/4 oz. fill)	72-143 (save 5%)	4.18
		144-863 (save 10%)	3.96

Zinc Stearate can also be used as a material lubricant — See page 148



Note: To clean residue, wash parts in a mild household detergent. Avoid excessive usage which could cause wear of mold pins and machine parts. Buildup can be removed with IMS Mold Cleaner.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Aerosol Mold Cleaner Selection Guide



See website for pricing and economical size aerosol tanks and bulk packaging (Review our website for the most up-to-date information on any product we sell)

	Red 2000 #118310	White 2000 #118308	Economy #119252	Formula A-P #118313	<u>Citrus</u> #111598	<u>Citrus-50</u> #169732	<u>SafeKlean</u> #126674	<u>LT-65</u> #168231	<u>C-Foam</u> #168232
Evaporation	Fastest	Very Fast	Very Fast	Slow but Complete	Needs to be Wiped	Needs to be Wiped	Needs to be Wiped	Very Fast	Needs to be Wiped
Toxicity (relative to other aerosal cleaners)	Favorable	Least Favorable	Least Favorable	Favorable	Most Favorable	Favorable	Most Favorable	Very Favorable	Favorable
Flammability	Extremely Flammable	Not Flammable	Not Flammable	Flammable	Highly Flammable	Flammable	Flammable	Extremely Flammable	Not Flammable [†]
Cleaning Ability	Good	Better	Better	Good	Best	Better	Best	Better	Better
Environmental Friendliness (relative to other aerosal cleaners)	Moderate	Least Favorable	Least Favorable	Moderate	Favorable	Moderate	Most Favorable	Favorable	Favorable
Price (relative to other aerosal cleaners)	Best	Moderate	Moderate	Second Best	High	Moderate	High	Moderate	Moderate
Scent	Moderate Petroleum	Strong Chlorinated	Strong Chlorinated	Very Mild Petroleum	Strong Orange	Mild Orange	Strong Orange	Moderate Chemical	Mild Orange

† not flammable while spraying, but foam is flammable

Aerosol Rust Preventive Selection Guide



See website for pricing, as well as more economical size aerosol tanks and bulk packaging (Review our website for the most up-to-date information on any product we sell)

	<u>Safeseal</u> #124644	Night Coat #142877	<u>Clear Coat</u> #137083	<u>Step Two</u> #142939	<u>Heavy Coat</u> #145220
Duartion	Overnight to 24 months or more	Overnight to 1 week	Overnight to 4 months or more	Up to 1 year	Up to 2 years
Indoor/Outdoor	Indoor	Indoor	Indoor	Indoor/Outdoor	Indoor/Outdoor
Deposited Product Texture	Buttery / Gel	Very Light Oil	Petroleum Jelly	Light Wax	Heavy Wax
Removal	Removed w/startup shots - if applied heavily, might need to wipe first	Removed w/startup shots - if applied heavily, might need to wipe first	Removed w/startup shots - if applied heavily, might need to wipe first	Solvent Required to Remove	Solvent Required to Remove
Penetrates - Runs	No	Yes	No	No	No
Neutralizes Acid	No	Yes	No	No	No
Displaces Moisture	Yes	Yes	Yes	No	No
Price (relative to other aerosal rust preventatives)	Higher Than Average	Low	Low	Moderate	Moderate
Toxicity to Operator (relative to other aerosal rust preventatives)	Favorable	Average	Better Than Average	Average	Average



www.imscompany.com



IMS Nonflammable White 2000 Mold Cleaner

Our Best Heavy Duty Solvent For Use at The Press

IMS White 2000 Mold Cleaner is a heavy duty, nonflammable, chlorinated solvent offering excellent cleaning properties and very fast evaporation.

Cleans Without Wiping

Referred to as a power wash in a can.

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
118308	Nonflammable White 2000 Mold Cleaner (16 oz. fill)	1-71	\$6.99
		72-143 (save 5%)	6.64
		144-863 (save 10%)	6.29



Item #	Description	Unit Price (Per Can)
	Nonflammable White 2000 Mold Cleaner (Tank)	
119254	(30 lb./263/4 lb. fill)	\$243.31
119259	(60 lb./52½ lb. fill)	322.61

Note: May react with aluminum. Use White 2000 Mold Cleaner ONLY with Brass Spray Gun. See page 150

For Tank Spray Systems and Accessories — see pages 150 - 157



Item #	Description	Unit Price (Per Can)
	White 2000 Mold Cleaner (Bulk)	
119850	(1-gal. can)	107.95
119843	(5-gal. can)	428.23
119846	(55-gal. drum)	\$3,645.65

For Tank Spray Systems and Accessories — see pages 150 - 157





www.imscompany.com

phone order toll-free (USA & Canada) $\boldsymbol{1.800.537.5375}$

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-maii

IMS Red 2000 Mold Cleaner

Low-Toxicity For The Tooling Maintenance Area



Hydrocarbon-based Red 2000 Mold Cleaner provides very good solvent properties, very fast evaporation and moderate toxicity.

Low cost

· Cleans with little or no wiping

Moderate toxicity

· Fastest evaporation

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
118310	Red 2000 Mold Cleaner	1-71	\$3.41
	(10 oz. fill)	72-143 (save 5%)	3.24
		144-863 (save 10%)	3.07



IMS Nonflammable Economy Mold Cleaner





Made with hydrocarbon and chlorinated solvents, this product quickly and economically cleans your molds.

Nonflammable

· Cleans without wiping

· Evaporates quickly

· Preserves mold finish

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
119252	Nonflammable Economy Mold Cleaner (16 oz. fill)	1+	\$6.73
		72-143 (save 5%)	6.39
		144-863 (save 10%)	6.06





www.imscompany.com



Citrus Spray Mold Cleaner

A Natural, Biodegradable Degreaser

IMS Citrus Spray is a pure, all-natural cleaner with good solvent ability, a natural orange scent and low toxicity. It contains no water and no detergents.

- FDA rated GRAS 21 CFR 182.60
- · Cleans with minimal wiping, saves labor time
- · Accepted for electrical and electronics cleaning
- Non-conductive to 43,000 volts

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
111598	Biodegradable Citrus	1-71	\$5.53
	Spray Mold Cleaner	72-143 (save 5%)	5.25
	(12 oz. fill)	144 or more (save 10%)	4.98

NOTE: Citrus cleaner pricing is directly affected by citrus fruit-crop conditions in Florida

Item #	Description	Unit Price (Per Can)
	Citrus Mold Cleaner (Bulk)	
112075	<u>(1-gal. can)</u>	\$125.06
112082	(5-gal. can)	379.35
112083	(55-gal. drum)	2,860.01



Biodegradable

CITRUS SPRAY

Mold Cleaner

IMS Citrus-50 PLUS is a unique blend of our proven, natural citrus solvent and an FDA grade petroleum-based solvent.

- NOW FDA rated 21 CFR 172.884 and 178.3650
- · Takes advantage of the synergy of two different solvent types
- Helps avoid the price fluctuations that can be found in pure citrus cleaners
- · Cleans with minimal wiping, saves labor time

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
169732	Citrus-50 PLUS Mold	1-71	\$4.08
	Cleaner (12 oz. fill)	72-143 (save 5%)	3.88
		144+ (save 10%)	3.67



· Low flammability



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS SafeKlean™ Mold Cleaner

A Natural, Biodegradable Degreaser



- FDA rated GRAS 21 CFR 182.60
- · Cleans with minimal wiping, saves labor time
- · Accepted for electrical and electronics cleaning

• Non-conductive to 43,000 volts

Packaged with a 2-way spray nozzle and optional tube

	-	_
Sa	feKl	ean
Mole	I CI	eaner
		e moldes
		t the press
		<i>en la prensa</i> tural Solver
		iodegradable
Grange S	cent Aron	na a Naranja
Cleans Lingis con	with mini	mal wiping de frotamient
Suitabl	e for food	packaging
Meets one or m	ore FDA app 8 174.5: 175.	roval specifications
Im No. (Produ	oto No.)	F 10
12667	NI 12 44	
340 grams (gr	imos) B	rands ************************************
Annual Sections (1985)	Militari, contains gain allowed and uniter area influently, contains gain in fellow it as ingeneral my	ander promise shelps per cell ege. May count shelps per cell t baps promise punts replace or of pens as ten one requirement
Interpretation of	the course was produced to come for additional to	ces advisoris in reputati day precisions

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
126674	SafeKlean™ Mold Cleaner (Less	1-71	\$6.70
	Flammable Citrus Cleaner) (12 oz. fill)	72-143 (save 5%)	6.37
		144 or more (save 10%)	6.03

NOTE: Citrus cleaner pricing is directly affected by citrus fruit-crop conditions in Florida and Brazil

IMS All-Purpose Formula A-P Mold Cleaner

A Low Cost, Worker-Friendly Cleaner



Formula A-P Mold Cleaner is a hydrocarbon-based solvent offering low toxicity, moderate flammability, moderate evaporation and good solvent properties.

- FDA rated GRAS 21 CFR 172.884; 178.3650
- · Ideal for warm molds
- · Cleans with little or no wiping
- · Leaves little residue

Our Safest	
Cleaner	

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
118313	All-Purpose Formula A-P Mold	1-71	\$4.30
	Cleaner (10 oz. fill)	72-143 (save 5%)	4.09
		144-863 (save 10%)	3.87

	ULA A-F
	Cleaner r de moldes
mold cleani	se in most ng applications en la mayoria de de limpieza de molde
Cleans with I	little or no wiping ninimo de frotamiente
Suitable fo	r food packaging
tem No. 118313 Not Wt.: 10 oz.	DA approval specification FR 172.884

Item #	Description	Unit Price (Per Can)
	Formula A-P Mold Cleaner (Bulk)	
119888	(1-gal. can)	\$73.89
119882	(5-gal. can)	200.87
119884	(55-gal. drum)	1,575.27





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



IMS C-FOAM Foaming Citrus Mold Cleaner

Strong Cleaning From a Drip-Resistant Foam

Aggressive foam stays in place longer to clean better.

• Biodegradable

· Low toxicity

• Not flammable as sprayed

• Low VOC / No California Prop 65

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
168232	C-FOAM Foaming Citrus Mold	1-71	\$4.71
	Cleaner (16 oz. fill)	72-143 (save 5%)	4.47
		144-863 (save 10%)	4.24





IMS SAFESEAL™ Premium Tool Steel Protectant





Can be used on molds up to 350°F (speeds change-over time)

- · Quick, easy removal saves money.
- Foaming/spreading action ensures coverage of even the smallest, hidden areas (One 11 oz. can will cover approximately 31 sq. ft. when applied between .01" and .015" thickness.)
- Grass green color lets you see when the mold is covered and when it's clear.

SAFESEAL™ is a unique blending of a polymer into a vegetable-based oil to provide long lasting, heavy duty rust prevention in a non-toxic formula. It protects the most finely polished mold finishes, preventing downtime and mold refinishing expenses.

SAFESEAL'S green coloring lets workers see what surfaces are covered and what aren't. Nothing gets missed or over sprayed. SAFESEAL'S foaming action helps spread the material evenly - for total protection.

The base material in SAFESEAL™ is safe for application at temperatures as high as 350°F, so the mold does not have to be cooled before application (when there are no sources of ignition present.) Mold changeovers are quicker and more profitable.

SAFESEAL™ is easily removed without solvents - simply wipe with dry paper towels or cloths, then allow the startup shots to finish the job - saving money in downtime and mold cleaner expense.

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
124644	SAFESEAL™ Premium Tool	1-71	\$8.59
	Steel Protectant (11 oz. fill)	72-143 (save 5%)	8.16

Reduces Usage

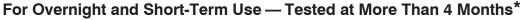


- Formula is compatible with all common old steels and polymers
- Meets or exceeds 72 hour ASTM B-117 specifications for corrosion protection

The Best Steel Protector - Only From IMS

SAFESEAL™ is a trademark of DeNOVUS

CLEAR COAT Rust Preventive Spray





- · Chemically prevents rust*
- Displaces moisture**
- Developed for Injection Molds.
 Great for any metal surface.
- "Dry" does not penetrate into pins and bushings. Won't bleed out.
- Stays soft and buttery does not get waxy.
- Easily removed by wiping or startup shots.

There's nothing else like it!

No Chlorinated Solvents • No TCE • Low Oder • Low Cost

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
137083	Clear Coat3 Rust Preventive	1-71	\$4.67
	Spray (11 oz. fill)	72-143 (save 5%)	4.44



^{**} Tested to Mil-C-16173E Fingerprint Suppression specs









IMS Night Coat™ Rust Preventive and Acid Neutralizer

Stops Corrosion During Short or Long-Term Shut-Downs

IMS Night Coat is Excellent:

1) As an overnight or short-term rust preventive

Just spray it on at shut-down. Penetrates and quickly wets out across the mold, displacing moisture and neutralizing acid from fingertip perspiration. Easily removed by start-up shots or with standard solvent

2) As an acid-neutralizing surface preparation for longer-term rust preventives

(A must when molding PVC or CPVC, where out-gassed hydrochloric gas combines with moisture to create corrosive hydrochloric acid.)

Just spray it on and wipe away any puddles. Then apply IMS Step 2 Heavy Coat or any other longer-term protector

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
142877	Night Coat Rust Preventive and	1-71	\$3.95
	Acid Neutralizer (10 oz. fill)	72-143 (save 5%)	3.75



Bilingual Label

(English & Spanish)

- Helps protect and preserve the value of your molds
- Helps reduce downtime and mold maintenance costs
- Helps decrease your costs and inventory of mold care products

Night Coat™ is a trademark of IMS Company



IMS Step Two Rust Stopper

Part of a Two-Step Process for Mold Surface Protection for PVC and CPVC Molding

Use our Two-Step System to protect even the most highly polished tooling when you process PVC or CPVC.

- 1) The first step is to clean the mold with IMS Night Coat. Wipe up any puddles.
- 2) Next apply Improved IMS Step Two to chemically prevent rust and provide a tough barrier against future exposure to moisture and acid. Improved Step Two is also a great, general-purpose rust preventive for indoor or outdoor mold storage.

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
142939	Step Two Rust Stopper	1-71	\$3.60
	(11 oz. fill)	72-143 (save 5%)	3.42



Bilingual Label

(English & Spanish)

Now an even better Rust Stopper



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone 1.888.288.6900 001.8

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001

e-mail

IMS Heavy Coat Mold Surface Protector



For Long-Term Mold Storage - Indoors or Outdoors

- · Leaves a heavy, waxy coating plus chemical rust preventives
- · Easily removed with any IMS mold cleaner

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
145220	Heavy Coat Mold Surface	1-71	\$3.87
	Protector (11 oz. fill)	72-143 (save 5%)	3.68

Want even better assurance of maximum protection? Before applying Heavy Coat, pre-treat the steel with Night Coat #142877 (page 138) to displace moisture and neutralize acids.



Bilingual Label (English & Spanish)

Improved by latest chemical technology

Replaces #111547

IMS Foaming Mold Water Passage Rust Inhibitor and Cleaner



Mold water passage rust preventive and cleaner

Protect water passages during mold storage. Reusable hose, clamp, and fitting sold separately.

- · Displaces moisture from mold passages
- Prevents rust
- · Easily dissolved into water system at start-up

Item #	Description	Quantity (Packaged 12 Cans Per Case)	Unit Price (Per Can)
103776	Foaming Mold Water Passage	1-71	\$7.56
	Rust Inhibitor and Cleaner (16 oz. fill)	72-143 (save 5%)	7.18
	(10 02. 1111)	144-863 (save 10%)	6.80
Optional .	Optional Accessory		
101549	1' hose, 1/4" N.P.T. fitting and cla	amp	\$6.41





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

sales@imscompany.com

<u>.com</u>





3rd Generation Formula — The Best Yet

An Essential Molding Shop Accessory!

- · Cleans Tough Jobs Doesn't Scratch
- Polishes mold hang-up areas and reduces the need for mold release
- · Quickly cleans stubborn mold stains
- Easily removes burn deposits without scratching fine mold finishes
- Dries Faster For Easier Removal

Old Purple™ is a registered trademark of IMS Company



Item #	Description	Unit Price
149045	Old Purple® — 16 oz. plastic squeeze bottle	\$12.80



Wiping & Polishing Rags

For General Molding Shop Use

Perfect for Cleaning and Polishing Presses, Tools, etc

- · Made of recycled cotton material
- Super soft
- Washable
- Low lint
- Mixed colors and sizes

See Page 420 for More Information

Take advantage of quantity breaks to lower your cost!



Carton Clips

Many Molding Shop Uses

Great For Holding Gaylord Liners in Place - See Page 420 For More Information





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888,288,6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Advanced Mold Polishing Diamond Compounds



Oil Soluble Type

IMS brings you the very best synthetic diamond compound to produce the best results. All IMS diamond compounds provide the best polish in the least time required in polishing.

IMS diamond compounds are excellent for molds, but also work great for die and tool polishing, initial charging of lapping plates and discs, polishing to final tolerance of ceramic parts, various tool-room use, and other processes that require high finish as well as close tolerance performance.

IMS Diamond Compound Advantages:

- Monocrystalline-type structure has a strong cubo-octahedral shape with pronounced multiple cutting edges.
- Resistant to breakdown or "frying" at high temperatures. If frying does occur, the crystal is fracture controlled to produce more cutting edges.
- · Extremely efficient metal bond retention.
- Oil soluble carrier indefinitely suspends diamond particles uniformly without separating, provides the fastest polishing time.
- · Non-toxic, easy to use and easy to clean.
- Impervious to contaminants on lapping surface.
- Withstands pressure and temperature during application.
- Sold in Syringe applicators to pinpoint areas to apply compound, eliminates contamination, and reduce wasteful overuse.
- Medium diamond concentrations for optimum polishing and value.

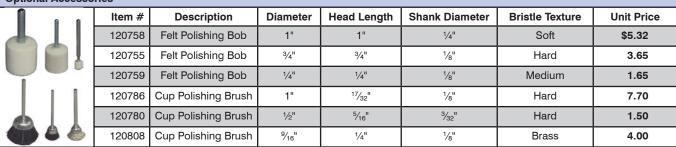
These oil-soluble compounds are effective on most applications; water-soluble versions are also available. Larger containers are also available. Call today for more information.



18 Gram

Recommended for:	US Bureau of Standards Micron Size	Micron Size Range	Mesh Size Equivalent	Color Code	5 Gram	Syringe	18 Gram	Syringe	
Ultra Fine Finish	1	0 - 2	14,000	lvory	120784	\$4.25	120793	\$19.95	
Super Fine Finish	3	2 - 4	8,000	Yellow	120807	9.25	120781	42.85	
	6	4 - 8	3,000	Orange	120796	11.00	120800	38.00	
	9	6 - 12	1,800	Green	120782	11.00	120792	38.00	
Fine Finish/ Prep-Lapping	15	10 - 12	1,200	Blue	120778	11.00	120787	38.00	
	30	20 - 40	575	Red	120804	12.70	120809	43.75	
Aggressive Removal/Roughing	45	30 - 60	400	Brown	120798	12.70	120806	43.75	
	60	50 - 70	270	Purple	120790	12.70	120797	43.75	
Convenient Compound Kits	One Each of Above				120852	\$72.25	120847	\$275.00	
						SAVE! \$12.35		SAVE! \$18.25	

Optional Accessories





Autosol® Metal and Mold Care

- · German Engineered / Professional Grade Quality
- Award Winning / Tried and Tested / Renowned car makers trust Autosol® products
- · Many products promise results, but end up disappointing. Autosol® delivers on all its claims
- More than 80 years of producing metal care products
- Stop wasting time and money on substandard metal care items. Don't risk using cheap inferior products on your expensive molds, choose the product with the Guarantee*, choose Autosol® from IMS.

Autosol® Mold/Metal Polish (Rated NSF A7)

For all Ferrous metal surface types. cleans and removes plastic build up, dirt, and surface rust. Provides a brilliant high gloss finish.

Item #	Description	Price
165794	Tube 2.5 oz (75 ml)	\$7.12



Autosol® Metal and Mold Care

- · German Engineered / Professional Grade Quality
- Award Winning / Tried and Tested / Renowned car makers trust Autosol® products
- Many products promise results, but end up disappointing. Autosol® delivers on all its claims
- More than 80 years of producing metal care products
- Stop wasting time and money on substandard metal care items. Don't risk using cheap inferior products on your expensive molds, choose the product with the Guarantee*, choose Autosol® from IMS.

Autosol® Liquid Metal Polish

Ideal for brass and copper alloys - contains no ammonia. Cleans and removes plastic build up, dirt, and corrosion. Provides a brilliant high gloss finish.

Item #	Description	Price
165802	Bottle 8.4 oz (250 ml)	\$8.24



Made in the U.S.A

Check Out These Other Useful IMS Products!





Keeps Mold Productivity Up And Press Operating Costs Down!

The Problem:

Water circulators provide mold temperature control, but water can leave deposits that insulate the mold from the circulating water; as little as $\frac{1}{64}$ " can reduce heat transfer 40%. Full temperature change takes longer. Cycle times and electricity use go up as part quality goes down.

The Solution:

The IMS Lime Buster circulates a mild acid through your mold water passages, dissolving mineral deposits and flushing them away. Circulating water can then have direct contact with the metal in the mold, restoring heat transfer. You'll see shorter cycles and better parts.

See Page 759 - 763 For More Information



Sealants

Keep fasteners and pipe joints tight! Help prevent costly down time!

Pipe Thread Sealant Compound

- Contains PTFE
- Non-hardening
- Non-toxic
- Positive seal
- Prevents corrosion
- Withstands hydraulic pressures up to 10,000 psi

Dynases The ad Seales American services American

Thread Sealant Tape with PTFE

- Mil-Spec # MIL-T-27730A
- · Meets USDA and FDA requirements
- Seals against gas, air, oil and water
- · Resists chemicals, corrosives, caustics and solvents
- · Prevents leakage
- · Resists high heat
- Seals effectively in 2 or 3 wraps
- Withstands hydraulic pressures up to 10,000 psi



IMS Paintable Ejector Pin Lube L T

Made For Use on Knock-Out Pins in Forward Position



IMS Paintable Ejector Pin Lube LT is a clean, paintable, load-bearing lubricant designed for spraying on close-fitting knockout pins. The lubricant produces minimal part marking, won't bleed out and can be used in a -65°F to +350°F temperature range.

Item #	Description	Unit Price (Per Can)
140171	Paintable Ejector Pin Lube LT (91/4" oz. fill)	\$4.24



No Chlorinated Solvents

IMS White Lithium Lubricant Spray

Ideal For Injection Molds and Most Other Industrial Applications



- Sprays Like a Fluid to Penetrate Into Tight Passages
- Thickens Into Grease to Lubricate
- Medium-bodied Grease
- Moisture Proof, and Resists Most Chemicals and Acids
- Long Lasting Resists Wiping Off
- For Slides, Stripper Plates, Cams and Guide Pin Bushings
- · Minimizes Galling
- Resists Heat to 275°F
- Useful at Temps as cold as -10°F

Specifications

NLGI Number: 1

Worked Penetration Range @ 77°F: 310/340

ASTM Dropping Point: 380°F

Mineral Oil Viscosity (SUS @ 100°F): 750

(CSt @ 40°C): 135

Item	#	Description	Unit Price (Per Can)
1452	221	White Lithium Lubricant Spray (11 oz. fill)	\$6.25



Replaces #127364



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375





IMS Original Formula® Mold Grease

Long Lasting Lubricant with PTFE — Good to 500° F

Forms an adherent, but slippery film. Won't wipe off through tight bushings.

- · Superior strength and load bearing ability
- Superior lubricity -40°F to +500°F
- Waterproof
- Anticorrosive
- Non-melting
- Non-silicone
- NSF listed

The Original and Still the Best!™



Item #	Container	Net Weight	Unit Price
107320	2 oz. jar	2 oz. (57 g)	\$4.00 each
107439	14 oz. cartridge	14 oz. (397 g)	16.05 each
105998	16 oz. jar	1 lb. (454 g)	17.00 each
107526	1-gal. pail	8 lbs. (3.63 kg)	135.00 each
107433	5-gal. pail	42 lbs. (19 kg)	600.00 each



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 1.888.288.6900

tech support toll-free (USA & Canada) 1.866.467.9001

WD-40[®] The Original Multipurpose Spray

Use on Molds, Machinery and All Around Your Shop

- · Frees rusted metal parts
- · Provides positive rust protection
- · Non conductive

Specifications

Appearance: Clear or slightly cloudy

Color: Light amber

Odor: Mild Petroleum Odor Flash Point: 110° F open cup (min.)

Boiling Point: 300° F (min.)

Bulk Liquid

Item #	Description	Price
105341	WD-40® (1-gal. container)	\$37.42



Aerosol Spray with Smart Straw™



Attention California Customers:

Due to California laws and regulations, this standard formula WD-40 cannot be sold into California. You must purchase the Low-VOC formula locally.

Smart Straw[™] are a trademarks of WD-40 Company

WD-40® is a registered trademark of WD-40 Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Zinc Stearate Material Lubricant

Zinc Stearate is an internal lubricant for thermoplastic resins (especially styrenes) to ease material passage through the barrel.

- · Often eliminates the need for mold release agents acts as a paintable mold release
- Often improves cycle time
- Melt Point: 249.8°F

Item #		Unit Price
104464	Zinc Stearate Bulk Plastic Lubricant (25-lb. bag)	\$128.23

Acrawax® C Material Lubricant

Acrawax® C Material Lubricant is an excellent internal lubricant for Nylon, PVC and Polyurethane. When properly proportioned*, Acrawax® C often:

- Improves color dispersion
- · Speeds machine cycle times
- · Eliminates the need for mold release agents
- Imparts antistatic properties to molded parts
- Melt Point: 285.8° F
- * Typically .25% to 5.00% by weight. With Nylon and PVC, .25% to 3.00% by weight. With Polyurethane .40% by weight.

Often reduces static problems and color separation in the hopper and material feed system.



104460

Item #		Unit Price
104460	Acrawax® C Material Lubricant (50-lb. bag - powdered form)	\$566.97
127431	Acrawax® C Material Lubricant (50-lb. bag - pellet form)	Inquire

Plastic Resin Scoops

#132787

#132788

#146497

Item #	Size	Style	Color	Unit Price
132787	32 oz			\$5.86
132788	82 oz.	Flat Bottom	White	7.05
146497	128 oz.			13.25



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

IMS Spray Can Holders

Hold Cans Securely Within Reach but Not in the Way

- · Stop fumbling for cans
- · Help reduce valve breakage
- · Dress up your presses

- Mount on walls, injection presses, cabinets, etc.
- Pay for themselves many times over!

Heavy Duty Stainless Steel Can Holder



Multi-Can Holder



- · Two pre-drilled holes for easy mounting
- · Generally large enough for most 12 oz., 16 oz. or 20 oz. cans
- Steel holder with powder-coated finish

Item No. 100588 \$14.50 ea.

Item No. 123490 \$24.53 ea.

Sprays (shown) sold separately

Spray Can Handle

Turns Spray Cans Into Spray Guns!



There Is Only One CAN-GUN®

- · It's a Quick Snap On/Off
- · Eliminates painful finger fatigue
- Provides accurate and comfortable spray control
- Color: Black
- · Made of: Recycled Plastic
- · Weight: Less than 1 oz.

Firmly snaps on most spray cans



Item No. 135048 **Just \$1.50**



CAN-GUN® and V-Notch™ are trademarks of SafeWorld International, Inc.



phone order toll-free (USA & Canada) 1.800.537.5375

Red 2000 Mold Cleaner

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

Friendly Design

IMS Spray Gun

Designed expressly for use with Aerosol Tanks or cylinders

Lightweight • Fast Acting • Changeable Valves

- Accepts any standard, 1" uncrimped aerosol valve. Lets you control discharge rate.
- Lets you choose the spray valve best suited to your application.

PATENT No. 3,592,390

Item #	Description	Price
100650	Brass Spray Gun Assembly includes 167910 Spray Valve	\$114.43
100554	Brass Spray Gun Assembly with 8' Hose & Fittings and 167910 Spray Valve	
100509	100509 Brass Spray Gun Assembly with 12' Hose & Fittings and 167910 Spray Valve	
Brass spray guns are required for products with chlorinated solvents such as IMS White 2000 and in IMS A4-series Mold Release Tanks. They can be used with any aerosol tank.		
100662	Aluminum Spray Gun Assembly includes 167911 Spray Valve	\$81.18
100565	Aluminum Spray Gun Assembly with 8' Hose & Fittings and 167911 Spray Valve	101.63
100520	Aluminum Spray Gun Assembly with 12' Hose & Fittings and 167911 Spray Valve	106.44



Accessories and Replacement Parts

Item #	Description	Price
170084	Magnetic Spray Gun Holder for use with IMS Aerosol Tank Spray Guns	\$17.25
100597	Threaded, Aluminum Gun Cap	31.86
100641	Threaded, Aluminum Gun Body	58.75
100606	O-Ring Gun Gasket	0.94
167911	Medium Spray Valve (Standard)	1.80
168896	Fine Spray Valve	1.80
167909	Medium Spray Valve	1.80
167910	Coarse Spray Valve	1.80
100590	8-ft. Hose with Fittings	26.15
100587	12-ft. Hose with Fittings	32.25



Any length hose to special order





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

e-maii

SURE SHOT® Refillable Compressed Air Sprayers



Now Less Expensive And Lighter Weight Than The Old Model

- · Easier to buy and easier to use
- · Save money; help save the environment
- · Eliminate can, propellant, labeling and packaging costs of throw-away aerosols
- · Take full advantage of lower-cost bulk material
- For Mold Releases, Mold Cleaners and Rust Preventives*
- Heavy Duty, 16-oz. Aluminum Canister with Electroless-Nickel Plating Inside and Out
 — includes Interchangeable Valves and Nozzles

Compressed Air Sprayer Assembly

Safe for most non-acidic industrial chemicals

Item No. 142862

Contains: 16 oz. Electroless-Nickel Plated Aluminum Sprayer with Brushed Finish/Chrome-Plated Brass Valve Body

- (2) General-Purpose Spray Valves with Dip Tube Includes Viton O-Ring #110455
- (2) General-Purpose Regular Spray Nozzles
- (1) Pin-Stream Nozzle with 6" Snorkel Tube
- (5 each) Labels and Clear Label Covers

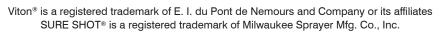
\$79.02

— Nozzles, Valves and O-Rings —		
109736	General-Purpose Valves (pkg. of 6) Does not include #110455 O-Ring	\$2.74
108626	General-Purpose Regular Spray Nozzles (pkg. of 6)	1.40
108630	Pin-Stream Nozzles with 6" Snorkel Tube (pkg. of 6)	1.80
110455	Viton® O-Ring for General Purpose Spray Valve (1)	1.10
108628	Fine-Mist Nozzles (pkg. of 6)	1.40

Other size canisters and different styles are available — Inquire



*Note: Thicker solutions may need to be diluted for proper operation.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

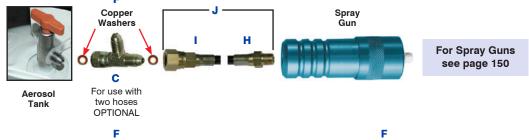


S Aerosol Tank Setup Hardware

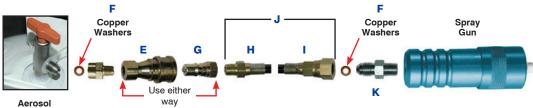
3 Ways to Use!

Speed Bulk Tank Changes

1 Standard hook-up to IMS Spray Gun for manual spraying



2 Quick disconnect hook-up to IMS Spray Gun for manual spraying



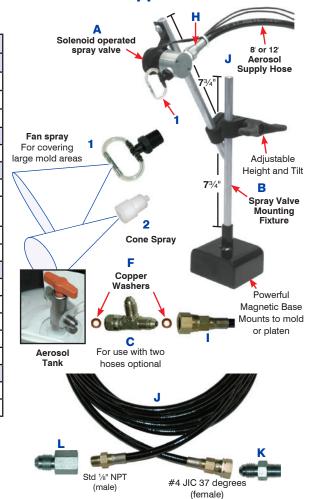
3 Mountable hook-up to Solenoid Operated Spray Valve for automatic spraying (using IMS Spray Controller)

Item#	Description	Unit Price	
	Spray Valve and Nozzle		
A 112160	Solenoid Operated Spray Valve	\$61.84	
1 114706	Swivel Loop, Fan Spray Nozzle	19.50	
2 114707	Cone Spray Nozzle	17.60	
	Spray Assembly Mounting Fixture		
B 114343	Adjustable Spray Valve Mounting Fixture	\$173.46	
	Aerosol Tank End Fittings & Hose		
C 100625	Optional "T" Connector for Attaching two hoses	\$4.85	
D 100612	Spray Gun Adapter, Quick Connect, Adapts 1/4" Female Flare To 1/8" NPT Male	Inquire	
E 163302	Quick Disconnect Coupler	16.82	
F 100605	Copper Flare Washers, use with C & D (Pack of 6)	3.60	
	Hose to Spray Gun End		
G 163307	Quick Disconnect Nipple for use with E	\$5.84)	
H 100646	1/8" Male NPT Thd Hose Crimp Fitting	Inquire	
I 100636	#4 Female JIC 37° Thd Hose Crimp Fitting	Inquire	
J 100590	8' Aerosol Supply Hose Assembly with Fittings	26.15	
100587	12' Aerosol Supply Hose Assembly with Fittings	32.25	
	Coupler & Hose Extension Adaptors		
K 142859	JIC Male Adaptor 1/8" NPT x 7/16" JIC 37 Deg	\$1.45	
L 142860	JIC Female Adaptor 1/8" NPT x 7/16" JIC 37 Deg	1.85	

Note

Adaptors (K) and (L) can be used to connect multiple hoses for larger lengths. Use with copper washer (F).

Two Spray Nozzles Suit Most Applications





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

e-maii



Spray/Robot Controller for Aerosol Tanks

Allows Faster, More Consistent and Safer Mold Release Application

Based on Fully Programmable PLC Technology Automate for Smooth, Consistent Coverage

Cycle Count

24VDC output to dry contact on the press for "mold open"

Spray Start

24 VDC output to spray solenoid

Sweep Start

24 VDC output to robot

Displayed Parameters		
Cycle count	(0 to 9999)*	
Cycles per robot	(0 to 9999)*	
Robot per spray	(0 to 9999)*	
Spray delay	(0 to 999.9 Seconds)*	
Spray time	(0 to 999.9 Seconds)*	
Robot delay	(0 to 999.9 Seconds)*	

(* denotes user-selectable values)



Unit Price

Item No. 173243

Complete with three, 10 foot pigtails with female Jones Plugs.

\$2,427.52

Electrical Requirements: 115 VAC

Dimensions: 8"H x 10"W x 6"D

Weight: (Boxed) 181/2 lbs.

(Unboxed) 16 lbs.

Available Only from IMS!

IMS can also customize this controller to more specific applications — Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

≝Vision 130⁵

1

F1

F2

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

sales@imscompany.com

+/-



IMS ECONO-CUBE™ Mold Release Spray-System

Helps You Beat the Ever-Increasing Costs and Regulations of Aerosols

Environmentally safer

Compressed-air operated no questionable chemicals

Effective

High-tech spray gun provides smooth, consistent mold release application

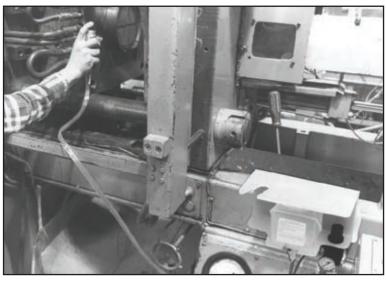
Convenient

Entire assembly mounts directly on or near press

Economical

Unique ECONO-CUBES™eliminate can and propellant costs

Go Bulk to Save Money



Mounted within operator reach, the ECONO-CUBE™ Spray System is easy to use and gives excellent mold-release coverage.

Lets You Apply Mold Release Without CFC's or Cans!



The IMS ECONO-CUBE™ Spray System uses only inexpensive bulk mold release and compressed air. That saves you the expense and inconvenience of aerosol cans, solvents and propellants.

You get the most even and finely atomized bulk spray available — almost as good as aerosol cans.

The ECONO-CUBE™ spray gun mounts conveniently at the press, on a rugged, easy to install, polypropylene holder. Connect the air, install the ECONO-CUBE™ and you're ready to spray. Total changeover time is about one minute.

And using the ECONO-CUBE™ is even easier. Slide the spray gun off the holder, spray the mold, and slide the spray gun back onto the holder.

The ECONO-CUBE™ gives you maximum mold coverage with minimum use of material.

EPA Regulations and the ECONO-CUBE™

Continuing changes in aerosol regulations have made the ECONO-CUBE™ the best choice for applications where non-flammability and worker exposure are critical issues.

The ECONO-CUBE™ eliminates the headaches of EPA regulations and questionable chemicals altogether because it uses only bulk mold release and compressed air. Highly economical, effective and convenient, the ECONO-CUBE™ is a smart choice.

Each ECONO-CUBE™ contains as much mold release as 88, 12 oz. aerosol cans!

Sprays only air & mold release - No CFC's

ECONO-CUBE™ is a Trademark of IMS Company



Excellent for Die Casters or Investment Casting

Compact combination cube base/gun holder

Mounts anywhere on or near press (welded polypropylene construction)



Air Pressure: 30-100 psi

Gun Body: Anodized, 6061 Aluminum **Spray Nozzle:** Nickel-Plated Brass

Cartridge Valve: Brass with Buna-N Seals Hose: Coiled, Clear PVC (8' uncoiled) Holder: Welded Polypropylene

Standard Spray Gun Assembly	
Item #111971	
Includes: Aluminum Spray Gun with Fan-Spray Nozzle, 8' Air/Fluid Supply Hose, Base/Holder, Filter/Regulator and Fluid Connector	\$455.00 ea.
Low Volume Spray Gun Assembly Item #116364	
Same as above but with #112931 Low Volume Round-Spray Nozzle	\$455.00 ea.
High Volume Spray Gun Assembly Item #118906	
Same as above but with #112947 High Volume Fan-Spray Nozzle	\$455.00 ea.
Optional Spray Nozzles Low Volume Spray Nozzle Kit Item #112931	
Includes: #112878 Fluid Cap and #112877 Air Cap	\$65.00
High Volume Spray Nozzle Kit ltem #112947	
Includes: #112876 Fluid Cap and #112872 Air Cap	\$75.00

Unique Aluminum Spray Gun



Note: Pure mold release spray is hard to see, unlike an aerosol where you can see the carrier. Test-spray on a smooth surface to determine coverage.

Save Money, Warehouse Space, Shipping Costs!

Specially Priced Kits Include:

- A Cube of Specified Mold Release (Silicone or Paintable).
- Aluminum Spray Gun with Eight Foot Air/Fluid Supply Hose, Base/Holder, Filter/Regulator and Fluid Connector.
- · Fan-Spray Nozzle.

111983	Silicone Kit	\$480.95 ea.			
116369	Silicone Mist Kit	487.50 ea.			
111969	Paintable Kit	480.30 ea.			
Refills (1 quart/956 ml)					
111967	Silicone	\$47.54			
115348	Silicone Mist	49.10			
113133	Paintable	43.83			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-maii



Automatic Bulk Spray System

Specially Designed for Use With Less Expensive Bulk Mold Releases

Automatic Programmed Spraying

Helps Maintain Consistent Cycle Times

The IMS Bulk Mold Release Spray System conveniently automates mold release applications using bulk materials. It quickly pays for itself in reduced operating and material costs.

Compressed air pressurizes the material tank and feeds the bulk mold release to the spray gun. Another compressed air line to the spray gun atomizes the fluid. PLC-controlled solenoids precisely control the flow of fluid and air to produce a finely-divided spray when it is needed and for as long as it's needed.

Settings include Sweep Delay, Spray Delay and Spray Time. A built-in delay shuts off the fluid slightly before air-shutoff to avoid drooling.

Two spray guns can be used with each controller.

Three spray head options are available to achieve different spray patterns. The cart sits on four lockable swivel casters for easy mobility and easy placement close to the press.

Environmentally-Friendly and Cost Effective

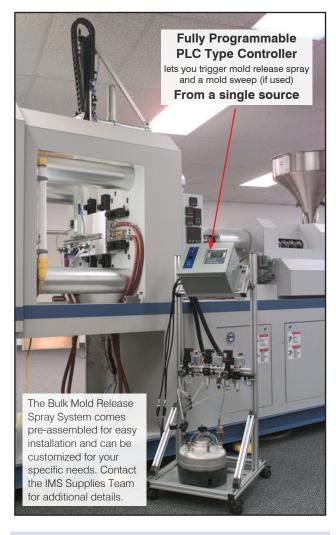
Selecting a bulk product presents financial, safety, environmental, training and regulatory advantages.

- Helps eliminate (Volatile Organic Compounds) VOCs
- Helps meet environmental regulation requirements

Spray Cart and Controller Item #121983

Bulk Mold Release Spray System with bulk spray cart, single-press PLC-Type controller and instructions (spray gun not included). One required for every press that will have automatic spray control.

\$5,044.00



Save Money – Uses Bulk Releases & Compressed Air

Specifications

Compressed Air Requirements: 80-100 psi

Electrical Requirements (controller only): 2A at 115 VAC/60/1

Output: 2 A at 24 VDC

Dimensions: (controller only) 8"h x 10"w x 6"d

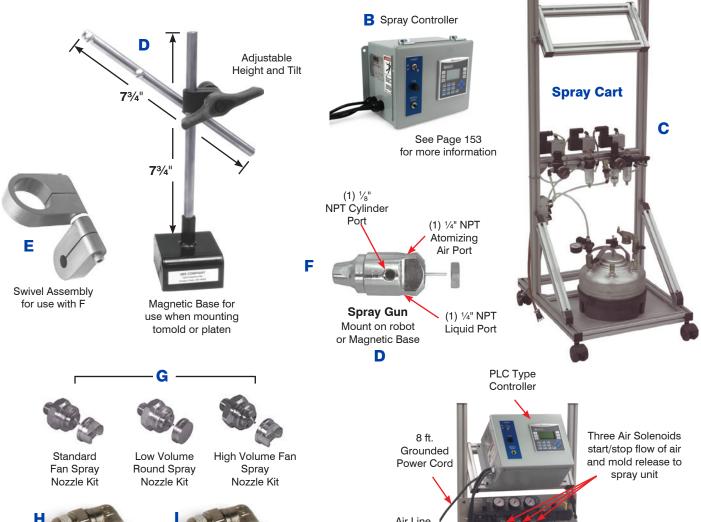
(entire assembly) 50"h x 191/2"w x 211/2"d

Weight: Controller: 16 lbs., 18½ lbs. boxed Cart: 48 lbs., 59 lbs. boxed



NS Automatic Bulk Spray System

Parts and Components





(1 per gun)
1/8" NPT



Elbow Fitting #147306 (2 per gun) 1⁄4" NPT



1/4" NPT Use when plumbing two or more guns together.



Order Form on Next Page



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

1/4" NPT

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

easy placement close to the press

Spray System Worksheet

Select either entire assembly or select individual components that fit your application

	Select either entire assembly of select individual c	omponents that it	your application		
A	Spray Cart and Controller Bulk Mold Release Spray System with bulk spray of PLC-Type controller and instructions (spray gun no One required for every press that will have automated)	ot included)	\$5,044.00	x	=
В	Spray Controller PLC-based controller which mounts onto the spray One required for every press that will have automate		\$2,427.52	x	=
С	Spray Cart Aluminum frame assembly complete with casters, One required for every press that will have automate			х	=
	Use to position the spray units				
D	Magnetic Base One base (and associated swivel assembly) can s base can be mounted close to the mold cavity to r		gun; ensure that this	х	=
E	Swivel Assembly	Item #122233	Inquire	х	=
	One of these is required for every magnetic base.				
	Choose one or more depending on area to be	sprayed			
F	Spray Gun Only (automatic) The size and shape of your mold cavity may require spray coverage; nozzle kit must be ordered in add			x	=
	Choose one per spray gun				
Г	Standard Fan Spray Nozzle Kit	Item #120480	\$61.45	х	=
G	Low Volume Round Spray Nozzle Kit	Item #112931	\$65.00	х	=
L	High Volume Fan Spray Nozzle Kit	Item #112947	\$75.00	х	=
	These are the most common nozzles that have be	en used in this app	olication; others are a	available as a	special order.
	Purchase as needed				
not	1/4" O.D. Polyurethane Tubing	Item #118052	\$0.34/ft.	х	=
	This tubing is recommended for connection betwee spray guns; its blue color increases visibility, which				
Н	Elbow Fitting (1 per gun)	Item #147305	•	х	=
	Male elbow, brass, tube to male pipe; joins $1/4$ " O.D.				
	Elbow Fitting (2 per gun) Male elbow, brass, tube to male pipe; joins 1/4" O.D.	Item #147306 D. tube to 1/4" N.P.T.		х	=
	Use when plumbing two guns				
	For split lines at cart:				
J	Tee Union Tee union, brass, tube to tube; joins $1/4$ " O.D. tube	Item #147296 to 1/4" O.D. tube.	\$5.42	х	=
	For split lines at guns:				
K	Tee Union $1\!\!/_8$ " NPT (1 per gun) Tee union, brass, tube to tube; joins $1\!\!/_4$ " O.D. tube	Item #147319 to 1/4" O.D. tube.	\$4.87	х	=
L	Tee Union 1/4" NPT (2 per gun) Tee union, brass, tube to tube; joins 1/4" O.D. tube	Item #147320 to 1/4" O.D. tube.	\$4.68	х	=
	Bulk Mold Release: Products having a viscosity of	of 200 centiStokes	or lower are recomm	ended.	
	Total				



fax order toll-free (USA & Canada) phone order toll-free (Mexico)

tech support toll-free (USA & Canada)

e-mail



Since

Coil & Strip Heaters 190 - 193

Wire & Accessories

194 – 197

Heaters & Temperature Control





Cartridge Heaters 206 - 212

> **Thermocouples** 214 - 228

Thermometers 229 - 233

Temperature Alarms & Monitors 234 - 240

Temperature & Voltage Controllers 242 - 262

Most Items In Stock For Same Day Shipment



Standard Mica Bands

Hot Sleeves*

Good Quality Bands at a Great Price

- · Mica insulated
- 12" fiberglass braided leads
- Strap lockup (in most cases)
- · Large variety available

See Pages 161-165



V Bands*

Better Quality at a Moderate Price

- Mica Insulated
- 12" fiberglass braided leads
- Heavier duty strap lockup
- · Large variety available

See Pages 166-167



Metric Mica Bands

Metric Bands*

Made to Fit Exactly

No shimming, forming or stretching necessary

- Mica insulated
- 12" fiberglass braided leads
- Strap lockup
- · Made to order

Ideal for metric sizes that do not closely correspond with an English measurement

See Page 184



Special Feature Bands

Key Lock Bands*

Designed for use in Tight Spaces

Low Profile, reverse-wedge design tightly clamps the band while maintaining a small outer diameter

- Mica Insulated
- 36" flex leads
- · Large variety available

See Page 169



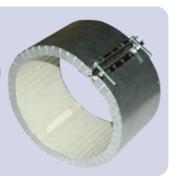
Hot Sleeves Big Bands*

Larger or Barrel Bands

Over 40 Sizes - 4" to 33" ID

- Mica or ceramic insulated
- 12" treated glass braid leads or post terminals
- Stainless steel clamp or flange lockup
- Large variety available

See Pages 174-181



S Bands - IMS Exclusive*

Patented Design Resists Melted Plastic

Less chance of electrical shorts

- Mica Insulated
- 10" fiberglass braided leads
- · Heavier duty strap lockup
- · Large variety available

See Page 168



Adjustable I.D. Mica Barrel-Heater Bands

Stock Alternative to Costly Bands from the Manufacturer

- · Mica insulated, strap lockup
- Diameter adjustable within 1/2" or 3/4" range (depending on size)
- · Lower cost than custom bands
- Two-pieced design allows installation without removal of all bands on the barrel
- · Large variety available

See Page 182



Hot Sleeves Xtreme*

Higher Wattage Heater Bands

Generates more heat than other mica bands of the same size

- Mica Insulated
- 36" stainless steel braided leads
- Strap lock or key lock
- · Large variety available

Recommended where experience shows other mica bands cannot keep up with the heat load

See Pages 170-173



NOTE: High watt density bands require appropriate temperature control techniques to prevent them from overheating

Adjustable I.D. Ceramic Heater Bands

Stock Alternative to Costly Bands from the Manufacturer

- Diameter adjustable within ½" or ¾" range (depending on size of band)
- Lower cost than custom bands
- Highly flexible design allows installation without removal of all the other bands on the barrel
- Large variety available

See Page 183



^{*}Custom bands made to order

Hot Sleeves Heater Bands

Good Bands at a Great Price



Mica Insulation

31-46 Watts per square inch (average)

Nickel-Chromium resistance wire element **Rust Resistant Steel Sheath**

Stainless Steel Strap Type Lock-Up

Leads exit at end of band Notched sleeve allows installation

flush with nozzle hex



TGGT Treated Glass Braid Leads

I.D.	Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price	
3/4"	1"	120	80	12"	Stron	134660	\$17.39	
/4		240	60		Strap	134599	22.90	
	1"	120	100			134600	22.90	
		240	100			134601	17.34	
7/11	11/4"	120	90	12"	Strap	134661	22.90	
7/8"		240	90			134662	22.90	
11/2"	120	100			134663	22.90		
	240	100			134664	22.10		
		120	125			134602	15.32	
1"	240	125	12"	Strap	134603	14.52		
		460	150			137758	34.11	
	1½"	120	100	100	12"	Strap	134604	15.73
	1 /2	240		. —	Oliap	134605	15.73	
		120	200	12"	Strap	134606	15.73	
	2"	240				134607	15.32	
1"		480	250	36"		137462	Inquire	
		240	300	12"		134665	14.52	
	3"	120	300	12"	Strap	134608	15.73	
	J	240		12	Oliap	134609	15.73	
	4"	120	400	12"	Strap	134666	18.95	
		240	400	12	Oliap	134667	18.15	
	5"	120	475	12"	Strap	134668	25.57	
		240	475	12	Strap	134610	24.76	
1 ³ / ₁₆ "	13/8"	120	150	12" Strap	Strap	134669	22.90	
1/16		240	150			134611	17.39	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

I.D.	leater Bands co Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
		120				134612	\$22.90
	1"	240	125	12"	Strap	134613	16.13
		120/240				134670	33.55
	11/2"	120	200	12"	Strap	134671	17.34
	- , -	240				134672	16.53
11/4"	2"	120	250	12"	Strap	134673	22.90
		240	150			134674	17.34
	011	240	130	12"	Strap	134675	25.57
	3"	120	400		'	134676	25.57
		240				134677	25.57
	1"	120	200	12"	Strap	134614	22.90
13/8"	13/"	240				134615	16.53
1 /8	11/2"	120	200	12" Strap	Strap	134678	22.90
		240				134679	17.34
	2"	120	300	12"	Strap	134680	22.90
		240				134681	16.53
	3/4"	120	150	12"	Strap	134682	22.90
	,-	240	.00			134616	17.39
		120		12"	Strap	134617	16.53
		240	150			134618	15.73
	1"	240] !	36"	Flange	137676	Inquire
		120/240	400	12"	Strap	134683	33.55
		120		'2	Chap	134684	17.3
		120		12"		138653	16.53
	1½"	230	275	24"	Strap	139923	31.94
	1 72	120		400	- ·	134619	14.52
		240	300	12"		134620	14.52
		120		4.011	04	134685	23.47
11/2"	13⁄4"	240	285	12"	Strap	134686	17.34
1 /2		120				134621	16.53
		240	300			134622	14.52
	2"	120/240	000	12"	Strap	134687	23.79
		120/240	375	-		134688	22.90
		230	400	-			1
			400			135062	Inquire
	21/2"	120	400	12"	Strap	134623	18.15
		240				134624	16.13
		120	450			134625	16.13
	3"	240	700	12"	Strap	134626	16.94
		120/240				134689	24.60
	31/2"	120	525	12"	Strap	134627	18.1
	372	240			·	134628	17.34

HOT Sleeves™ is a trademark of IMS Company



I.D.	Heater Bands co Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
	4"	120	550	12"	Strap	134629	\$17.34
	4	240	550		June	134630	16.53
		240	500			144300	20.65
	5"	120	700	12"	Strap	134631	18.95
11/2"		240	700			134632	18.95
1 72		240	500			144301	28.23
	6"	120	050	12"	Strap	134690	18.95
	8"	240	850			134691	19.76
		120	1250	36"	Flange	137559	Inquire
	8"	240	1500	12"	Strap	138179	Inquire
	1"	120	475	4.011	Chuan	134633	22.90
	, I	240	175	12"	Strap	134634	16.53
	41/11	120	000	4.011	Chuan	134635	17.34
	1½"	240	300	12"	Strap	134636	16.53
	Oll	120	050	4.011	Chuan	134692	22.90
	2"	240	350	12"	Strap	134637	16.53
	2½" 1¾" 3"	120	050	4.011	04	134693	25.57
		240	350	12"	Strap	134694	19.00
13/4"		120	500	101	04	134638	25.57
.,.		240	500	12"	Strap	134639	18.15
	01/11	120	500	10"	04	134695	25.57
	31/2"	240	500	12"	Strap	134696	25.57
	411	120	700	12"	Chuan	134697	25.57
	4"	240			Strap	134698	25.57
		120	750	12"	Strap	134699	28.23
	5"	120	000	4.011	Chuan	134700	28.23
		240	900	12"	Strap	134701	20.57
	6"	120	1000	1011	Ctron	134702	28.23
	0	240	1000	12"	Strap	134703	28.23
17/8"	1"	120	200	101	Ctron	134704	22.90
178	'	240	300	12"	Strap -	134705	22.90
	1"	120	200	1011	Ctron	134640	16.53
		240	200	12"	Strap	134641	17.34
		120/240	300			134706	33.55
	11/2"	120	250	12"	Strap	134642	22.90
		240	350			134643	16.53
Oll	2"	120	400	12"	Ctron	134644	22.90
2"	2	240	400	12	Strap	134645	16.53
	21/2"	120	500	12"	Stron	134707	25.57
	2.72	240	500	12	Strap -	134708	18.95
		120	500			134646	25.57
	3"	240	500	12"	Strap	134647	18.15
		120	600			134709	25.57
		240				134710	25.57

HOT Sleeves™ is a trademark of IMS Company



I.D.	Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
		230	750		_	134711	\$25.57
	4"	120	800	12"	Strap	134712	25.57
2"		240				134713	19.00
_	5"	120	900	12"	Strap	134714	28.23
	5	240	900	12	Silap	134715	28.23
Ī	6"	120	1200	12"	Strap	134716	28.23
	O	240	1200	12	Strap	134717	20.57
	1"	120	225	12"	Strap	134718	25.57
	'	240		12	Strap	134648	25.57
Ì	1½"	120	300	12"	Strap	134719	25.57
21/8"	1 72	240	300	12	Silap	134720	25.57
- /8	2"	240	300	12"	Stron	134721	25.57
	2	240	400	12	Strap	134722	25.57
Ì	3"	120	600	12"	Ctron	134723	25.57
	S	240	_ 000	12	Strap	134724	25.57
	1"	120	225	12"	Ctron	134649	25.57
	'	240		12	Strap	134650	25.57
	11/4"	240	327	12"	Strap	134725	25.57
21/4"	1½"	240	350	12"	Strap	134727	25.57
	2"	120	450	10"	Chunn	134728	19.00
	2"	240	450	12"	Strap	134729	18.95
	01/1	120	600	1011	Chuan	134730	25.57
	21/2"	240	600	12"	Strap	134731	25.57
Ì	3"	120	700	12"	Ctron	134732	28.23
	3	240	700	12	Strap	134733	20.57
Ì		120	900	12"	Ctron	140474	Inquire
	4"	240	900	12	Strap	143073	37.05
			950	12"	Strap	134734	28.23
	1"	120	250	12"	Stron	134735	25.57
23/8"	ı	240		12	Strap	134651	18.95
_,0	1½"	120	400	12"	Ctron	134736	25.57
	1 72	240	400	12	Strap	134737	18.15
	1"	120	000	1011	Churan	134652	25.57
	I.	240	300	12"	Strap	134653	17.34
	41/11	120	350	36"	Flange	140176	Inquire
	11/4"	480	380	20'	Strap	137024	Inquire
		120	050	12"	Strap	134654	18.95
	1½"	240	350			134655	17.34
21/2"		240	300	Posts		144864	19.68
-	0"	120			04	134739	37.0
	2"	240	500	12"	Strap	134740	18.15
	21/2"	240	350	12"	Strap	135760	Inquire
		120				134741	19.00
	3"	240 700	12"	Strap	134742	18.15	

HOT Sleeves™ is a trademark of IMS Company



I.D.	Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
	4"	240	850	12"	Strap	134743	\$20.57
21/2"	5"	240	1150	12"	Strap	134744	28.23
	6"	240	1150	12"	Strap	139904	Inquire
		120	400			138658	23.95
23/4" 3"	1½"	240	400	12"	Strap	135081	17.34
	3"	240	750	12"	Strap	134745	20.57
2 ⁷ /16"	1%"	230	250	12"	Strap	134738	25.57
	1"	120	300	12"	Strap	134656	25.57
	'	240	12	12	Silap	134657	18.15
	11/2"	120	500	12"	Strap	134658	25.57
	1 72	240	300	12	Silap	134659	17.34
3"	2"	120	600	12"	Strap	134746	18.95
2½"	2	240	600	12	Sirap	134747	18.95
	21/2"	460	500	48" SS	Strap	140223	80.25
	2"	120	900	12"	Strap	134748	25.57
	3	240	900	12	Silap	134749	18.15
	3½"	240	665	12"	Strap	134750	28.23
01/"	1"	240	400	12"	Strap	134751	25.57
31/8"	11/2"	240	500	_ 12	Silap	134752	25.57
	11/2"	240	500	12"	Strap	134753	18.15
	1 72	240	600	Euro Plug	Flange	129751	Inquire
31/2"		120	500	Post		139939	42.74
	2"	240	600	12"	Strap	134754	18.15
		240	650	_ 12		134755	18.95
	11/2"	240	500	12"	Strap	134758	25.57
33/4"	1 72	240	700	_ 12	Strap	134759	18.15
	2"	250	300	12"	Strap	134760	25.57
	3"	120	600	12"	Strap	134761	25.57
3 ⁵ / ₈ "	11/2"	240	625	12"	Strap	134756	25.57
3 %	1 72	120/240	650	_ 12	Silap	134757	38.87
37/8"	3"	460	1500	12"	Strap	134762	25.57
4"	21/2"	240	1250	36"	Strap	137009	70.97
41/2"	1½"	240	700	Euro Plug	Flange	129750	Inquire
81/2"	11/4"	240	600	12"	Strap	140290	Inquire



V-Type Mica-Insulated Heater Bands

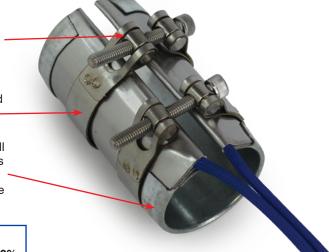
Heavier Duty For Improved Durability

Mica insulation nichrome heating element

31-46 watts per square inch provides effective heating up to 800°F Heavy Duty Strap Type Lock-Up with socket head screw

Aluminized impregnated steel shell resists rust and extends life

24 or 26 gauge shell thickness minimizes hotspot formation, extending heater life



TGGT 12" electrical leads _ with fiberglass partial sleeve

Heater Band Quantity Discounts*

Order 13-24 DEDUCT 5% Order 25 or more DEDUCT 10%

*Same item only

I.D.	Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
7/8"	1"	240	100	12"	Strap	101732	\$40.04
76		120			1	101714	30.84
	1"		125	12"	Strap	101694	24.70
		240		36"		164040	22.18
	13/8"	240	150	12"	Strap	101657	40.04
1"	44411	120	1=0	4.0"		101680	40.04
	1½"	240	150	12"	Strap	101670	30.84
	011	120	200	4.0"	2:	101660	31.76
2"	240	200	12"	Strap	101650	28.70	
	3"	120	275	275 12"	01	101641	46.34
	3"	240			Strap	101633	46.34
41/11	1"	120	125	125 12"	Ctron	101647	Inquire
11/4"	'	240		125	Strap	101638	40.04
13/8"	1"	240	200	12"	Strap	101684	27.77
	3/4"	120	150 12"	12"	Strap	101674	40.04
	9/4	240	150	12"	Sirap	101664	30.84
	1"	240	150	12"	Strap	101645	30.84
	1½"	120	250	12"	Strap	101636	30.84
	1 72	240	250	12	Sirap	101628	24.70
11/2"	2"	120	300	12"	Strap	101682	40.97
	۷	240	300	12	σιιαρ	101672	25.63
	2½"	120	350	12"	Strap	101662	41.89
	£/2	240	000	12	σιαρ	101652	29.61
	3"	120	400	12"	Strap	101643	34.00
	J	240	1 700	12	σιαρ	101635	34.06

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

V-Type Mica-Insulated Heater Bands

V-Type Mica	-Insulated Heate	r Bands	•		•		
I.D.	Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
	31/2"	120	525	12"	Strap	101626	\$48.02
	- , -	240			2 2	101679	32.68
11/2"	4"	120	550	12"	Strap	101669	49.57
		240			J J.	101659	37.29
	5"	120	700	12"	Strap	101649	55.71
	, ,	240			o ii ap	101640	43.00
	1"	240	175	12"	Strap	101623	40.97
	1½"	120	250	12"	Strap	101676	37.00
13⁄4"	1 /2	240	200	12	Oliup	101666	40.97
2"	240	350	12"	Strap	101646	42.20	
	1"	240	200	12"	Strap	101673	40.7
	1½"	120	300	12"	Strap	101663	40.97
2"	1 /2	240		12	σιαρ	101653	40.97
	2"	240	400	12"	Strap	101627	42.20
	3" 120 500	12"	Strap	101681	35.00		
	J	240	300	12	σιαρ	101671	48.34
21/8"	1"	240	225	12"	Strap	101651	41.89
23/8"	1"	240	250	12"	Strap	101678	41.89
	1"	120	300	12"	Strap	101668	41.89
21/2"	'	240		12	σιαρ	101658	32.68
L/2	11/2"	120	350	12"	Strap	101648	32.68
	1 /2	240	330	12	Guap	101639	32.68
3"	1"	120	300	12"	Strap	101631	42.82
3	11/2"	240	450	. 12	σιιαρ	101665	33.61
21/11	1"	240	350	12"	Strap	101655	40.00
31/8"	11/2"	240	450	12"	Strap	102376	42.00

S-Type Mica-Insulated Heater Bands

Patented shell-folding design resists melted plastic

Help prevent shorts — Less downtime / Save money

- 10" TGGT leads
- Mica insulation and nichrome heating element with 31-46 watts per square inch provide effective heating up to 800° F
- Stainless steel straps

Aluminized impregnated steel shell resists rust and extends life

24 or 26 gauge shell thickness minimizes hotspot formation, extending heater life

Heater Band Quantity Discounts*
Order 13-24 deduct 5% Order 25 or more deduct 10%



I.D.	Width	Volts	Watts	Leads	Lock-Up-Style	Item #	Unit Price
	1"	120	125	10"	Strap	117075	\$29.47
	'	240	125	10	Strap	117103	32.22
1"	2"	120	200	10"	Strap	117092	36.85
1		240	200	10	Strap	117078	36.85
	3"	120	300	10"	Strap	117108	39.50
3		240	300	10	Strap	117095	35.75
1"	120	150	10"	Strap	117082	35.54	
	'	240	150	10	Strap	117071	29.00
		480	200	10"	Strap	117076	43.27
	11/2"	120/240	275	10	Strap	117105	Inquire
	1 /2	120	300	10"	Strap	117093	29.47
		240			Strap	117079	24.70
	2"	120	300	300 10"	Strap	117109	33.00
11/2"		240			Oliap	117096	30.54
.,_	21/2"	120	400	10"	Strap	117084	38.18
	272	240	400	10	Strap	117072	34.52
	3"	115	450	10"	Strap	117100	35.75
		240	450	10	Strap	117089	27.47
	4"	120	550	10"	Strap	117077	44.04
	1	240	330	10	Strap	117107	39.90
	5"	120	700	10"	Strap	117094	52.87
] 3	240	700	10	Strap	117080	43.27
13/4"	11/2"	240	250	10"	Strap	117097	36.85
	1"	120	200	10"	Strap	117086	36.85
2"	<u> </u>	240	200		σιαρ	117074	36.85
	11/2"	120	300	10"	Strap	117101	33.00

^{*}Same item only



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

e-mail

Key Lock Bands

Low profile design

Reverse-wedge design tightly clamps the band – while maintaining a small outer diameter

- 36" TGGT leads
- · Mica insulation and nichrome element
- Rust-resistant sheath
- 25-40W per square inch

Heater Band Quantity Discounts*

Order 13-24 deduct 5% Order 25 or more deduct 10%

34" I.D. Band fits into a $1\frac{1}{4}$ " Die Hole 1" I.D. Band fits into a $1\frac{1}{2}$ " Die Hole $1\frac{1}{4}$ " I.D. Band fits into a $1\frac{3}{4}$ " Die Hole $1\frac{1}{2}$ " I.D. Band fits into a $2\frac{1}{6}$ " Die Hole

I.D.	Width	Volts	Watts	Leads	Item #	Unit Price
2/11	1"	120	75	36"	105241	\$62.58
3/4"	'	240	75	30	105239	62.58
	1"	120	125	36"	101824	46.74
	'	240	125	30	101801	44.81
	11/2"	120	200	36"	101779	62.58
	1 72	240		30	101755	48.00
411	2"	120	250	36"	101733	46.71
1"	2	240	250	30	101715	44.78
	21/2"	120	275	36"	101695	50.81
	272	240	2/5	30	101817	62.53
	3"	120	300	36"	101794	50.92
	3"	240	300	30	101747	50.92
	1"	240	150	36"	108883	53.41
41/11	11/2"	240	200	36"	108877	59.43
11/4"	2"	240	250	36"	108871	50.69
	3"	240	350	36"	108884	50.90
	1"	120	150	36"	108882	62.53
	'	240	150	30	108879	62.53
	11/2"	120	275	36"	101761	59.43
	1 72	240	2/5	36	101738	47.85
	2"	120	200	36"	101701	62.53
	2	240	300	30	101823	62.53
	3"	120	450	36"	101799	62.64
	3	240	450	30	101777	62.64
44/11	3½"	120	525	36"	110049	62.92
11/2"	3 72	240	525	30	110046	62.92
	4"	120	E7E	261	101713	Inquire
	4"	240	575	36"	101693	63.07
	41/2"	240	675	36"	110053	65.86
	5"	120	700	36"	101771	70.53
	5	240	700	30	101746	68.21
	51/2"	240	800	36"	110042	68.44
	71/2"	240	1100	36"	110055	60.11

^{*}Same item only



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) pt 1.888.288.6900 001

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

Hot Sleeves Xtreme Heater Bands

For use where other bands are not keeping up with the heat load

70 Watts 36" Stainless Steel Braided per square inch Leads with strain relief Leads exit 180° from gap **Rust resistant** Galvannealed Shell, 430 Stainless **Pressure Plate**

Your choice of Lock-Up:

- Style 1 Barrel Nut Lock-Up
- Style 2 Key-Lock Style

Ideal where minimum clearance is necessary



Appropriate temperature control technique required to prevent overheat and burnout — see page 173

I.D.	Width	Volts	Watts	Leads	Lock-Up Style	Item #	Unit Price
		120			Barrel Nut	141797	\$84.09
	1"	240	220	36" SS	Strap	150975	56.75
	·	120			Key Lock	141911	86.01
		240			Key Lock	141912	58.66
		120			Barrel Nut	141799	135.40
	1½"	240	330	36" SS	Barrel Nut	141800	56.50
	1 /2	120	000	00 00	Key Lock	141913	86.07
1"		240			Key Lock	141914	86.07
	2"	120			Barrel Nut	141801	84.21
	2"	240	440	36" SS	Barrel Nut	141802	56.60
-	2	120	440	36" 55	Key Lock	141915	137.40
		240			Key Lock	141916	86.13
	3"	120	660	36" SS	Barrel Nut	141803	84.57
		240			Barrel Nut	141804	84.57
		120			Key Lock	141917	137.93
		240			Key Lock	141918	86.49
		120			Barrel Nut	141805	136.01
	1"	040	280	36" SS	Barrel Nut	141806	84.75
		240			Key Lock	141920	137.93
		120			Barrel Nut	141807	135.15
11/4"	1½"	240	420	36" SS	Barrel Nut	141808	84.17
	1 /2	120	720	00 00	Key Lock	141921	137.07
		240			Key Lock	141928	137.07
	5"	240	1375	36" SS	Barrel Nut	141810	143.77
		240	1075	00 00	Key Lock	141930	145.69

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

I.D.	Width	Volts	Watts	Leads	Lock-Up Style	Item #	Unit Price
		120			Barrel Nut	141811	\$84.20
	4.11	240	-	0011 00	Barrel Nut	141812	56.23
	1"	120	330	36" SS	Key Lock	141931	137.10
		240			Key Lock	141932	58.15
		120			Barrel Nut	141813	56.25
	41/11	240	500	36" SS	Barrel Nut	141814	56.25
	11/2"	120	500	30 33	Key Lock	141933	86.12
		240			Key Lock	141934	86.12
		120			Barrel Nut	141815	84.42
	2"	240	675	36" SS	Barrel Nut	141816	56.28
	_	120	_ 0/3	30 33	Key Lock	141935	137.59
		240	1		Key Lock	141936	86.34
		120			Barrel Nut	141817	137.20
	21/2"	240	825	36" SS	Barrel Nut	141818	86.88
		240			Key Lock	141938	139.12
		120			Barrel Nut	141819	141.85
	3"	040	1000	36" SS	Barrel Nut	141820	88.76
		240			Key Lock	141940	90.68
	04/11	120	800	2011 20	Barrel Nut	141821	51.73
	31/2"	240	1200	36" SS	Barrel Nut	141822	91.73
		120		0011.00	Barrel Nut	141823	143.69
	4"	240	1300	36" SS	Key Lock	141944	145.36
		120 240 1500		Barrel Nut	141825	144.46	
11/2"	41/2"		1500	36" SS	Barrel Nut	141826	93.41
					Key Lock	141946	94.39
		120		36" SS	Barrel Nut	141827	144.99
	5"	240	1700		Barrel Nut	141828	93.76
		240			Key Lock	141948	146.38
	51/2"	120	1250	36" SS	Key Lock	141949	71.03
		120	1350		Barrel Nut	141831	125.31
	6"	240	2000	36" SS	Barrel Nut	141832	103.57
		120	1350	30 33	Key Lock	141951	67.83
		240	2000	1	Key Lock	141952	149.32
	61/ !!	100	1450		Barrel Nut	141833	67.84
	61/2"	120	1450	36" SS	Key Lock	141953	71.74
		120	1575	2011 20	Barrel Nut	141835	RFQ
	7"	120	1575	36" SS	Key Lock	141955	73.02
	71/2"	120	1700	36" SS	Barrel Nut	141837	71.67
	1 72	120	1700	30 33	Key Lock	141957	75.62
		120	1800		Barrel Nut	141839	RFQ
	8"	120	1800	36" SS	Key Lock	141959	77.00
		240	2700		Key Lock	141960	155.19
		120	1900		Barrel Nut	141841	75.54
	81/2"	240	2800	36" SS	Barrel Nut	141842	154.25
		120	1900		Key Lock	141961	79.49



I.D.	Width	Volts	Watts	Leads	Lock-Up Style	Item #	Unit Price
	1"	240	400	36" SS	Barrel Nut	141844	\$84.17
	1"	240	400	30" 55	Key Lock	141964	137.35
		120			Barrel Nut	141845	137.78
	41/11	240	600	0011.00	Barrel Nut	141846	58.78
	11/2"	120	- 600	36" SS	Key Lock	141965	88.44
40/11		240			Key Lock	141966	139.70
13/4"	21/2"	240	1000	36" SS	Barrel Nut	141848	89.30
	3"	120	1200	36" SS	Barrel Nut	141849	141.83
	31/2"	120	1400	36" SS	Barrel Nut	141851	143.51
		120	1300		Barrel Nut	141853	69.11
	5"	240	2000	36" SS	Barrel Nut	141854	67.58
	3	120	1300	30 33	Key Lock	141973	69.13
		240	2000	1	Key Lock	141974	147.44
		120			Barrel Nut	141855	84.34
	1"	240	450	36" SS	Barrel Nut	141856	56.52
		240			Key Lock	141976	137.51
		120			Barrel Nut	141857	137.12
	11/2"	240	700	36" SS	Barrel Nut	141858	57.84
		240			Key Lock	141978	139.04
2"	2"	240	750	36" SS	Barrel Nut	141714	55.73
	3"	240	1400	36" SS	Barrel Nut	141860	141.09
	4"	120	1200	36" SS	Barrel Nut	141861	63.90
	5"	120	1500	36" SS	Barrel Nut	141863	69.15
	5	120	1500	30 33	Key Lock	141983	71.79
	6"	120	1800		Barrel Nut	141865	73.09
		240	2300	36" SS	Barrel Nut	141866	97.52
		120	1800]	Key Lock	141985	77.00
	1½"	120	750		Barrel Nut	141867	84.05
21/4"	1 /2	240	750	36" SS	Barrel Nut	141868	47.78
	21/2"	240	1000	1	Barrel Nut	141923	82.26
		240			Barrel Nut	141870	59.42
	1"	120	550	36" SS	Key Lock	141989	140.72
		240]		Key Lock	141990	53.92
21/2"	11/4"	240	700	36" SS	Barrel Nut	141872	84.63
		120			Barrel Nut	141873	85.73
	11/2"	040	825	36" SS	Barrel Nut	141874	57.68
		240			Key Lock	141994	138.90
		120	900		Barrel Nut	141875	84.94
	11/2"	240	900	36" SS	Barrel Nut	141876	86.28
23/4"		240	700]	Key Lock	158351	139.60
	CII	100		00 00	Barrel Nut	141877	76.94
	5"	120	2000	36" SS	Key Lock	141997	80.84
3"	1½"	240	1000	36" SS	Barrel Nut	141880	137.48
<u> </u>	1 /2	240	1300	55 66	Barrel Nut		
21/11	11/2"	240	1200	0011 00		141882	87.61
31/2"	0"	0.10	1000	36" SS	Key Lock	142002	Inquire
	2"	240	1600		Barrel Nut	141884	87.73
3¾"	11/2"	240	1300	36" SS	Barrel Nut	141886	89.13
J /4	•				Key Lock	142006	142.75

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) $\boldsymbol{1.800.537.5375}$

fax order toll-free (USA & Canada)

phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Hot Sleeve Xtreme Heater Bands continued

		nds continued		1			
I.D.	Width	Volts	Watts	Leads	Lock-Up Style	Item #	Unit Price
	1"	120	900	36" SS	Barrel Nut	141887	\$142.11
	'	240	900	30 33	Barrel Nut	141888	91.47
		120			Barrel Nut	141889	143.80
	11/2"	240	1400	36" SS	Barrel Nut	141890	143.80
		120			Key Lock	142009	145.72
4"		240			Key Lock	142010	145.72
	2"	120	1200	36" SS	Barrel Nut	141891	62.64
		240	1800	30 33	Barrel Nut	141892	93.75
		120	1500		Barrel Nut	141893	69.15
	21/2"	240	2200	36" SS	Barrel Nut	141894	145.52
		120	1500		Key Lock	142013	71.79
	11/2"	240			Barrel Nut	141896	65.99
5"		120	1700	36" SS	Key Lock	142015	148.20
		240			Key Lock	142016	148.20
51/4"	11/2"	240	1700	36" SS	Barrel Nut	141898	93.97
E1/II	41/11	120	1250	0611.00	Barrel Nut	141899	63.89
51/2"	1½"	240	1800	36" SS	Barrel Nut	141900	145.91
0"	44/11	120	1350	0011.00	Barrel Nut	141901	66.52
6"	1½"	240	2000	36" SS	Barrel Nut	141902	94.34
01/1	41/11	100	4.475	0611.00	Barrel Nut	141903	67.84
61/2"	11/2"	120	1475	36" SS	Key Lock	142023	71.74
		120	1500		Barrel Nut	141905	66.50
63/4"	11/2"	240	2300	36" SS	Barrel Nut	141906	147.65
		120	1500		Key Lock	142025	73.11
711	41/11	100	1575	2611.00	Barrel Nut	141907	71.40
7"	1½"	120	1575	36" SS	Key Lock	142027	73.02
Oll	41/11	240	2700	2611.00	Barrel Nut	141909	149.98
8"	1½"	120	1800	36" SS	Key Lock	142029	77.00

IMS Hot Sleeves Xtreme Heater Bands - Extra Power Requires Extra Attention

IMS Hot Sleeves Xtreme Heater Bands require extra attention during installation and use. Xtreme Bands have twice the watt-density of a normal heater band. They are capable of getting extremely hot extremely fast. That is good news, but you need to make sure that the band doesn't get hot faster than the nozzle can absorb the heat. If that happens, the band can burn itself out very quickly.

To ensure a successful application:

- Tighten the heater band well when installing.
 Metal-to-metal contact is needed no air gaps.
 These bands cannot heat air.
- If there is an air gap, fill it with aluminum foil. (We do not recommend heat transfer compound on heater bands. It can melt off and cause electrical shorts.)
- If necessary, tap around the circumference of the band with a soft-face hammer to make the band as round as it can be.
- Always heat the band slowly to allow the nozzle to absorb the heat gradually. Use the controller's soft-start feature, or manually heat to 212°F (100°C) to drive off moisture, then 100° at a time until you reach temperature.
- Re-tighten the screws after a few heat-up and cool-down cycles and occasionally after that.

- Avoid mixing Xtreme Bands with standard bands within a control circuit. If you must use the same control circuit, put the Xtreme Band nearest the thermocouple. The reason for this is:
 - The controller will select its power output based on the nozzle or barrel temperature directly under the thermocouple.
 - The controller sends the same voltage to both bands, but does not get the same results from both bands.
 - If the thermocouple is closer to the standard band, it will sense
 the temperature in the colder part of the nozzle. The controller will
 send enough power to heat the nozzle under the colder band,
 but that same power will overheat the Xtreme Band.
 - If the thermocouple is closer to the Xtreme Band, the thermocouple will sense the temperature in the hotter part of the nozzle and will quit sending power before the nozzle has come up to temperature under the colder band. You might leave the nozzle a little too cold at times, but you won't burn out the Xtreme Band.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

e-mail



Hot Sleeves Big Bands

4" to 33" I.D.

Hundreds of Sizes and Types (Mica and Ceramic)



I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price
			625	12" Leads		Strap	134763	\$19.76
	1"	240	023	24" Leads	Mica	Flange	138663	47.10
			700	12" Leads		Strap	134764	28.23
		230	400	12" Leads	Mica	Strap	134765	28.23
		240	550	Post	Ceramic	Flange	139947	110.09
		240	625	12" Leads		Strap	134768	19.76
	4"	460	023	12 Leaus		Silap	134769	28.23
		480	650	Post 180° from Gap	Mica	Flange	138664	42.10
4"		230	725	Post		riange	139946*	74.36
		240	800	12" Leads		Strap	134770	20.57
		240	600	12" Leads	Mica	Strap	134771	20.57
	2"		800		IVIIOG	Oliap	134772	19.76
	-			Post 180° from Gap	Ceramic	Flange	138665	110.09
		230	1100	Post	Mica	riunge	139948*	77.02
	3"	230	500	48" Leads	Mica	Flange	139949	71.94
	316"	230	1000	Post	Mica	Flange	139950*	91.86
	3½"	200	1800	1 051	IVIICa	riange	139951*	91.86
		240	1600	Post 180° from Gap	Mica	Flange	138666	86.62
41/8"	.,,	230	1000	Post	Mica	Flange	139952*	101.86
478	7	200	1800	1 031	IVIICA	riange	139953*	101.86

^{* 2} Piece



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price
41/11	21/2"	120	1200	Doct	Miss	Florido	139955	\$52.26
41/4"	4"	240	2650	Post	Mica	Flange	134296*	101.86
4"	2"	240	600	24" Leads	Mica	Flange	139956	53.39
	11/2"	240	750	5 .			131276	69.76
		480	650	Post	Mica	Flange	138667	54.76
44711	21/2"	230	600	Post	N4:	Flange	139957*	84.44
41/2"		240	1250	12" Leads	Mica	Strap	134773	22.18
	4"	120/240	1500	40111	Minn	Chucus	134774	28.63
		230		12" Leads	Mica	Strap	134775	30.89
	61/2"	240	1000	12" Leads	Mica	Strap	134776	30.89
	1"	240	515	Post	Mica	Flange	144356	31.87
42/II	11/2"	240	650	Post	Mica	Flange	144357	30.08
43/4"	11/4"	240	400	18" Leads	Mica	Strap	133313	90.17
	51/2"	230	1600	J screws	Mica	Strap	139959*	141.30
4 ¹⁵ / ₁₆ "	4"	240/480	1200	Post 180° from Gap	Mica	Flange	138669	120.17
10	1"	120	650	Post	Mica	- Flange	139960	45.08
	·	120	030	FOSI	Ceramic	Flarige	139961	117.27
	11/2"	240	500	12" Leads	Mica	Strap	134777	22.18
	11/2"	240	700	Euro Plug	Mica	Flange	129747	165.74
	1 72	120/240	1000	12" Leads	IVIICa	Strap	134778	41.53
5"	2"	240	500	12" Leads	Mica	Strap	134779	30.89
	21/2"	240/480	720	24" Leads	Mica	Flange	138668	85.33
5	272	240	750	12" Leads	iviica	Strap	134780	30.89
	23/4"	230	860	72" Armor Leads	Mica	Flange	139962*	229.69
	3"	240/480	1200	36" Leads	Mica	Flange	137507	141.54
	4"	240	2100	Post	Ceramic	Flange	139963	174.93
	61/2"	230	2760	Post 180° from Gap	Ceramic	Flange	138670	260.66
	9"	220	1900	12" Leads	Mica	Strap	134781	36.21
	11/4"	240	750	Post	Ceramic	Flange	139964	121.78
		240	800	1 001		- Harigo	139965	48.07
	11/2"	240	825	12" Leads	Mica	Strap	134782	30.89
		120/240	1000	12 20003		Ottap	134783	41.53
	21/2"	240	1300	Post w/Box	Mica	Flange	139967	96.38
	21/4"	230	1300	Post	Mica	Flange	139966*	87.99
51/4"		230	850	Post		Flange	139968	70.89
	3"	230	1200	1 331	Mica	, idiigo	139969*	70.89
		120/240	1700	12" Leads		Strap	134784	41.53
	41/2"	230	1300	Post	Mica	Flange	139970	116.62
	. / 2	120/240	2400	12" Leads	111104	Strap	134786	41.53
	5"	240	1700	12" Leads	Mica	Strap	134787	36.21
	11/2"	120/240	1000	12" Leads	Mica	Strap	134788	41.53
51/2"	23/4"	480	800	60" SS	Mica	Flange	140198	97.20
J /2	3"	220	1500	12" Leads	Mica	Strap	134789	23.79
	4"	220	1500	12" Leads	Mica	Strap	134790	33.55

continued on next page * 2 Piece



e-mail

Hot Sleeve Big Bands continued...

I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price
F2/II	3"	480	1200	Post 180° from Gap	Ceramic	Flange	138672	\$152.11
5¾"	4"	480	1200	Post 180° from Gap	Ceramic	Flange	138673	198.88
5 ⁷ /8"	11/4"	240	1000	36" SS	Mica	Flange	134213	108.80
		0.40	600	Post			140073	82.10
		240	650	Euro Plug		Flange	129468	163.72
	11/2"	240/480	675	24" Leads	Mica		138675	81.54
		240					134791	22.18
		120/240	1000	12" Leads		Strap	134792	41.53
	2"	240	650	Post	Mica	Flange	139971	52.50
	2	480	800	F051	Ceramic	Flatige	139972	126.30
6"	21/2"	480	1450	Post w/Box	Mica	Strap	140530	71.70
			1200		Mica	Flange	136595	105.41
	3"	480	1400	Post	IVIICa	Strap	134794	23.79
			1800		Ceramic	Flange	139973	152.11
	4"	240	1200	Post	Mica	Flange	137360	95.89
	5"	480	3500	Post	Ceramic	Flange	140071	273.81
	5	240/480	4200	F05t	Ceramic	Flarige	140070	329.62
	51/4"	240/480	2350	Post 180° from Gap	Mica	Flange	138676	114.04
	11/2"	480	1000	Post	Mica	Flange	139975	132.59
	3"	230	2500	Post	Mica	Strap	140605	53.25
61/4"	41/2"	230	2500	Post	Mica	Strap	140604	62.60
	5"	230	2600	Post 180° from Gap	Ceramic	Flange	138677	253.00
	71/4"	240	3900	Post	Mica	Flange w/ Springbolt	137355	240.90
6.33"	6"	230	3500	Post	Mica	Flange	139976*	164.04
	11/2"	240	900	Post	Mica	Strap	144865	40.00
	1"	240	500	12" Flex Leads	Mica	Strap	140293	52.70
				12" Armor Leads		2 11 14	140292	Inquire
			500	12" Armor Leads		Strap	140291	58.31
		240	700	12" Leads			134795	33.55
	11/2"	240	0.50	Euro Plug	Mica	Flange	129749	Inquire
61/2"			950	12" Leads		Strap	134796	33.55
	4"	460	1000	Post	Mico	Flange	139977	51.29
	5"	460 480	1850 1675	48" SS	Mica Mica	Flange Flange	137506 138678	107.75 157.75
	6"	480	2700	Post 180° from Gap	Mica	Strap	138680	123.15
	7"	480	1800	Post 180° from Gap	Mica	Flange	138681	200.25
	8"	480	2500	Post	Ceramic	Flange	139978	359.86
	9"	480	3800	Post 180° from Gap	Mica	Flange	138682	234.13
			290	Post		1190	139979	53.39
		240	750	Post 180° from Gap	Mica		138683	63.07
00/11	41/11	460	765	Post		Flange	139980	54.84
6¾"	11/2"	240		Post 180° from Gap	Ceramic]	138684	140.33
		120/240	815	12" Leads	Mica	Strap	134798	41.53
		240	1000	Post 180° from Gap	Ceramic	Flange	138685	140.33

* 2 Piece continued on next page



176

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

Hot Sleeve	Big Band	ls continued	d						
I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price	
	11/2"	120/240	1000	12" Leads	Mica	Strap	134799	\$41.53	
	2"	240	1000	Post 180° from Gap	Ceramic	Flange	138687	140.33	
	3"	240	1630	Post 180° from Gap	Ceramic	Flange	138686	164.36	
63/4"	4"	480	2600	Post	Mica	Flange	138104	104.44	
		120/240	2000	12" Leads	WIIOQ	Strap	134802	44.20	
	5"	240	2600	Post 180° from Gap	Ceramic	Flange	138679	270.66	
	11/2"	240	1000	12" Leads	Mica	Strap	134803	33.55	
	1 /2	120/240	1250	12 Ecdas	WIIOQ	Oliap	134804	44.90	
	3"	120/240	2000	12" Leads	Mica	Strap	134805	44.20	
		480	2000	Post	Ceramic	Flange	139982	172.59	
	41/2"	240	2100	Post	Mica	Flange	139983*	110.65	
7"			1500		Ceramic		139984	270.66	
	5"	240	2000	Post	Ceramic	Flange	139985	270.66	
			2080		Mica		139986	117.75	
		480	3700	Post 180° from Gap	IVIICa		138688	117.75	
	53/4"	230/460	2000	Post	Ceramic	Flange	139987	301.23	
	81/2"	480	2500	Post	Ceramic	Flange	139988	446.72	
71/11	6"	230	3500	Post	Mica	Flange	139989*	183.32	
71/4"	71/2"	240	2200	Post	Mica	Flange	135263*	242.19	
	1"	240	750	12" Leads	Mica	Strap	134808	35.49	
		240	500	Doot			139991	54.84	
		230	850	- Post			139990*	86.94	
		240	1000	36" SS Leads	Minn	Flange	134214	91.30	
	11/2"	040/490	1000	Post	Mica		138691	88.23	
		240/480	240/480	80 1000	48" Leads			138690	113.72
		240	1100	Post		Barrel Nut	138692	94.44	
		120/240	1500	12" Leads		Strap	134809	46.13	
71/2"	2"	040	1050	Post 180° from Gap	Miss	Parral Nut	138694	57.58	
	-	240	1250	Post	Mica	Barrel Nut	138693	98.72	
			2290	Post	Mica		137280	87.18	
			2325	Post 180° from Gap	IVIICa		138695	60.50	
	3½"	240	2020	Post	Ceramic	Flange	139993	218.64	
			2350	FUSI	Mica		139992*	108.80	
			2600	Post 180° from Gap	Ceramic		138696	218.64	
			3250	Post	Ceramic		139994	218.64	
	5½"	240/480	2500	Post	Coromio	Flange	139996	351.23	
	3 //2	240/400	3000	FUSI	Ceramic	riange	139997	351.23	
	7"	480	5000	Post	Ceramic	Flange	138697	362.04	
	1½"	230/460	1000	Post	Ceramic	Flance	139998	187.75	
73/4"	1 /2	240/480	1000	FUSI	Mica	Flange	139999	78.47	
	5½"	230	2800	Post	Mica	Flange	140001*	180.82	

* 2 Piece continued on next page



Hot Sleeve Big Bands continued

I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price
			850	Post 180° from Gap		Flange	138698	\$92.34
		040	950	12" Leads		Strap	134810	35.49
	11/2"	240	1000	Post	Mica	Flange	140002	92.34
			1100	96" SS		rialige	135707	177.83
		120/240	1250	12" Leads		Strap	134811	46.13
			1000	12" Leads		Strap	134812	35.49
	2"	240	1000	Euro Plug	Mica	Flange	129748	179.04
			1200	Post 180° from Gap	IVIICA	Strap	144863	46.85
8"		230/460	1400	Post 180° from Gap		Flange	138699	120.57
O	3"	480	1500	12" Leads	Mica	Strap	134813	35.49
		100		Post	Milod	Flange	140003	72.99
	41/2"	240/480	2000	Post 180° from Gap	Mica	Flange	138700	192.67
	.,,	240	2275	T GGC 1 GG 11 GIGIP			138701	169.04
	5"	480	2500	Post	Mica	Strap	135761	129.52
		240	3250			Flange	140004	129.52
	51/2"	240/480	3800	Post 180° from Gap	Mica	Flange	138702	212.03
	7"	240	2000	Post	Ceramic	Flange	140013	397.69
	83/4"	460	4900	Post 180° from Gap	Ceramic	Flange	138703	512.69
	9"	480	4900	Post w/Box	Ceramic	Flange	138704	551.32
	11/2"	240/480	1300	Post	Mica	Flange	140007	82.42
	.,_	230	1400		Ceramic		140006	166.46
	4"	240/480	1700	Post	Mica	Flange	140009	149.04
	~	240	3400	1 050	Ceramic	ridige	140008	268.00
	41/2"	240	3350	Post w/Box	Ceramic	Flange	138705	327.52
		240	2500	Post	Ceramic	Flange	140010	326.07
81/2"	5"	240	3250	Post	Ceramic	riange	140011	326.07
)	400	0050	12" Leads	N.4:	Strap	134814	36.86
		480	3250	Post	Mica	Flange	140012	136.22
	81/2"	240/480	6800	Post	Mica	Flange	140068	342.76
	1"	240	1200	36" SS Leads	Mica	Flange	138111*	189.12
83/4"	11/2"	240	1000	36" SS Leads	Mica	Flange	134215	97.67
-, -	5"	240	3250	Post	Ceramic	Flange	140014	344.38
	1"	240	1200	72" SS Leads	Mica	Flange	133093*	229.93
		240	500	Post	Mica		140015	61.37
	11/2"	240	1450	Post 180° from Gap	Ceramic	Flange	138706	213.40
	011	040		•		Ctron	+	
	2"	240	900	12" Leads	Mica	Strap	134816	35.49
	21/2"	460	1791	12" Leads	Mica	Strap	134818	34.70
9"	<u></u>		_	Post	Ceramic	Flange	140017	196.79
	21/4"	240/480	800	Post	Mica	Flange	140016	97.67
	31/2"	240/480	3000	Post	Ceramic	Flange	140018	291.31
	4"	240	2275	Post	Ceramic	Flange	140019	283.48
		460	2500	12" Leads	Mica	Strap	134819	35.49

* 2 Piece continued on next page



Hot Slee	eve Big Ba	ands continu	ıed					
I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price
	21/2"	480	2270	Post	Mica	Strap	140531	\$97.70
91/4"	33/4"	480	3800	Post 180° from Gap	Ceramic	Strap	138707	126.70
	41/2"	240	3250	Post	Ceramic	Flange	140020	321.55
07/ "	3"	240/480	2300	Post	Mica	Flange	140074	145.65
97/16"	45/8"	240	3425	Post	Mica	Flange	140075	170.01
	2"	240/480	1700	Post	Mica	Flange	140086	79.80
	21/2"	460	2600	Post	Mica	Flange	140021*	135.25
	3"	480	2300	Post	Mica	Flange	138709	144.85
	31/2"	240/480	3000	Post 180° from Gap	Mica	Flange	138710	189.69
	5"	240	1750	Post	Mica	Flange	140022	149.61
91/2"		230	5500	1 051	IVIICA	riange	140069*	190.17
	81/4"	240/480	4740	Post	Ceramic	Flange	140023	646.01
93/4"	6"	480	4200	Post	Ceramic	Flange	135688	Inquire
	1"	460	736	Post	Mica	Flange	140024*	125.01
	11/2"	460	1100	Post	Mica	Flange	140025*	127.35
		240/480	1500	12" Leads		Strap	134824	48.15
		240	1700	Post	1 [Flores	138711	127.75
	2"	240/480	1700	Post 180° from Gap	Mica	Flange	141731	88.39
		460	1800	12" Leads	1 [Strap	134823	37.50
10"		240	2000	12 Leaus		Strap	134822	37.50
	3"	240	2000	Post	Ceramic	Flange	140026	233.72
	4"	230	3000	Post	Mica	Flange	140027*	165.09
	5"	240	1500	Post	Ceramic	Flange	140028	384.86
		480	3500	1 031	Ceramic	Flange	140029	585.68
	5½"	240	2500	Post	Ceramic	Flange	140072	435.19
	8"	460	5750	Post	Ceramic	Flange	140030	557.78
	81/2"	240/480	8000	Post w/Box	Ceramic	Flange	138712	720.69
101/4"	2"	240/480	2000	Post	Mica	Flange	140031	99.20
	2"	480	2250	Post w/Box	Mica	Flange	137267	138.80
101/2"	3"	240	1200	Post	Mica	Flange	140032	91.70
1072	3½"	120/240	3300	Post	Mica	Strap	134826	48.15
	372	240/480	3300	1 031	IVIICA	Flange	140033	152.35
10.7"	2"	480	2000	Post	Ceramic	Flange	140034	216.06
	1"	460	1000	Post	Mica	Flange	140035*	102.10
		460	603	12" Leads	Mica	Strap	134827	37.50
	11/2"	400	1000	Post	IVIICA	Flange	140036	71.70
11"	11"	240/480	1750	FUSI	Ceramic	riange	140037	95.17
	4"	460	1400	Post	Mica	Flange	140039*	177.35
	+	400	3220	FUSI	iviica	riange	140038*	177 35

* 2 Piece continued on next page



111//8"

3"

480

3220

2190

Flange

Post

140038*

140040

177.35

100.65

Mica

Hot Sleeve Big Bands continued I D Width Volta Wester Terminals Material Lock Un Style Item # Unit Price											
I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price			
111/4"	5"	240/480	5100	12" Leads	Mica	Strap	134831	\$48.15			
111/2"	5"	480	4000	Post	Ceramic	Flange	140041	449.70			
1172	51/2"	240	5000	Post w/Box	Ceramic	Flange	138713	576.24			
11 ³ / ₁₆ "	2"	240/480	1800	Post	Mica	Flange	140067	130.57			
			1000		Ceramic	Flange	140042	288.97			
	3"	480	2500	Post	Mica	Strap	134832	37.50			
12"					Ceramic	Flange	140043	288.97			
			4000			. id.iige	140044	288.97			
	71/8"	480	4900	24" SS Leads	Mica	Flange	140046*	405.43			
	3"	480	3000	24" w/Box	Ceramic	Flange	138716	434.78			
121/2"	31/4"	460	3900	Post 180° from Gap	Mica	Flange	138717	157.51			
	33/4"	240	2400	Post	Mica	Flange	140047*	170.41			
	11/2"	460	1428	Post	Mica	Flange	140048*	155.65			
	2"	460	2000	Post	Mica	Flange	140049*	161.46			
		240	3800	Post 180° from Gap	Ceramic	riange	138714	262.03			
	21/2"	460	2800	Post	Ceramic	Flange	140051	294.94			
4.011	272	240/480	3000	Post w/Box	Mica	riango	138715	180.66			
13"	23/8"	460	2800	Post	Ceramic	Flange	140050	294.94			
		480	2000	1 001	Mica	Strap	134833	37.50			
	33/4"	480	3900	Post	Mica	Flange	138718*	218.72			
	4"	460	3710	Post	Mica	Flange	140052*	202.59			
131/4"	1½"	460	1458	Post	Mica	Flange	140054*	131.06			
10 /4	21/2"	240/480	3000	Post	Mica	Flange	140055	170.01			
143/4"	2"	460	2180	24" Leads	Mica	Flange w/ Springbolt	136179*	246.47			
17/4	3"	460	6744	Post	Ceramic	Flange	140056*	430.35			
	11/2"	460	1724	Post	Mica	Flange	140057*	177.99			
4 = 4 (11	21/2"	460	2188	Post	Mica	Flange w/ Springbolt	135790*	277.52			
15½"			2250		Ceramic	Flange	140058	348.41			
	3"	460	3640	Post	Mica	Flange	140059*	212.35			
	4"	460	4600	Post	Mica	Flange	140060*	241.95			
15¾"	3¾"	460	2400	Post	Mica	Flange	140061	209.85			
173/4"	4"	460	5400	Post 90° from Gap	Ceramic	Flange w/ Springbolt	134878*	643.43			
181⁄2"	3"	230	4600	Post	Mica	Flange w/ Springbolt	135755*	245.58			
19"	3"	460	4200	72" Fiberglass Leads	Mica	Flange w/ Springbolt	130961	321.47			
	2"	460	1483	Post w/Box	Mica	Flange w/ Springbolt	130954*	219.21			
19¾"	3"	460	3378	Post	Mica	Flange w/ Springbolt	130953*	280.66			
	5"	460	7288	Post	Mica	Flange w/ Springbolt	130952	430.75			

* 2 Piece continued on next page



I.D.	Width	Volts	Watts	Terminals	Material	Lock-Up Style	Item #	Unit Price
	2"	460	3200	Post	Ceramic	Flange w/ Springbolt	130957*	\$409.46
201/2"	3"	460	4500	Post w/Box	Mica	Flange w/ Springbolt	130956*	330.10
2072		400	4500	1 OSt W/DOX	IVIICA	Springbolt	136861	Inquire
	5"	460	7800	Post	Mica	Flange	140062*	370.59
21"	3"	460	4740	Post w/Box	Mica	Flange w/ Springbolt	135811*	346.96
22"	4"	240	6600	Post w/Box	Mica	Flange w/ Springbolt	135754*	399.54
23"	3"	460	5270	Post	Mica	Flange	140063*	289.61
24"	5"	230	12000	Post	Mica	Flange	140064*	419.14
25¾"	3"	460	5860	Post	Mica	Flange	140065*	322.92
30"	3"	460	6826	Post	Mica	Flange w/ Springbolt	130960*	366.88
33"	5"	460	12000	Post	Ceramic	Flange	140066*	1,432.26

^{* 2} Piece

Check Out These Other Useful IMS Products



INFRA-KOTE

These products consists of metal powders blended into a grease carrier to allow it to be applied. The grease carrier will break down at the temperature listed, but the products will continue to provide heat transfer up to the listed temperature limits of the metal powders.





Both excellent heat transfer compounds for use with cartridge heaters and heater bands.



Improve surface contact between heaters and equipment, extending heater life, providing better response times and reducing energy costs.



Limited use heat transfer compound formulated for continuous use up to 350°F

See Page 213 For Specifications and Pricing Information



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

An affordable, high heat

compound for continuous

use up to 600°F

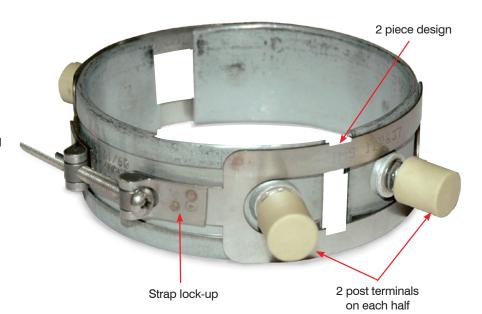
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Adjustable I.D. Mica Barrel-Heater Bands

The Original Adjustable Band

- · Mica type insulation
- 28-32 watts per sq. in.
- 900°F maximum use temperature
- Rust resistant, low expansion steel
- 20 gauge pressure plate
- · Maximum conductivity
- 240 volts (Can be wired in series for 480 volts - see page 186-189)



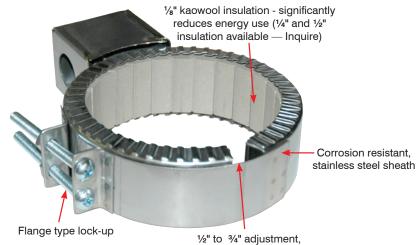
I.D.	Width	Watts	Item #	Unit Price				
4" to 4½"		500	122637	\$65.15				
4½" to 5"		575	122638	63.42				
5" to 5½"		650	122639	66.29				
5½" to 6"		750	122640	68.75				
6" to 6½"		850	122641	68.39				
6½" to 7"		900	122642	72.60				
7" to 7½"	1 ½"	950	122643	75.34				
7½" to 8"		1000	122644	82.80				
8" to 8½"		1100	122645	79.50				
8½" to 9"		1200	122646	87.54				
9" to 9 ³ / ₄ "		1300	122647	89.83				
93/4" to 101/2"		1400	122648	87.39				
10½" to 11¼"		1500	122635	89.96				
111/4" to 12"	1111/4" to 12"		122636	Inquire				
Cerami	Post Protector 10-32 Thre	ad	108972	\$3.16				



MS Adjustable I.D. Ceramic Heater Bands

End Long Waiting for Special OEM and Metric Bands

- 35 watts per sq. in.
- 1200°F maximum use temperature
- 11/2" wide, 2 post terminals 240 volts (Can be wired for 480 volts using two bands in a series - see page 187)
- 21/2" wide, 3 post terminals 240 volts (Can be wired for 480 volts - see page 186-189)



depending on size of the band

I.D.	Width	Volts	Watts	Item #	Unit Price
4" to 4½"	1 ½"	240	650	101863	\$107.70
4 10 472	21/2"	240/480	1100	101854	94.13
4½" to 5"	1 ½"	240	700	101844	83.10
472 10 5	21/2"	240	1150	101960	122.77
5" to 5½"	11/2"	240	800	101949	108.55
5 10 372	21/2"	240	1150	101941	100.72
5½" to 6"	1 ½"	240	850	101931	109.99
372 10 0	21/2"	240	1400	101905	133.01
6" to 6 ¹ / ₂ "	11/2"	240	950	101913	Inquire
0 10 0 /2	21/2"	240/480	1600	101888	136.98
61/2" to 7"	21/2"	240/480	1650	101868	111.72
7" to 7½"	1 ½"	240	1100	101877	Inquire
7 10 7 72	21/2"	240/480	1850	101849	145.99
7½" to 8"	1 ½"	240	1200	101858	Inquire
7 72 10 6	21/2"	240/480	2000	101954	116.15
8" to 8½"	11/2"	240	1250	101838	105.46
0 10 072	21/2"	240/480	2000	101935	120.68
8½" to 9"	21/2"	240/480	2250	101917	Inquire
0114- 03/11	11/2"	240	1450	101927	141.38
9" to 9 ³ ⁄ ₄ "	21/2"	240/480	2400	101900	130.22
03/+o 101/	11/2"	240	1550	101909	146.15
9 ³ / ₄ " to 10 ¹ / ₂ "	21/2"	240/480	2600	101881	Inquire
10½" to 11¼"	11/2"	240	1650	101901	Inquire
10 /2" to 11 /4"	21/2"	240/480	2750	101892	144.46
11½" to 12"	1 ½"	240	1800	101883	Inquire
1174 (0 12"	21/2"	240/480	3000	101873	158.75



Optional Accessory					
Ceramic Post Protector 10-32 Thread	108972	\$3.16			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Metric Size Mica-Insulated Heater Bands

For The Proper Fit — Eliminate Shimming, Forming and Stretching

24 or 26 gauge shell thickness minimizes hotspot formation, extending heater life \

Aluminized impregnated steel shell resists rust and extends life

Stainless steel straps have lower coefficient of temperature than band, providing further tightening as barrel temperature rises



High temperature insulated leads (482°F/250°C) with braided steel sleeving resists contamination and abrasion

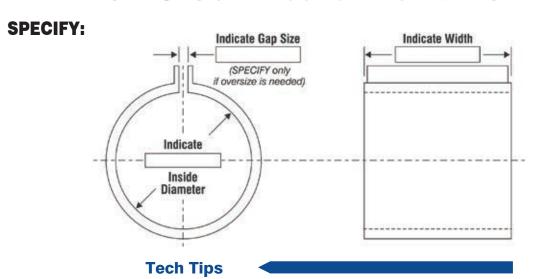
Mica insulation and nichrome heating element with 25 to 35 watts per square inch provide effective heating up to 800°F

I.D. x Width (mm)	Volts	Watts	Leads	Lock-Up Style	Item #	Unit Price
30 x 30	240	100	12"	Strap	111242	Inquire
30 x 38	240	130	12"	Strap	111231	\$37.66
35 x 16	240	60	12"	Strap	111254	29.92
35 x 22	120	85	12"	Strap	111250	Inquire
00 X ZZ	240	00	12	Oliap	111245	27.99
35 x 25	240	100	12"	Strap	111235	30.57
45 x 30	240	250	12"	Strap	111249	34.66
48 x 22	120	220	12"	Strap	111244	Inquire
+0 X ZZ	240	220	12	Oliap	111239	29.71
50 x 27	480	220	12"	Strap	135143*	22.34
50 x 34	240	275	12"	Strap	111252	31.00
56 x 22	240	250	12"	Strap	111232	27.76
60 x 22	120	275	12"	Strap	111228	28.42
00 X 22	240		Oliap	111255	28.42	
65 x 20	240	150	12"	Strap	111246	Inquire
65 x 22	240	275	12"	Strap	111236	29.28

^{*12&}quot; Braided Fiberglass Leads



Non-Stock Heater Band Form

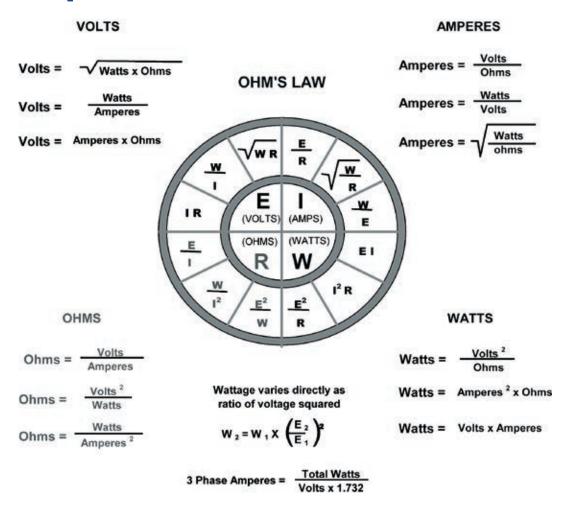


A good rule of thumb for figuring the maximum available heater band wattage: $3.14 \times 10^{-2} \times$

Quantity:			Electrical Connections/Terminations				
Mfg. (if known):			Select One Only				
			NOTE: Illustrate location of connection on diagrams above.				
Wattage:			Flex Leads:			long	
Voltage:			Flex Leads with Ar	•		long	
Type: Nozzle Bar	nd 🔲 Key L	ock 🗌	Flex Leads with Br		/ing: 🗌	long	
Construction		Adjustable I.D. ☐	Post Terminals:	OR		36	
One-Piece Expand	dable Mica	· —	Post Terminals wit	th Terminal Box:			
Other (describe):			Post Terminals wit	th Voltraps:			
Insulation			Post Terminals wit	th Terminal Caps	: 🗆		
Mica Com	pacted Mineral	Ceramic	Plug Connector (B	Blade):			
Lock-up							
Flange *	Strap 🗌 *	Key (Wedge)	Plug Connector (E	iuropean):	Ш		
Barrel Nut S			Expedited 24-48 H	our Service:			
Other (describe):			Special				
			For ho	les, cut-outs and r and location on dr		bove.	
Date:	_ Quantity:	Phone:()		Fax: ()			
Name:			Title:				
Company Name:			Email:				
Address:							
			State:	Zip:_			

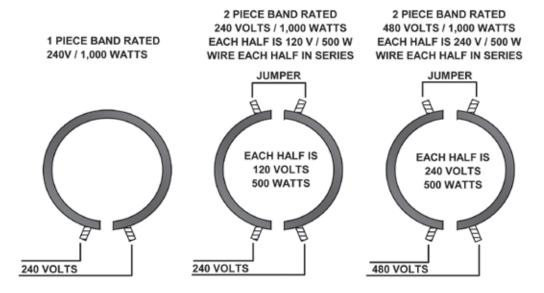
Variations of Ohm's Law

Tech Tips



Heater Band Wiring

One Piece and Two Piece Bands:

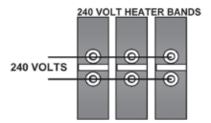


Heater Band Wiring (continued)

Parallel and Series Wiring

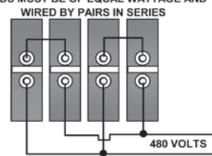
PARALLEL WIRING:

HEATER BANDS ARE NORMALLY WIRED IN PARALLEL BY ZONE

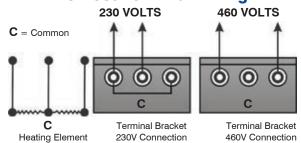


SERIES WIRING:

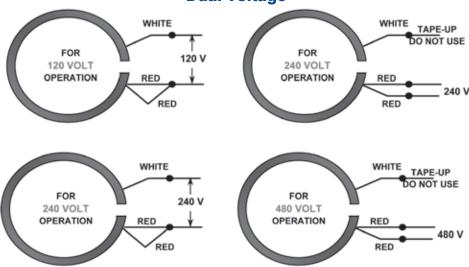
ILLUSTRATION SHOWS 240 VOLT BANDS WIRED TO ACCEPT 480 VOLTS BANDS MUST BE OF EQUAL WATTAGE AND



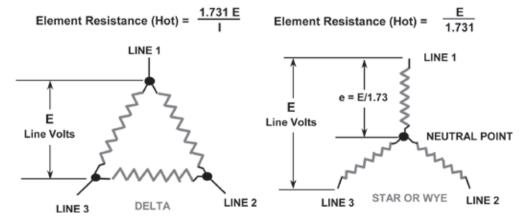
3 Post Terminal Wiring



Dual Voltage



3 Phase



Heater Band Wiring (continued)

Tech Tips

CAUTION

DO NOT EXCEED AMP RATING OF CONTROLLER.

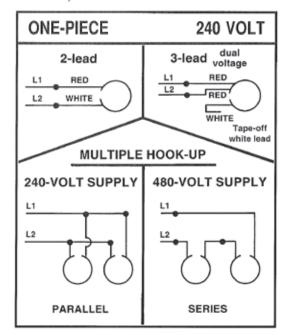
Consider number of heaters in circuit, and actual voltage of power supply. Have a qualified electrician approve wiring.

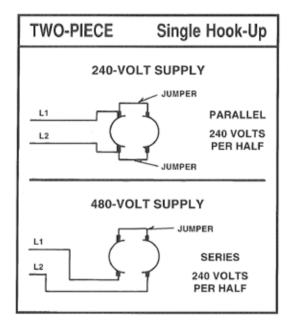
ONE-PIECE 2-lead 2-lead N N WHITE MULTIPLE HOOK-UP 120-VOLT SUPPLY L N PARALLEL SERIES

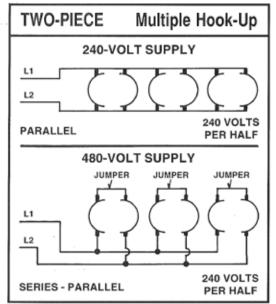
NOTES

To extend heater life:

- Use a Heat-Transfer Compound such as IMS Infra-Kote on all types of heater bands except open-coil ceramic. It will improve heat transfer and save power.
- Preheat non-sealed heaters to 200° F at half power before applying full power. Many of today's solid state controllers have a soft start feature that automatically does this.









www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888,288,6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Should You Connect Heaters in a "Series Circuit"

Tech Tips

This question arises when more than one heater is to be connected to electrical power.

Usually any number of heaters can be connected in a "Parallel Circuit".

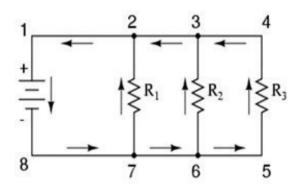
Usually only two heaters may be connected in a "Series Circuit" as it is much more complicated to do so.

The main disadvantage of a "Series Circuit" is that there is only one path in which the current can flow. Opening or breaking a Series Circuit at any point will cause the entire circuit to "open" or stop operating:

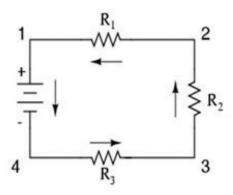
- In a "Series Circuit" every heater must function properly for the entire circuit to operate. If any heater fails, all
 other heaters within that circuit will not receive power to operate, whereas in a
 "Parallel Circuit" the failure of one heater will not affect the other heaters in that circuit.
- If two heaters are connected in a "Series Circuit" the voltage of each heater must be the same and equal to "one half" of the total voltage available. Example: Let's say you have two 240 volt heaters connected in series, therefore you must provide a 480 volt supply for the heaters to function properly.
- The wattage of each heater is a "Series Circuit" must also be of the same value. If the wattage and voltage for each heater are not the same value the heaters will not split the voltage equally, resulting in improper heating.

If you must wire heaters in "Series" the basic rule of thumb is that only two heaters are wired together, and those heaters must have the same voltage and wattage specifications.

Parallel Circuit



Series Circuit



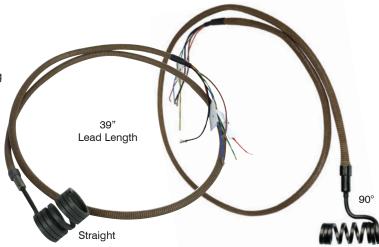


DME OEM Replacement Coil Heaters

Available With and Without Built-In Type J Thermocouple

- Flat profile ensures OPTIMUM control
- Thermocouple is placed at tip for more precise temperature measurements
- Flexible cold section will not break when installing (length may vary)





		Lead		Coil	Cold	Lead				Unit
Item #	OEM Part #	Exit	Coil ID	Length	Selection	Length	Voltage	Wattage	T/C	Price
163764	SSTC-62-90	90°		1.45"	11/4"			200		\$209.69
163765	SSTC-72-90	90°		2"	1"			200		212.92
163897	SSTC-42	Straight		21/2"	0.95"		230	450		253.24
163898	SSTC-42-90	90°	1/2"	21/2"	2.12"	39		450	Yes	253.24
163763	SSTC-32-90	90°		41/2"	2.12"			300		253.24
163899	SST-31	Straight		41/2"	1-½"		120	300		309.70
163900	SSTC-31-90	90°		45/8"	2.12"		120	300		246.79
163775	SCH0003			0.975"	1.65"			225	No	212.92
163862	SCH0081			2"				300		253.24
163901	SCH0082			21/2"				350		222.59
163902	SCH0083	Straight	5/8"	3"	4711	39	230	400	Yes	275.82
163766	SCH0084		/0	31/2"	1/2"			450		253.24
163904	SCH0085			4"				500		283.89
163905	SCH0086			5"				500		254.85
163767	SCH0087			6"				525		272.60
163906	SCH0060			1.437"	1/2"			250	No	235.50
163768	SCH314-2			13⁄4"	1.87"			315	Yes	253.24
163907	SCH0061			1.937"	1/2"			300	No	201.62
163890	SCH0062			2.437"	1.87"			350	140	195.17
163769	SCH324-2	Straight	3/4"	2.437"		39	230	315	Yes	246.79
163908	SCH0063			2.937"				400		220.98
163770	SCH0064			3.437"	1/2"			400	No	245.18
163909	SCH0065			4.437"				500		283.89
163910	SCH0066			5.437"				500		241.95
163911	SCH0088			21/8"				400		275.82
163863	SCH0089			25/8"				450		261.31
163771	SCH0090			31/8"				525		272.60
163912	SCH0091	Straight	⁷ /8"	35/8"	1/2"	39	230	700	Yes	306.47
163913	SCH0092	Straight	78	4½"	72	03	200	800	163	322.60
163914	SCH0093			51/8"				900		338.73
163915	SCH0094			61/8"				1000		309.70
163772	SCH0095			71//8"				1000		346.80



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Husky 750 Series OEM Replacement Coil Heaters



Item #	OEM Part #	Coil Length	Wattage	Unit Price
146569	534975	30mm	220	
146570	1501609	John	350	
146571	534976	40mm	220	
146572	1502992	40111111	350	
146573	534977	50mm	220	
146574	1045865	3011111	350	
146575	534978	60mm	220	
146576	1501594	Oomin	400	
146577	534979	70mm	220	
146578	1502994	7011111	400	
146579	534980	80mm	220	
146580	1501595	Oomin	400	Contact IMS
146581	534981	90mm	220	for current
146582	1502995	9011111	400	Pricing and
146583	534982	100mm	220	Availability
146584	1501596	TOOTHIT	400	
146585	534983	110mm	220	
143638	1502996	11011111	400	
146586	535470	130mm	220	
146587	1502997	13011111	400	
146588	535471	150mm	220	
146589	1502998	13011111	400	
146590	535472	170mm	220	
146591	1502999	17011111	450	
146592	535473	190mm	220	
146593	1503000	19011111	450	
146594	535474	210mm	220	

Custom Coil Heaters

Inquire for any Front Load Hot Runner Heater, Flat Profile Heater, or any other coil heater application at 1-800-537-5375

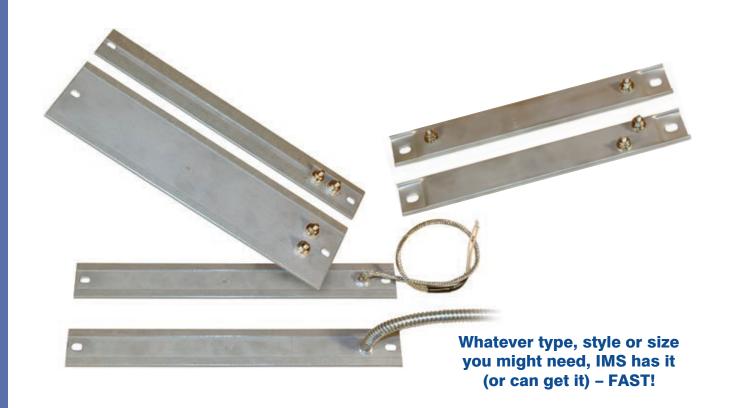


Mica and Ceramic Strip Heaters

IMS can supply all your Strip Heater needs!

For Thermoforming, Molds, Platens, Dies, Hot Plates, Sealing Equipment, Hot Stamping, Ovens, Tank Heaters, Air Heating etc.

Mica Strip Heaters		Ceramic Strip Heaters
Nickel/Chrome ribbon	Element	Nickel/Chrome coil
Post Type with 10"-24 x $\%$ s" thread (12" flex leads available)	Terminals	Post Type with 10"-24 thread
1/4" x 3/6"	Mounting slots	5/16" X 1/2"
Standard steel with special surface treatment to increase heat transfer and to retard oxidation (Stainless steel available)	Sheath	Stainless steel (heavy gauge) heat resistant coating is inorganic and baked to a peel-free finish
900°F / 482°C 1,200°F / 650°C	Maximum Sheath Temp. Standard Steel Stainless Steel	N/A 1,400°F
35 Watts/Sq. In. Max.	Watt density	45 Watts/Sq. In, Max
480 VAC Max.	Voltage	240 VAC Max.



— Use Forms That Follow to Order —



Custom Strip Heater Form

Specify: □ MICA	— or —	□ CERAMIC
	— A — → H	Ceramic Dimensions Length (A):
Length (A):		Length (B):
Length (B):		W Length (C):
Length (C):		<u>*</u>
Width: ☐ ¾" ☐ 1" ☐ 1½" ☐ 2"	Width: ☐ 1" ☐	1½"
Thickness: 1/4" 5/16"	Thickness: 1/4	"
Mounting Slot/Hole: 1/4" x 3%" (Standard)	Mounting Slot/Hole	e:
☐ Custom		Custom
Specify:		Specify:
	•	
Mounting Tabs: Voltage:		Wattage:
Post Terminals Styles: or	Lead Location	ons:
_	-	
(Mica: ¾" Min Width) (Ceramic: 1" Min Width)		¾" Min Width) ic: 1" Min Width)
	(Octum	No. 1 Will Width
	-	6
(Mica: 1½" Min Width) (Ceramic: 1½" Min Width)	(Mica : 1" Min Width	n) (Ceramic: 1½" Min Width)
	12" Leads standard [Other / Specify:
OPTIONS		
(Midd. 1 Min Width) (Geranne: 1 Min Width)	s steel braid over leads armor over leads	☐ Dual voltage Specify:
☐ 4 ☐ Strain re		Grounding stud
	(indicate location on drawing)	Other
(Mica: 2" Min Width) (Ceramic: 11/2" Min Width)	e pins	Specify:
Date: Quantity: Phone:()	Fax: ()
Name:	Title:	
Company Name:		
Address:		
City:		



Heater Band and Cartridge Heater Wire

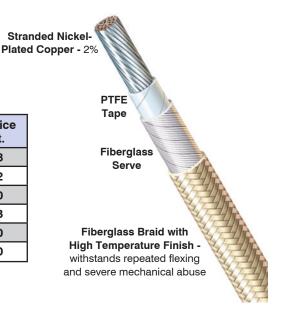
TGGT High Temperature Wire

- Moisture resistant
- · Resists pushback and braid frey
- Flexible

Item #	Volt	Temp	Gauge	Unit Price per ft.
102373		482°F (250°C)	8	\$4.68
102379	600	482°F (250°C)	12	1.42
102377*		302°F (150°C)	12	1.00
102375		482°F (250°C)	14	1.23
102372		482°F (250°C)	18	0.50
102369		482°F (250°C)	16	0.80

*Glass braided silicone, annealed tinned copper wire, silicone rubber insolation and braided glass jacket

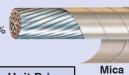
24 AWG - 4/0 AWG available - Inquire



MGT Lead Wire

- UL rated
- Resists pushback and braid frey
- Flexible

Stranded Nickel-Coated Copper - 27%



Tape

Fiberglass Braid with
High Temperature Finish withstands repeated flexing and
severe mechanical abuse

Item #	Volt	Temp	Gauge	Unit Price per ft.
143844		842°F (450°C)	10	\$3.45
143845	600	842°F (450°C)	12	1.80
143846		842°F (450°C)	14	2.33

24-2 AWG Available — Inquire

Heater Band Wire Sleeving

Use Heater Band Wire Sleeving to protect personnel from electrical shock, and to help protect your heater band wire.

Item #	Description	Unit Price (per foot)
102371	Woven fiberglass lead wire cover – 1/4" I.D.	\$0.87
102382	Flexible, galvanized armor wire cover – 3/16" I.D.	2.53





#102371

#102382



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Wire Connectors





Item #	Wire Size	Lug Size	Max Temp	Quantity	Unit Price
127271	12-10	#10	900°F	Package of 50	\$12.71
102374	8	#8	650°F	Each	4.12

Electrical Terminal & Connector Set

150 Piece Set Includes:

- 7 16-14 AWG Spade Terminal #10
- 10 22-16 AWG Spade Terminal #6
- 10 22-16 AWG Spade Terminal #8
- 5 12-10 Ring Terminal 1/4"
- 5 12-10 Ring Terminal #10
- 10 16-14 Ring Terminal #6
- 10 16-14 Ring Terminal #8
- 10 16-14 Ring Terminal #10
- 10 22-16 Ring Terminal #6
- 10 22-16 Ring Terminal #8
- 10 22-16 Ring Terminal #10
- 7 16-14 AWG Female Disconnector 1/4"
- 7 22-16 AWG Female Disconnector 1/4"
- 7 16-14 AWG Male Disconnector 1/4"
- 7 22-16 AWG Male Disconnector 1/4"



- 5 12-10 AWG Butt Connector
- 10 16-14 AWG Butt Connector
- 10 22-16 AWG Butt Connector



Item #	Description	Unit Price
146628	150 Piece Set: Includes Ring Connectors, Butt Connectors, Female and Male Quick Disconnects, Spade Connectors	\$9.66

High Heat Tape

Use High Heat Tape to help protect your operators from shock and from burns. Choose from either the glass cloth backed "sticky tape," or the PTFE with silicone pressure sensitive adhesive. Both come in 36-yard rolls and can be used for temperatures up to 356° F.

Item #	Description	Unit Price (per foot)
102378	Tape No. 60, PTFE with silicone pressure sensitive adhesive, 3½ mils. x ½" wide; 356°F max. temperature; black	\$22.42
102381	Glass cloth backed "sticky" tape	21.84





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Pin Crimping Tool

Precision tool at a great price

Parallel-jaw pliers frame - eliminates terminals from rocking out of position

Crimps:

- IMS Hot Runner Pin and Socket Contacts
- Metri-Pack & Weather Pack Terminals



Pin Extractor Tool

Use with connector pins for hot runners

- Convenient Pin removal tool for use with IMS Hot Runner Pin and Socket Contacts (#104232 and #104224)
- Also for use with other Type II, III(+) Size 16 Pin & Socket Contacts.







3.16 ea.

Ceramic Heater Band Post Protectors

Eliminate electrical hazards • Protect your operators • Easy to install





Heater Bands

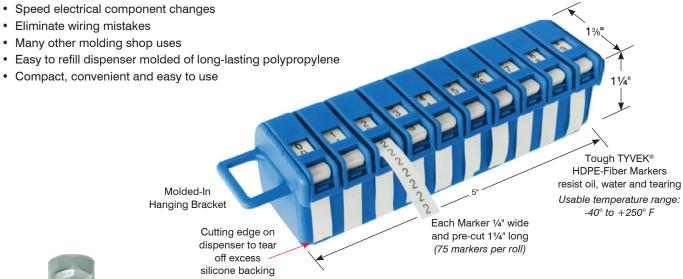
sold separately

One-Piece Cap With 10-32 Thread

Self-Adhesive Wire Markers

108972

Protect your personnel and your equipment!





102368

102367

Refills packaged for no-fumble replacement



Item	Includes	Price					
111160	Dispenser containing 10 rolls (0 through 9) of ready-to-use self-adhering markers						
	Refills						
111140	Set of 10 Rolls (0 through 9)	18.84					

TYVEK® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.	C.		F.	C.		F.	C.		F.
-17.8	0	32.0	10.0	50	122.0	38	100	212	288	550	1022
-17.2	1	33.8	10.6	51	123.8	43	110		293	560	1040
-16.7	2	35.6	11.1	52	125.6	49	120		299	570	1058
-16.1	3	37.4	11.7	53	127.4	54	130		304	580	1076
-15.6	4	39.2	12.2	54	129.2	60	140		310	590	1094
-15.0	5	41.0	12.8	55	131.0	66	150		316	600	1112
-14.4	6	42.8	13.3	56	132.8	71	160		321	610	1130
-13.9	7	44.6	13.9	57	134.6	77	170		327	620	1148
-13.3	8	46.4	14.4	58	136.4	82	180		332	630	1166
-12.8	9	48.2	15.0	59	138.2	88	190		338	640	1184
-12.2	10	50.0	15.6	60	140.0	93	200		343	650	1202
-11.7	11	51.8	16.1	61	141.8	99	210		349	660	1220
-11.1	12	53.6	16.7	62	143.6	100	212		354	670	1238
-10.6	13	55.4 57.2	17.2	63 64	145.4	104	220		360	680	1256
-10.0	14	57.2	17.8	64	147.2	110	230		366	690	1274
- 9.44	15	59.0	18.3	65 66	149.0	116	240		371	700	1292
- 8.89 - 8.33	16 17	60.8 62.6	18.9 19.4	66 67	150.8 152.6	121 127	250 260		377 382	710 720	1310 1328
- 0.33	18	64.4	20.0	68	154.4	132	2 0 0		388	720 730	1346
- 7.22	19	66.2	20.6	69	156.2	138	280		393	740	1364
- 6.67	20	68.0	21.1	70	158.0	143	290		399	750	1382
- 6.11	21	69.8	21.7	71	159.8	149	300		404	760	1400
- 5.56	22	71.6	22.2	72	161.6	154	310		410	770	1418
- 5.00	23	73.4	22.8	73	163.4	160	320		416	780	1436
- 4.44	24	75.2	23.3	74	165.2	166	330		421	790	1454
- 3.89	25	77.0	23.9	75	167.0	171	340	644	427	800	1472
- 3.33	26	78.8	24.4	76	168.8	177	350		432	810	1490
- 2.78	27	80.6	25.0	77	170.6	182	360		438	820	1508
- 2.22	28	82.4	25.6	78	172.4	188	370		443	830	1526
- 1.67	29	84.2	26.1	79	174.2	193	380		449	840	1544
- 1.11	30	86.0	26.7	80	176.0	199	390		454	850	1562
- 0.56	31	87.8	27.2	81	177.8	204	400		460	860	1580
0	32	89.6	27.8	82	179.6	210	410		466	870	1598
0.56 1.11	33 34	91.4 93.2	28.3 28.9	83 84	181.4 183.2	216 221	420 430		471 477	880 890	1616 1634
1.67	35	95.0 96.8	29.4	85 86	185.0	227 232	440		482	900 910	1652
2.22 2.78	36 37	96.8 98.6	30.0 30.6	86 87	186.8 188.6	232	450 460		488 493	910	1670 1688
3.33	38	100.4	31.1	88	190.4	243	470		493	930	1706
3.89	39	102.2	31.7	89	192.2	249	480		504	940	1724
4.44	40	104.0	32.2	90	194.0	254	490		510	950	1742
5.00	41	105.8	32.8	91	195.8	260	500		516	960	1760
5.56	42	107.6	33.3	92	197.6	266	510		521	970	1778
6.11	43	109.4	33.9	93	199.4	271	520		527	980	1796
6.67	44	111.2	34.4	94	201.2	277	530	986	532	990	1814
7.22	45	113.0	35.0	95	203.0	282	540	1004	538	1000	1832
7.78	46	114.8	35.6	96	204.8						
8.33	47	116.6	36.1	97	206.6						
8.89	48	118.4	36.7	98	208.4						
9.44	49	120.2	37.2	99	210.2						

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column. Look to left column for Celsius conversion.

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column. Look to right column for Fahrenheit conversion.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



UniVest® Barrel Insulation System



Contains and Conserves Costly Barrel Heat

Cuts energy use — increases profits

- Typical Pay Back: Generally 6-12 months
- · Helps create a cooler work environment
- · Safeguards personnel from accidental burns
- · Promotes faster machine start-ups
- · Stops barrel heat fluctuations ensures consistent part quality
- · Protects heater bands from trouble-causing drool and debris





A comparison of manual surface temperatures with and without a UNIVEST® shows a difference of 471° F.

UniVest® Modules are Made to Last!

Resist Material Degradation Better Than Any Other Blanket on the Market!

5 Year Warranty



Blanket Specifications

- Hot Face (Inside Fabric)
 Silica Fabric (.042 Thick/1800° F Continuous)
- Cold Face (Outside Fabric) Green Fiberglass Cloth Impregnated with PTFE (.016 Thick/550° F)
- Insulation Ceramic fiber
 Non-Asbestos (1" Thick/2000° F)

- Straps (Fabric with PTFE)

 Made of the same material as the Cold Face
- Strap Enclosure
 Cinch straps
- Buckles Nickel Plated Steel Wire With a loose roller for tightening ease

continued on next page

 ${\sf UNIVEST} \$ \ \textit{is a registered trademark of UniTherm Insulation Systems}$



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

UniVest® Barrel Insulation System

IMS has completely overhauled our Barrel Blanket line.

Each standard IMS Barrel Blanket now covers a range of barrel circumferences and diameters. And each circumference now comes in a series of standard mix 'n' match widths to cover your barrel.

Standard Circumferences ranges are 6" to 13", 13" to 19", 19" to 25", 25" to 31", 31" to 38", 38" to 44", 44" to 50", 50" to 57", and 57" to 63".

Standard widths are 2, 4, 5, 6, 8, 10, 12, 14 and 16 inches. For odd-numbered widths, you can simply use a blanket that is 1" wider than you need.

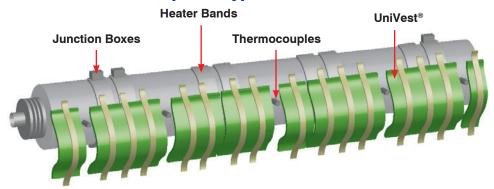
They easily compress in width. Or you can combine 5" width blankets with other available sizes.

These changes make your order simpler to place and IMS is more likely to ship same-day from stock. For blankets we don't have in the Ohio warehouse, the lead times are shorter than ever.

NOTE: Barrel blankets are also now Green instead of Blue, as a reminder of the energy savings these blankets offer.

Need Help? Contact a friendly Technical Specialist for prompt assistance and guidance.

Example of Typical Installation



Our easy 3-step process will guide you to the correct sizing options:

- 1. Measure current outer diameter of heater bands and junction boxes
- 2. Measure widths between thermocouples
- 3. Mix and match different widths to fit your requirements

UniVest® insulation jackets come with a 5-year warranty, under normal installation and operation applications. With its unique design, UniVest® can function at temperatures up to 1500°F.

UniVest® jackets are lightweight, modular and easy to handle for stress-free installation. No tools required for installation.

Barrel O.D.	Circ.	Length	Width	Item #	Price				
			2"	164924	\$32.30				
			4"	164925	53.36				
			5"	164926	64.59				
	6" - 13"	19"L	6"	164927	74.43				
2" - 4"			19"L	19"L	19"L	19"L	8"	164928	96.89
			10"	164929	117.95				
			12"	164930	139.02				
			14"	164931	161.48				
			16"	164932	182.54				



Barrel O.D.	Circ.	Length	Width	Item #	Price	
			2"	164933	\$42.12	
			4"	164934	70.21	
			5"	164935	84.25	
	13" - 19"		6"	164936	98.29	
4" - 6"		13" - 19"	13" - 19" 25"L	8"	164937	124.97
				10" 1649	164938	153.06
				12"	164939	181.14
			14"	164940	209.22	
			16"	164941	237.31	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

UniVest® Barrel Insulation System

Barrel O.D.	Circ.	Length	Width	Item #	Price					
			2"	164942	\$51.96					
			4"	164943	85.66					
			5" 16	164944	102.51					
	19" - 25"	31"L	31"L	31"L					6"	164945
6" - 8"					8"	164946	154.46			
				10"	164947	188.16				
			12"	164948	223.27					
			14"	164949	256.97					
		ĺ	16"	164950	292.06					

Barrel O.D.	Circ.	Length	Width	Item #	Price	
			2"	164978	\$91.28	
			4"	164979	153.06	
	44" - 50"	56"L	5"	164980	183.95	
			56"L		6"	164981
14" - 16"				8"	164982	275.21
				10"	164983	355.60
			12"	164984	397.38	
			14"	164985	459.16	
			16"	164986	519.54	

Barrel O.D.	Circ.	Length	Width	Item #	Price				
			2"	164951	\$63.19				
			4"	164952	103.91				
	25" - 31"	38"L	6" 16 8" 16 10" 16	5"	164953	124.97			
				38"L	38"L		6"	164954	146.03
8" - 10"						8"	164955	200.80	
						10"	164956	230.28	
				164957	272.41				
			14"	164958	313.13				
			16"	164959	355.26				

Barrel O.D.	Circ.	Length	Width	Item #	Price	
			2"	164987	\$102.51	
			4"	164988	171.31	
	50" - 57"		5"	164989	206.42	
		63"L	6"	164990	240.12	
16" - 18"			63"L	8"	164991	308.91
			10"	164992	377.72	
			12"	164993	446.52	
			14"	164994	515.33	
			16"	164995	584.13	

Barrel O.D.	Circ.	Length	Width	Item #	Price						
			2"	164960	\$70.21						
			4"	164961	117.95						
			5"	164962	141.82						
	31" - 38"	43"L	43"L	43"L					6"		165.69
10" - 12"					8"	164964	212.03				
					10"	164965	259.77				
			12"	164966	306.10						
					14"	164967	353.85				
			16"	164968	401.59						

Barrel O.D.	Circ.	Length	Width	Item #	Price					
			2"	164996	\$110.93					
			4"	164997	185.35					
			5"	164998	221.86					
	57" - 63"	68"L	68"L					6"	164999	258.36
18" - 20"				68"L 8" 165000	165000	332.79				
			10"	165001	407.20					
			12"	165002	481.63					
			14"	165003	554.64					
			16"	165004	629.06					

Barrel O.D.	Circ.	Length	Width	Item #	Price	
			2"	164969	\$81.44	
			4"	164970	136.21	
			5"	164971	164.29	
	38" - 44"	50"L	6"	164972	190.96	
12" - 14"			50"L	8"	164973	245.73
			10"	164974	300.49	
			12"	164975	355.26	
			14"	164976	410.01	
			16"	164977	464.78	

Custom Insulation Blanket Systems

For better fit and heat retention or for other applications such as on barrel end caps, extruders, die heads, melt pipes, hoppers, dryers, etc.

Lead time required — call for details

Optional

If ordering a custom barrel end cap bonnet, you will also need to measure and note the distance from the nozzle hex to the front face of the barrel and the diameter of the nozzle.

UNIVEST® is a registered trademark of UniTherm Insulation Systems



Custom UniVest® Barrel Insulation Form

Measuring Procedure (in inches):

Use form below

- The hopper is at the rear of the machine.
- Measure parts of the barrel from the operator's side, starting from the rear.
- Measure from face of the hopper flange to first thermocouple – round to closest whole inch and write it down on the form.
- Continue to measure from thermocouple to thermocouple, moving from rear to front.

- The front blanket width will end with the large diameter barrel (the start of the nozzle adapter).
- Measure the circumference of the barrel for each of the widths identified below. Include all obstructions and projections, such as a junction box. Write this in the Circumference box below.
- Divide the circumference by 3.141 to get the barrel outside diameter. This is the I.D. (inside diameter) of the UniVest® Barrel Insulation.
- Write the I.D. in the diameter box below.

UNIVEST® is a registered trademark of UniTherm Insulation Systems Round to the nearest inch: T/C T/C T/C T/C T/C **FRONT** #5A #4A #3A #2A #1A #nA REAR Hopper width width width width width width Flange #5B #3B circumference circumference circumference circumference circumference diameter diameter diameter diameter diameter diameter **Brand** oz./ton Press# Injection Extrusion Blow Mold Other Date: _____ Quantity: ____ Phone: (_____) ____ Fax: (_____) ____ Title:_____ Company Name: _____ Email: _____ Address: _____ State: _____ Zip:_____



Tech Tips

Calculating Barrel Heat Loss

Operating Temperature (°F)	No Insulation (Watts/Sq. Ft.)	1" Insulation (Watts/Sq. Ft.)	1.5" Insulation (Watts/Sq. Ft.)
300	180	18.6	12.4
325	210	20.9	14.0
350	243	23.4	15.6
375	275	26.0	17.3
400	313	29.0	19.0
425	350	31.5	21.0
450	387	34.3	22.9
475	425	37.2	24.8
500	465	40.1	25.8
525	505	43.2	26.9
550	550	46.5	28.3
575	605	49.9	29.9
600	660	54.1	32.1

Note: Heat loss values are based on an ambient room temperature of 70°F. Values are based on indoor installation with no wind using ceramic insulation.

Barrel Heat Loss Sample Problem

Barrel Length: 48" Barrel Diameter: 61/2"

Barrel Dimensions: 48" I x 61/2" dia.

Surface Area: 6.8 sq. ft.

Heat Loss:

At 450° with no insulation: 387 watts/sq. ft.

At 450° with 1" ceramic insulation: 34.3 watts/sq. ft.

387 watts/sq. ft. x 6.8 sq. ft. = 2632 watts heat loss with no insulation 34.3 watts/sq. ft. x 6.8 sq. ft. = 233 watts heat loss with insulation

Savings

2632 watts without insulation – 233 watts with insulation = 2.40 kwh savings

1000 w/kw

2.40 kwh savings x \$.085/kwh x 24 hours x 7 days/week x 4.3 weeks/month x 12 months = \$1,768.43 savings per year





White Board Mold Insulation

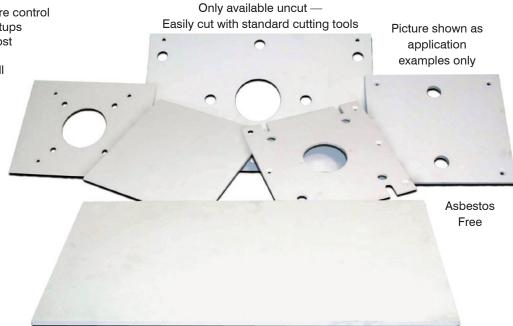
Reduce Heat Loss And Begin Molding Better Parts

Using White Board Will Immediately:

Improve mold temperature controlPromote faster mold startups

• Lower energy use and cost

White Board Mold Insulation will help reduce heat loss, increase temperature control and speed up startup times. Finished to a close thickness tolerance, it is ideal for insulation between the mold and the press or within the mold itself.



Low Thermal Conductivity • Oil & Moisture Resistan • High Strength

Features and Benefits

- Fully Machinable
- Withstands High PSI Compression
- Available in Various Standard Thicknesses
- Heat and Flame Resistant up to 550° F
- Oil. Grease and Chemical Resistant
- 100% Asbestos Free
- High-Temperature Resistant

Applications:

- Injection & Compression Molding Platens
- High Compression Areas
- Sheet Dies

Item #	Thickness	Length	Width	Weight	Unit Price
148223			18"	12 lbs	\$134.14
148186	0.25"		24"	16 lbs	178.84
147756		36"	36"	24 lbs	476.10
149006	0.50"		18"	24 lbs	372.60
148563			24"	32 lbs	496.80
148562			36"	48 lbs	745.20



Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	.3969
1/32"	.03125"	.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/32"	.15625"	3.9688
11/64"	.171875"	4.3656
3/16"	.1875"	4.7625
13/64"	.203125"	5.1594
7/32"	.21875"	5.5562
15/ II	.234375"	5.9531
1/4"	.25"	6.35
17/64"	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/16"	.3125"	7.9375
21/64"	.328125"	8.3344
11/32"	.34375"	8.7312
23/ ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
²⁵ / ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
²⁷ / ₆₄ "	.421875"	10.7156
7/16"	.4375"	11.1125
29/64"	.453125"	11.5094
15/32"	.46875"	11.9063
31/ ₆₄ "	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32	.53125"	13.4938
35/64"	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/64"	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/64"	.671875"	17.0656
11/16"	.6875"	17.4625
45/64"	.703125"	17.8594
23/32"	.71875"	18.2563
47/64"	.734375"	18.6531
3/4"	.75"	19.05
49/64"	.765625"	19.4469
25/32"	.78125"	19.8438
51/64"	.796875"	20.2406
13/16"	.8125"	20.6375
53/64"	.828125"	21.0344
27/32"	.84375"	21.4312
55/64"	.859375"	21.8281
7/8"	.875"	22.225
57 _{/64} "	.890625"	22.6219
29/32"	.90625"	23.0188
59/ ₆₄ "	.921875"	23.4156
15/16"	.9375"	23.8125
61/64"	.953125"	24.2094
31/32"	.96875"	24.6062
63/64"	.984375"	25.0031
1"	1.0"	25.4





HOT STIX Cartridge Heaters

Internally Connected, High Temp Leads

- Fiberglass braided, mica tape insulated lead wires
- 850°F (450°C) maximum temperature rating
- 1/4" minimum unheated area at lead end is required
- 100 Watts Per Square Inch
- 120 or 240 Volts

Electrical Connections:

Parallel - wired in parallel at applied voltage.

Series - two 120 volt heaters can be wired in series for 240 volt. Or 240 volt heaters can be wired in series for 480 volt.

Cartridge Heater Selection Guide



Determine required heater specifications as indicated on this diagram, plus voltage and wattage.

Heater Construction Features

- Tubing is manufactured from alloy that maximizes heat transfer from the heating element to the part being heated.
- The outside diameter tolerance of the cartridge heater is -.004" ±.002" to ensure a tight fit in the hole into which the heater is installed. The tolerance on length is $\pm 2\%$ or $\pm 3/32$ ", whichever is greater.
- Nickel-Chromium resistance wire is precision wound to ensure the maximum amount of wire possible in each heater.
- Ceramic cores are manufactured to close tolerances to maximize heat transfer.
- Extra long, UL and CSA approved lead wire, exiting along the axis, is standard.
- · High purity Magnesium Oxide packing for even heat distribution.

Fully swaged for higher temperatures and better durability

HOT STIX™ is a trademark of IMS Company





Suitable for Most Heating Applications

- 842°F (450°C) maximum temperature
- 100 watts per square inch for fast start-ups
- 24" swaged electrical leads standard (except where noted)



Note: Actual cartridge diameters are .004" less than nominal size listed, ±.002"

Diameter	Length	Volts	Watts	Item #	Unit Price	Buy 12+ Save 5%
	1"	120	150	135818	\$22.71	\$21.57
	11/2"	120	150	135819	21.84	20.75
		240	200	135820	21.84	20.75
	2"	120	250	135822	22.21	21.10
	2	240	150	135821	22.21	21.10
1/4"	21/2"	120	150	135823	23.71	22.52
	272	240	200	135824	23.71	22.52
	3"	120	300	135826	24.23	23.02
	3	240	300	135825	23.29	22.13
		120	300	135828	25.32	24.05
	4"	240	27.27200	135827	24.36	23.14
		240	300	137544 (36" leads)	56.94	54.09
	11/2"	240	250	135829	23.10	21.95
	2"	120	200	135830	23.86	22.67
	2	240	250	135831	22.94	21.79
	21/2"	120	300	137634	24.58	23.35
	272	240	300	135832	23.63	22.45
		120	300	150549	Inquire	
	3"	240	300	135834	25.32	24.05
		240	500	135835	24.36	23.14
	31/2"	120	300	135836	25.81	24.52
	372	120	500	135837	25.81	24.52
		120	300	135838	25.71	24.42
3/8"	4"	240	400	135839	25.71	24.42
		240	500	135840	25.71	24.42
		120	500	137805 (12" leads)	26.23	24.92
	5"	240	300	135841	28.16	26.75
		240	500	135842	28.16	26.75
	51/2"	240	750	135843	28.71	27.27
	6"	240	600	135844	28.37	26.95
	7"	240	600	135845	29.74	28.25
	8"	120	600	135846	32.28	30.67
	8	240	1000	135847	31.03	29.48
	10"	240	1000	135848	33.60	31.92
	12"	240	1000	137495	53.29	50.63

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



(continued)

Diameter	Length	Volts	Watts	Item #	Unit Price	Buy 12+ Save 5%
	11/2"	120	150	135849	\$24.13	\$22.92
	2"	240	300	135850	24.99	23.74
	21/2"	120	300	135851	25.81	24.52
	3"	120	300	137804 (12" leads)	27.23	25.87
	Ü	240	300	135852	25.84	24.55
	31/2"	240	500	135853	25.20	23.94
		120	300	135854	28.71	27.27
	4"		250	135855	28.71	27.27
		240	500	135856	27.61	26.23
			1000	135857	27.61	26.23
1/2"	41/2"	240	750	135858	27.40	26.03
/2	5"	240	500	135859	29.61	28.13
	6"	240	500	135860	31.32	29.75
		240	1000	140082	49.29	46.83
	8"	240	500	135861	35.05	33.30
	, and the second	240	1000	135862	35.05	33.30
		240	500	135863	40.23	38.22
	10"		1000	140083	62.46	59.34
			1000	163234 (90° exit)	64.18	60.97
	12"	12" 240	1000	162684	48.92	46.47
	12		1500	135864	42.50	40.38
	14"	240	1000	162685	80.92	76.28
	16"	240	1000	162686	69.78	66.29
	3"	240	500	135865	31.16	29.60
	4"	240		135868	33.77	32.08
	5"	240	750	135869	34.63	32.90
5/8"	7"	240	1000	135866	45.63	43.35
, ,	8"	240	500	135867	42.71	40.57
	8"	240		135870	42.84	40.70
	10"	240	1000	135871	45.63	43.35
	12"	240		135872	49.71	47.22
	4"	240	500	135873	38.32	36.40
	5"	240	1000	135874	41.50	39.43
3/4"	6"	240	500	135875	44.47	42.25
'*	8"	240	4000	135876	48.95	46.50
	10"	240	1000	135877	54.92	52.17
	12"	240		135878	61.02	57.97





For Internally Heated Nozzles

Special Purpose 1/4" diameter Cartridge Heaters are made expressly for nozzles. The mica-fiberglass lead sleeving protects the swaged leads from breaking, reducing equipment costs.

- 842°F maximum temperature (higher temperatures available upon request)
- 10" swaged leads (not crimped)



Note: Insert cartridges into nozzle holes lead end first. Always push cartridges into nozzle, do NOT pull on leads.

Diameter	Length	Volts	Watts	Item #	Unit Price	Buy 12+ Save 5%
	1"	120	125	135879	\$30.63	\$29.10
	11/2"	240	150	135880	30.50	28.98
	2"	120	175	135881	29.92	28.42
	_	240	173	135882	28.78	27.34
	21/2"	240	175	135883	32.05	30.45
	3"	120	200	135884	29.23	27.77
	J	240	200	135885	31.15	29.59
1/11	4"	120	300	135886	28.63	27.20
1/4"	7	240		135887	28.63	27.20
	5"	120	300	135888	30.08	28.58
	5	240	300	135889	30.08	28.58
	6"	120	400	135890	30.63	29.10
	0	240	700	135891	29.45	27.98
	7"	240	600	135892	35.18	33.42
	8"	120	600	135893	36.99	35.14
		240		135894	35.57	33.79

Don't see what you need? Call IMS for a quote today!

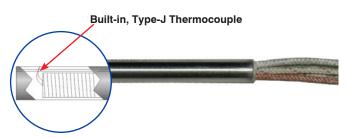


HOT STIX TC Cartridge Heaters

With Built-In Type J Thermocouple

Cartridge Heaters with Built-In Type J Thermocouple provide a quick and easy way to get accurate temperature readings of your cartridge heaters. No need to fumble with extra thermocouples when one is already included.

- 850°F (450°C) lead wire maximum temperature
- Built-in bottom grounded thermocouple
- 36" leads (both power and T/C standard)
- Power leads: T/C (-) red, T/C (+) white



Note: Actual cartridge diameters are .004" less than nominal size listed, ± .002".

Diameter	Length	Volts	Watts	Item #	Unit Price	Buy 12+ Save 5%
	11/2"	240	200	135896	51.68	49.10
	2"	240	200	135897	53.29	50.63
	21/2"	120	200	135898	54.92	52.17
1/4"	272	240	200	135899	54.92	52.17
	3"	240	200	135900	56.73	53.89
	4"	240	250	135901	59.92	56.92
	5"	240	250	135902	63.33	60.16
	11/2"	240	200	135903	53.97	51.27
	13/4	240	250	135904	50.92	48.37
	2"	240	250	135905	53.91	51.21
	2	240	300	135906	51.68	49.10
	21/2"	240	300	135907	55.42	52.65
	3"	240	260	135908	57.12	54.26
	3	3 240	500	135909	54.92	52.17
	31/2"	240	320	135910	59.00	56.05
	072	240	500	135911	59.19	56.23
	4"	240	370	135912	58.26	55.35
3/8"	4	240	500	135913	58.26	55.35
	41/2"	240	420	135914	62.33	59.21
	₹/2	240	500	135915	59.92	56.92
	5"	240	750	135916	61.73	58.64
	51/2"	240	750	135917	63.33	60.16
			575	135918	64.86	61.62
	6"	240	750	135919	64.86	61.62
			1000	135920	64.86	61.62
	61/2"	240	1000	135921	69.31	65.84
	7"	240	1000	135922	68.21	64.80
	8"	240	1000	135923	71.49	67.92
	81/2"	240	1000	137727	73.31	69.64
	10"	240	1000	136110	81.36	77.29

continued on next page



With Built-In Type J Thermocouple (continued)

Diameter	Length	Volts	Watts	Item #	Unit Price	Buy 12+ Save 5%
	2"	240	400	136111	\$55.71	\$52.92
	3"	240	750	136112	59.46	56.49
	31/2"	240	420	136113	61.21	58.15
	4"	240	750	136114	60.79	57.75
	41/2"	240	750	136115	64.96	61.71
1/11	5"	240	1000	136116	64.37	61.15
1/2"	6"	240	775	136117	70.70	67.17
		240	1000	136118	67.97	64.57
	7"	240	1000	136119	71.49	67.92
	7½"	240	1000	136120	76.25	72.44
	8"	240	1500	136121	74.99	71.24
	9"	240	1500	136122	78.80	74.86
	10"	240	2000	137460	82.36	78.24
	4"	240	1000	136124	70.58	67.05
⁵ /8"	7"	240	1500	136126	88.02	83.62
	10"	240	2000	136127	102.72	97.58

Check Out These Other Useful IMS Products!

Heat Resistant Gloves

Use them for quick transfer of hot Nozzles, Screws, Screw Tips, Molds, Water Lines, Heater Bands, etc.

• Heat resistant up to 400°F (short duration)

 Special nitrile rubber coating improves grip — prevents slipping

 Comfortable and breathable 100% cotton

Extra thick inner liner resists heat

· One size fits all



• Maximum Use Temperature: 190°F

 Heat resistant dots leave no marks on product

· Dots on both sides

One size fits all



High Heat PVC Dot Gloves

Item No. 136368

See Pages 446-447 For More Gloves and Pricing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

Hot Nozzle Gloves

with anti-slip coating

Item No. 110671

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

ily.com

Non-Stock Cartridge Heaters

SPECIFY:

Standard Right Angle Overall Length Insertion Length 3/4"----1/4" Unheated Unheated ☐Right Angle Style: Standard Voltage: a) Outside Diameter: Wattage: b) Overall or Insertion Length: _____ Built-in Type J Thermocouple? ☐Yes ☐No c) Lead Length: Is Heater for an Internally Heated Nozzle? ☐ Yes ☐ No Lead Type: Maximum Use Temperature: ° F (Standard, stainless steel braided and armored available) 24-48 Hour Expedite Service? ☐ Yes ☐ No Date: _____ Quantity: ____ Phone:(____) ___ Fax: (____) Name:______ Title:_____ Company Name: _____ Email: __ City: _____ State: ___ Zip:

If the heater you need isn't in stock, we'll have it made and get it to you in

24-48 HOURS!

(expedite charges apply)

NOTE: In the manufacture of non-stock products, it is necessary to allow for losses in production. We reserve the right to ship the following variations in quantities.

Quantity Ordered	Shipping Variations
1-5	No variation
6-10	+/- 1 unit
11-25	+/- 2 units
26-50	+/- 3 units
51-75	+/- 4 units
76-99	+/- 5 units
100 +	+/- 5 Percent





IMS Heat Transfer and Anti-Seize Compounds



INFRA-KOTE

These products consists of metal powders blended into a grease carrier to allow it to be applied. The grease carrier will break down at the temperature listed, but the products will continue to provide heat transfer up to the listed temperature limits of the metal powders.

Will Not Harden



Both excellent heat transfer compounds for use with cartridge heaters and heater bands.



Improve surface contact between heaters and equipment, extending heater life, providing better response times and reducing energy costs.



An affordable, high heat compound for continuous use up to 600°F

- · Eliminates trouble-causing air pockets
- · Distributes heat more uniformly
- · Reduces scale and oxidation
- · Helps prevent seizing and galling

Specifications

Melting point of Copper:

*Max. Continuous Service 600°F - For Cartridge Heaters Temp. for Carrier Medium: and Threads (not exposed to air)

Also an excellent anti-seize compound for use on end cap bolts, and nozzle and screw tip threads.

Item # Description		Unit Price
130787	12-oz. jar SAFEKOTE 60™	
	complete with brush top	\$31.29

Limited use heat transfer compound formulated for continuous use up to 350°F

- · Prolongs heater life
- · Cuts energy costs
- Ensures consistent heat transfer
- Facilitates heater removal

Specifications

Melting point of Copper: 1981°F 1220°F **Melting point of Aluminum:**

Melting point of Graphite: In air, 750°F to 1100°F

in a reduced oxygen environment, 6700°F

Max. Continuous Service Point: 350°F Grease Media Decomposition: 550°F

Item # Description		Unit Price		
103781	16-oz. jar Infra-Kote with	brush top \$23.15		

SAFEKOTE 60™ is a trademark of IMS Company

Available ONLY from IMS!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Type J and K Thermocouples



		naracteristics	Temperature	Limits of Error	
Туре	Positive	Negative	Range (°F)	Standard	Special
Ι,	Iron-White	Constantan-Red	32 to 530	± 4° F	± 2° F
J	(Magnetic)	(Non-Magnetic)	530 to 1400	± 3/4 %	± 3/8 %
	Chromel-Yellow	Alumel-Red	32 to 530	± 4° F	± 2° F
K	(Non-Magnetic)	(Magnetic)	530 to 2300	± 3/4 %	± 3/8 %

Type J and K (industry standard) Thermocouples are an excellent choice for molding temperature sensors. IMS carries several styles, providing you with exactly what you need.

How they work

Thermocouples are made of a variety of materials. When select dissimilar metals are joined, they produce a millivolt signal corresponding to the temperature. A rise or fall in temperature results in a rise or fall in the millivolt output. Millivolt signals are electronically amplified to display or control various thermal activities.



Thermocouple Junctions

This is the plastics industry standard. It is a good, general-purpose sensing system for measuring solids such as plastic material and for surface applications.

Ungrounded:



This junction is electrically isolated from the measured medium, making it excellent for use in conductive environments, where stray voltages and EMF can leak into normal millivolt outputs, resulting in false readings at the control or readout device. Most of our standard T/C's are available ungrounded to special order.

Additional thermocouple options

RTD (Resistance Temperature Detectors) and ungrounded thermocouples are all available as special orders. Contact the IMS Supplies Team at sales@imscompany.com or call 800.537.5375 for additional information.

Most IMS Stock Thermocouples are Grounded unless otherwise noted.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



Unchallenged Quality and Performance

Since 1965, Sawi has manufactured premium temperature sensing products while closely following their core beliefs in quality improvement and uncompromised delivery. Sawi specializes in state of the art miniaturization, improved sensor response time, and the development of new temperature control sensors for the ever-changing demands of the market. These Swiss-made thermocouples are considered the highest quality sensors in the marketplace today. You can be assured when you receive a Sawi style thermocouple, you are receiving the most reliable and durable sensor out there. That is why Sawi sensors are so widely preferred in so many different temperature control and monitoring applications.

IMS is proud to offer the entire Sawi line of sensor products; from the plastics industry standard thermocouples, to ultrasensitive miniature temperature sensors, to the latest technology in mold and cavity sensors.

What does this mean for you and your company? If you need a temperature or pressure sensor for a hot runner system, nozzle or barrel temperature control, or any other special application sensor, IMS can deliver the very best available sensor there is to offer.

- Unchallenged Quality and Performance
- Dependability
- More Precise Measurements Allow You to Mold Better Parts

NOTE: Other types available upon request



IMS SAWI Swiss Made Thermocouples

In Hole Styles

Probe Type

• Tip OD: 3/16"

 Kapton® Coated Fiberglass Leads reinforced with Stainless Steel Overbraid for Durability

· Lead Termination: Stripped Ends

Grounded

103616

MAX. Operating Temperature: 842°F / 450°C



Type J				Type K		
Item #	Unit Price	Probe Length	Lead Length	Bendable	Item #	Unit Price
146643	\$17.65		48"	Non-Bendable		
146644	29.40	1"	96"		159850	Inquire
146645	35.90	[144"			
146646	29.95		48"		159852	43.75
146647	41.40	21/2"	96"		159853	Inquire
146648	50.55		144"		159854	52.55
146649	26.05	12"	48"	Bendable	159855	27.45
146650	41.40		96"			
146651	50.55		144"			
Spare Part						

Fixed Depth, Direct Melt Temperature-Sensing Type

• Direct Melt Style: "B" 90° Bend

• Thread: 3/8"-24 w/swivel nut

• Kapton® Coated Fiberglass Leads reinforced with Stainless Steel Overbraid for Durability

• Lead Termination: Spade Lugs

• MAX. Operating Temperature: 842°F / 450°C

· Hastelloy Tip Material



Тур	oe J		Tungsten			
Item #	Unit Price	Lead Length	Tip Depth	Carbide Coating	Dual Leads*	Junction
147012	\$67.25	48"				
147013	74.85	96"	1/8"	Yes		
147014	82.50	144"			No	Grounded
146652	45.30	48"			INO	Grounded
146653	Inquire	96"	1/4"	No		
146654	62.90	144"				

*1 to indicator, 1 to controller

Kapton® is a registered trademark of DuPont



www.imscompany.com

1/8" N.P.T. compression fitting

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

\$2.94

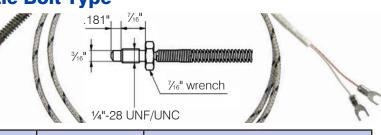


IS SAWI Swiss Made Thermocouples

In Hole Styles

Nozzle Bolt Type

- Kapton® Coated Fiberglass Leads reinforced with Stainless Steel Overbraid for Durability
- 118° Tip Shape to Optimize Contact and Heat Transmission
- Lead Termination: Spade Lugs
- MAX. Operating Temperature: 842°F / 450°C



Тур	e J			Тур	e K
Item #	Unit Price	Lead Length	Junction	Item #	Unit Price
146509	\$21.75	48"		159858	\$23.85
146510	30.65	96"	Grounded	159859	32.15
146511	36.55	144"	ĺ	159860	37.95
146515	29.90	48"		159861	34.75
146516	39.46	96"	Ungrounded	159862	37.60
146517	41.00	144"		159863	53.38

Variable Depth Type - Bayonet & Spring

- Grounded
- Kapton® Coated Fiberglass Leads reinforced with Stainless Steel Overbraid for Durability
- 118° Tip Shape to Optimize Contact and Heat Transmission
- MAX. Operating Temperature: 842°F / 450°C
- Polarized Plug or Spade Lugs



Ту	/pe J	Bayonet Cap	Tip)	Lead		Lead	Ту	pe K
Item #	Unit Price	Adjustment Range	Diameter	Length	Length	Style	Termination	Item #	Unit Price
146662	\$32.67				48"		-	159864	\$34.15
146663	45.05				96"		Polarized Plug	159865	Inquire
146664	60.42	1" to 12"	1/4"	1/8"	144"		i iug		
147015	22.15	1 10 12	74	/8	48"			159873	23.60
147016	28.10				96"			159874	29.55
147017	32.80				144"	Straight		159875	Inquire
147029	42.95	½" to ¾"		9/32"	96"			159868	46.90
		72 10 74		732	144"			159869	44.40
147021	32.60				48"		Spade	159876	34.05
147022	49.25	11⁄4" to 13⁄4"		25/ ₃₂ "	96"		Lugs	159877	40.90
147023	51.58		0.4 11		144"				
147025	44.23	½" to ¾"	³ ⁄ ₁₆ "	9/32"	96"			159871	38.75
147018	35.52				48"	90°		159879	33.20
147019	45.78	11⁄4" to 13⁄4"		25/ ₃₂ "	96"			159880	40.05
147020	Inquire				144"				



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

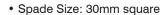
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

SAWI Swiss Made Thermocouples

Surface Styles

Spade Type



 Kapton® Coated Fiberglass Leads reinforced with Stainless Steel Overbraid for Durability

• Lead Termination: Spade Lug

Grounded

• MAX. Operating Temperature: 842°F / 450°C

• Heavy Duty Strain Relief to Promote Durability



Туре Ј		Lead	Туре К		
Item #	Unit Price	Length	Item #	Unit Price	
146506	\$30.65	48"	159882	\$31.20	
146507	36.35	96"	159883	37.80	
146508	50.08	144"	159884	43.65	

Washer Type

• Washer: Stainless Steel

 Kapton® Coated Fiberglass Leads reinforced with Stainless Steel Overbraid for Durability

• Lead Termination: Spade Lugs

Grounded

• MAX. Operating Temperature: 842°F / 450°C



Тур	e J	Hole	Lead	Тур	e K
Item #	Unit Price	ID	Length	Item #	Unit Price
146512	\$15.55		48"	159885	\$17.00
146513	25.10	1/4"	96"	159886	33.52
146514	34.10		144"	159887	Inquire
146518	15.55		48"	159888	17.00
146519	25.10	³ ⁄16 ["]	96"	159889	33.52
146520	34.15		144"		

Kapton® is a registered trademark of DuPont





SAWI Swiss Made Thermocouples

Hot Runner Style

- Kapton® Coated Fiberglass Leads reinforced with Overbraid for Durability
- Lead Termination: Stripped Ends
- Heavy Duty, Stainless Steel Strain Relief with 30 lb Rating

- Grounded
- High-Tech Sensor with Mineral Insulated Thermocouple
- Small, Stainless Steel Transition Fitting
- 482°F Max



Тур	Type J				Тур	e K	
Item #	Unit Price	Tip OD	Tip Length	Lead Length	Item #	Unit Price	
147030	\$61.74			48"	159891	\$54.15	
147031	53.10		110mm	96"			
147032	Inquire			144"			
147033	47.65	1mm		48"			
147034	62.65		150mm	150mm	96"	159895	75.10
147035	Inquire				144"		
147040	56.40		200mm	48"			
147041	79.17		200111111	96"			
147043	55.78			48"			
147044	Inquire		110mm	96"			
147045	Inquire	1.5mm		144"			
147046	56.35		150mm	48"	Inqı	uire	
147048	59.35			144"			
147049	50.25			48"			
147050	Inquire		200mm	96"			



SAWI Swiss Made Thermocouples

Newbury Nozzle Style

Held in place with a set screw, the Newbury Nozzle Thermocou senses temperature from the hole sides. Insert it from either sid since the nozzle has a straight through hole.

- Type J thermocouple
- 1" long with 90° bend
- 0.118 diameter stainless steel welded tip
- Braided stainless steel electrical leads with stripped end
- Grounded
- · Heavy duty strain relief

uple de	
ls	2007-1-378

Type J		Lead
Item #	Unit Price	Length
147009	\$26.90	48"
147010	35.70	96"
147011	Inquire	144"

Other lead lengths, types and ungrounded thermocouples available — Inquire

Band Clamp with Thermocouple Adaptor

IMS Band Clamp Adaptors secure thermocouples to permit highly accurate surface temperature readings. For even greater accuracy, drill a 1/32" hole 1/8" deep for thermocouple tip.

- %16" wide, stainless steel clamp
- Corrosion-resistant plated adaptor and bushings
- · Replaceable 2" bayonet adaptor

Item #	Description	Unit Price
140592	1½6" - 2"	\$19.36
140593	21/16" - 3"	22.26
140595	35/16" - 41/4"	22.90
103566	41/8" - 7"	23.39





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

All-In-One, Hose Clamp Thermocouples

Use anywhere T/C holes are unavailable or impractical. No drilling, No tapping required.

Quick, Easy Installation and Removal

T/C junction is on the inside of the clamp to ensure good surface contact



Available with 48" or 96" stainless steel braided leads



All corrosion-resistant stainless steel, including worm-gear housing and screw



Nozzle and Heater

Photo shows an All-In-One Thermocouple on an injection nozzle



Type J (Iron/Constantan) - Grounded

ALL-IN-ONE Thermocouple
Quantity Discounts
Order 25 or more DEDUCT 10%

Item #	Decimal	Metric	Lead Length (Inches)	Unit Price
140095	1½6" to 2½6"	27 to 51	48"	\$75.00
140102	1½" to 2½"	27 to 51	96"	80.65
140096	2½16" to 3"	52 to 76	48"	75.00

In Stock

Larger sizes available to special order





IMS Brand Thermocouples

High Quality in a Basic Design

7 Styles Available

Common Specifications

- Grounded
- Flex Leads with Stainless Steel Braid
- Spade Lug Terminals



1 to 12" Variable Depth Style - Bayonet and Spring

- Type J
- 3/16" Tip Diameter x 3/16" Tip

 Can be used in place of 1/4" tip diameter
- · Heavy Duty Strain Relief

Item #	Lead Length	Price
171141	48"	\$17.95
171142	96"	22.29



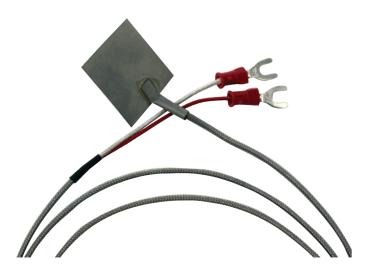
Spade Style

- Type J
- 1" x 1" Spade
- · Heavy Duty Strain Relief

Item #	Lead Length	Price
169558	48"	\$14.19
171136	96"	20.79

- Type K
- 1" x 1" Spade
- · Heavy Duty Strain Relief

Item #	Lead Length	Price
171418	48"	\$18.84



Nozzle Style

- Type J
- $\frac{1}{4}$ " 28 UNF Thread, $\frac{7}{16}$ " Hex Fitting
- 3/16" Tip Diameter
- Heavy Duty Strain Relief

Item #	Lead Length	Price
171137	48"	\$18.52
171138	96"	23.52





www.imscompany.com

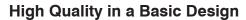
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Brand Thermocouples (continued)





Washer Style

- Type J
- · Stainless Steel Washer
- Strain Relief on Leads

Item #	Hole	Lead	Price
171139	1/4"	48"	\$16.65
171140	3/16"	48"	15.13



Probe Style

- Type J
- 3/16" Probe Diameter

Item #	Probe	Lead	Price
171132	1"	48"	\$12.71
171133	1"	96"	19.37
171134	21/2"	48"	14.94
171135	21/2"	96"	20.10



90° Variable Depth Style

- Type -
- 1/2" 3/4" Variable Depth Spring Style
- 90° Bend
- Stainless Steel Leads and Spade Lugs
- 3/16" Tip Diameter x 9/32" Tip Length

Item #	Lead Length	Price
171697	48"	\$29.53



Variable Depth Extended Probe Style

- Type J
- 1-12" Variable Depth Spring Style
- · Straight Style
- Stainless Steel Leads and Spade Lugs
- 3/16" Tip Diameter x 9/32" Tip Length
- 17/8" Overall Probe Length

Item #	Lead Length	Price
171712	48"	\$32.78
171713	96"	Inquire





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Non-Stock Spring Adjustable Immersion Thermocouples

SPECIFY:	В	2" Split wi	2" Split with Spade Lugs (shown)			
A	Thomas sansan	c				
	manne annum	× × × >> \				
	D			C		
		E				
Thermocouple	Type: □J □K □O	other		I		
Junction:	Grounded Ungrounded					
Conductor Wir	re: Solid Stranded					
A) Tip and Spring	O.D. (NOTE: Tip O.D. will indicate	e Spring O.D.)				
Tip O.D.	Spring O.D.					
☐.125"	.203"					
188"	.263"					
250"	.324"					
B) Bayonet Cap S	Style: \[\frac{1}{16}\] I.D. Single Slot (st	andard)	o 15 mm I.D. [Dual Slot		
	☐ 12 mm I.D. Slot		o Positive Sea	t Indicating		
	12 mm O.D. Pin					
C) Lead Type:	Fiberglass Insulation	Stainless Steel Br	aid	Stainless Steel Armor		
D) Spring Length	:					
E) Overall Length	with Lead Wire Termination:					
F) Terminations:	Leads Not Stripped	Standard Male Plu	ug	☐Mini Male Plug		
	2" Split, 1/4" Stripped	Standard Female	Jack	☐Mini Female Jack		
	☐2" Split with Spade Lugs	2" Split with 1/4" Fe	emale Disconne	ects		
Options:	☐Mating Connector	Cable Clamp		☐Box Connector		
lf v	ou have any questions, contact t	he IMS Sunnlies Tean	n at salas@im	scompany com		
y	ou have any questions, contact t	ne iwo ouppnes rean	ii at sales@iiii	scompany.com		
Data	Quantity: Phone:(1	Fav. (1		
	_ Quantity: Phone:(
Company Name:		Email:				
Address:						
City:		State:		Zip:		



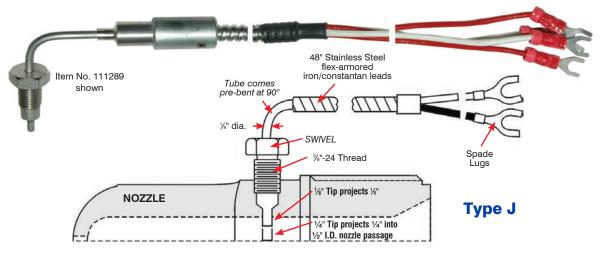
Non-Stock Threaded Nozzle Thermocouples

SPECIFY: A B A Thermocouple	ı	□K □0	E D ther	2" Spl	it with Spade Lugs F (shown)	
Junction:		Ungrounded				
Conductor Wi	_	Stranded				
A) Thread Size	B) Tip O.D.	C) Thread Le	ngth (NOT	E: Thread Size wi	II indicate Tip O.D. and Thread	Length)
<u></u> 1½"-28	3/16"	3/8"				
³ / ₈ "-24	1/4"	1/2"				
☐6mm X 1mm	3/16"	10mm				
□8mm X 1.25mm	1/4"	10mm				
D) Overall Length	n with Lead Wire T	ermination:				
E) Lead Type:	Fiberglass Insu	lation	Stainle	ss Steel Braid	Stainless Steel Armor	
F) Terminations:	Leads Not Strip	ped	Standa	ard Male Plug	☐Mini Male Plug	
	2" Split, 1/4" Stri	pped	□Standa	ard Female Jack	☐Mini Female Jack	
	☐ 2" Split with Sp	ade Lugs	□2" Spli	t with 1⁄4" Female D	isconnects	
Options: Ma	ating Connector	Cable	Clamp	☐Box Conr	nector	
If	you have any que	estions, contact	the IMS Su	upplies Team at sa	ales@imscompany.com	
Date:	_ Quantity:	_ Phone:()		Fax: ()	
Name:				Title:		
Company Name:				Email:		
Address:						
City:			Stat	te:	Zip:	



Direct Melt-Temperature-Sensing Thermocouples

Obtain Actual Temp of Hot-Melt Stream for Precise Process Control



Replaceable Type "J" Thermocouples screw into tapped hole in nozzle. Tip projects into material flow.

1/8" Tip

- Tip protrudes 1/8" into melt for less exposure to wear
- · Use with filled or abrasive plastics
- 48" Lead and %"-24 fitting

1/4" Tip

- Tip protrudes 1/4" into melt for most accurate measurement
- Use with non-abrasive materials
- 48" Lead and 3/6"-24 fitting

Item #	Description	Unit Price	
111289	1/4" Tip Direct Melt Temperature Sensing Thermoco Grounded with 2 pairs of leads (1 to indicator / 1 to	RFQ	
Optional Accessorie	es		
104720	Plug for style B thermocouple hole (%"-24 THD)		RFQ

Surface Thermocouple — Magnetic Type

Ideal for Sensing Surface Temperatures



- Type J thermocouple
- Simple installation

- 48" flexible armored lead and removable coupling
- Grounded

Item #	Description	Unit Price
103571	Magnetic Type Thermocouple	\$168.88



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Non-Stock Cartridge Type Thermocouple

SPECIFY:

			ds standard pped ¼")
_	B ()	ZZ	
	A	c	
Thermocouple	• Type: □J □K □ Ot	her	
Junction:	Grounded Ungrounded		
A) Sheath Length	:		
B) Sheath Diame	ter:		
C) Lead Length:			
D) Lead Type:	Stainless Steel Braid	Stainless Steel Armor	Other
E) Terminations:	☐Leads Not Stripped	Standard Male Plug	☐Mini Male Plug
	□2" Split, 1/4" Stripped	Standard Female Jack	☐Mini Female Jack
	☐2" Split with Spade Lugs	☐ 2" Split with 1/4" Female Di	sconnects
Options:	☐ Mating Connector	Cable Clamp	☐ Box Connector
	If you have any questions, contac	t the IMS Supplies Team at s	sales@imscompany.com
Date:	_ Quantity: Phone:() F	Fax: ()
Name:		Title:	
Company Name:		Email:	
Address:			
City:		State:	Zip:



Type J and K Thermocouple Accessories

Polarized Mini Connectors



Polarized Connectors

	Item #	Description	Dimensions	Prices		Item #	Description	Dimensions	Prices	
	103639	Type J - I/C female jack	1" w x 11/4" l 7/16" hole spacing	\$7.10	0	135499	Type K - I/C female jack	1" w x 11/4" l 7/16" hole spacing	\$7.10	
	121838	Type J - I/C female jack	1" w x 1%" I 7/16" hole spacing	3.62	0	135497	Type K - I/C	3⁄4" W X 1" l	5.48	
ALI.	103714	Type J - I/C male plug	1" w x 11/4" l 7/16" pin spacing	5.48	THE		male plug	7/₁6" pin spacing		
N. C.	121837	Type J - I/C male plug	1" w x 1%" l 7/16" pin spacing	3.65	0	103648	Cable clamp Includes 4 sc	rews	2.28	
e la	103648	Cable clamp Includes 4 sc	rews	2.26		121839	Cable clamp		1.05	
. 579	121839	Cable clamp Includes 2 sc	rews	2.17	5.19		Includes 2 sc	rews		

Thermocouple Lead Wire (Iron/Constantan)

16-Gauge for Standard Connection - This duplex, solid-wire construction consists of wires individually covered with extruded, color-coded PVC, then paralleled and jacketed with PVC to provide excellent moisture and abrasion resistance. Continuous-use temperature limit: 221°F (105°C).

24-Gauge for Mini Connection - This duplex, solid-wire construction consists of wires individually covered with glass or glass insulation. Good for temperatures up to 900°F (482°C).

Single Circuit Thermocouple Jack Panels

Type K Standard shown



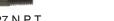
Type K Mini shown

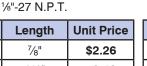
Item #	Desc.	Unit Price (per ft.)	Item #	Desc.	Unit Price (per ft.)	Item #	Desc.	Unit Price (per ft.)	Item #	Desc.	Unit Price (per ft.)
103579	Type J 16-Gauge	\$0.81	148224	Type K 16-Gauge	\$1.29	137116	Type J Mini	\$8.00	148712	Type K Mini	\$10.16
108415	Type J 24-Gauge	0.56	148711	Type K 24-Gauge	0.56	138770	Type J Standard	10.81	160704	Type K Standard	10.81

NOTE: When installing plugs or jacks remember - Iron is the positive wire (white) and can be identified with a magnet. Constantan is the negative wire (red).

Thermocouple Adaptors







Item #	Length	Unit Price
103585	7/8"	\$2.26
131697	11/4"	2.42
103645	21/4"	2.90
158322	31/2"	6.13



%"-24 NF

Item # \$11.75		Unit Price
103704	7/8"	\$3.71
131698	1 ½"	6.18
131699	21/2"	6.77



12mm x 1mm

Item #	Length	Unit Price
112803	1"	\$8.71
112801	21/2"	8.71



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Microprocessor Calibrator Thermometer

Now just one, single instrument can be used to check the calibration accuracy of the eight most common T/C Type devices: J, K, T, E, C, R, S and N

1) Lets you calibrate temperature equipment more accurately

High accuracy calibration function simulates precision thermocouple outputs for use in calibrating thermometers, transmitters, controllers or recorders.

2) Lets you check temperatures more quickly

One model for multiple thermocouple types with precision output displayed as mv or °c/°f.

- · Five user adjustable calibration values for fast calibrations
- °C/°F switchable for increased versatility
- · Displays output in terms of millivolts or temperature based on thermocouple tables
- · 4 digit LCD display is easy to read with thermocouple type indication

Measurements and Source Ranges:

Type J	-58° to 1830°F	-50° to 1000°C
Type K	-58° to 2498°F	-50° to 1370°C
Type T	-184° to 752°F	-270° to 400°C
Type E	-58° to 1382°F	-50° to 750°C
Type C	32° to 3182°F	0° to 1750°C
Type R	32° to 3182°F	0° to 1750°C
Type S	32° to 3182°F	0° to 1750°C
Type N	-58° to 2372°F	-50° to 1300°C
Voltage	-5.00mV to +55.00mV	10μV



Thermocouple calibration cables (terminated with subminiature connectors on either side) are standard

Resolution: 0.1° (measure) / 1° (source) Accuracy: ±0.05% +1.8° F / 1°C Input Impedance: 10 Mohm

Display Update: 4 times per second

Cold Junction Compensation: 0.02°F per °F (0.03°C per °C)

Battery: 6 AA batteries or AC adaptor

Dimension: 6.3" x 3.2" x 1.7" (159mm x 80mm x 44mm)

Weight: 8 oz (not including batteries)



100-240 Volt

 ϵ

Item #170050

Includes: Type K thermocouple calibration cable, copper calibration cable, 6 AA batteries, AC adaptor/recharger and hard carrying case.

\$549.00

Item #170049

Calibrator Thermometer with NIST Certificate: Inquire



Type K & J Digital Thermometers

Use to Check Temperatures Of Melted Plastic, Hot Air and Mold Cooling/Heating Fluids



Readout Specifications

Measuring Range:58° to +1,999°F (-50° to +1,300°C) **Accuracy:** $\pm (0.3\% \text{ rdg.} +2^{\circ} \text{ F})$

±(0.3% rdg. +1° C); >1,000° C (0.5%)

Resolution: 0.1° or 1°

Display: Four LCD Digits, 11/16" high

Power Source: 6 AAA batteries

Overall Dimensions: 5.2" L x 2.8" W x 1.2" D

Weight: 8.3 oz.

INCLUDES: Meter, Rubber Holster with Flip-out Stand, Naked-bead Temperature Probe (T/C wires soldered at end) and 6 AAA Batteries.

117659	Type K Thermometer	\$165.80
129099	Type K Thermometer w/NIST Certificate	316.00
124061	Dual Input Type K&J w/programmable alarms	149.99



St	Optional Stainless Steel Type K Temperature Probes			
118019	General Purpose Probe (1292°F/700°C) (4" long Probe with 3 ft. Lead and 2-Pin Connector)	42.90		
Surface Probe (932°F/500°C) (6" long Probe with 8 mm dia. Tip and 24" coiled Lead and 2-Pin Connector)		79.26		
128102	Immersion Probe (1652°F/900°C) (6" long Probe with 24" coiled Lead and 2-Pin Connector)	65.78		
123136	Naked-bead Temperature Probe	20.00		
136845	Carrying Case Soft Vinyl	23.64		



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Type K & J Input Thermometers

Provides Greater Flexibility For Accurate Temperature

Large backlit LCD display

improves ease of readability for operator

Side-button controls

provides one-handed operation

- Wide temperature range with 0.1°/1° resolution
- · Readout in °F, °C, or K (Kelvin)
- · Data Hold function freezes reading on display
- · Max/Min/Avg readings with relative time stamp
- · Offset key used for zero function to make relative measurements
- · Auto Power off with disable feature
- Single unit complete with Type K temperature probe and 9V battery

1 Year Warranty



Specifications

Accuracy: \pm (0.15% + 1.8°F/1°C) Size: 8³/₄" | x 2¹/₂" w x 1¹/₈" h

Weight: 7 oz.

Item #	Extech #	Description	Unit Price
161925	TM100	Single input thermometer	\$157.49
161926	TM100-NIST	Single input thermometer with NIST	182.95
	Optional Accessories		
161937	TP870	Type K bead wire temperature probe (482°F)	\$16.55
161938	TP875	Type K bead wire temperature probe (1000°F)	37.35

Compatible with the Stainless Steel Type K Temperature Probes on page 230





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Mini IR Non-Contact Thermometer

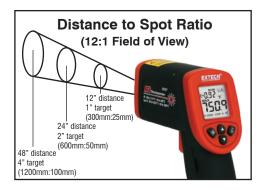
Precise Temperature Measurement in Difficult to Reach Surfaces

Adjustable Emissivity • Lightweight • Compact

This Improved Mini IR Non-Contact Thermometer from IMS measures surface temperature up to 1112°F and is ideal for spot checking heater bands, bearings, mold and melt temperatures and other hard to reach or unsafe to contact areas. The lightweight instrument is operated by a trigger, making it easy and convenient to use. A large, bright white backlit display makes temperature reading easy even in dim lighting, and the built-in laser pointer improves aim for increased accuracy.

New Features:

- Wider temperature range
- Includes removeable Type K Probe for readings up to 1832°F
- Simultaneous Ambient, IR and Type K input temperature measurements



Specifications

Temperature Range

IR: -58 to 1112°F (-50 to 600°C) Ambient: -4°F to 158°F (-20 to 70°C) Type K: -58 to 1832°F (-50 to 1000°C) Accuracy: ±2% of reading or ±4°F (2°C)

Resolution: 0.1°F/°C

Distance to Target: 12:1

Emissivity: 0.05 to 1.00 (adjustable) Power Supply: 9V Battery (included)

Size: 6.0" x 4.7" x 1.7"

153 mm x 120 mm x 42 mm Weight: 5.1oz. (145g) without battery

Item #173605

Includes: Thermometer, Type K Probe and 9V Battery

\$132.64

Just Point and Squeeze Trigger for Reading



· Automatic data hold maintains reading while writing documentation

· Bright backlighting facilitates use in dark areas

· Molded plastic housing

Measures temperature up to 1112°F

• °F / °C Switchable







EXTECH



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

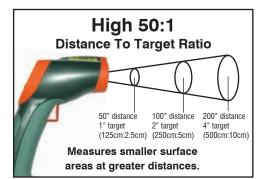
tech support toll-free (USA & Canada) 1.866.467.9001

Hi Temp IR Thermometer

Facilitates Precise Temperature Measurement of Difficult to Reach Surfaces

Lightweight • Compact • Easy to handle

- Measures from -58°F to +1,832°F with 50 to 1 distance to target ratio
- Built-in laser pointer identifies target area
- · High and low alarms
- Adjustable emissivity increases measurement accuracy for different surfaces
- Adjustable High/Low setpoints with audible alarm alerts user when temperature exceeds the programmed setpoints
- Min/Max/Avg plus differential between Max-Min
- Backlighting illuminates display for taking measurements at night or in areas with low background light levels
- Automatic Data Hold when trigger released (for 7 seconds — or lockable)
- · Auto power off



Item #141777

Includes: Thermometer, Hard Carrying Case and 9 volt Battery

\$332.99



Specifications

Range: -58° F to 1,832°F

-50° C to 1,000°C

Accuracy: ±2% of reading +4°F (2°C)

Emissivity: Adjustable
Resolution: 0.1° to 199.9°
Power Supply: 9 volt battery
Size: 3.9"L x 2.2"W x 9"H

100 mm x 56 mm x 230 mm

Weight: 10.2 oz. (290 g)





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001

Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	.3969
1/32"	.03125"	.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/32"	.15625"	3.9688
11/64"	.171875"	4.3656
3/16"	.1875"	4.7625
13/ ₆₄ "	.203125"	5.1594
7/32"	.21875"	5.5562
15/ ₆₄ "	.234375"	5.9531
1/4"	.25"	6.35
17/64	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/16"	.3125"	7.9375
21/64"	.328125"	8.3344
11/32"	.34375"	8.7312
23/ ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
²⁵ / ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
²⁷ / ₆₄ "	.421875"	10.7156
7/16"	.4375"	11.1125
29/64"	.453125"	11.5094
15/32"	.46875"	11.9063
31/64"	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32	.53125"	13.4938
35/64"	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/ ₆₄ "	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/ ₆₄ "	.671875"	17.0656
11/16"	.6875"	17.4625
45/64	.703125"	17.8594
23/32"	.71875"	18.2563
47/ ₆₄ "	.734375"	18.6531
3/4"	.75"	19.05
49/64	.765625"	19.4469
25/32"	.78125"	19.8438
51/ ₆₄ "	.796875"	20.2406
13/16"	.8125"	20.6375
53/ ₆₄ "	.828125"	21.0344
27/32"	.84375"	21.4312
55/ ₆₄ "	.859375"	21.8281
7/8"	.875"	22.225
57/ ₆₄ "	.890625"	22.6219
29/32"	.90625"	23.0188
59/64"	.921875"	23.4156
15/16"	.9375"	23.8125
61/64"	.953125"	24.2094
31/32"	.96875"	24.6062
63/64	.984375"	25.0031
1"	1.0"	25.4



Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	.3969
1/32"	.03125"	.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64	.109375"	2.7781
1/8"	125"	3.175
9/64	.140625"	3.5719
5/32"	.15625"	3.9688
11/ ₆₄ "	.171875"	4.3656
3/ ₁₆ "	.1875"	4.7625
13/64	.203125"	5.1594
7/32"	.21875"	5.5562
15/ ₆₄ "	.234375"	5.9531
1/4"	.25"	6.35
17/64"	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/ ₁₆ "	.3125"	7.9375
21/64"	.328125"	8.3344
11/32"	.34375"	8.7312
23/ ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
25/ ₆₄ "	.390625"	9.9219
13/ ₃₂ "	.40625"	10.3188
²⁷ / ₆₄ "	.421875"	10.7156
⁷ / ₁₆ "	.4375"	11.1125
29/64"	.453125"	11.5094
15/32"	.46875"	11.9063
31/ ₆₄ "	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32"	.53125"	13.4938
35/ ₆₄ "	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/64"	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/64"	.671875"	17.0656
11/16"	.6875"	17.4625
45/ ₆₄ "	.703125"	17.8594
23/32"	.71875"	18.2563
47/64"	.734375"	18.6531
3/4"	.75"	19.05
49/64"	.765625"	19.4469
²⁵ / ₃₂ "	.78125"	19.8438
51/64"	.796875"	20.2406
13/16"	.8125"	20.6375
53/ ₆₄ "	.828125"	21.0344
²⁷ / ₃₂ "	.84375"	21.4312
⁵⁵ / ₆₄ "	.859375"	21.8281
7/8"	.875"	22.225
57/ ₆₄ "	.890625"	22.6219
29/32"	.90625"	23.0188
59/64"	.921875"	23.4156
15/16"	.9375"	23.8125
61/64"	.953125"	24.2094
31/32"	.96875"	24.6062
63/ ₆₄ "	.984375"	25.0031
1"	1.0"	25.4



	Process Trouble-Shooting Guidelines				
CRYSTALLINE MATERIALS Problem Lower/Reduce Raise/Increase		AMORPHOUS MATERIALS Lower/Reduce Raise/Increase			
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp	
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size	
	Injection Speed	Gate Size	Injection Pressure	Gate 0120	
Splay	Mold Release Spray		Screw Speed		
			Hold Pressure Time		
			Venting		
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure	
	Mold Temp		Mold Temp		
Flash	Injection Pressure		Injection Pressure		
1 14011	Hold Pressure Time		Injection Speed		
	Injection Speed		, .		
	Melt Temp	Mold Temp	Melt Temp	Mold Temp	
	Moisture Content	Gate Size	Moisture Content	Gate Size	
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure	
		Back Presure	Injection Speed	Back Pressure	
		Hold Pressure Time		Hold Pressure Time	
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time	
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time	
	Injection Pressure		Injection Pressure		
			Back Pressure		
	Mold Temp	Melt Temp	Mold Temp	Gate Size	
		Gate Size		Injection Pressure	
		Injection Pressure		Hold Pressure Time	
Sinks		Hold Pressure Time		Injection Speed	
		Injection Speed		Venting	
		Cushion			
		Venting			
		Melt Temp		Melt Temp	
		Mold Temp		Mold Temp	
Ole e d		Gate Size		Gate Size	
Short Shot		Injection Pressure		Injection Pressure	
Snot		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
				Venting	
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp	
		Mold Temp		Mold Temp	
Classinoss		Injection Pressure		Injection Pressure	
Glossiness		Injection Speed		Hold Pressure Time	
		Venting		Injection Speed	
				Venting	
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray	
Dorto	Mold Temp		Mold Temp		
Parts	Injection Pressure		Injection Pressure		
Sticking	Hold Pressure Time		Hold Pressure Time		
	Cooling Time		Cooling Time		
	Injection Speed		Injection Speed		
	Melt Temp	Gate Size	Moisture Content	Gate Size	
	Moisture Content	Venting	Injection Pressure	Venting	
	Injection Pressure		Back Pressure		
	Back Pressure		Screw Speed		
Brittleness	Screw Speed		Hold Pressure Time		
	Hold Pressure Time		Cushion		
	Cushion		Regrind		
	Regrind		Mold Release Spray		
	Mold Release Spray				
Burn	Injection Pressure	Venting	Melt Temp	Gate Size	
Marks	Injection Speed		Injection Pressure	Venting	
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp	
	Injection Speed	Gate Size		Gate Size	
	Moisture Content	Melt Temp	Moisture Content	Melt Temp	
		Mold Temp		Mold Temp	
Weld		Gate Size		Gate Size	
vveid Lines		Injection Pressure		Injection Pressure	
LIHES		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
		Venting		Venting	
	Injection Speed	Melt Temp	Injection Speed	Melt Temp	
Jetting	Hold Pressure Time	Mold Temp		Mold Temp	
		Gate Size		Gate Size	

IMS Hot Runner Testing System

Safely Troubleshoot Various Electrical Problems With Ease

Eliminates Days in Downtime - Save Hours in Maintenance



The Affordable Diagnostics System That Can Increase Worker Safety and Reduce Costly Mistakes

- Predict Heater and Thermocouple failure
- Spot check your hot runner system before and after installation of your manifold
- · Simplifies troubleshooting, minimum training required
- · Verify all hot runner cables are wired correctly and functional
- Completely portable and powered by 9-volt batteries (included)
- Prevent work place accidents can prevent electrocution, burns and falls associated with climbing on machines



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Hot Runner Mold Testing System

MoldXChecker[™]

Troubleshoot And Diagnose Various Common Electrical Problems Within Your Hot Runner/Temperature Control System Quickly With Ease



Check for Opens: Shows thermocouple or heater opens which can indicate damage to the mold or a misplaced wire.

Check for Shorts: Electrical shorts are dangerous and destructive to your temperature controller and its delicate components.

Check Mold Health: Test the Ohms in the drops, manifolds and sprues to ensure heaters and thermocouples are operating properly.



Dimensions: 8" x 8" x 4" Weight: 7 lbs

Item #166199

Includes: Checker, Two Year Warranty, Instruction Manual and Two 9V Batteries

\$2,050.05

Avoid Dangerous and Costly Unknown Electrical Shorts!



The Mold X Checker is equipped with standard DME® Style Power and Thermocouple Hot Runner Housing Connectors.

Custom Connectors Available





Hot Runner Cable Testing System

CableXChecker™

Quickly Diagnose Problems With Standard Hot Runner Heater and Thermocouple Cables



Check Pin and Wire Continuity: Pushed-in pins, unseated sockets, damaged pin crimps and severed wires are commonly difficult to detect with a standard multimeter.

Check for Cable Shorts: Shorts can be the most labor intensive diagnosis. The routine method for a standard 24-pin cable requires a 576 point-to-point test to diagnose a problem. The CableXChecker™ can check the same cable in less than a minute.

Check for Incorrectly Wired Connectors: Use the CableXChecker™ to assist in repairing and making cables. This unit allows for quick and easy bench testing during cable assembly or repair.

Includes: Checker, Two Year Warranty, Instruction Manual, Testing Lead and One 9V Battery

For 5 Zone Cables (Item #166196)
For 8 Zone Cables (Item #166197)
Inquire

For 12 Zone Cables (Item #166198) **\$1,240.73** each

Also Available!



Dimensions: 16" x 13" x 8" Weight: 8 lbs

For 5, 8 &12 Zone Cables (Item #166945)

\$1,434.05



Dimensions: 8" x 8" x 4" Weight: 7 lbs

The Cable X Checker is equipped with standard DME® Style Power and Thermocouple Hot Runner Cable and Housing Connectors.

Custom Connectors Available

5 Zone



8 Zone



12 Zone



5/8/12 Zone





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Mold and Cable Checker Protective Blow Molded Case

Protect your diagnostics investment with a protective blow molded case:

Item #168638: \$95.00

Fits (1) MoldXChecker or (1) CableXChecker

Item #168637: \$125.79

Fits (1) MoldXChecker and (1) CableXChecker or (1) Deluxe CableXChecker Only

Cases come with customizable foam inserts

Request for quote: Make a copy. Scan and email to sales@imscompany.com or Fax: 1 888 288 6900 (Form online at www.imscompany.com)



Custom Mold and Cable Checkers Form

Specify:

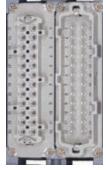
- 1. ☐ MoldXChecker™ ☐ CableXChecker™
- 2. Single Latch Double Latch (Connector Hood)

3. Common Connector Styles:

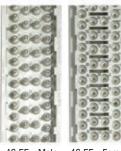












10 HA - Male 10 HA - Female

32 HBE - Female/Male

48 HBE - Female/Male

32 EE - Male 32 EE - Female

46 EE - Male 46 EE - Female



Amphenol - Male



Amphenol Round Military Style - Male



6 HBS - Male 6 HBS - Female



25 HD





40 HD - Male





64 HD - Female

Round Military Style

Round Military

Style - Female



Amphenol Round Military Style - Female

Date: Quantity: Phone: ()	Fax: ()
Name:	_ Title:
Company Name:	_ Email:
Address:	
City:	State: Zip:



phone order toll-free (USA & Canada) 1.800.537.5375

64 HD - Male



Works With All IEC Circuit Breakers



- · Keep your machines running safely
- · Protects against accidental turn on/off
- · Anodized aluminum construction
- Red or black color
- · Compatible with Airpax/Sensata, Heinemann, Carling Switch, Potter-Brumfield, CBI and more

Custom Lockouts Available — Inquire









Contact the Equipment Team for pricing and additional information: sales@imscompany.com or Call: 1.886.467.9001







- · Prevents operator from accidentally turning on/off important switches to the process
- · Stainless steel construction

Contact the Equipment Team for pricing: sales@imscompany.com









IEC Circuit Breakers

- All OEM's available Heinemann, Carling Switch, CBI and more
- 1, 2, 3 or 4 poles
- · Many stock sizes

Contact the Equipment Team for pricing: sales@imscompany.com









www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Single Zone Temperature Control System

Totally Digital and Self Contained for Today's Industry

The MFH-1 is a 240V, 15 amp, microprocessor-based, single zone temperature controller designed for today's demanding needs. It's compact foot print, robust design with rugged extruded aluminum case and advanced features are ideally suited for use with hot sprue bushings, machine nozzles or in areas where this condensed size and all inclusive design are requisites.

The latest in microprocessor technology offers many improved and unique operating features not found elsewhere, providing ease of use, the flexibility of menu selectable features and settings, as well as real time fault detection and alarm.



Superior Features:

- · Compact, durable and full featured design
- · Easy to use
- · Preferred diagnostic features
- Large Dual Digital Displays Easy to read temperature, setpoint and diagnostic conditions
- Audible Alarm Sounds during error conditions
- Fuses Mounted on rear panel for easy access
- Soft Start LED Indicator Lit when in soft start mode
- Heater Load LED Indicator Lit as power is applied to
- Bumpless Transfer APO (average power output) with learned % power for thermocouple failure conditions

Selectable Features:

- Auto or Manual Operation LED mode indicator
- Type J or K Thermocouple LED mode indicator
- F° or C° Temperature Range LED mode indicator
- Amperage Monitoring and Display LED mode indicates AMP mode
- Audible Alarm Selectable on/off
- Front Panel Lockout Selectable on/off

Enhanced Diagnostics:

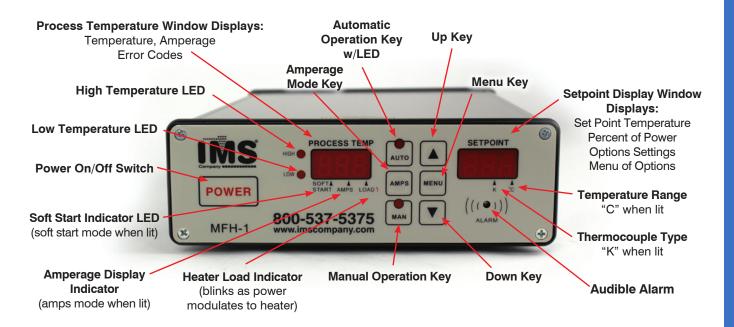
- High/Low Temperature LED's indicate fault (selectable range)
- tCr Error Display Thermocouple Reverse
- tCO Error Display Thermocouple Open
- tCS Error Display Thermocouple Shorted
- tOh Error Display Triac/Heater Open
- tSh Error Display Triac Shorted
- HiC Error Display High Amperage Alarm (selectable range)

Safety Features:

- High Voltage Thermocouple Protections (fused)
- Module High Current Protection (fused)
- · Electrically Isolated Front Panel
- · Power Disabled to Heater:
 - Triac Shorted
 - Triac Open
 - Heater Open
 - Over Temperature
 - High Amperage

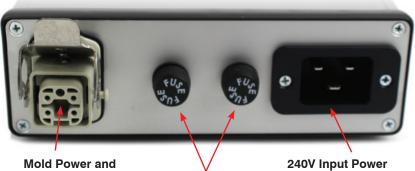
continued on next page







Mating connector #104248 supplied with system



Thermocouple Main Frame Connector (female)





Mating connector #147229 supplied with system.

Specifications and Prices

Control System

Power Usage: Less than 5 watts

Set Point Range: 0° to 999°F Control Accuracy: $\pm 1^{\circ} F (0.5^{\circ}C)$

Calibration Accuracy: Better than 0.2% full range

Temperature Range: -32° to 120°F

> Output Drive: Internal solid state triac,

zero crossing AC pulse

Size: 61/2" wide x 11/25" high x 10" deep

Connector (male)

- 120/60/1 or 208 to 240/60/1
- 50/60 Hz
- 15 Amp Capable
- 3600 Watts
- Cold Junction Compensation

Item #	Voltage	Description	Unit Price	
149127	120V	MFH-1 Single Zone Temperature Control System	\$348.31	
145116	208 to 240V	WIFTI-1 Single Zone temperature Control System	348.31	
Optional Acces	sories			
147229	Input Power Conn	ector	\$22.30	
104248	Spare Male Connector		15.00	
104251	15 AMP Fuse		3.91	
47230 MFH-1-IPC 240Vac Input Power Cable		37.90		
104212	10' PTC1 Combination Power and T/C Cable		93.33	
104191	20' PTC1 Combina	ation Power and T/C Cable	130.00	



phone order toll-free (USA & Canada) 1.800.537.5375

IMS CLOSED 15 Amp Temperature Control Modules

Precise, Dependable Control of Probes and Heaters

Now Get Even Better:

- Performance
- Versatility
- Durability
- · Ease of operation

2 Year Warranty!

For Less Money!

Common Features Of Both Models

Compatible with DME and Athena Housings and Main Frames

- Selectable Control Methods Adaptive-auto-tuning PID or Fuzzy Logic (amperage control)
- Interchangeable with all "G" series mainframes, including DME, ITC, EMI, Athena, PPE, and others.
- · Can be used with Type "J" or "K" Thermocouples
- Automatic Mode Just turn on the power and enter the desired temperature.
- · Manual Mode Allows manual adjustment if thermocouple feed-back is lost
- LED Digital Read-Out Displays actual process temperature in degrees Fahrenheit or Celsius or Amperage Draw
- High and Low Temperature Indicator
- · Open Thermocouple Indicator/Protection Continues to apply learned percentage of power based on conditions prior to break
- Reversed Thermocouple Indicator
- Shorted Thermocouple Indicator Help prevent heater run-away
- Open Triac / Heater Indicator
- Shorted Triac Indicator/Protection Automatically turns off power to heater if controller detects continued power draw when temperature is well above the setpoint
- Over Current Indicator warns if current exceeds a selected value helps detect leakage in wires, cables, heaters etc. at an early stage
- Advanced Automatic Soft Start "Cooks-out" trouble-causing moisture before applying full power to heaters
- Blown Fuse Indicators
- Advanced Anti-Arcing Circuitry (when used in IMS's updated Main Frames) helps prevent damage if module is changed while main frame is under power
- · Durable, Industrial Grade Electronics

Common Specifications Of Both Models

Amps: 15 / 3,600 watts Setpoint: 0°F to 999°F

Dimensions: 2" wide x 7" tall x 71/2" deep Accuracy: ±11/2° F (200°F to 800°F)

Tech Tips

All new temp controllers are fitted with anti-arcing jumper. If you have an old control housing you'll need to remove this for proper operation.



S20-D3C

Rock-solid performance



Intelligent design and advanced

Delivers simple operation and reliability

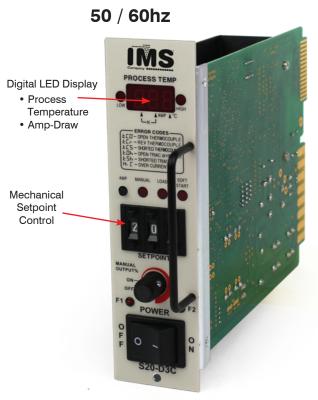
- Manual buttons for fast and easy setpoint selection
- Amp-draw display is now standard lets you check for faulty heaters. Also lets you see how much heat each zone is pulling — a powerful tool for diagnosing molding issues

Perfectly matched control for Hot Runners

50 / 60hz

- Advanced membrane keypad for multiple functions and displays
- New Standby Key function for one touch, safe idle temperature setting

In addition to the common features listed on previous page, specific controller features include:



Accurate, reliable temperature regulation at an economical price!

Digital LED Display (((0)) Process Temperature Amp-Draw Output Power Percentage **Ground Fault Indicator** with selectable sensitivity **Digital LED Display** Setpoint Electronic Setpoint Control Standby Key lowers setpoint to a safe temperature while machine is idle POWER Boost Key - for UATC-20 temporary, 100% power output

Stock Model S20-D3C				Stock Model UATC-20	
#137679 (120V)		52.00	#134360 (120V)	\$187.00	
#133753 (240V)		only \$153.00		#133752 (240V)	\$167.00
Spare Parts (For Either Model)		Optional Features (UATC-20 Only) (requires main frame modification)			
Item #	Descr	iption	Prices	Global Standby - places all or a group of zones in standby mode: Inquire	
104251	15-amp Rectifie	er Fuse	\$3.91		
127511 Trans Triac (for TM315M, UATC-15, S20-D3C, UATC-20) 8.50 Global Power Boost - raises temperature for all or a segroup of zones for user selected time: Inquire					

Housings, connectors and other controller accessories also stocked - Inquire Custom panel racks - available to order



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

IMS CLOSED- Temperature Control Housings

Accept IMS, DME® G-Series and Athena (SPP) Modules

1 Zone Housing Assembly

Up to 15 amp Capacity 3,600 Watts (240 Volt) 1,800 Watts (120 Volt) NOTE For 1 Zone, 30 AMP Housing Inquire

Voltage: Designed for both 240/60/1 or 120/60/1

(See next page for component part numbers and prices)

Item #		Unit Price
104199	Housing Assembly with power jack only	\$291.53

Order modules, cable and/or connector separately as required



Industry Standard Mounting Accepts Most Power Modules!

2 Zone Housing Assembly

Up to 15 amp Capacity 3,600 Watts (240 Volt) each zone 1,800 Watts (120 Volt) each zone

Voltage: Designed for both 240/60/1 or 120/60/1

(See next page for component part numbers and prices)

Item #		Unit Price
104303	Housing Assembly with power jack	\$370.10

Order modules, cable and/or connector separately as required



Height: 103/4" x Width: 7" x Depth: 10"

Choose Between Two Heater Hookup Methods

A. Connect heater and T/C wires directly to connector, when housing is adjacent to heater (lowest cost method)

Item #		Unit Price
104248	Male Cable-to-Housing Connector	\$15.00
	with cable hood	

B. Use 10 or 20 foot, armored cable assembly to reach heater and T/C wires attached to mountable connector with clamps (most versatile method)

Items Required:

Combination Heater and T/C Cable/Connector Assembly

Item #		Unit Price
104212	10'	\$93.33
104191	20'	130.00
104202	Male Mold Connector with clamp	15.00

Spare Part	s	Unit Price
108157	10-amp rectifier fuse	Inquire
104184	Blank module panel cover	\$12.86
107485	Plastic push pin for panel cover (2 required per cover)	1.43 ea



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Cable Connector Sets

For 1 and 2 Zone Controllers

1 & 2 Zone Cables

Heater and Thermocouple Combination Cables



1 & 2 Zone Cables		Unit Price
104212	10 Foot Cable	\$93.33
104191	20 Foot Cable	130.00

Tech Tips

Using spare temperature controls will eliminate wasting time having to wait for a mold to come to temperature. It can be brought to temperature before it is hung.

1 & 2 Zone Connectors









1 & 2 Zone Connectors		Unit Price
130888	Stand Alone Male Mold Connector	\$16.43
104202	Male Mold Mountable Heater & TC	15.00
104309	Female Cable to Mold Connector	15.00
104248	Male Cable to Housing Connector	15.00

1 & 2 Zone Housing Replacement Parts







1 & 2 Zone Housing Replacement Parts		Unit Price
104290	Mountable Female Housing Connector	\$15.00
113640	Flanged Inlet Housing Power Male Receptacle	32.60
109040	Housing Power Connector Female Plug	35.68



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Tech Tips

How To Order Temperature Controllers & Housings



- 1. Specify how many zones of control are required.
- 2. Specify amperage required per zone (15 or 30).
- 3. Specify control modules required.
- 4. Specify the main frame size.
- 5. Specify cables, connectors and terminal boxes.
- 6. Choose optional accessories: Current/Voltage Monitor, Floor Stands, Transformer Kits, Fuses and Blank Module Panels.

IMS Closed-Loop Temperature Control Housings

Accept IMS, DME® G-Series and Athena (SPP) Modules

Side-Mounted Ventilation Fan and Phase Indicator Lights Standard

24 & 36 Zone Housing Assemblies Available - Inquire

5 Zone Housing Assembly



8 Zone Housing Assembly



12 Zone Housing Assembly



Voltage: 240/60/3

(Can be wired to 120 or 240/60/1 by user. - For 480 operation, see transformer kits on page 253)

Item #	Description	Unit Price
104280	Housing Assembly ONLY (shown)	\$647.90
104269	Housing with 10' Heater & T/C Cable/Connector Assemblies and Mold Connectors	970.76
104250	Housing with 20' Heater & T/C Cable/Connector Assemblies and Mold Connectors	1,020.76
104262	Dual Mold Heater and T/C Connector Mounting Box	71.43

Voltage: 240/60/3

(Can be wired to 120 or 240/60/1 by user. - For 480 operation, see transformer kits on page 253)

Item #	Description	Unit Price
104259	Housing Assembly ONLY (shown)	\$776.47
104225	Housing with 10' Heater & T/C Cable/Connector Assemblies and Mold Connectors	1,170.75
104204	Housing with 20' Heater & T/C Cable/Connector Assemblies and Mold Connectors	1,213.61
104240	Dual Mold Heater and T/C Connector Mounting Box	75.00

Voltage: 240/60/3

(Can be wired to 120 or 240/60/1 by user. - For 480 operation, see transformer kits on page 253)

104242	Housing Assembly ONLY (shown)	\$947.90
104173	Housing with 10' Heater & T/C Cable/Connector Assemblies and Mold Connectors	1,409.33
104291	Housing with 20' Heater & T/C Cable/Connector Assemblies and Mold Connectors	1,487.90
104185	Dual Mold Heater and T/C Connector Mounting Box	78.57

Spare Parts		Unit Price
104184	Blank module panel cover	\$12.86
107485	Plastic push pin for panel cover (2 required per cover)	1.35 ea.
106124	Heineman circuit breaker (230 volt, 50 amp)	128.57

IMS Connector Sets and Accessories

For 5, 8 and 12 Zone Controllers

Temperature Control Cables





	Thermoco	uple Cable		Mold Power Cable 15 Amp				
Item #	Zones	ones Length Unit Price		Item #	Zones	Length	Unit Price	
104234	5	10'	\$121.43	104278	5	10'	\$121.43	
104214		20'	142.86	104258	Ü	20'	150.00	
104209	8	10'	157.14	104254	8	10'	150.00	
104189		20'	178.57	104228	Ü	20'	171.43	
104255	12	10'	192.86	104297	12	10'	171.43	
104231] '-	20'	214.29	104274		20'	228.57	

Need a Custom Cable? (DME, Husky, INCOE, etc.) Call to Inquire

Great Prices and Fast Delivery on these OEM style cables.

Mounting Box (Thermocouple & Power)								
Item # Zones Unit Price								
104262	5	\$71.43						
104240	8	75.00						
104185	104185 12							





IMS also offers the EZ-Junxxion Box to speed up your mold connections

See Page 252 for details





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

Mold End Connectors

Controller End Connectors

With Pigtail





With Pigtail



With Pigtail

104177

104198

109465 108611

Male Mold Thermocouple Connector						Male Housing Thermocouple Connector			Female Housing Power Connecter		
Item #	Zones	Unit Price	Item #	Zones	Unit Price	Item #	Zones	Unit Price	Item #	Zones	Unit Price
104301	5	\$37.14	104181	5	\$42.86	109463	5	\$60.00	108610	5	\$61.43
104272	8	37.14	104294	8	50.00	109459	8	74.29	108609	8	75.71
104177	12	41.43	104198	12	55.71	109465	12	98.57	108611	12	100.00







106362



106361

109031

Male Metal Panel Mounting Plastic Male Insert, **Female Metal Panel Female Insert with Base with Gasket for** with Pin Contacts **Mounting Base with Gasket Socket Contacts Heaters & Connectors** for Thermocouples **Unit Price** Zones Item # Item # Zones **Unit Price Unit Price Zones Unit Price** Item # Zones Item # 104273 5, 8, 12 109034 5 109042 5 109038 5 \$17.90 Inquire \$13.50 \$15.85 109031 8 \$23.80 109037 8 16.75 109036 8 16.55 12 106360 106362 12 106361 12 36.92 19.50 21.75











12

106359





Cable Hood for Power		Cable Hood for le Hood for Thermocouple			Pir	ıs Crimp	Type Sockets Crimp Type				
Item #	Zones	Unit Price	Item #	Zones	Unit Price	Item #	Zones	Unit Price	Item #	Zones	Unit Price
104279	5,8,12	\$18.65	109032	5	\$19.90	104232	5,8,12	\$1.05	104224	5,8,12	\$0.75
			109030	8	25.00			Optional	Acces	sorv	-

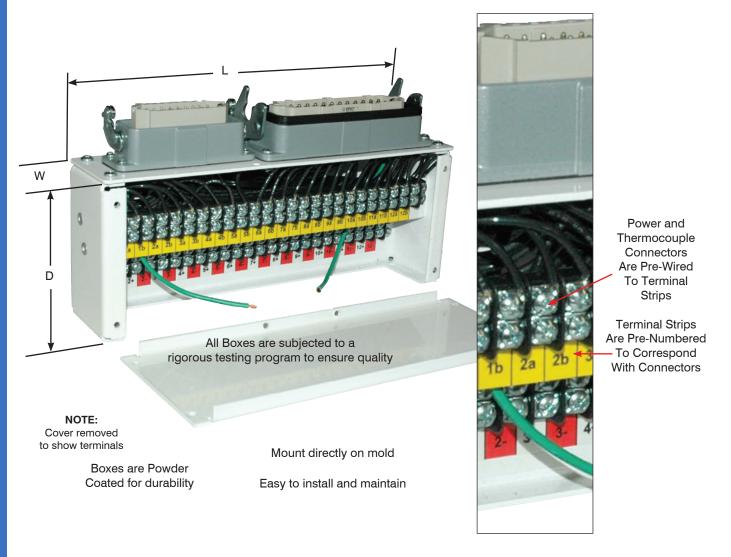
26.30

Pin Extractor Tool see page 196





Help Simplify and Speed Up Mold Setup!



16 Amp, 240 Volt

	Box Dimensions											
Item #	Zones	L	W	D	Unit Price							
140111	5	8.66"	2.34"	4.00"	\$239.70							
140112	8	9.47"	2.34"	4.00"	253.99							
140113	12	10.53"	2.34"	4.00"	318.27							

Different Configurations Available on Request

EZ JUNXXION BOX™ is a Trademark of IMS Company



Accessories for IMS 5, 8 & 12 Zone Control Systems

Housing Stand

Permits fast, safe movement of controllers from press to press!

#112695 (One Stand Fits All)

Complete with all installation hardware for 5, 8 or 12 zone housings

\$321.43

Can also be used with 1 & 2 zone by special order



Transformer Kits

Converts 480/60/3 to 240/60/3

Includes: Stand (same as shown above)

- Plus: Enclosed Transformer
 - 6 ft. cable for controller
 - Disconnect Switch
 - Mounting Hardware
 - · Pre-Assembly of Transformer and Stand

How To Size A Transformer

Add the wattage of all heaters. Divide by 1000. This is the maximum KVA used if every zone were drawing full power simultaneously. Choose the transformer size that is the closest, but not lower than your calculation.

Item Number	Power Capacity	Unit Price
109467	6kVA	
109464	9kVA	
109323	15kVA	RFQ
137354	30kVA	
158275	45kVA	
165257	75kVA	

Consult an IMS Technical Specialist for Other Voltage and Current Capacities





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

West Temperature Controllers







West Temperature Controllers hold barrel and nozzle temperatures within a 2° to 3° F variation. They provide a steady temperature that not only helps to improve quality, but also decreases part reject rate and reduces cost.

Retrofitting your machine is simple and straightforward as well. Usually only six wires are needed for connection and IMS can supply you with an electrical drawing to aid in conversion from an older controller, at no extra charge. Adaptor plates are available for retrofitting panel cutouts.

Setting the range is also easy. The simplified front panel permits quick and uncomplicated access to adjustments.

In many cases the instruments can be directly configured via a PC. The Large 3-digit LED display on any West Controller provides maximum visibility at a glance.

West Controllers are programmable for nearly any thermocouple input range and accept 96 - 264 VAC 50 and 60 Hz power. IMS can provide you with a wide selection of options to ensure that you only pay for the functions you need. Let us know exactly what you require in a temperature controller, and chances are we have precisely what you want.

Cross Reference Single Relay Output

(Heat Only) Controls — Type J Thermocouple

Model Size	Model	Size
Barber Colman	Older West Instruments	
272 P (full)DIN*	Gardsman (JP) C)dd*
520 series Odd**	800 Series ¹ / ₄	DIN
580 Series ¹ / ₄ DIN	2000 Series ¹ / ₄	DIN
220 Series ¹ /8 DIN	3000 Series ¹ /8	DIN
AT580 Series 1/4 DIN	400 Series ¹ / ₄	DIN
MAM Series ¹ /16 DIN	1400 Series ¹ / ₄	DIN
Eurotherm	Fuji	
Model 94 ¹ /8 DIN	PYW4 ¹ / ₁₆	DIN
Model 91 E1/16 DIN	PYX4 ¹ / ₁₆	DIN
*use 1/4 DIN to replace	PYW5 ¹ / ₈	DIN
**use 1/6 DIN to replace	PYX51/8	DIN

Model	Size
Cal	
Model 9900 ¹ /16	DIN

The West controls listed below can be used to replace all the controls listed. The difference is in size and features.

West Ins	truments Rep	lacements _
WCOL IIIO	tranicitis ricp	laccilicits
Size	Series	IMS Item #
1/ ₁₆ DIN	Series 6100	119499
		163528
	8100	119511
1/4 DINI	4100	110504

IMS Item # is for single relay output (heat only) control. Adaptor plates are available to convert between control sizes.

OVERVIEW



100 Series Temperature Controllers

Our Most Advanced Microprocessor-Based Controllers

Innovative design combines sophisticated functionality with built-in versatility and ease of use.

These units will hold barrel and nozzle temperatures to within a 2° F to 3° F variation. The 3-digit LED displays provide maximum visibility at a glance. A wide selection of options ensure that you pay only for the functions you need. Contact the IMS Supplies Team at sales@imscompany.com for additional information.

- Microprocessor-based closed-loop temperature control
- · Configurable directly from a PC
- Three tuning options:

Pre-tune — This is a single shot tune that increases the power to 2/3 of setpoint and then turns off until the process slows and the PID terms can be calculated. The setpoint is then returned to normal and the process goes to temperature using the PID terms it has calculated.

Self-Tune — This is a continuous tune that runs while the process is on control.

Manual Tune — This is where you enter your own calculated PID terms.

- Accommodates a variety of thermocouple and sensor types
- Pre-programmed for 32° F to 842° F range with Type J T/C input
- · Large, dual LED display of temperature and setpoint
- · Power relays turned off if T/C fails
- · User-defined setpoints for process temperature
- · User-defined setpoints for temperature high and low alarms
- Bumpless auto/manual transfer

92mm X 92mm



45mm X 92mm



48mm X 48mm



1/8 DIN

1/16 DIN

- · Field upgradeable
- Sealed control panel
- Password protected operator access
- $\frac{1}{4}$ DIN, $\frac{1}{8}$ DIN, and $\frac{1}{16}$ DIN panel sizes
- CE approved, UL and Canadian UL recognized or pending

Options:

- · Celsius display of temperature and setpoint
- Handles Type K T/C input for higher temperatures
- Second relay output (secondary control or alarm 2)
- Third relay output (alarm 1 or DC recorder output setpoint or process variable)
- Field installable RS485 serial communications protocols
- · Dual setpoint operation
- 20-50 VAC/VDC power input

S	nec	ificat	tions	and	Prices
U	pcc	IIICa		and	1 11003

Accuracy: ±.25% of span ±1 LSD

(least significant digit; typically 1°F)

Control Output: 1 SPDT (2A) relay or

solid state relay driver

Power Input: 96 to 264 VAC

	i ever input of to 201 vice	
Item#	Description	Unit Price
119504	West Model 4100+ Temperature Controller (1/4 DIN)	\$649.44
119511	West Model 8100+ Temperature Controller (1/8 DIN)	628.32
119499	West Model 6100+ Temperature Controller (1/16 DIN - Standard Relay Output)	485.76
119863	West Model 6100 + Temperature Controller ($\frac{1}{16}$ DIN - Standard Relay Output) with dual outputs	373.85
135686	West Model 6100+ Temperature Controller (1/16 DIN - Solid State Relay Driver Output)	Inquire
135687	West Model 6100+ Temperature Controller ($\frac{1}{16}$ DIN - Solid State Relay Driver Output) with dual outputs	Inquire
Spare Part		
160429	Replacement Plug-In Relay Board	\$95.74



Model 6500 Temperature Controller

For Precise Temperature Control at an Affordable Price

Designed for basic electric heater applications, the West Model 6500 uses the latest proven technology. Usually only six wires are needed for connection. IMS can supply you with an electrical drawing to aid in conversion from older controllers at no extra charge. IMS offers a wide selection of options to ensure that you only pay for the functions you need. Contact the IMS Supplies Team at supplies@imscompany.com for additional information.

- Lowest cost West 1/16 DIN temperature controller
- · Large red three-digit display
- · Continuous indication of alarm status
- Easy-tune This is similar to Pre-Tune (see previous page) except it runs every time the controller is turned on and the over shoot is stored from the previous time it ran. The over shot is then used to move the calculation of the PID terms closer to the setpoint. (NOTE: This can not be disengaged.)
- Sealed control panel
- Accommodates a variety of T/C types



- Pre-programmed for 32° F to 842° F range with Type J T/C input
- CE approved, UL and Canadian UL recognized or pending

Options:

- · Celsius display of temperature and setpoint
- High-range Type K input
- 20-50 VAC/VDC power input

Specifications and Prices								
Accuracy:	±.25% of span ±1 LSD (least significant digit; typically 1° F)	-	1 SPDT (2A) relay 96 to 264 VAC					
Item #	Description			Unit Price				
119507 Model 6500 Temperature Controller (1/16 DIN)								

Check out these other useful IMS products!



Heater Bands Pages 160 – 189



Cartridge Heaters Pages 206 – 212



Thermocouples Pages 214 - 228



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Model 6010 Temperature Indicator

Provides Good Visible Indication, Alarm Capability and Security

This unit has fast identification of alarms via separate LED indicators. Other options include a retransmission output, a 24 volt AC/DC input power supply, plus a remote input for a security lock.

Configuration can be easily setup through the front panel. plus, unauthorized user can be locked out of changing the alarm values and configuration parameters via a simple security code or by a remote.

- · Large, red 4-digit LED display
- · 3 alarms: latching, relay and multiple alarm options
- Plug and Play technology allows for field upgrades
- · Retransmission output
- · Security via password protection and remote lock option

Options:

- 20-50VAC, 22-65VDC low voltage option
- · RS485 serial communications protocols
- · Remote reset



1/16 DIN

Specifications and Prices

Temperature ±.25% of span ±1 LSD Accuracy: Range: 32°F to 842°F

(least significant digit; typically 1° F)

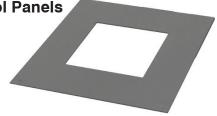
Control Output: 1 SPST (2A) relay Power Input: 90 to 264V AC 50/60Hz

Item # **Description Unit Price** 128292 Model 6010+ Temperature Indicator (1/16 DIN) \$265.00

Adaptor Plate

Simplify Retrofitting of Existing Control Panels

• 1/4 DIN to 1/16 DIN



Specifications and Prices

16 gauge Stainless Steel

Dimensions: **Cutout Dimensions** Panel Dimensions 92 mm x 45 mm 114 mm x 142 mm

Item # **Unit Price Description** 168676 1/4 DIN to 1/8 DIN Inquire Ask about other sizes



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

IMS Microstat® 5 Amp Open Loop Temperature Controllers

Compact, Solid-State Replacements for Variable Transformers

IMS solid state Microstat® open loop controllers regulate power to heaters, replacing variable transformers. An analog AC ammeter shows amps drawn for each zone (selectable by pushbutton). Needle movement verifies heater band is working.

- · Heavy duty constructions for tough shop conditions
- One low cost replacement part per zone
- · Amp meter selectable for each zone
- Zone control dial is graduated 0 to 10 (For 120 volt systems, effective control is from 6.5 to 10 on dial)
- · Both sides of the power line fused for fast blow
- · Amber light ON indicates a good fuse
- Operates on either 120 or 240/60/1 input: 1,200 watts on 240 volts (each zone) 600 watts on 120 volts (each zone)





Quickly and easily installed with just a screwdriver and wrench

Specifications and Prices								
Max. Load Current: Dimensions:		5 amps AC each zone 2 zone: 85%"h x 51%"w x 35%"d 8 zone: 205%"h x 51%"w x 35%"d	Weight:	2 zone: 31/4 lbs. 8 zone: 91/2 lbs.				
Item #	Description				Unit Price			
107522	Temperature Controller, Solid State, 2 Zone 5 Amp Microstat, 120/240 V, Analog Amp Meter Includes: 5 Spare Fuses (#104265), (2) Male Hubbell Plugs (#104179), & 6' Cord.							

 $\mathsf{MICROSTAT}^{\scriptscriptstyle{(0)}}$ is a registered trademark of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

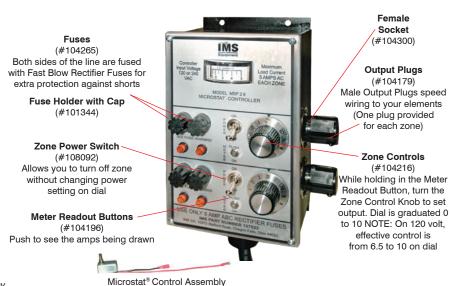
Heaters & Temperature Control

Spare Parts for IMS Microstat®5 Amp Open Loop Temperature Controllers

Spare P	arts	Unit Price
104265	Rectifier fuse (5 amp)	\$11.90
101344	Fuse holder w/ cap	4.80
108092	Zone power switch	8.31
104196	Meter buttons	83.10
104300	Female socket	34.89
104179	Male hubbel plug (15 amps)	23.37
104192	Microstat® control assembly	106.20
104216	Knob with "0" to "10" scale markings	2.86

CAUTION: Use only IMS #104265 fuses. Failure to use 5 amp, 250 volt fast blow, rectifier fuses voids all warranties.

MICROSTAT® is a Registered Trademark of IMS Company



(#104192)

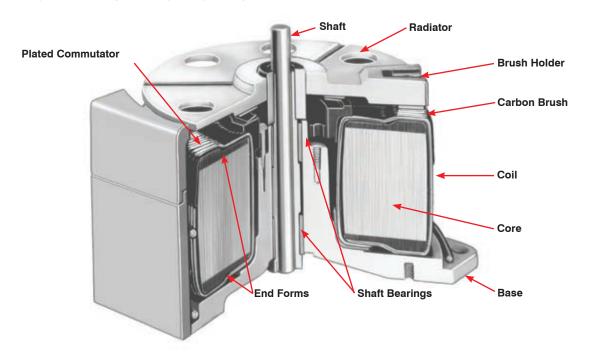


Voltage Controllers

Put Out Up To 17% More Voltage Than Is Put In

Voltage Controllers overcome costly effects of low line voltage common in many molding plants. These Auto Transformers put out UP TO 17% more VOLTAGE than is put in. If your line voltage is 104 (or 208) volts, you can

still get 120 (or 240) volts at full setting of the controller. Production benefits are immediate because your heater bands can still be run at full rated voltage.



Linear Output Voltage

Output voltage is continuously adjustable from zero to maximum output voltage proportionately over the full range.

Smooth Control

The output voltage of a variable transformer can be considered continuously adjustable. The voltage between turns is a fraction of a volt and the brush-tap is always in contact with one or more turns of the winding. Adjustment of output voltage can be made to a fraction of a volt.

Low Operating Torque

The glass-smooth commutator surface, the constant and correct contact pressure of the brush-tap to the commutator and the stable positioning of coil and internal components result in the low operating torque of all variable transformers.

Rugged Mechanical Construction

All variable transformers are designed for heavy-duty, trouble-free operation. Rigid inspection at every stage

of manufacture gives assurance of a quality-built product. The securely mounted core and coil, extra-large aluminum brush heat radiator and durable brush assembly reduce the need for attention or replacement.

Negligible Maintenance

With ordinary care and attention to the operating instructions, the only elements that may require periodic inspection and maintenance are the brushes. Their replacement is infrequently needed because they are made of a special carbon and are of a design that ensures proper contact of the brush to the commutator at any setting.

Long Life

Variable transformers give reliable performance over extended periods of time even under extreme operating conditions. Materials are constantly being improved to give increased life expectancy.



4.5 Amp Constant Impedance Voltage Controller

(Enclosed Model)

Adjust input voltage to your plastics process heaters with IMS Variable Transformers to provide open loop control of temperatures. These auto transformers put out up to 17% more voltage (at lower current) than line input voltage. They provide reliable performance even under extreme operating conditions.

- Continuously adjustable from zero to maximum voltage for smooth control
- · Minimal maintenance required
- · Heavy duty construction for long service life and trouble-free operation
- Grounded power cord with plug

Dust proof case helps extend controller life!



Specifications and Prices									
L501B Voltage Controller									
Input Output									
Item #	Volts	Hertz	Volts	Constant Co	urrent Load Max. kVA	Constant Imp Max. Amp	edance Load Max. kVA	Shipping Weight	Unit Price
104247	120	50/60	0-140	4.5	0.63	_	_	11 lbs.	\$609.95
Spa	Spare Parts								
10	104168 Fuse holder with cap, right angle terminals							\$5.10	

Check out these other useful IMS products!

Temperature Controllers Machine Components Thermocouple Adaptors Page 228 Page 245 Nozzle **Thread Adapters** 1/8"-27 N.P.T. Pages 482-488 Screw Tips 3/8"-24 NF Pages 524-550 Feed Screws 12mm x 1mm Pages 560 - 573



3.5 Amp Constant Impedance Voltage Controller

- Continuously adjustable from zero to maximum voltage for smooth control
- · Minimal maintenance required
- Heavy duty construction for long service life and trouble-free operation
- · Grounded power cord with plug





Specif	Specifications and Prices									
	3PN1020B Voltage Controller Input Output									
Item #	Volts	Hertz	Volts	Constant C Max. Amp	urrent Load Max. kVA	Constant Impedance Load Max. Amp Max. kVA		Shipping Weight	Unit Price	
104295	240	50/60	0-280	3.5	.98	_	_	12 lbs.	\$633.60	
Spare Pa	Spare Parts									
104168	Fuse ho	lder with	cap, righ	t angle term	inals				\$5.10	

10 Amp Constant Impedance Voltage Controller

- Continuously adjustable from zero to maximum voltage for smooth control
- Minimal maintenance required
- Heavy duty construction for long service life and trouble-free operation
- · Grounded power cord with plug





Specif	Specifications and Prices									
	3PN1010B Voltage Controller Input Output									
Item #	Volts	Hertz	Volts	Constant C Max. Amp	urrent Load Max. kVA	Constant In	npedance Load Max. kVA	Shipping Weight	Unit Price	
109303	120	50/60	0-140	10	1.4	_	_	12 lbs.	\$479.00	
Spare Pa	Spare Parts									
104168	Fuse ho	lder with	cap, righ	t angle term	inals				5.10	





Custom-Made Gate Cutters 267

Special Application Gate Cutters 287 – 300

Gate Cutters, Trimmers & Accessories



Heated Gate Cutter Parts & Accessories 301

Gate Cutter Repair Service

Air-Powered Gate Cutters 304 – 312

Air-Powered Gate Cutter Reconditioning Services 314

Knives, Trimmers & Flash Removal Tools
315 – 330

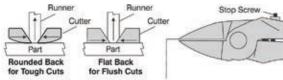
Most Items In Stock For Same Day Shipment



Tech Tips

How to select the right gate cutter for your job.

De-gating a plastic part from its runner may be your final operation before shipping the parts to the customer. Often it is a challenge to remove a runner and leave the part cosmetically, functionally and structurally intact. Choosing the proper gate cutter with the necessary physical characteristics and features becomes an important decision. Therefore, when selecting a gate cutter, consider the length of the handle, blade length and opening, blade angle relative to the handle and the contour of the back of the blade (the blade characteristics should match the part at the area of the de-gating) and features such as a blade stop, type of spring and handles. Consider the following features:



NOTICE: To ensure maximum blade life, adjust stop screw so that the blades just barely touch on soft plastics and leave a gap of 1/32" on hard materials.

Blade Stop:

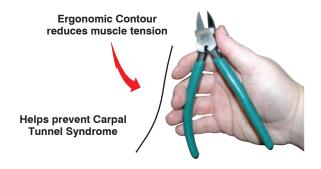
Gate cutters are actually wedges that cut from both sides until the tensile strength of the uncut section at the middle is overcome. and the remainder of the runner or sprue is



"snapped" out. This rapid release causes blades to hit each other, shortening their life. For this reason, a blade stop screw is recommended if the cutter is to be used on hard, brittle materials. The screw should be set so the blades stop short of hitting each other. For softer materials, a better cut can be obtained using a very thin, sharp blade. If a blade stop is used with softer materials (polyethylene, flexible PVC, etc.), it should be adjusted for minimal blade gap. This allows the blades to cut farther through the runner, yet only allows the blades to touch slightly.

Springs:

Leaf springs are welded to the handles and covered by hand grips. Generally, they are set to a lower pressure and require less effort to squeeze, thereby reducing user fatigue. Coil springs offer a stronger return pressure "fly back" when releasing from a cut, but require more pressure to make a cut. Also, they can be easily and inexpensively replaced by the operator.



Handles:

The length of the cutter's handles determines how much pressure the operator must exert to cut through a gate or sprue. A cutter with a handle that is too short will cause excessive strain on the operator's hand. A cutter with a handle that is too large for the operator's hand is difficult to grip. Try to match the cutter with the operator's hand and the gate or sprue being cut. Ergonomic-contoured handles are effective in reducing the fatigue that can accompany the prolonged squeezing action of gate cutting. They minimize strain on the smaller, weaker fingers by keeping them from pulling from a tight-fisted position. This reduces the risk of carpal tunnel syndrome.

We have a wide range of gate cutters to fit all your gate cutting needs. If we don't have it in stock, chances are, we can make it!

We encourage you to send us a small quantity of parts with the runners attached, so we can recommend the best cutter for your application.



1.866.467.9001

Gate Cutters & Trimmers

Stock Model Cutters and Trimmers

All the following are included in this section







Slim-Line Blade Cutters



Needle-Nose Blade Cutters



All the following are included in our Special application gate cutter section

20° Mini Nippers



25°-Angle Blade Cutters



35°-Angle Blade Cutters



45°-Angle Blade Cutters



80°-Angle Blade Cutters



90°-Angle Blade Cutters



10" Cutters with 30° - Angle Blade



Convex Blade Cutters



Concave Blade Cutters



End Nippers



Air Powered Cutters (5 Models)



All the following are included in our Utility and deflashing tools sections

Utility Knives





Rout-a-Burrs







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Super Series Gate Cutters



The Best Cutters on the Market!

Constructed of High Chromium, Swedish/American Steel superior quality that delivers the longest life cycle, permitting multiple resharpening for your best overall cost

Induction-Hardened Cutting Edge - provides high hardness on the cutting edge, but allows full toughness on the rest of the tool

New, Special, Hard Alloy Pivot Pin

- is self lubricating and wear resistant
- prevents shifting of jaws, delivering a "clean cut"

Adjustable Stop - protects cutting edge

Black Oxide Finish - prevents rusting

Ergonomic Handle Design - reduces discomfort, strain and the risk of injury

Comfortable, extra thick Anti-Static Foam Handles - helps prevent user fatigue

- Available ergonomic Leaf Springs or user replaceable Coil Springs
- Blade Stop Option on select models

Re-sharpening program is available to maximize the value of your investment.

Delivers over 200,000 cuts before needing re-sharpening for a cost of 21¢ per 1000 cuts



Quantity Discounts Available, Inquire Today.

IMS Classic Series Gate Cutters



Manufactured from high carbon steel with a low profile for terrific performance and a long life

 Delivers over 150,000 cuts before needing re-sharpening for a cost of 24¢ per 1000 cuts*!

See Page 274

IMS Signature Series Gate Cutters

The Best Buy Available on the Market!



- Manufactured from M4151 Steel for Long Life Cycle and Multiple Resharpening for the Best Overall Cost
- Delivers 75,000 cuts before needing re-sharpening for a cost of 34¢ per 1000 cuts*

Economy Gate Cutters

Great Price & Performance Package!



- Great quality cutter at the lowest price ever offered by IMS on any gate cutter
- Drop forged from alloy steel
- Delivers 15,000 cuts for a cost of 48¢ per 1000 cuts*

See Pages 27	75-27	78
--------------	-------	----

See Pages 279-285

Foam handle covers	PVC handle covers	Foam handle covers		
Slim line, flat back blades	Come modele quallable with adjustable stan			
Black oxide finish to prevent rust	k oxide finish to prevent rust			
Available ergonomic leaf spring or user-replaceable coil springs				

IMS recommends assigning SW and IMS Series cutters to workers and establishing an aggressive re-sharpening program to maximize the value of your investment

IMS Custom-Made Gate Cutters

Specially designed to suit your molded parts!



IMS can design unique cutter blade configurations to your specifications

Let IMS make the perfect gate cutters for your molding process. Have gate cutters designed to easily and comfortably reach hard-to-manage cuts. Reduce muscle fatigue and Carpal Tunnel Syndrome with custom-made ergonomic gate cutters.

Contact the IMS Supply Team today at sales@imscompany. com or call for more details and an RA number. Then send a sketch and some samples of your molded parts with uncut gates to get a prompt quotation.

Tech Tips

Gate Cutter Cost Per Cut Analysis

Cost Per 1000 Cuts					
Quality Level	Tool Brand	Item Number	Cycles Before Failure	Price	Price/1000 Cuts
5	SUPER	102589	200,000+	\$43.22	\$0.21
4	IMS Classic	101534	150,000+	37.36	0.24
3	IMS Signature	123898	75,000	26.33	0.34
\$	Economy	130593	15,000	7.62	0.48

*Cost per 1000 Cuts:

Cost per cut analysis completed by an independent authority in the industry. Each cutter was tested by cutting copper wire in an automated test. Testing ceased when the cutter was unable to make a clean slice of the copper wire which indicates the cutter needs to be reconditioned or replaced.

Using a lot of Cutters? Ordering in bulk?

Ask IMS about bigger quantity discount offers suited to fit your needs! Call or email for a fast quote!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 1.888.288.6900

tech support toll-free (USA & Canada) 1.866.467.9001

Quick Reference

Flat Back, Slim Profile Blades for Flush Cuts



	Standard Super Gate Cutters with Leaf Spring						
	Item #	Length	Description	Model	Spring	Page	Unit Price
Α	118000	5"	15° Flat Back, Slim Blade	S-44		270	\$56.00
В	118004	55%"	15° Flat Back, Slim Blade	S-55		270	56.00
С	167506	6"	15° Flat Back, Slim Blade - Right Hand	S66ER		271	63.30
D	167507	6"	15° Flat Back, Slim Blade - Left Hand	S66EL	Leaf	2/1	63.30
Е	102589	65/8"	15° Flat Back, Slim Blade	S-66	Loui	272	58.50
F	102571	77/8"	15° Flat Back, Slim Blade	S-77		212	63.60
G	123494	8"	15° Flat Back, Slim Blade	S-88		273	68.70
Н	123495	93/4"	20° Flat Back, Slim Blade	S-99		213	76.40
			Standard Super Gate Cutters wi	th Coil S	pring		
	Item #	Length	Description	Model	Spring	Page	Unit Price
Α	131670	55/8"	15° Flat Back, Slim Blade	S44-C		270	\$56.00
В	131481	55%"	15° Flat Back, Slim Blade	S55-C		210	56.00
С	167515	6"	15° Flat Back, Slim Blade - Right Hand	S66ER-C		271	63.30
D	167511	6"	15° Flat Back, Slim Blade - Left Hand	S66EL-C	Coil	2/1	63.30
Е	130253	65/8"	15° Flat Back, Slim Blade	S66-C		272	58.50
F	128238	77/8"	15° Flat Back, Slim Blade	S77-C		212	63.60
G	131669	8"	15° Flat Back, Slim Blade	S88-C		273	68.70
Н	131668	93/4"	20° Flat Back, Slim Blade	S99-C		213	76.40



Standard Gate Cutters Quick Reference Price Chart

	IMS Classic Series Gate Cu	tters (L	eaf Spring)		
Item #	Description	Model	Spring Type	Page	Unit Price
101534 shown	6", 15° Flat Back Slim Line Blade	SW6	Leaf	074	\$48.30
109824	9", 20° Flat Back Slim Line Blade (extra thin)	SW9	Loui	274	63.60
	IMS Classic Series Gate Cu	itters (C	oil Spring)		
Item #	Description	Model	Spring Type	Page	Unit Price
131662	6", 15° Flat Back Slim Line Blade	SW6-C	Coil	274	\$48.30
131667	9", 20° Flat Back Slim Line Blade (extra thin)	SW9-C	33.1	214	63.60
	IMS Signature Series Gate C	utters (Leaf Spring	I)	
Item #	Description	Model	Spring Type	Page	Unit Price
123898 shown	6", 15° Flat Back Slim Line Blade	IMS6S		276	32.60
123456	6", 15° Flat Back Slim Line Blade	IMS6			29.70
123464	7", 15° Rounded Back Blade	IMSB7	Leaf	277	33.20
123899	7", 15° Flat Back Slim Line Blade	IMS7S			33.10
123454	7", 15° Flat Back Slim Line Blade	IMS7		278	30.50
	IMS Signature Series Gate C	utters (Coil Spring)	
Item #	Description	Model	Spring Type	Page	Unit Price
130693	4", 15° Flat Back Standard Profile Blade	IMS3-C		275	\$28.90
129667	41/2", 15° Flat Back Slim Line Blade	IMS4-C		213	28.90
129501	5", 15° Flat Back Slim Line Blade	IMS5-C	Coil	276	28.90
129502	6", 15° Flat Back Slim Line Blade	IMS6-C	Coll	210	28.90
129532	7", 15° Flat Back Slim Line Blade	IMS7S-C		278	33.10
129534	7", 15° Flat Back Slim Line Blade	IMS7-C		210	30.50
	Economical Gate Cutter	s (Coil s	Spring)		
Item #	Description		Spring Type	Page	Unit Price
130592	5", 15° Flat Back Blade			279	\$8.38
130912	5", 15° Rounded Back Blade				8.38
130593 shown	6", 15° Flat Back Blade			280	8.38
130913	6", 15° Rounded Back Blade				8.38
131351	6", 15° Flat Back Blade, Right Hand			281	10.49
131352	6", 15° Flat Back Blade, Left Hand		Coil		10.77
131355	6", 15° Flat Back Blade with Adjustable Stop			282	10.23
130594	7", 15° Flat Back Blade			283	10.52
130914	7", 15° Rounded Back			200	10.52
131353	7", 15° Flat Back Blade - Right Hand			284	11.17
131354	7", 15° Flat Back Blade - Left Hand				11.67
131356	7", 15° Flat Back Blade with Adjustable Stop			285	12.82















Our Finest Cutters!

- High chromium Swedish/American steel for far greater cutting edge life
- · Adjustable stop to protect cutting edge
- Black oxide finish to prevent rust
- Extra thick, foam handle covers

· Available with ergonomic leaf springs* or user-replaceable coil springs

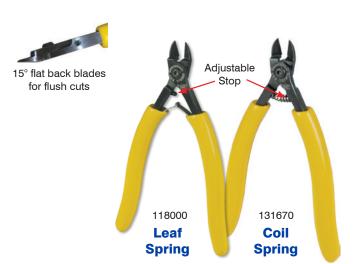
Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

4" Model S44

Specifications	
Overall Length:	5"
Blade Length:	3/8"
Usable Blade Opening at Tip:	3/8"
Usable Blade Opening at Base:	3/16"
Weight:	4 oz.

Item #	Description	nit Price 1-24 (each)
118000	5" Model S44 with twin leaf spring*	\$56.00
131670	55/8" Model S44-C with coil spring	56.00
Spare Pa	rts	
129503	Extra Coil Springs with Spacers \$7	'.23 per doz.

^{*}Replaceable only through gate cutter repair service



Cut plastic only. Wear eye protection.

5" Model S55

Specifications	
Overall Length:	55/8"
Blade Length:	9/16"
Usable Blade Opening at Tip:	9/16"
Usable Blade Opening at Base:	3/16"
Weight:	4 oz.

Item #	Description Unit Price
118004	55%" Model S55 with twin leaf spring* \$56.00
131481	55%" Model S55-C with coil spring 56.00
Spare Pa	rts
129503	Extra Coil Springs with Spacers \$7.23 per doz.

^{*}Replaceable only through gate cutter repair service





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 1.888.288.6900

tech support toll-free (USA & Canada) 1.866.467.9001





Our Finest Cutters!

- High chromium Swedish/American steel for far greater cutting edge life
- · Adjustable stop to protect cutting edge
- · Black oxide finish to prevent rust
- · Extra thick, foam handle covers

• Available with ergonomic leaf springs* or user-replaceable coil springs

Gate Cutter Quantity Discounts Order 25-49 **DEDUCT 4%** Order 50 or more **DEDUCT 6%**

6" Model S66ER - Right Hand

Specifications	
Overall Length:	6"
Blade Length:	13/16"
Usable Blade Opening at Tip:	1/2"
Usable Blade Opening at Base:	13/16"
Weight:	6 oz.

Item #	Description Unit Price 1-24 (each)	
167506	6" Model S66ER with twin leaf spring* \$63.30	
167515	6" Model S66ER-C with coil spring 63.30	
Spare Parts		
129503	Extra Coil Springs with Spacers \$7.23 per doz.	

^{*}Replaceable only through gate cutter repair service



Cut plastic only. Wear eye protection.

6" Model S66EL - Left Hand

Specifications	
Overall Length:	6"
Blade Length:	13/16"
Usable Blade Opening at Tip:	1/2"
Usable Blade Opening at Base:	13/16"
Weight:	6 oz.

Item #	Description Unit Price 1-24 (each)
167507	6" Model S77EL with twin leaf spring* \$63.30
167511	6" Model S77EL-C with coil spring 63.30
Spare Parts	
129503	Extra Coil Springs with Spacers \$7.23 per doz

^{*}Replaceable only through gate cutter repair service





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001





Our Finest Cutters!

- High chromium Swedish/American steel for far greater cutting edge life
- Adjustable stop to protect cutting edge
- · Black oxide finish to prevent rust
- · Extra thick, foam handle covers

 Available with ergonomic leaf springs* or user-replaceable coil springs

Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

6" Model S66

Specifications Overall Length: 65%" Blade Length: 7/8" Usable Blade Opening at Tip: 5/8" Usable Blade Opening at Base: 1/4" Weight: 6 oz.

Item #	Description	nit Price 1-24 (each)
102589	6" Model S66 with twin leaf spring*	\$58.50
130253	6" Model S66-C with coil spring	58.50
Spare Par	rts	
129503	Extra Coil Springs with Spacers \$7	7.23 per doz.

^{*}Replaceable only through gate cutter repair service



Cut plastic only. Wear eye protection.

7" Model S77

Specifications	
Overall Length:	7"
Blade Length:	15/16"
Usable Blade Opening at Tip:	1/2"
Usable Blade Opening at Base:	3/16"
Weight:	8 oz.

Item #	Description	nit Price 1-24 (each)
102571	7" Model S77 with twin leaf spring*	\$63.60
128238	7" Model S77-C with coil spring	63.60
Spare Pa	ırts	
129503	Extra Coil Springs with Spacers \$7	'.23 per doz.

^{*}Replaceable only through gate cutter repair service





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 1.888.288.6900

tech support toll-free (USA & Canada) 1.866.467.9001





Our Finest Cutters!

- High chromium Swedish/American steel for far greater cutting edge life
- · Adjustable stop to protect cutting edge
- · Black oxide finish to prevent rust
- · Extra thick, foam handle covers

Available with ergonomic leaf springs* or user-replaceable coil springs

Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%



8" Model S88

Specifications Overall Length: 8" Blade Length: 11/4" Usable Blade Opening at Tip: 3/4" Usable Blade Opening at Base: 1/16"

Unit Price Item # Description 1-24 (each) 123494 8" Model S88 with twin leaf spring* \$68.70 131669 8" Model S88-C with coil spring 68.70 **Spare Parts** 129503 Extra Coil Springs with Spacers **\$7.23** per doz

Weight: 6% oz.

Cut plastic only. Wear eye protection.

9" Model S99

Specifications	
Overall Length:	93/4"
Blade Length:	11/2"
Usable Blade Opening at Tip:	1"
Usable Blade Opening at Base:	3/16"
Weight:	6.4 oz.

Item #	Description	nit Price 1-24 (each)
123495	9" Model S99 with twin leaf spring*	\$76.40
131668	9" Model S99-C with coil spring	76.40
Spare Parts		
130935	Extra Coil Springs with Spacers \$	7.23 per doz.

^{*}Replaceable only through gate cutter repair service





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

^{*}Replaceable only through gate cutter repair service



IMS Standard Classic Series Gate Cutters

High Quality Cutters

- Slim line, flat back blades
- · Adjustable stop to protect cutting edge
- Foam handle covers

• Available with ergonomic leaf springs* or user-replaceable coil springs

Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

6" Model SW6

Specifications

Overall Length: 6" Blade Length: 13/16" Usable Blade Opening at Tip: 1/2" Usable Blade Opening at Base: 3/16"

Weight: 6 oz.

Item #	Description Ur	nit Price 1-24 (each)
101534	6" Model SW6 with twin leaf spring*	\$48.30
131662	6" Model SW6-C with coil spring	48.30
Spare Pa	rts	
129503	Extra Coil Springs with Spacers \$7	.23 per doz.

^{*}Replaceable only through gate cutter repair service



Cut plastic only. Wear eye protection.

9" Model SW9

Specifications

Overall Length: 9"

Blade Length: 11/2" Usable Blade Opening at Tip: 11/8"

Usable Blade Opening at Base: 3/16" Weight: 121/2 oz.

Item #	Description	nit Price 1-24 (each)
109824	9" Model SW9 with twin leaf spring*	\$63.60
131667	9" Model SW9-C with coil spring	63.60
Spare Par	rts	
130935	Extra Coil Springs with Spacers \$7	7.23 per doz.

^{*}Replaceable only through gate cutter repair service





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

274



• Foam PVC handle covers

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

4" Model IMS3

Overall Length: 4" Blade Length: 7/16" Usable Blade Opening at Tip: 1/4" Usable Blade Opening at Base: 3/32" Weight: 11/2 oz.

	Item #	Description	Unit Price 1-24 (each)
	130693	4" Model IMS3-C with coil spring	\$28.90
ı	Spare Par	rts	
	131329	Extra Coil Springs with Spacers	\$3.10 per doz.



Cut plastic only. Wear eye protection.

41/2" Model IMS4

Specifications

Overall Length: 4½"

Blade Length: 5%"

Usable Blade Opening at Tip: $\frac{5}{16}$ " Usable Blade Opening at Base: $\frac{1}{8}$ " Weight: $\frac{21}{2}$ oz.

	Item #	Description	Unit Price 1-24 (each)
	129667	41/2" Model IMS4-C with coil spring	g \$28.90
	Spare Par	rts	
Г	131329	Extra Coil Springs with Spacers	\$3.10 per doz.







• Foam PVC handle covers

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

5" Model IMS5

Specifications

Overall Length: 5"
Blade Length: 5%"

Usable Blade Opening at Tip: 1/2"
Usable Blade Opening at Base: 1/4"
Weight: 3 oz.

Item #	Description	nit Price 1-24 (each)
129501	51/4" Model IMS5-C with coil spring	\$28.90
Spare Pa	rts	
129503	Extra Coil Springs with Spacers \$7	7.23 per doz.



Cut plastic only. Wear eye protection.

6" Model IMS6S with Adjustable Stop

Specifications Overall Length: 6" Blade Length: ½" Usable Blade Opening at Tip: ½6" Usable Blade Opening at Base: ¾6" Weight: 6 oz.

Item #	Description Unit Price 1-24 (each)
123898	6" Model IMS6S with twin leaf spring* \$32.60
129533	6" Model IMS6S-C with coil spring 30.50
Spare Pa	rts
129503	Extra Coil Springs with Spacers \$7.23 per doz.







• Foam PVC handle covers

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

6" Model IMS6

Specifications	
Overall Length:	61/2"
Blade Length:	13/16"
Usable Blade Opening at Tip:	3/4"
Usable Blade Opening at Base:	1/4"
Weight:	6oz.

Item #	Description	it Price 1-24 (each)
123456	6" Model IMS6 with twin leaf spring*	\$29.70
129502	6" Model IMS6-C with coil spring	28.90
Spare P	arts	
129503	Extra Coil Springs with Spacers \$6.2	20 per doz.

^{*}Replaceable only through gate cutter repair service



Cut plastic only. Wear eye protection.

7" Model IMSB7

Specifications

Overall Length: 7"
Blade Length: 1"

Usable Blade Opening at Tip: 7/8" Usable Blade Opening at Base: 1/4"

Weight: 8 oz.

Item #	Description	Unit Price 1-24 (each)
123464	7" Model IMSB7 with twin leaf sprin	g* \$33.20

^{*}Replaceable only through gate cutter repair service



15° rounded back, standard profile







• Foam PVC handle covers

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

7" Model IMS7S with Adustable Stop

Specifications

Overall Length: 7"
Blade Length: 1"
Usable Blade Opening at Tip: 7/6"

Usable Blade Opening at Base: 1/8" Weight: 8 oz.

Item #		Price -24 (each)
123899	7" Model IMS7S with twin leaf spring* \$	33.10
129532	7" Model IMS7S-C with coil spring	33.10
Spare Pa	rts	
129503	Extra Coil Springs with Spacers \$7.2	3 per doz.

^{*}Replaceable only through gate cutter repair service



Cut plastic only. Wear eye protection.

7" Model IMS7

Specifications

Overall Length: 7"

Blade Length: 15/16"

Opening et Tip: 7/ "

Usable Blade Opening at Tip: $\frac{7}{16}$ " Usable Blade Opening at Base: $\frac{9}{16}$ "

Weight: 8 oz.

Item #	Description	Unit Price 1-24 (each)
123454	7" Model IMS7 with twin leaf spring	g* \$30.50
129534	7" Model IMS7-C with coil spring	30.50
Spare Pa	rts	
129503	Extra Coil Springs with Spacers	7.23 per doz.

^{*}Replaceable only through gate cutter repair service





Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

5" Flat Back

Specifications	
Overall Length:	5"
Blade Length:	11/16"
Usable Blade Opening at Tip:	9/16"
Usable Blade Opening at Base:	3/16"
Weight:	3.5 oz.

Item #	Description	Unit Price 1-24 (each)
130592	5" Flat Back with coil spring	\$8.38
Spare Pa	rts	
131804	Extra Coil Springs	\$2.00 per doz



Cut plastic only. Wear eye protection.

5" Rounded Back

Specifications

Usable Blade Opening at Base: $\frac{3}{16}$ " Weight: 3.5 oz.

Item #	Description	Unit Price 1-24 (each)
130912	5" Rounded Back with coil spring	\$8.38
Spare Pa	rts	
131804	Extra Coil Springs	\$2.00 per doz.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

6" Flat Back

Specifications	
Overall Length:	6"
Blade Length:	3/4"
Usable Blade Opening at Tip:	5/8"
Usable Blade Opening at Base:	1/4"
Weight:	5 oz.

Item #	Description	Unit Price 1-24 (each)
130593	6" Flat Back with coil spring	\$8.38
Spare Pa	rts	
131804	Extra Coil Springs	\$2.00 per doz.



Cut plastic only. Wear eye protection.

6" Rounded Back

S	pecifications

Overall Length: 6" Blade Length: 3/4" Usable Blade Opening at Tip: 5/8" Usable Blade Opening at Base: 1/4"

Weight: 5 oz.

Item #	Description	Unit Price 1-24 (each)
130913	6" Rounded Back with coil spring	\$8.38
Spare Pai	rts	
131804	Extra Coil Springs	\$2.00 per doz





Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

6" Flat Back, Right Hand

Specifications	
Overall Length:	6"
Blade Length:	3/4"
Usable Blade Opening at Tip:	5/8"
Usable Blade Opening at Base:	1/4"
Weight:	5 oz.

Item #	Description	Unit Price 1-24 (each)
131351	6" Flat Back, RH with coil spring	\$10.48
Spare Pa	rts	
131804	Extra Coil Springs	\$2.00 per doz



Cut plastic only. Wear eye protection.

6" Flat Back, Left Hand

Overall Length: 6" Blade Length: 34" Usable Blade Opening at Tip: 5%" Usable Blade Opening at Base: 1/4" Weight: 5 oz.

Item #	Description	Unit Price 1-24 (each)
131352	6" Flat Back, LH with coil spring	\$10.77
Spare Pa	rts	
131804	Extra Coil Springs	\$2.00 per doz.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

6" Flat Back with Adjustable Stop

Overall Length: 6" Blade Length: 34" Usable Blade Opening at Tip: 5%" Usable Blade Opening at Base: 14" Weight: 5 oz.

Item #	Description	Unit Price 1-24 (each)
131355	6" Flat Back with Adjustable Stop and coil spring	\$10.23
Spare Pa	rts	
131804	Extra Coil Springs	\$2.00 per doz.



Cut plastic only. Wear eye protection.

6" Flat Back, 45° Blade

Specifications	
Overall Length:	6"
Blade Length:	13/16"
Usable Blade Opening at Tip:	11/16"
Usable Blade Opening at Base:	11/32"
Weight:	4.8 oz.

Item #	Description	Unit Price 1-24 (each)
133130	6" Flat Back, 45° with coil spring	\$11.63
Spare Par	rts	
131804	Extra Coil Springs	\$2.00 per doz.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

7" Flat Back

Specifications Overall Length: 71/4" Blade Length: 1" Usable Blade Opening at Tip: 7/6" Usable Blade Opening at Base: 5/16" Weight: 8.3 oz.

Item #	Description	Unit Price 1-24 (each)
130594	7" Flat Back with coil spring	\$10.52
Spare Pa	rts	
131805	Extra Coil Springs	\$3.60 per doz.



Cut plastic only. Wear eye protection.

7" Rounded Back

Specifications	
Overall Length:	71/4"
Blade Length:	1"
Usable Blade Opening at Tip:	7/8"
Usable Blade Opening at Base:	5/16"
Weight:	8.3 oz.

Item #	Description	Unit Price 1-24 (each)
130914	7" Rounded Back with coil spring	\$10.52
Spare Pa	rts	
131805	Extra Coil Springs	\$3.60 per doz





Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

7" Flat Back, Right Hand

Specifications

Overall Length: 71/4"
Blade Length: 1"

Usable Blade Opening at Tip: 7/8"
Usable Blade Opening at Base: 5/16"

Weight: 8.3 oz.

Item #	Description	Unit Price 1-24 (each)
131353	7" Flat Back, RH with coil spring	\$11.17
Spare Pa	rts	
131805	Extra Coil Springs	\$3.60 per doz.



Cut plastic only. Wear eye protection.

7" Flat Back, Left Hand

Specifications

Overall Length: 71/4" Blade Length: 1"

Usable Blade Opening at Tip: 7/8"

Usable Blade Opening at Base: 5/16"
Weight: 8.3 oz.

Item #	Description	Unit Price 1-24 (each)
131354	7" Flat Back, LH with coil spring	\$11.67
Spare Pa	rts	
131805	Extra Coil Springs	\$3.60 per doz.





Heavy Duty Cutters at a Great Price!

- Drop forged from alloy steel
- Precision machined and heat treated to ensure sharp, durable blades

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

7" Flat Back with Adjustable Stop

Specifications	
Overall Length: 7	71/4"
Blade Length: 1	1"
Usable Blade Opening at Tip: 7	7/8"
Usable Blade Opening at Base: 5	5/ ₁₆ "
Weight: 8	8.3 oz.

Item #	Description	Unit F	Price (each)
131356	7" Flat Back with Adjustable Stop and coil spring	\$1	2.85
Spare Pa	rts		
131805	Extra Coil Springs	\$3.60	per doz



Cut plastic only. Wear eye protection.

Gate Cutter Springs

Item #	Description	Unit Price
129503	For: S44-C, S55-C, S66-C, S77-C, S88-C, SW5-C, SW5ER-C, SW6-C, SW6ER-C,	\$7.23 per doz
	SW6EL-C, S7S-C, IMS5-C, IMS6S-C, IMS6-C, IMS6NN-C, IMS7S-C, IMS7-C,	
	SW6C.35, SW6C.45, SW6C.90, SW6CN, SW6CBXN, SWB7CSB90, SWB7CSB45	
130935	For: S99-C, SW9-C	6.20 per doz
131329	For: IMS3-C, IMS4-C, SB5C.80	5.16 per doz
131804	For: 130592, 130912, 130593, 130913, 131351, 131352, 131355, 133130, 133131, 163729, 133130, 133131	4.60 per doz
131805	For: 130594, 130914, 131353, 131354, 131356	3.60 per doz
106426	For: 100832	9.20 per doz
144599	For: SW10C.30	0.76 each
102908	For: F1, FH2, FH245, FH290, 109470, 109466	3.95 per doz



Special Application Super Gate Cutters Quick Reference



Leaf Spring shown - Available with Coil Spring (see below)

Special Application Super Gate Cutters (Leaf Spring)								
	Item #	Length	Description	Model	Spring	Page	Unit Price	
Α	113593	53/4"	Flat Back - End Nipper	SB5.80	Leaf _		288	\$66.20
	129907	5%"	15° Flat Back, Oval Blade	SB5.CH		289	61.00	
В	129975	61/2"	15° Flat Back, Oval Blade	SB6.CH			65.40	
С	110284	7"	15° Flat Back, Extra Slim Blade	S7S			76.40	
D	167508		35° Flat Back, Full Blade	S66.35		290	63.30	
Е	167509	6"	45° Flat Back, Full Blade	S66.45			63.30	
F	167510		90° Flat Back, Full Blade	S66.90		291	67.90	
G	167582	73/4"	90° Flat Back, Slim Blade	S88.90			73.00	
	Special Application Super Gate Cutters (Coil Spring)							
	Item #	Length	Description	Model	Spring	Page	Unit Price	
Α	133163	53/4"	Flat Back - End Nipper	SB5C.80		290	\$70.50	
С	131665	7"	15° Flat Back, Extra Slim Blade	S7S-C		289	76.30	
D	167512	6"	35° Flat Back, Full Blade	S66C.35	On:I	290	63.30	
Е	167513		45° Flat Back, Full Blade	S66C.45	Coil	290	63.30	
F	167514		90° Flat Back, Full Blade	S66C.90		291	67.90	
G	167583	73/4"	90° Flat Back, Slim Blade	S88C.90		291	73.00	



Special Application Gate Cutters

Quick Reference Price Chart

Special Application Gate Cutters				
Description	Item #	Page	Unit Price	
5¾" Model IMS6CC, Concave Blade	131186	292	\$114.84	
6" Model IMS6CX-C, Convex Blade	163729	293	13.38	
6" Economy, 45° Blade	133130	295	11.63	
6" Economy, 90° Blade	133131	295	12.23	
61/2" Model SW6N End Nipper	123486	296	28.76	
61/2" Model SW6CN End Nipper	144565	296	28.76	
6" Model SW6BXN Box End Nipper	133334	297	63.02	
6" Model IMS6NN Needle-Nose	123453	297	26.72	
6" Model IMS6NN-C Needle-Nose	129447	297	31.21	
7" Bent Handle Model SWB7CSB90, Rounded Back Blade	144566	298	35.91	
71/2" Bent Handle Model SWB7CSB45, Rounded Back Blade	123484	298	28.72	
71/2" Model SWB7.25, 25 Rounded Back	123483	299	24.62	
10" Model SW10.30, 30° Flat Back Blade	144597	299	45.89	
5" Lightweight Nips	100832	300	8.45	
5" Mini-Nippers	129941	300	6.46	



Have a tough gate cutting job? Not sure which cutter to try?

Send your parts to IMS and let our experts recommend the perfect cutter for the job. There is never a charge for this service. Call and ask for details! We're here to help!





Special Application Super Gate Cutters

5¾ Model SB5.80, 80° Rounded Back Blade

- · Stop screw to extend blade life
- For concave surface cuts; rounded angles
- High chromium Swedish/American steel
- Black oxide finish
- · Soft foam grips



Blade with rounded back



Weight: 7 oz.



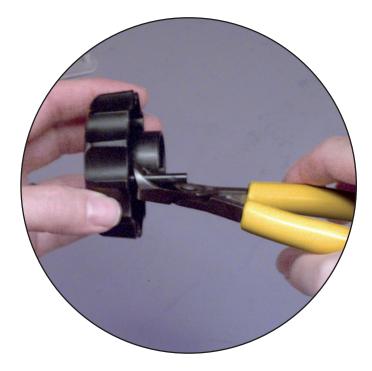
Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
113593	5¾" Model SB5.80, 80° Rounded Back Blade with Leaf Spring*	\$66.20
133163	133163 5¾" Model SB5C.80, 80° Rounded Back Blade with Coil Spring	
Spare Part		
131329	Extra springs	\$5.16 per dozen

Cut plastic only. Wear eye protection.

Cuts Tough Jobs - Doesn't Scratch

Custom Cutters Made-To-Order — See Page 267 For Details





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone of the control of the con

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

^{*}Replaceable only through gate cutter repair service



S Special Application Super Gate Cutters



55/8" and 61/2" Model SB.CH, Oval Blade

- High chromium Swedish/American steel for far greater cutting edge life
- · Black oxide finish
- Soft foam grips



15° oval blade with flat back

Specifications and Prices Spring Type: Stainless steel twin leaf* 129907 129975 Overall Length: 5%" 6½" Blade Length: ½" ¾" Usable Blade Opening at Tip: ½" ½" Usable Blade Opening at Base: ¾16" ¼" Weight: 4 oz. 4 oz.



Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
129907	5% Model SB5.CH, Oval Blade with Leaf Spring*	\$61.00
129975	61/2" Model SB6.CH, Oval Blade with Leaf Spring*	65.40

Cut plastic only. Wear eye protection.

Cuts Tough Jobs - Doesn't Scratch

7" Model S7S

- Ultra slim line, flat back blades milled for extra flush cuts
- · Adjustable stop to protect cutting edge
- Foam handle covers

Specifications and Prices

Spring Type: Stainless steel twin leaf*

or coil

Overall Length: 7"
Blade Length: 7/8"

Usable Blade Opening at Tip: ½"
Usable Blade Opening at Base: ¾6"

Weight: 7 oz.



Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
110284	7" Model S7S with twin leaf spring*	\$76.40
131665	7" Model S7S-C with coil spring	76.30
Spare Part		
131329	Extra springs	\$5.16 per dozen

^{*}Replaceable only through gate cutter repair service

^{*}Replaceable only through gate cutter repair service



6" Model S66.35

- 35° angled blade for hard to reach gates
- High chromium Swedish/American steel
- · Black oxide finish
- · Soft foam grips

Specifications and Prices

Spring Type: Stainless steel twin leaf*

or coil

Overall Length: 6"
Blade Length: 3/4"

Usable Blade Opening at Tip: ½"
Usable Blade Opening at Base: ¼"
Weight: 6 oz.

*Replaceable only through gate cutter repair service



Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
167508	6" Model S66.35, 35° Blade with twin leaf spring*	\$63.30
167512	6" Model S66.35C, 35° Blade with coil spring	63.30
Spare Part		
129503	Extra springs	\$7.23 per dozen

Cut plastic only. Wear eye protection.

Cuts Tough Jobs - Doesn't Scratch

6" Model S66.45

- \bullet 45° angled blade for hard to reach gates
- High chromium Swedish/American steel
- · Black oxide finish
- · Soft foam grips

45° full blade with flat back

Specifications and Prices Spring Type: Stainless steel twin leaf* or coil

Overall Length: 6"
Blade Length: 15/16"
Opening at Tip: 9/46"

Usable Blade Opening at Tip: %16"
Usable Blade Opening at Base: 1/4"
Weight: 6 oz.



Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
167509	6" Model S66.45, 45° Blade with twin leaf spring*	\$63.30
167513	6" Model S66.45C, 45° Blade with coil spring	63.30
Spare Part		
129503	Extra springs	\$7.23 per dozen



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

^{*}Replaceable only through gate cutter repair service

S Special Application Super Gate Cutters

6" Model S66.90

- Flat cutting surface for reaching into hollow objects
- · High chromium Swedish/American steel
- · Black oxide finish
- · Soft foam grips

Specifications and Prices

Spring Type: Stainless steel twin leaf*

or coil

Overall Length: 6" Blade Length: 11/16" Usable Blade Opening at Tip: 5/16" Weight: 6 oz.

*Replaceable only through gate cutter repair service



Gate Cutter Quantity Discounts Order 25 or more **DEDUCT 4%**

Item #	Description	Unit Price 1-24 (each)
167510	6" Model S66.90, 90° Blade with twin leaf spring*	\$67.90
167514	6" Model S66.90C, 90° Blade with coil spring	67.90
Spare Part		
129503	Extra springs	\$7.23 per dozen

Cut plastic only. Wear eye protection.

Cuts Tough Jobs - Doesn't Scratch

73/4" Model \$88.90

- · Flat cutting surface for reaching into hollow objects
- High chromium Swedish/American steel
- · Black oxide finish
- · Soft foam grips

Specifications and Prices

Spring Type: Stainless steel twin leaf*

Overall Length: 73/4" Blade Length: 11/16" Usable Blade Opening at Tip: 5/16" Weight: 8 oz.

Gate Cutter Quantity Discounts Order 25 or more **DEDUCT 4%**

Unit Price 1-24 (each) Item # Description 167582 73/4" Model S88.90, 90° Blade with twin leaf spring* \$73.00 73/4" Model S88.90C, 90° Blade with coil spring 167583 73.00 **Spare Part** 129503 **\$7.23** per dozen Extra springs



^{*}Replaceable only through gate cutter repair service

5¾" Model IMS6CC, Concave Blade

- Concave curved blades with rounded angles
- · Long-life box joint protects pivot joint
- · Stop screw extends blade life
- · Reduced operator fatigue and strain
- · Bonded plastic grips

Specifications and Prices

Spring Type: Single leaf

Overall Length: 53/4"
Blade Length: 7/8"

Usable Blade Opening at Tip: %"
Usable Blade Opening at Base: %16"

Weight: 6 oz.



Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
131186	53/4" Model IMS6CC, Concave Blade	\$160.60

Cut plastic only. Wear eye protection.

Custom Cutters Made-To-Order — See Page 267 For Details







Blade is convex for

6" Convex Blade

- · Convex blade trims inside curves
- Trims closely on radii and round parts
- · Reduced operator fatigue and strain
- Bonded PVC grips

trimming inside curves **Specifications and Prices** Spring Type: Overall Length: Blade Length: Usable Blade Opening at Tip: 18/32" Usable Blade Opening at Base: 1/32" **Gate Cutter Quantity Discounts** Weight: 43/40z. Order 25 or more **DEDUCT 4%**

Item #	Description	Unit Price 1-24 (each)
163729	6" Convex Blade	\$13.38
Spare Part		
131804	Extra springs	\$4.60 per dozen

Cut plastic only. Wear eye protection.

Custom Cutters Made-To-Order — **See Page 267 For Details**



Coil

Spring



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Check Out These Other Useful IMS Products

Cut-Resistant Gloves

Shield Hands From Lacerations and Hot Surface Contact

These gloves are especially useful around granulators and grinders to resist cuts from blades.

- Patented stainless steel, nylon and Kevlar® material
- Lightweight material "breathes" to dissipate heat
- Long cuff for added wrist protection
- · Gloves fit either hand
- USDA approved
- Machine washable (drip dry)

Protect Workers & Minimize Lost Man-Hours



Work Gloves

Quality Hand Protection at Economical Prices!





See Page 448 for Pricing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888,288,6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Economy 6" Flat Back, 45° Blade

Specifications

Overall Length: 6"

Blade Length: 13/16"

Usable Blade Opening at Tip: $^{11}/_{16}$ " Usable Blade Opening at Base: $^{11}/_{32}$ "

Weight: 4.8 oz.

Gate Cutter Quantity Discounts

Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

Item #	Description	Unit Price 1-24 (each)
133130	6" Flat Back, 45° with coil spring	\$11.63
Spare Pa	rt	
131804	Extra Coil Springs	\$4.60 per doz



Cut plastic only. Wear eye protection.

Economy 6", 90° Blade

Specifications and Prices

Overall Length: 6"

Blade Length: 3/4" Usable Blade Opening at Tip: 9/16"

Weight: 6 oz.

Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 8%

Item #	Description	Unit Price 1-24 (each)
133131	6", 90° Blade with coil spring	\$12.23
Spare Pa	art	
131804	Extra Coil Springs	\$4.60 per doz



Custom Cutters Made-To-Order — See Page 267 For Details





61/2" Model SW6N End Nipper

- Flat cutting face for reaching into narrow channels
- · Blade stop with adjustable set screw lengthens life
- Bonded PVC grips

Specifications

Spring Type: stainless steel twin leaf*

or coil

Overall Length: 6½"

Blade Length: 3%"

Usable Blade Opening at Tip: 7/16"

Weight: 5 oz.



Gate Cutter Quantity Discounts
Order 25 or more DEDUCT 4%

Item #	Description	Unit Price 1-24 (each)
123486	61/2" Model SW6N End Nipper with Leaf Spring	\$30.50
144565	61/2" Model SW6CN End Nipper with Coil Spring	30.50
Spare Part		
129503	Extra springs	\$7.23 per dozen

Cut plastic only. Wear eye protection.

Custom Cutters Made-To-Order — See Page 267 For Details





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phor 1.888.288.6900 001.

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

^{*}Replaceable only through gate cutter repair service



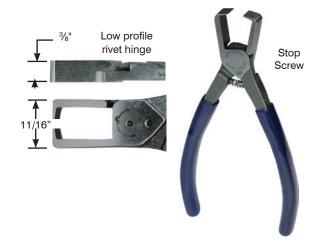
6" Model SW6BXN Box Style End Nipper

Overall Length: 6" Blade Length: ½" Usable Blade Opening at Tip: 5/8" Weight: 5 oz.

Gate Cutter Quantity Discounts Order 25 or more DEDUCT 4%

Item #	Description	nit Price 1-24 (each)
133334	6" Box Style Nipper with coil spring	\$66.80
Spare Pa	art	

Extra Coil Springs



Cut plastic only. Wear eye protection.

\$7.23 per doz.

6" Model IMS6NN (Needle-Nose) with Adjustable Stop

Specifications

129503

Overall Length: 61/2"

Blade Length: 13/16"

Usable Blade Opening at Tip: 3/4"
Usable Blade Opening at Base: 1/4"

Weight: 6 oz.

Gate Cutter Quantity Discounts Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

Item #	Description	Unit Price 1-24 (each)
123453	61/2" Model IMS6NN w/ twi	n leaf spring* \$33.10
129447	61/2" Model IMS6NN-C with coil spring 33.10	
Spare Part		
129503	Extra Coil Springs	\$7.23 per doz.

^{*} Replaceable only through gate cutter repair service



Custom Cutters Made-To-Order — See Page 267 For Details





7" Bent Handle Model SWB7CSB90, Rounded Back Blade

- 25° angled blade with slightly rounded back
- · Bent handle for easy side cutting
- Blade stop with adjustable set screw lengthens life
- Durable construction
- · Bonded foam grips

Specifications and Prices

Spring Type: Coil
Overall Length: 7"

Blade Length: 1"

Usable Blade Opening at Tip: 3/4"
Usable Blade Opening at Base: 1/2"

Weight: 6.25 oz.



Item #	Description	Unit Price 1-24 (each)
144566	7" Bent Handle Model SWB7CSB90, Rounded Back Blade	\$38.10
Spare Part		
129503	Extra springs	\$7.23 per dozen

Cut plastic only. Wear eye protection.

Cuts Tough Jobs - Doesn't Scratch

7½" Bent Handle Model SWB7CSB45, Rounded Back Blade

- 15° angled blade with slightly rounded back
- · Bent handle for easy side cutting
- Blade stop with adjustable set screw lengthens life
- Durable construction
- Bonded PVC grips

Specifications and Prices

Spring Type: Coil
Overall Length: 71/2"

Overall Length: 7½"

Blade Length: 15/16"

Usable Blade Opening at Tip: 3/4" Usable Blade Opening at Base: 1/4"

Weight: 8 oz.



Item #	Description	Unit Price 1-24 (each)
123484	71/2" Bent Handle Model SWB7CSB45, Rounded Back Blade	\$35.60
Spare Part		
129503	Extra springs	\$7.23 per dozen

Custom cutters made-to-order — See Page 267 For Details



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Order 25 or more DEDUCT 4%

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001



71/2" Model SWB7.25, 25° Rounded Back Blade

- Unique blade milling
- · Slightly rounded back for extra blade strength
- Thin blade to slice cleanly
- Bonded PVC grips

Specifications and Prices

Stainless steel twin leaf* Spring Type:

Overall Length: 71/2" Blade Length: 7/8"

Usable Blade Opening at Tip: 5/16" Usable Blade Opening at Base: 1/8" Weight: 8 oz.



Order 25 or more **DEDUCT 4%**

Item #	Description	Unit Price 1-24 (each)
123483	71/2" Model SWB7.25, 25° Rounded Back Blade	\$30.50

Cut plastic only. Wear eye protection.

Cuts Tough Jobs - Doesn't Scratch

10" Model SW10.30, 30° Flat Back Blade

· Bonded plastic grips with contoured handles

Specifications and Prices

Spring Type: Stainless steel

twin leaf* or coil

Overall Length: 93/4"

Blade Length: 15/16" Usable Blade Opening at Tip: 15%"

Usable Blade Opening at Base: 3/4"



Gate Cutter Quantity Discounts Order 25 or more **DEDUCT 4%**

Item #	Description	Unit Price 1-24 (each)
144597	10" Model SW10.30, 30° Flat Back Blade with Leaf Spring*	\$56.80
144598	10" Model SW10C.30, 30° Flat Back Blade with Coil Spring	58.40
Spare Part		
144599	Extra springs	\$0.40 each



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

^{*}Replaceable only through gate cutter repair service

^{*}Replaceable only through gate cutter repair service

5" Lightweight Nips

- · Fully flush ground flat back blades
- · Fast acting, long lasting spring
- · Made of case hardened steel
- · Stainless steel pivot

Specifications and Prices

Spring Type: U-Type Overall Length: 5" Blade Length: $\frac{3}{8}$ " Usable Blade Opening at Tip: $\frac{11}{16}$ "

Usable Blade Opening at Base: 3/8"

Weight: 1½ oz.



Gate Cutter Quantity Discounts

Order 25-49 **DEDUCT 4%** Order 50 or more **DEDUCT 6%**

Item #	Description	Unit Price 1-24 (each)
100832	5" Model T1055 Lightweight Nips	\$10.20
Spare Part		
106426	Extra U-Type Springs	\$9.04 per doz.

Cut plastic only. Wear eye protection.

5" Mini-Nippers

- .004" offset flat-back blades
- · Fast acting, long lasting spring
- · Made of case-hardened steel
- Soft-touch handle grips for safety
- · Blades heat treated to 57 Rockwell C
- .004 offset flat back blades

Specifications

Spring Type: semi-hidden torsion

Overall Length: 5"

Blade Length: ½"

Usable Blade Opening at Tip: ½"

Usable Blade Opening at Base: ½2"

Copper Wire: 1.3 mm (16 gauge) max.

Weight: 11/2 oz.



Gate Cutter Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

Item #	Description	Unit Price 1-24 (each)
129941	5" Mini-Nippers	\$8.90

Custom Cutters Made-To-Order — See Page 267 For Details



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

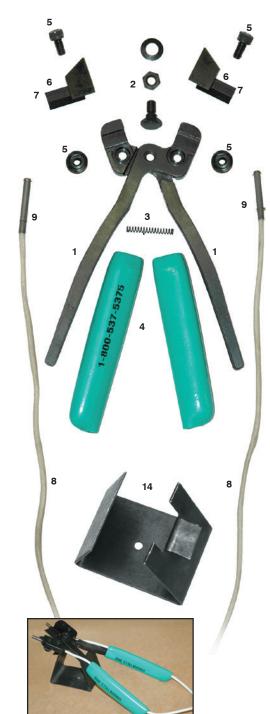
tech support toll-free (USA & Canada)
1.866.467.9001

e-mail

.467.9001 sales@imscompany.com

IMS Heated Gate Cutter

Replacement Parts And Accessories



Item #	Description	Price
Cutter		
102553	Pivot Nut/Bolt/Washer Assembly (each)	22.55
102908	Coil Spring (per dozen)	3.95
102580	Foam Handle Covers for heated cutters (per pair)	2.38
Blades		
102562	Blade Holding Nut/Bolt Assembly (each)	\$31.40
102569	Heated Straight Blades (per pair)	249.15

Cartridge	tridge Heaters	
165818	40 Watt (Two 20 Watt) Cartridge Heaters (per pair) (Sold in yoked pairs only with plug and 6 foot, contamination-resistant leads coated with PTFE)	\$75.00
108494	Retainer Clips for cartridge heaters (each)	0.35
148827	Male Electrical Plug for cartridge heaters (each)	8.10

Controller		
102576	Solid State Controller (120 volt / ½ amp) (Includes 6 foot grounded power cord and female receptacle for all IMS Heated Cutters)	\$244.15
102567	½ amp Controller Fuse (each)	0.86
113806	Fuse Holder Cap	3.45

Other		
102596	Cutter Stand	\$11.30

Accessori	es	
102378	High-Temp PTFE Tape, ½ in. w x 36 yd. (roll)	\$20.15
103781	Infra-Kote Heat Transfer Compound w/brush top (16 oz)	23.15



There Is Absolutely No Reason These Cutters Can't Last Forever!

- Cutters can be completely disassembled
- Blades can be re-sharpened
- Every cutter componentcan be replaced

All In Your Own Shop!



phone order toll-free (USA & Canada) 1.800.537.5375

IMS Gate Cutter Repair Service

You Save 5 Ways

- 1. Productivity increases as efficient tools help operator efficiency.
- 2. Quality of the product improves with precise, clean cuts; your product reject rate drops.
- 3. Expense of tool is significantly reduced.
- 4. Reduced operator strain can reduce repetitive-motion injuries.
- 5. Inventory costs for hand tools are reduced.

Worn And Damaged Gate Cutters Like These Can Be Completely Reconditioned Like These.



Quickly And Economically (Lead time required — Call for details)

(Load inne roquirou — oui roi dotailo)

Like New Tools For Considerably Less Than The Cost Of New Ones

Satisfaction Guaranteed



Each Cutter Receives These Basic Services

- Thorough, Ultrasonic Cleaning removes damaging particles inside the joint.
- Precise Joint Adjustment brings dull edges back into line.
- Careful Honing restores cutting edges and tips without loss of temper.
- Grips replaced with soft, fatigue-reducing grips.

- New Springs installed if necessary.
- Polishing inhibits corrosion and makes your tools look as good as they will work.
- · Cleaning and Lubrication guarantee longer tool life.
- A Final Testing insures that each tool meets the plastic industry's highest quality standards.

Call for Quote

For Gate Cutter Repair:

Call the IMS Order Line for a Return Authorization (RA) Number and Instructions.

Gate Cutters considered beyond repair will be returned on request or scrapped.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada) **1.866.467.9001**

Tech Tips

Reduce the Risk of CTDs with Air-Powered Gate Cutters

Air Powered Gate Cutters have many ergonomic advantages over manual cutters. Air powered cutters significantly reduce the risk of CTDs (Cumulative Trauma Disorders). CTDs are caused by repetitive or forceful exertions. Some common CTDs associated with hand-tools include carpal tunnel syndrome, tendonitis and trigger finger.

Air Powered Gate Cutters decrease the risk of CTDs by eliminating the excessive force necessary when manually cutting through heavy materials. Workers only need to use minimal pressure to activate the air powered gate cutters trigger.

Another way Air Powered Gate Cutters reduce the risk of CTDs, such as carpal tunnel syndrome, is elimination of the concentrated pressure in the user's palm. Many hand-tools dig into the palm when a lot of pressure is required for cutting. Pneumatic cutters almost completely eliminate the exertion of pressure on the palm.

Also, Air Powered Gate Cutters allow multiple ways to activate and allow greater flexibility. By alternating between fingers, palm and thumb, the user has even less hand fatigue. The user quickly adapts to a personal holding method. Each cutter is also adaptable to a foot actuator for even more ergonomic value added.

Air Powered Gate Cutters also reduce awkward wrist postures and minimize repetitive forceful exertion to the hand and arm.

Finally, Air Powered Gate Cutters allow the user to have a whole-hand power grip on the tool. In contrast, manual tools usually force users to hold the tool with a "pinch grip" (thumb opposes fingers). The "pinch grip" makes users prone to injury and is a much weaker grip.

Take advantage of the many ergonomic benefits of Air-Powered Gate Cutters today!











www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Air-Powered Gate Cutters and Accessories



Air-Powered Gate Cutters come in five models with cutting forces ranging from 250 to 2400 lbs. These cutters can take on tough materials that ordinary regular gate cutters just can't handle. The design, originally created for engineered plastics, ensures a quick, clean and easy cut. Trouble-free cutting improves your productivity and decreases operator fatigue, reducing the possibility of the painful and costly carpal tunnel syndrome. Other features include:

- Long-life neoprene O-ring springs
- Three blade styles for cutting through difficult plastics
- Safety lever latch (all models except PGC1)
- · Optional foot-operated valve
- · Optional suspension kit
- · Optional blade coatings and treatments

Additional features and options

IMS includes the Safety Lever Latch on its air-powered cutters (not available on the PGC1). This requires the operator to release a spring-actuated latch prior to squeezing the lever to begin cutting. This feature enhances safety in your shop by preventing inadvertent actuation.

A popular optional accessory along these lines is the Hands-Free Foot-Operated Air Valve. This option fits

conditions involving the de-gating of large parts secured by a fixture. Generally the gate cutter assembly is fixed in a stationary position. The Hands-Free option requires a modified power pack and is offered in an economically priced kit for all our air-powered cutters.

Suspension Kits fit all air-powered gate cutters and will keep cutters off the bench and in a ready-to-use position. This addition to your process will reduce repetitive motion strain and increase productivity.

Blades

We offer a variety of blade styles for five power ranges. We also offer specially coated blades for abrasive and talc or glass-filled materials. If your de-gating needs are unique, order blank blades that you can machine yourself. On request, we cryogenically treat the blades for extended wear resistance.

With such a vast variety of plastic types and sizes, we want to be absolutely sure that you receive the ideal model for your application.

Send us about a dozen parts, with the runner/ sprue attached, and one of our engineers will recommend the most suitable air-powered cutter for your application. Call an IMS Customer Service Representative for details and an RA number.

See Frequently Asked Questions & Answers — Page 313



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

6" Model PGC1 Air-Powered Gate Cutter

With Choice of 3 Blade Styles

Complete with 5 ft. Super-Flexible Air Hose (1/4" N.P.T.)

Note

Special design of the blades on these IMS Air-Powered Gate Cutters limits their use strictly to plastics



Air-Powered Gate Cutter Quantity Discounts
Order 2 or more DEDUCT 3%

Item No. 104016

With 25° Blades



\$416.75 each

Item No. 111375

With 15° Blades





Item No. 111385 With 35° Blades

|-- ----**!**--



Inq	uire
-----	------

Replacement Parts			
#104098	25° Blades (Per Pair)	\$119.84	
#104043	15° Blades (Per Pair)	Inquire	
#104037	35° Blades (Per pair)	238.74	
#104098 #104043 #104037			
#104022	5' Replacement Hose	\$44.14	
#104001	10' Replacement Hose	69.77	
Accessory			
#100764	Air Line Filter, Oiler and Regulator	\$185.00	

Foot switch operation available — see page 312

Specifications				
Blade Angle:	25°	15°	35°	
Blade Length:	1/2"	1/2"	⁷ / ₁₆ "	
Usable Blade Opening at Tip:	1/4"	1/8"	1/8"	
Usable Blade Opening at Base: 1/8" 3/32" 3/32"				
Cutting Pressure Midway on Blade: 250 lbs				
Weight: 10 oz.				
Recommended Air Pressure: 60-80 psi				
Please Note: An Air Line Filter, Oiler and Regulator must be used to maintain warranty. See Accessories for price.				



7" Model PGC2 Air-Powered Gate Cutter

With Choice of 3 Blade Styles

Complete with 5 ft. Super-Flexible Air Hose (1/4" N.P.T.) and Hanger Clip

Note

Special design of the blades on these IMS Air-Powered Gate Cutters limits their use strictly to plastics



Air-Powered Gate Cutter Quantity Discounts
Order 2 or more DEDUCT 3%

Item No. 104108

With 18° Blades

\$529.11 each



Item No. 111381

With Hard Hat 45° Blades

Inquire each



Item No. 104088 With 45° Blades

\$666.96 each



Replacement Parts See PGC2 Blades on Next Page			
#110232	Lever latch safety assembly	\$47.94	
#104111	Valve Assembly	46.80	
#104022	5' Replacement Hose	44.14	
#104001	10' Replacement Hose	69.77	
#104136	Power Pack for Foot Switch	408.97	
Accessories			
#100764	Air Line Filter, Oiler and Regulator	\$127.99	
#104105	Mounting Base	113.45	

Foot switch operation available — see page 312

Specifications		Hard Hat	
Blade Angle:	18°	45°	45°
Blade Length:	7/8"	⁷ / ₁₆ "	7/8"
Usable Blade Opening at Tip:	1/2"	5/16"	1/2"
Usable Blade Opening at Base:	1/4"	1/4"	1/4"
Cutting Pressure Midway on Blade: 575 lbs			l
Weight: 16 oz.			
Recommended Air Pressure: 60-100 psi			
Please Note: An Air Line Filter, Oiler and Regulator must			
be used to maintain warranty. See Accessories for price.			



PGC2 and PGC3 Blades



18° Blades

Item No. 104020 \$131.26 per pair

Angle: 18°

Length of Cut: 7/8" (22 mm)

Type of Cut: Flush

Max Opening: 31/64" (12.25 mm)



60° Blades

Item No. 125378\$310.45 per pair

Angle: 60°

Length of Cut: 3/4" (19 mm)

Type of Cut: Flush

Max Opening: 13/32" (10.50 mm)



Hard Hat 45° Blades

Item No. 103994 Inquire per pair

Angle: 45°

Length of Cut: 7/16" (11 mm)

Type of Cut: Flush

Max Opening: 13/64" (5 mm)



90° Blades

Item No. 125379\$340.12 per pair

Angle: 90°

Length of Cut: 1" (25 mm)

Type of Cut: Flush

Max Opening: 23/64" (9.06 mm)



45° Blades

Item No. 104017 \$262.51 per pair

Angle: 45°

Length of Cut: 51/64" (20 mm)

Type of Cut: Flush

Max Opening: 29/64" (11.48 mm)



15° Blades

Item No. 144762 \$144.27 per pair

Angle: 15°

Length of Cut: 7/8" (22 mm)

Plastics Only: Tapered Outside Edge

Max Opening: to 0.18" (4.75 mm)



Wire-Cutting Blades

Item No. 108859 Inquire

Angle: N/A

Length of Cut: 1/2" (12.7 mm)

Type of Cut: Semi-Flush

Max Opening: 3/16" (4.8 mm)



Blank Blades

Item No. 104054 \$112.99 per pair

For use as holding pliers or can be machined to suit special requirements for cutting, crimping or holding.

Jaws are 0.30" (7.62 mm) thick Maximum tip opening: 0.39" (9.90 mm)



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

7" Model PGC3 Air-Powered Gate Cutter

With Choice of 3 Blade Styles

Complete with 5 ft. Super-Flexible Air Hose (1/4" N.P.T.) and Hanger Clip

Note

Special design of the blades on these IMS Air-Powered Gate Cutters limits their use strictly to plastics



Item No. 104061

With 18° Blades

\$588.34 each



Item No. 111376

With hard hat 45° Blades

\$554.57 each



Item No. 104041

With 45° Blades

\$666.35 each



Replacement Parts See PGC3 Blades on Next Page				
#110232	Lever latch safety assembly	\$45.05		
#104093	Valve Assembly	41.09		
#104022	5' Replacement Hose	44.14		
#104001	10' Replacement Hose	69.77		
#104135	Power Pack for Foot Switch	443.42		
	Accessories			
#100764	Air Line Filter, Oiler and Regulator	\$127.99		
#104105	Mounting Base	113.45		

Foot switch operation available — see page 312

Specifications		Hard Hat	
Blade Angle:	18°	45°	45°
Blade Length:	7/8"	⁷ / ₁₆ "	7/8"
Usable Blade Opening at Tip:	1/2"	⁵ / ₁₆ "	1/2"
Usable Blade Opening at Base:	1/4"	1/4"	1/4"
Cutting Pressure Midway on Blade: 850 lbs			
Weight: 18 oz.			
Recommended Air Pressure: 60-100 psi			
Please Note: An Air Line Filter, Oiler and Regulator must be used to maintain warranty. See Accessories for price.			



10% Model PGC4 Air-Powered Gate Cutter

With Choice of 3 Blade Styles

Complete with 5 ft. Super-Flexible Air Hose (1/4" N.P.T.) and Hanger Clip

Note

Special design of the blades on these IMS Air-Powered Gate Cutters limits their use strictly to plastics.



Item No. 104036 With 25° Blades



\$904.51 each

Item No. 104112

With hard hat 60° Blades



Inquire

Item No. 111380

With 30° Blades



\$977.72 ea

Replacement Parts See PGC4 Blades on Next Page		
#110232	Lever latch safety assembly	\$45.05
#104073	Valve Assembly	41.09
#104022	5' Replacement Hose	44.14
#104001	10' Replacement Hose	69.77
#104134	Power Pack for Foot Switch	723.40
Accessories		
#100764	Air Line Filter, Oiler and Regulator	\$127.99
#135026	Mounting Base	139.98

Foot switch operation available — see page 312

Specifications		Hard Hat	
Blade Angle:	25°	60°	30°
Blade Length:	7/8"	⁷ / ₁₆ "	¹³ / ₁₆ "
Usable Blade Opening at Tip:	5/8"	5/8"	1"
Usable Blade Opening at Base:	3/8"	1/2"	9/16"
Cutting Pressure Midway on Blade: 2,000 lbs			oo lbs
Weight: 42 oz.			
Recommended Air Pressure: 80-110 psi			
Please Note: An Air Line Filter, Oiler and Regulator must be used to maintain warranty. See Accessories for price.			



www.imscompany.com

21/4"

phone order toll-free (USA & Canada) 1.800.537.5375

PGC4 and PGC5 Blades

25° Blades

Item No. 104078 \$208.68 per pair



Angle: 25°

Length of Cut: 7/8" (21.62 mm)

Type of Cut: Flush

Max Opening: 5/8" (15.85 mm)

60° Blades

Item No. 125383 Inquire

Angle: 60°

Length of Cut: 15/32" (29.33 mm)

Type of Cut: Flush

Max Opening: 11/16" (17.23 mm)

Hard Hat 60° Blades

Item No. 104114 \$571.32 per pair



Angle: 60°

Length of Cut: 7/16" (11.11 mm)

Type of Cut: Semi-Flush

Max Opening: 5/8" (15.88 mm)

90° Blades

Item No. 125384 332.61



Angle: 90°

Length of Cut: 15/32" (29.33 mm)

Type of Cut: Flush

Max Opening: 17/32" (13.64 mm)

30° Blades

Item No. 125381 \$316.02 per pair



Angle: 30°

Length of Cut: 11/8" (28.57 mm)

Type of Cut: Flush

Max Opening: 7/8" (22.48 mm)

Blank Blades

Item No. 104031 Inquire



For use as holding pliers or can be machined to suit special requirements for cutting, crimping or holding.

Jaws are 0.37" (9.52 mm) thick Maximum tip opening: 0.54" (13.84 mm)

45° Blades

Item No. 125382 \$332.69 per pair



Angle: 45°

Length of Cut: 17/64" (28.12 mm)

Type of Cut: Flush

Max Opening: 11/16" (17.23 mm)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

10% Model PGC5 Air-Powered Gate Cutter

With Choice of 3 Blade Styles

Complete with 5 ft. Super-Flexible Air Hose (1/4" N.P.T.) and Hanger Clip

Note

Special design of the blades on these IMS Air-Powered Gate Cutters limits their use strictly to plastics.



Item No. 103986 With 25° Blades



\$943.31 each

Item No. 104066

With hard hat 60° Blades



\$1,317.68 each

Item No. 111387 With 30° BLADES



Inquire

Replacement Parts See PGC5 Blades on Next Page		
#110232	Lever latch safety assembly	\$45.05
#104051	Valve Assembly	41.09
#104022	5' Replacement Hose	44.14
#104001	10' Replacement Hose	69.77
#104137	Power Pack for Foot Switch	732.69
Accessories		
#100764	Air Line Filter, Oiler and Regulator	\$127.99

Foot switch operation available — see page 312

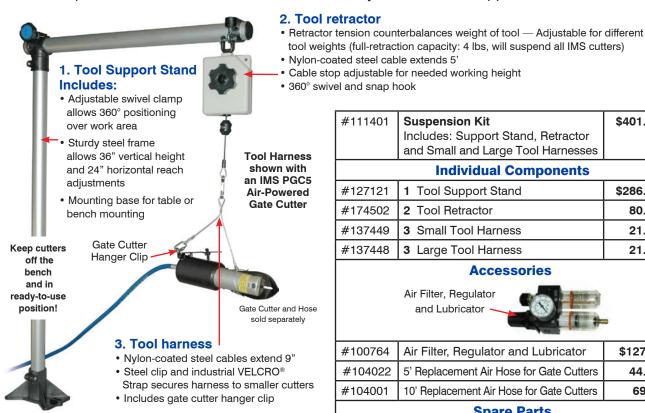
Specifications		Hard Hat	
Blade Angle:	25°	60°	30°
Blade Length:	7/8"	7/ ₁₆ "	¹³ / ₁₆ "
Usable Blade Opening at Tip:	5/8"	7/ ₁₆ "	1"
Usable Blade Opening at Base:	3/8"	1/2"	9/16"
Cutting Pressure Midway on Blade: 2,400 lbs			
Weight: 44 oz.			
Recommended Air Pressure: 80-110 psi			
Please Note: An Air Line Filter, Oiler and Regulator			

Please Note: An Air Line Filter. Oiler and Regulator must be used to maintain warranty. See Accessories for price.



Air-Powered Gate Cutter Tool Suspension Kit

Reduce Repetitive-Motion Strain • Increase Productivity • Eliminate Dropped Tool And Blade Damage



'			
#111401	Suspension Kit Includes: Support Stand, Retractor and Small and Large Tool Harnesses	\$401.78 ea.	
	Individual Components		
#127121	1 Tool Support Stand	\$286.02 ea.	
#174502	2 Tool Retractor	80.85 ea.	
#137449	3 Small Tool Harness	21.34 ea.	
#137448	3 Large Tool Harness	21.34 ea.	
	Accessories		
	Air Filter, Regulator and Lubricator		
#100764	Air Filter, Regulator and Lubricator	\$127.99 ea	
#104022	5' Replacement Air Hose for Gate Cutters	44.14 ea.	
#104001	10' Replacement Air Hose for Gate Cutters	69.77 ea	
Spare Parts			
#104118	Gate Cutter Hanger Clip	\$6.83 ea.	

Air-Powered Gate Cutter Foot Switch



VELCRO® is a registered trademark of Velcro Companies





#144840	Works with IMS Models PGC2-PGC5	\$139.18 ea.	
Power Packs			
#104136	for PGC2	\$408.97	
#104135	for PGC3	\$443.42	
#104134	for PGC4	\$723.40	
#104137	for PGC5	\$787.68	
	Accessories		
#104022	5' Replacement Air Hose for Gate Cutters	44.14 ea.	
#104001	10' Replacement Air Hose for Gate Cutters	69.77 ea.	
NOTE: Foot switch requires power pack with two pneumatic lines.			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Tech Tips

Air-Powered Gate Cutters Frequently Asked Questions

Question

Does my air-powered gate cutter need to be lubricated? What kind of oil should I use?

How do I know when the blades need to be resharpened?

Why do I feel air blowing out of the back of the cutter during operation?

Standard blades will not quite fit into our application. Do you make any different blades?

How do I know what cutter to use for my application?

Will increasing the air pressure increase the cutting power?

Answer

Use of an air line filter, oiler and regulator is required to prevent O-ring failure and to maintain the cutter's warranty. See the Optional Accessories listed for your model cutter. Any light hydraulic oil or sewing machine oil may be used.

When cuts are not as smooth and easy as they should be, your blades can be returned to IMS for resharpening. Turnaround time is within 14 days, and blades can usually be resharpened up to 5 times. It is not recommended that you try to resharpen the blades yourself. Any material removed from the blades needs to be compensated for by using larger rollers on the back of the blades.

This is usually caused by worn or damaged O-rings. Ask us about a replacement O-ring kit for your model cutter. DO NOT increase air pressure above recommended levels.

Yes, we have engineers to design blades specifically for your application. Ask us about the custom blades that we can make for you.

Send in sample parts and we will recommend a cutter for your job. Please call for a Return Authorization (RA) number before shipping parts.

Increasing air pressure beyond the recommended level will not increase cutting power and may damage the cutter.



IMS Air-Powered Gate Cutter Reconditioning Services

Extend Cutter Life - Cut Tool Replacement Cost

Let IMS save you money by repairing and resharpening your worn air-powered gate cutters. Simply contact the IMS Supplies Team at sales@imscompany.com for a return authorization (RA) number and instructions, then ship your worn or damaged cutter to IMS.

If sending blades for resharpening, please include the jaw housing to ensure proper blade alignment. Replacement rollers and pins are included in the price of the Resharpening Service.

If ordering the Reconditioning Service, we will inspect your cutter and issue a quotation before work proceeds.

Note: Gate Cutters considered beyond repair will be returned on request or scrapped

Note: Actuating lever safety latch and foam grip (for PGC2 and PGC3) are available — specify

Note: This service is for Simonds Air Powered Gate **Cutters only**



Item #	Description	Prices (each)
105745	Air-Powered Gate Cutter Blade Resharpening ONLY	RQF*
105787	Air-Powered Gate Cutter Reconditioning Service (blade sharpening not included)	RQF**

NOTE: There will be a \$27 (per item) evaluation fee for customers who decline the resharpening/reconditioning service



^{*} PLUS shipping (Allow 4 weeks for delivery)

^{**} PLUS cost of parts replaced and shipping (Allow 4 weeks for delivery)

Utility Knives and Deflashing Tools Quick Reference Chart

Description	Item #	Page	Price
Flash Trimmers	multiple	316	
High Visibility Retractable Blade	115722	317	\$6.02
Retractable Blade 99™	100835	317	5.55
Fixed Blade Utility Knife	100908	317	3.55
6½" Standard Retractable Blade Utility Knife	130676	318	8.19
5¾" Self-Retracting Utility Knife (10 Pack)	144719	318	27.70
6½" Front Loading Retractable Blade Utility Knife	144720	318	12.18
Retractable Blade Utility Knife	107826	319	4.90
Fixed Utility Knife	107828	319	1.70
Utility Knife, Carton Cutter	144715	319	1.15
Folding Blade Pocket Knife	129900	320	9.07
High Quality Industrial Hand Knife	143668	320	18.40
5½" Heavy Duty Flash-Trimming Knife (red handle)	137579	321	3.89
5½" Mini Pocket-Style Utility Knife	137580	321	1.10
18mm Standard Snap-Off Trimming Knife	108651	322	0.40
9mm Standard Snap-Off Trimming Knife	107829	322	0.45
18mm Heavy Duty Snap-Off Trimming Knife	166178	322	2.75
9mm Heavy Duty Snap-Off Trimming Knife	166177	322	1.85
18mm Ceramic Heavy Duty Snap-Off Knife	165844	322	9.00
9mm Ceramic Heavy Duty Snap-Off Knife	165842	322	7.00
Ceramic Trim Knife CR2000	137112	323	27.71
Ceramix Utility Knife Style Flash Trimming Set	136867	323	18.21
Ceramic Scraper Utility Knife	165846	323	4.76
SafeCut Flash Trimming and Deburring Knife	136862	323	26.21
SafeCut Mini Flash Trimming and Deburring Knife	136863	323	26.93
6" Square-Point Trim Knife	135799	324	20.92
4" Square-Point Trim Knife	135800	324	10.50
Safety-Style Trim Knife	131839	324	5.40
Plastic Safety Knife	165820	324	6.25
ROUT-A-BURR Deflashing Tools	multiple	326- 329	



IMS Flash Trimmers

The Original — and Still The Best

Now Take Advantage Of Quantity Breaks To Lower Your Cost!

Safe

No sharp edges like razors and knives

Long Lasting

Easily resharpened on a belt sander

Versatile

Use either end

Made of 1075 Spring Steel Heat Treated to 46 Rockwell



IMS flash trimmers safely and quickly remove parting line flash - reduce risk of damaging your molded parts.

Compact: Overall Length: 57/8" x Overall Width: 7/8"

Light Weight: Just 2 oz.

Bonded Plastic Grip: Never comes loose

Item #: 100861 - 1/2" and 3/16" Cutting Holes





Item #: 165514 - 1/4" Cutting Hole on Both Ends





Item #	1-11	1 Dozen (12)
100861	\$5.30	\$4.77
110853	4.50	4.05
165514	4.50	4.05
100875	\$5.30	\$4.77

Save 10% when ordering by the dozen (12)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

STANLEY Utility Knives

High Visibility Retractable Blade Utility Knife #10-179

- · Easy-to-find, eye-catching colored handles
- Three blade positions
- · Push button blade lock
- Flat-sided handle (keeps knife from rolling off surfaces)
- Diagonal non-slip ribs on the handle
- · Blade safely secured between the two handle halves
- · Comes with two extra blades



Retractable Blade 99™ Utility Knife

- Three blade positions
- · Push button blade lock
- Two-piece die cast aluminum handle
- Flat-sided handle (keeps knife from rolling off surfaces)
- · Comes with two extra blades



Fixed Blade Utility Knife #10-299

- Sturdy two-piece die cast aluminum handle
- Flat-sided handle (keeps knife from rolling off surfaces)
- · Comes with two extra blades



Utility Knife Replacement Blades

- Reversible blades with two cutting edges for double usage
- Straight and rounded-edge (reduced puncture damage) blade styles





Item #	Description	Unit Price
115722	6½" High Visibility Retractable Blade Utility Knife includes 2 extra blades	\$6.25
100835	6" Retractable Blade 99™ Utility Knife includes 2 extra blades	5.55
100908	6" Fixed Blade Utility Knife includes 2 extra blades	3.55
Spare Pa	rts	
	For #115722, #100835 and #100908 Utility Knives	
100859	Reversible straight blades (dispenser of 100)	\$21.35
109243	Reversible rounded edge blades (pack of 5)	1.45
109241	Reversible rounded edge blades (dispenser of 100)	23.84

Retractable Blade 99™ is a trademark of STANLEY Tools



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



THYDE Retractable Blade Utility Knives

Standard Retractable Blade Utility Knife

- · Blade will not retract while cutting
- Lightweight, 2 piece diecast aluminum handle
- Spare blade can be stored in handle



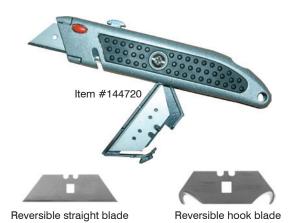
Self-Retracting Utility Knife

- Blade self-retracts upon release of button
- · No-tool blade replacement
- Bright orange, ultra-light polypropylene handle



Front Loading Retractable Utility Knife

- Blades installed directly in front No tools needed
- Blade storage in aluminum die cast handle
- String cutter in handle
- Three blade positions



Item #	Description	Unit Price	
130676	6½" HYDE® Standard Retractable Blade Utility Knife	\$8.19	
144719	5¾" HYDE® Self-Retracting Utility Knife (10 Pack)	27.70	
144720	6½" HYDE® Front Loading Retractable Blade Utility Knife (includes 3 blades)	12.18	
Spare Part	Spare Parts		
102544	Reversible straight blades (pack of 5)	\$1.81	
102594	Reversible straight blades (dispenser of 100)	25.57	
102588	Reversible hook blades (pack of 5)	3.05	

Allway Utility Knives

Retractable Blade Utility Knife

- · Four-position retractable blade
- · Contoured to fit comfortably in palm
- Flat-sided handles (keeps knife from rolling off surfaces)
- · Convenient blade-storage compartment
- Push button blade lock
- Two-piece, zinc, die cast handle with locking nose design
- · Comes with one blade



Reversible straight blade

Reversible hook blade

Fixed Utility Knife

- Two fixed blade positions
- Blade secured safely between handle halves
- Contoured to fit comfortably in palm
- Flat-sided handles (keeps knife from rolling off surfaces)
- · Convenient blade-storage compartment
- Two-piece, zinc, die cast handle with locking nose design
- · Comes with three blades



Utility Knife, Carton Cutter

- · Replaceable metal blade
- Low cost
- No tool blade replacement
- Push-pull action to expose blade



Item #144715



Reversible carton cutter blade

Item #	Description	Unit Price
107826	67/8" Retractable Blade Utility Knife (includes 1 blade)	\$4.90
107828	61/4" Fixed Blade Utility Knife (includes 3 blades)	1.70
107825	Reversible straight blades for #107826 and #107828 (20 packs of 5 blades = 100 blades)	10.25
107827	Reversible hook blades for #107826 and #107828 (20 packs of 5 blades = 100 blades)	35.00
144715	3¾" Utility Knife, Carton Cutter (includes 1 blade)	1.15
144716	Reversible blades for #144715 (100 blades)	12.81

STANLEY Folding Blade Pocket Knife

• Blade rotates into handle for safe storage

• Flat-sided handle (keeps knife from rolling off surfaces)

Blade lock



Item #129901

Item #	Description	Unit Price
129900	6" Folding Blade Pocket Knife	\$9.07
129901	Replacement blade for #129900	3.27

THYDE High Quality Industrial Hand Knife



Handle and Blade Sold Separately



Item #136739 & 143668



Item #136726

Item #171338

Item #	Description	Unit Price
143668	4 ³ / ₈ " Long Wood/Aluminum Knife Handle	\$18.40
136739	43/8" Long Wood/Aluminum Knife Handle (box of 10)	165.66
136725	4¾" Long x ¾" wide Curved Blades (pack of 10)	40.65
136726	4¾" Long x ¾" wide Bevel Point Blades (pack of 10)	40.97
171338	21/4" Long x 3/6" wide Concave Carving Blades (each)	5.99

Flash-Trimming Knives

- Honed, carbon-steel blades hardened for long cutting life
- · Multiple blades available for many applications
- 5.5" knife length



Item #137579







Trimmer Quantity Discounts
Order 25-49 DEDUCT 4% Order 50 or more DEDUCT 6%

Item #	Description	Unit Price 1-24 (each)
137579	5½" Heavy Duty (Red Handle) Flash-Trimming Knife w/ 15-A 45° angled blade	\$3.89
<u>171526</u>	5½" Medium Duty Knife Handle (Blade Not Included)	3.92
137576	15-H large fine-point blades* (pack of 100)	36.41

^{*}Blades interchangeable with both #137579 and #171526 handles

Mini Pocket-Style Utility Knife

- Thin yellow handle
- Twist lock screw locks blade
- Thumb indent for better control
- · High quality carbon steel
- Fully adjustable and reversible
- Pocket clip and keychain hole



Item #137580

Item #	Description	Unit Price
137580	5½" Mini Pocket-Style Utility Knife with 110B double end blade	\$1.10



Break-Away/Snap-Off Knives

Superior Quality IMS Trimming Knives with 2X Life Blades or Ceramic Blades

- Blades are scored allowing tips to be snapped off to reveal fresh tip when blade becomes dull
- · Blades are fully retractable
- · Push button with blade lock

- · Knives available in standard and heavy duty
- · Bright colors for safety
- 9mm and 18mm sizes to fit a variety of trimming and cutting applications

18mm Knives and Blades

Tomin Knives and I		
Snap-Off Style Trimming Knives	Item #	Price
18mm Width Standard Duty w/Std Blade	108651	\$0.40
18mm Width Heavy Duty w/2X [†] Blade and Stainless Steel Blade Track	166178	\$2.75
Ceramic Style* 18mm Heavy Duty w/Ceramic Blade and Stainless Steel Blade Track	165844	\$9.00

Replacement Blades		
18mm 2X [†] Life Blade (50 Pack)		
Item #	Price	
166176	\$8.25	
	1/	
Fits both		
108651 & 166178		
18mm Ceramic	Blade (each)	
Item #	Price	
165845	\$6.25	
Fits 165844 only		

9mm Knives and Blades

9mm Width Standard Duty w/Std Blade	107829	\$0.45
9mm Width Heavy Duty w/2X [†] Blade and Stainless Steel Blade Track	166177	\$1.85
Ceramic Style* 9mm Heavy Duty w/Ceramic Blade and Stainless Steel Blade Track	165842	\$7.00



^{*}Ceramic Knives/Blades are much safer than conventional steel blades, however much like paper, they can still cut you if drawn across the skin at a rapid pace. Due to the nature of ceramic blades and widths they are not compatible with knives other than the Ceramic Style Snap-Off Knives. The also have a tendancy to be brittle if not treated with care.

^{†2}X Blades are Extra Sharp and Longer Life than Conventional Blades



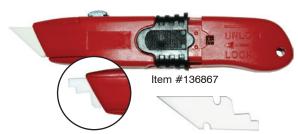
Ceramic Trimming Knives

Deflashing With No Sharp Edges — Boost Worker Safety

Noga CR2000 Ceramic Trim Knife

- "No edge" blade avoids accidents
- · Low profile handle fits nicely in hand
- · Grey easy grip design
- · Easy view blade storage
- · Easy swap
- · Easily check extra blade stock





Item #136868

Ceramix Utility Knife Style Flash Trimming Set

- Two sided blade for surface or sheet edge cleaning
- Retractable, light weight red handle
- Quick release access to spare blades
- Metal utility blade included with set

Ceramic Scraper Utility Knife

- · One-touch safety lever design
- Clear Light Weight Handle
- Long Lasting Ceramic Blade for Safety in Multiple Applications



SafeCut Flash Trimming and Deburring Knives

- · Deburrs plastic safely and efficiently
- · SafeCut Mini ideal for smaller hands
- Never needs resharpened



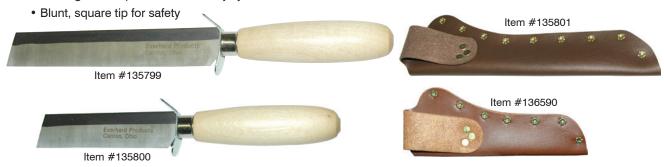
Item #136863

Item #	Description	Unit Price
137112	Ceramic Trim Knife CR2000	\$27.71
137113	Replacement blade for #137112	21.50
136867	Ceramix Utility Knife Style Flash Trimming Set with metal utility blade	18.21
136868	Replacement blade for #136867	13.48
165846	5" Ceramic Scraper Utility Knife with Ceramic Blade	4.76
165847	Replacement blade for #165846	3.47
136862	7" SafeCut Flash Trimming and Deburring Knife	26.21
136863	5%" SafeCut Mini Flash Trimming and Deburring Knife	26.93



Square-Point Trim Knives

· Blade guard helps avoid worker injury



Item #	Description	Unit Price	
135799	6" Square-Point Trim Knife	\$20.92	
135801	Sheath for 6" Knife	Inquire	
135800	4" Square-Point Trim Knife	22.42	
136590	Sheath for 4" Knife	12.47	

Safety-Style Trim Knife

- Avoid accidental operator cuts Blade only access through notches
- Quick blade release
- Covered tip
- Blue, light weight handle



Item #131839

Item #	Description	Unit Price
131839	Safety-Style Trim Knife, T-500 Series (Includes knife and 1 blade)	\$5.40
131840	Replacement blade for #131839	2.30

• Spring-loaded blade retracts automatically when handle is released

- Metal protection on edge of knife
- Squeeze handle prevents hand fatigue



- Quantity Discounts -

Item #	Description	Unit Price	10-49	50+
165820	Plastic Safety Knife (Includes knife and 1 blade)	\$6.25 ea.	\$5.94 ea.	\$5.32 ea.
107825	Replacement blades for #165820 (pack of 100)	10.25		



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Tool Holsters

Keep Your Most Frequently Used Tools Always Within Reach!

2 Styles in 2 Sizes!

- · Hold Flash Trimmers, Gate Cutters, Utility Knives, Pliers, Sprue Pullers etc.
- · Keep tools from damaging clothes or equipment
- · Protect tools
- · Made of Durable, Lightweight Black Nylon

Both sizes are 3" wide



Metal clip on back of Tool Holster attaches easily and comfortably to your belt or pocket.

#110606	5" long	Open Style	\$7.66 ea.
#110611	o long	Closed Style	Inquire
#110604	7" long	Open Style	8.06 ea.
#110609	, iong	Closed Style	8.87 ea.

VELCRO® is a registered trademark of VELCRO Industries





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

ROUT-A-BURR Deflashing Tools



Speed part deflashing with ROUT-A-BURR Deflashing Tools. These tools come in a wide selection of handles, blade holders and blades to provide flexibility for all applications. The blades are good for plastic, steel, aluminum, brass and cast iron.

Handles and Holders

- Adjustable blades can swivel a full 360°
- · Excellent for both internal and external part deflashing
- · Heavy duty styles for tough applications
- Easy and comfortable to use
- ARB-1 and PRB-2 blade holder accepts all B series blades
- PRB-3 and GB-E accept all E series blades directly into the handle

Standard B Blades

- Come on ROUT-A-BURRS with anodized aluminum holders and plastic handles
- · Vertical or horizontal insertion
- Curved to automatically follow contours and edges of work pieces
- High grade steel
- B10 for small holes
- B20 can rotate clockwise and counter clockwise

Standard E Blades

- Come on ROUT-A-BURRS with transparent plastic container handles and aluminum swivel blade holders
- · Larger blade diameters
- Meant for heavy duty jobs where subjected to extra pressure
- · High grade steel
- E100: Basic blade (right-handed)
- E200: Can rotate clockwise and counter clockwise
- E300: Removes external and internal burrs simultaneously from holes drilled into tubing and sheet metal. Follows inside walls for burrs deeper than E100 or 200
- E350: Used for straight edges, key ways, etc.
- E600: Used for deburring in the most inaccessible locations. Ideal for deep cross drilled holes



Specifications and Prices

- Smooth 360° swivel action
- · ARB-1 and PRB-2 blade holder accepts all B series blades and allows blades to be used in a vertical or horizontal position
- PRB-3 and GB-E accept all E series blades directly into the handle
- All blades are made of high speed steel

ARB-1

Size (without blade): 4.2" I x .975" dia.

Weight: 9 oz.



PRB-2

Size (without blade): 4.002" I x .975" dia.

Weight: 3 oz.



PRB-3

Size (without blade): 4.2" I x .975" dia.

Weight: 6 oz.



GB-E

Size (without blade): 5.125" I x .625" dia.

Weight: .7 oz.



UB1

Size (without blade): 4.75" I x .354" dia.

Weight: .7 oz.



Item #	Description	
122706	ARB-1 Rout-A-Burr with Anodized Aluminum Holder complete with blade holder and B10 and B20 blades	\$15.50
122707	PRB-2 Rout-A-Burr with Plastic Handle complete with blade holder and B10 and B20 blades	12.47
138142	Blade Holder B - Holds all B Blades, for use with 122706 & 122707	5.55
122708	PRB-3 Rout-A-Burr with Transparent Plastic Container Handle complete with E100, E200 and E300 blades	10.79
127808	GB-E Red Multi-Burr ABS Plastic Swivel Blade Holder complete with E100 blade	3.47
144567	GB-E Green Multi-Burr ABS Plastic Swivel Blade Holder complete with E100 blade	3.47
144568	GB-E Blue Multi-Burr ABS Plastic Swivel Blade Holder complete with E100 blade	3.47
144569	GB-E Yellow Multi-Burr ABS Plastic Swivel Blade Holder complete with E100 blade	3.47
140609	UB1 Red DisposaBurr complete with non-replaceable E100 blade	4.21

See Next Page for Rout-A-Burr Blades



ROUT-A-BURR Blades

Item #	Description		Unit Price
122715	B10 blade (for small holes, right-handed)	~	\$0.94
144570	B10L blade (for small holes, left-handed)		1.11
122716	B20 blade (can rotate clockwise and counter clockwise)	~	1.03
144571	B25 blade (thin-nosed for standard plastics)	~	1.03
144579	B25C blade (solid carbide thin-nosed for abrasive plastics)		6.94
144572	B30 blade (simultaneously deburrs the inside and outside of holes up to 0.16" thick)	~	1.52
122710	E100 blade (basic blade, right-handed)	~	1.39
144573	E100L blade (basic blade, left-handed)		1.52
144574	E110 blade (B10 blade with E shaft)		1.52
144575	E111 blade (thin-nosed for holes with min. dia. 0.06")		1.52
122711	E200 blade (can rotate clockwise and counter clockwise)		1.39
144580	E250 blade (very thin, heavy duty)	~	1.39
122712	E300 blade (removes external and internal burrs simultaneously from holes drilled into tubing and sheet metal)	<u></u>	1.74
122713	E350 blade (for straight edges, key ways, etc.)		1.39
122714	E600 blade (for deburring in the most inaccessible locations) ldeal for deep cross drilled holes		2.77
144581	E750 blade (for deburring for rubber and soft plastics without poking or sticking into product)		2.08



Mango II Deburring Tool Sets

Comfort and Control

Mango II Handle

- Comfortable, ergonomic handle
- · Holds B- and E-type blades
- · Easy to load
- · Telescopic blade holder



148975	Mango II Handle ONLY (shown)	\$5.19
144752	Blade Holder (not shown)	7.16

The Sheet Cleaner

Ideal for flat surface sheets

- Deburrs in one pass
- · Telescopic blade holder



144750	Sheet Cleaner Set	\$18.53
144751	Replacement Blade	7.13

The Scraper

Ideal for straight edge, hole edge, hole back edge, flat surface and hole inner surface

- Triangular blade with 3 cutting edges for high quality
- Telescopic blade holder to reach difficult to reach areas
- Key for safely removing blades



144732	Scraper Set	\$20.07
144733	Replacement Blade Holder	5.55
144734	Replacement Blade	12.11

Slot Edge Cleaner

Ideal for edges, external keyways and slots up to .6" (14mm)

- Blade with 8 cutting edges for deburring and cleaning
- Telescopic blade holder to reach difficult to reach areas



144742	Slot Edge Cleaner Set	\$15.31
144743	Replacement Blade	4.98

The Countersink

Ideal for chamfering countersinks

- Use for hole edge applications up to .79" (20mm) dia.
- Telescopic blade holder to reach difficult to reach areas



144735	Countersink Set	\$29.97
144736	Replacement Blade Holder	5.55
144738	Replacement 3/4" Blade	18.52
144737	Optional ½" Blade	13.53
144739	Optional 11/4" Blade	32.07

Heavy Duty Sheet Cleaner

Ideal for straight edge sheets

- For difficult materials with single or double edges
- Uses two blades to create an arc finish
- · Hand guard included for worker safety



144740	Heavy Duty Sheet Cleaner Set	\$21.61
144741	Replacement Blade (requires 2)	4.86



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	0.3969
1/32"	.03125"	0.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/ ₃₂ "	.15625"	3.9688
11/64"	.171875"	4.3656
3/ ₁₆ "	.1875"	4.7625
13/ ₆₄ "	.203125"	5.1594
7/ ₃₂ "	.21875"	5.5562
15/ ₆₄ "	.234375"	5.9531
1/4"	.25"	6.35
17/64"	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/16"	.3125"	7.9375
21/64"	.328125"	8.3344
11/32"	.34375"	8.7312
23/ ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
25/ ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
²⁷ / ₆₄ "	.421875"	10.7156
⁷ / ₁₆ "	.4375"	11.1125
29/ ₆₄ "	.453125"	11.5094
15/32"	.46875"	11.9063
31/64"	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32"	.53125"	13.4938
35/64	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/64"	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/ ₆₄ "	.671875"	17.0656
11/16"	.6875"	17.4625
45/64"	.703125"	17.8594
23/32"	.71875"	18.2563
47/ ₆₄ "	.734375"	18.6531
3/4"	.75"	19.05
49/ ₆₄ "	.765625"	19.4469
²⁵ / ₃₂ "	.78125"	19.8438
51/ ₆₄ "	.796875"	20.2406
13/ ₁₆ "	.8125"	20.6375
53/ ₆₄ "	.828125"	21.0344
27/32"	.84375"	21.4312
55/ ₆₄ "	.859375"	21.8281
7/8"	.875"	22.225
57/ ₆₄ "	.890625"	22.6219
29/32"	.90625"	23.0188
59/64"	.921875"	23.4156
¹⁵ / ₁₆ "	.9375"	23.8125
61/64"	.953125"	24.2094
31/32"	.96875"	24.6062
63/64"	.984375"	25.0031
1"	1.0"	25.4





Fittings, Manifolds, Hose & Accessories



Mold Flow Regulators 334 – 339

Flowmeters 340 – 351

SWAP® Mold Water Purge Valves 352

Taco[®] Series Air Separators 353

Mold Water Manifolds 354 - 365

Waterline Fittings & Accessories 367 – 396

Thread & Pipe Sealant 397

Cam & Groove Couplings 398 – 399

Tubing, Waterline Hose & Accessories 400 – 406

> Hopper Dryer Hose & Insulation 407 – 409

> > **Loader Hose** 410 – 413

Ultrasonic Leak Detector
415

Most items IN STOCK for Same Day Shipment



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

(C) tec

tech support toll-free (USA & Canada) **1.866.467.9001**







Mold Temperature Regulators

Recovers Waste Heat From Resin Shot To Stabilize Mold Temperature Compact / Easy to Install / Needs No Electricity!

Smartflow Mold Temperature Regulators

- Multiple zone control using several regulators or an optional inlet manifold facilitates effective zone control
- Unaffected by pressure changes the Mold Temperature Regulator uses the thermal expansion principle for operation
- Handles tower water temperature changes - modulates flow to control cooling water temperature
- In-Line mounting installs easily without additional hardware
- Cost of ownership typically ½ the cost of a conventional electric mold heater

- Maintenance free few internal parts for trouble-free operation
- Energy saving it uses no electricity, conserving precious energy dollars
- Small size cleans up shop floor clutter: no hoses or power cords to trip over
- Integral dial thermometer verifies Set Point temperature
- Optional inlet manifold provides temperature control for multiple zones with one regulator



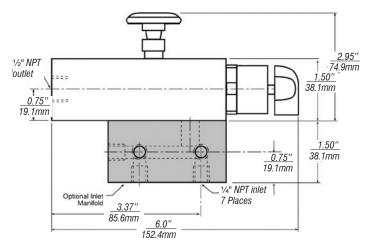
No. 5,813,601 **Set Point Knob**

Hold Constant Temperatures to Mold Better Parts

The Smartflow Mold Temperature Regulator effectively controls mold cooling water temperature between 80°F and 120°F (27° and 49°C) to maintain a steady mold temperature. Installed to control water flow exiting an injection mold, the Mold Temperature Regulator quietly recovers waste heat from the resin shot, working without electricity to reduce shop floor clutter, and cut production costs. In many cases, it is a simple, inexpensive substitute for a conventional electric mold heater.

Cooling water temperature always corresponds to higher mold (steel) temperatures (for example: 120°F water temperature may result in 180°F mold temperature).

Specifications		
Physical		
Material (wetted parts)	Electroless Nickel-Plated Brass & 303 Stainless Steel	
O-Rings	Buna-N	
Inlet Size	1/4" NPT(F)	
Outlet Size	½" NPT(F)	
Maximum Pressure	125 psi (8.6 bar)	
Weight	3 lbs (1.5 kg	
Operating: Regulator		
Cooling water set point range	80° to 120°F (27° to 49°C)	
Accuracy	±1°F	
Regulator operation is more ac	curate than dial thermometer.	
Dial Thermometer		
Range	0 to 250°F (-18 to 121°C)	
Accuracy	±1°F Mid Scale ±2°F Full Scale	



-1.50" -38.1mm_{1.72"} -43.7mm

Turbulent Flow, Supply Cooling Water Pressure & Temperature

Traditionally, high turbulent flow rates are used in cooling water loops to achieve acceptable heat transfer rates from the mold. High turbulent flow rates are irrelevant when using the Smartflow Mold Temperature Regulator. It regulates cooling water flow leaving the mold to achieve Set Point temperature. The unit is also unaffected by supply cooling water pressure and temperature. For example, it automatically compensates for temperature changes of cooling tower water between night and day.

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

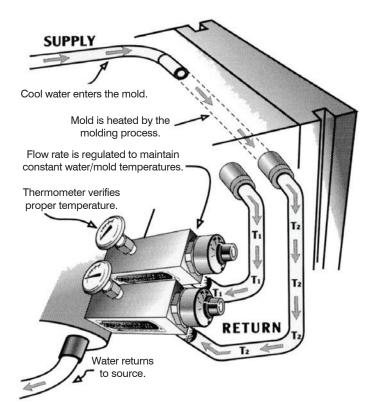
tech support toll-free (USA & Canada) 1.866.467.9001

Principle of Operation

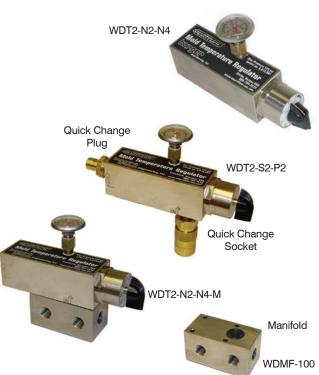
The Smartflow Mold Temperature Regulator works on the principle of thermal expansion. It is connected to the return lines of the mold cooling water loop. A simple bellows and range spring capsule senses the temperature of the water leaving the mold and compares it to the Set Point temperature. The Set Point is easily adjusted by rotating the pointer knob to the desired water temperature value on the calibration scale. The dial thermometer provides visual verification of the setting. Note: A discrete cooling water temperature always corresponds to a hotter mold (steel) temperature.

When the water temperature leaving the mold is hotter than the Set Point, the internal valve modulates toward open, cooling water flow rate increases, and cooling water temperature decreases to stabilize at the Set Point. When the water temperature leaving the mold is cooler than the Set point, the internal valve modulates toward close, cooling water flow rate decreases, residency time in the mold increases and cooling water temperature rises until stabilizing at the Set Point. The valve never completely closes.

Note: The Mold Temperature Regulator recovers waste heat energy from the resin shot and transfers it to heat the cooling water and the mold. The Mold Temperature Regulator does not generate heat, and it does not function as a chiller.



No Electricity Required • No Floor Space Required • No Noise



Smartflow Mold Temperature Regulators

Item #	Model #	Unit Price	
142850	2850 1/4" NPT Inlet, 1/2" NPT Outlet WDT2-N2-N4		
143573	1/4" NPT Inlet/Outlet with Quick Connect Socket and Plug - WDT2-S2-P2	505.00	
143574	143574 3/8" NPT Inlet/Outlet with Quick Connect Socket and Plug - WDT2-S3-P3		
143575	1/4" NPT Inlet, 1/2" NPT Outlet with 7 Port Manifold - WDT2-N2-N4-M	602.00	
143576	7 Port Manifold (1/4" NPT) Only WDMF-100	112.00	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001







Allow Manual Control of Individual Cooling Water Lines

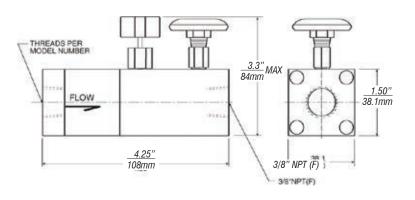
Smartflow Flow Regulators

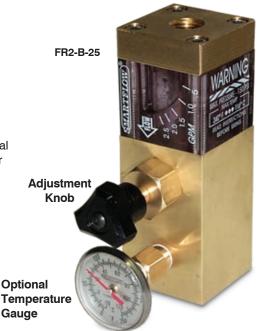
- Compact size works well in restricted-space locations.
- Rugged construction provides years of dependable service.
- 210°F (99°C) Temperature Rating allows installation into a wide range of applications.
- Optional Temperature Gauge displays additional process information.
- No Mounting Restrictions ease installation in any position without extra brackets or hardware.

Smartflow® flow regulators provide a unique, leak-free, single-point manual flow control. This regulator incorporates the proven mechanical flowmeter and integral needle valve in a compact design. Very few moving parts improve reliability and leak-free operation.

Used singly or in combination with a water manifold, the flow regulator allows manual control of individual cooling water lines.

Inlet Sizes - 1/4",	%" & ½" NPT
Outlet Sizes	- 3/8" NPT
Flow Rates - 1.	5 to 8 GPM
(Most ranges also availabl	
Rugged, wetted parts are compati	ble with many process liquids
End Cap and Regulator Body	Brass
Flow Body	Polysulfone
Vane	Glass-Filled Nylon
Viewing Window	Polysulfone
Spring	Stainless Steel
O-Rings	EPDM
Cap Screws	Stainless Steel
Opt. Quick-Connect Fittings	Brass
Specifications	
Flow Accuracy	±10% full scale
Operating Temperature	210°F (99°C) max.
Operating Pressure	100 psi (6.9 bar) max.
Dial Thermometer	0° to 250°F (-20° to 120°C)
	±2% accuracy (full scale)





Precise Control of Water Flow



Manually control multiple cooling zones on a single tool with ganged installation on a return manifold. (Factory installation required.)

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



Flow Regulators (continued)

1/4", 3/8" & 1/2" NPT

Item #	Model #	NPT	Flow Range	Unit Price
143938	FR2-A-15	1/4"	0.2 - 1.5 gpm	\$185.00
143939	FR3-A-15	3/8"	0.2 - 1.5 gpm	185.00
143940	FR4-A-15	1/2"	0.2 - 1.5 gpm	185.00
143941	FR2-A-25	1/4"	0.5 - 2.5 gpm	178.00
143942	FR3-A-25	3/8"	0.5 - 2.5 gpm	178.00
143943	FR4-A-25	1/2"	0.5 - 2.5 gpm	178.00
143944	FR2-A-80	1/4"	1- 8.0 gpm	178.00
143945	FR3-A-80	3/8"	1- 8.0 gpm	178.00
143946	FR4-A-80	1/2"	1- 8.0 gpm	178.00
143947	FR2-A-100	1/4"	2 -10 lpm	178.00
143948	FR3-A-100	3/8"	2 -10 lpm	178.00
143949	FR4-A-100	1/2"	2 -10 lpm	178.00
143950	FR2-A-300	1/4"	4 -30 lpm	178.00
143951	FR3-A-300	3/8"	4 -30 lpm	178.00
143952	FR4-A-300	1/2"	4 -30 lpm	178.00

Item #	Model #	NPT	Flow Range	Unit Price
143961	FR2-B-15	1/4"	0.2 - 1.5 gpm	216.00
143962	FR3-B-15	3/8"	0.2 - 1.5 gpm	216.00
143963	FR4-B-15	1/2"	0.2 - 1.5 gpm	216.00
143964	FR2-B-25	1/4"	0.5 - 2.5 gpm	211.00
143965	FR3-B-25	3/8"	0.5 - 2.5 gpm	211.00
143966	FR4-B-25	1/2"	0.5 - 2.5 gpm	211.00
143967	FR2-B-80	1/4"	1- 8.0 gpm	211.00
143968	FR3-B-80	3/8"	1- 8.0 gpm	211.00
143969	FR4-B-80	1/2"	1- 8.0 gpm	211.00
143970	FR2-B-100	1/4"	2 -10 lpm	211.00
143971	FR3-B-100	3/8"	2 -10 lpm	211.00
143972	FR4-B-100	1/2"	2 -10 lpm	211.00
143973	FR2-B-300	1/4"	4 -30 lpm	211.00
143974	FR3-B-300	3/8"	4 -30 lpm	211.00
143975	FR4-B-300	1/2"	4 -30 lpm	211.00

Model Number Explanation

Example: FR3-B-25

Would signify the Flow Regulator has 3/8" NPT female threads, includes a Temperature Gauge and has a maximum Flow Rate of 2.5 gallons per minute

Inlet Size		Flow Regulator Accessories			Flow Rate		
FR2	1/4" NPT (F)	/ ₄ " NPT (F) A Flow Regulator ONLY		15	0.2 - 1.5 gpm (gal per minute)		
FR2B	1/4" BSPP (F)	B with Thermometer		25	0.5 - 2.5 gpm		
FR3	%" NPT (F)	Е	with Thermometer and Quick Change Socket and Plug (NPT only)	80	1 - 8.0 gpm		
FR3B	%" BSPP (F)			100	2 - 10 lpm (liters per minute)		
FR4	½" NPT (F)			200	5 - 20 lpm		
FR4B	1/2" BSPP (F)			300	4 - 30 lpm		

Other Thread Styles and Sizes Available on Request - Inquire

SMARTFLOW is a registered trademark of Burger & Brown Engineering, Inc.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

Tech Tips

Calculating Heat Load for a Circuit

Application Procedure

Use the following formula and method to calculate heat load for one cooling circuit. This will help determine suitability of the Smartflow Mold Temperature Regulator to your process.

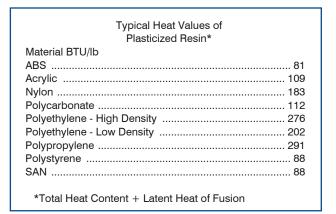
 Select material from the table at right and calculate BTU/hr using the formula below. Shot weight is the total drop including cold runner (if any).

 $\frac{\text{BTU/lb x Shot Weight (oz.) x 225}}{\text{Cycle Time (sec)}} = \text{BTU/hr}$

- Find BTU/hr along the X axis of the graph below. Locate the desired steel temperature along the Y axis of the graph. Find the spot where the X and Y values intersect.
- The graphed line nearest this intersection point represents the difference in temperature between the incoming water and the Mold Temperature Regulator set point (ΔT).
- 4. The Smartflow Mold Temperature Regulator should work in your application if the sum of the incoming water temperature and the ΔT value is between 80° and 120°F.

Every mold is different! The effectiveness of the Mold Temperature Regulator relies on the ability of the resin shot to heat the mold, and the efficiency of the cooling lines inside the mold.

NOTE: These graphs and information are intended as a general guide for sizing and initial setup of the mold temperature regulator. Due to the different mold designs, results may vary from the graphs.

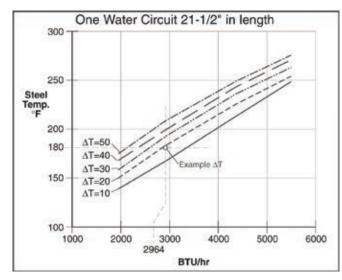


Example:

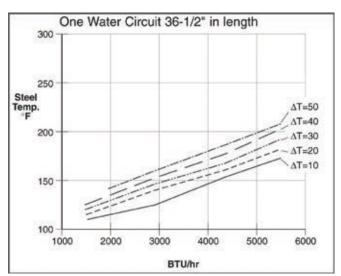
A molder is using nylon material in a four-cavity mold with a shot weight of .90 ounces (including the runner). The cycle time is 12.5 seconds with a mold steel temperature of 180°F. BTU/hr formula is as follows:

$$\frac{183 \text{ BTU/lb x .90 oz. x 225}}{12.5 \text{ sec}} = 2964.6 \text{ BTU/hr}$$

See the One Water Circuit Graph below left for the differential temperature (ΔT) value. Add 70°F incoming water temp. to the ΔT value (20°F). This is the beginning set point for the mold temperature regulator, and may be adjusted as needed.







Mold Temperature vs.

Heat Input for 21-1/2" Water Circuit and
Five Different Values of ΔT

These graphs were generated by simulated molds, with BTU input varied by electric heaters. The water line path through each mold was $\frac{7}{16}$ dia.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Injection Mold Water Flow Regulators

Flow Regulators indicate the exact flow rate and temperature of the fluid in your mold circuits, eliminating trial and error experimentation, calculations and pyrometer readings. Use them to establish a consistent heating or cooling process in your molding system and improve your part quality.

Standard IMS Flow Regulators feature:

- · Highly visible calibrated nylon sight tube
- · Adjustable setpoint marker
- · Solid brass float
- · Brass needle valve for flow control
- · Shut-off valve
- · Removable dial thermometer
- No-rust design

Special O-ring seals enhance the no rust design and protect the brass threads of the needle valve spindle to provide long life and trouble-free operation.

These flow regulators come stocked with calibrated Style A sight tubes. Style A tubes, made of nylon, are highly resistant to most chemicals.

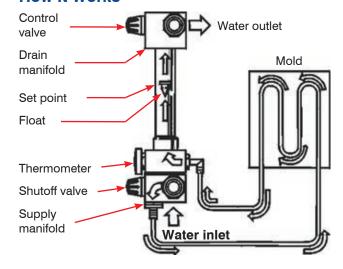
Flow-Rate Table Shaded flow range is for standard sight tube (A) and float (No. 1)								
	4	1	<u> </u>	- <i>Filmi</i> A				
	•	(1) Solid Brass	(3) Hollow Bras	ss (4) PVC				
SS	200				1.20			
Glass	180	8.7	4.2	12.1	1.05			
Sight	150	6.8	3.5	10.8	0.80			
	125	6.0	2.85	9.6	0.65			
lon	100	4.5	2.3	8.3	0.48			
Level	75	3.5	1.75	7.0	0.32			
Ľ	50	2.55	1.3	5.5	0.18			
	25	1.6	0.8	4.0	0.0			
	10	1.0	0.5	3.2	0.0			
		GPM						

To help in selection of flow regulators, the flow rate table below shows the flow rates for different float positions, using Style A sight tube and Float Numbers 1, 2, and 3. The standard sight tube and float are Style A and Float 1, represented by the shaded area.

You can easily remove the sight tubes for cleaning without special tools. We recommend that you clean sight tubes regularly.

Flow Regulators can be made with sight tubes numbering from 1 to 12. So you can monitor up to 12 different zones in one mold or monitor as many as 12 different molds.

How It Works



Fluid from the mold flows to the regulator via a fitting that directs it up the sight tube. The float in the sight tube sits at a position that depends on the flow rate. (Once you have determined the best flow rate for your parts, adjust the set point marker on the sight tube to compare and match fluid rates every time.) Then the fluid exits the regulator by way of the fluid outlet, flows back to the manifold, and on to a mold passage.





Injection Mold Water Flow Regulators

Indicate Flow Rate And Temperature Of Each Mold Circuit

- Maintain different temperatures uniformly in each circuit of multi-channel molds
- Eliminate trial and error, calculations and need for pyrometer readings
- · High visibility
- Help prevent wasting costly coolant fluids
- · Accurate, repeatable, precision adjustment
- · No rust design

Call for custom orders!

Options available:

- Floats
- Inlets/outlets
- Left/Right-handed

Calibrated sight tube With quick release feature

with quick release feature

Set point marker

Solid brass float

(1.0 To 8.7 gpm range-standard)

Shut-off valve

Straight Barb-Type fittings (For ½" I.D. Hose std. Supply to mold)

Removable non-contact Indicating thermometer (30° - 170° F)

90° Barb-Type Fittings On Back — Return From Mold (for ½" I.D. Hose Std. Return from mold)

1" N.P.T.

Brass Water

Outlet (Lightweight

units hang on pipe)

Item No. 105477 6 lines

(shown)

1" N.P.T. Brass

> Water Inlet

Specifications

Maximum Working Pressure: 100 psi Maximum Working Temperature: 170°F

Item #	Zones	Height	Width	Depth	Boxed Weight	Unit Price
105430	1		4"		9 lbs.	\$152.94
105398	2		61/4"		11 lbs.	233.33
105369	3		83/8"		14 lbs.	326.53
105532	4		105/8"		16 lbs.	405.00
105506	5	181/4"	12¾"		18 lbs.	485.00
105477	6		15"	51/4"	20 lbs.	577.50
105452	7		171⁄4"		21 lbs.	680.17
105420	8		195/8"		25 lbs.	691.22
105390	9		21¾"		27 lbs.	844.06
105514	10		24"		29 lbs.	893.62
105460	12		285/8"		33 lbs.	1,085.00

Optional Accessories			
	#117360	Cleaning brush for Style A sight tube	\$1.58



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

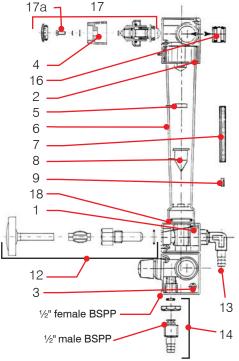
tech support toll-free (USA & Canada)

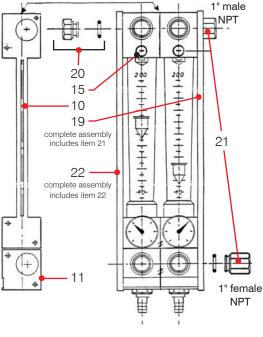
1.866.467.9001

Injection Mold Water Flow Regulator

Spare Parts

Part	List		•
Illus #	Item #	Description	Unit Price
1	132732	Injection manifold	\$3.69
2	105459	Return manifold	10.48
3	105429	Supply manifold	6.37
4	105397	Knob	0.90
	138516	Black cap for knob	Inquire
5	105368	Set point indicator	0.53
6	105375†	Nylon sight tube A	21.40
7	105451‡	Tie rod 1 zone	1.83
	105419‡	Tie rod 2 zone	2.12
	113184‡	Tie rod 6 zone	2.86
	113661‡	Tie rod 8 zone	2.78
8	105499	Float N.1 (solid brass) 10 & 12 zone	4.60
	105470‡	Float N.2 (plastic)	9.64
	105444‡	Float N.4 (PVC)	5.15
9	105490	Tie rod connection	0.25
10	105435	Central spacer	2.93
11	105403	Distributor tie spacer	1.13
12	105523	Thermometer assembly (°F)	12.14
	109955‡	Thermometer assembly (°C)	17.23
13	105442†	90° Hose Barb, ½" ID Hose, ½" Male BSPP (nylon)	5.50
13	105409‡	90° Hose Barb, 3/8" ID Hose, 1/2" Male BSPP (brass)	16.25
13	105497‡	90° Hose Barb, 3/4" ID Hose, 1/2" Male BSPP (brass)	16.25
14	105516†	Straight Hose Barb, 1/2" ID Hose, 1/2" Male BSPP (nylon)	2.12
14	105488‡	Straight Hose Barb, 3/8" ID Hose, 1/2" Male BSPP (brass)	9.64
14	105380‡	Straight Hose Barb, 3/4" ID Hose, 1/2" Male BSPP (brass)	12.60
13/14	107490‡	Hose Barb Adapter, ½" Male BSPP x ¼" Female NPT (brass) Converts ½" Female BSPP Hose Barb Thread to ¼" Female NPT	15.21
13/14	105388‡	Hose Barb Adapter, ½" Male BSPP x ¾" Female NPT (brass) Converts ½" Female BSPP Hose Barb Thread to ¾" Female NPT	8.89
13/14	107492‡	Hose Barb Adapter, ½" Male BSPP x ½" Female NPT (brass) Converts ½" Female BSPP Hose Barb Thread to ½" Female NPT	12.32
15	105479	Sight glass lock assembly	1.23
16	105423	Manifold internal connecting assembly	3.17
17	105392	Valve assembly	23.97
17a	133801	Screw for Control Knob	Inquire
18	105513	O-ring for sight glass (25.9 x 3.53 x 32.96 mm)	0.40
19	105432	Right side plate assembly (includes #105417)	25.77
20	105455	Manifold plug assembly	4.60
21	105417	1" female N.P.T. supply connector (brass)	28.39
22	105372	Left side plate assembly (includes #105455)	19.84
	105547	Complete O-Ring Kit Includes: (2) Valve Stem O-Rings, (2) Valve Nut O-Rings, (2) Sight Glass O-Rings, (5) Hose Fitting, Plug, Piston O-Rings, (1) Thermometer, Plug, Nipple O-Ring, (12) Internal and Manifold Connection O-Rings and (1) Valve Seat O-Ring	6.14
	105401	FR1 Zone Kit - Includes items 1-18 and complete O-Ring Kit	105.00













#105409

#107490

#105488







Standard Mechanical Flowmeters

Smartflow mechanical flowmeters are durable, vane-operated devices that provide visual indication of flow rate in many different styles and sizes.

Smartflow Flowmeters

- Stretch your MRO budget. Rugged construction and corrosion resistant materials ensure years of dependable service. Add-on gauges give instant access to temperature and pressure readings in addition to flow rate.
- · Simplify mold setup. Compact size facilitates installation in restricted space locations.
- · Help optimize cycle times. Optional quick disconnect fittings create an excellent tool for spot checking flow and locating clogged lines



Inlet sizes - 1/4" - 3"
Flow Ranges - Small: 1.5 To 8 GPM, Medium: 20 GPM, Large: 40 to 150 GPM
(Most ranges also available in liters per minute)

Duraned wetted nexts are competible with many process limited

	Rugged, wetted parts	are compatible with ma	any process liquids		
	Small (Brass)	Small (Nylon)	Medium	Large	
End Caps	Brass	Glass-Filled Nylon	N/A	N/A	
Body	Polysulfone	Polysulfone	Anodized Aluminum	Anodized Aluminum	
Vane	Glass-Filled Nylon	Glass-Filled Nylon	Stainless Steel	Stainless Steel	
Viewing Window	Polysulfone	Polysulfone	Polysulfone	Polysulfone	
Spring	302 Stainless Steel	302 Stainless Steel	Stainless Steel	Stainless Steel	
Pin	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	
Gasket	N/A	N/A	Neoprene	Neoprene	
O-Rings	EPDM	EPDM	N/A	N/A	
Cap Screws	Stainless Steel	Zinc-Plated Steel	N/A	N/A	
Opt.Gauge Block	Brass	Brass	N/A	N/A	
Opt. Quick-Connect Fittings	Brass	Brass	N/A	N/A	
Specifications					
Flow Accuracy	±10% f	ull scale	ale ±10%		
Operating Temperature	210°F (99	9°C) max.	210°F (99°C) max		
Operating Pressure	100 psi (6.	9 bar) max	100 psi (6.9 bar) max		
Dial Thermometer	0° to 250°F (-20° to 120°C)	±2% accuracy (full scale)	0° to 250°F (-20° to 120°C) ±2% accuracy (full scale)		
Pressure Gauge	0 to 100 psi (0 to 700 Kpa)	±3% accuracy (full scale)	0- to 100 psi (0 to 700 Kpa) ±3% accuracy (full scale)		

Dimensions (Inches)	1/4", 3/8", 1/2"	3/4"	1/4", 3/8", 1/2"	3/4" & 1"	1", 11/4"	11/2", 2"	3"
Length	2.25	3.25	2.25	4.13	4.75	5.50	6.50
Length with gauges	2.75	3.75	2.75	N/A	N/A	N/A	N/A
Width	1.50	1.50	1.50	1.75	2.25	3.00	4.00
Width with gauges	3.25	3.25	3.25	3.00	3.00	N/A	N/A
Height	1.50	1.50	1.50	1.75	2.25	3.00	4.00
Height with thermometer	3.10	3.10	3.10	2.60	3.10	3.90	4.90
Height with pressure gauge	3.70	3.70	3.70	3.20	3.80	4.50	5.50

SMARTFLOW is a registered trademark of Burger & Brown Engineering, Inc.

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

Small - Brass End Caps (1/4", 3/8", 1/2" & 3/4")

Item #	Model #	Inlet Size	Flow Range	Unit Price
Flowmete	er Only			,
143553	F2-A-15	1/4" NPT	0.2 - 1.5 gpm	\$103.00
143554	F3-A-15	3/ ₈ " NPT	0.2 - 1.5 gpm	103.00
143555	F4-A-15	1/2" NPT	0.2 - 1.5 gpm	103.00
143556	F6-A-15	3/4" NPT	0.2 - 1.5 gpm	129.00
143449	F2-A-25	1/4" NPT	0.5 - 2.5 gpm	79.00
143453	F3-A-25	3/8" NPT	0.5 - 2.5 gpm	79.00
143557	F4-A-25	½" NPT	0.5 - 2.5 gpm	79.00
143558	F6-A-25	3/4" NPT	0.5 - 2.5 gpm	103.00
143451	F2-A-80	1/4" NPT	1.0 - 8.0 gpm	79.00
143455	F3-A-80	3/8" NPT	1.0 - 8.0 gpm	79.00
143457	F4-A-80	½" NPT	1.0 - 8.0 gpm	79.00
143559	F6-A-80	3/4" NPT	1.0 - 8.0 gpm	103.00
With Tem	perature Ga	nge		
143980	F2-B-15	1/4" NPT	0.2 - 1.5 gpm	\$170.00
143981	F3-B-15	3/8" NPT	0.2 - 1.5 gpm	170.00
144359	F4-B-15	½" NPT	0.2 - 1.5 gpm	170.00
143982	F6-B-15	3/4" NPT	0.2 - 1.5 gpm	201.00
143983	F2-B-25	1/4" NPT	0.5 - 2.5 gpm	151.00
143984	F3-B-25	3/8" NPT	0.5 - 2.5 gpm	151.00
143985	F4-B-25	1/2" NPT	0.5 - 2.5 gpm	151.00
143986	F6-B-25	3/4" NPT	0.5 - 2.5 gpm	160.00
143987	F2-B-80	1/4" NPT	1.0 - 8.0 gpm	151.00
143988	F3-B-80	3/8" NPT	1.0 - 8.0 gpm	151.00
143989	F4-B-80	½" NPT	1.0 - 8.0 gpm	151.00
143990	F6-B-80	3/4" NPT	1.0 - 8.0 gpm	160.00
With Pres	ssure Gauge			
144771	F2-F3-15	1/4" NPT	0.2 - 1.5 gpm	\$170.00
144772	F3-F3-15	3/ ₈ " NPT	0.2 - 1.5 gpm	170.00
144773	F4-F3-15	½" NPT	0.2 - 1.5 gpm	170.00
144774	F6-F3-15	3/4" NPT	0.2 - 1.5 gpm	201.00
144775	F2-F3-25	1/4" NPT	0.5 - 2.5 gpm	151.00
144776	F3-F3-25	3/ ₈ " NPT	0.5 - 2.5 gpm	151.00
144777	F4-F3-25	½" NPT	0.5 - 2.5 gpm	151.00
144778	F6-F3-25	3/4" NPT	0.5 - 2.5 gpm	169.00
144779	F2-F3-80	1/4" NPT	1.0 - 8.0 gpm	151.00
144780	F3-F3-80	3/8" NPT	1.0 - 8.0 gpm	151.00
144781	F4-F3-80	½" NPT	1.0 - 8.0 gpm	151.00
144782	F6-F3-80	3⁄4" NPT	1.0 - 8.0 gpm	169.00

Small - Brass End Caps (1/4", 3/8", 1/2" & 3/4")

Item #	Model #	Inlet Size	Flow Range	Unit Price
With Liqu	ıid-Filled Pre	ssure Gauge	(100 psi)	
144783	F2-FL-15	1/4" NPT	0.2 - 1.5 gpm	\$187.00
144784	F3-FL-15	3/ ₈ " NPT	0.2 - 1.5 gpm	187.00
144785	F4-FL-15	½" NPT	0.2 - 1.5 gpm	187.00
144786	F6-FL-15	3/4" NPT	0.2 - 1.5 gpm	233.00
144787	F2-FL-25	1/4" NPT	0.5 - 2.5 gpm	164.00
144788	F3-FL-25	3/8" NPT	0.5 - 2.5 gpm	164.00
144789	F4-FL-25	½" NPT	0.5 - 2.5 gpm	164.00
144790	F6-FL-25	3/4" NPT	0.5 - 2.5 gpm	182.00
144791	F2-FL-80	1/4" NPT	1.0 - 8.0 gpm	164.00
144792	F3-FL-80	3/8" NPT	1.0 - 8.0 gpm	164.00
144793	F4-FL-80	1/2" NPT	1.0 - 8.0 gpm	164.00
144794	F6-FL-80	3/4" NPT	1.0 - 8.0 gpm	182.00
With Tem	perature Ga	uge & Quick	Change Socket	and Plug
144795	F2-E-15	1/4" NPT	0.2 - 1.5 gpm	\$202.00
144796	F3-E-15	3/8" NPT	0.2 - 1.5 gpm	202.00
144797	F4-E-15	½" NPT	0.2 - 1.5 gpm	216.00
144798	F2-E-25	1/4" NPT	0.5 - 2.5 gpm	185.00
144799	F3-E-25	3/ ₈ " NPT	0.5 - 2.5 gpm	185.00
144800	F4-E-25	½" NPT	0.5 - 2.5 gpm	201.00
144801	F2-E-80	1/4" NPT	1.0 - 8.0 gpm	185.00
144802	F3-E-80	3/8" NPT	1.0 - 8.0 gpm	185.00
144803	F4-E-80	½" NPT	1.0 - 8.0 gpm	201.00
With Tem	perature Ga	uge (100 psi)	& Pressure Ga	uge
143560	F2-C3-15	1/4" NPT	0.2 - 1.5 gpm	\$208.00
143561	F3-C3-15	3/8" NPT	0.2 - 1.5 gpm	208.00
143562	F4-C3-15	½" NPT	0.2 - 1.5 gpm	208.00
143563	F6-C3-15	3/4" NPT	0.2 - 1.5 gpm	240.00
143459	F2-C3-25	1/4" NPT	0.5 - 2.5 gpm	191.00
143564	F3-C3-25	3/8" NPT	0.5 - 2.5 gpm	191.00
143565	F4-C3-25	½" NPT	0.5 - 2.5 gpm	173.00
143566	F6-C3-25	3/4" NPT	0.5 - 2.5 gpm	216.00
143461	F2-C3-80	1/4" NPT	1.0 - 8.0 gpm	191.00
143463	F3-C3-80	3/8" NPT	1.0 - 8.0 gpm	191.00
143465	F4-C3-80	½" NPT	1.0 - 8.0 gpm	191.00
143567	F6-C3-80	3/4" NPT	1.0 - 8.0 gpm	216.00

continued on next page



Small - Brass End Caps (1/4", 3/8", 1/2" & 3/4")

Item #	Model #	Inlet Size	Flow Range	Unit Price		
With Temperature Gauge 100 psi, Pressure Gauge & Quick Change Socket and Plug						
143568	F2-D3-15	1/4" NPT	0.2 - 1.5 gpm	\$233.00		
143569	F3-D3-15	3/8" NPT	0.2 - 1.5 gpm	233.00		
143570	F4-D3-15	½" NPT	0.2 - 1.5 gpm	246.00		
143571	F2-D3-25	1/4" NPT	0.5 - 2.5 gpm	215.00		
143469	F3-D3-25	3/8" NPT	0.5 - 2.5 gpm	215.00		
143572	F4-D3-25	½" NPT	0.5 - 2.5 gpm	233.00		
143467	F2-D3-80	1/4" NPT	1.0 - 8.0 gpm	215.00		
143473	F4-D3-80	½" NPT	1.0 - 8.0 gpm	233.00		
With Tem (100 psi)	perature Gau	ıge & Liquid-	filled Pressure	Gauge		
144804	F2-CL-15	1/4" NPT	0.2 - 1.5 gpm	\$224.00		
144805	F3-CL-15	3/8" NPT	0.2 - 1.5 gpm	224.00		
144806	F4-CL-15	½" NPT	0.2 - 1.5 gpm	224.00		
144807	F6-CL-15	3/4" NPT	0.2 - 1.5 gpm	258.00		
144808	F2-CL-25	1/4" NPT	0.5 - 2.5 gpm	208.00		
144809	F3-CL-25	3/ ₈ " NPT	0.5 - 2.5 gpm	208.00		
144810	F4-CL-25	½" NPT	0.5 - 2.5 gpm	208.00		
144811	F6-CL-25	3/4" NPT	0.5 - 2.5 gpm	234.00		
144812	F2-CL-80	1/4" NPT	1.0 - 8.0 gpm	208.00		
144813	F3-CL-80	3/ ₈ " NPT	1.0 - 8.0 gpm	208.00		
144814	F4-CL-80	½" NPT	1.0 - 8.0 gpm	208.00		
144815	F6-CL-80	3/4" NPT	1.0 - 8.0 gpm	234.00		
With Temperature Gauge, Liquid-filled Pressure Gauge (100 psi) & Quick Change Socket and Plug						
144816	F2-DL-15	1/4" NPT	0.2 - 1.5 gpm	\$248.00		
144817	F3-DL-15	3/8" NPT	0.2 - 1.5 gpm	248.00		
144818	F4-DL-15	½" NPT	0.2 - 1.5 gpm	261.00		
144819	F2-DL-25	1/4" NPT	0.5 - 2.5 gpm	228.00		
144820	F3-DL-25	3/8" NPT	0.5 - 2.5 gpm	228.00		
144821	F4-DL-25	½" NPT	0.5 - 2.5 gpm	245.00		
144822	F2-DL-80	1/4" NPT	1.0 - 8.0 gpm	228.00		
144823	F3-DL-80	3/8" NPT	1.0 - 8.0 gpm	228.00		
144824	F4-FL-80	½" NPT	1.0 - 8.0 gpm	245.00		

Small - Nylon End Caps (1/4", 3/8" & 1/2")

Item #	Model #	Inlet Size	Flow Range	Unit Price
Flowmet	er Only			
143910	FP2-A-15	1/4" NPT	0.2 - 1.5 gpm	\$77.00
143911	FP3-A-15	3/8" NPT	0.2 - 1.5 gpm	77.00
143912	FP4-A-15	½" NPT	0.2 - 1.5 gpm	77.00
143450	FP2-A-25	1/4" NPT	0.5 - 2.5 gpm	54.00
143454	FP3-A-25	3/8" NPT	0.5 - 2.5 gpm	54.00
143913	FP4-A-25	½" NPT	0.5 - 2.5 gpm	54.00
143452	FP2-A-80	1/4" NPT	1.0 - 8.0 gpm	54.00
143456	FP3-A-80	3/ ₈ " NPT	1.0 - 8.0 gpm	54.00
143458	FP4-A-80	½" NPT	1.0 - 8.0 gpm	54.00
With Ten	nperature Ga	uge		
143953	F2-B-15	1/4" NPT	0.2 - 1.5 gpm	\$145.00
143954	F3-B-15	3/8" NPT	0.2 - 1.5 gpm	145.00
143955	F4-B-15	½" NPT	0.2 - 1.5 gpm	145.00
143933	F2-B-25	1/4" NPT	0.5 - 2.5 gpm	126.00
143956	F3-B-25	3/8" NPT	0.5 - 2.5 gpm	126.00
143957	F4-B-25	½" NPT	0.5 - 2.5 gpm	126.00
143958	F2-B-80	1/4" NPT	1.0 - 8.0 gpm	126.00
143959	F3-B-80	3/8" NPT	1.0 - 8.0 gpm	126.00
143960	F4-B-80	1/2" NPT	1.0 - 8.0 gpm	126.00
With Pre	ssure Gauge	(100 psi)		
144825	FP2-F3-15	1/4" NPT	0.2 - 1.5 gpm	\$145.00
144826	FP3-F3-15	3/8" NPT	0.2 - 1.5 gpm	145.00
144827	FP4-F3-15	½" NPT	0.2 - 1.5 gpm	145.00
144828	FP2-F3-25	1/4" NPT	0.5 - 2.5 gpm	126.00
144829	FP3-F3-25	3/8" NPT	0.5 - 2.5 gpm	126.00
144830	FP4-F3-25	½" NPT	0.5 - 2.5 gpm	126.00
144831	FP2-F3-80	1/4" NPT	1.0 - 8.0 gpm	126.00
144832	FP3-F3-80	3/ ₈ " NPT	1.0 - 8.0 gpm	126.00
144833	FP4-F3-80	1/2" NPT	1.0 - 8.0 gpm	126.00
With Liq	uid-filled Pre	ssure Gauge	(100 psi)	
144891	FP2-FL-15	1/4" NPT	0.2 - 1.5 gpm	\$162.00
144892	FP3-FL-15	3/8" NPT	0.2 - 1.5 gpm	162.00
144893	FP4-FL-15	½" NPT	0.2 - 1.5 gpm	162.00
144894	FP2-FL-25	1/4" NPT	0.5 - 2.5 gpm	140.00
144895	FP3-FL-25	3/8" NPT	0.5 - 2.5 gpm	140.00
144896	FP4-FL-25	½" NPT	0.5 - 2.5 gpm	140.00
144897	FP2-FL-80	1/4" NPT	1.0 - 8.0 gpm	140.00
144898	FP3-FL-80	3/ ₈ " NPT	1.0 - 8.0 gpm	140.00
144899	FP4-FL-80	½" NPT	1.0 - 8.0 gpm	140.00



Small - Nylon End Caps (1/4", 3/8", 1/2")

Item #	Model #	Inlet Size	Flow Range	Unit Price		
With Temperature Gauge & Quick Change Socket and Plug						
144900	FP2-E-15	1/4" NPT	0.2 - 1.5 gpm	\$176.00		
144901	FP3-E-15	3/8" NPT	0.2 - 1.5 gpm	176.00		
144902	FP4-E-15	½" NPT	0.2 - 1.5 gpm	204.00		
144903	FP2-E-25	1/4" NPT	0.5 - 2.5 gpm	160.00		
144904	FP3-E-25	3/8" NPT	0.5 - 2.5 gpm	160.00		
144905	FP4-E-25	½" NPT	0.5 - 2.5 gpm	175.00		
144906	FP2-E-80	1/4" NPT	1.0 - 8.0 gpm	160.00		
144907	FP3-E-80	3/8" NPT	1.0 - 8.0 gpm	160.00		
144908	FP4-E-80	½" NPT	1.0 - 8.0 gpm	175.00		
With Tem	perature Gau	uge & Pressu	ıre Gauge (100	psi)		
143914	FP2-C-15	1/4" NPT	0.2 - 1.5 gpm	\$184.00		
143915	FP3-C-15	3/8" NPT	0.2 - 1.5 gpm	184.00		
143916	FP4-C-15	½" NPT	0.2 - 1.5 gpm	184.00		
143917	FP3-C-25	3/8" NPT	0.5 - 2.5 gpm	167.00		
143918	FP4-C-25	½" NPT	0.5 - 2.5 gpm	167.00		
With Temperature Gauge, Pressure Gauge (100 psi) & Quick Change Socket and Plug						
143919	FP2-D3-15	1/4" NPT	0.2 - 1.5 gpm	\$200.00		
143920	FP3-D3-15	3/8" NPT	0.2 - 1.5 gpm	200.00		
143921	FP4-D3-15	½" NPT	0.2 - 1.5 gpm	213.00		
143922	FP2-D3-25	1/4" NPT	0.5 - 2.5 gpm			
143923	FP4-D3-25			184.00		
143468	20 20	½" NPT	0.5 - 2.5 gpm	184.00 200.00		
140400	FP2-D3-80	½" NPT 1/4" NPT	0.5 - 2.5 gpm 1.0 - 8.0 gpm			
143474			,	200.00		
143474	FP2-D3-80 FP4-D3-80	1/4" NPT 1/2" NPT	1.0 - 8.0 gpm	200.00 184.00 200.00		
143474 With Tem	FP2-D3-80 FP4-D3-80	1/4" NPT 1/2" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm	200.00 184.00 200.00		
143474 With Tem (100 psi)	FP2-D3-80 FP4-D3-80	1/4" NPT 1/2" NPT uge & Liquid-	1.0 - 8.0 gpm 1.0 - 8.0 gpm -filled Pressure	200.00 184.00 200.00 Gauge		
143474 With Tem (100 psi)	FP2-D3-80 FP4-D3-80 perature Gau	1/4" NPT 1/2" NPT LIGE & Liquid- 1/4" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm filled Pressure	200.00 184.00 200.00 Gauge \$200.00		
143474 With Tem (100 psi) 144909 144910	FP2-D3-80 FP4-D3-80 perature Gau FP2-CL-15 FP3-CL-15	1/4" NPT 1/2" NPT uge & Liquid- 1/4" NPT 3/8" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm -filled Pressure 0.2 - 1.5 gpm 0.2 - 1.5 gpm	200.00 184.00 200.00 Gauge \$200.00		
143474 With Tem (100 psi) 144909 144910 144911	FP2-D3-80 FP4-D3-80 perature Gau FP2-CL-15 FP3-CL-15 FP4-CL-15	1/4" NPT 1/2" NPT uge & Liquid- 1/4" NPT 3/8" NPT 1/2" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm filled Pressure 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.2 - 1.5 gpm	200.00 184.00 200.00 Gauge \$200.00 200.00		
143474 With Tem (100 psi) 144909 144910 144911 144912	FP2-D3-80 FP4-D3-80 Perature Gau FP2-CL-15 FP3-CL-15 FP4-CL-15 FP2-CL-25	1/4" NPT 1/2" NPT 1/2" NPT 1/4" NPT 3/8" NPT 1/2" NPT 1/4" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm filled Pressure 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.5 - 2.5 gpm	200.00 184.00 200.00 Gauge \$200.00 200.00 184.00		
143474 With Tem (100 psi) 144909 144910 144911 144912 144913	FP2-D3-80 FP4-D3-80 perature Gau FP2-CL-15 FP3-CL-15 FP4-CL-15 FP2-CL-25 FP3-CL-25	1/4" NPT 1/2" NPT uge & Liquid- 1/4" NPT 3/8" NPT 1/2" NPT 1/4" NPT 3/8" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm filled Pressure 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.5 - 2.5 gpm 0.5 - 2.5 gpm	200.00 184.00 200.00 Gauge \$200.00 200.00 200.00 184.00		
143474 With Tem (100 psi) 144909 144910 144911 144912 144913	FP2-D3-80 FP4-D3-80 FP4-D3-80 FP2-CL-15 FP3-CL-15 FP4-CL-25 FP3-CL-25 FP4-CL-25	1/4" NPT 1/2" NPT 1/2" NPT 1/4" NPT 3/8" NPT 1/4" NPT 1/4" NPT 3/8" NPT 1/2" NPT	1.0 - 8.0 gpm 1.0 - 8.0 gpm filled Pressure 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.2 - 1.5 gpm 0.5 - 2.5 gpm 0.5 - 2.5 gpm 0.5 - 2.5 gpm	200.00 184.00 200.00 Gauge \$200.00 200.00 184.00 184.00		

Small - Nylon End Caps (1/4", 3/8", 1/2")

Item #	Model #	Inlet Size	Flow Range	Unit Price		
With Temperature Gauge, Liquid-filled Pressure Gauge & Quick Change Socket and Plug						
144918	FP2-DL-15	1/4" NPT	0.2 - 1.5 gpm	\$223.00		
144919	FP3-DL-15	3/8" NPT	0.2 - 1.5 gpm	223.00		
144920	FP4-DL-15	½" NPT	0.2 - 1.5 gpm	237.00		
144921	FP2-DL-25	1/4" NPT	0.5 - 2.5 gpm	204.00		
144922	FP3-DL-25	3/8" NPT	0.5 - 2.5 gpm	204.00		
144923	FP4-DL-25	½" NPT	0.5 - 2.5 gpm	220.00		
144924	FP2-DL-80	1/4" NPT	1.0 - 8.0 gpm	204.00		
144925	FP3-DL-80	3/8" NPT	1.0 - 8.0 gpm	204.00		
144926	FP4-DL-80	½" NPT	1.0 - 8.0 gpm	220.00		

Medium (3/4" & 1")

Wedium (%4" & 1")							
Item #	Model #	Inlet Size	Flow Range	Unit Price			
Flowmeter Only							
143924	F6-A-20	3/4" NPT	2.0 - 20 gpm	\$222.00			
143925	F8-A-20	1" NPT	2.0 - 20 gpm	222.00			
With Temperature Gauge							
144927	F6-B-20	3/4" NPT	2.0 - 20 gpm	\$257.00			
144928	F8-B-20	1" NPT	2.0 - 20 gpm	257.00			
With Pres	ssure Gauge	(100 psi)					
144929	F6-F3-20	3/4" NPT	2.0 - 20 gpm	\$257.00			
144930	F8-F3-20	1" NPT	2.0 - 20 gpm	257.00			
With Liqu	iid-filled Pres	sure Gauge	(100 psi)				
144931	F6-FL-20	3/4" NPT	2.0 - 20 gpm	\$275.00			
144932	F8-FL-20	1" NPT	2.0 - 20 gpm	275.00			
With Tem	perature Gau	ıge & Pressu	re Gauge (100	psi)			
144501	F6-C3-20	3/4" NPT	2.0 - 20 gpm	\$291.00			
144502	F8-C3-20	1" NPT	2.0 - 20 gpm	291.00			
With Temperature Gauge & Liquid-filled Pressure Gauge (100 psi)							
144933	F6-CL-20	3/4" NPT	2.0 - 20 gpm	\$310.00			
144934	F8-CL-20	1" NPT	2.0 - 20 gpm	310.00			

continued on next page



Large (1" 11/4" 11/4" 2" & 3")

Item #	Model #	Inlet Size	Flow Range	Unit Price
Flowme	ter Only			
143926	F8-A-40	1" NPT	2.5 - 40 gpm	\$228.00
143927	F10-A-40	11/4" NPT	2.5 - 40 gpm	245.00
143928	F12-A-40	11/2" NPT	2.5 - 40 gpm	258.00
143929	F16-A-40	2" NPT	2.5 - 40 gpm	274.00
143930	F12-A-100	11/2" NPT	10 - 100 gpm	258.00
143931	F16-A-100	2" NPT	10 - 100 gpm	274.00
143932	F16-A-150G	2" NPT	10 - 150 gpm	289.00
144935	F24-A-150G	3" NPT	10 - 150 gpm	435.00
With Te	mperature Gau	ıge		
144687	F8-B-40	1" NPT	2.5 - 40 gpm	\$262.00
144688	F10-B-40	11/4" NPT	2.5 - 40 gpm	281.00
144689	F12-B-40	1½" NPT	2.5 - 40 gpm	293.00
144690	F16-B-40	2" NPT	2.5 - 40 gpm	308.00
144691	F12-B-100	1½" NPT	10 - 100 gpm	293.00
144692	F16-B-100	2" NPT	10 - 100 gpm	308.00
144693	F16-B-150G	2" NPT	10 - 150 gpm	Inquire
144936	F24-B-150G	3" NPT	10 - 150 gpm	470.00
With Pro	essure Gauge	(100 psi)		
144937	F8-F3-40	1" NPT	2.5 - 40 gpm	\$262.00
144938	F10-F3-40	11/4" NPT	2.5 - 40 gpm	281.00
144939	F12-F3-40	11/2" NPT	2.5 - 40 gpm	293.00
144940	F16-F3-40	2" NPT	2.5 - 40 gpm	308.00
144941	F12-F3-100	11/2" NPT	10 - 100 gpm	293.00
144942	F16-F3-100	2" NPT	10 - 100 gpm	308.00
144943	F16-F3-150G	2" NPT	10 - 150 gpm	324.00
144944	F24-F3-150G	3" NPT	10 - 150 gpm	470.00
With Lic	uid-filled Pres	sure Gauge	(100 psi)	
144945	F8-FL-40	1" NPT	2.5 - 40 gpm	\$283.00
144946	F10-FL-40	11/4" NPT	2.5 - 40 gpm	295.00
144947	F12-FL-40	1½" NPT	2.5 - 40 gpm	311.00
144948	F16-FL-40	2" NPT	2.5 - 40 gpm	325.00
144949	F12-FL-100	1½" NPT	10 - 100 gpm	311.00
144950	F16-FL-100	2" NPT	10 - 100 gpm	325.00
144951	F16-FL-150G	2" NPT	10 - 150 gpm	343.00
144952	F24-FL-150G	3" NPT	10 - 150 gpm	489.00

Item #	Model #	Inlet Size	Flow Range	Unit Price
With Ter	mperature Gau	ige & Pressu	re Gauge (100	psi)
144503	F8-C3-40	1" NPT	2.5 - 40 gpm	\$301.00
144504	F10-C3-40	11/4" NPT	2.5 - 40 gpm	314.00
144505	F12-C3-40	11/2" NPT	2.5 - 40 gpm	330.00
144506	F16-C3-40	2" NPT	2.5 - 40 gpm	344.00
144507	F12-C3-100	11/2" NPT	10 - 100 gpm	330.00
144508	F16-C3-100	2" NPT	10 - 100 gpm	344.00
144509	F16-C3-150G	2" NPT	10 - 150 gpm	358.00
145045	F24-C3-150G	3" NPT	10 - 150 gpm	505.00
With Ter (100 psi	•	ıge & Liquid-	filled Pressure	Gauge
144953	F8-CL-40	1" NPT	2.5 - 40 gpm	\$318.00
144954	F10-CL-40	11/4" NPT	2.5 - 40 gpm	333.00
144955	F12-CL-40	11/2" NPT	2.5 - 40 gpm	347.00
144956	F16-CL-40	2" NPT	2.5 - 40 gpm	362.00
144957	F12-CL-100	11/2" NPT	10 - 100 gpm	347.00
144958	F16-CL-100	2" NPT	10 - 100 gpm	362.00
144959	F16-CL-150G	2" NPT	10 - 150 gpm	379.00
144960	F24-CL-150G	3" NPT	10 - 150 gpm	524.00



Model Number Explanation

Example: F4-C-80

Would signify the Flowmeter is made of Brass, has 1/2" NPT female threads, includes a Temperature Gauge and Pressure Gauge and has a maximum Flow Rate of 8.0 gallons per minute.

Er	nd Cap	lr	let Size		Flowmeter Accessories		Flow Rate
F	Brass	2	1/4" NPT	Α	Flowmeter ONLY	15	0.2 - 1.5 gpm (gal per minute)
FP	Nylon*	2B	1/4" BSPP	В	Thermometer		2.0 - 20 gpm
		3	%" NPT	C1	Thermometer and 30 psi Pressure Gauge	25	0.5 - 2.5 gpm
		3B	%" BSPP	C2	Thermometer and 60 psi Pressure Gauge	40	2.5 - 40 gpm
		4	½" NPT	СЗ	Thermometer and 100 psi Pressure Gauge	80	1.0 - 8.0 gpm
		4B	½" BSPP	CL	Thermometer and Liquid-Filled Pressure Gauge (100 psi)	100G	10 - 100 gpm
	6 3/4" NPT		3⁄4" NPT	D1	Thermometer, 30 psi Pressure Gauge, Quick Change Socket and Plug **	150G	10 - 150 gpm
	6B 3/4" BSPP		3/4" BSPP	D2	Thermometer, 60 psi Pressure Gauge and Quick Change Socket and Plug **	75	7 - 75 lpm (liters per minute)
	8 1" NPT		1" NPT	D3	Thermometer, 100 psi Pressure Gauge, Quick Change Socket and Plug **	100	2- 10 lpm
		8B	1" BSPP	DL	Thermometer, Liquid-filled Pressure Gauge (100 psi) and Quick Change Socket and Plug **	e (100 psi) 150 19 - 150 lpm	
		10	11/4" NPT	Е	Thermometer, Quick Change Socket and Plug	200	5 - 200 lpm
	12 1½" NPT		PT F1 30 psi Pressure Gauge		300	4 - 30 lpm	
	12B 1½" BSPPC		F2	60 psi Pressure Gauge	375	38 - 375 lpm	
	16 2" NPT		F3	F3 30 psi Pressure Gauge			
	16B 2" BSPP FL Liquid-filled Pressure Gauge						
		24	3" NPT				

^{*} Available with 1/4", 3/8", & 1/2" Inlets Only

Other Thread Styles and Sizes Available on Request - Inquire



^{**} Not available with 3/4" inlet or BSPP Threads





Dr. Eddy™ Flowmeters

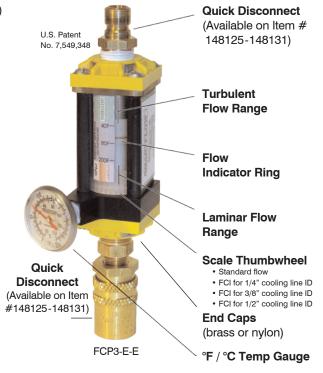
with FCI (Fluid Characteristic Indication) Technology

Provide a direct prediction of Turbulent Flow taking into account all relevant conditions - flow, fluid temperature and passage size

- Cut Production Time. Using FCI (Fluid Characteristic Indication) to achieve Turbulent Flow (maximum heat transfer) helps minimize cycle times and maximize part production.
- · Reduce Water Use. Using FCI, systematic cooling fluid flow can be optimized, conserving water and maximizing cooling plantwide without plumbing changes.
- Simplify Mold Setup. Compact size facilitates installation in restricted space locations.
- Help Stretch Your MRO Budget. Rugged construction and corrosion resistant materials ensure years of dependable service.

Inlet Sizes - 1/4" & 3/8" (Also available in liters per minute) Rugged, wetted parts are compatible with many process liquids				
	Small (Nylon)	Small (Brass)		
End Caps	Glass-Filled Nylon	Brass		
Body	Polysul	fone		
Indicator Ring	Silicone F	Rubber		
Piston	Acet	al		
Spring	302 Stainle	ss Steel		
O-Rings EPDM				
Cap Screws Stainless Steel				
Gauge Block	Brass			
Opt. Quick-Connect Fittings	Brass			
Specifications				
Accuracy	±10% ful	l scale		
Operating Temperature	210°F (99°C) max			
Operating Pressure	100 psi (6.9	bar) max.		
Dial Thermometer	0° to 250°F (-20° to 120°C) ±2% accuracy (full scale)			
Dimensions (Inches)	1/4" & 3/8"			
Length	3.75			
Width	1.50			
Width with gauge	2.10			
Height	1.50			
Height with thermometer	2.80			

SMARTFLOW is a registered trademark of Burger & Brown Engineering, Inc. Dr. Eddy is a trademark of Burger & Brown Engineering, Inc.



Turbulent Flow Basics

- If your flow rate is too low (laminar flow), it will be hard to keep your mold temperature from rising.
- If your flow rate is too high, it will effectively remove heat, but you will be wasting water and the extra energy required to pump it.
- Turbulent flow is a point somewhere in between where heat removal is maximized and water use is minimized.







A Dr. Eddy Flowmeter with FCI Technology can help you set the flow rate that achieve Turbulent Flow - No charts or calculations are necessary.

It's easy to use!

To achieve Turbulent Flow, simply note the fluid temperature on the built-in °F/°C thermometer and adjust the flow to line up with the temperature marks on the scale.

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Dr. Eddy™ - Nylon End Caps (1/4" & 3/8")

	•	1 (- /				
Item #	Model #	Inlet Size	Unit Price			
Flowmeter Only						
148117	FCP2-B-E	1⁄4" NPT	Inquire			
148119	FCP3-B-E	%" NPT	Inquire			
With Quick Change Socket Plug						
148125	FCP2-E-E	1/4" NPT	Inquire			
148127	FCP3-E-E	%" NPT	Inquire			

Dr. Eddy™ - Brass End Caps (1/4" & 3/8")

		<u> </u>			
Item #	Model #	Inlet Size	Unit Price		
Flowmeter Only					
148121	FC2-B-E	1/4" NPT	Inquire		
148123	FC3-B-E	3/8" NPT	Inquire		
With Quick Change Socket Plug					
148129	FC2-E-E	1/4" NPT	Inquire		
148131	FC3-E-E	%" NPT	Inquire		

Model Number Explanation

Example: FC3-B-E

Would signify the Flowmeter is a Dr. Eddy™ Style with Brass End Caps, has %" NPT female threadsand is a standard unit with English Scale Units

En	d Cap	li	nlet Size	Flowmeter Accessories		Flow Rate	
FC	Brass	2	1/4" NPT (F)	В	Thermometer (Standard)	_	English (Temp in °F
FCP	Nylon	2B	1/4" BSPP† (F)	Е	Thermometer with Quick Change Socket and Plug	_	and flow in GPM)
		3	3/8" NPT (F)			N	Metric (Temp in °C
		3B	3/8" BSPP† (F)			IVI	and flow in LPM)

† BSPP: British Parallel Thread

Check Out These Other Useful IMS Products!



One Piece, Straight-Through Aluminum Manifolds

Won't leak / Resists Corrosion

4, 6, 8, 10, 12 or 16 Port Inlet Sizes: %", 1", 1½" or 2" Port Sizes: ¼", %" or ½"



Standard Mechanical Flowmeters

Expressly designed for accuracy and longevity

Inlet Sizes: 1/4" - 3"

Flow Ranges: SMALL 1.5 to 8 GPM, MEDIUM 20 GPM, LARGE 40 to 150 GPM



Mold Circulator Hose 5 Styles

Max. Use Temperatures: 212°F to 350°F Min. Burst Pressure: 175 – 1,200 PSI Hose I.D.: $\frac{1}{2}$ "



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001





Hot Oil/Water Mechanical Flowmeters

Smartflow Hot Oil/Water Flowmeters are Durable, Vane-Operated Devices Designed Specifically for High Temperature Circulating Loops

Smartflow Flowmeters

- Stretch your MRO budget. Rugged construction and corrosion resistant materials ensure years of dependable service. Add-on thermometer gives instant access to temperature in addition to flow rate.
- Simplify mold setup. Compact size facilitates installation in restricted space locations.

Inlet sizes – ½" - 1" Flow Ranges – Hot Oil/Water: 2 to 6 GPM, Hot Oil Only: 5 to 40 GPM Rugged, wetted parts are compatible with many process liquids					
	Hot	Oil/Water		Hot Oil Only	
Body	Sta	inless Steel	(bl	Carbon Steel ack oxide finish)	
Vane	Stainless Steel				
Viewing Window	Glass				
Spring	Stainless Steel				
Pin	Stainless Steel				
Gasket	Non-Asbestos Fiber				
Magnet		Sintered	Alnic	co 8HE	
Specifications					
Flow Accuracy		±10% full scale			
Operating Temperature		550°F (2	288°C	c) max	
Operating Pressure		150 psi (1	0.3 b	ar) max.	
Dial Thermometer		0° to 600°F	(-20°	to 310°C)	
Dimensions (Inches)		1/2"		1"	
Length		3.75		4.75	
Width		1.50		2.25	
Height		1.50		2.25	

SMARTFLOW is a registered trademark of Burger & Brown Engineering, Inc.

Temperature Rating HF8-A-40 Hot Oil Only FLOW HF4-B-60 Hot Oil/Water HF8-B-40 Hot Oil/Water HF8-A-40 Hot Oil Only HF8-A-40 Hot Oil Only HF8-A-40 Hot Oil Only FLOW FL

Special, High Temperature Flow Gauge and 600°F Thermometer



The indicator ball is separated from the process by a high temperature gasket and stainless steel plate. A glass window retains the indicator ball. Big, easy to read 600°F (300°C) thermometer shown below.

Stainless Steel Body (1/2")

		, ,				
Item #	Model #	Inlet Size	Flow Range	Unit Price		
Flowmeter Only						
143934	HF4-A-60	1/2" NPT	2 - 6 gpm	\$360.00		
With Ten	With Temperature Gauge					
143935	HF4-B-60	1/2" NPT	2 - 6 gpm	\$440.00		

Carbon Steel Body (1")

			, ,			
	Item #	Model #	Inlet Size	Flow Range	Unit Price	
	Flowmeter Only					
ĺ	143936	HF8-A-40	1" NPT	5 - 40 gpm	\$494.00	
	With Temperature Gauge					
ĺ	143937	HF8-B-40	1" NPT	5 - 40 gpm	\$568.00	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

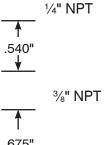
tech support toll-free (USA & Canada)
1.866.467.9001

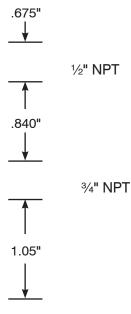
Quick Change Fittings & Thread Profile Sizing

All Fittings Shown Actual Size

Simply hold your fitting up to the appropriate profile to determine the NPT, Series or Barb Size.

Common Pipe Thread





Coupler / waterline / thread Quick reference charts

Coupler specifications

Series - Body Size	200 - 1/4"	300 - 3/8"	500 - 1/2"
Rated Pressure (PSI)	200	200	200
Rated Flow (GPM)	3	6	12

Coupler seals

Material	Temperature Range
Standard Silicone Seal	-90° to +400° F
Optional Flourocarbon Seal*	-15° to +400° F

Water Capacity (gpm)

*For use with oil based fluids only

Pipe

500 Series Coupler



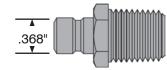
300 Series Coupler



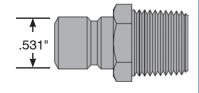
200 Series Coupler



200 Series Plug



300 Series Plug



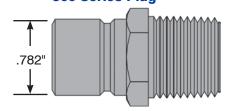
ı	Size	variation	10	25	50	100+
		5 PSI	1.8	2.3	2.4	2.8
	1/2"	10 PSI	4.8	5.3	6.0	8.9
	& 3⁄4"	15 PSI	9.1	10.1	10.9	11.8
	,	20 PSI	14.3	15.8	16.5	16.6
		5 PSI	1.5	2.0	2.7	6.9
l	1"	10 PSI	8.7	12.8	13.6	17.5
l	'	15 PSI	14.2	20.9	27.3	28.0
ı		20 PSI	17.3	25.7	30.9	42.8
l	11/4"	5 PSI	18.5	20.0	25.4	25.7
l	11/2"	10 PSI	43.2	45.5	48.6	50.4
	&	15 PSI	64.8	67.4	69.5	70.5
	2"	20 PSI	77.7	80.3	87.8	95.2

Differential Pressure (P1-P2) PSI

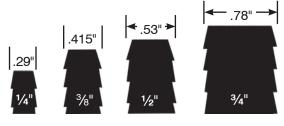
Pipe Thread Data

Pipe Size	Threads Per Inch		Inside Diameter of Pipe	Tap Dr Without Ream	ill Size With Ream
1/4	18	.540	.364	7/16	27/64
3/8	18	.675	.493	9/16	9/16
1/2	14	.840	.622	45/64	11/16
3/4	14	1.050	.824	29/32	57/64

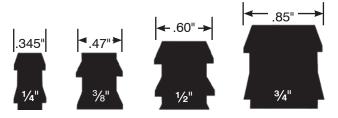
500 Series Plug



Common Standard Hose Barbs



Common Push-On Hose Barbs









Tracer® Electronic Flowmeters with Liquid Crystal Display

Measures, Calculates and Shows: Flow Rate, Temperature, BTU's/minute and Turbulent Flow*

Smartflow Flowmeters...

- Conserve Water. Using FCI (Flow Characteristic indicator), systemic cooling water flow can be optimized, conserving water and maximizing cooling plant-wide without plumbing changes
- Stretch your MRO budget. Corrosion-resistant wetted parts assure long-lasting durability
- Simplify mold setup. Compact size and bi-directional flow reading makes installation simple and convenient
- Help optimize cycle times. Optional quick disconnect fittings create an excellent tool for spot checking temperature and flow and locating clogged lines



With Unique FCI (Flow Characteristic Indicator) U.S. Patent Pending

* Turbulent Flow is the point at which cooling efficiency is optimized. Flow rates higher than the point of Turbulent Flow do not improve cooling. "TFLOW" displays on the FCI when Turbulent Flow is present within the Tracer Flowmeter.

Inlet Sizes – 3/8" - 2" Flow Ranges – 0 to 110 GPM Rugged, wetted parts are compatible with many process liquids					
	3/8"	2"			
Body	Nickel-Plated Brass	Clear, Anodized Aluminum			
Viewing Window	Polysulfone	N/A			
Impeller	Nylon	6/12			
Impeller Shaft	18-8 Stainless Steel				
Magnet	Neodymium				
Magnet	3.6V, 1.0A Lithium				
Battery Life (actual use)	500 H	lours			
Specifications					
Flow Accuracy	±5	5%			
Flow Repeatability	±3	1%			
Operating Temperature	32° to 180°F	(0° to 82°C)			
Temperature Accuracy	±2% of dis	play value			
Repeatability	±1% of dis	play value			
Operating Pressure	150 psi (10.3 bar) max	100 psi (6.9 bar) max			
Dimensions	3.45"L x 1.67"W x 2.27"H	5.50"L x 3.00"W x 4.65"H			

NOTE: Accuracy and Repeatability Figures are based on the full scale of the range

FCI (Flow Characteristic Indicator)



- Display is configured with sealed push-buttons and user-friendly menus
- Flow Rate can be shown in gal or liters per minute
- Temperature can be shown in Fahrenheit or Celsius
- Calculates BTU's per minute
- Displays "TFLOW" when turbulent flow is achieved
- Programmable "ON" Time
- Adjustable, Automatic Display Shut-Off
- RoHS Compliant

Tracer®

Item #	Model #	Inlet Size	Flow Range	Unit Price		
Flowmeter Only						
143515	DD-3B	%" NPT	0 - 8 gpm	\$658.00		
144961	DD-3B-B	%" BSPP	0.5 - 8 gpm	658.00		
143542	DD-16B	2" NPT	10 - 110 gpm	838.00		
144965	DD-16B-B	2" BSPP	10 - 110 gpm	838.00		

With Quick Change Socket and Plug					
143544	DD-3E	%" NPT	0-8	\$675.00	

Item above includes 300 Series* Coupler and Plug

Accessories

Item #	Model ≠	#	Unit Price
143577	EFB-36	Battery (3.6V, 1.0A)	\$32.00

Note: Add "-SS" suffix to model numbers for 303 Stainless Steel Bodies with NPT threads only

SMARTFLOW and Tracer are registered trademarks of Burger & Brown Engineering, Inc.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

e-maii







Tracer® Electronic Switching Flowmeters with Liquid Crystal Display Switching

Measure, Calculate and Show: Flow Rate, Temperature, BTU's/minute and Turbulent Flow*

Also provide a programmable switch for low or high flow or temperature and a selectable analog signal

Smartflow Flowmeters...

- Protect equipment and processes. Programmable SPDT Switch ensures production remains within set flow and temperature parameters
- Stretch your MRO budget. Corrosion-resistant wetted parts ensure years of dependable service
- Simplify mold setup. Compact size and bi-directional flow reading makes installation simple and convenient
- Conserve Water. Using FCI (Flow Characteristic indicator), systemic cooling water flow can be optimized, conserving water and maximizing cooling plant-wide without plumbing changes

Features a Unique FCI (Flow Characteristic Indicator[†] with Programmable SPDT Switch^{††}



* Turbulent Flow is the point at which cooling efficiency is optimized. Flow rates higher than the point of Turbulent Flow do not improve cooling. "TFLOW" displays on the FCI when Turbulent Flow is present within the Tracer Flowmeter.

Inlet Sizes – 2" Flow Ranges – 10 to 110 GPM Rugged, wetted parts are compatible with many process liquids					
Rugged, wetted parts at	2"				
Body	Clear, Anodized Aluminum				
Impeller	Nylon 6/12				
Impeller Shaft	18-8 Stainless Steel				
Magnet Neodymium					
Power	8 to 28VDC				
Programmable SPDT Switch	1A, 30VAC, 42VDC				
Analog Output	0-5 or 0-10V – selectable				
Specifications					
Flow Accuracy	±5%				
Flow Repeatability	±3%				
Operating Temperature	32° to 180°F (0° to 82°C)				
Temperature Accuracy	±2% of display value				
Repeatability ±1% of display value					
Operating Pressure	e 100 psi (6.9 bar) max				
Dimensions	5.50"L x 3.00"W x 4.65"H				

NOTE: Accuracy and Repeatability Figures are based on the full scale of the range

† FCI (Flow Characteristic Indicator)

- Display and switching operations are configured with sealed push-buttons and user-friendly menus
- Flow Rate can be shown in gallons or liters per minute
- Temperature can be shown in Fahrenheit or Celsius
- Calculates BTU's per minute
- Displays "TFLOW" when turbulent flow is achieved
- Programmable "ON" Time
- Adjustable, Automatic Display Shut-Off
- RoHS Compliant

U.S. Patent Pending

†† Programmable SPDT Switch

- One SPDT switch is provided with four programmable set points. Low or high flow or temperature set points can be used together or individually
- Selectable analog signal is scalable for flow and temperature
- Switch can be wired directly to an alarm circuit in a process control system or other peripheral equipment

Switching Tracer®

on to make the second of the s					
Item #	Model #	Inlet Size	Flow Range	Unit Price	
Flowmeter Only					
143548	DDS-16B	2" NPT	10 - 110 gpm	\$1,053.00	
144970	DDS-16B-B	2" BSPP	10 - 110 gpm	1,053.00	

Note: Add "-SS" suffix to model numbers above for 303 Stainless Steel Bodies with NPT threads only

Also suitable for use in lube oil systems, blending systems filter condition indicators and varied applications requiring flow measurement of clean, non-viscous, chemically compatible process liquids

NOT recommended for use with liquids containing metallic particles

SMARTFLOW and Tracer are registered trademarks of Burger & Brown Engineering, Inc.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



Swap® Valve

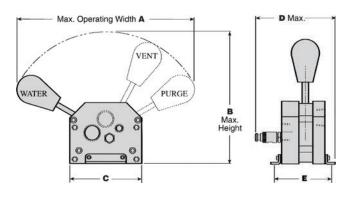
Compressed Air Mold Cooling Water Purge / Choose from Brass or Glass Filled Nylon

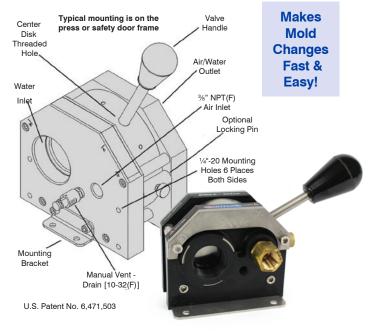
Ideal for cooling water supply lines up to 2" NPT on frequently changed molds that are installed small to medium tonnage injection molding machines.

SMARTFLOW Swap Valves

- Cut 15-20 minutes off mold changes by eliminating the need to drain multiple Supply and Return hoses and clean up water spills
- Help protect molds from corrosion during downtime and storage by evacuating water quickly and thoroughly
- Permit fast identification of Supply lines by noting which manifold is connected to the SWAP Valve
- Provide a convenient Supply water shut-off near the machine control, rather than with conventional ball valves on the Supply manifold, typically located on the other side of the press
- · Allow maximum cooling water to flow at minimum pressure drop
- · Reduce accidents around the press by helping to keep the floor dry

Specifications						
SWAP Body and Valve Disc: Molded						
Body			Glass-Filled Nylon			
Valve Disc			Stainless Steel			
Return Check Valv	/e		Brass			
Maximum Pressur	е		150 psi (10.3 bar)			
Maximum Operati	ng Temperature		250°F (121°C			
Normal Working A	ir Pressure		80 to 100 psi			
(Integral s	snubber prevents hose "	whip'	' during purging)			
Pressure Drop Ac	ross Purge Valve		1 psi at 50 gpm			
Brass						
Body		Brass				
Valve Disc	Valve Disc		Stainless Steel			
Return Check Valv	eturn Check Valve		rass (Recommended)			
Maximum Pressure			150 psi (10.3 bar)			
Maximum Operating Temperature			250°F (121°C)			
Normal Working A	ir Pressure	80 to 100 psi				
(Integral s	snubber prevents hose "	whip'	' during purging)			
Pressure Drop Ac	ross Purge Valve		1 psi at 50 gpm			
Dimensions	SPV8		SPV16			
Α	11.75" (299 mm)		15.5" (395 mm)			
В	8.7" (221 mm)		11.7" (297 mm)			
С	4.7" (119 mm)		6.8" (173 mm)			
D	5.1" (130 mm)		6.3" (160 mm)			
E	3.9" (99 mm)		4.9" (126 mm)			





Glass-Filled Nylon

INCLUDES: Return Check Valve and Mounting Brackets

Item #	Body	Model #	Thd. Size	Unit Price
167962	Molded	SPV8-A-M	1" NPT	\$520.00
169583	Molded	SPV8-L-M*	1" NPT	604.00

^{*} w/Locking Pin

Brass

Item #	Body	Model #	Thd. Size	Unit Price
161962	Brass	SPV8-A-B	1" NPT	\$726.00
169618	Brass	SPV8-L-B*	1" NPT	811.00
173326	Brass	SPV16-A-B	2" NPT	1,047.00
171270	Brass	SPV16-L-B*	2" NPT	1,100.00

^{*} w/Locking Pin

Optional Accessories

Item #	Model #	Description	Unit Price
144495	PVCV-3-A	Air Check Valve - 3/8" NPT	\$37.00

Spare Parts

Item #	Model #	Description	Unit Price
144496	PVOSET-100A	EPDM O-Ring Set - 1"	\$44.00
144497	PVOSET-200A	EPDM O-Ring Set - 2"	51.00
144498	PVCV-100-A**	Check Valve - 1" NPT	139.00
144499	PVCV-200-A**	Check Valve - 2" NPT	272.00

^{**} Included with all new Swap Valves

ALL available with British Standard Pipe Thread - INQUIRE

SMARTFLOW and SWAP are registered trademarks of Burger & Brown Engineering, Inc.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

e-maii



Taco® Series Air Separators

Eliminates Air From Closed Loop Water Circulating Systems

SMARTFLOW Taco Air Separators

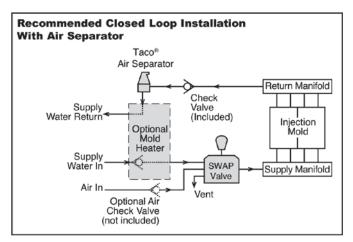
Small air bubbles and micro-bubbles adhere to surfaces on the pall rings in the water path and join together to form larger air bubbles. The combined bubbles then travel up through the water and into the conical air chamber to be released by the vent at the top.

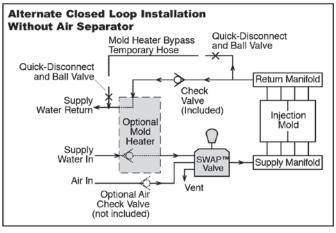
Specifications					
Connection Sizes	1" & 2" NPT(F)				
Housing Material	Brass				
Pall Ring Material	Stainless Steel				
Venting Unit Materials	Stainless Steel EPDM, Viton, Engineered Plastics				
Max. Operating Pressure	150psi (10 bar)				
Max. Operating Temperature	240°F (115°C)				
Min. Operating Temperature	25°F (-4°C)				
Media	Water or Water/Glycol				
Max. Velocity	5 feet/second				



A must for inline use with SMARTFLOW Swap Valves in a closed loop system

Item #	Model #	Thd. Size	Height	Width	Weight	Unit Price
161887	49-100	1" NPT	63/4"	43/8"	4½ lbs	\$181.00
161888	49-200	2" NPT	87/16"	53/16"	6 lbs	385.00





NOTE: If temperature control units not used, install separator at highest point in return cooling water loop



Anodized Aluminum Manifolds

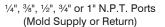
4, 6, 8, 10, 12 and 16 Port Straight-Through Models

Smartflow® aluminum manifolds are constructed from extruded material, machined, then anodized for corrosion protection. Many manifold sizes are stocked, however custom manifolds can be made to your specifications.

Standard red and blue anodizing denotes supply and return for cooling water lines. Green, black, clear and gold anodized manifolds are available. 3/4", 1", and 11/2" manifolds are equipped with dovetail locking channels, pre–drilled mounting holes, and screws for ease in pairing and installation. Call for pricing and delivery.

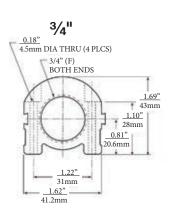
- Extend Equipment Life and Stretch Your MRO Budget
- · Add-on Ball Valves and Flowmeters increase versatility
- One-piece, extruded anodized aluminum construction
- · Won't leak / resists corrosion.

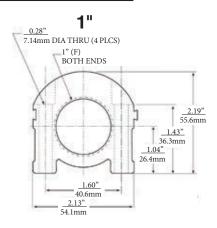
Specifications	
Material: ¾", 1", 1½" , 2"	Aluminum (6000 Series)
Inlet Size	3/4", 1", 11/2" or 2", NPT(F) standard British threads optional
Port Size	1/4", 3/8", 1/2", 3/4" or 1" NPT
Max. Pressure	150 psi (10 bar)
Max. Temperature	300°F (149°C)
Optional Ball Valves	NPT only to match port size

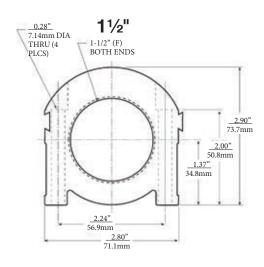


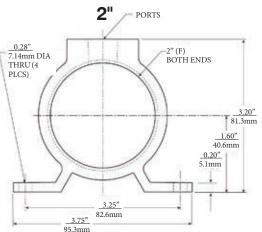


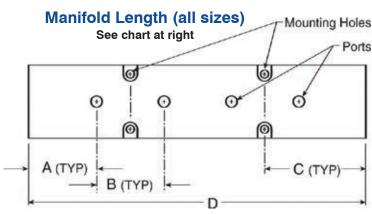
3/4", 1", 11/2" or 2" N.P.T. Inlet/Outlet (Main Supply or Return)











Total Manifold Length: $D = [(number of ports - 1) \times B] + (2 \times A)$

3/4" Manifolds				
Number of Ports		1/4" Ports		
	Model #	Length in. mm	Weight Ibs. kg	
4	6SA- 4-2-2	7.5 190	1.1 0.5	
6	6SA- 6-2-2	10.5 267	1.6 0.7	
8	6SA- 8-2-2	13.5 343	2.0 0.9	
Number of Ports		3/8" Ports		
4	6SA- 4-3-2	9 229	1.4 0.6	
6	6SA- 6-3-2	13 330	2.0 0.9	
8	6SA- 8-3-2	17 432	2.6 1.2	

2" Manifolds								
Number of Ports	½" Ports							
	Model #	Wei	ght					
		in.	mm	lbs.	kg			
4	16SA-4-4	10	254	2.9	1.3			
6	16SA-6-4	14	356	4.1	1.8			
8	16SA-8-4	18	457	5.2	2.4			
12	16SA-12-4	26	660	7.5	3.4			
16	16SA-16-4	34	864	9.9	4.5			

	1" Manifolds								
Number of Ports		1/4" Ports							
	Model #	Weight lbs. kg							
4	8SA- 4-2-2	7.5 190	2.0 0.9						
6	8SA- 6-2-2	10.5 267	2.8 1.3						
8	8SA- 8-2-2	13.5 343	3.6 1.6						
10	8SA-10-2-2	16.5 419	4.5 2.0						
12	8SA-12-2-2	19.5 495	5.3 2.4						
16	8SA-16-2-2	25.5 648	6.9 3.1						
Number of Ports		3/8" Ports							
4	8SA- 4-3-2	9 229	2.4 1.1						
6	8SA- 6-3-2	13 330	3.5 1.6						
8	8SA- 8-3-2	17 432	4.6 2.1						
10	8SA-10-3-2	21 533	5.7 2.6						
12	8SA-12-3-2	25 635	6.8 3.1						
16	8SA-16-3-2	33 838	8.9 4.0						

1½" Manifolds								
Number of Ports		½" Ports						
	Model # Length			Weig	ght			
		in.	mm	lbs.	kg			
4	12SA- 4-4-2	10	254	4.4	2.0			
6	12SA- 6-4-2	14	356	6.2	2.8			
8	12SA- 8-4-2	18	457	7.9	3.6			
10	12SA-10-4-2	22	559	9.7	4.4			
12	12SA-12-4-2	26	660	11.4	5.1			
16	12SA-16-4-2	34	864	15.0	6.7			

	Dime	nsion Cha	art (incl	hes/mm	1)	
Manifold Size	Port Size	Suggested Ball Valve*	А	В	С	
	1/8"	Low Profile		1.0" 25.4mm	2.0" 50.8mm	
3/4" & 1"	1/4"	Low Profile	1.5" 38.1mm	<u>1.5"</u> 38.1mm	<u>2.25"</u> 57.2mm	
	3/8"	Low Profile/ Standard	30.1111111	<u>2.0"</u> 50.8mm	<u>2.5"</u> 63.5mm	
	1/2"	Low Profile		30.011111	00.3HIII	
	1/4"	Low Profile	1.5"	<u>1.5"</u> 38.1mm	<u>2.25"</u> 57.2mm	
1 ½"	3/8"	Low Profile/ Standard	38.1mm	2.0" 50.8mm	2.5" 63.5mm	
	1/2"	Low Profile	2.0"	<u>2.0"</u> 50.8mm	3.0" 76.2mm	
	3/4"	Low Profile	50.8mm	3.0" 76.2mm	3.5" 88.9mm	
	1/2"	Low Profile		<u>2.0"</u> 50.8mm		
2"	3/4"	Low Profile/ Standard	<u>2.0"</u> 50.8mm	3.0"	1.0" 25.4mm	
	1"	Low Profile/ Standard		76.2mm		

^{*}See Ball Valves on page 371-373

continued on next page



Item #	Model #	Color	Inlet/ Outlet NPT	Port NPT	# of Ports	Unit Price				
Aluminum (¾" Inlet/Outlet NPT) Single Manifolds										
143475	6SA-4-2-2-AY	Red	3/4"	1/4"	4	\$73.00				
143476	6SA-4-2-2-AZ	Blue	3/4"	1/4"	4	73.00				
143479	6SA-6-2-2-AY	Red	3/4"	1/4"	6	92.00				
143480	6SA-6-2-2-AZ	Blue	3/4"	1/4"	6	92.00				
143483	6SA-8-2-2-AY	Red	3/4"	1/4"	8	108.00				
143484	6SA-8-2-2-AZ	Blue	3/4"	1/4"	8	108.00				
143578	6SA-10-2-2-AY	Red	3/4"	1/4"	10	127.00				
143579	6SA-10-2-2-AZ	Blue	3/4"	1/4"	10	127.00				
143493	6SA-12-2-2-AY	Red	3/4"	1/4"	12	145.00				
143494	6SA-12-2-2-AZ	Blue	3/4"	1/4"	12	145.00				
143580	6SA-16-2-2-AY	Red	3/4"	1/4"	16	181.00				
143581	6SA-16-2-2-AZ	Blue	3/4"	1/4"	16	181.00				

Item #	Model #	Color	Inlet/ Outlet NPT	Port NPT	# of Ports	Unit Price			
Aluminum (¾" Inlet/Outlet NPT) Single Manifolds									
143477	6SA-4-3-2-AY	Red	3/4"	3/8"	4	\$87.00			
143478	6SA-4-3-2-AZ	Blue	3/4"	3/8"	4	87.00			
143481	6SA-6-3-2-AY	Red	3/4"	3/8"	6	113.00			
143482	6SA-6-3-2-AZ	Blue	3/4"	3/8"	6	113.00			
143582	6SA-8-3-2-AY	Red	3/4"	3/8"	8	138.00			
143583	6SA-8-3-2-AZ	Blue	3/4"	3/8"	8	138.00			
143584	6SA-10-3-2-AY	Red	3/4"	3/8"	10	162.00			
143585	6SA-10-3-2-AZ	Blue	3/4"	3/8"	10	162.00			
143495	6SA-12-3-2-AY	Red	3/4"	3/8"	12	186.00			
143496	6SA-12-3-2-AZ	Blue	3/4"	3/8"	12	186.00			
143586	6SA-16-3-2-AY	Red	3/4"	3/8"	16	237.00			
143587	6SA-16-3-2-AZ	Blue	3/4"	3/8"	16	237.00			

Aluminum (1" Inlet/Outlet NPT) Single Manifolds									
143588	8SA-4-2-2-AY	Red	1"	1/4"	4	\$85.00			
143589	8SA-4-2-2-AZ	Blue	1"	1/4"	4	85.00			
143590	8SA-6-2-2-AY	Red	1"	1/4"	6	106.00			
143591	8SA-6-2-2-AZ	Blue	1"	1/4"	6	106.00			
143489	8SA-8-2-2-AY	Red	1"	1/4"	8	127.00			
143490	8SA-8-2-2-AZ	Blue	1"	1/4"	8	127.00			
143592	8SA-10-2-2-AY	Red	1"	1/4"	10	148.00			
143593	8SA-10-2-2-AZ	Blue	1"	1/4"	10	148.00			
143594	8SA-12-2-2-AY	Red	1"	1/4"	12	169.00			
143595	8SA-12-2-2-AZ	Blue	1"	1/4"	12	169.00			
143596	8SA-16-2-2-AY	Red	1"	1/4"	16	211.00			
143597	8SA-16-2-2-AZ	Blue	1"	1/4"	16	211.00			

Aluminum (1" Inlet/Outlet NPT) Single Manifolds									
143485	8SA-4-3-2-AY	Red	1"	3/8"	4	\$94.00			
143486	8SA-4-3-2-AZ	Blue	1"	3/8"	4	94.00			
143487	8SA-6-3-2-AY	Red	1"	3/8"	6	118.00			
143488	8SA-6-3-2-AZ	Blue	1"	3/8"	6	118.00			
143491	8SA-8-3-2-AY	Red	1"	3/8"	8	143.00			
143492	8SA-8-3-2-AZ	Blue	1"	3/8"	8	143.00			
143598	8SA-10-3-2-AY	Red	1"	3/8"	10	169.00			
143599	8SA-10-3-2-AZ	Blue	1"	3/8"	10	169.00			
143600	8SA-12-3-2-AY	Red	1"	3/8"	12	194.00			
143895	8SA-12-3-2-AZ	Blue	1"	3/8"	12	194.00			
143896	8SA-16-3-2-AY	Red	1"	3/8"	16	245.00			
143897	8SA-16-3-2-AZ	Blue	1"	3/8"	16	245.00			

	Aluminum (1½" Inlet/Outlet NPT) Single Manifolds									
143497	12SA-4-4-2-AY	Red	1-1/2"	1/2"	4	\$136.00				
143498	12SA-4-4-2-AZ	Blue	1-1/2"	1/2"	4	136.00				
143499	12SA-6-4-2-AY	Red	1-1/2"	1/2"	6	174.00				
143500	12SA-6-4-2-AZ	Blue	1-1/2"	1/2"	6	174.00				
143501	12SA-8-4-2-AY	Red	1-1/2"	1/2"	8	213.00				
143502	12SA-8-4-2-AZ	Blue	1-1/2"	1/2"	8	213.00				
143503	12SA-10-4-2-AY	Red	1-1/2"	1/2"	10	251.00				
143504	12SA-10-4-2-AZ	Blue	1-1/2"	1/2"	10	251.00				
143505	12SA-12-4-2-AY	Red	1-1/2"	1/2"	12	290.00				
143506	12SA-12-4-2-AZ	Blue	1-1/2"	1/2"	12	290.00				
143898	12SA-16-4-2-AY	Red	1-1/2"	1/2"	16	369.00				
143899	12SA-16-4-2-AZ	Blue	1-1/2"	1/2"	16	369.00				

	Aluminum (2" Inlet/Outlet NPT) Single Manifolds									
143900	16SA-4-4-2-AY	16SA-4-4-2-AY Red 2" ½" 4								
143901	16SA-4-4-2-AZ	Blue	2"	1/2"	4	139.00				
166333	16SA-4-6-2-AY	Red	2"	3/4"	4	Inquire				
166334	16SA-4-6-2-AZ	Blue	2"	3/4"	4	Inquire				
148876	16SA-4-8-2-AY	Red	2"	1"	4	170.00				
148877	16SA-4-8-2-AZ	Blue	2"	1"	4	170.00				
143902	16SA-6-4-2-AY	Red	2"	1/2"	6	172.00				
143903	16SA-6-4-2-AZ	Blue	2"	1/2"	6	172.00				
163187	16SA-6-6-2-AY	Red	2"	3/4"	6	Inquire				
163188	16SA-6-6-2-AZ	Blue	2"	3/4"	6	Inquire				
147517	16SA-6-8-2-AY	Red	2"	1"	6	251.79				
147518	16SA-6-8-2-AZ	Blue	2"	1"	6	220.00				

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Item #	Model #	Color	Inlet/ Outlet NPT	Port NPT	# of Ports	Unit Price				
Aluminum (2" Inlet/Outlet NPT) Single Manifolds										
143904	16SA-8-4-2-AY	Red	2"	1/2"	8	\$204.00				
143905	16SA-8-4-2-AZ	Blue	2"	1/2"	8	204.00				
163053	16SA-8-6-2-AY	Red	2"	3/4"	8	Inquire				
163054	16SA-8-6-2-AZ	Blue	2"	3/4"	8	Inquire				
143906	16SA-12-4-2-AY	Red	2"	1/2"	12	272.00				
143907	16SA-12-4-2-AZ	Blue	2"	1/2"	12	272.00				
159726	16SA-12-6-2-AY	Red	2"	3/4"	12	Inquire				
159727	16SA-12-6-2-AZ	Blue	2"	3/4"	12	Inquire				
143908	16SA-16-4-2-AY	Red	2"	1/2"	16	338.00				
143909	16SA-16-4-2-AZ	Blue	2"	1/2"	16	338.00				
159915	16SA-16-6-2-AY	Red	2"	3/4"	16	Inquire				
159916	16SA-16-6-2-AZ	Blue	2"	3/4"	16	Inquire				



Model Number Explanation

Example: 12SA-16-4-2-BY

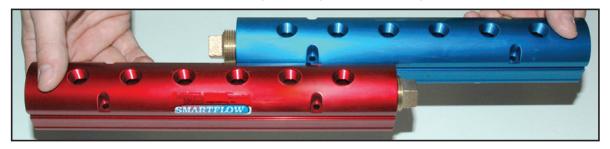
Would signify the Manifold is red, has 11/2" NPT Inlets and 16, 1/2" NPT Ports that are centered and include ball valves.

	0 ,									
	hread Size Type	Number of Ports		Port Size	Port Location			Manifold Accessories	С	olor
6SA	3/4" NPT (F)	4	2	1/4" NPT (F)	0	Left Side	Α	Manifold only	Υ	Red
8SA	1" NPT (F)	6	3	%" NPT (F)	1	Left 45°	В	Ball Valves only	Z	Blue
12SA	11/2" NPT (F)	8	4	½" NPT (F)	2	Center	С	Ball Valves and Plain Flowmeters		
16SA	2" NPT (F)*	10	6	3/4" NPT (F)**	3	Right 45°	D	D Ball Valves and Flowmeters with Thermometers		
		12	8	1" NPT (F)**	4	Right Side	E	E Ball valves and Flowmeters with Thermometers and Pressure Gauges		
		16			********	2	F	Plain Flowmeters only		
			-		1	3	Н	Quick Connect Plugs		
					0	1-14		Port Hose Barbs		

^{*} NOTE: All manifolds with 2" Inlet/Outlet have centered ports

Other Thread Styles and Sizes Available on Request - Inquire

For paired installation, slide manifolds together using dovetail lock along the side of each manifold





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

^{** 3&}quot; Port center spacing



DUOFLOW™ Anodized Aluminum Manifolds

8 (4 in/4 out), 12 (6 in/6 out) and 16 (8 in/8 out) Port Split Models

SMARTFLOW® DUOFLOW™ Manifolds are robust extruded aluminum manifolds similar to the Smartflow one-piece design. The manifolds are divided internally and anodized with one red end and one blue end to denote supply and return on a single manifold. No end plug is needed.

The Duoflow design provides a shorter footprint specifically for mounting a manifold directly to an injection mold, or where space is limited. Port spacing is narrow for installation of hose barbs or quick disconnect fittings only. Ball valves are not recommended due to port spacing.

Tool change time is significantly decreased by mounting manifolds directly to molds in storage. Water hookup is simplified to "Supply" and "Return" lines versus individual water lines for every circuit.

- Shorter length for easier mounting directly to injection molds
- Mold-Mount to speed mold change times
- · Economical, Proven Design for reliability
- Optional Quick Disconnect Fittings for convenience and ease of installation

Specifications Material Body Aluminum (6000 Series) Stainless Steel Divider O-Ring **EPDM** Inlet Size 3/4", 1" or 11/2", NPT(F) standard British threads optional **Port Size** 1/4", %" or 1/2", NPT(F) standard British threads optional Max. Pressure 150 psi (10 bar) 210°F (99°C) Max. Temperature

DUOFLOW™ is a trademark of Burger & Brown Engineering, Inc. SMARTFLOW® is a registered trademark of Burger & Brown Engineering, Inc.

Note: Tests have shown that if copper based alloys (brass) fittings are attached directly to aluminum, there is a high probability that galvanic corrosion will occur. Galvanic action can be reduced or prevented by breaking the path of electrical conductivity through the plumbing system.

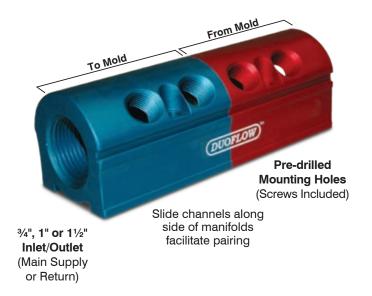
Section View

1/4", 3/8" or 1/2"
N.P.T. Ports
(Mold Supply
or Return)

Stainless Steel Divider

Compact Design to be Mounted on the Mold

Red and Blue Anodizing Easily Identifies Hot and Cold Lines NOTE: Ball valves not recommended due to port spacing



Dimension Chart (inches/mm)									
Manifold Size	Port Size	Α	В	С	D				
3/4"	1/4"	1" 25.4mm	<u>1"</u> 25.4mm	<u>1.5"</u> 38mm	2" 50.8mm				
1"	3/8"	1.25" 32mm	1.25" 32mm	1.88" 47.6mm	<u>2.25"</u> 57.2mm				
11/2"	1/2"	<u>1.75"</u> 44.5mm	<u>1.5"</u> 38mm	<u>2.5"</u> 63.5mm	<u>2.5"</u> 63.5mm				



phone order toll-free (USA & Canada) 1.800.537.5375

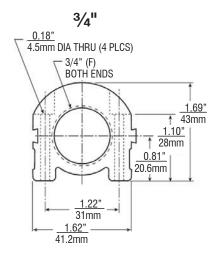
fax order toll-free (USA & Canada)

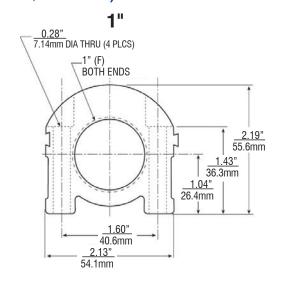
1.888.288.6900

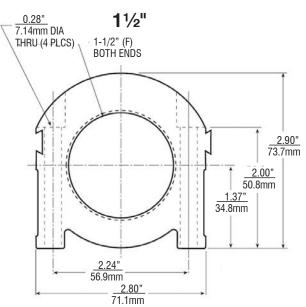
phone order toll-free (Mexico)
001.888.304.1307

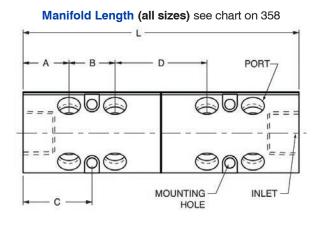
tech support toll-free (USA & Canada)
1.866.467.9001

DUOFLOW™ (3/4", 1" & 11/2" Inlet/Outlet NPT)









		Inlet/Outlet	Port	# of	Length		Weight		Unit		
Item #	Model #	NPT	NPT	Ports			Price				
Single Ma	nifolds										
149536	6SDA-8-2-13-AYZ	3/4"	1/4"	8 (4 in/4 out)	6	152	0.75	0.3	\$118.00		
149537	6SDA-12-2-13-AYZ	3/4"	1/4"	12 (6 in/6 out)	8	203	1.1	0.5	145.00		
149538	6SDA-16-2-13-AYZ	3/4"	1/4"	16 (8 in/8 out)	10	254	1.4	0.6	168.00		
Single Ma	Single Manifolds										
149539	8SDA-8-3-13-AYZ	1"	3/8"	8 (4 in/4 out)	7.25	184	1.7	0.8	\$143.00		
149540	8SDA-12-3-13-AYZ	1"	3/8"	12 (6 in/6 out)	9.75	248	2.4	1.1	175.00		
149541	8SDA-16-3-13-AYZ	1"	3/8"	16 (8 in/8 out)	12.25	311	3.1	1.4	208.00		
Single Ma	Single Manifolds										
149542	12SDA-8-4-13-AYZ	11/2"	1/2"	8 (4 in/4 out)	9	229	3.5	1.6	\$204.00		
149543	12SDA-12-4-13-AYZ	11/2"	1/2"	12 (6 in/6 out)	12	305	4.9	2.2	249.00		
149544	12SDA-16-4-13-AYZ	11/2"	1/2"	16 (8 in/8 out)	15	381	6.2	2.8	293.00		

Customs are available on request!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Model Number Explanation

Use This To Verify Manifold Style Or Use For Custom Ordering

Example: 8SDA-16-3-13-AYZ

Would signify the DUOFLOW™ Manifold, has 1" NPT Inlets and 16, 3/8" NPT Ports that are on the left and right at 45° and is red and blue.

Inlet Thread Size & Type		Number of Ports	Port Size		Port Location		Manifold Accessories			Color	
6SDA	3/4" NPT (F)	4	2	1/4" NPT (F)	0	Left Side	Α	Manifold only	Υ	Red	
6BSDA	3/4" British Parallel (F)	6	2B	1/4" BSPP (F)	1	Left 45°	Н	Port Quick Connect Plugs	Z	Blue	
6TSDA	3/4" British Taper (F)	8	2T	1/4" BSPT (F)	2	Center	J	Port Hose Barbs			
8SDA	1" NPT (F)	10	3	3/8" NPT (F)	3	Right 45°		Quick connect plugs and hose barb are sized to match the ports. Contact the factory if different sizes or optio			
8BSDA	1" British Parallel (F)	12	3B	3/8" BSPP (F)	4	Right Side					
8TSDA	1" British Taper (F)	16	ЗТ	3/8" BSPT (F)		2		are required. Ball valves are not			
12SDA	1½" NPT (F)		4	½" NPT (F)		10-10	recommended.				
12BSDA	1½" British Parallel (F)		4B	1/2" BSPP (F)	0,11()11/4						
12TSDA	1½" British Taper (F)		4T	½" BSPT (F)							

NOTE: For $\frac{3}{4}$ " and 1" Manifolds, use port locations 1 & 3 or 0, 2, & 4 in combination for proper port spacing.

NOTE: Port locations 0 - 4 may be used in any combination on 11/2" Aluminum Manifolds.





Please contact IMS for custom manifold configurations.



MiniFold™ Steel, Straight-Through Manifolds



One Manifold with Many Uses!

All Inlet/Outlets And Ports Are The Same Size (3/8") To Maximize Versatility

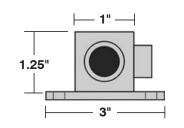
Use with Water or Oil

· Perfect for use with smaller molds

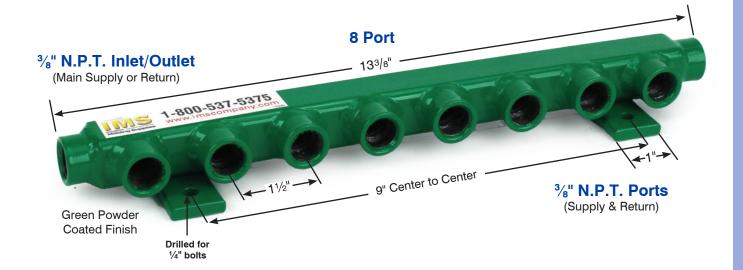
Use with Air

· Great for use with robots and at work stations

Air Pressure Tested at 100 psi







Specifications and Prices								
Item #	Ports	Material	Inlet/Outlet	Port Size	Port Spacing*	Mounting Hole Location*	OAL	Unit Price
138530	8	Steel	3/8" NPT	3/8" NPT	11/2"	9"	13¾"	\$78.69

^{*}Center to center

Suggested Items	Description	Unit Price
138098	% NPT Brass Socket Head Plug	\$0.59
105579	Pipe Thread Tape, 3.5 Mils, 1/2" Wide x 36 Yards	2.90

Same Day Shipment!

 $\mathsf{MiniFold}^{\scriptscriptstyle\mathsf{TM}}$ is a trademark of IMS Company



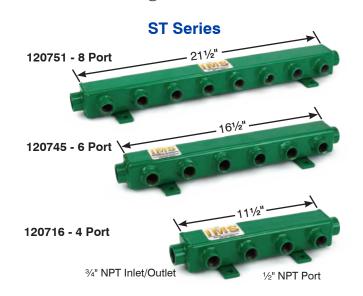


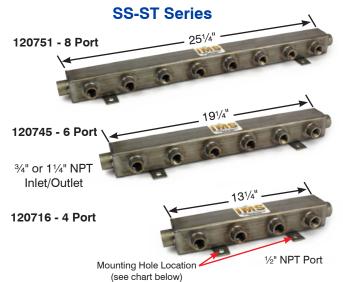
Injection Molding Water/Oil/Air Manifolds

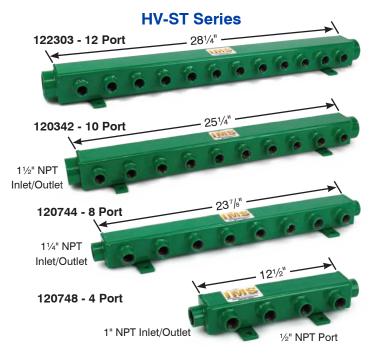
Also good for: Compressed Air and Hot Oil (not pressurized)

- Precision Welded
- Stocked in Stainless or Powder Coated Steel
- Stainless Steel is 14 Gauge Type 304 with 550°F max temp
- Powder Coated Steel is 1/8" thick CRS with 300°F max temp
- Air Pressure Tested @ 100 PSI

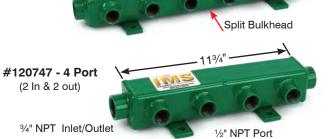
- Pre-Drilled Welded Mounting Tabs
- Styles: Straight-Through, High Volume Straight-Through and Split Bulkhead Styles
- Stocked in 4 to 12 ports





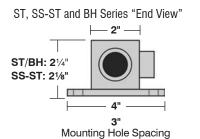


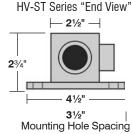




Series	Description	Tube Size Square	— Mounting Feet —		
Series	Description	Tube Size Square	L x W x Thick	Pre-Drilled Hole Size	
ST	Steel Straight Through	2" x 2"	4" x 1" x 1/4"		
SS-ST	Stainless Steel Straight Through	2" x 2"	4" x 1" x 1/8"	3/,"	
HV-ST	High Volume Steel Straight Through	2½" x 2½"	4½" x 1" x ¼"	78	
ВН	Steel Split Bulkhead (In-Out)	2" x 2"	4" x 1" x 1/4"		

#120752 - 6 Port (3 In & 3 Out)





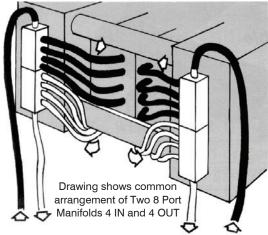


Typical Installation using Bulkhead Style Manifolds

For best results, use Manifold Water Flow Control Valves

only on RETURN Lines. This ensures keeping the mold

water passages full at all times.



Supply Lines TO and FROM Tower, Circulator or Chiller

Supply Lines TO and FROM Tower, Circulator or Chiller

lower, Circulator or Chiller

Riser Kit for Tandem Mount

Includes (4) 6" Bolts, (4) 4½" Sleeves and (4) Washers #101210: \$25.00 ea.

(Recommended ball valve on return lines not shown).

Specifications

Оробинов	1					1			
Item #	# of Ports	Material*	Series	Inlet/ Outlet	Port Size	Port	Mounting Hole Location [‡]	OAL	Unit Price
iteiii#	# OI POILS	iviateriai"	Series	Outlet	Size	Spacing [†]	Location	UAL	Filce
120716	4	Steel	ST	3/4" NPT		21/2"	51/8"	11½"	\$138.41
105529	4	Stainless	SS-ST	3/4" NPT		3"	6"	131/4"	218.44
120748	4	Steel	HV-ST	1" NPT		3"	61/4"	12½"	141.27
160222	4	Stainless	SS-ST	11/4" NPT		3"	6"	131/4"	237.01
120745	6	Steel	ST	3/4" NPT		21/2"	101//8"	16½"	152.70
105416	6	Stainless	SS-ST	3/4" NPT		3"	12"	191/4"	247.99
160223	6	Stainless	SS-ST	11/4" NPT	1/2"	3"	12"	191⁄4"	266.57
120751	8	Steel	ST	3/4" NPT	NPT	21/2"	151/%"	21½"	144.45
105546	8	Stainless	SS-ST	3/4" NPT		3"	18"	251/4"	297.03
160224	8	Stainless	SS-ST	11/4" NPT		3"	18"	251/4"	315.61
120744	8	Steel	HV-ST	11/4" NPT		3"	17¾"	237/8"	179.85
120342	10	Steel	HV-ST	1½" NPT		21/2"	191/4"	281/4"	Inquire
122303	12	Steel	HV-ST	1½" NPT		21/4"	221/4"	301/4"	241.95
120747	2 in/2 out	Steel	ВН	3/4" NPT		21/2"	51/8"	113⁄4"	89.57
120752	3 in/3 out	Steel	ВН	3/4" NPT		21/2"	101/8"	16¾"	68.00
120749	4 in/4 out	Steel	ВН	3/4" NPT		21/2"	151//8"	21¾"	175.57

^{*}Stainless steel is 14 gauge 304 type / Steel is 1/8" powder coated †Center to Center

Suggested Items:	Description
137835	½" NPT Male x Female Ball Valve
117871	½" Male x ¾" Female NPT Bronze Hex Bushing Reducer
117897	½" NPT Bronze Square Head Plug
117889	¾" NPT Bronze Square Head Plug
117882	1" NPT Bronze Square Head Plug
117875	11/4" NPT Bronze Square Head Plug
117867	1½" NPT Bronze Square Head Plug
105579	Pipe Thread Tape, 3.5 Mils , 1/2" Wide x 36 Yards



www.imscompany.com

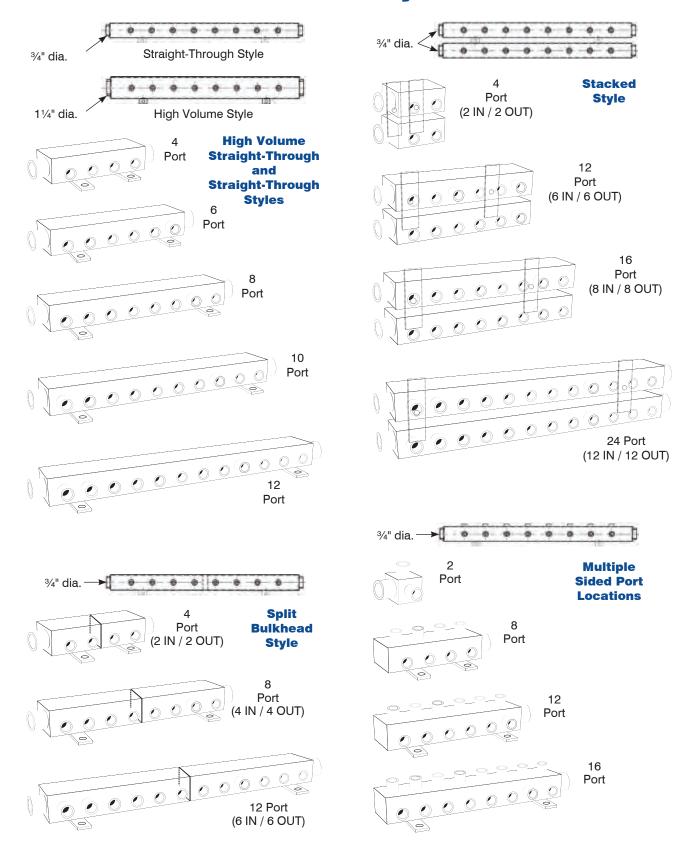
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Manifold Styles

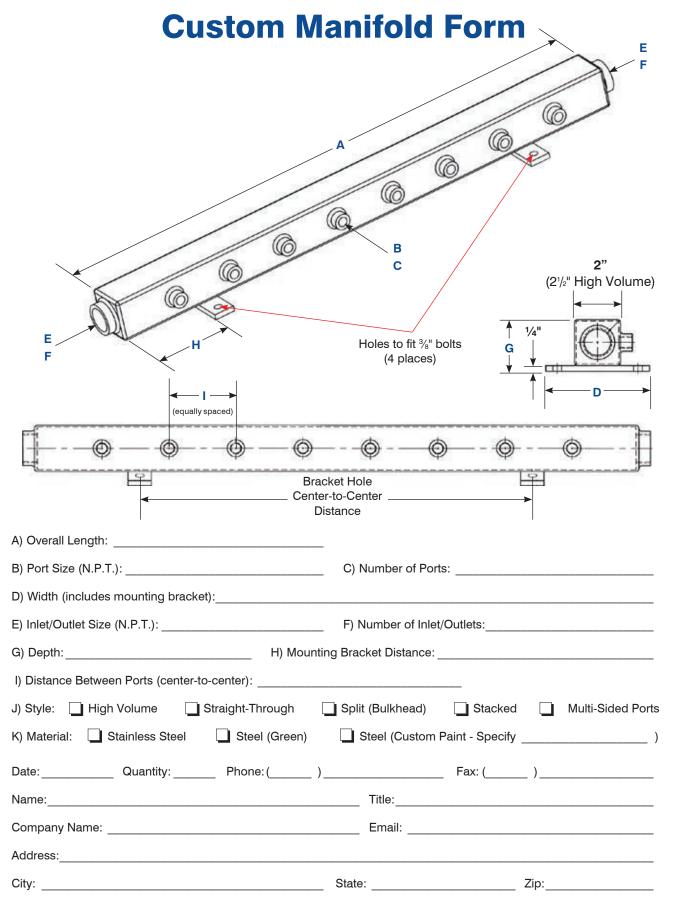




fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001





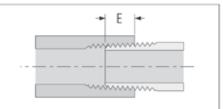
Tech Tips

Pipe Thread Data

Most ordering mistakes are caused by measuring the pipe size of the fitting or component incorrectly. The nominal size of any pipe does not in fact refer to either the outside diameter (O.D.) or the inside diameter (I.D.) of the pipe. The table lists standard pipe sizes along with the actual O.D. and I.D. for each size. Keep in mind that manufacturers may slightly modify these dimensions to strengthen or enhance the performance of a product.

	Threads	Outside Dia.	Inside Diameter	Tap Drill Size		
Pipe Size	Per Inch	of Pipe	of Pipe	Without Ream	With Ream	Е
V ₁₆	27	.312	.209	1/4	15/64	.261
1/8	27	.405	.269	11/32	21/64	.263
1/4	18	.540	.364	₹/16	23/64	.395
3∕8	18	.675	.493	9/16	9 ∕16	.407
1/2	14	.840	.622	45/64	11/16	.534
3/4	14	1.050	.824	29/32	57/64	.545
1	111/2	1.315	1.049	19/64	11/8	.661
11/4	111/2	1.660	1.380	131/64	115/32	.681
11/2	111/2	1.900	1.610	123/32	145/64	.681
2	111/2	2.375	2.067	23/16	211/64	.697

Once the correct pipe size has been determined, the "E", dimension may be used to determine the length of the component required to assemble properly when fully tightened.



Pipes shown actual size













Check Out This Other Useful IMS Product!

IMS Hose and Fitting Sizer



Identify Hose I.D.



Identify Female Pipe Threads



Identify
Male Pipe Threads

See more on page 383

Item No. 110658



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Need a Fitting? IMS has it!

Visit www.imscompany.com for Current Pricing and to Order Online — Quick and Easy

Socket Head Plug

	N.P.T.	Black Steel	Galvanized	Brass
	1/16"	143684	142790	142788
	1/8"	146990	134540	135349
	1/4"	146991	134541	135350
	3/8"	146992	134542	138098
	1/2"	146993	134543	129920
	3/4"	146994	134544	142789
	1"	146995	134545	135348*

^{*}Bronze with square drive

Square Head Plug (male)

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	146732	134536	132054
	1/4"	146733	134537	117912
PRINT	3/8"	146734	134538	117904
The state of the s	1/2"	131724	134539	117897
	3/4"	131723	131585	117889
W. 1. 1. 1.	1"	146735	133403	117882
	11/4"	146736	136434	117875
	1 ½"	134224	133412	117867
	2"	132755	136435	146848

Hex Bushing

Tick Bushing						
	N.P.T.	Black Steel	Galvanized	Bronze		
	male x female					
	1/4 X 1/8	134198	134860	132058		
	3⁄8 x 1∕8	143685	147392	147427		
	3⁄ ₈ x 1∕ ₄	132879	134497	117884		
	½ X ½	133475	134498	132057		
	½ X ¼	132909	131584	117879		
	½ X ¾	133486	134499	117871		
	3/4 X 1/8	146737	146665	132059		
	3/4 X 1/4	132911	136781	146851		
	3/4 X 3/8	131726	146666	117892		
WE BU	3⁄4 X 1∕2	131725	134500	117900		
	1 x 1/4	131517	134501	146852		
	1 x 3/8	135414	134502	146853		
	1 x ½	132641	134503	117865		
	1 x ¾	132642	131589	117863		
	11/4 x 1/4	143686	147393	147428		
	11/4 x 3/8	143687	147394	147429		
	11/4 x 1/2	133192	146667	146854		
	11/4 x 3/4	146738	136782	117887		
	11/4 x 1	131701	133399	117894		
	1½ x ¼	143688	147395	147430		
	1½ x 3/8	143689	147396	147431		

Hex Bushing (continued)

N.P.T. male x female	Black Steel	Galvanized	Bronze
1½ x ½	143690	147397	147432
1½ x ¾	132694	134504	138159
1½ x 1	132670	136783	117910
1½ x 1¼	131784	129916	117902
2 x 3/8	143691	147398	N/A
2 x ½	143692	147399	147433
2 x ¾	146739	146668	138152
2 x 1	132910	134505	146855
2 x 11/4	132758	134506	146856
2 x 1½	132779	146669	146857
2½ x ½	143693	147400	N/A
2½ x ¾	143694	147401	N/A
2½ x 1	143695	147402	N/A
2½ x 1¼	143696	147403	N/A
2½ x 1½	132686	146670	N/A
2½ x 2	143697	147404	N/A

RFQ=Request for Quote

Pipe Cap

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	146740*	134532*	146858
	1/4"	132881*	134533*	146859
	3/8"	146741	134534	146860
100	1/2"	134948	134535	146861
	3/4"	134949	146671	146862
THE REPORT	1"	134950	136458	146863
	11/4"	146742	136431	146864
	1 ½"	134225	136432	146865
	2"	146743	136433	146866
	21/2"	143698	147405	N/A

^{*}hex style

Coupling

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	133472	134528	143631
	1/4"	133478	134529	143632
	3/8"	133483	134530	147434
	1/2"	132701	134531	146870
	3/4"	132702	133400	146871
	1"	132671	133402	146872
	11/4"	132697	133407	146873
	11/2"	132781	136436	146874
	2"	132688	N/A	146875

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

Fittings (Continued)

Visit www.imscompany.com for current pricing

Merchant Coupling

	N.P.S.	В	lack Steel	Galvanized	Brass
	1/8"		147325	147369	N/A
	1/4"		147326	147370	N/A
	3/8"		147327	147371	N/A
	1/2"		147328	147372	N/A
Marie Company	3/4"		147329	147373	N/A
- ' ×	1"		147330	147374	N/A
	11/4"		147331	147375	N/A
	11/2"		N/A	147376	N/A
	2"		147333	147377	N/A

Union

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	147350	147416	147441
	1/4"	133480	146706	146895
	3/8"	133485	146707	146896
	1/2"	132708	146708	146897
	3/4"	132707	146709	146898
	1"	132640	136459	146899
	11/4"	147351	137401	146900
	11/2"	132672	136443	146901
	2"	131515	133414	146902

Reducing Coupling					
	N.P.T.	Black Steel	Galvanized	Bronze	
	female x female			1	
	1/4 X 1/8	134967	133397	146876	
	1/4 X 3/8	134223	134507	146877	
	3/8 X 1/8	147334	147406	131118	
	1/2 X 1/8	133476	146673	146878	
	1/2 X 1/4	133481	134508	146879	
	1/2 X ³ /8	133487	133398	146880	
	3/4 X 1/8	147335	147407	N/A	
	3/4 X 1/4	147336	146674	146881	
	3/4 X 3/8	147337	136761	146882	
	3/4 X 1/2	132703	134509	146883	
	1 x ¹ / ₄	147338	146675	N/A	
	1 x ³ / ₈	147339	146676	146884	
	1 x ¹ / ₂	132704	134511	146885	
	1 x ³ / ₄	131700	146677	146886	
Marie Park	1 1/4 X 3/8	147340	147408	N/A	
100	1 1/4 X 1/2	147341	147409	147435	
	1 1/4 X 3/4	147342	134242	146887	
	11/4 x 1	147343	134510	146888	
	1 1/2 X 3/8	147344	147410	N/A	
	11/2 X 1/2	147345	147411	147436	
	1 1/2 X 3/4	132695	137915	146889	
	1½ x 1	132692	146678	146890	
	11/2 x 11/4	132693	146679	146891	
	2 x ¹ / ₂	147346	147412	147437	
	2 x ³ / ₄	147347	147413	147438	
	2 x 1	134126	146680	146892	
	2 x 1 ¹ / ₄	132753	146681	146893	
	2 x 1½	147348	146682	147439	
	21/2 x 11/2	132687	147414	146894	
	21/2 x 2	147349	147415	147440	

Don't see it — call us, we have it!

Female Elbow

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	133471	134512	146923
	1/4"	133477	134513	146924
	3/8"	133482	134514	146925
	1/2"	132699	134515	146926
AND	3/4"	132696	131583	146927
	1"	131516	134516	143639
	1 1/4"	136797	129919	146929
	11/2"	132676	133411	146930
	2"	131513	147004	146931

Reducing Female Elbow

	N.P.T.	Black Steel	Galvanized	Bronze
	female x female	9		
	1/4 X 1/8	N/A	N/A	147442
	3/8 X 1/8	147352	147378	N/A
	3/8 X 1/4	147353	147379	N/A
	1/2 X 1/4	147354	147380	147443
	1/2 X 3/8	147355	147381	147444
	3/4 X 3/8	147356	147382	N/A
	3/4 X 1/2	147357	147386	147445
	1 x ½	147358	147387	N/A
	1 x ³ / ₄	147359	147388	147446
	11/4 x 3/4	147360	147389	N/A
	11/4 x 1	147361	147390	147447
	1½ x ¾	147362	147391	N/A
	1½ x 1	147363	147417	147448
	11/2 x 11/4	147364	147418	N/A
	2 x ³ / ₄	147365	147419	N/A
	2 x 1	147366	147420	147449
	2 x 1 ¹ / ₄	147367	147421	N/A
	2 x 1 ¹ / ₂	147368	147422	N/A
	2 ¹ / ₂ x 1 ¹ / ₂	147451	147423	N/A
	2 ¹ / ₂ x 2	147452	147424	N/A

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-maii

Fittings (Continued)

Visit www.imscompany.com for current pricing

45° Female Elbow

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	146751	134521	146932
	1/4"	146752	134520	146933
	3/8"	146753	146683	146934
	1/2"	146754	146684	146935
	3/4"	146755	146685	146936
1	1"	146756	146686	146937
	11/4"	135294	142803	146938
	11/2"	146757	146688	146939
	2"	132759	146689	146940

Pipe Tee

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	146765	134524	146914
	1/4"	132880	134525	146915
	3/8"	146766	134526	146916
	1/2"	132698	146694	146917
100	3/4"	134903	134527	146918
	1"	131518	135412	143640
	11/4"	133693	134959	146920
	1 ¹ / ₂ "	132665	134248	138153
	2"	131511	133413	138169
	21/2"	146767	146695	146921
	3"	146768	146696	146922

Street elbow

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	133479	134517	146903
	1/4"	146758	134518	132920
	3/8"	133484	134519	146904
	1/2"	132706	146690	146905
	3/4"	132705	133401	146906
	1"	132643	135413	131587
	11/4"	135295	136400	146907
	11/2"	132677	147545	146908
	2"	132689	136430	141763

Reducing Pipe Tee (Reducing On Branch)

N.P.T. run x branch	Black Steel	Galvanized	Bronze
1½" x 1"	N/A	RFQ*	RFQ*
2" x 1"	133168	131588	RFQ*

*RFQ=Request for Quote

45° Street elbow

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	146759	147546	146909
	1/4"	146760	134522	146910
Alle.	3/8"	146761	134523	146911
	1/2"	146762	146691	146912
	3/4"	146763	146692	138151
	1"	146764	146693	146913
	11/4"	147383	147425	146919
	11/2"	147384	147426	146928
	2"	147385	146687	147450

Pipe Cross

	N.P.T.	Black Steel	Galvanized	Bronze
	1/8"	146769	146697	N/A
	1/4"	134128	146698	146941
	3/8"	146770	146699	146942
	1/2"	146771	146700	146943
3	3/4"	146772	146701	146944
	1"	132709	146702	146945
	11/4"	132690	146703	146946
	11/2"	132789	146704	146947
	2"	132691	146705	146948

See Pipe Thread Sealant Compound on page 397



Nipples



N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	105938	131586	117874
	1 1/2"	146780	133404	138155
	2"	132844	134553	117898
	21/2"	146781	134554	138156
	3"	132712	134555	138157
1/4"	31/2"	146782	134556	138158
74	4"	132713	134557	117890
	41/2"	146783	146713	146957
	5"	146784	134558	146958
	5 ¹ / ₂ "	146785	146714	146959
	6"	132845	131325	117881
	8"	146786	146715	132051

N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	105937	134559	117895
	1 1/2"	146788	134560	146960
	2"	146789	134561	117866
	21/2"	146790	146716	RFQ*
	3"	146791	146717	146962
3/8"	31/2"	146792	134562	146963
	4"	146793	146718	117911
	4 1/2"	146794	RFQ*	146964
	5"	146795	133409	146965
	5 ¹ / ₂ "	146796	146720	133142
	6"	146797	133410	117903

N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	105936	134563	117864
	1 1/2"	146799	134564	138160
	2"	146800	134565	117888
	21/2"	146801	RFQ*	138161
	3"	146802	136478	138162
1/2"	31/2"	146803	134566	138163
72	4"	146804	136479	117880
	4 1/2"	146805	RFQ*	146966
	5"	146806	136481	146967
	5 ½"	146807	136482	146968
	6"	146808	134567	117872
	8"	146809	146722	132052

^{*}RFQ=Request for Quote

















N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	105935	131590	117885
	1 1/2"	146810	134568	138164
	2"	146811	133405	117909
	21/2"	146812	133406	138165
	3"	134897	134569	138166
3/4"	31/2"	146813	134570	138167
	4"	146814	134571	117901
	4 1/2"	146815	146723	146969
	5"	146816	134572	146970
	5½"	146817	146724	146971
	6"	146818	146725	117893

N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	105934	134573	117862
	2"	146825	136460	117886
	21/2"	146826	136461	144699
	3"	146827	136462	146973
1"	31/2"	146828	136463	146974
•	4"	146829	136464	117878
	4 1/2"	146830	136465	146975
	5"	146831	136466	146976
	5 ¹ / ₂ "	146832	136467	146977
	6"	146833	136468	RFQ*

N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	108140	129917	117883
	2"	146834	133193	117907
	21/2"	146835	136437	146978
	3"	146836	136438	146979
11/4"	31/2"	146837	146726	146980
1 74	4"	146838	136439	117899
	41/2"	146839	146727	146981
	5"	146840	136440	146982
	5 ¹ / ₂ "	146841	136441	146983
	6"	132757	136442	

N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	132669	134250	117905
	2"	146842	134249	117876
	21/2"	146843	136444	RFQ*
	3"	132730	136445	146985
11/2"	31/2"	146844	136446	146986
1 /2	4"	132731	136447	117868
	4 1/2"	146845	146728	146987
	5"	146846	136448	146988
	5 ¹ / ₂ "	146847	146729	146989
	6"	132790	136454	117861

N.P.T.	Length	Black Steel	Galvanized	Brass
	CLOSE	131514	136455	143674
	21/2"	143675	143679	138168
2"	3"	143676	136456	143681
	31/2"	143677	136457	143682
	4"	143678	143680	143683

N.P.T.	Length	Black Steel	Galvanized	Brass
3"	6"	RFQ*	RFQ*	141764



Full-Port Female/Female Ball Valves

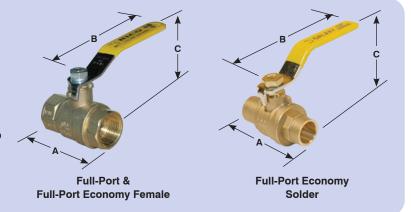
Prevents Fluid Loss During Mold Changes

Certifications: NSF-61, CSA-AGA, UL, FM

Specification	ns and Prices				
N.P.T.	Length (A)	Handle Length (B)	Height (C)	Item #	Unit Price
1/4"	1.96"	3.43"	1.57"	103937	\$4.32
3/8"	1.96"	3.43"	1.57"	103778	5.26
1/2"	2.28"	3.35"	1.77"	101424	7.26
3/4"	2.44"	3.35"	1.89"	103809	10.66
1"	3.03"	4.61"	2.20"	103803	17.11
11/4"	3.46"	4.61"	2.36"	105621	24.17
11/2"	3.94"	6.30"	3.15"	105620	Inquire
2"	4.45"	6.30"	3.15"	128071	70.26

Stainless Steel and Male x Female Valves Available — INQUIRE

- Durable forged brass construction
- · Easy installation
- 1/4 turn shut off
- · Full-flow design
- · Virgin PTFE seats and seals
- Blowout-proof stem
- · Zinc-plated steel handle with plastic hand grip
- Chrome-plated ball
- Working pressure: 600 psi (water oil gas)
- Temperature range: 0°F to 300°F



Full-Port Economy Female/Female Ball Valves

When Certification is Not Necessary

Spec	ification	s and Pri	ces					
NDT		ngth —	Handle	Unight (C)		x Female		older
N.P.T.	F x F (A)	Solder (A)	Length (B)	Height (C)	Item #	Unit Price	Item #	Unit Price
1/4"	1.69"		3.43"	1.83"	132668	\$3.62	N/A	
3/8"	1.69"	_	3.43"	1.83"	132664	4.01	N/A	
1/2"	1.89"	2.15"	3.43"	2.03"	135928	6.05	136104	\$10.58
3/4"	2.28"	3.64"	3.70"	2.24"	135929	9.90	134240	16.25
1"	2.64"	3.27"	4.61"	2.48"	132666	16.31	136105	24.30
11/4"	3.11"	3.76"	4.61"	2.79"	132756	22.76	136106	37.45
1 ½"	3.58"	4.13"	5.59"	3.29"	132667	34.24		
2"	4.11"	4.84"	5.59"	3.62"	132729	54.44	136108	86.45

Stainless Steel and Male x Female Valves Available — INQUIRE



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

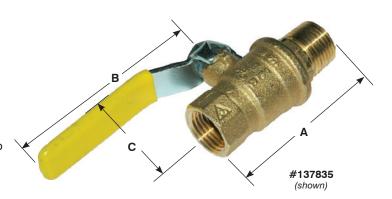
1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Full-Port Male/Female Ball Valves Standard

Prevents Fluid Loss During Mold Changes

- Deep threads
- Threaded ends conform to ANSI B 1.20.1
- Durable forged brass construction
- Easy installation
- 1/4 turn shut off
- Full-flow design
- Virgin PTFE seats and seals
- Blowout-proof stem
- · Zinc-plated steel handle with plastic hand grip
- Solid chrome plated ball
- Working pressure: 600 psi (water oil gas)
- Temperature range: 0° F to 300 F



Specificati	Specifications and Prices								
N.P.T.	Length (A)	Handle Length (B)	Height (C)	Item #	Unit Price				
1/4"	2.05"	2.76"	1.69"	138279	\$10.37				
3/8"	2.09"	3.54"	1.89"	138280	10.65				
1/2"	2.34"	3.54"	2.05"	137835	13.60				
3/4"	2.62"	3.78"	2.20"	138281	20.19				
1"	3.00"	4.53"	2.58"	138282	29.94				
11/4"	3.56"	4.53"	2.95"	138283	36.95				
1 ½"	3.97"	5.51"	3.35"	138284	61.87				
2"	4.50"	5.51"	3.68"	138285	77.50				

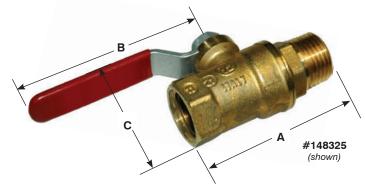
Stainless Steel Valves Available — INQUIRE

Low Profile Male/Female Ball Valves

Works Great When Port Clearance is an Issue With SmartFlow Aluminum Manifolds

Space Saving

- · Heavy duty forged brass
- Threaded ends conform to ANSI B 1.20.1
- · Great for steam, water, oil or gas applications
- · Works great for IMS aluminum manifolds



Specifi	Specifications and Prices								
N.P.T.	Pressure Rating	Length (A)	Handle Length (B)	Height (C)	Item #	Unit Price			
1/8"		1.87"	1.68"	1.44"	148323	Inquire			
1/4"		1.95"	1.68"	1.44"	148321	\$9.60			
3/8"	600 psi	2.20"	3.01"	1.81"	148322	12.10			
1/2"		2.50"	3.01"	1.91"	148325	13.48			
3/4"		2.87"	3.70"	2.51"	148324	20.12			
1"	500 psi	3.37"	3.70"	2.87"	148326	26.01			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Mini Ball Valves

Ideal When Space is Restricted

- Chrome plated forged brass body
- Chrome plated brass ball
- NPT taper ANSI B1.20.1 threads
- 450 PSI working pressure
- 355 PSI @ 212°F
- 142 PSI @ 356°F
- 1/4 turn alumzinc handle
- · Not lead free

Specifications									
Female x Female N.P.T.	Length (A)	Handle Length (B)	Height (C)	Item #					
1/8"				169514					
1/4"	1.57"	0.93"	1.46"	167283					
3/8"				169515					
1/2"	1.77"		1.56"	169516					

Male x Female N.P.T.	Length (A)	Handle Length (B)	Height (C)	Item #
1/8"				169517
1/4"	1.57"	0.00	1.46"	169518
3/8"		0.93"		169519
1/2"	1.77"		1.56"	169520



Self-Igniting Torch Heads

Brazing and Soldering



BERNZOMATIC® Torch Head

High Heat Model TS4000

Trigger-Activated Ignitor with NON-Adjustable Flame Control

- Mapp/Propane Fuel
- · Auto Start/Stop Ignition
- · Standard Swirl Flame for Max Heat
- Trigger Lock to Keep Torch Burning
- Cast Aluminum Body

Item #168507

\$52.94



BERNZOMATIC® Torch Head

Premium Model TS8000

Trigger-Activated Ignitor with Adjustable Flame Control

- Mapp/Propane Fuel
- · Auto Start/Stop Ignition
- · Ultra Swirl Flame for Max Heat
- Trigger Lock to Keep Torch Burning
- · Pressure Regulated, Use Inverted
- · Cast Aluminum Body

Item #168508

\$77.15

BERNZOMATIC® is a registered trademark of BERNZOMATIC



BERNZOMATIC®

Self-Igniting Torch Head Assembly for Maximum Accessability!



Adjustable flame control



Cylinder holster allows hands free convenience



Features:

- Mapp/Propane Fuel
- Auto Start/Stop Ignition
- Swirl Flame for Max Heat
- Trigger Lock to Keep Torch Burning
- Pressure Regulated, Use while Inverted
- Stainless Steel Burn Tube
- Cast Aluminum Body

BERNZOMATIC® Torch Head

Model BZ8250HT Assembly

Trigger-Activated Ignitor with Adjustable Flame Control

Item #168509

Includes: 5' Hose and Fuel Holster*

\$87.80

*Fuel tank not included



Quick Change Waterline Plugs

			S	pecific	cations	and P	rices					
	200	Series (½	4" passa	age)	300	Series (¾	∕₅" passa	age)	500 Series (½" passage)			
	Item #	Series	N.P.T.	Price	Item #	Series	N.P.T.	Price	Item #	Series	N.P.T.	Price
				Ma	ale Threa	d (Brass))					
	140201	250	1/16"	\$0.64	135360	351	1/8"	\$0.68	144525	552	1/4"	\$2.71
PHILIPPIN PRINCIPAL	105453	251	1/8"	0.40	105412	352	1/4"	0.68	144526	553	3/8"	2.71
THE PERSON NAMED IN COLUMN	105549	252	1/4"	0.47	105519	353	3/8"	0.92	105376	554	1/2"	2.58
	105471	253	3/8"	0.94	105436	354	1/2"	1.19	105512	556	3/4"	3.08
				Fem	ale Threa	ad (Steel)					
Religion (1970)	105421	251F	1/8"	\$1.45	105384	352F	1/4"	\$0.76	105538	554F	1/2"	\$3.70
	105525	252F	1/4"	1.50	105491	353F	3/8"	1.18	105484	556F	3/4"	Inquire
	105445	253F	3/8"	3.71	144527	354F	1/2"	4.92				
				Fem	ale Threa	ıd (Brass						
	144528	250FB	1/16"	\$1.50	135366	351FB	1/8"	\$1.22	144529	551FB	1/8"	\$4.62
	112383	251FB	1/8"	2.44	112391	352FB	1/4"	1.20	144530	552FB	1/4"	3.26
	112389	252FB	1/4"	1.20	112388	353FB	3/8"	1.92	144531	553FB	3/8"	3.58
	135319	253FB	3/8"	1.94	105404	354FB	1/2"	4.47	144532	554FB	1/2"	3.80

^{*}Valved Plugs require two-way valved sockets to operate — Inquire

Tech Tips

When at all possible, waterlines on the mold should all enter and exit the rear of the mold (away from the operator). This saves on hoses looping under/over the mold as well as the time it takes to install them.



Combination Hose Inserts

Eliminates multiple fittings and assembly. Put a combination hose insert on one end of a hose and a coupler on the other. Hoses may then be snapped together in series.

For use with Push-Lok or standard hose



	200 S	eries (1/4" Pass	sage)			300 5	Series (3/ ₈ " Pas	sage)			500 5	Series (½" Pas	sage)	
Item #	Hose I.D.	D	М	L	Price	Item #	Hose I.D.	D	М	L	Price	Item #	Hose I.D.	D	М	L	Price
140584	1/4"	3/16"	7/8"	13/8"	\$1.84	140587	1/4"	3/16"	7/8"	1 13/16"	\$2.21	140589	1/2"	13/32"	11/16"	2"	\$3.73
140585	5/16"	1/4"	7/8"	13/8"	1.85	140588	5/16"	1/4"	7/8"	1 13/16"	2.21	140590	3/4"	1/4"	1 ½"	21/2"	4.77
137990	3/8"	1/4"	11/16"	1 %16"	2.11	135345	3/8"	9/32"	11/16"	1 13/16"	1.76						
						137989	1/2"	11/32"	11/16"	1 13/16"	1.77						



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

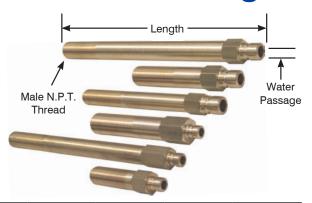
BSPT Available - Inquire

Quick Change Waterline Extension Plugs

Brass Extension Plugs from IMS make mold setup and maintenance more convenient.

- Durable solid brass
- Rust-proof and leak-proof
- · Quick to install, easy to remove

See IMSCompany.com for Pricing



			Spec	ifications	- Call for	Prices				
	200 S	eries (1/4" Pas	sage)	300 S	eries (¾" Pas	sage)	500 8	sage)		
	Item #	Series	Length	Item #	Series	Length	Item #	Series	Length	
	141736		2.5"	135376		2.5"		•		
¹ /16"	135342		4"	135363		4"	1			
Male	132157	250	5"		350		1	Available		
N.P.T.	141737	250	5.5"	135364	350	5.5"	1	on Request		
Thread	132156		7"	141739		7"	1			
	132155		8.5"							
	122656		2.5"	129623		2.5"				
4	122657		4"	129624		4"]			
1/8"	122658		5.5"	135367		5.5"				
Male	122659	251	7"	137726	351	7"	1	Available		
N.P.T.	122660		8.5"	134957		8.5"	on Request			
Thread	135361		10"	141741		10"				
	141738		11.5"	141740		11.5"				
	144047		13"	144051		13"				
	122661		2.5"	122671		2.5"				
	122662		4"	122672		4"				
1/4"	122663		5.5"	122673		5.5"				
Male	122664	252	7"	122674	352	7"	ļ	Available		
N.P.T.	122665		8.5"	122675		8.5"		on Request		
Thread	135362		10"	134958		10"				
	137984		11.5"	141742		11.5"				
	144048		13"	138521		13"				
	163484		15"	138520		14"				
	122666		2.5"	122676		2.5"	141746		2.5"	
³ /8"	122667		4"	122677		4"	137675		4"	
^{∕8} Male	122668		5.5"	123493		5.5"				
N.P.T.	122669	253	7"	122679	353	7"	141748	553	7"	
Thread	122670		8.5"	122680		8.5"	141749		8.5"	
	111010		"	141744		10"				
	144049		11.5"	144052		11.5"	111057	_	40"	
				144053		13"	144057		13"	
				122681		2.5"	122686	4	2.5"	
1/2"				122682		•	122687	-	4"	
Male		Available		122683		5.5"	122689	-	5.5"	
N.P.T.		on Request		122684	354	7"	122688 554 7" 122690 8.5" 141751 10"			
Thread		on ricquest		122685		8.5"				
				141745		10"				
				144054		11.5"	144058	-	11.5"	
				144055		13"	144059		13"	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 1.888.288.6900

tech support toll-free (USA & Canada) 1.866.467.9001

Quick Change, "Push-On" Barb-Type Waterline Hose Couplers

- Maximum pressure: 200 psi
- Temperature range: -90°F to 400°F
- · Brass and stainless steel construction
- · Compatible with all mold connectors
- Available with automatic shut-off to prevent fluid from draining out when disconnected

WARNING: Non-valved couplers offer no protection from fluids draining out when disconnected. Use extreme caution, especially with hot fluids.

No hose clamp needed when used with "Push-On" Hose



	200 Series	(¼" Passage)	300 Series	(3/ ₈ " Passage)	500 Series	(½" Passage)
	Item #	Hose I.D.		Hose I.D.	Item #	Hose I.D.
	Straight (Non-	-Valved)			•	
	101186	1/4"	101203	3/8"	101150	1/2"
	101165	3/8"	101182	1/2"	134383	3/4"
	Straight (Valv	ed)*			•	
	101173	1/4"	101195	3/8"	1	
	101154	3/8"	101169	1/2"		
	45° (Non-Valv	ed)			•	
	101172	1/4"	101189	3/8"	138875	1/2"
	101152	3/8"	101166	1/2"		
	45° (Valved)*				•	
	101163	1/4"	101177	3/8"	1	
	101213	3/8"	101157	1/2"		
***	90° (Non-Valv	ed)			•	
3.55	101214	1/4"	101161	3/8"	128054	1/2"
	127741	3/8"	101209	1/2"	134962	3/4"
	90° (Valved)*				•	
***	101205	1/4"	101148	3/8"		
	101185	3/8"	101200	1/2"		

^{*}The valved couplers on this page are not compatible with valved plugs. 2-way valved couplers available - Inquire

See Standard Barb-Type Waterline Hose Couplers on next page



Standard Barb-Type Waterline **Hose Couplers**



Maximum pressure: 200 psi

• Temperature range: -90°F to 400°F

· Brass and stainless steel construction

- · Compatible with all mold connectors
- · Available with automatic shut-off to prevent fluid from draining out when disconnected

WARNING: Non-valved couplers offer no protection from fluids draining out when disconnected. Use extreme caution, especially with hot fluids.



Specifications	and Prices					
	200 Series	(¼" Passage)	300 Series	(¾" Passage)	500 Series	(½" Passage)
	Item #	Hose I.D.	Item #	Hose I.D.	Item #	Hose I.D.
	Straight (Non-	Valved)	_			
	105496	1/4"	105551	3/8"	122929	1/2"
	105382	3/8"	105502	1/2"	105540	3/4"
			108205	1/2" HF		
	Straight (Valve	ed)*				
	105467	1/4"	105527	3/8"	1	
	105542	3/8"	105448	1/2"		
	45° (Non-Valve	ed)				
	105536	1/4"	105465	3/8"	123342	1/2"
5 5 5	105424	3/8"	105407	1/2"	132044	3/4"
			138876	1/2" HF		
	45° (Valved)	*				
	105510	1/4"	105439	3/8"		
	105393	3/8"	105379	1/2"		
	90° (Non-Valve	ed)				
	105517	1/4"	105414	3/8"	123187	1/2"
	105402	3/8"	105545	1/2"	132045	3/4"
The same of the sa			108218	1/2" HF		
	90° (Valved)*					
	105489	1/4"	105386	3/8"		
	105373	3/8"	105494	1/2"		

^{*}The valved couplers on this page are not compatible with valved plugs. 2-way valved couplers available - Inquire

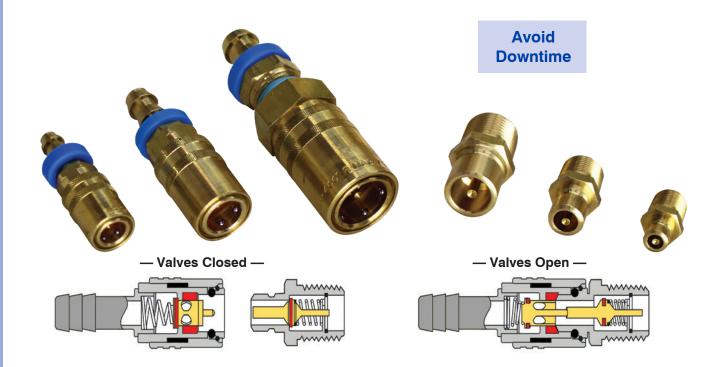
Tech Tips

When ordering water fittings, always match the coupler series with the plug series to ensure a proper fit.



Two-Way Valved Mold Coolant Couplers and Plugs

Automatic Shut-Off At Mold Minimizes Mold Coolant Leaks

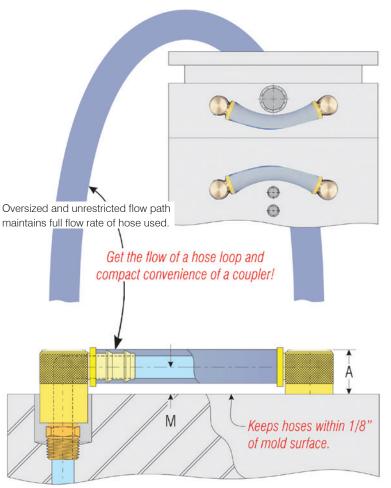


Item #	Description	Series	Unit Price						
	Two-Way Valved Mold Coolan	t Couplers							
169998	200 Series, 1/4" Straight Push-On Barb	204V2P	\$7.44						
169999	200 Series, 3/8" Straight Push-On Barb	206V2P	7.50						
148221	300 Series, 3/8" Straight Push-On Barb	306V2P	11.00						
170000	300 Series, 3/8" 90° Push-On Barb	316V2P	14.24						
147599	300 Series, 3/8" 45° Push-On Barb	326V2P	Inquire						
170001	300 Series, ½" Straight Push-On Barb	308V2P	12.21						
167015	300 Series, ½" 90° Push-On Barb	318V2P	14.58						
170002	500 Series, ½" Straight Push-On Barb	504V2P	27.05						
170003	500 Series, ¾" Straight Push-On Barb	506V2P	25.44						
	Two-Way Valved Mold Coola	ant Plugs							
144672	200 Series, 1/4" Male NPT	252V2	\$3.60						
170010	200 Series, 3/8" Male NPT	253V2	5.55						
170011	300 Series, 1/4" Male NPT	352V2	4.40						
138096	300 Series, 3/8" Male NPT	353V2	3.02						
167016	300 Series, ½" Male NPT	354V2	5.89						
170012	500 Series, %" Male NPT	553V2	Inquire						
170013	500 Series, ½" Male NPT	554V2	12.65						
	Two-Way Valved Mold Coolant Extension Plugs Available — Inquire								



Quick-Coupler Type Water Jumpers

Get The Flow of a Hose Loop and Compact Convenience of a Coupler

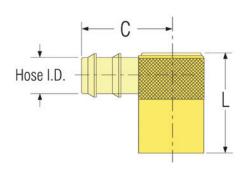




Coupler sleeve twists to lock, preventing accidental disconnect

No hose clamp needed when used with "Push-On" Hose

- Compact design neatly and safely holds cooling lines close to the mold surface.
- Exclusive Locking Sleeve prevents accidental disconnect and ensures proper installation.
- Unlimited installation options. Fits around obstacles and installs in compact spaces.
- Viton® Seals provide for temperatures up to 400°F.
- · All brass and stainless steel construction.
- Compatible with all major mold connection systems.



Speci	Specifications and Prices												
200 Series (1/4" Passage)							300 Series (¾ Passage)						,
Item #	Hose I.D.	L	С	М	Α	Price	Item #	Hose I.D.	L	С	М	Α	Price
138045	1/4"	1"	11/4"	3/8"	5/8"	\$7.19	135331	3/8"	1 ½16"	1 %16"	1/2"	7/8"	\$8.61
135358	3/8"	1"	11/4"	3/8"	5/8"	7.19	135359	1/2"	1 ½16"	1 %16"	1/2"	7/8"	8.61

	500 Series (½" Passage)										
Item #	Item# Hose I.D. L C M A Price										
142284	1/2"	21/8"	2"	7/8"	1 5⁄ ₁₆ "	\$17.39					
1/12285	3/4"	21/."	Q"	7/,"	15/"	17.57					

 ${\rm Viton}^{\oplus}$ is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates



Coupler Replacement Parts

Silicone Replacement Seal For use with Water/Glycol (-90° F to 400°F)



Specification	Specifications and Prices									
200 Series (1/4" Passage) 300 Series (3/8" Passage) 500 Series (1/2" Passage)										
Item #	Unit Price	Item #	Unit Price	Item #	Unit Price					
105438	\$0.18	105406	\$0.24	105378	\$0.68					

Viton Replacement Seal

For use with Oil (-20° F to 400°F)



Specification	Specifications and Prices									
200 Series (1/4" Passage) 300 Series (3/8" Passage) 500 Series (1/2" Passage)										
Item #	Unit Price	Item #	Unit Price	Item #	Unit Price					
134858	\$0.37	125403	\$0.58	165653	\$1.36					

Coupler Accessory

Stop Plug



Specifications and Prices					
200 Series (1⁄4" Passage)	300 Series (¾" Passage)		500 Series (½" Passage	
Item #	Unit Price	Item #	Unit Price	Item #	Unit Price
133720	\$1.66	133605	\$1.68	133606	\$3.63



IMS Hose and Fitting Sizer

Made Exclusively by IMS for Injection Molders



For fast, accurate hose I.D. and pipe thread identification

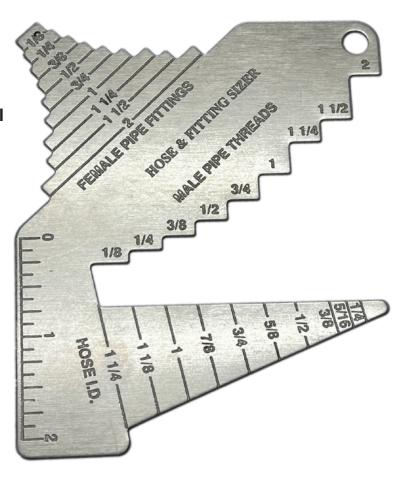
- · Easy to use, compact
- · Decrease Installation time
- · Great for mold setup and maintenance

Durable 22 Gauge Stainless Steel

With etched numbers and lettering

Item No. 110658

\$9.60 ea.

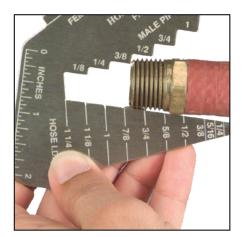




Identify Hose I.D.



Identify Female Pipe Threads



Identify Male Pipe Threads



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Quick Change, Positive, Sleeve-Lock Waterline Sockets

Prevents Injuries Caused By Accidental Disconnection

- Sleeve must be turned manually to lock or unlock
- · Provides visual indication of lock
- Silicone seal resists destructive effects of water, glycol and air
- Durable brass construction resists corrosion
- 10 psi pressure drop at 68° F
- Non-valved*, straight-through style

*WARNING: Non-valved sockets offer no protection from fluids draining out when disconnected. Use extreme caution, especially with hot fluids.



Sleeve detent must be turned (either direction) to line up with ball in socket body to unlock and allow socket to disconnect. Turn sleeve between 1/4 and 1/2 around for effective lock.

Specifi	Specifications and Prices							
Temperature Range: -90° F to 400° F (-68° C to 205° C) Max. Pressure: 200 psi (14.06 Kg/sq.cm)								
200 S	200 Series (1/4" Passage) 300 Series (3/8" Passage)			assage)	500 Se	ries (½" Pa	ıssage)	
	GPM at	N.P.T.		GPM at	N.P.T.		GPM at	N.P.T.
Item #	10 psi	Thread	Item #	10 psi	Thread	Item #	10 psi	Thread
			Sleev	e-Lock, Non-	Valved			
			120919	12.5	1/4" female			
120922	3.9	$\frac{1}{8}$ " female	125103*	17	%" female	120915	27	½" female
·	Ask about Viton® seals for higher chemical resistance							

^{* 3/8&}quot; high flow socket with Viton® seal allows 37% greater flow than standard 3/8" socket

Quick Change, Non-Lock Waterline Sockets



Specifications and Prices						
Temperature Range: -90°F to 400°F (-68°C to 205°C) Max. Pressure: 200 psi (14.06 Kg/sq.cm)						
200 Series (¼" Passage) 300 Series (¾" Passage)			500 Series	(½" Passage)		
	N.P.T.		N.P.T.		N.P.T.	
Item #	Thread	Item #	Thread	Item #	Thread	
		Non-Lock,	Non-Valved			
107579	$\frac{1}{8}$ " female	108189	1/4" female	108219	½" female	
138080	1/4" female	136362*	$\frac{3}{8}$ " female			
	Non-Lock, Valved					
107577	1/8" female	108228	1/4" female	RFQ**		
Ask about Viton® seals for higher chemical resistance						

^{*3%&}quot; high flow socket allows 37% greater flow than standard 3%" socket
** Request for Quote

See IMSCompany.com for Pricing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Quick Change Waterline Socket Locking Clips

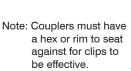


Simply slide clips into the groove behind the releasing sleeve to prevent accidental disconnection of quick change fittings.

- · No tools necessary
- · Polypropylene clips
- Fit D-M-E, Jiffy-Tite, Jiffy-Matic, Parker, OBAC, Foster, TOMCO and IMS Fittings









Specifications and Prices						
Series	Coupler Size	ID	Thickness	Color	Item #	Price
				Red	136469	
200	1/4"	0.560"	0.110"	Blue	136472	
				Orange	136475	
	0			Red	136470	
300	3/8"	0.790"	0.140"	Blue	136473	25 [¢]
				Black	136476	
				Red	136471	
500	1/2"	1.050"	0.150"	Blue	136474	
				Black	136477	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Thread Profiles

Pipe Threads 1/8"-27 1/4"-18 3/8"-18 1/2"-14 1-1/4"-11 1/2 3/4"-14 1"-11 1/2 2 1/2"-8 2"-11 1/2 1 1/2"- 11 1/2 **Hose Barb Fittings** 5/16" 1/8" 3/16" 1/4" 1" 3/4" 5/8" 1.02 .645 .79 .53 .354 .415 BARB O.D. .185 .85 **Push On Fittings** .725 .60 .47 .410 .345 5/8" 3/4" Garden Hose Fittings Male garden hose threads are 3/4" with O.D. of 1.0625 and 111/2 threads per inch 1" 3/4" 5/8" 3/8" 1200 PSI 1400 PSI 1900 PSI **Brass 45° Flared Tube Fittings** 2800 PSI 1/2"-20 7/16"-20 5/16"-24 3/8"-24 5/16" 750 PSI 650 PSI 550 PSI 450 PSI 1000 PSI 3,4"-16 7/8"-14 1-1/16"-14 1-1/4"-12 5/8"-18 1/2" 5/8" 3/4" 7/8" 3/8" **Brass Inverted Flare Fittings** 550 PSI 650 PSI 750 PSI 1-1/16"-16 7/8"-18 1000 PSI 3/4"-18 1400 PSI 1900 PSI 5 6"-18 1/2"-20 3/8"-24 7/16"-24 5/16"-28 3/4" 5/8" 1/2" 3/8" 5/16" 3/16" 1/8" **Brass Compression Fittings** 100 PSI 1-1/8"-18 150 PSI 300 PSI 200 PSI 200 PSI 1"-18 400 PSI 400 PSI 500 PSI 13/16"-18 11/16"-20 1/2"-24 9/16"-24 5/16"-24 3/8"-24 7/16"-24 7 /8" 3/4" 5/8" 1/2" 1/4" 5/16" 3/8" 1 /8" 3/16" **Tubing O.D. Size** 1/16

Standard & Push-On Barbed Hose Fittings

Specifica	tions and Pric	es			
Hose I.D.	N.P.T. Male	Push-on I	lose Fitting	Standard I	Hose Fitting
Hose I.D.	Thread (Brass)	Item #	Unit Price	Item #	Unit Price
1/8"	1/8"	N/A		165504	\$0.39
1/4"	1/8"	136618	\$0.80	105521	0.68
1/4"	1/4"	101201	1.28	105466	0.77
1/4"	3/"	136619	1.71	105394	1.16
3/"	1/8"	136620	1.39	105495	0.66
3/8"	1/4"	101192	1.52	105440	0.94
3/8"	3/"	101179	1.81	105552	1.42
3/8"	1/2"	101416	2.87	105503	2.21
1/2"	1/4"	107450	2.24	105425	1.02
1/2"	3/"	101167	2.13	105528	1.56
1/2"	1/2"	101207	3.00	105474	2.11
1/2"	3/4"	130668	4.51	136600	2.84
5/8"	1/2"	136621	3.38	105449	2.47
5/8"	3/4"	136622	5.62	136601	2.78
3/4"	1/2"	136623	3.98	105415	2.32
3/4"	3/4"	136624	5.40	134019	3.80
3/4"	1"	N/A		136602	8.03
1"	3/4"	N/A		136603	4.10
1"	1"	135467	9.76	108188	6.27
11/4"	1"	N/A		128417	13.81
11/4"	11/4"	N/A		108227	30.10
		Female Thre	ad (Brass)		
1/4"	1/8"	136626	\$1.31	136604	\$0.91
1/4"	1/4"	101162	1.31	105374	1.05
1/4"	3/8"	136627	4.42	136605	2.93
3/8"	1/8"	136628	1.50	136606	1.30
3/8"	1/4"	136629	2.29	105537	1.33
3/"	3/8	101149	3.27	105511	1.91
3/8"	1/2"	136630	2.58	136607	3.38
1/2"	1/4"	136631	8.49	136608	1.47
1/2"	3/"	136632	2.11	105482	2.36
1/2"	1/2"	101211	3.76	105457	2.84
1/2"	3/4"	136633	5.93		
5/"	1/2"	136634	2.64	136609	5.05
3/4"	1/2"	136636	Inquire	136610	6.29
3/4"	3/4"	136637	8.63	136611	4.65
1"	3/4"	N/A		136640	15.92
1"	1"	138287	20.64	123148	Inquire
	He	ose Menders/S	plicers (Brass)		
1/4"	N/A	101199	\$1.18	136612	\$0.50
3/8"	N/A	101187	1.41	136613	0.98
1/2"	N/A	101175	2.06	136614	1.21
5/"	N/A	136638	3.78	136615	1.37
3/4"	N/A	136639	4.53	136616	1.75
1"	N/A	N/A		136617	5.19



Push-On Hose Fitting



Standard Hose Fitting
Requires hose clamp —
see page 404



Push-On Hose Fitting



Standard Hose Fitting Requires hose clamp see page 404



Push-On Hose Mender



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Steel Barb-Type Hose Fittings

For Fluid Service Only

Combination Nipples are a versatile means of transitioning from hose to pipe, adaptors, valves or strainers!



Plated to prevent rust

Specifications and Prices					
Item #	Hose Barb / N.P.T. Thread	Unit Price			
132718	1/2"	\$2.35			
132719	3/4"	2.84			
135411	1"	3.40			
133195	11/4"	4.40			
133194	1½"	4.50			
134973	2"	6.60			

Push-To-Connect Tubing

Use with IMS "Push-To-Connect" Brass Fittings. Select from three different materials, depending on the application temperature.

 \bullet Polyurethane: -40° F to 180° F

• Nylon: -65° F to 200° F

• Polyethylene: -40° F to 140° F



Specifications and Prices						
Item #	Tube O.D.	Tube I.D.	Wall Thickness	Min. Burst at 73° F	Unit Price (per ft.)	
Flexible Polyuret	Flexible Polyurethane					
118052	1/4"	0.156"	0.047"	428 psi	\$0.34	
118050	3/8"	0.250"	0.063"	428 psi	0.69	
118054	1/2"	0.328"	0.172"	428 psi	1.25	
High Pressure N	ylon					
105469	1/4"	0.180"	0.035"	1000 psi	\$0.39	
105443	3/8"	0.275"	0.050"	1000 psi	1.27	
Instrument Grade Polyethylene						
107453	3/16"	0.127"	0.030"	400 psi	\$0.30	
105524	3/8"	0.250"	0.062"	400 psi	0.33	
105498	1/2"	0. 375"	0.125"	400 psi	0.34	



Barstock Brass Fittings

Visit www.imscompany.com for current pricing

45° STreet Elbow					
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147453	\$1.07	\$1.02
C. C	1/4"	1/4"	147454	2.19	2.08
	3/8"	3/8"	147455	2.87	2.73
	1/2"	1/2"	147456	4.39	4.17
	3/4"	3/4"	147457	7.69	7.31
	90° S	Street	Elbow		
	N.P.T.	N.P.T.	Brass	1-24	25+
11111111	1/8"	1/8"	135353	\$1.28	\$1.22
	1/4"	1/4"	135352	2.61	2.48
	3/8"	3/8"	132060	3.31	3.14
	1/2"	1/2"	133389	5.47	5.20
	3/4"	3/4"	147458	10.42	9.90
	4	5° Elbe	ow		
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147464	\$1.78	\$1.69
	1/4"	1/4"	147465	2.93	2.78
	9	0° Elbe	ow		
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147459	\$1.47	\$1.40
	1/4"	1/4"	147460	2.61	2.48
	3/8"	3/8"	147461	3.96	3.76
	1/2"	1/2"	147462	7.10	6.75
	3/4"	3/4"	147463	9.70	9.21
	1"	1"	168502	18.64	17.72
		Tee			
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147466	\$1.63	\$1.55
	1/4"	1/4"	147467	3.27	3.08
Salar Sa	3/8"	3/8"	147468	4.43	4.21
	1/2"	1/2"	147469	8.03	7.63
	3/4"	3/4"	147470	11.17	10.61
	1"	1"	168503	24.89	23.65
	Br	anch ⁻	Tee		
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147471	\$2.14	\$2.03
	1/4"	1/4"	147472	3.35	3.18
	3/8"	3/8"	147473	4.30	4.09
THE RESERVE OF THE PARTY OF THE	, 0				
, <u>**</u>	1/2"	1/2"	147474	9.32	8.85
*		1/2" 3/4"	147474 147475	9.32 16.06	8.85 15.26
<u>#</u>	1/2" 3/4"	 	147475		
<u> </u>	1/2" 3/4"	3/4"	147475		
<u> </u>	1/2" 3/4" S	³¼" treet T	147475 ee	16.06	15.26
	1/2" 3/4" S N.P.T.	3/4" treet T N.P.T.	147475 ee Brass	16.06	15.26 25 +
	1/2" 3/4" S N.P.T. 1/8"	3/4" treet T N.P.T.	147475 ee Brass 147476	16.06 1-24 \$1.74	15.26 25 + \$1.65
	1/2" 3/4" S N.P.T. 1/8" 1/4"	3/4" treet T N.P.T. 1/8" 1/4"	147475 Ce Brass 147476 147477	1-24 \$1.74 3.37	15.26 25 + \$1.65 3.20

	Cross				
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147481	\$2.58	\$2.45
	1/4"	1/4"	147482	4.21	4.00
	3/8"	3/8"	147483	6.17	5.86
3-3	1/2"	1/2"	147484	9.63	9.15
	3/4"	3/4"	147485	14.68	13.95
	Hex	Coup	ling		
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	146867	\$0.80	\$0.85
minutes Temperat	1/4"	1/4"	146868	1.49	1.42
	3/8"	3/8"	146869	1.96	1.86
1	1/2"	1/2"	146972	2.98	2.83
	3/4"	3/4"	147486	3.77	3.58
	1"	1"	168501	13.44	12.77
Extende	er-Ada	pter (F	emale >	(Male	<u>)</u>
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147487	\$0.53	\$0.50
	1/4"	1/8"	147488	0.97	0.92
	1/4"	1/4"	147489	1.02	0.97
-	3/8"	1/8"	147490	1.47	1.40
2144444	3/8"	1/4"	147491	1.27	1.21
THE PERSON NAMED IN	3/8"	3/8"	147492	1.35	1.28
	1/2"	1/4"	147493	2.54	2.41
	1/2"	3/8"	147494	3.02	2.87
	1/2"	1/2"	147495	2.17	2.06
	3/4"	3/8"	147496	14.97	14.22
	3/4"	1/2"	147497	3.35	3.18
	3/4"	3/4"	147498	8.16	7.75
	He	x Nip	ole		
	N.P.T.	N.P.T.	Brass	1-24	25+
	1/8"	1/8"	147499	\$0.51	\$0.48
	1/4"	1/8"	147500	0.71	0.67
	1/4"	1/4"	147502	1.02	0.97
	3/8"	1/8"	147501	1.68	1.60
AMMINICA DIMININA	3/8"	1/4"	147503	1.46	1.39
	3/8"	3/8"	135297	1.40	1.33
	1/2"	1/4"	147504	2.07	1.97
	1/2"	3/8"	147505	2.70	2.57
	1/2"	1/2"	135296	2.39	2.27
	3/4"	1/2"	147506	3.85	3.66
	3/4"	3/4"	147507	2.93	2.78
	1"	1"	147508	9.56	9.08

Barstock Brass Fittings
Quantity Discount
Order 25 or more Deduct 5%



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Straight Through Brass Couplers and Nipples

with Buna-N Seals

Comparable with Parker "ST Series"

NOTE: Mix and Match Couplers and Nipples by Body Size / Hose I.D.



Couplers (Female Thread)

Couplers (Fernale Tilleau)					
Item #	Body Size	N.P.T.			
135440	1/8"	1/8 -27"			
138613	1/4"	1/4-18"			
138614	3/8"	³ / ₈ -18"			
138615	1/2"	1/2-14"			
134975	3/4"	3/4-14"			
131321	1"	1-11½"			
132859*	1"	1-11½"			
129921	11/4"	11/4-111/2"			
138616	1½"	11/2-111/2"			

^{*} with Sleeve-Lock



Nipples (Male Thread)

Item #	Body Size	N.P.T.
138617	1/8"	1/8-27"
138618	1/4"	1/4-18"
138619	3/8"	³⁄8 -18"
134977	1/2"	1/2-14"
136815	3/4"	3/4-14"
131323	1"	1-11½"
128416	11/4"	11/4-111/2"
138620	1½"	11/2-111/2"



Couplers (Male Thread

Couplers (Male Thread)					
Item #	Body Size	N.P.T.			
138621	1/8"	1/8 -27"			
138622	1/4"	1/4-18"			
138623	3/8"	³⁄8 -18"			
138624	1/2"	1/2-14"			
138625	3/4"	3/4-14"			
131429	1"	1-11½"			
Not Available					



Couplers with Standard Hose Barb

Item #	Hose I.D.
142231	1/4"
142232	3/8"
138076	1/2"
138077	3/4"
131430	1"



Nipples (Female Thread)

Item #	Body Size	N.P.T.		
138626	1/8"	1/8-27"		
138627	1/4"	1/4-18"		
138628	3/8"	³%-18"		
134976	1/2"	1/2-14"		
134978	3/4"	3/4-14"		
131431	1"	1-111/2"		
129922	11/4"	11/4-111/2"		
138629	11/2"	11/2-111/2"		



Nipples with Standard Hose Barb

Item #	Hose I.D.
142233	1/4"
142234	3/8"
142235	1/2"
142236	3/4"
131432	1"

See IMSCompany.com for Pricing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

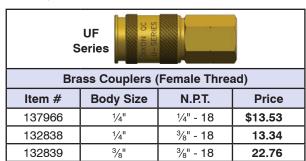
tech support toll-free (USA & Canada)
1.866.467.9001

Pneumatic Couplers

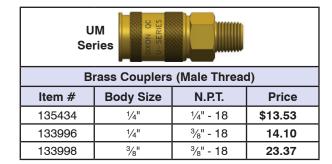
Universal Interchange Automatic Couplers



- · Automatic Couplers accept plugs/nipples without sleeve retraction like Manual Couplers
- Universal Couplers are compatible with Industrial Interchange and ARO 210/310 Series Plugs/Nipples (Pages 393/394) Also compatible with a variety of Plugs/Nipples by Parker, Hansen, Tomco and others



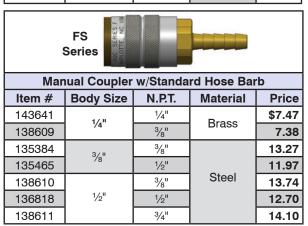
- · Machined components manufactured using solid brass bar stock
- Stainless steel balls, retaining rings, and springs maximize corrosion resistance and extend service life
- Seals are Nitrile (Buna-N) pneumatically energized seals are standard, temperature range of -40°F to +250°F (-40°C to +121°C)



General Purpose Industrial Interchange Manual Couplers

- · Manual Couplers must have sleeve manually retracted to accept and eject plug/nipple
- Industrial Interchange Couplers are compatible with Industrial Interchange Plugs/Nipples (Page 437)
- Stainless steel balls, retaining rings, and springs maximize corrosion resistance and extend service life
- 1/4" manual couplers constructed of brass with steel sleeve and steel tubular valve as standard
- 3/8" and 1/2" manual couplers constructed of steel as standard with steel tubular valve
- · Seals are Nitrile (Buna-N) seals are standard, providing a temperature range of -40°F to +250°F (-40°C to +121°C)

FF Series					
N	/lanual Coup	ler (Fema	le Thread)		
Item #	Body Size	N.P.T.	Material	Price	
138600		1/8" - 27		\$5.31	
129960	1/4"	1/4" - 18	Brass	6.48	
129962		3/8" - 18		6.81	
138601		1⁄4" - 18		\$12.90	
135385	3/8"	3⁄8" - 18		8.40	
135307		1/2" - 14	0	12.70	
136820		3⁄8" - 18	Steel	14.31	
136819	1/2"	1/2" - 14		10.60	
138606		3/4" - 14		14.60	





FB Series					
Man	ual Coupler	w/Push-O	n Hose Barl	o*	
Item #	Body Size	N.P.T.	Material	Price	
138245	1/."	1/4"	Brass	\$5.20	
129964	1/4"	3/8"	Diass	7.44	
135415	3/8"	1/4"		\$12.13	
138612	78	3/8"		Inquire	
135416		1/2"	Steel	12.30	
135417	1/2"	3/8"		16.17	
135418		1/2"		14.73	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



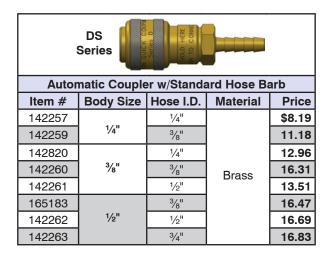
Pneumatic Couplers

General Purpose Industrial Interchange Automatic Couplers

- Automatic Couplers accept plugs/nipples without sleeve retraction like Manual Couplers
- Industrial Interchange Couplers are compatible with Industrial Interchange Plugs/Nipples (Page 393)
- Stainless steel balls, retaining rings, and springs maximize corrosion resistance and extend service life
- Automatic couplers constructed of brass with steel sleeve and steel tubular valve as standard (%" to 3/4" couplers have steel prong valves)
- Seals are Nitrile (Buna-N) seals are standard, providing a temperature range of -40°F to +250°F (-40°C to +121°C)

DF Series					
Item #	Itomatic Cou Body Size	N.P.T.	Material	Price	
	Body Size		Material		
142249		1/8" - 27		\$7.32	
128055	1/4"	1/4" - 18		RFQ	
142250		3⁄8" - 18		11.80	
142251		1/4" - 18	Brass	12.39	
142252	3/8"	3⁄8" - 18	Diass	11.89	
142253		1/2" - 14		12.96	
142254		3⁄8" - 18		21.07	
142255	1/2"	1/2" - 14		16.77	
142256		3/4" - 14		16.77	

DM Series				
Α	utomatic Co	upler (Ma	le Thread)	
Item #	Body Size	N.P.T.	Material	Price
142264		1/8" - 27		\$7.29
142265	1/4"	1/4" - 18		8.69
142266		3/8" - 18		11.80
142268		3/8" - 18	Brass	16.76
142269	3/8"	1/2" - 14	Diass	RFQ
142270		3/ ₈ " - 18		22.18
142271	1/2"	1/2" - 14		15.29
142272	'/2"	3/4" - 14		16.13



DB Series				
Auton	natic Couple	r w/Push-C	On Hose Ba	rb*
Item #	Body Size	Hose I.D.	Material	Price
138246	1/4"	1/4"		\$9.80
142274	74	3/8"	Brass	10.87
142275	3/8"	3/8"	,,,,,	16.95
142276	1/2"	1/2"		16.21

*Push-On Barbs are for use with Push-On Hose which if used in conjunction eliminates the need for a hose clamp. **See Page 400** for IMS High Quality Push-On Hose.



General Purpose Industrial Interchange Plugs/Nipples



For use with all Industrial Interchange Couplers Series – UF, UM, FF, FM, FS, FB, DF, DM, DS and DB. Not compatible with ARO Series Couplers, refer to page 394 for ARO Plugs and Couplers

Specifications							
Temp Range:	Temp Range: -40°F to +250°F (-40°C to +121°C)						
	Coupler/Plug Combination						
Body Size	Brass Coupler/Steel Plug Brass Coupler/Brass Plug Steel Coupler/Steel Plug						
		Max Working PSI	-				
1/4"							
3/8"	500	300	500				
1/2"	300	300	300				
3/4"							

DFP Series					
	Nipple/Plug	`			
Item #	Body Size	N.P.T.	Material	Price	
138814		1/8" - 27		\$1.62	
129954	1/4"	1/4" - 18		1.45	
129955		3⁄8" - 18		1.70	
138815		1/4" - 18	Steel	2.30	
138816	3/8"	3/8" - 18	Steel	3.34	
138817		1/2" - 14		3.66	
138818	1/2"	3⁄8" - 18		3.53	
138819	72	3⁄4" - 14		5.96	

	DMP Series					
	Nipple/Plu	ug (Male T	hread)			
Item #	Body Size	N.P.T.	Material	Price		
138820		1/8" - 27		\$1.29		
129957	1/4"	1/4" - 18		1.23		
134895		3/ ₈ " - 18		2.55		
135470		1/4" - 18		1.66		
135309	3/8"	3⁄8" - 18	Steel	2.00		
136753		1/2" - 14	0.001	4.29		
165184		1/4" - 18		3.23		
138821	1/	3/ ₈ " - 18		2.67		
138822	1/2"	1/2" - 14		2.39		
138823		3⁄4" - 14		4.99		

DSP Series						
Item #	Nipple/Plug w/Standard Hose Barb Item # Body Size Hose I.D. Material Price					
134353		1/4"		\$1.31		
133233	1/4"	3/8"		1.59		
165185		1/4"		3.24		
135312	3/8"	3/8"	Steel	2.51		
135466		1/2"	Otoci	3.53		
138824		3/8"		3.53		
129959	1/2"	1/2"		3.87		
138825		3/4"		5.27		

_	DBP Series							
Ni	Nipple/Plug w/Push-On Hose Barb*							
Item #	Body Size	Hose I.D.	Material	Price				
138826	1/4"	1/4"		\$1.74				
129956	/4	3/8"	Steel	2.95				
138827	3/8"	3/8"		4.54				
136821	1/2"	1/2"		4.80				

^{*}Push-On Barbs are for use with Push-On Hose which if used in conjunction eliminates the need for a hose clamp. See Page 400 for IMS High Quality Push-On Hose.





General Purpose ARO Series Manual & Automatic Couplers, Plug/Nipples

- Automatic Couplers accept plugs/nipples without sleeve retraction like Manual Couplers
- ARO 210 (1/4") and ARO (3/8") Interchange
- Machined components are manufactured using solid steel or brass bar stock
- Automatic couplers constructed of brass

- · Stainless steel balls, retaining rings, pins and springs maximize corrosion resistance and extend service life
- Manual couplers constructed of steel
- Seals are Nitrile (Buna-N) seals are standard, providing a temperature range of -40°F to +250°F (-40°C to +121°C)

ARO Coupler (Female Thread)

Item #	Series	Body Size	N.P.T.	Material	Sleeve	Price
132770	210	1/4"	1/4" - 18 3/8" - 18	Brass	Manual	\$8.25
131326				Steel	Auto	8.40
138598						6.98
135311	310	3/8"	/8 10			14.87





ARO Coupler (Male Thread)

Item #	Series	Body Size	N.P.T.	Material	Sleeve	Price
125644			1/4" - 18	Brass	Manual	\$5.11
138209	210	1/4"	/4 10			8.50
138599			³½" - 18	Steel	Auto	7.37
142819	310	3/8"	76 10			13.27





ARO Coupler w/Standard Hose Barb

	7 ii 10 00 a protei ii 7 otaanaan a 11000 Danib									
Item #	Series	Body Size	N.P.T.	Material	Sleeve	Price				
135339			1/4"	Brass	Manual	\$5.38				
132837	210	1/4"	/-			7.11				
131387			3/,"	Steel	Auto	7.61				
129918	310	3/8"	/ 0			8.99				





ARO Nipple/Plug (Female Thread)

	Title Hippie/Hag (Fernale Hilleau)								
Item #	Series	Body Size	N.P.T.	Material	Sleeve	Price			
131328	210	1/4"	1/4" - 18	Steel	_	\$1.50			
134022	310	3/8"	3/8" - 18	0.001	_	5.32			



ARO Nipple/Plug (Male Thread)

		•		,		
Item #	Series	Body Size	N.P.T.	Material	Sleeve	Price
134018	210	1/4"	1/8" - 27		_	\$1.54
131327	210	/4	1⁄4" - 18	Steel	_	1.47
129995	310	3/8"	3/ ₈ " - 18]	_	4.74



ABO Nipple/Plug w/Standard Hose Barb

	Arto hippion lag myotamada riose barb									
Item #	Series	Body Size	N.P.T.	Material	Sleeve	Price				
137039	210	1/4"	1/4"		_	\$1.95				
134592	210	/4	3/8"	Steel	_	3.42				
131319	310	3/8"	' 8		_	6.10				





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Hydraulic Quick Couplings

Manual Sleeve Poppet Valves

Double Shut-Off - Compatible with Parker 60 Series NOTE: Match Couplers and Plugs by Body/NPTF Size

Specifications								
ISO 7241, Series B Interchange								
Buna Seal* Viton Seal**								
Temp Range	-40 De	-40 Deg F to +225° F			-15 Deg F to +400° F			
Material Rated Pressure PSI								
Body Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	11/2"	
ZP Steel	5000	5000	4000	4000	2500	2000	1000	
Brass	1000	1000	1000	1000	1000	1000	800	
Stainless Steel 2000 2000 1500 1500 1500 1000 1000								

^{*}For use with petroleum based oil or water **For use with petroleum based oil only To use couplers and plugs up to 300° F water temp, request EPDM seals - INQUIRE

— Standard Size —





Stainless Steel Coupler

Stainless Steel Nipple





Zinc Plated Steel Coupler

Zinc Plated Steel Nipple





Zinc Plated Steel Coupler Zinc Plated Steel Nipple

Standard Size Hydraulic Couplers

Body/	Rated Flow	Zinc Plated	Zinc Plated			Stainless Steel
NPTF Size	GPM	Steel w/Buna	Steel w/Viton	Brass w/Buna	Brass w/Viton	303 w/Viton
1/8"	1	134106	163289	163293	163302	126256
1/4"	3	133971	147622	163294	163303	126257
3/8"	6	133502	147620	163295	163304	126258
1/2"	12	131917	128421	163296	163305	126259
3/4"	28	137035	163131	150559	163270	126260
1"	50	131787	163290	161551	163306	147551

Standard Size Hydraulic Nipples

Body/	Rated Flow	Zinc Plated	Zinc Plated			Stainless Steel
NPTF Size	GPM	Steel w/Buna	Steel w/Viton	Brass w/Buna	Brass w/Viton	303 w/Viton
1/8"	1	134107	163291	163297	163307	143659
1/4"	3	133972	147621	163298	163308	126253
3/8"	6	133503	147619	163299	163309	126254
1/2"	12	131916	128422	163300	163310	126255
3/4"	28	137036	163130	150560	163271	126256
1"	50	131786	163292	163301	163311	147552

Large Size Hydraulic Couplers

Body/	Rated Flow	Zinc Plated	Zinc Plated			Stainless Steel
NPTF Size	GPM	Steel w/Buna	Steel w/Viton	Brass w/Buna	Brass w/Viton	303 w/Viton
1-1/2" x 1-1/4"	100	137033	163323	163327	163331	RFQ
1-½" x 1-½"	100	137034	163324	163328	163332	RFQ

Large Size Hydraulic Nipples

Body/	Rated Flow	Zinc Plated	Zinc Plated			Stainless Steel
NPTF Size	GPM	Steel w/Buna	Steel w/Viton	Brass w/Buna	Brass w/Viton	303 w/Viton
1-1/2" x 1-1/4"	100	137037	163325	163329	163333	RFQ
1-½" x 1-½"	100	137038	163326	163330	163334	RFQ



"Push-To-Connect" Tube Fittings

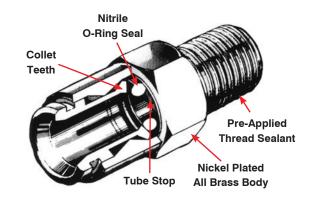
For Permanent Tubing and Manifolding

- Pre-applied thread sealant and Nitrile O-ring seal prevents leaks
- · Durable, nickel plated, all brass body
- Nitrile O-ring seal
- Maximum temperature: 200° F
- Maximum pressure: 270 psi



• Push-to-Connect Tubing, page 388





To connect: Push tubing into the fitting until it will go no further. This will secure and seal the tube.

tube in all the way with one hand. With the other hand, push in release collet with thumb and index finger. Pull tube out.

To disconnect: Push the



Specificatio	ns and	Prices		
	Item #	Tube O.D.	N.P.T. Thread	Unit Price
	Manifolding Tee (Tube to Male Pipe)			
	147319	1/4"	1/8"	\$4.87
	147320	1/4"	1/4"	4.68
	147321	3/8"	1/4"	8.13
	147322	3/8"	3/8"	8.72
	147323	1/2"	3/8"	12.96
	147324	1/2"	1/2"	13.90
	Union (Tube to Tube)			
	147302	1/4" to 1/4"		\$6.21
	147303	3/8" to 3/8"		5.00
	147304	½" to ½"		6.55
0=	Elbow Union (Tube to Tube)			
	147299	1/4" to 1/4"		4.00
	147300	3/8" to 3/8"		6.00
	147301	½" to ½"		8.40
The state of the s	Tee Union (Tube to Tube)			
	147296	1/4" to 1/4"		\$7.97
	147297	3/8" to 3/8"		6.57
	147298	1/2" t	0 1/2"	9.51



Sealants

Keep Fasteners and Pipe Joints Tight! Help Prevent Costly Down Time!

Pipe Thread Sealant Compound

- Contains PTFE
- Non-hardening
- Non-toxic
- Positive seal
- · Prevents corrosion
- Withstands hydraulic pressures up to 10,000 psi



Specifications and Prices

Temperature Range: -35°F to 550°F Color: White

Density (specific gravity): 1.2

Item #	Description	Unit Price
132710	Pipe Thread Sealant Compound (16 oz.)	\$17.03

Thread Sealant Tape with PTFE

- Mil-Spec # MIL-T-27730A
- · Meets USDA and FDA requirements
- · Seals against gas, air, oil and water
- · Resists chemicals, corrosives, caustics and solvents
- · Prevents leakage
- · Resists high heat
- Seals effectively in 2 or 3 wraps
- Withstands hydraulic pressures up to 10,000 psi



Specifications and Prices							
Temperature Range: -400°F to 550°F Color: White Width: ½"							
Item #	Description			Density	Length	Unit Price	
105579 Medium Density Thread Sealant Tape with PTFE		0.7 to 0.8	108'	\$4.50			
101180 Low Density Thread Sealant Tape with PTFE				0.4 to 0.5	108'	2.24	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Cam & Groove Couplings

Perfect for Applications Requiring Quick Disconnect, Positive Sealing Couplers

Features

- · Positive, leak-free sealing action
- Works well with dry bulk or low pressure liquids* (-20° to 200° F)
- Interchangeable with other brands
- Complies with MIL-C-27487 specifications

Specifications

Rated Working Pressure: 150 PSI (tested at 300 PSI)

Construction

- Handles: 1. Brass on Brass and Aluminum Couplers
 2. Steel on Stainless Steel Couplers
- Handle Pins: 316 Stainless Steel
- · Handle Rings: Cadmium Plated Spring Steel



Variety of Sizes: 3/4" to 4"

We Have Them All!

Aluminum, Brass or Stainless Steel Styles: A, B, C, D, E, F, DP, DC, FC, BC

Style A

Male Adapter x Female N.P.T. Thread



Style C
Female Coupler
Hose Shank



Size	Aluminum Item #	Brass Item #	Stainless Steel Item #
3/4"	130020	130021	130022
1"	130023	130024	130025
1 ¹ /4"	130026	130027	130028
1 ¹ /2"	130029	130030	130031
2"	130032	130033	130034
21/2"	130035	130036	130037
3"	130038	130039	130040
4"	130041	130042	130043

Hose Shank

Size	Aluminum Item #	Brass Item #	Stainless Steel Item #
	Itelli #	Item #	Item #
3/4"	130078	130079	130080
1"	130081	130082	130083
11/4"	130084	130085	130086
11/2"	130087	130088	130089
2"	130090	130091	130092
21/2"	130093	130094	130095
3"	130096	130097	130098
4"	130099	130100	130101

Brass

Item #

130109

130112

130115

130118

130121

130124

130127

130129

Style B Female Coupler x Male N.P.T. Thread



Style D
Female Coupler x
Female N.P.T. Thread

Size

3/4

1"

11/4"

1¹/2

2"

4"

Aluminum

Item #

130108

130111

130114

130117

130120

130123

130126

130128



Stainless Steel

Item #

130110

130113

130116

130119

130122

130125

130133

130130

Size	Aluminum Item #	Brass Item #	Stainless Steel Item #
3/4"	130050	130051	130052
1"	130053	130054	130055
11/4"	130056	130057	130058
11/2"	130059	130060	130061
2"	130062	130063	130064
21/2"	130065	130066	130067
3"	130068	130069	130070
4"	130071	130072	130073

^{*}Special seals may be required for oils and aromatics - please consult us when ordering.

WARNING: Under NO circumstances should Cam and Groove Couplings be used for compressed air or steam service!



Style E Male Adapter x Hose Shank



Style FC
Male Adapter x
Compression



Size	Aluminum Item #	Brass Item #	Stainless Steel Item #	
3/4"	130136	130137	130138	
1"	130139	130140	130141	
11/4"	130142	130143	130144	
11/2"	130145	130146	130147	
2"	130148	130149	130150	
21/2"	130151	130152	130153	
3"	130154	130155	130156	
4"	130157	130158	130159	

Aluminum
Size Item #

11/2" 136216
2" 133705
21/2" 136217
3" 136218

136221

136222

Style F Male Adapter x Male N.P.T. Thread



Style BC
Female Coupler x
Compression

Size

11/2"

2"

21/2

3"



	Aluminum	Brass	Stainless Steel
Size	Item #	Item #	Item #
3/4"	130165	130166	130167
1"	130168	130169	130170
11/4"	130171	130172	130173
11/2"	130174	130175	130176
2"	130177	130178	130179
21/2"	130180	130181	130182
3"	130183	130184	130185
4"	130186	130187	130188

Style DP

Adapter Dust Plug

(NOT for use in pressure applications)

Replacement Gaskets



BUNA**

Item # 136229

135014

136230

133556

135013

136231

136232

136233

Size	Aluminum Item #	Brass Item #	Stainless Steel Item #		Size	EPDM* Item #
3/4"	130219	130220	130221	i i	3/4"	_
1"	130222	130223	130224	1 1	1"	136223
11/4"	130225	130226	130227	1 [1 ¹ /4"	136224
11/2"	130228	130229	130230	1 [1 1/2"	136225
2"	130231	130232	130233	1 [2"	134496
21/2"	130234	130235	130236	1 [2 ¹ /2"	136226
3"	130237	130238	130239	1 [3"	136227
4"	130240	130241	130242	j l	4"	136228

* 300° Outdoor Use ** 250° Oil Resistant

Stainless Steel

Item #

130194 130197

130200

130203

130206

130209

130212

130215

Style DC

Size

3/4"

1'

11/4

11/2

2"

21/2"

3"

4"

Coupler Dust Cap

(NOT for use in pressure applications)

Aluminum

Item #

130192

130195

130198

130201

130204

130207

130210

130213



Replacement Handle Kits



	Brass	Stainless Steel
Size	Item #	Item #
1/2"-3/4"	136236	136241
1"	136237	136242
11/4"-21/2"	136238	136243
3" - 5"	136239	136244

WARNING: Under NO circumstances should Cam and Groove Couplings be used for compressed air or steam service!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

Brass

Item #

130193

130196

130199

130202

130205

130208

130211

130214

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Parker Push-Lok Jiffy Hose 7212



No hose clamp needed when used with Push-On Fittings

Specifications

Working:

Pressure: 300 psi

Min Burst:

Pressure: 1000 psi

Temp Range: -40° F to 212° F

Cover: Neoprene

Tube: Nitrile

Reinforcement: 1 braid synthetic

Hann	Hose			-	Price Per Foot — Cut to Order Full		
Hose I.D.	O.D.	Item #	Color	1-99	Order 100+	Full Reels	Reel Size*
		101151	Black	Inquire	N/A	N/A	
		104317	Red				
1/4"	0.50"	118484	Blue	\$1.47	\$1.43	\$1.37	700'
		165864	Yellow				
		101194	Black				
	0.62"	104366	Red	\$1.47	\$1.43	\$1.37	700'
3/8"		118480	Blue				
		165865	Yellow				
		129683	Green				
		101160	Black		\$1.97	\$1.89	600'
1/2"	0.75"	104434	Red	\$2.03			
		118475	Blue	·			
		173331	Gray				
5/8"	0.91"	136171	Red	RFQ	-	-	400'
		136151	Black				
3/4"	1.03"	125328	Red	\$2.91	\$2.82	2.82 \$2.71	400'
		123000	Blue				

^{*} Due to hose manufacturing, reel lengths may vary slightly from standard reel size and may contain more than one continuous length

Specifications

Working:

Pressure: 300 psi

Min Burst:

Pressure: 1000 psi Temp Range: -40° F to 212° F

Cover: Neoprene Reinforcement: 1 braid synthetic

Tube: Nitrile

Hose	Hose			— Price Per Foot — Cut to Order Full		Std Reel	
I.D.	O.D.	Item #	Color	1-99	100+	Reels	Size*
1"**	1.28"	131371	Red	\$7.76	\$7.53	\$7.22	200'
	1.20	131370	Blue	4.170	Ψ7.00	Ψ1.22	230

^{**} Parker 801 Push-Lok Plus: 200 PSI / -40° to + 185° F

Hydraulic Hose

Made to Order

Got a slow leak? Re-doing a machine next week? Tired of paying too much at your local supplier?

Let IMS Build Your Hoses and Ship Them to Your Door! We can do almost every size hose with whatever fittings you might need.

All we need to know:

- · Working pressure
- · Hose I.D.
- Length
- Fitting type (Straight/45°/90°)
- and in some cases the phase angles

Save Big with **IMS Hydraulic Hose**



Call for a Quote Today!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Waterline Hose



For use with barb-type waterline hose sockets.

• EPDM tube and cover resist chemicals

· Spiral synthetic cord reinforcement prevents rupturing

Specifications and Prices

H Working Pressure: 300 psi Minimum Burst Pressure: 1200 psi Temperature Range: -40°F to 212°F

Cover: EPDM (ethylene-propylene-dienemonomer rubber)

Reinforcement: Multiple textile spirals

Tube: EPDM

Hose I.D.	Hose O.D.	Item #	Color		— Price Per Foot — Cut to Order Full 1-99 100+ Reels		Std Reel Size**
1/4"	0.55"	105504	Red	\$0.68	\$0.66	\$0.63	800'
3/8"	0.688"	105476	Red	1.10	1.07	1.02	700'
	0.844"	127414	Black	1.21	1.17	1.13	500'
1/2"	0.875"	105450	Red	1.35	1.31	1.26	500'
	0.844"	136392	Blue	1.55	1.50	1.44	550'
5/8"	1.06"	105418	Red	1.70	1.65	1.58	450'
3/4"	1.156"	105389	Red	1.82	1.77	1.69	400'
/4	1.156"	124209	Blue	2.02	1.96	1.88	400'
1"	1.438"	108185	Red	3.29	3.19	3.06	300'
	1.438"	128413	Black	2.92	2.83	2.72	300'

H Working Pressure: 200 psi Minimum Burst Pressure: 800 psi Temperature Range: -40°F to 212°F

Cover: EPDM (ethylene-propylene-dienemonomer rubber)

Reinforcement: Multiple textile spirals

Tube: EPDM

Hose I.D.	Hose O.D.	Item #	Color	— Price Per Foot — Cut to Order Full 1-99 100+ Reels		Std Reel Size**	
1/4"	0.55"	136154	Black	\$1.12	\$1.09	\$1.04	800'
3/8"	0.688"	127908	Black	1.02	0.99	0.95	700'
5/8"	1.06"	128313	Black	1.29	1.25	1.20	400'
3/4"	1.156"	114970	Black	1.23	1.19	1.14	400'
1"	1.438"	134894*	Blue	3.39	3.29	3.15	400'
'		134245	Black	2.60	2.52	2.42	300'
11/4"	1.74"	119271	Black	3.89	3.77	3.62	250'
174		108221	Red	4.40	4.27	4.09	250'
1½"	1.74"	132716	Black	4.77	4.63	4.44	200'
1 /2		133174	Red	5.19	5.03	4.83	200'
2"	2.45"	148450	Red	10.57	10.25	9.83	250'

^{*}Working Pressure: 250 psi / Burst Pressure: 1000 psi

^{**} Due to hose manufacturing, reel lengths may vary slightly from standard reel size and may contain more than one continuous length



High-Heat Resistant Hose with PTFE

Resists Mold Fluid Circulating Temperatures to 450°F

IMS High-Heat Hose with fluoropolymer (PTFE) resin is a smooth bore, medium pressure hose for circulating fluids at temperatures **up to 450°F**. The hose is suitable for water, ethylene glycol, oil and other heat transfer fluids such as IMS PG-1.

The PTFE inner tube and braided stainless steel outer cover offer unlimited shelf life, excellent flex life, vibration absorption and corrosion protection. Additionally, you can steam clean this hose. Male fittings swaged onto both ends accept optional swivel and stainless steel disconnect fittings.

Specifications									
Temperature Range:	Range: -65° to 450° F (-54° to 232° C) Intermittent service: -100° to 500° F (-73° to 260° C)								
	with PTFE, wire braid r requiremen	einforceme		s steel					
N.P.T. Nomina Size	1/4"	3/8"	1/2"	3/4"					
Fitting I.D.	.153"	.270"	.360"	.590"					
Nominal I.D.	.187"	.312"	.406"	.625"					
Nominal O.D.	.312"	.445"	.549"	.778"					
Operating Pressure psi	3,000	2,500	2,000	1,200					
Min. Burst Pressure psi	12,000	10,000	8,000	4,800					
Min. Bend Radius	2"	4"	5.2"	7.7"					
Hose Weight lb./ft.	.070	.110	.123	.170					



Prices			
N.P.T.	Item #	Length	Prices
	110796	1'	\$15.37
	129753	2'	20.07
	109676	4'	28.49
1/4"	109660	6'	29.45
	109672	8'	48.23
	109675	10'	57.62
	109662	12'	65.65
	116589	1'	17.31
	116009	2'	19.79
	109674	4'	34.78
3/8"	109679	6'	45.47
	109667	8'	57.12
	109681	10'	68.79
	109713	12'	80.44
	111522	1'	23.37
	134085	2'	32.55
	117554	3'	40.13
1/2"	109697	4'	46.02
	109703	6'	56.34
	109694	8'	48.96
	109696	10'	83.91
	109707	12'	108.65
	122436	3'	60.84
	105577	4'	69.13
3/4"	105588	6'	63.11
, .	105605	8'	113.38
	105571	10'	135.52
	105591	12'	142.09

Custom hose and/or fittings available

Optional Swivel Fittings and Quick Disconnect

Specifications								
N.P.T.	Working Pressure	Typical Flow at 10 psi pressure drop						
1/4"	1500	3.6						
3/8"	1000	6.7						
1/2"	900	11.0						
3/4"	800	26.3						

Notice: In order to avoid any possibility of leakage and/or thread seizing, IMS highly recommends the use of high heat thread tape or lube on all high heat fittings.

Viton® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates

Prices							
Zinc Plated Steel S	Zinc Plated Steel Swivel Fittings				uick Disco o 400°F)	nnect w	vith Viton®
Female to Female		NPT		2-Way Shut Off P	lugs	NPT	
	109626	1/4"	\$4.00		143659	1/8"	\$12.25
A A	109698	3/8"	4.00	William William	126253	1/4"	15.00
	109695	1/2"	4.10	1990	126254	3/8"	23.10
	105570	3/4"	4.20		126255	1/2"	41.10
					126256	3/4"	56.77
Male to Female		NPT		2-Way Shut Off	Sockets	NPT	
	135377*	1/8"	\$2.50				
AHMINE 550	109622	1/4"	3.00		126257	1/4"	38.39
	109710	3/8"	3.00		126258	3/8"	51.80
WHITE CONTRACTOR	109704	1/2"	3.15		126259	1/2"	77.69
	105589	3/4"	3.80		126260	3/4"	Inquire

^{*} $\frac{1}{4}$ " Male x $\frac{1}{8}$ " Female



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Firesleeve™ High Heat Insulation Products



Protect Continuously to 500°F

Great for: • Insulating against energy loss in piping & hose

 Protecting hoses, wires and cables from high heat and occasional flame · Protecting employees from burns

· Bundling wires, hoses and cables

Made of knitted/braided fiberglass yarns in a flexible substrate and coated with a high-grade silicone rubber Resistant to hydraulic fluids, lubricating oils and fuels

Common Specifications

Fiberglass

Fiber Type: E Class Resistance to: Acids: FAIR Alkalis: GOOD

Effect of:

Bleaches and Solvents: NONE

Melt Temp.: 2,050°F

Silicone Rubber

Flammability Rating: UL94



Sleeve Style Insulation							
Item No.	I.D.	Weight (per 100 ft.)	Price (per ft.)				
138328	1/2"	10.5 lbs.	\$3.31				
138329	3/4"	15.8 lbs.	4.32				
138330	1"	17.9 lbs.	5.40				
138331	15/8"	32.1 lbs.	6.40				
138332	2"	35.3 lbs.	10.21				
	Tape Sty	/le Insulation					
Item No.	Width	Weight (per 100 ft. roll)	Price				
138340	1"	5.0 lbs.	\$263.77				

Firesleeve™ is a trademark of Davlyn Manufacturing Inc.

Fast Shipment!

Hose and Plastic Pipe Cutters

Use these to safely make clean square cuts on hose and plastic pipe.

- · NEW spring loaded and locking option
- Tough injection molded nylon handles
- Replaceable blade, A-2 steel (coated with PTFE) (stainless steel standard on 113265)
- Weight: 4 oz.

CAUTION: Do not attempt to cut anything harder than plastic with these cutters.





Specifications	and Prices						
Item #	For Use on Mold Circulator Hose	For Use on Schedule 40 and Class PVC Pipe	For Use on Flexible Pipe (PE)	For Use on Flexible Pipe (PB)	Unit Price		
Standard Cutter							
109191 (1" dia.)	up to 1" I.D.	up to 1" I.D.*	up to 1" I.D.	up to 1" I.D.	\$11.66		
116102 (1½" dia.)	up to 1½" I.D.	up to 11/4" I.D.*	up to 1½" I.D.	up to 11/4" I.D.	14.37		
113265 (2" dia.)	up to 23/4" I.D.	up to 11/4" I.D.	up to 1½" I.D.	up to 1½" I.D.	15.91		
Spring Loaded and	Locking Cutter						
158406 (1" dia.)	up to 1" I.D	up to 1" I.D.*	up to 1" I.D.	up to 1" I.D.	\$14.02		
136527 (1½" dia.)	up to 1½" I.D.	up to 11/4" I.D.*	up to 1½" I.D.	up to 11/4" I.D.	18.88		
136528 (2" dia.)	up to 2" I.D.	up to 11/4" I.D.	up to 1½" I.D	up to 1½" I.D.	18.48		
Spare Parts and Acc	essories						
109186	2 ¹⁵ /16" blade for 1" di	a. cutter			\$4.44		
116099	33/16" blade for 11/2" o	33/16" blade for 11/2" dia. cutter					
113270	41/4" blade for 2" dia	41/4" blade for 2" dia. cutter — stainless steel					
136529	Leather sheath for a	Il cutters			Inquire		

^{*}Optional stainless steel blade required — Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001



Worm Gear Hose Clamps

Micro Hose Clamps

Precision-engineered clamps for use in small hose applications

- · 300 Stainless Steel Band
- Rust Resistant Plated Carbon Steel Screw with 1/4" Hex Head
- 5/16" Width

Specifications and Prices								
Item# Clamp # Siz		Size in Inches	Size in mm	Unit Price				
108587	4	5/16" to 5/8"	08-16	\$0.56				
108591	6	7/ ₁₆ " to ²⁵ / ₃₂ "	11-22	0.60				



Standard Hose Clamps

Clamps for use in most hose applications

- · 200 Stainless Steel Band
- Rust Resistant Plated Carbon Steel Screw with 5/16" Hex Head
- 1/2" Width (unless otherwise noted)

Specificat	Specifications and Prices					
Item#	Clamp #	Size in Inches	Size in mm	Unit Price		
108209	6	3/8" to 7/8"	10-22	\$0.66		
108201	8	⁷ ∕₁ ₆ " to 1"	11-25	0.71		
108196	10	½" to 1½"	13-27	0.82		
108192	12	½" to 1¼"	14-32	0.71		
108223	16	11/ ₁₆ " to 11/ ₂ "	17-38	0.67		
108214	20	3/4" to 13/4"	19-44	0.76		
108207	24	1" to 2"	21-51	0.82		
108200	28	11/4" to 21/4"	32-57	0.78		
108195	32	1½" to 2½"	38-63	0.71		
108191	36	1¾" to 2¾"	46-70	0.85		
108186	40	1" to 3"	26-76	0.86		
108222	44	11/4" to 31/4"	32-82	1.10		
108212	48	2½" to 3½"	65-89	0.91		
108206	52	2¾" to 3¾"	70-95	1.80		
108199	56	3" to 4"	78-101	1.08		
108127	88	4" to 6"	102-152	2.40		
109111*	128	1¾" to 8½"	45-216	1.76		



Lined, Super Strong Flex Gear, Oetiker and other Specialty Clamps available upon Request

Nylon Hose Clamps

Specifications and Prices				
Item# Clamp Range (dia.) Unit Price				
108204	0.702" to 0.801"	\$0.41		

- Low cost
- Corrosion resistant nylon 6/6
- Reusable
- Maximum temperature: 250°F





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

404

^{* %16&}quot; Width



One Million Uses — Use Anywhere You Need to Fasten, Fix or Hold

UV Resistant makes the Mille-Tie QuickStrip suitable for all conditions.

- Reusable Undo to use again.
- No Sharp Edges Ready to use or cut there are no sharp edges to snag or injure.
- Quick Fitting Needs no orientation works in any direction.
- No Waste Once latched the cut off tail becomes another tie.



1. Loop around hoses to be tied. (NOTE: Actual color is black.)



2. Slide end of strap into head slot as shown. Pull hoses tight.



 To Lock: Pull end up to lock in place.
 To Release: Put end of strap through same head slot and pull through.

Specifications and Prices							
	Overall		Diam	neter			Unit
Item	Length*	Width	Min	Max	Qty per Bag	Color	Price
147234	121/2"	0.4"	0.02"	3.3"	20	Black	\$2.92

^{*}QuickStrips are semi-elasticated and will exceed their nominal length during use.



Colored Plastic Wire Ties

Help Identify and Organize Wires

• Self-locking design



Nylon

Specifications and Prices							
Item #	Length	Color	Width	Tensile Strength	Price/bag (100 ties)		
121257	4"	Red	0.094"	18 lbs.	\$1.17		
121246	4"	Blue	0.094"	18 lbs.	0.77		
117736	4"	Natural	0.094"	18 lbs.	0.70		
121247	5.7"	Red	0.140"	40 lbs.	4.52		
121236	5.7"	Blue	0.140"	40 lbs.	3.95		
117743	5.7"	Natural	0.140"	40 lbs.	1.38		
117742	7.5"	Natural	0.140"	50 lbs.	2.78		
121237	8.8"	Red	0.140"	40 lbs.	3.00		
121226	8.8"	Blue	0.140"	40 lbs.	3.00		
121218	11.2"	Red	0.178"	50 lbs.	5.57		
121208	11.2"	Blue	0.178"	50 lbs.	7.08		
117741	11.2"	Natural	0.178"	50 lbs.	3.72		
121197	14.5"	Blue	0.178"	50 lbs.	8.38		
117739	14.5"	Natural	0.178"	50 lbs.	4.31		
121198	15.1"	Red	0.300"	120 lbs.	15.47		
121253	15.1"	Blue	0.300"	120 lbs.	16.90		
117738*	25.3"	Natural	0.340"	175 lbs.	14.41*		

^{*117738} contains 50 straps per bag



High Heat Hose Insulation

For Continuous Temperatures up to 1,000° F



- High quality fiberglass
- · Saturated with synthetic rubber
- · Highly flexible at any temperature
- · Expands over joints and around turns
- Light brown

I.D.	Item Number	UNIT PRICE
11/8" — 2"	*108373	\$8.27 per ft.
2½" — 4"	108699	8.67 per ft.

^{*} Fits IMS HAD & MD Series Hopper Dryers



Therma SleeveTM Modular Dryer Hose Insulation

For Hose Temperatures up to 600°F



- Modular 2' long sleeves let you insulate different hose lengths
- 36.84% BTU reduction SAVES YOU MONEY
 Payback in energy savings in as little as 5½ months
- · Provide better process heat control to mold quality parts
- · Protects employees from accidental contact with hot hose
- Easy to install No machine downtime, No tools needed
- Vinyl exterior repels dust and oil Protects hose
- · Overlapping cuffs for maximum heat retention

Fits Hose O.D.	Item Number	Unit Price (each)
11/2"	121428	\$41.08
2"	121421	42.20
21/2"	121449	45.48
3"	121441	32.09
31/2"	121436	Inquire
4"	121452	35.74
41/2"	121445	53.04
5"	121437	39.66
5½"	121432	57.66
6"	121447	66.18

2" Wide VELCRO® Fastener

High Temperature Thread rated to 600°F (315°C)

Uni-Flex Inner Layer rated to 600°F

VELCRO® is a registered trademark of VELCRO Companies

Therma Sleeve™ is a trademark of Uni-Therm Insulation Systems

Custom Sizes Available — Call for Price and Delivery



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



Hopper Dryer Air Hose (Orange)

For Process/Output Line from Dryer to Hopper

For Continuous Use -95°F up to 500°F (540°F Intermittent)

- Great Industrial Ducting Hose for use with Dust Removal, Exhaust and Ventilation, Chemical Fumes, etc.
- Economical 1 Ply or Rugged 2 Ply Construction
- · Silicone coated fiberglass with wire helix
- · Highly flexible, UV and Weather Resistant
- · Light Weight easy to install and non-kinking
- · Standard 13 Foot Lengths
- · Not recommended for liquids or abrasives



	1 PLY				
ID	Item #	Working PSI*	Vacuum HG*	Unit Price	
1"	173666	21.756	17.127	\$68.00	
11/4"	173667	21.756	17.127	70.00	
11/2"	173668	21.756	17.127	65.00	
2"	173669	21.756	14.765	72.00	
21/4"	173670	18.855	14.765	75.00	
21/2"	173671	18.855	14.765	80.00	
3"	173672	15.954	11.517	85.00	
31/2"	173673	15.954	11.221	105.00	
4"	173674	15.954	8.859	105.00	
5"	173675	13.054	6.201	160.00	
6"	173676	11.603	5.315	130.00	
8"	173677	8.702	2.953	300.00	
10"	173678	5.802	2.953	370.00	
12"	173679	1.450	2.067	500.00	

	2 PLY						
Item # Working PSI*		Vacuum HG*	Unit Price				
173680	40.60	20.95	\$80.00				
173681	39.16	19.20	100.00				
173682	37.71	17.72	85.00				
173683	37.71	15.36	108.00				
173684	36.26	14.17	135.00				
173685	34.81	13.58	120.00				
173686	30.46	12.70	130.00				
173687	29.01	11.81	132.00				
173688	27.56	10.34	165.00				
173689	20.31	6.80	190.00				
173690	17.41	5.02	195.00				
173691	10.15	2.66	390.00				
173692	7.25	2.07	550.00				
173693	7.25	2.06	560.00				

^{*}Technical data based on tests at 68°F and are approx. values

Purchasers also order:

- Worm Gear Hose Clamps, page 404
- Dryers, Desiccant, Dewpoint Meters and other Drying Accessories, pages 684-715



Hopper Dryer Air Hose (Black)

For Return/Input Line From Hopper to Dryer



Great Industrial Ducting Hose for use with Dust Removal, Exhaust and Ventilation, Chemical Fumes, etc.

Neoprene Hose



- · Rugged 2 Ply Construction
- Neoprene Coated Fiberglass with Wire Helix
- · UV and Weather Resistant
- · Light Weight easy to install and non-kinking
- Temperature Range -30°F to +275°F
- Intermittent to 300°F
- Standard 13 Foot Lengths
- · Not recommended for liquids or abrasives

ID	Item#	Working PSI*	Vacuum HG*	Unit Price
11/4"	173694	39.15	19.20	
11/2"	173695	37.70	17.70	
13/4"	173696	37.70	17.15	
2"	173697	37.70	15.35	
21/4"	173698	36.25	14.15	
21/2"	173699	34.80	13.60	RFQ
3"	173700	30.45	12.70	
31/2"	173701	29.00	11.80	
4"	173702	27.55	10.35	
5"	173703	20.30	20.30	
6"	173704	17.40	5.00	
8"	173705	10.15	2.65	

^{*}Technical data based on tests at 68°F and are approx. values



Thermoplastic Rubber Hose

For Continuous Temperatures up to 275°F (300°F Intermittent)

- · Steel Wire Helix
- · UV, Ozone and Abrasion Resistant
- Superior Chemical Resistance
- Temperature Range -60°F to +275 F
- · 25 and 50 Foot Lengths

25 FOOT

50 FOOT

ID	Item #	Unit Price	Working PSI*	Vacuum HG*	ID	Item #	Unit Price
11/2"	136532	\$98.32	24	>29	1 ½"	136533	\$190.32
13/4"	136534	99.62	22	>29	13/4"	136535	195.33
2"	136536	105.55	17	>29	2"	136537	199.50
21/4"	136538	109.77	17	>29	21/4"	136539	219.53
2 ½	136540	Inquire	13	28	21/2	136541	239.17
3"	136542	144.36	10	28	3"	136543	260.00
31/2"	136544	154.01	10	20	31/2"	136545	308.01
4"	136546	161.52	10	25	4"	136547	323.04
41/2"	136548	172.79	10	20	41/2"	136549	345.58
5"	136550	173.21	9	15	5"	136551	346.41
6"	136552	202.83	9	11.5	6"	136553	397.33

^{*}Pressure and Vacuum data is based on straight lenghts of hose at ambient temperature of 72°F



phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 1.888.288.6900

001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Loader Hose Comparison

	Heavy Duty PVC Loader Hose	Light Weight Food Grade Loader Hose	IMS Food Grade Polyurethane Wired Hose	IMS Anti-Static Polyurethane Wired Hose
Material PVC PVC		PVC	Polyurethane	Polyurethane
Rating Heavy Duty Light Weight		Heavy Duty	Heavy Duty	
Uses	conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate, gases and dry industries intended for conveying of high volume of powder, bulk material, granulate, gases and dry industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries industries intended for conveying of high volume of powder, bulk material, granulate industries industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder, bulk material, granulate industries intended for conveying of high volume of powder.		For food and pharmaceutical industries intended for conveying of high volume of abrasive powder, bulk material, granulate, gases, dry foods, and waste	Intended for conveying of high volume of abrasive powder, bulk material, granulate, gases and waste
Temperature Range	-4°F - 150°F	-5° to 160°F -40° to 195°F		-40° to 195°F
Intermittant To	175°F	175°F	250°F	250°F
Classifications		Food grade, FDA 21, microbe and hydrolysis resistant	Food grade, FDA 21, microbe and hydrolysis resistant, flame-retardant	Permanently anti-static, ISO 8031, microbe resistant, flame-retardant
Ground Wire	No	No	Yes	Yes
Interior	Smooth Bore	Smooth Bore	Highly Abrasion Resistant	Highly Abrasion Resistant
Exterior	Smooth Cover	Corrugated Cover	Corrugated Cover	Corrugated Cover
Vacuum	28 Hg	4-7 Hg	16-26.6 Hg	10-29.5 Hg
Catalog Page	411	412	413	414

Check out these other useful IMS products!

IMS Portable Resin Bins

See pages 692 - 693





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)
1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) **1.866.467.9001**

Heavy Duty PVC Loader Hose

Reinforced for a Long Service Life



Specifications

Wall: Clear

Helix: White nylon Inside: Smooth bore Outside: Smooth cover

Material: PVC

Vacuum Rating*: 28 in/Hg Max. Temp. Rating: 150°F



Specifications and Prices							
Item #: 136135 136136 106028 106009							
Inside Diameter:	3/4" I.D.	1" I.D.	11/4" I.D.	1½" I.D.			
Outside Diameter:	1.01"	1.26"	1.50"	1.875"			
Minimum Bend Radius*:	3"	3"	3"	4"			
Weight (lbs./ft.):	.19	.26	.30	.40			
1-99 ft.:	RFQ	\$1.06	\$1.35	\$1.50			
100 ft. (uncut):	-	0.95	1.21	1.35			

Item #:	108834	130613	123204	135777
Inside Diameter:	2" I.D.	21/2" I.D.	3" I.D.	4" I.D.
Outside Diameter:	2.375"	2.875"	3.43"	4.5"
Minimum Bend Radius*:	5"	8"	10"	15"
Weight (lbs./ft.):	.60	.87	1.24	1.85
1-99 ft.:	\$2.32	\$2.98	\$4.05	N/A
100 ft. (uncut):	2.09	2.68	3.65	RFQ

^{*} at 70° F †100' Rolls Only

Available up to 8" — Inquire

Zinc Plated Carbon Steel Spiral Double Bolt Clamps

For Counterclockwise Spiral

Specially designed to fit corrugated suction hose. Also works well on rubber suction hose. Ideal for proper mounting of Cam & Groove couplings and couplers.



Item #	Size	Weight	Price (each)
135764	1½"	0.18 lbs.	\$4.58
135765	2"	0.36 lbs.	4.97
135766	21/4"	0.40 lbs.	5.00
135767	21/2"	0.48 lbs.	5.77
135768	3"	0.66 lbs.	6.89
135769	3½"	0.70 lbs.	6.31
135770	4"	1.02 lbs.	6.89



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Light Weight Food Grade Loader Hose

Best Value, Food Grade PVC

Specifications

Wall: Clear

Helix: White, rigid PVC spiral integrated in wall Inside: Smooth interior; wall: special premium

ether-polyurethane Outside: Smooth cover Material: PVC

Temp. Range: -5°F to 160°F, short time to 175°F

Complies with FDA 21 CFR 177.2600



Specifications and Prices							
Item #:	173706 173707 173710 173712 173713						
Inside Diameter:	11⁄4" I.D.	1½" I.D.	2" I.D.	2½" I.D.	3" I.D.		
Outside Diameter:	1.50"	1.77"	2.28"	2.80"	3.31"		
Bend Radius*:	0.75"	1.22"	1.77"	1.91"	2.56"		
Vacuum (in HG):	5.9"	5.9"	5.9"	4.725"	4.725"		
Weight (lbs./ft.):	0.42	0.64	0.88	1.08	1.15		
Price Per Foot:	\$3.00	\$3.75	\$3.00	\$5.00	\$5.25		

* at 68°F

Available up to 8" — Inquire

- · Light Weight
- Abrasion-Resistant
- **Odorless And Tasteless**
- · Microbe And Hydrolysis Resistant
- · Good Resistance To Oil, Gasoline, And Chemicals
- Very Good Low Temperature Flexibility

Available in 50 ft. rolls. Order by the foot or by the roll.

Conveniently stamped with IMS part number and phone number throughout the hose

Check Out These Other Useful IMS Products!

Material Loaders

See Pages 650-671 for all options



IMS Series Stainless Steel Material Loaders



IMS Whisper Loader Series



IMS Compressed Air Loader



NEW Shini Single Station Hopper Loader Systems



phone order toll-free (USA & Canada) 1.800.537.5375



IMS Food Grade Polyurethane Loader Hose

Heavy Duty, Microbe Resistant, with Ground Wire - Food Grade

Specifications

Wall: Transparent

Helix: Spring steel wire firmly embedded in wall

Inside: Smooth bore

Outside: Permanently antistatic premium ester-polyurethane

Material: Antistatic Polyurethane Hose

Temp. Range: -40°F to 195°F, short time to 255°F

Complies with: FDA 21 CFR 177.2600 and 178.2010

Embedded static wire prevents the build-up of static electricity and helps to keep material flowing smoothly.



Specifications and Prices					
Item #:	172220	172222	172224	172226	
Inside Diameter:	1" I.D.	11/4" I.D.	1½" I.D.	1¾" I.D.	
Outside Diameter:	1.25"	1.65"	1.89"	2.17"	
Bending Radius*:	0.750"	1.02"	1.14"	1.30"	
Vacuum (in HG):	26.58 in/Hg	25.84 in/Hg	29.53 in/Hg	24.95 in/Hg	
Weight (lbs./ft.):	0.190	0.295	0.350	0.403	
Price Per Foot:	\$5.00	\$3.60	\$4.25	\$4.75	

Item #:	172227	172231	172233
Inside Diameter:	2" I.D.	2½" I.D.	3" I.D.
Outside Diameter:	2.36" 2.95"		3.39"
Bending Radius*:	1.36"	1.67"	2.58"
Vacuum (in HG):	/acuum (in HG): 24.66 in/Hg		16.39 in/Hg
Weight (lbs./ft.): 0.445		0.565	0.705
Price Per Foot:	\$5.25	\$6.90	7.75

* at 68°F

Available up to 6" - Inquire

NOTE: Static wire loader hose needs to be grounded to work. Simply strip away the jacketing of the loader hose to expose the wire and ground it. If grounding to the loader body, make sure your loader controls are grounded; otherwise the charge may blow the board.

- Heavy Duty
- · Highly Abrasion Resistant
- Increased Pressure And Vacuum Resistance
- Odorless And Tasteless
- Microbe And Hydrolysis Resistant
- Good Resistance To Oil, Gasoline, And Chemicals
- · Very Good Low Temperature Flexibility

Available in 50 ft. rolls. Order by the foot or by the roll.

Conveniently stamped with IMS part number and phone number throughout the hose

Tech Tips

IMS recommends using static wire hose to ground all its loaders.

We carry everything for your material handling needs:

• Elbows • Clamps • Joiners • Reducers



IMS Anti-Static Polyurethane Wired Hose

Heavy Duty, Microbe Resistant, with Ground Wire - Anti-Static

Specifications

Wall: Transparent

Helix: Spring steel wire firmly embedded in wall

Inside: Smooth bore

Outside: Permanently antistatic premium ester-polyurethane

Material: Antistatic Polyurethane Hose

Temp. Range: -40°F to 195°F, short time to 255°F

Embedded static wire prevents the build-up of static electricity and helps to keep material flowing smoothly.



Specifications and Prices						
Item #: 172221 172223 172215 172225						
Inside Diameter:	1" I.D.	11⁄4" I.D.	1½" I.D.	1¾" I.D.		
Outside Diameter:	1.26"	1.65"	1.89"	2.17"		
Bending Radius*:	0.79	1.02"	1.14"	1.30"		
Vacuum (in HG):	29.53 in/Hg	29.53 in/Hg	29.53 in/Hg	27.02 in/Hg		
Weight (lbs./ft.):	0.190	0.295	0.350	0.403		
Price Per Foot	\$3.40	\$3.50	\$3.90	\$4.75		

Item #:	172216	172230	172232
Inside Diameter:	2" I.D.	21/2" I.D.	3" I.D.
Outside Diameter:	2.36"	2.36" 2.95"	
Bending Radius*:	1.36"	1.67"	2.58"
Vacuum (in HG):	n (in HG): 24.36 in/Hg		14.91 in/Hg
Weight (lbs./ft.): 0.445		0.565	0.705
Price Per Foot	\$5.25	\$6.75	7.25

* at 68°F

Available up to 6" - Inquire

NOTE: Static wire loader hose needs to be grounded to work. Simply strip away the jacketing of the loader hose to expose the wire and ground it. If grounding to the loader body, make sure your loader controls are grounded; otherwise the charge may blow the board.

- · Heavy Duty
- · Highly Abrasion Resistant
- Increased Pressure And Vacuum Resistance
- · Odorless And Tasteless
- Microbe Resistant
- Good Resistance To Oil, Gasoline, And Chemicals
- · Very Good Low Temperature Flexibility
- · Permanently Antistatic Wall

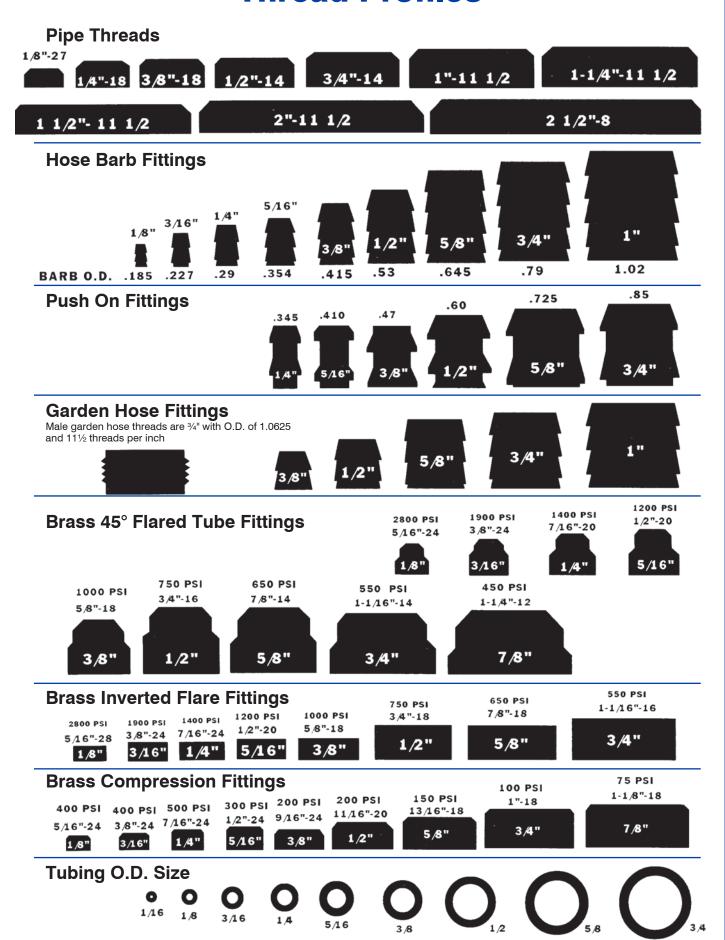
Available in 50 ft. rolls. Order by the foot or by the roll.

Conveniently stamped with IMS part number and phone number throughout the hose



Fittings, Manifolds & Hose

Thread Profiles

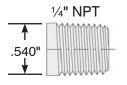


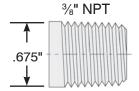
Quick Change Fittings & Thread Profile Sizing

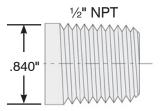
All Fittings Shown Actual Size

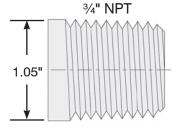
Simply hold your fitting up to the appropriate profile to determine the NPT, Series or Barb Size.

Common Pipe Thread









Coupler / waterline / thread Quick reference charts

Coupler specifications

Series - Body Size	200 - 1/4"	300 - 3/8"	500 - 1/2"
Rated Pressure (PSI)	200	200	200
Rated Flow (GPM)	3	6	12

Coupler seals

Material	Temperature Range
Standard Silicone Seal	-90° to +400° F
Optional Flourocarbon Seal*	-15° to +400° F

1.8

4.8

9.1

14.3

1.5

8.7

14.2

17.3

18.5

43.2

64.8

77.7

Differential Pressure (P1-P2) PSI

50

2.4

6.0

10.9

16.5

2.7

13.6

27.3

30.9

25.4

48.6

69.5

87.8

100 +

2.8

8.9

11.8

16.6

6.9

17.5

28.0

42.8

25.7

50.4

70.5

95.2

25

2.3

5.3

10.1

15.8

2.0

12.8

20.9

25.7

20.0

45.5

67.4

80.3

Water Capacity (gpm)

 P_2

Variation

5 PSI

10 PSI

15 PSI

20 PSI

5 PSI

10 PSI

15 PSI

20 PSI

5 PSI

10 PSI

15 PSI

20 PSI

*For use with oil based fluids only

Pipe

Size

1/2"

&

3/4"

1"

11/4"

11/2"

&

2"

500 Series Coupler



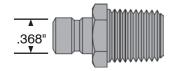
300 Series Coupler



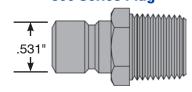
200 Series Coupler



200 Series Plug



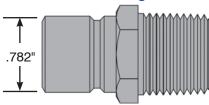
300 Series Plug



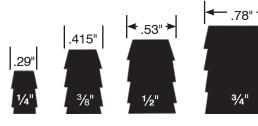
Pipe Thread Data

Pipe Size	Threads Per Inch		Inside Diameter of Pipe	Tap Drill Size Without Ream With Ream	
1/4	18	.540	.364	7/16	27/64
3/8	18	.675	.493	9/16	9/16
1/2	14	.840	.622	45/64	11/16
3/4	14	1.050	.824	29/32	57/64

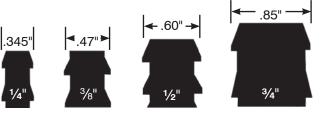
500 Series Plug



Common Standard Hose Barbs



Common Push-On Hose Barbs





418 – 421

Misc. Shop Access.

Bench Top Scales

Stopwatches 425 – 427

Air Guns, Tips & Hose

Static Eliminators 433 – 444

Hand, Arm & Finger Protection 445 – 450

Hairnets, Ear Plugs & Respirators 451 – 452

> Eye & Face Protection 453 – 454

Absorbent Products 455 – 456

Hand & Power Tools 458 – 461

> Tape Measures 462 - 463

Part Removal Systems 464 – 468

General Industrial Supplies



Most items IN STOCK for Same Day Shipment



Process Trouble-Shooting Guidelines					
	CRYSTALL	INE MATERIALS	AMORPHO	US MATERIALS	
Problem	Lower/Reduce Raise/Increase		Lower/Reduce Raise/Increase		
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp	
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size	
	Injection Speed	Gate Size	Injection Pressure		
Splay	Mold Release Spray		Screw Speed		
			Hold Pressure Time		
			Venting		
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure	
	Mold Temp		Mold Temp		
Flash	Injection Pressure		Injection Pressure		
i idon	Hold Pressure Time		Injection Speed		
	Injection Speed		,		
	Melt Temp	Mold Temp	Melt Temp	Mold Temp	
	Moisture Content	Gate Size	Moisture Content	Gate Size	
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure	
		Back Presure	Injection Speed	Back Pressure	
		Hold Pressure Time	josaon opesa	Hold Pressure Time	
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time	
\\/	Mold Temp	Injection Pressure	Mold Temp	Cooling Time	
Warpage	Injection Pressure	,	Injection Pressure		
	goddon i Tobouro		Back Pressure		
	Mold Temp	Melt Temp	Mold Temp	Gate Size	
	Wold lellip	Gate Size	Word Terrip	Injection Pressure	
		Injection Pressure		Hold Pressure Time	
0:-1:-		Hold Pressure Time		Injection Speed	
Sinks		Injection Speed		Venting	
		Cushion		veriling	
		Venting		Malk Taura	
		Melt Temp		Melt Temp	
		Mold Temp		Mold Temp	
Short		Gate Size		Gate Size	
Shot		Injection Pressure		Injection Pressure	
		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
				Venting	
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp	
		Mold Temp		Mold Temp	
Glossiness		Injection Pressure		Injection Pressure	
Giossiriess		Injection Speed		Hold Pressure Time	
		Venting		Injection Speed	
				Venting	
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray	
Parts	Mold Temp		Mold Temp		
Sticking	Injection Pressure		Injection Pressure		
Sucking	Hold Pressure Time		Hold Pressure Time		
	Cooling Time		Cooling Time		
	Injection Speed		Injection Speed		
	Melt Temp	Gate Size	Moisture Content	Gate Size	
	Moisture Content	Venting	Injection Pressure	Venting	
	Injection Pressure		Back Pressure		
	Back Pressure		Screw Speed		
Brittleness	Screw Speed		Hold Pressure Time		
	Hold Pressure Time		Cushion		
	Cushion		Regrind		
	Regrind		Mold Release Spray		
	Mold Release Spray				
Burn	Injection Pressure	Venting	Melt Temp	Gate Size	
Marks	Injection Speed		Injection Pressure	Venting	
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp	
	Injection Speed	Gate Size		Gate Size	
	Moisture Content	Melt Temp	Moisture Content	Melt Temp	
		Mold Temp		Mold Temp	
		Gate Size		Gate Size	
Weld		Injection Pressure		Injection Pressure	
Lines		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
		Venting		Venting	
	Injection Speed	Melt Temp	Injection Speed	Melt Temp	
Jetting	Hold Pressure Time	Mold Temp	,	Mold Temp	
Journal	Injection Pressure	Gate Size		Gate Size	
	Injection r lessure	Suit Oile		Guio Gizo	

LED Magnetic Corded Work Light

Perfect For On-The-Press Mold Illumination!

Avoid costly damage to your molds, use an LED magnetic work light

Many Uses in your Molding Shop. Helps your operators see what they are doing!

Item #169590

2 Folding Swivel Hooks, 2 Removable Rotating Magnets, Top and Bottom Protective Bumpers, Finger Grips and Push Button On/Off

\$45.00 ea

Buy 4 or more SAVE 5%: \$42.75 ea

Specifications







Wiping & Polishing Rags

For General Molding Shop Use

Perfect for Cleaning and Polishing:

Presses, Tools, etc

- · Made of recycled cotton material
- · Super soft
- Low lint
- Washable
- · Mixed colors and sizes

Now take advantage of quantity breaks to lower your cost.

25 lb box - approximately 200 rags

Item #149055: \$27.42 ea.

(2 or more 25 lb boxes): 25.05 ea.



Punchout Hole (perforated) for easy rag removal



Carton Clips

Many Molding Shop Uses

· Hold box flaps down

Allow closer box to personnel placement – eliminate leaning and reaching

Help prevent conveyed boxes from snagging / tipping

· Great for holding gaylord liners in place



#137148: \$0.94 ea.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada) **1.866.467.9001**

Industrial Cleaning Pads

6" X 9", Nylon-Based Pads Can be Used to Clean, Polish or Finish Just About Anything!



Pads can be purchased individually or in groups of 10 for discount

Item #	Color	Grade	For	From	Unit Price
137309	Black	Blending & Finishing	Paint Removal	Stainless Steel and Metal	\$4.97
137305	Brown	Heavy Duty	Removing heavy rust and cleaning welds	Metal	4.97
137307	Maroon	General Purpose	Cleaning and brightening	Metal	2.32
137311	Green	General Cleaning	Stripping paint and varnish	Metal and Wood	1.65
137313	Gray	Ultra Fine	Sanding before/ between finish coats	Metal and Wood	2.11
137315	White	Light Duty	Light Cleaning and Polishing	Fiberglass, Vinyl Plastic, Formica, Ceramic	2.30

137318 Sampler Pack, One of Each Pad Above \$12.50





IMS is a Proud Distributor of **OHAUS Scales**



Analytical Balances

- Discovery
- Adventurer Pro
- Explorer
- Pioneer



Compact Bench Scales

- Valor
- FD Food Portioning
- Ranger
- Trooper



Precision Balances

- Explorer NTEP
- Explorer High Capacity
- MB Moisture Analyzers Adventurer Pro NTEP



Counting Scales

- Ranger Count Plus
- EC
- Trooper Count
- EB



Portable Balances

- Navigator
- CS/CL
- Scout
- Handheld



Bench/Floor Scales

- Defender
- ES Series
- VX/VN Floor
- CKW Checkweigher



- Field Test
- Spring
- Triple Beam
- Harvard Trip



Indicators & Bases

- Defender Bases
- CKW Indicators
- VN Floor Scale Bases
- 7000, 5000, 3000 Series

Contact the IMS Supplies Team at sales@imscompany.com for more details



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

OVERVIEW

OHAUS Triple-Beam Mechanical Balance Scale

Controlling Molded Part Quality and Your Cost Begins With Accurate Part Weight!

Also for Dry-Color and Additives

- · Magnetic damper for faster weighing
- · Stainless steel plate
- · Spring loaded zero adjustor compensator
- · 3 notched and tiered beams with center reading

Capacity: 610g

(with weights) 2,610g

Capacity x Readability: (front beam) 10g x 0.1g

(middle beam) 500g x 100g (rear beam) 100g x 10g



100g poise

Dimensions: 18" I x 12" w x 9" h

5 Year Warranty

Item #	OHAUS #	Description	Unit Price	
103793	750-S0, 707-00	Triple-Beam Balance complete with #103814 weights	\$260.00	
103800	750-S0	Triple-Beam Balance (weights are not included)	200.00	
Optional Accessories				
103814	707-00	Weights (set of 3; 2-1000g, 1-500g)	\$61.00	

Compact Scales

2,000 Gram Capacity

- · Displays oz, g, ozt and dwt
- Includes 500g calibration weight
- · Parts-counting mode
- Energy-saving auto shut off
- Large weighing bow and cover/tray
- Easy to read backlit LCD display





Item #164031

Capacity x Readability: 2000g x 0.1g (72 oz./0.035 oz.)

Power Requirements: 6V Includes 4 AAA Batteries

(AC adapter not included)

Platform Size: 5.8" dia. stainless steel
Dimensions: 6.75"W x 7.5"L x 1.5"H

Shipping Weight: 4 lb. (1.8 kg)

Item #164031

\$54.00

5,000 Gram Capacity

- Weighing Modes: Grams and Ounces w/Tare
- Backlit LCD Display
- Large Weighing Bowl
- Tested to comply with FCC standards
- Unit can be calibrated in-house



Item #146525

5 Year Warranty

Capacity x Readability: 5000g x 1g

Power Requirements: AA batteries (included)

Color: Black

Platform Size: 4.7" dia.

Note: The primary reasons for inaccuracy and malfunction are low batteries, incorrect calibration, overload or operating on an unstable surface.

Dimensions: 7.4" dia. x 2.25"H (without bowl)

Overloading the scale will void the warranty.

Item #146525

\$12.23



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

OHAUS Electronic Scales

For Fast, Accurate Weighing Of Small Parts (Also For Dry-Color And Additives)

220 Gram Capacity

- 6 application modes weighing, parts counting, % weighing, check weighing, totalization, display hold
- Displays kt, gr, g, kg, n, oz, ozt, dwt, lb, lb:oz
- · Determines density and specific gravity
- Includes a standard 200g mass for easy calibration
- Easy-to-use 4 button operation
- Weight below hook allows for density determination or specific gravity calculation. Hook stores in battery compartment
- Mechanical and software protection provides superior resistance against shock and overloading
- · Built-in security bracket, lock-switch and shipping lock
- · High contrast LCD display

Stabilization Time: 1 sec.

Power Requirements: 5V AC adapter (included) or (4) AA batteries

Operating Temp.: 50° F to 104° F (10° C to 40° C) Display: LCD with 6 digits 0.78in/20mm high

Platform Size: 4.7" dia. (stainless steel) Dimensions: 8.0"W x 8.8"L x 2.1"H Shipping Weight: 3.3 lb. (1.0 kg)



3 Year Warranty

Item #	OHAUS #	Capacity x Readability (grams)	Linearity	Repeatability (std. dev.)	Unit Price includes calibration mass & instructions
168495	SPX222	2000g x 0.01g	±1.0g	0.01g	\$631.00

2,200 Gram Capacity

- Displays oz, g, lb:oz
- Easy-to-use 2 button operation
- · Stainless steel weighing pan
- · High contrast LCD display
- · Energy-saving auto shut off
- · Low battery indicator
- Optional AC adapter: 173191, \$21.60



Stabilization Time: 3 sec. Power Requirements: AC adapter (optional) or

3 AA batteries (included)

Operating Temp.: 65°F to 77°F (18°C to 25°C) Display: LCD 0.7"/18mm high

Dimensions: 5.3"W x 7.9"L x 1.6"H Weight: 1.1 lb. (0.51 kg)

2,200 Gram Capacity

- Displays oz, g, lb:oz, pennyweight
- Easy-to-use 2 button operation
- · ABS weighing pan
- · High contrast LCD display
- · Energy-saving auto shut off
- · Low battery indicator
- Optional AC adapter: 173192, \$34.20



Item #171758

Stabilization Time: 3 sec.

Power Requirements: 3 AA batteries (included)

or AC adapter (optional)

1 Year Warranty

Operating Temp.: 65°F to 77°F (18°C to 25°C) Display: LCD 0.6"/15mm high

Dimensions: 5.5"W x 8.1"L x 1.6"H Weight: 0.9 lb. (0.4 kg)

1 Year Warranty

Item # OHAUS # Capacity x Readability Linearity Repeatability **Unit Price** includes calibration mass and instructions (grams) (std. dev.) 2200g x 0.01g 173190 CX2200 ±1.0g 1g 205.00

 $\pm 1.0g$



CR2200

www.imscompany.com

2200g x 0.01g

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

147.00

1g

171758

	Pro	ocess Trouble-Shoo	ting Guidelines		
CRYSTALLINE MATERIALS			AMORPHOUS MATERIALS		
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase	
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp	
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size	
	Injection Speed	Gate Size	Injection Pressure	5.4.6 5.25	
Splay	Mold Release Spray	34.0 0.20	Screw Speed		
			Hold Pressure Time		
			Venting		
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure	
	Mold Temp	·	Mold Temp	·	
Flash	Injection Pressure		Injection Pressure		
	Hold Pressure Time		Injection Speed		
	Injection Speed				
	Melt Temp	Mold Temp	Melt Temp	Mold Temp	
	Moisture Content	Gate Size	Moisture Content	Gate Size	
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure	
		Back Presure	Injection Speed	Back Pressure	
		Hold Pressure Time		Hold Pressure Time	
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time	
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time	
	Injection Pressure		Injection Pressure		
			Back Pressure		
	Mold Temp	Melt Temp	Mold Temp	Gate Size	
		Gate Size		Injection Pressure	
		Injection Pressure		Hold Pressure Time	
Sinks		Hold Pressure Time		Injection Speed	
		Injection Speed		Venting	
		Cushion			
		Venting			
		Melt Temp		Melt Temp	
		Mold Temp		Mold Temp	
Chart		Gate Size		Gate Size	
Short Shot		Injection Pressure		Injection Pressure	
31101		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
				Venting	
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp	
		Mold Temp		Mold Temp	
Glossiness		Injection Pressure		Injection Pressure	
Giossiness		Injection Speed		Hold Pressure Time	
		Venting		Injection Speed	
				Venting	
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray	
Parts	Mold Temp		Mold Temp		
Sticking	Injection Pressure		Injection Pressure		
Sticking	Hold Pressure Time		Hold Pressure Time		
	Cooling Time		Cooling Time		
	Injection Speed		Injection Speed		
	Melt Temp	Gate Size	Moisture Content	Gate Size	
	Moisture Content	Venting	Injection Pressure	Venting	
	Injection Pressure		Back Pressure		
	Back Pressure		Screw Speed		
Brittleness	Screw Speed		Hold Pressure Time		
	Hold Pressure Time		Cushion		
	Cushion		Regrind		
	Regrind		Mold Release Spray		
	Mold Release Spray				
Burn	Injection Pressure	Venting	Melt Temp	Gate Size	
Marks	Injection Speed		Injection Pressure	Venting	
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp	
	Injection Speed	Gate Size		Gate Size	
	Moisture Content	Melt Temp	Moisture Content	Melt Temp	
		Mold Temp	-	Mold Temp	
Weld		Gate Size	-	Gate Size	
Lines		Injection Pressure	-	Injection Pressure	
55		Hold Pressure Time		Hold Pressure Time	
		Injection Speed		Injection Speed	
	Lainetina O	Venting	I Inication C	Venting	
latt'	Injection Speed	Melt Temp	Injection Speed	Melt Temp	
Jetting	Hold Pressure Time	Mold Temp		Mold Temp	
	Injection Pressure	Gate Size		Gate Size	

	1	ocess Trouble-Shoo	-,-	IO MATERIA: 0
Problem	CRYSTALLIN Lower/Reduce	NE MATERIALS Raise/Increase	AMORPHOL Lower/Reduce	JS MATERIALS Raise/Increase
1 10010111	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
		· · · · · · · · · · · · · · · · · · ·		Gate Size
Splay	Injection Speed	Gate Size	Injection Pressure	
-	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time	ingerior epice	Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
Warpage	<u> </u>	injection Fressure	Injection Pressure	Cooling Time
	Injection Pressure		+ ·	
	Mold Town	Malt Town	Back Pressure	Cot- Oi
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
		Injection Speed		Venting
		Cushion		
		Venting		
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Short		Injection Pressure	1	Injection Pressure
Shot		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		Injection opeca		Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
	Word Helease Spray	Mold Temp	Widd Helease Spray	Mold Temp
		Injection Pressure	+	Injection Pressure
Glossiness				Hold Pressure Time
		Injection Speed		
		Venting		Injection Speed
			1	Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
Dorto	Mold Temp		Mold Temp	
Parts	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	J
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
Dimilorioss	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
	Mold Release Spray		1.4.0.7	0 + 5:
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed		Injection Pressure	Venting
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp
	Injection Speed	Gate Size		Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Weld		Injection Pressure	1	Injection Pressure
Lines		Hold Pressure Time	+	Hold Pressure Time
		Injection Speed	-	Injection Speed
	1	Venting		Venting
	Injection Speed	Melt Temp	Injection Speed	Melt Temp
Jetting	Hold Pressure Time	Mold Temp		Mold Temp

	Pr	ocess Trouble-Shoo	tina Guidelines	
		IE MATERIALS		JS MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	-
Splay	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
Voids	Moisture Content	Gate Size	Moisture Content	Gate Size
7 3 1 4 1	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
	Melt Temp	Hold Pressure Time Cooling Time	Melt Temp	Hold Pressure Time Hold Pressure Time
	Mold Temp	Injection Pressure	Mold Temp	
Warpage	Injection Pressure	injection riessule	Injection Pressure	Cooling Time
	injection i ressure		Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
On no		Injection Speed		Venting
		Cushion		
		Venting		
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
Short		Gate Size		Gate Size
Short		Injection Pressure		Injection Pressure
SHOL		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
				Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
Glossiness		Injection Pressure Injection Speed		Injection Pressure Hold Pressure Time
		Venting		Injection Speed
		venting	+	Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
	Mold Temp	Word Helease Spray	Mold Temp	Word Helease Spray
Parts	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
Б	Mold Release Spray	\/\ti	Mark Tara	0-4- 0'
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed	Mold Tomp	Injection Pressure	Venting Mold Temp
Delamination	Melt Temp Injection Speed	Mold Temp Gate Size	Moisture Content	Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
	Woodare Content	Mold Temp	Worstand Content	Mold Temp
		Gate Size	+	Gate Size
Weld		Injection Pressure	+	Injection Pressure
Lines		Hold Pressure Time	1	Hold Pressure Time
		Injection Speed	1	Injection Speed
		Venting	1	Venting
	Injection Speed	Melt Temp	Injection Speed	Melt Temp
Jetting	Hold Pressure Time	Mold Temp	<u>'</u>	Mold Temp
9	Injection Pressure	Gate Size		Gate Size

All Purpose, Vac-u-Gun™ System

A Low Cost Solution To A Wide Variety Of Industrial Housekeeping Problems

Can be used as a powerful vacuum gun, as an efficient blow gun or as a transfer tool for lightweight material (Conversion is simply a matter of reversing the direction of the nozzle insert)

Great for:

· Vacuuming shavings, chips, absorbent, sawdust, spills

• Blowing shavings, chips, scrap, coolant, water

· Transferring small parts, pellets, trim, dust

How it Works

Vac-u-Gun injects a small amount of compressed air through directed nozzles to produce a vacuum on one end and an output flow (12 times the air consumption rate) on the other.





Specifications

• Pressure Supply required: 80 psi

• Air Consumption: 13 SCFM, 368 SLPM

• Air Inlet: 1/4" NPT

Item #138472

Includes: Air Gun, Re-usable Collection Bag, 10 foot Vacuum Hose, Brush, Crevice Tool, Skimmer Tool and (2) 191/4" Extension Wands.

\$184.00





Vac-u-Gun™ is a trademark of Exair Corp.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Low Cost Safety Air Gun

Unique Design Provides a Full Flow Volume Stream of Air at a Safe 30 PSI or Less

Quiet

Built-in air silencer

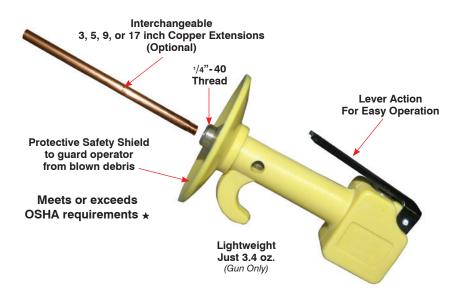
Rugged

Made of super tough Molded nylon

Lightweight

Tamper Resistant

Maintenance-free



Air Inlet 1/4" Female N.P.T.

★ OSHA - Meets or exceeds requirements of OSHA 1910.95 (noise level) and 1910.242 (b). (Compressed air shall not be used for cleaning purposes except where reduced to less than 30 PSI and then only with effective chip guarding and personal protective equipment.)

Item #	n # Description	
101197	Safety Air Gun (Extension pipe not included)	\$18.09
Optional Accessories		
101153	5" Copper Extension Pipe	\$3.99
116558	9" Copper Extension Pipe	4.78
116557	17" Copper Extension Pipe	5.45





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

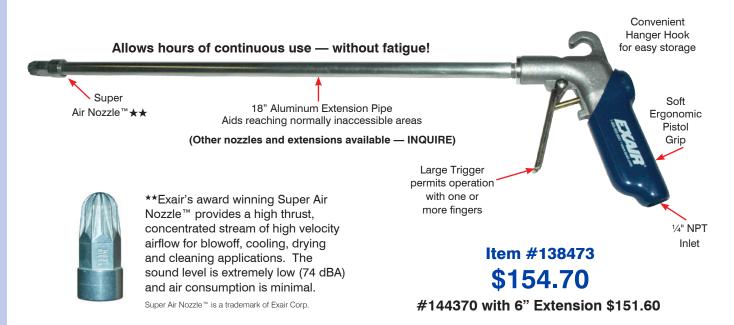
tech support toll-free (USA & Canada) 1.866.467.9001

Heavy Duty, Cast Aluminum Air Guns

Designed for Quiet, Safe and Efficient Use of Compressed Air and Long Service Life

Soft Grip, Safety Air Gun

Complete with 18" extension and Super Air Nozzle



Economical, Lever-Action Air Guns

Heavy Duty Die Cast Construction

Reduces 125-lb. line pressure to 30 lbs. It also features an air cone chip guard and pressure relief holes specified by law.



\$9.07

Great for blowing water out of mold passages

"/s" NPT
Outlet

\$10.99

Remember! Always use eye protection when cleaning with air!



Tips and Accessories

For Use on Heavy Duty Die Cast Air Guns

Specifications and Prices				
Item #	Description	Unit Price		
118327	Cleaning Tip: Wide open tip pressures: 100 - 125 lbs. ½ male N.P.T.	\$1.58		
118352	Rubber Cleaning Tip Wide open tip pressures: 100 - 125 lbs. 1/8 male N.P.T. Great for Blowing Out Mold Passages	3.45		
118353	OSHA Safety Tip Reduces 125-lb. line pressure to 30 lbs.; features air cone chip guard and pressure relief holes specified by law. 1/8 male N.P.T.	1.89		
104439	Adjustable Air Saver Tip Air Consumption Chart Delivers 25 times greater air flow than actual compressed air input; greatly decreases energy costs and noise levels. ½ male N.P.T. INLET PRESSURE. PSIG	29.03		
104396	12" Aluminum Extension Tube (1/8" N.P.T.)	4.48		
104321	Female Quick Disconnect Fitting Easy tip changing, shuts off air flow on tip removal 1/8 male N.P.T.	5.39		



Tech Tips

To prevent accidents, always leave a 30 psi safety tip in guns not being used for specific authorized cleaning jobs.



		Process Trouble-Shoo	ting Guidelines	
CRYSTALLINE MATERIALS		AMORPHOUS MATERIALS		
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	
Splay	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time		Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
, waipago	Injection Pressure		Injection Pressure	
			Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
On mo		Injection Speed		Venting
		Cushion		
		Venting		
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Short		Injection Pressure		Injection Pressure
Shot		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		, ,		Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
		Injection Pressure		Injection Pressure
Glossiness		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
				Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
	Mold Temp		Mold Temp	
Parts	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure	Tonung	Back Pressure	ronung
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
Dillioness	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
	Mold Release Spray		Word Holedae Opilay	
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed	venung	Injection Pressure	Venting
	Melt Temp	Mold Temp	Moisture Content	Mold Temp
Delamination	Injection Speed	Gate Size	Woodard Content	Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
	Moistare Someni	Mold Temp	Wolstars Content	Mold Temp
		Gate Size	+	Gate Size
Weld		Injection Pressure	+	Injection Pressure
Lines		Hold Pressure Time	-	Hold Pressure Time
		Injection Speed		Injection Speed
	Injection Creed	Venting Melt Temp	Injection Cased	Venting Molt Tomp
lottin ~	Injection Speed	Melt Temp	Injection Speed	Melt Temp
Jetting	Hold Pressure Time	Mold Temp		Mold Temp
	Injection Pressure	Gate Size		Gate Size

Self-Coiling Air Hoses

IMS Self-Coiling Air Hose Assemblies are Compatible With Most Air Tools That Have N.P.T. Female Thread or Quick-Disconnect Fittings

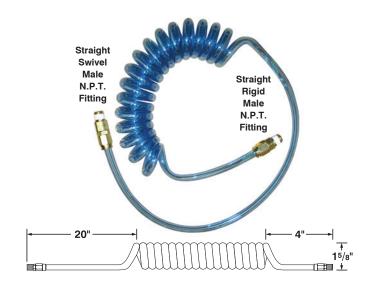
Nylon Recoil Assemblies

4" coils with male swivel fittings



Polyurethane Recoil Assemblies

2" coils with rigid and swivel fittings



- Durable Nylon Tubing Yellow
- 4" Coil Diameter Compact and easy to maneuver
- · Swivel Fittings on Both Ends

- Durable Kink Resistant Polyurethane Tubing Clear
- 2" Coil Diameter Compact and easy to maneuver
- · Swivel and Rigid Fittings on Either Ends

Specifica	Specifications and Prices					
Maximum s	afe operating p	oressure: 180	psi			
Item #	Hose I.D.	Length	Unit Price			
Straigl	nt Swivel Male	Fittings On Eac	h End			
135039	1/4"	50'	\$37.52			
135041	3/8"	25'	46.31			
135042	135042 ³ / ₈ " 50' 75.26					
135043 ½" 12' 53.70						
135045	1/2"	50'	75.37			

Specifications and Prices						
Working	Pressure: 12	5 psi at 75° F				
Item #	Hose I.D.	Length	Unit Price			
Straigl	nt Swivel Male	Fittings On Eac	h End			
118197	1/4"	10'	\$25.36			
135032	1/4"	25'	34.50			
135034	135034 3/8" 25' 59.19					
135035 ½" 10' 71.85						
135036	1/2"	25'	113.11			

Note: To comply with OSHA Regulation 1910.242(b), select a hose and air gun combination designed to reduce your tip pressure to less than 30 psi when using compressed air for cleaning.

For Air Guns see pages 428-430
For Quick Disconnect Fittings see page 431



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Tech Tips

Eliminate Static and Dust!

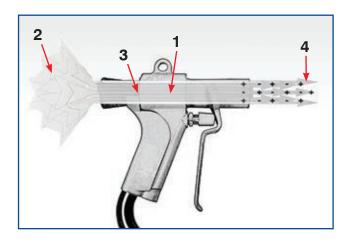
When the air is dry, passing objects strip electrons from each other and develop a static charge. It can cause shocks up to 10,000 volts in people - painful, but not lethal. In plastics production, static can be lethal ... to profits. Parts can jam up and dust attraction can ruin the product appearance.

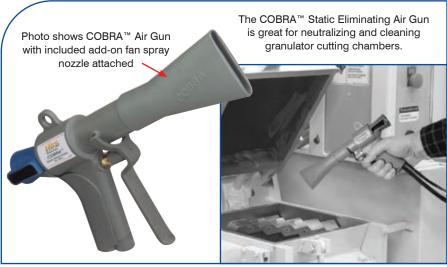
The COBRA™ Air Gun solves the problem by removing the static charge and blowing off dust at the same time.

It is also great for cleaning mixers, hoppers, grinders, storage containers and loaders - anywhere that plastic tends to stick to your machinery. The COBRA™ breaks the static-electric bond between the metal and the dust and fines, then easily blows them away.

At a normal line pressure of 80 PSI, the air gun's high volume stream of ionized air can drop an object's voltage from 5,000 volts to 500 volts in 0.4 seconds at a distance of 3". That is fast.

To minimize air consumption, the COBRA™ uses airflow amplification to induce surrounding room air through the gun at a 3:1 ratio.





Here Is How It Works

Compressed air is released into the barrel of the gun (1) inducing a high volume flow of surrounding air (2) to pass through it. The shockless emitter point (3) ionizes the entire airstream. The result is a high volume flow of ionized air (4) capable of neutralizing high static charges in fractions of a second.

The COBRA™ Air Gun is lightweight and includes a hanger hook for easy storage. The 20 foot power cable is extremely flexible and designed for rugged industrial use. An ergonomic grip allows hours of continuous use without fatigue.

Other advantages include:

- · Strong blowoff force and flow
- · Shockless, non-radioactive
- Meets OSHA pressure and noise level requirements

If you need help with a static problem, contact our Technical Support Hotline at 1-866-467-9001. IMS has a complete line of static eliminators and will be glad to help you select the appropriate model for your application.

CAUTION: Wear proper safety equipment and follow safety procedures when using compressed air guns.

COBRA™ is a trademark of Simco Industrial Static Control



COBRA™ Static-Neutralizing Air Gun

GREEN Products

Eliminates Static-Caused Particle Attraction on Large and Hard-To-Reach Surfaces



	Specifications
Air Gun	
Maximum Pressure:	100 psi*; 1/4" N.P.T. connector
Air Consumption:	14 SCFM at 50 psi; 22 SCFM at 100 psi
Outlet Air Pressure:	Pressure relief in gun body complies with OSHA requirements
Outlet Air Flow:	80 CFM at 50 psi; 130 CFM at 100 psi
Ion Balance:	±100 v at 6"
Discharge Time (gun only)):	0.6 seconds at 6" and 30 psi (1,000v to 100v) 0.5 seconds at 6" and 100 psi (5,000v to 500v)
Discharge Time (gun w/ accessory nozzle):	0.7 seconds at 6" and 30 psi (1,000v to 100v 0.5 seconds at 6" and 100 psi (5,000v to 500v)
Noise Level (measured 2 ft. from unit):	92 dB at 30 psi; 96 dB at 60 psi; 101 dB at 100 psi
Weight (gun with 20' cable):	1.5 lbs.
Power Supply	
Input:	120 v, 50/60 Hz., 0.25 A
Output:	5.1 KVAC, 5mA max short circuit current, floating secondary
Size:	5 ³ / ₈ " l x 3 ⁷ / ₈ " w x 4 ¹ / ₂ " h
Weight:	6.6 lbs.

^{*}Filter/Separator required to remove dirt, compressor oil and water.

Item #130679

Includes: Air Gun with 20 ft. cable, Add-On Fan Spray Nozzle, Storage Hook, Cable Strain Relief and G165 (120v) Power Supply

\$811.00

#134997	Same as above (with 40 ft. cable)	\$892.31
	Optional Accessories	
#133242	G165 (120v) Power Supply	\$408.41
#133035	G255 (230v) Power Supply	Inquire
#133036	Air Gun with 40 ft. Cable	511.00
#133037	Air Gun with 20 ft. Cable	436.48

COBRA™ is a trademark of Simco Industrial Static Control



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Tech Tips

Eliminate Static and Dust!

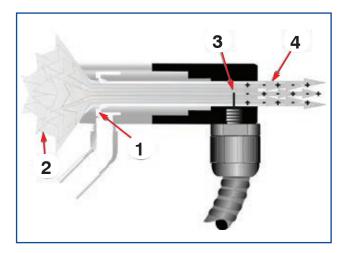
When the relative humidity is low (below 40%), your feet strip electrons off the carpet and you eventually experience a painful discharge, often near 10,000 volts. The current is too low to kill people, but can be lethal to machines where parts and materials jam up or where dust attraction ruins the product appearance.

The Ion Air Gun is the solution! It effectively removes the static charge that causes the attraction of dust, plastic particles and fines as well as eliminating static electricity shocks. In addition to cleaning the finished product, it's the



The Silencer Static Eliminating Air Gun is great for neutralizing and cleaning granulator cutting chambers.





easy way to clean molds, mixers, hoppers, grinders, storage containers and loaders.

This hand-held ionizer gives you the benefits of rapid static decay along with low compressed air consumption. Surrounding room air is induced through the gun at a ratio of 5:1, minimizing compressed air use and maximizing airflow. The force can be adjusted from a "blast" to a "breeze". At a normal line pressure of 80 PSIG, the high volume stream of ionized air is capable of neutralizing a 5,000 volt charge in 0.18 seconds! That's incredibly fast!

The Ion Air Gun incorporates a High Velocity Air Jet and electrically energized emitter point. A small amount of compressed air is injected into the barrel of the gun (1) inducing a high volume flow of surrounding air (2) to pass through it. The emitter point (shockless) at the discharge end of the gun (3) ionizes the entire airstream. The result is a high volume flow of ionized air (4) capable of neutralizing high static charges in fractions of a second. An optional filter and regulator cleans the compressed air and allows infinite adjustment of airflow and velocity.

The Ion Air Gun is quiet, lightweight and features a hanger hook for easy storage. The 10 foot shielded power cable is extremely flexible, designed for rugged industrial use. A comfortable grip and hand position allows hours of continuous use without fatigue.

Other advantages include:

- · Strong blowoff force and flow
- Quiet (less than 80 dBA)
- · Shockless, non-radioactive
- Meets OSHA pressure and noise level requirements
- Attractively priced

If you need help with a static problem, contact our Technical Support Hotline at 1-866-IMS-9001. IMS has a complete line of static eliminators and will be glad to help you select the appropriate model for your application.



436

Static Eliminating Ion Air Gun

Effectively Eliminates Static-Caused Particle Attractions Through the Entire Molding Plant!

- · Neutralize Static Electricity point and shoot
- Integrated Ground Design requires no separate ground connection
- 5:1 Air Amplification strong adjustable blow-off force and flow
- · Shockless, Non-radioactive
- Meets OSHA Pressure & Noise Level Requirements
 - Replaceable emitter point
 - Hanger hook for easy storage
 - Includes 10' extremely flexible, electromagnetically shielded, high voltage cable that protects against abrasion and cuts

Pressure Supply		Air Consumption		Sound Level	Dissipates 5kV*
PSIG	BAR	SCFM SLPM		dBA	Seconds
26	1.4	7.4	209	67	0.45
40	2.8	11.5	325	74	0.33
60	4.1	15.8	447	79	0.24
80	5.5	22.0	622	82	0.18
100	6.9	24.0	679	85	0.18

Use Wherever Static Electricity is a Problem!



Specifications and Prices

Input Voltage: 115/230 VAC (switching) Air Supply:

Input Current: .2/.1 amps max Connection: ½" N.P.T. inlet

Frequency: 50/60 Hz Air Amplification: 5:1 increase in air flow Output Voltage: 5000 Vrms Cable Length: 10' long, shielded

Max Ambient Temp: 165°F (74°C) Electrical Hazard: Shockless (<40 mA short circuited)

Max Range: Cleans upto 15' Electrical: For use with 5 kVrms, 5 mA (max)

Metal Construction: Brass, zinc and stainless steel Certifications: UL, CE and RoHS
Plastic Construction: UL rated 94 HB Weight (Air Gun): 2.6 lbs (with cable)

WARNING: DO NOT use near flammable materials or gases

Item #	Model	Description	Unit Price
167261	8193	Static Eliminating Air Gun complete with 10' cable and 1' air supply hose with quick disconnect	\$608.00
167311	8293	Static Eliminating Air Gun Kit complete with 10' cable and 1' air supply hose with quick disconnect and 120 VAC power supply	790.00
		Power Supply	_
167853	7960	2 Outlet 115V Power Supply with 6' Power Cord and Lighted Power Switch	\$557.00
168634	7961	4 Outlet 115V Power Supply with 6' Power Cord and Lighted Power Switch	690.00
			. 35

NOTE: Old style guns (118158 and 121182) must use old style power supplies



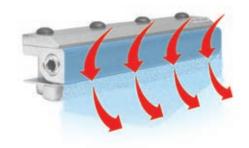
www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



Gen4 Air-Operated Air Knife Ionizer

Neutralize Static Charges



30% improved performance at lower pressures – saves compressed air and money!

The EXAIR-lonizer™ solves the problems of static charge build-up. Use on parts conveyors, parts discharge chutes, machine beds and worktables. Quickly and safely neutralizes static electricity on plastic parts, eliminating sticking parts, dust attraction and static shock hazards. Easy to install and use. Simply connect clean air and a power supply and mount close to the parts.

- Ionizing range: up to 20'
- · Cleans parts as it neutralizes
- Bar lengths from 6" to 48"
- Duplex outlet for use with two bar assemblies.
 Quadruple outlet optional.
- 6' grounded power cord with plug
- Ionizing bar with 5' connector cable
- Switchable power supply (115/230/60/1)
- 1/4"-18 N.P.T. air supply inlet

Note: Do not use near flammable materials or gases. Power supply, ionizing bar, and mounting surface must be well grounded.

The EXAIR-Ionizer™ has no moving parts. With proper filtration, it will operate for years with no maintenance required. (Proper filter must be used to maintain warranty.)

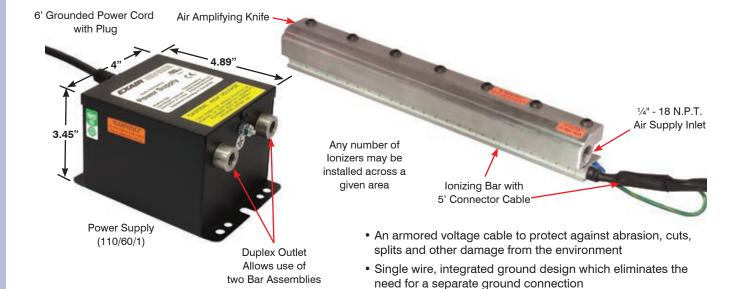
How the EXAIR-Ionizer™ works

The EXAIR-Ionizer™ consists of an EXAIR-Knife™ (see page 490) an electrically operated, air-ionizing bar, which creates a curtain of ionized air. This charged field of both positive and negative ions, imparts a balancing charge to any material passing near it. Though positive and negative ions recombine quickly, the air knife's high velocity air stream delivers the ion cloud to the work surface before the ions have an opportunity to recombine. Thus, the EXAIR-Ionizer™ can achieve effective neutralization at distances not possible before. The high velocity air stream from the EXAIR-Knife™ also blows loose dust and dirt from the neutralized surface.

Gen4 Standard Ion Air Knife Performance

		ir mption*	Sound Level	Dissipates 5kV**	
PSIG	BAR	SCFM	SLPM	dBA	Seconds
5	0.3	6	170	66	0.38
10	0.7	8	227	68	0.28
20	1.4	15	453	69	0.29
40	2.8	24	679	78	0.21
60	4.1	32	905	84	0.21
80	5.5	41	1160	87	0.21
100	6.9	49	1387	90	0.21

*per foot of length **6" from target



EXAIR® and EXAIR-Ionizer™ are trademarks of EXAIR Corp.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

· Electromagnetic shielding in all cables to protect electronics

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Specifications and Prices

Construction: Knife - aluminum (stainless steel available)

Ionizing bar:

- emitters - stainless steel

- bar channel - aluminum - plastic parts - UL rated 94HB

Ionizing bar cable will withstand 50kV

peak for 5 min.

Max. Ambient

165°F (73°C) Temperature:

Certifications: Ionizing bars are UL component

recognized (CSA certified)

Output: 5 kVrms for a sine wave

or 7kVpeak for other wave forms

(Use power supply limited to 5 mA max.)

Electrical

Hazard: Shockless (less than 0.04 mA per point

short circuited)

Air Inlets: 1/4" NPT on both ends

	Air Knif Ionizin		Air Knife, Ionizing Bar and Power Supply		
Air Flow Length*	Item #	Unit Price	Item #	Unit Price	Air Consumption [†] at 80 psi
3"	170563	\$433.00	170573	\$720.00	10.20 CFM
6"	170564	548.00	170574	790.00	20.40 CFM
9"	170565	618.00	170575	840.00	30.60 CFM
12"	170566	686.00	170576	889.00	40.80 CFM
18"	170567	811.00	170577	979.00	61.20 CFM
24"	170568	922.00	170578	1,060.00	81.60 CFM
30"	170569	1,083.00	170579	1,174.00	102 CFM
36"	170570	1,204.00	170580	1,260.00	122.40 CFM
42"	170571	1,341.00	170581	1,357.00	142.80 CFM
48"	170572	1,487.00	170582	1,467.00	163.20 CFM

Special length Ionizing Bars up to 119" are available — Inquire

Spare Parts					
	Ionizing Bar an	nd Cable Only	Standard A	ir Knife Only	
Air Flow Length*	Item #	Unit Price	Item #	Unit Price	
3"	170553	\$235.00	144313	\$180.00	
6"	170554	296.00	104468	210.00	
9"	170555	333.00	144314	254.00	
12"	170556	374.00	104467	268.00	
18"	170557	416.00	104471	347.00	
24"	170558	468.00	104470	403.00	
30"	170559	515.00	104469	497.00	
36"	170560	563.00	144310	567.00	
42"	170561	620.00	144311	643.00	
48"	170562	668.00	144312	736.00	

^{*}Actual length of knife is 1" greater than air flow length

NOTE: Air Knives can be combined for longer lengths. Due to the 1/2" of dead-space on each end of the knife, end to end mounting leaves 1" gaps in the air curtain. See Super Air Knife (page 443) for continuous end to end coverage.

> See Optional Accessories on next page (Shim Kits, Multiple Outlet Power Supplies, etc.)

Warning: Do not use near flammable materials or gases. Power supply, ionizing bar, and mounting surface must be well grounded.



e-mail



Air-Operated Air Knife Ionizer

Optional Accessories

Optiona	I Accessories	Unit Price
144315	3" Air Knife Shim Kit	\$17.00
134267	6" Air Knife Shim Kit	17.00
144316	9" Air Knife Shim Kit	20.00
134268	12" Air Knife Shim Kit	24.00
134269	18" Air Knife Shim Kit	27.00
144317	24" Air Knife Shim Kit	34.00
144318	30" Air Knife Shim Kit	37.00
144319	36" Air Knife Shim Kit	40.00
144320	42" Air Knife Shim Kit	50.00
144321	48" Air Knife Shim Kit	57.00
104454	Air Filter for #104450, #104447	114.00
104452	Air Filter for#104446, #104445, #104455	192.00
104451	Air Regulator for #104450, #104447	58.00
104448	Air Regulator for #104446, #104445, #104455	94.00
167853	2 Outlet Power Supply 115V	453.00
168634	4 Outlet Power Supply 115V	562.00
144339	Universal Air Knife Mounting System (use 2 mounting kits for knives over 24" long)	280.00

Tech Tips

Install a pressure gauge right before your air knife to insure you are receiving an accurate pressure reading. Use a tooth brush to keep Static Air Knife Ionizer clean for consistent operation.

Upgrade to a Super Air Knife

Greater air amplification with less noise.



Quiet (Approx. 69 dBA for most applications)

1/4" N.P.T. Compressed Air Inlets on both ends PLUS two more on bottom which can also be used for mounting NOTE: Lengths 24" and longer should be supplied with compressed air at each end to maintain uniform air flow

> Safe To Operate At Higher Pressures

Cannot Be "Dead-Ended"

Variable Velocity

Thickness of Plastic Shim between cap and body (.002" standard) determines force and flow of air stream. Thicker and thinner Shims (sets available below) can be used to increase or decrease airflow. A pressure regulator on the compressed air supply provides infinite control of flow, force and air consumption.

NOTE: Use of an Air Filter Separator is essential for proper operation.

See page 443 for details

Any number of knives may be installed across a given area



Compact Easy To Mount

Can be supported by the compressed air supply pipe.

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

High Volume Ion-Air Cannon™

Neutralizes Static at Distances up to 15 Feet!

22:1 Air Amplification

Stainless Steel Connections

115/230V Selectable Power Supply -

to operate the ionizing point

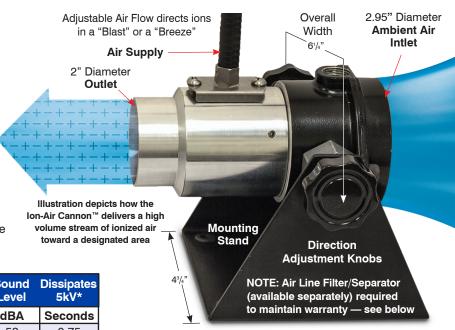
Integrated Ground Design -

requires no separate ground connection

Shockless, Non-radioactive

Meets OSHA Pressure & Noise Level Requirements

- · Replaceable emitter point
- Includes 5' extremely flexible, electromagnetically shielded, high voltage cable



Pressure Supply		Air Consumption		Sound Level	Dissipates 5kV*
PSIG	BAR	SCFM	SLPM	dBA	Seconds
26	1.4	5.7	161	58	0.75
40	2.8	11.5	255	64	0.60
60	4.1	12.2	345	70	0.50
80	5.5	15.5	439	72	0.43
100	6.9	18.7	529	74	0.37

*12" from target

Compressed Air Consumption: requires 10 PSIG for most applications

Specifications and Prices

Input Voltage: 115/230 VAC (switching)

Air Supply

Input Current: .2/.1 amps max Connection: % N.P.T. inlet

Frequency: 50/60 Hz Air Amplification: 22:1 increase in air flow

Output Voltage: 5000 Vrms Cable Length: 5' long, shielded

Max Ambient:Temp: 165° F (74° C) Electrical Hazard: Shockless (<40 mA short circuited)

Max Range: Cleans upto 15' Electrical: For use with 5 kVrms, 5 mA (max)

Max Range: Cleans upto 15' Electrical: For use with 5 kVrms, al Construction: Brass, zinc and stainless steel Certifications: UL, CE and RoHS

Metal Construction: Brass, zinc and stainless steel Certifications: UL, CE and RoHS
Plastic Construction: UL rated 94 HB Weight (Air Gun): 3.5 lbs (model 8192)

WARNING: DO NOT use near flammable materials or gases

Item #	Item # Model Description				
170051	8192	Ion Air Cannon includes Super Air Amplifier, Emmitter, Stand and 5' length of armored and electromagnetically shielded cable	\$1,389.00		
Power Supply					
167853	7960	2 Outlet 115V/230V Power Supply with 6' Power Cord and Lighted Power Switch	\$453.00		
168634	7961	4 Outlet 115V/230V Power Supply with 6' Power Cord and Lighted Power Switch	562.00		
		Accessory			
104454		Air Line Filter/Separator (3/8" N.P.T.)	\$114.00		

Ion-Air Cannon™ is a trademark of EXAIR Corp.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



Standard Air Knife™

Produces a Linear, High Velocity Curtain of Air

For non-contact blow-off, cleaning, drying and cooling of molded parts on conveyors, work tables, etc.

30:1 Air Amplification

Compressed air savings of 40 to 90% over drilled or slotted pipe

Quiet

(Approx. 83 dBA for most applications)

10-20 dBA less than wide open blow-offs

Aluminum Construction

(For corrosive and/or high temperature environments or for food processing applications, ask about our stainless steel air knives)

- · Any number of knives may be installed across a
- · A great alternative to bulky, noisy, high maintenance electric blowers!
- Compact easy to mount
- Can be supported by compressed air supply pipe.

Item #	Air Flow Length*	Unit Price	Item #	Air Flow Length*	Unit Price
144313	3"	\$153.00	104470‡	24"	\$344.00
104468	6"	180.00	104469‡	30"	424.00
144314	9"	206.00	144310‡	36"	484.00
104467	12"	229.00	144311‡	42"	549.00
104471	18"	296.00	144312‡	48"	629.00

Air Knives may be combined for added length. Non-standard lengths up to 48" can be custom made. ‡ Length of 24" or more not recommended for use with IMS Air Differential Blow-Off System. Can be used with solenoid or other actuator methods with larger air supply lines.

*NOTE: Actual length of knife is 1" greater than air flow length. Due to the ½" of dead-space on each end of the knife, end to end mounting leaves 1" gaps in the air curtain.

on cach and a transfer at the characteristics of gaps in the air cartain.					
Optional Accessories Standard Air Knife Shim Sets (include 1", 3" and 4" thick plastic shims - 1 of each)					
144315	for 3" Air Knife	\$13.00	144317	for 24" Air Knife	\$26.00
134267	for 6" Air Knife	14.00	144318	for 30" Air Knife	29.00
144316	for 9" Air Knife	16.00	144319	for 36" Air Knife	33.00
134268	for 12" Air Knife	18.00	144320	for 42" Air Knife	39.00
134269	for 18" Air Knife	21.00	144321	for 48" Air Knife	44.00
Pressure Regulator					
104451	1/4" N.P.T. \$58.00				
134259	½" N.P.T. 61.54				
104448	3/4" N.P.T. 94.00				
	Aut	o Drain Fi	Iter Separ	ator	
104454	%" N.P.T \$114.00				
134260	½" N.P.T. 149.00				
104452	³ / ₄ " N.P.T. 192.00				
144339	Universa	al Air Knife	Mounting	System	228.00
	(use 2 m	ounting kits fo	or knives over	24" long)	

Variable Velocity

Thickness of Plastic Shim between cap and body (.002" standard) determines force and flow of air stream. Thicker and thinner Shims (sets available below) can be used to increase or decrease airflow. A pressure regulator on the compressed air supply provides infinite control of flow, force and air consumption.

NOTE: Use of an Air Filter Separator is essential for proper operation.



How It Works

12 18' Airflow **Pattern**

Compressed air flows through an inlet (1) into a plenum chamber (2). It is then throttled through a thin nozzle (3) extending the length of the Standard Air Knife. This primary airstream adheres to the coanda profile (4), which turns it 90° and directs the flow down the face of the unit. The primary stream immediately begins to entrain surrounding air (5), for amplification ratios of 30:1 at 6" (152 mm) away.

No moving parts — nothing to wear out or break!

Standard Air Knife™ is a Trademark of EXAIR Corp.

For even greater performance and savings, see the Super Air Knife on the next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

ax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Super Air Knife™

Produces a Quiet, Hard Hitting Curtain of Air





40:1 Air Amplification

Compressed air savings of 40 to 90% over drilled or slotted pipe

Quiet

(Approx. 69 dBA for most applications)

20-30 dBA less than wide open blow-offs

Aluminum Construction

(For corrosive and/or high temperature environments or for food processing applications, ask about our stainless steel air knives)

Safe to operate at higher pressures Cannot be "dead-ended"

- Any number of knives may be installed across a given area
- · Recessed hardware for easier mounting
- · Compact easy to mount
- Can be supported by compressed air supply pipe.

Item #	Air Flow Length*	Unit Price	Item #	Air Flow Length*	Unit Price
144340	3"	\$260.00	133924‡	24"	\$604.00
133921	6"	298.00	144342‡	36"	893.00
144341	9"	368.00	144343‡	42"	1,070.00
133922	12"	401.00	144344 [‡]	48"	1,304.00
133923	18"	503.00			

Air Knives may be combined for added length.

Non-standard lengths up to 48" can be custom made

‡ Length of 24" or more not recommended for use with IMS Air Differential Blow-Off System. Can be used with solenoid or other actuator methods with larger air supply lines

System. Can be used with solehold of other actuator methods with larger an supply lines.					
	Optional Accessories Standard Air Knife Shim Sets (include 1", 3" and 4" thick plastic shims - 1 of each)				
144345	for 3" Air Knife	\$20.00	144347	for 30" Air Knife	40.00
134272	for 6" Air Knife	24.00	144348	for 36" Air Knife	47.00
144346	for 9" Air Knife	24.00	144349	for 42" Air Knife	54.00
134273	for 12" Air Knife	27.00	144350	for 48" Air Knife	64.00
134274	for 18" Air Knife	34.00			
		Pressure	e Regulato	r	
104451				\$58.00	
134259	½" N.P.T. 76.00				
104448	3/4" N.P.T. 94.00				
Auto Drain Filter Separator					
104454	%" N.P.T \$114.00				
134260	½" N.P.T. 149.00				
104452	452 3/4" N.P.T. 192.00				
	Coupling Bracket Kit (Aluminum)				
134277	Joins two Super Air Knives together \$62.00 ea.			\$62.00 ea.	
144339	Universal Air Knife Mounting System (use 2 mounting kits for knives over 24" long)				
147559				/ Ionizing Bars* orackets for 25"+)	22.00

*Convert your Super Air Knife to a Static Eliminating Ionizing Super Air Knife by adding an Ionizing Bar (see page 438). Match the air flow lengths of the Super Air Knife and the Ionizing Bar and then add mounting brackets.

Super Air Knife™ is a Trademark of EXAIR Corp.

Variable Velocity

Thickness of Plastic Shim between cap and body (.002" standard) determines force and flow of air stream. Thicker and thinner Shims (sets available below) can be used to increase or decrease airflow. A pressure regulator on the compressed air supply provides infinite control of flow, force and air consumption.

NOTE: Use of an Air Filter Separator is essential for proper operation.

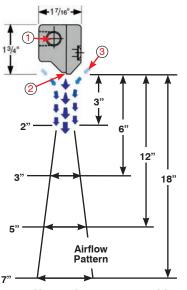
See below if needed.

1/4" N.P.T. Compressed Air Inlets on both ends + two more on bottom which can also be used for mounting NOTE: Lengths 24" and longer should be supplied with compressed air at each end to maintain uniform air flow



5 Year Warranty

How It Works



Compressed air flows through an inlet (1) into the plenum chamber of the Super Air Knife. The flow is directed to a precise, slotted orifice. As the primary airflow exits the thin slotted nozzle (2), it follows a flat surface that directs the airflow in a perfectly straight line. This creates a uniform sheet of air across the entire length of the Super Air Knife. Velocity loss is minimized and force is maximized as the room air (3) is entrained into the primary airstream at a ratio of 40:1. The result is a well defined sheet of laminar airflow with hard-hitting force and minimal wind shear.

No moving parts — nothing to wear out or break!

The Universal Air Knife Mounting System is used to provide secure, precise positioning for any Air Knife. The Air Knife can quickly and easily be moved within close proximity of the part to improve effectiveness. It has durable, stainless steel construction.

(Maximum extension is 30" and requires a ½" dia. hole for mounting or ½"-13 tapped hole to be threaded into.)



Static Meter

Detects and Measures Static Charges

Helps You Identify Where Static Is Most Prevalent

Facilitates The Positioning Of Static-Eliminating Ionizers

- Lightweight, Portable
- · Hand Held, One-Button Operation
- · Non-Contact Measurement
- · Battery Operated
- Factory Set No Adjustments

Range: 0 to \pm 20 kV at 1"

Distance: Meter reads true at 1" from the test surface

Accuracy: ±10% of full scale

Dimensions: 4.14" (10.6cm) long, 2.4" (6.1cm) wide,

875" (2.2cm) thick

Weight: 4 oz. (113g)

Battery: 9 volt (Eveready 216)



Photo shows how easy it is to use the Static Meter. Just point it at test part. Meter detects both the intensity and polarity of static charges.





Item #122691
Includes: Battery and Carrying Case

Just \$1,061.00 Order Now!



High Volume Static Eliminators

Neutralize Molded Parts up to 10 Feet Away!

Perfect for Molding Room and Packaging Applications!

Mount directly above:

- · Parts Conveyors
- · Part Discharge Chutes
- · Machine Beds
- · Work Tables, etc.

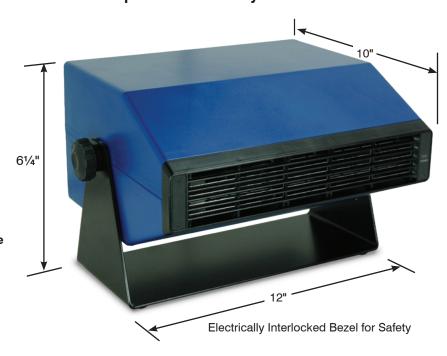
STOP

· Static cling, dust attraction, shock hazard

Self-Contained — easy to install and use

Simple Angle Adjustment and Variable Speed Fan Maximize Coverage Area

UL and CUL Certified



Specifications

• Line Voltage: 115/60/1

Power: 45 WattsFuse: 1.0 amp

• Air Volume: Variable 100-255 cfm

 Air Velocity: 850 fpm at 2 ft. distance (maximum fan speed setting)

EMI/RFI: Complies with FCC Part 15 requirements

for Class A equipment

High Volume Static Eliminator Item #104453

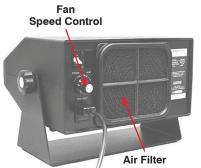
\$1,177.81

Complete with Filter Housing, 5 Filters and Instructions

Optional		
112718	Adjustable Stand	\$505.08
Spare Parts		
123198	Air Filter (Packs of 10)	56.46
137928	Replacement Clip for Filter	4.56

OPTIONAL

Adjustable stand for easy positioning and optimum effectiveness



Tech Tips

Check filters at the beginning of each shift.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Heavy Duty Gloves

Protect Fingers From Burns, While Keeping Hands Cool, Prevent Finger Marks on Molded Parts

• Stretchable • Seamless • Washable

Heavy Duty Cotton Gloves

- · Knitted elasticized wrist
- Fit either hand
 Three sizes fit all

 NOTE: actual color may vary

#101068	#101100	#165012
Small	Large	Extra Large
\$5.70	\$7.74	\$8.71

(per dozen pairs)

Heavy Duty Open Finger Safety Gloves

Allow greater dexterity to hold tools, writing instruments, etc.

- Heavy weight cotton and polyester knit
- Keep hands cool
- Fit either hand
 - One size fits most

· Elasticized wrist band



Medium Duty Gloves

Medium Duty Gloves with PVC Grips

- · Anti-slip PVC dots on both sides improve grip
- 60% cotton / 40% polyester
- Can be worn on either hand



\$1.35 (per pair)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Hot Nozzle Gloves

Help Prevent Accidental Burns!

Use them for quick transfer of hot Nozzles, Screws, Screw Tips, Molds, Water Lines, Heater Bands, etc.

Hot Nozzle Gloves With Anti-Slip Coating

· Extra thick inner

· Can be worn on

either hand

· One size fits all

liner resists heat

- Heat resistant up to 400°F (short duration)
- Special nitrile rubber coating improves grip
 — prevents slipping
- Comfortable and breathable 100% cotton

1tem #110671 \$9.76 (per pair)

NOTE: actual

color may vary

Item #159699 - \$117.10 (dozen pairs)

Hot Nozzle Gloves With Extra Long Cuff

- Heat resistant up to 450°F (short duration)
- 5" gauntlet cuff for wrist protection
- · Beige with black binding



Heat Resistant Gloves

Durable Work Gloves For Higher Temperature Jobs!

Use them for quick transfer of hot Nozzles, Screws, Screw Tips, Molds, Water Lines, Heater Bands, etc.

24 oz Hot Mill Gloves

• Reinforced sewn knuckle straps



30 oz Hot Mill Gloves

Reinforced sewn knuckle straps
Band topped cuff
White
One size fits all
NOTE: actual color may vary
Item #136370
\$3.20 (per pair)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Cut-Resistant Gloves

Shield Hands From Lacerations and Hot Surface Contact

These gloves are especially useful around granulators and grinders to resist cuts from blades.

- Patented stainless steel, nylon and Kevlar® material
- Lightweight material "breathes" to dissipate heat
- · Long cuff for added wrist protection



#106044	#106043	#106041
Small	Medium	Large
\$16.00	\$20.79	\$22.25

Kevlar® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates

Check Out These Other Useful IMS Products!

Utility Knives

5½" Flash-Trimming Knife with extra thick, heavy duty handle. Includes one 15A, 45° angled blade.



Item #137579

ALLWAY 6% Retractable, Break-Away-Blade Utility Knife. With lightweight, durable ABS Handle. Includes one, 7 point break-away blade



Item #108651

See Pages 315 - 324 for more information

Work Gloves

Quality Hand Protection at Economical Prices!





Other hand, arm, ear, and eye safety equipment available — Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

е-тан

Disposable Gloves

For Clean Part Inspection





litrile Gloves	
100 gloves per boxMicro-textured	
Non-allergenic (Non-Latex)	
Blue color	
10	NOTE: actual color may vary

#136375	#136376	#136377
Small	Medium	Large
Inquire	15.36	15.36

(per dozen pairs)

#173903	#173904	#173905	
Small	Medium	Large	
\$17.74			

(per box)

Light Duty Gloves

Help Keep Molded Parts Clean and Free of Finger Oils

Lint-Free Gloves



#105701	#134486	#105702
Polyester (Small)	Nylon (Medium)	Nylon (Large)
\$7.95	Inquire	8.15

(per dozen pairs)

Light Duty Cotton Gloves



#100979	#100947
(Small)	(Large)
\$4.84	5.28

(per dozen pairs)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Cut-Resistant Arm Guards

Shield Arms From Lacerations

Heavy Duty, Cut-Resistant Arm Guards

- · Maximum arm cut resistance
- Made from high strength fibers and stainless steel
- 10" and 22" lengths
- 22" guard clips to shirt-sleeves
- USDA approved
- Machine washable (drip dry)



Medium Duty, Cut Resistant Arm Guards

- Made from stainless steel and cut-resistant fibers
- 10" length
- USDA approved
- Machine washable (drip dry)



Low cost, Cut-Resistant Forearm Sleeves

- Made from 100% Kevlar® fibers
- Extend to provide partial hand protection
- · Available with non-slip top
- · Guards fit either arm



Warning: Cut-Resistant Arm Guards are cut-resistant but NOT cut-proof or puncture-resistant. Do not use with power driven or serrated blades.

Item #	Description	Unit Prices (each)
116864	Heavy Duty Arm Guards (10" forearm sleeve)	\$24.70
116879	Heavy Duty Arm Guards (22" forearm sleeve with clip)	41.59
108041	Medium Duty Arm Guards (10" forearm sleeve)	27.02
121964	Low Cost Forearm Sleeves with thumb hole (14" with nonslip top)	5.73

Kevlar® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates



Leather Finger Cots

Use To Protect Specific Fingers From Scratches and Cuts

Perfect when full gloves are too prohibitive



Soft, Split Leather - Comfortable and pliable

Wide Elastic Band - Holds cot securely in place

Open Ended - One Size fits all!

Item #116526 - \$1.54 each

Finger Safety Tape

Makes Handling Parts Easier — Safer



Finger Safety Tape is a self-adhering safety tape made of surgical gauze and natural rubber particles. It will stick only to itself, not to hair, skin or clothing because of the composition of the non-adhesive material. Finger Safety Tape is dry to the touch and is not affected by moisture.

- · Basic finger protection Maximum dexterity
- Helps prevent burns, cuts & abrasions
- Cleaner parts handlingmeans fewer rejects
- · Low cost use & discard

Finger Safety Tape Each Roll: ¾" wide x 30 yards long		
Item #	Color	Unit Price (16 rolls per package)
100975	White	\$23.40 pkg.
108428	Peach	23.40 pkg.
101120	Green	31.87 pkg.
108429	Blue	23.40 pkg.

Particulate Respirators

Help Keep Your Operators Safe and Productive

- PeakFit, N95 Approved, Vent For Exhalation
- Certification: NIOSH 42 CFR 84 N95
- · Adjustable metal nose piece provides a custom fit and secure seal
- Non-latex, elastic head straps
- 95% Efficient for Non-Oil
- Disposable



- TruAir® Mask by Gateway Safety
- Meets NIOSH 42CFR84 N95 requirements *TC-84A-0007
- · Adjustable metal nose piece provides a custom fit and secure seal
- Non-latex, elastic head straps
- 95% efficient for Non-Oil
- Disposable



- Certification: NIOSH 42 CFR 84 N95
- Electrostatic Media
- · Welded strap attachment for durability
- · Soft nose form for comfort
- Nose clip to ensure custom seal



WARNING: These Dust Masks do not supply oxygen. Use in atmospheres containing at least 19.5% oxygen. Change mask if breathing becomes difficult, mask is physically damaged, or if you can smell or taste the contaminant.

Do Not Use These Respirators For: Paint spray, oil aerosols, gases, vapors, asbestos or sandblasting. *At least 95% filtration efficiency when subjected to a 0.3 μ m MMAD Sodium Chloride particle challenge. Filter performance will be greater against larger non-oil based particles.

Item #	Description	Unit Price
173338	Particulate Respirator with Exhalation Valve	\$17.58 per box of 10
173333	Particulate Respirator with Exhalation Valve	\$15.60 per box of 10
121677	Particulate Respirator	11.22 per box of 20

Safety Glasses

Adjustable One-Piece Lens Safety Glasses

Item #	Description	Unit Price (each)
121966	One-Piece Lens Safety Glasses	\$2.38



- Nylon frame and one-piece clear polycarbonate lens
- Virtually 100% UV protection
- · Easy to slide adjustment



Rubber Arm Safety Glasses

Item #	Description	Unit Price (each)
136373	Rubber Arm Safety Glasses	\$2.38

- Slim line construction
- · Rubber arms for comfort
- Clear lenses



Slim Line Safety Glasses

Item #	Description	Unit Price (each)
136367	Slim Line Safety Glasses with Mirrored Lenses	\$2.51
136366	Slim Line Safety Glasses with Smoke Lenses	Inquire
136365	Slim Line Safety Glasses with Clear Lenses	1.85



- Slim line construction
- Sleek look
- One size fits all



Item # Description Unit Price (each



- Fog-Free Polycarbonate Lens
- Soft Vented PVC Construction
- · Covers Most Eyeglasses





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Economical Faceshield

Protects Wearer From Sparks, Splashes and Flying Debris

Complete with Headgear and clear, plastic faceshield

\$11.00

Faceshield Headgear ONLY

- ABS, Nylon 66 and HDPE
- Adjustable Head Size: 61/2" to 73/4"
- · Simple ratcheting cam lock positioner
- · Accepts most any faceshield

#138342: \$7.47

Facesheild ONLY

- 8" Wide x 151/2" Long x .04" Thick
- Clear Polycarbonate
- UV Protection: 99.9%

#138341: \$4.05



10 Person (67 piece) First Aid Kit

- Compact
- Weather Proof Case
- Carrying Hand and Mounting Holes

Kit Includes:

- 16 ea. 1" x 3" adhesive strips
- 4 ea. 3" gauze pads
- 1 ea. 4" gauze bandage
- 1 ea. 40" triangular bandage
- 1 ea. 8" x 10" large wound dressing
- 1 ea. 1/2" adhesive tape
- 30 ea. antiseptic wipes
- 6 ea. first aid/burn cream packets
- 4 ea. exam gloves
- 1 pair scissors
- 1 pair forceps
- 1 ea. first aid instructions

Item #136364

\$17.40





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-mail

Universal Absorbent Roll in 2-Roll Bale

Use it like a:

- Pad
- Roll
- Strip
- Sock
- Wipe
- · Absorbs: Oil, water and non-aggressive petroleum and water-based products
- · Scuff resistant top surface improves durability and appearance
- · Floor-hugging bottom surface helps hold mat in place

	Size	Absorb	
Mat	15" w x 150' l	28 gal./roll	

Item #	Description	Unit Price
173234	Universal Absorbent Roll in 2-Roll Bale	\$128.00



Absorbent Track-On™ Rugs

The Ideal Walk-On Product

- · Resist wear
- Stay put
- · Absorb leaks/spills
- · Wringable/reusable

	Size	Absorb	
Roll	36" w x 150' l	40 gal./roll	





Item #	Description	Unit Price: 1-2
131344	Tuff Dawg Walkway Track-On™ Rug (1 roll)	\$164.80

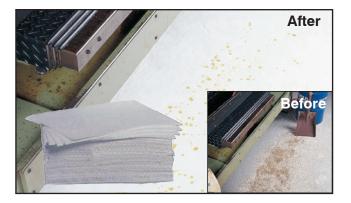
Track-On™ is a trademark of DAWG Corp.



Oil-Only Economy Absorbent Pads

For Everyday Drips, Leaks and Overspray

- · Effectively absorb petroleum-based liquids
- · Can be used to skim oil off water
- Incinerable to less than .02% ash: high BTU value, 22,000 BTU's per pound



	Size	Absorb
Pads	16" w x 20" l	37 gal./bag (100 pads)

Item #	Description	Unit Price: 1-2
131343	Double Weight Oil-Only Economy Pads (100 pads)	\$97.94

Universal Economy Absorbent Pads and Rolls

Suitable For Controlling/Cleaning Most Any Leak, Spill or Drip

Absorb just about everything!

- Oil
- Water
- Coolants
- Solvents

- Acids
- Bases
- Fuels
- and more

Ultrasonic Bonding

- · Hastens absorption
- · Increases durability
- · Prevents linting

Medium Gray Color

· Hides grime

	Size	Absorb
Pads	16" w x 20" l	25 gal./bag (100 pads)
Rolls	30" x 200' l	60 gal./roll



DAWG is a registered trademark of DAWG Corp.

Item #	Description	Unit Price: 1-2
131340	Universal Economy Pads (100 pads)	\$85.78
131341	Double-Weight, Universal Economy Roll (1 roll)	150.17

WD-40® The Original Multipurpose Spray

Use on Molds, Machinery and All Around Your Shop

- · Frees rusted metal parts
- · Provides positive rust protection
- · Non conductive

Specifications

Appearance: Clear or slightly cloudy

Color: Light amber

Odor: Very slight pleasant odor Flash Point: 110°F open cup (min.)

Boiling Point: 300°F (min.)

Bulk Liquid

Item #	Description	Price
105341	WD-40® (1-gal. container)	\$27.57
105347	16 oz. Refillable Spray Bottle (empty)	4.03



Aerosol Spray with Smart Straw™



Attention California Customers:

Due to California laws and regulations, this standard formula WD-40 cannot be sold into California. You must purchase the Low-VOC formula locally.

Smart Straw[™] are a trademarks of WD-40 Company

WD-40® is a registered trademark of WD-40 Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

DC Torque-Controlled Driver

1.2-14 lbf in torque (#1-#10 screws)

These drivers shut off automatically when a preset torque is reached, eliminating over- or under-tightening. Torque is adjusted by twisting an external torque nut. Two springs are provided for either the lower or higher end of the torque range specified for each tool.

- Low voltage DC operation
- Uses 1/4" hex bits; #1 Phillips, #2 Phillips and .030" slotted bits included with driver
- 6' detachable cord connects driver to DC Power Pack
- Push-to-start
- · Quiet, suitable for office-type assembly



Item #	Torque	Drive Size	Approx 30 VDC	x. RPM 20 VDC*	Length	Dia.	Weight		g Type Heavy	Unit Price
129237	1.2-14 lbf in	1/4" hex	910	600	9"	13/8"	231/2"	White	Yellow	\$879.40

^{*}At lower voltages, full performance of tool may not be achievable

Power Packs

For DC Torque-Controlled Drivers

- · Fused input protection
- · Circuit breaker protection on output voltage
- Switchable output voltage provides two speeds
- UL listed

Specifications							
Model:	PS-55	CLT-65					
Maximum amps:	2.5	3.5					
Number of drivers:	1	1					
Circuit Controller:	Built-in	Built-in					
Safety:	Input: 2A fuse Output: 3A breaker	5A fuse 4A breaker					
Approx. Output Voltage:	20-30 VDC	20-30 VDC					
Input Voltage:	120 VAC	120 VAC					
Size:	$3^{1}/2$ " w x $7^{1}/2$ " d x 4" h	$7^{1}/8$ " w x $5^{1}/_{2}$ " d x $5^{1}/_{4}$ " h					
Weight:	6.5 lb.	11.2 lb.					





Note: When using the CLT-50 power supply for thread forming operations, the driver torque specification may be reduced. If thread forming, please contact the IMS Supplies Team at sales@imscompany.com for details.

Item #	Description	Price
127120*	PS-55 Power Pack for DC drivers	\$286.00
129235**	CLT-60 Power Pack for DC drivers	701.50

^{*}For use with drivers with up to 14 lbf•in in torque



^{**}For use with drivers with over 14 lbf•in in torque (Not Shown)

Power Pack

For DC Torque-Controlled Drivers

- Fused input protection
- Switchable output voltage provides two speeds

Specifications

Maximum amps: 4.5
Number of drivers: 1

Safety: Input: 3A fuse
Approx. Output Voltage: 21-31 VDC
Input Voltage: 120 VAC

Size: $4" \le 5^{1/2} \le 2" h$

Weight: 2.1 lb.



Item #	Description	Unit	Price
129236	T-70 Power Pack for DC dr	iver	Inquire



120VAC Torque-Controlled Driver

8-26 lbf in Torque (#4-#10 screws)

These drivers shut off automatically when a preset torque is reached, eliminating over- or under-tightening. Torque is adjusted by twisting an external torque nut.

- · Requires no separate power supply
- 10' attached cord
- Uses 1/4" hex bits; #1 Phillips, #2 Phillips and .030" slotted bits included with driver
- UL listed
- · Push-to-start available

Caution: Due to the integral power supply, this tool will get warm to the touch if used near or exceeding the duty cycle of .05 seconds on/3.5 seconds off. For full duty cycle applications, IMS recommends the low voltage DC torque-controlled drivers, such as 129237 or 129234 with matched external power supply.



		Drive			Dia.	Weight	Unit
Item #	Torque	Size	RPM	Length	(at grip)	OZ.	Price
127123	8-26 lbf in	1/4" hex	1200	11"	1.512"	24	Inquire

Tool Support Stand

These sturdy stands keep the tool within easy reach of the operator and cords out of the way. They are made of tempered anodized aluminum tubing with 20% glass-reinforced polycarbonate fittings.

• Rust-proof, chip-proof finish

Specifications						
Height:	36" max.					
Arm Length:	24" max.					

Max. Tool Weight: 15 lbs. Item # **Description** 127121 Tool Support Stand \$240.92

Unit Price

36"

Tool Positioner

The Tool Positioner reduces operator fatigue and unnecessary reaching by holding the tool at the position it's left in.

Specifications	
Cord Length:	55"
Weight Capacity:	5 lbs.

Adjustment Screw

• Circumference: 3.3" Diameter: 2.51" • Thickness: 1.54"

Item #	Description	Unit Price
127122	Tool Positioner	\$85.28



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Dura-Driver™ 7 in 1

This hand tool drives a variety of fasteners and nuts.

• Rear taper tri-oval handle permits effective handling

• Extra long, tri-oval shape reduces tension at pressure points, improving comfort

· Non-slip grip allows higher torque

• Interchangeable bits provide power and versatility

· Strong S2 steel bits offer long service

• Handle Length: 5"

• Overall Length: 81/4"



Item #	Description	Unit Price
122720	DURA-DRIVER™ 7 in 1	\$15.20

Brass Screwdriver

- SAFE Will not scratch molds
- 3/8" diameter
- Straight with flared tip
- · Oversized plastic grip for easier handling



Item #	Description	Unit Price
141788	Brass Screwdriver	\$18.28



Lufkin® Yellow Clad Tape

- Large, easy action winding drum with friction washers
- Manufactured to US standard Department of Commerce 005" thick
- 3/8" wide, yellow clad steel blade
- · Fitted with folding hook ring
- 1/8" at 1' increment



Item #	Description	Unit Price
161393	50' Tape Measure	\$37.90
161394	100' Tape Measure	54.60

Quikread Decimal/Fraction Measuring Tape

- 25' tape length
- End hook with built-in shock absorber
- · Clear coat tape protection with non-glare finish
- Positive toggle lock holds blade for measurement
- Durable ABS high-impact case with 3" base
- · Ergonomic shape for operator comfort
- Fully inspected for accuracy
- Easy read design all measurements marked



Item #	Description	Unit Price
122725	Quikread Measuring Tape	\$15.52

Circumference Tape Measure



Item #	Description	Unit Price
120125	Lufkin® Tape Measure	\$27.42
	(standard, 6', 1.9' dia.)	

Diameter Tape

Radius or Orifice Gauge



See Page 511



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Regular Tape

Magnetic Tape Measure

- Dual sided tape read either side
- Dual sided hook grabs either way
- Color: green and black
- 1" wide blade



Item #	Description	Unit Price
160229	30' Magnetic Tape Measure	\$27.22

25' Tape Measure

- High carbon blade minimum 7' blade extension
- Durable case
- · Color: orange



Item #	Description	Unit Price
137432	25' Tape Measure	\$8.92

Feeler Gauges

Measure the gap between materials

Thumbwheel locking



Item #	Description	Unit Price
136488	20 Leaf Feeler Gauge (Metric)	\$10.70
136489	26 Leaf Feeler Gauge (SAE)	10.70

Pitch Gauges

Determine pitch quickly and easily

Thumbwheel locking



Item #	Description	Unit Price
136490	28 Leaf Pitch Gauge (Metric)	\$8.20
136492	31 Leaf Pitch Gauge (SAE)	8.20
136491	51 Leaf Pitch Gauge (SAE)	10.98



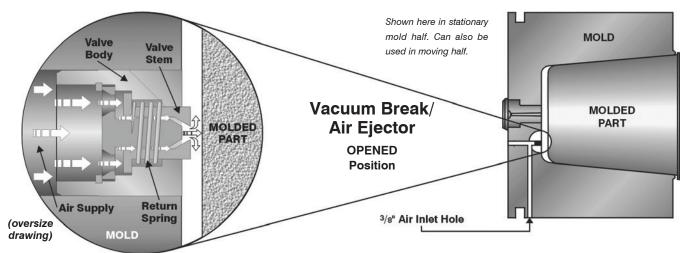
www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



EJECTORJET Vacuum Break/Air Ejectors

Designed To Replace Less Effective, Single-Purpose Poppet Valves



How It Works

When the mold opens, compressed air forces the EJECTORJET spring-return valve forward (See Air Actuator System). The air first breaks the vacuum holding the part in the core and/ or cavity, then blows through the air passageway in a solid jet, ejecting the part.



Molder-Developed to Stop Part Sticking





- Fast acting reduce cycle times
- Especially good for deep, drawn parts like trash cans and flower pots
- Interchangeable with other poppet valves
- Ruggedly made for consistent, trouble-free operation
- · Easy to install in core and/or cavity of mold
- · Flashproof, non-clogging

Specifications

105921
0.7509" (± .0002")
0.750"
0.3116"
5.16
303 Stainless Steel
30 - 150 psi

EJECTORJET Vacuum Break

Diameter	Item #	Unit Price
3/4"	105921	\$148.10 each

(Other Diameters and Lengths to Special Order —Inquire)

Optional Air Actuator System Priced Separately Beyond



www.imscompany.com

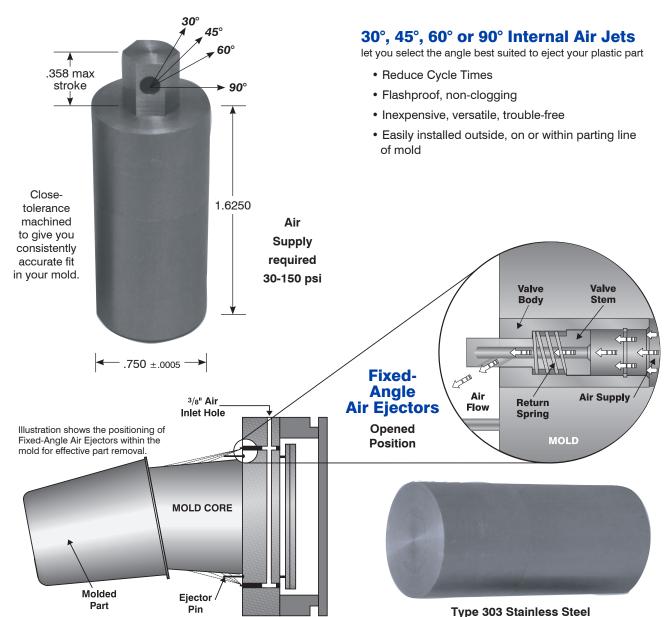
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada)

Fixed-Angle Air Ejectors

For Faster, More Effective Molded Part Blow-Off





Item #AngleSimple Installation10654130°

Item #	Angle	Unit Price
106541	30°	\$83.65
106540	45°	109.68
106538	60°	100.01
106536	90°	83.65

Fixed-Angle Air Ejectors

(Other Diameters and Lengths to Special Order — Inquire)

Optional Air Actuator System Priced Separately Beyond



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

Instructions Included

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

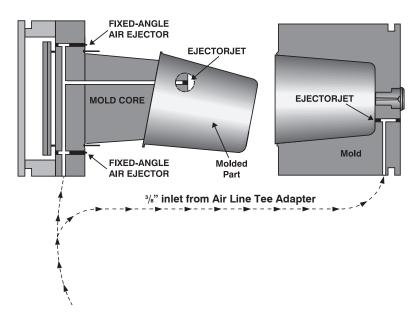
Air Actuator System

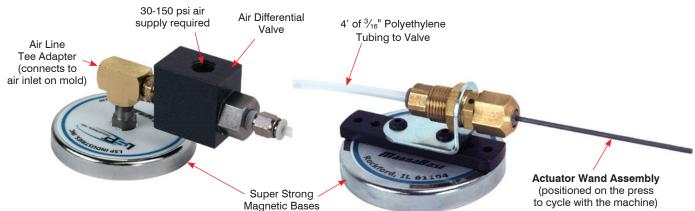
For Use With Vacuum Break/Air Ejectors, Fixed-Angle Air Ejectors or Your Existing Internal Air Ejectors

- · Air operated No electrical connections required
- Versatile Magnetic bases easily moved for different molds
- Simple

How It Works

The Air Actuator method is a pneumatic control system which can be magnetically attached to any injection molding machine. When the Actuator Wand is moved one inch in any direction, the Air Differential Valve opens, supplying air to the Vacuum Break and/or Fixed-Angle Air Ejectors, or other air blow-off devices listed on these pages.





Air Actuator System Only

For direct connection to mold already equipped with a blow-off device or vacuum break

Includes: Actuator Wand Assembly, Two Magnetic Bases, 4' of $\frac{3}{16}$ " Polyethylene Tubing, Air Line Tee Adapter and Air Differential Valve.

\$385.83

Optional accessories

llation

Select a position on the press which can be used to move the Ejection System Actuator Wand at least 1" and cycle with the machine. Position the Actuator's Magnetic Base at this location. Position the Air Differential Valve's Magnetic Base at any convenient spot within 4' of the Actuator Wand. Connect a $\frac{3}{8}$ " plant air supply line and a $\frac{3}{8}$ " air line to mold ports.

#104454	Filter	\$114.00
#104451	Regulator	58.00

This Actuator System can also be used for External Part Blow-Off.

See next page for accessory equipment & kit pricing.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

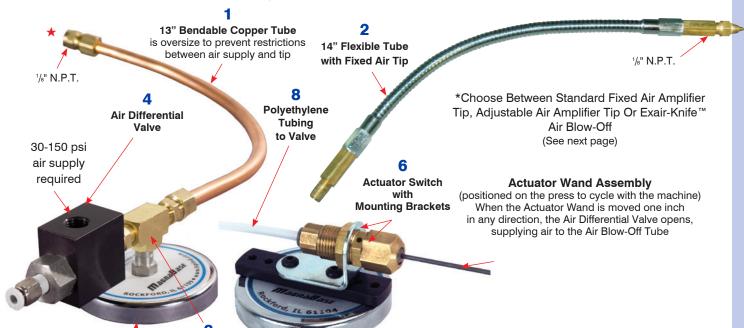
fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

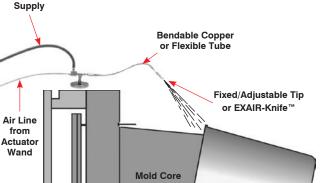
tech support toll-free (USA & Canada) 1.866.467.9001

Pneumatic Part Ejector Systems

- Protect your mold improves part and runner ejection
- Reduce cycle time can eliminate multiple ejection strokes
- · Versatile magnetic bases easily moved for different molds and difficult cavities
- · Air operated no electrical connections required







Air Line **Tee Adapter**

5

Magnetic Base with Tee Adapter

Pneumatic Part Ejector Systems

Includes: Actuator Wand Assembly, Two Magnetic Bases, 4' of 3/16" Polyethylene Tubing, Air Line Tee Adapter, Air Differential Valve, and choice of Bendable Copper or Flexible Tube:

	valve, and choice of bendable Copper of Flexible Tube.			
	With 13" Bendable Copper Tube *			
	107653		\$322.60	
	With 14" Flexible Tube and Fixed Air Tip			
	107654		\$305.20	
	Components			
	Item #	Description	Price	
1	106602	13" Bendable copper Tube (with 1/8" N.P.T. fittings)	\$36.92	
2	107460	14" Flexible Tube (with 1/8" N.P.T. fittings, close nipple and fixed air tip)	196.12	
3	107459	Air Line Tee Adapter	19.08	
4	107461	Air Differential Valve	189.54	
5	107457	Magnetic Base (with Tee Adapter)	153.62	
6	107456	Actuator Switch (with mounting bracket)	123.08	
7	107455	Magnetic Base (with mounting bolts)	Inquire	
8	107453	Polyethylene Tubing 3/16" O.D	0.30/ft.	
	Optional Accessories			
	104454	Filter	\$114.00	
	104451	Regulator	58.00	



Air

Wand

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

Molded Part

tech support toll-free (USA & Canada) 1.866.467.9001

Air Amplifier Tips

For Use With Air Differential Blow-Off Systems

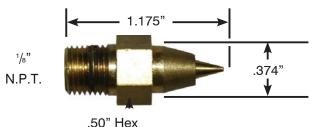
2 Styles

Reduce: Shop Noise

Energy Consumption Compressor Loading

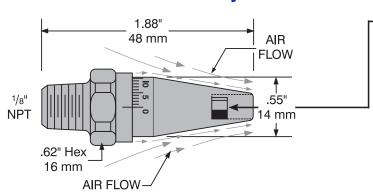
Fixed Air Amplifier Tip

Focuses and intensifies the air stream for greater impact



\$15.70 ea.

Adjustable Air Amplifier Tip



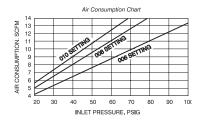
SET SCREW

NOTE: Factory set at a .800 gap. To change this setting, loosen the internal set screw with $\frac{3}{32}$ " hex wrench and rotate nozzle tip to desired setting. Tighten set screw to secure new setting.

How The Air Saver Nozzle Tip Works

This Air Saver Nozzle Tip uses Vortec's TRANSVECTOR™ air flow amplification principle to deliver 25 times greater air flow than the actual compressed air input. In operation, compressed air is released at extremely high velocity through a ring-shaped orifice. This high-speed air entrains a large mass of surrounding still air, resulting in a much larger total air flow. The blow-off effect (sometimes called thrust or "punch") per SCFM of compressed air consumed, is much larger than open compressed air jets, and noise is much lower.

Easily Disassembled for Cleaning!



Adjustable Air Amplifier Tip

Air stream can be easily adjusted for different part sizes

Item #104439

\$27.04 ea.

TRANSVECTOR[™] is a Trademark of VORTEC Corp.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Since **1949**





Nozzles, Nozzle Tips & Supplies

Pages 472 - 522

Screw Tips, Screws & Barrels

Pages 524 - 592

Mold & Die Maintenance

Pages 594 - 614

Table Of Contents

Engineered Components & Supplies

Engineered Components

Nozzles, Nozzle Tips & Supplies

Standard Replacement Nozzles	472-481
Nozzle Thread Adapters	483-488
Nozzle Tips	489-497
Nozzle Tip Thread Adapters	498-499
Refacing Tools	500
Shutoff Tips & Nozzles	501-503
Color Mixing Nozzles	504-510
Gauges	511
Color Dispersion Plug	512-513
Melt Temperature & Pressure-Reading Nozzles	514
Heat Barrier Nozzles	515
Gas Assist Molding Equipment	516-517
Nozzle Accessories	518-521
Nozzle Leak Detector	522



Screw Tips, Screws & Barrels

Ball Check Screw Tips	524-533
Free Flow Screw Tips	534-550
Evolve™ Ball Valve	551
BRODY-ring® Seals	553-555
Screw Tips Wrenches	556-557
Feed Screw Repair Service	558-559
Feed Screws	560-573
Barrel Repair Service	574-579
End Cap Repair Service	580-583
IMS Exclusive SPIRAL™ System	584-585
Purgers & other Maintenance Products	586-592

Mold & Die Maintenance

Mold Bushings	.594-596
Mold Bushings	597-603
Mold Supplies	604-605
Compression Springs	606-614









www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

Please refer to imscompany.com for current pricing ©Copyright 2021 IMS Company. All rights reserved.

Pages 483 - 488



Since

Components & Supplies

Nozzles, Nozzle Tips & Supplies



Nozzle Thread Adapters

Nozzle Tips Pages 489 – 497

Nozzle Tip Thread Adapters Pages 498 – 499

Refacing Tools
Pages 500

Shutoff Tips & Nozzles Pages 501 – 503

Color Mixing Nozzles Pages 504 – 510

IMS Color Dispersion Plug Pages 512 – 513

Melt Temperature & Pressure Reading Nozzles
Page 514

Heat Barrier Nozzles
Page 515

Gas Assist Nozzles and Accessories
Pages 516 – 517

Nozzle Accessories Pages 518 – 521

Nozzle Leak Detector Pages 522

Most items IN STOCK for Same Day Shipment



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

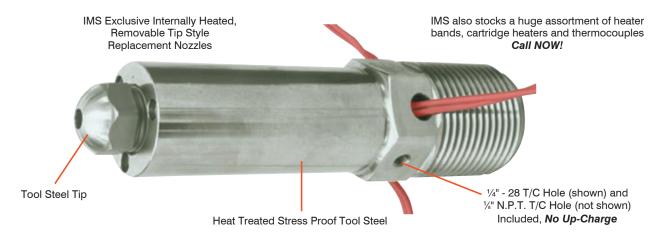
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



Injection Machine Nozzles



Why buy IMS Nozzles? Here are seven reasons:

#1 High quality steel. Unlike some nozzle suppliers who use lower grade, re-sulfurized or pre-heat treated steels that tend to chip and/or fail prematurely, we use only premium quality steels for all of our nozzle components.

#2 Quality control. We insist that every bar of steel is inspected and thoroughly tested.

#3 Machining. Our nozzles are made in a state-of-theart machine shop with tools capable of repeat accuracy in the millions of the inch. Operators each have 10 to 20 years of experience. **#4 Finishing.** After being expertly machined, our nozzles are vacuum heat treated under computer control to maximize wearability. They're also hand polished at critical surfaces for the smoothest finish possible.

#5 Testing. IMS uses all the latest computerized measuring and hardness checking equipment. When you buy an IMS nozzle, you can be sure you're getting the same consistent quality every time.

#6 Stock.

IMS stocks their exclusive replacement nozzles in most popular sizes and styles.

Call for availability or check online at www.lmscompany.Com

#7 Custom Nozzles.

IMS can also design, manufacture and ship most custom nozzles.

Use the request for quotation form on page 478

Before Ordering, Please Gather The Following Dimensions:



Measure Sprue Bushing
Orifice "O" Dimension
and subtract 1/32" for proper seal

IMS Orifice Gauge

3 Measure Thread Size & Rear Opening and advise machine make & model

Rear Opening

Diameter and Pitch of Threads



phone order toll-free (USA & Canada) 1.800.537.5375



IMS Radius Gauge

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Externally Heated, One-Piece Style Standard Replacement Nozzles



Ims Nozzles Come Standard with Two Different T/C Holes for Your Convenience

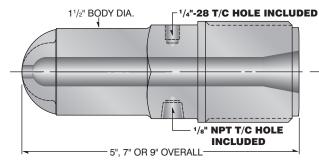
Heat Treated Stress Proof Tool Steel

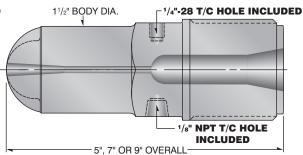
General Purpose

For use with styrene, polyethylene and other general-purpose materials

Nylon

Minimizes drool when molding with nylon

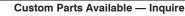




Length	Thread Size	Rear Opening	Radius	Orifice	Item #	Unit Price			
General Purpose									
				1/8"	104533				
			1/2"	³ /16"	104505				
	11/4"-12	3/4"		1/4"	104478				
	1/4 12	/-		1/8"	104627				
			3/4"	³ /16 ["]	104601				
				1/4"	104576				
				1/8"	104552				
			1/2"	³ /16"	104526				
	11/2"-12	½"-12		1/4"	104498				
5"			3/4"	1/8"	104472	Inquire			
				3/16"	104621				
		3/4" _	1/2"	1/8"	104570				
				³ /16"	104545				
				1/4"	104518				
		74	3/4"	1/8"	104493				
	43/11 0			³ ⁄16"	104613				
	194 -0	1¾"-8		1/4"	104589				
				1/8"	104565				
			1/2"	³ /16"	104540				
		11/4"		1/4"	104511				
			3/4"	1/8"	104485				
				1/8"	104532				
7"	11/4"-12	3/4"	1/2"	³ /16"	104503	Inquire			
				1/4"	104476				

Recommended Heater Band					
120 V / 240V					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134627 / #134628					
#134627 / #134628					
#134627 / #134628					

continued on next page



phone order toll-free (USA & Canada) 1.800.537.5375



1.888.288.6900



IMS Externally Heated, One-Piece Style Standard Replacement Nozzles

Length	Thread Size	Rear Opening	Radius	Orifice	Item #	Unit Price		
General Purpose								
				1/8"	104625			
	11/4"-12	3/4"	3/4"	³ /16 ["]	104600			
				1/4"	104574			
				1/8"	104550			
			1/2"	³ /16"	104525			
	41/11.40	1/11		1/4"	104497			
	1½"-12	1/2"		1/8"	104640			
			3/4"	³ /16"	104619			
7"				1/4"	104595	Inquire		
				1/8"	104517	•		
			1/2"	³ /16"	104491			
		3/4"		1/8"	104612			
			3/4"	³ /16"	104588			
	1¾"-8			1/4"	104564			
				1/8"	104538			
			1/2"	³ ⁄16 ["]	104509			
		11/4"		1/4"	104484			
			3/4"	1/8"	104632			
			74	³ /16"	104580			
	11⁄4"-12	11/4"-12 3/4"	1/2"	1/8"	104531			
				³ /16"	104502			
				1/4"	104475			
			3/4"	³ /16"	104599			
			1/2"	1/8"	104549			
				³ /16"	104524			
	1½"-12	1/2"	3/4"	1/4"	104496			
		/-		1/8"	104639			
				³ /16"	104618			
				1/4"	104594			
9"			1/2"	³ /16"	104568	Inquire		
			/2	716 1/4"	104544 104515			
		3/4"		1/8"	104313			
			3/4"	³ /16 ["]	104409			
			, ,	1/4"	104586			
	1¾"-8			1/8"	104562			
			1/2"	³ /16"	104536			
		11/."		1/4"	104508			
		11/4"	3/4"	1/8"	104482			
				³ /16"	104605			
				1/4"	104578			

Recommended Heater Band
120 V / 240V
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632

Custom Parts Available — Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

continued on next page

IMS Externally Heated, One-Piece Style Standard Replacement Nozzles



Length	Thread Size	Rear Opening	Radius	Orifice	Item #	Unit Price	
		Ge	eneral Purpos	e			
		3/4"	1/2"		104523	Inquire	
	11/4"-12	/-	3/4"		105306		
5"		1/2"	1/2" 3/16"	³ / ₁₆ "	3/16" 104593		
		3/4"			104488		
13/4"-8	1¾"-8	74	3/4"		104610		
		11/4"	1/2"		104561		
	11/4"-12			³ / ₁₆ "	104630		
		3/4"	1/2"	/16	104500]	
7"		13/4"-8		1/4"	113569	Inquire	
	174 0	3/4"	3/16"	105237			
		11/4" 1/2"		104546			
9"	1¾"-8	11/4"	1/2"	³⁄ ₁₆ "	104567	Inquire	

Recommended Heater Band					
120 V / 240V					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134619 / #134620					
#134627 / #134628					
#134627 / #134628					
#134627 / #134628					
#134627 / #134628					
#134627 / #134628					
#134631 / #134632					

Custom Parts Available — Inquire

IMS Internally Heated, One-Piece Style Standard Replacement Nozzles

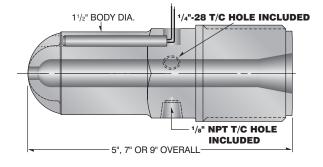
Heated internally, these nozzles can go deeper into die clearance holes for shorter sprues.

• Heat Treated Stress Proof Tool Steel

General Purpose

For use with styrene, polyethylene and other general purpose materials

IMS Nozzles come standard with two different T/C holes for your convenience



Length	Thread Size	Rear Opening	Radius	Orifice	Item #	Unit Price
		Ge	eneral Purpos	e		
5"	1¾"-8	3/4"	1/2"	1/8"	104506	Inquire
J	1 /4 -0	/4	3/4"	78	104628	inquire
7"	1¾"-8	3/4"	1/2"	1/8"	104553	Inquire
_ ′	174 0	/4	3/4"	/0	104527	mquire
	11/4"-12		1/2"		109348	
9"	1¾"-8	3/4"	1/2"	³ / ₁₆ "	109222	Inquire
	1 /4 -0		3/4"		104519	

Recommended Cartridge Heater (3 required)					
120 V / 240V					
#135881 / #135882					
#135881 / #135882					
#135886 / #135887					
#135886 / #135887					
#135890 / #135891					
#135890 / #135891					
#135890 / #135891					

Call for pricing and other sizes



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

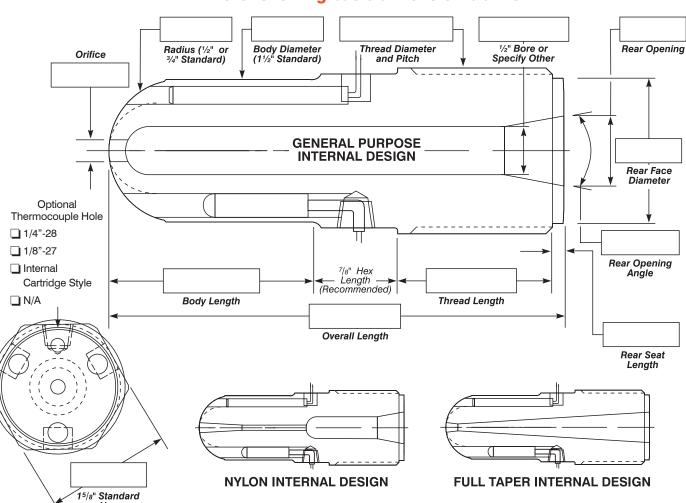
tech support toll-free (USA & Canada)
1.866.467.9001

Custom One-Piece Nozzle Form

Specify:

1. Internal Design:2. Heating:General PurposeNylonFull-Taperinternalexternal

Fill in the following basic dimension blanks



Optional:

3. Press Makeand Model4. Material To Be Molded				5. Operating Temperature				
				6. Thermocouple Thread Size and Location				
Date:	Pate: Quantity: Phone:()			Fax: ()				
Name:			·	Title:				
Company Name:								
Address:								
City:			S	State:		Zip:		



Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.		C.		F.	C.			F.]	C.		F.
-17.8	0	32.0		10.0	50	122.0	38	10	0	212		288	550	1022
-17.2	1	33.8		10.6	51	123.8	43	110		230		293	560	1040
-16.7	2	35.6		11.1	52	125.6	49	12		248		299	570	1058
-16.1	3	37.4		11.7	53	127.4	54	13	0	266		304	580	1076
-15.6	4	39.2		12.2	54	129.2	60	14	0	284		310	590	1094
-15.0	5	41.0		12.8	55	131.0	66	15		302		316	600	1112
-14.4	6	42.8		13.3	56	132.8	71	16		320		321	610	1130
-13.9	7	44.6		13.9	57	134.6	77	17		338		327	620	1148
-13.3	8	46.4		14.4	58	136.4	82	18		356		332	630	1166
-12.8	9	48.2		15.0	59	138.2	88	19		374	-	338	640	1184
-12.2	10	50.0		15.6	60	140.0	93	20		392		343	650	1202
-11.7	11	51.8		16.1	61	141.8	99	210		410		349	660	1220
-11.1 -10.6	12 13	53.6 55.4		16.7 17.2	62 63	143.6 145.4	100 104	21: 22:		413.6 428		354 360	670 680	1238 1256
-10.0	14	57.2		17.2	64	145.4	110	23		446		366	690	1274
- 9.44	15	59.0	-	18.3	65	149.0	116	24		464	-	371	700	1292
- 8.89	16	60.8		18.9	66	150.8	121	25		464 482		377	710	1310
- 8.33	17	62.6		19.4	67	152.6	127	26		500		382	710	1328
- 7.78	18	64.4		20.0	68	154.4	132	27		518		388	730	1346
- 7.22	19	66.2		20.6	69	156.2	138	28		536		393	740	1364
- 6.67	20	68.0	ł	21.1	70	158.0	143	29		554	1	399	750	1382
- 6.11	21	69.8		21.7	71	159.8	149	30		572		404	760	1400
- 5.56	22	71.6		22.2	72	161.6	154	31		590		410	770	1418
- 5.00	23	73.4		22.8	73	163.4	160	32		608		416	780	1436
- 4.44	24	75.2		23.3	74	165.2	166	33	0	626		421	790	1454
- 3.89	25	77.0	Ī	23.9	75	167.0	171	34		644		427	800	1472
- 3.33	26	78.8		24.4	76	168.8	177	35		662		432	810	1490
- 2.78	27	80.6		25.0	77	170.6	182	36		680		438	820	1508
- 2.22	28	82.4		25.6	78 70	172.4	188	37		698		443	830	1526
- 1.67	29	84.2		26.1	79	174.2	193	38		716	-	449	840	1544
- 1.11	30	86.0 87.8		26.7 27.2	80	176.0	199 204	39 40		734 752		454	850	1562
- 0.56 0	31 32	89.6		27.2 27.8	81 82	177.8 179.6	210	41		752 770		460 466	860 870	1580 1598
0.56	33	91.4		28.3	83	181.4	216	42		770 788		471	880	1616
1.11	34	93.2		28.9	84	183.2	221	43		806		477	890	1634
1.67	35	95.0	H	29.4	85	185.0	227	44		824		482	900	1652
2.22	36	96.8		30.0	86	186.8	232	45		842		488	910	1670
2.78	37	98.6		30.6	87	188.6	238	46		860		493	920	1688
3.33	38	100.4		31.1	88	190.4	243	47		878		499	930	1706
3.89	39	102.2		31.7	89	192.2	249	48		896		504	940	1724
4.44	40	104.0		32.2	90	194.0	254	49		914		510	950	1742
5.00	41	105.8		32.8	91	195.8	260	50		932		516	960	1760
5.56	42	107.6		33.3	92	197.6	266	51		950		521	970	1778
6.11	43	109.4		33.9	93	199.4	271	52		968		527	980	1796
6.67	44	111.2	-	34.4	94	201.2	277	53		986	-	532	990	1814
7.22	45 46	113.0		35.0	95 96	203.0	282	54	U	1004		538	1000	1832
7.78 8.33	46 47	114.8 116.6		35.6 36.1	96 97	204.8 206.6								
8.89	48	118.4		36.7	98	208.4								
9.44	49	120.2		37.2	99	210.2								
0.11		U.L		0L		_ 10.L								

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column.

Look to left column for Celsius conversion.

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column.

Look to right column for Fahrenheit conversion.





IMS Externally Heated, Removable Tip Style Standard Replacement Nozzles

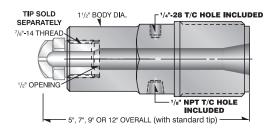
IMS Nozzles Come Standard with Two Different T/C Holes for Your Convenience

Rather than buy a variety of expensive nozzles, just buy different tips for these nozzles.

· Heat Treated Stress Proof Tool Steel

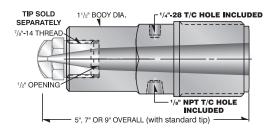
General Purpose

For use with styrene, polyethylene and other general-purpose materials



Full-Taper

For use with ABS, acrylics, polycarbonate, sulfone and other engineering materials



Length	Thread Size	Rear Opening	Item #	Unit Price					
General Purpose									
	11/4"-10	3/4"	104483	\$94.05					
	11/4"-12	3/4"	104631	88.65					
	1½"-12	1/2"	104606	88.65					
	1½"-12	.59"	104579	80.50					
41/4"	1½"-12	3/4"	104556	77.40					
	1½"-12	27/32"	104530	88.65					
	13/4"-8	3/4"	104501	80.50					
	13/4"-8	15/16"	105360	88.65					
	13/4"-8	11/4"	104623	88.65					
	1¾"-12	3/4"	104598	88.65					
	11/4"-10	3/4"	104572	\$104.80					
	11/4"-12	3/4"	104547	120.90					
	1½"-12	1/2"	104522	100.95					
	1½"-12	.59"	104495	100.95					
61/4"	11/2"-12	3/4"	104638	104.80					
	1½"-12	27/32"	104616	100.00					
	13⁄4"-8	3/4"	104592	100.95					
	13⁄4"-8	15/16"	105363	108.00					
	13⁄4"-8	11/4"	104542	100.95					
	13⁄4"-12	3/4"	104513	100.95					
	11/4"-10	3/4"	104487	\$119.05					
81/4"	11/4"-12	3/4"	104633	119.05					
	1½"-12	1/2"	104609	120.90					

Custom Parts Available — Inquire

Recommended Heater Band
120 V / 240V
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134631 / #134632
#134631 / #134632
#134631 / #134632

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

e-maii

IMS Externally Heated, Removable Tip Style Standard Replacement Nozzles



Thermocouple Holes Included — No Additional Charge

Length	Thread Size	Rear Opening	Item #	Unit Price
		General Purpose		
	1½"-12	.59"	104584	\$119.05
	1½"-12	3/4"	104560	Inquire
81/4"	1½"-12	27/32"	104535	120.90
074	1¾"-8	3/4"	104507	120.90
	1¾"-8	11/4"	104480	120.90
	1¾"-12	3/4"	104629	119.05
	11/4"-10	3/4"	108169	Inquire
	11/4"-12	3/4"	104516	\$233.75
	1½"-12	1/2"	104490	Inquire
4.44711	1½"-12	.59"	105302	Inquire
111/4"	1½"-12	3/4"	109269	223.80
	1½"-12	27/32"	104587	266.00
	1¾"-8	3/4"	104563	233.75
	1¾"-8	11/4"	104537	178.60
	1¾"-12	3/4"	107809	Inquire
		Full-Taper		
	11/4"-10	3/4"	107557	\$129.00
	11/4"-12	3/4"	104520	176.54
	1½"-12	.59"	113470	90.65
41/4"	1½"-12	3/4"	110306	90.65
.,.	1½"-12	27/32"	104614	90.65
	1¾"-8	3/4"	104590	142.50
	1¾"-8	11/4"	104566	231.50
	1¾"-12	3/4"	110314	90.65
	11/4"-10	3/4"	107647	\$151.43
	11/4"-12	3/4"	104486	209.75
	1½"-12	.59"	110826	Inquire
61/4"	1½"-12	3/4"	113199	141.95
2/4	1½"-12	27/32"	104583	215.25
	1¾"-8	3/4"	104559	84.42
	1¾"-8	11/4"	104534	277.45
	1¾"-12	3/4"	110489	Inquire
81/4"	1¾"-8	11/4"	113233	\$193.45

Recommended Heater Band
120 V / 240V
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134631 / #134632
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134629 / #134630
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628

#134623 / #134624

Custom Parts Available — Inquire





IMS Internally Heated, Removable Tip Style Standard Replacement Nozzles

IMS Nozzles Come Standard with Two Different T/C Holes for Your Convenience

Rather than buy a variety of expensive nozzles, just buy different tips. Heated internally, these nozzles can go deeper into die clearance holes for shorter sprues.

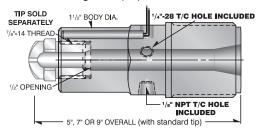
• Heat Treated Stress Proof Tool Steel

Purchasers also order:

- Cartridge Heaters, pages 206-212
- Nozzle Tips, page 489-497

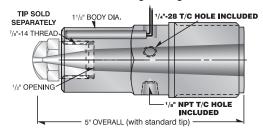
General Purpose

For use with styrene, polyethylene and other general-purpose materials



Full-Taper

For use with ABS, acrylics, polycarbonate, sulfone and other engineering materials



Length	Thread Size	Rear Opening	Item #	Unit Price					
	<u> </u>								
	11/4"-12	3/4"	104608	Inquire					
	1½"-12	1/2"	104582	Inquire					
41/4"	1½"-12	.59"	106067	185.00					
	1¾"-8	3/4"	104477	Inquire					
	1¾"-8	11/4"	104626	Inquire					
	11/4"-10	3/4"	105295	Inquire					
61/4"	11/4"-12	3/4"	104575	Inquire					
074	1¾"-8	3/4"	104620	Inquire					
	1¾"-8	11/4"	104569	Inquire					
	11/4"-12	3/4"	104492	Inquire					
81/4"	1¾"-8	3/4"	104539	Inquire					
	1¾"-8	11/4"	104510	Inquire					
	Full-Taper								
41/4"	11/4"-12	3/4"	104604	Inquire					
61/4"	1¾"-8	11/4"	104571	\$205.00					

(3 required)
120 V / 240V
#135881 / #135882
#135881 / #135882
#135881 / #135882
#135881 / #135882
#135881 / #135882
#135886 / #135887
#135886 / #135887
#135886 / #135887
#135886 / #135887
#135890 / #135891
#135890 / #135891
#135890 / #135891
#135881 / #135882
#135886 / #135887

Recommended Cartridge Heater

Ask about other sizes



Custom Removable Tip Nozzle Form

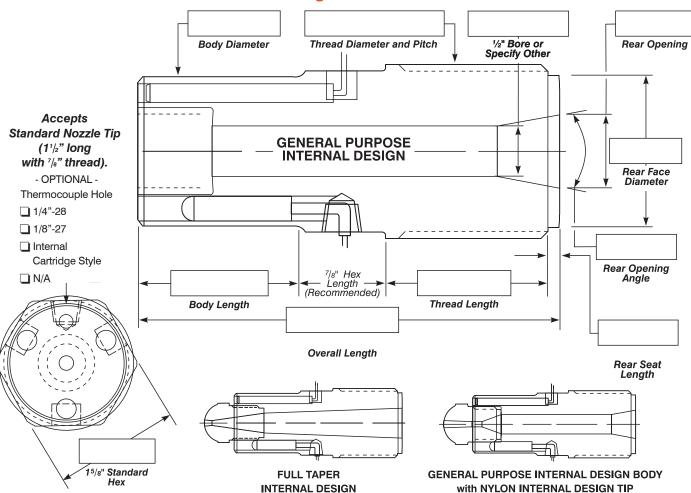
Specify:

1. Internal Design:

General Purpose Nylon Full-Taper

2. Heating:
Internal External

Fill in the following basic dimension blanks



Optional:

3. Press Make			5. Operating Temp	5. Operating Temperature				
and Model				6. Thermocouple				
				Location				
Date:	Quantity:	Phone:()		Fax: ()				
Name:			Title:					
Company Nan	ne:		Email:					
Address:								
City:			State:	Zip:				



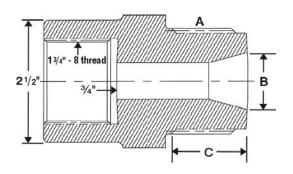


Converts All Metric or Nonstandard Threads to 13/4" - 8

Makes Machine Upkeep Easy!

Save Money — Avoid Special Threads

Eliminates expense and saves time waiting for special size nozzles



Make of Press		Dimensions		Unit	Recommended Heater Bands		
Item #	Thread Size (A)	Rear Opening (B)	Thread Length (C)	Price	120 Volt	240 Volt	
	_	,		,			
Arburg							
105138	M24x1.5 RH	7.5mm	28mm				
109524	M45x1.5	25mm	35mm	\$161.20	134652	134653	
105206	M52x2.0	35mm	32mm				
Battenfeld							
105207	M35x2.0	21mm	30mm		134652		
105172	M40x2.0	25mm	38mm	\$161.20		134653	
105233	M40x2.0	30mm	38mm				
105231	TR65x3.0	48mm	45mm				
Beloit							
131909	1-1/4"-12	.750"	1.250"	\$161.20	134652	134653	
Cincinnati							
105196	1-1/2"-12	1/2"	2"				
105225	1-3/4"-8	.750"	1-3/4"	\$161.20	134652	134653	
124395	2"-8	.79"	1-1/2"				
Demag							
170854	M60x3.0	19mm	36mm	\$161.20	134652	134653	

Call 866-467-9001 or email sales@imscompany.com for ordering information



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

ke of Press		Dimensions	Unit	Recommended Heater Bands		
Item #	Thread Size (A)	Rear Opening (B)	Thread Length (C)	Price	120 Volt	240 Volt
Farrel	ı					
105130	1-¾"-8	1/2"	1-3/4"	* 101 00		,
120052	1-1/2"-12	1"	1-3/4"	\$161.20	134652	134653
		<u> </u>				
Fellows						
105183	1-1/4"-10	3/4"	1-3/8"	\$161.20	134652	134653
105139	1-¾"-12	3/4"	1-3/4"	Ψ101.20	104002	104000
	•					
HPM						
105225	1-3/4"-8	.750"	1-3/4"	\$161.20		
105208	2-1/2"-8	1"	1-1/2"	145.00	134652	134653
105173	3-1/8"-8	1"	1-1/4"	\$161.20		
105158	3-1/8"-8	1"	2-3/16"			
Husky	14.5.00		1	4424.22	10.10=0	1010-0
121024	M45x3.0	22mm	40mm	\$161.20	134652	134653
Imnaa	ı					
Impco 105236	1-3/4"-12	3/4"	1-3/16"	\$161.20	134652	134653
103230	1-74-12] 3/4	I = /16	\$101.20	104032	104000
JSW	l					
105137	M50x3.0	15mm	57mm			
144523	M55x3.0	8mm	40mm	\$161.20	134652	134653
122385	M55x3.0	8mm	55mm			
						•
awaguchi						
105177	1-¾"-8	15⁄16"	1-1/4"			
105150	M30x3.0	12.7mm	28.7mm	\$161.20	134652	134653
105161	M38x3.0	14mm	28.7mm			
105184	M45x3.0	16mm	38mm			
Klockner		Г	, ,			
105232	1' BST	.394"	1.41"	\$161.20	134652	134653
124271	M58x3.0	14.5mm"	43mm			
M. 6						
auss-Mafei	M40.0.5 :	10-	1 00	444 55 1	1040-0	40.055
136897	M48x3.0 Female	12.7mm	30mm	\$161.20	134652	134653

continued on next page

Call 866-467-9001 or email sales@imscompany.com for ordering information



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico)

tech support toll-free (USA & Canada)

1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

Make of Press		Dimensions	Unit	Recommended Heater Bands		
Item #	Thread Size (A)	Rear Opening (B)	Thread Length (C)	Price	120 Volt	240 Volt
Lester		r	1			Г
105144	1-1/2"-12	7/8"	1 - ²¹ / ₃₂ "	\$161.20	134652	134653
105127	1-3/4"-8	1.3"	1-5/8"			
Mir	I					
123152	M75x3.0	45mm	52.5mm	Inquire	134652	134653
Mitsubishi	1					
140618	1-1/2"-12	3/4"	1.1"	\$161.20	134652	134653
129847	2-1/4"-8	3/4"		\$161.20	134032	134033
Natco	0.1/8.0	00"	4.075"	Т		Ι
105151	2-1/4"-8	.60"	1.075"	\$161.20	134652	134653
120890	2-1/4"-8	.60"	1.075"		134032	134033
105220	3"-8	1-3/4"	1-7/16"			<u> </u>
New Britain	1					
105160	M55x3.0	19mm	43mm	\$161.20	134652	134653
105219	M55x3.0	32mm	43mm	ψ101.20	104002	104000
Newbury 105205	1-1/2"-12	²⁷ / ₃₂ "	1.44	\$161.20	134652	134653
103203	1-72-12	/32	1.77	Ψ101.20	104032	104030
Niigata	1					
138593	M40x3.0	20mm	37mm	\$161.20	134652	134653
170853	M50x2.0	36mm	52mm	\$101.20	134032	134033
	_					
Nissei						
110906	M40x2.0	20mm	37mm	\$161.20	134652	134653
105197	M50x2.0	26mm	42mm			
Stokes	•					
105190	1-3/4"-8	1-1/4"	1-3/4'	\$161.20	134652	134653
100100	1 /4 0	1 /4	1 /4	ψ101.20	10 1002	1 10-1000
Sumitomo						
127748	M68x3.0	25mm	33mm	\$161.20	134652	134653

continued on next page

Call 866-467-9001 or email sales@imscompany.com for ordering information



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

phone order toll-free (Mexico)
001 888 304 1307

tech support toll-free (USA & Canada)

e-maii

1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

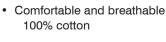
Make of Press		Dimensions		Unit	Recommende	d Heater Bands
Item #	Thread Size (A)	Rear Opening (B)	Thread Length (C)	Price	120 Volt	240 Volt
Toshiba						
105148	1-1/2"-12	.59"	1-3/8"			
105185	3-1/4"-8	2.04"	2-1/4"	\$161.20	134652	l
105171	M60x4.0	32mm	42mm			134653
136424	M80x4.0	53mm	74mm	Inquire		
125014	M80x4.0	55mm	80mm	iiiqaiio		
	_					,
Van Dorn						
105136	1-1/4"-12	3/4"	1-5/8"			
105190	1-3/4"-8	1-1/4"	1-3/4"	\$161.20	134652	134653
105213	1-3/4"-8	3/8"	1-3/4"			

Check Out These Other Useful IMS Products!

Heat Resistant Gloves

Use Them For Quick Transfer Of Hot Nozzles, Screws, Screw Tips, Molds, Water Lines, Heater Bands, Etc.

- Heat resistant up to 400°F (short duration)
- · Special nitrile rubber coating improves grip prevents slipping





Hot Nozzle Gloves with anti-slip coating Item No. 110671

- Maximum Use Temperature: 190°F
- · Heat resistant dots leave NO MARKS on product
- · Dots on both sides

One size fits all

High Heat PVC Dot Gloves Item No. 136368

See Pages 446 - 449 for More Gloves and Pricing



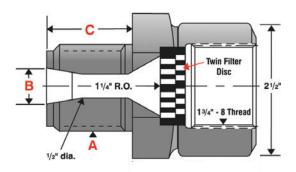


IMS Nozzle Thread Adapters with Metal Trap

Help Stop Tramp Metal From Entering Mold

For use only with 13/4"-8 thread, 11/4" rear opening nozzles (Should only be used with twin filter disc in place)





CAUTION: Only use with filter disc in place

ake of Press		Dimensions		Unit	Recommende	d Heater Bands
Item #	Thread Size (A)	Rear Opening (B)	Thread Length (C)	Price	120 Volt	240 Volt
		,				
Arburg						
105228	M24/1.5	7.5mm	28mm	\$274.00	134652	134653
135240	M52/2.0 RH	35mm	32mm	4 27		
	_					
Battenfeld						
105157	M40/2.0	25mm	38mm			
105216	M41/2.0	30mm	38mm	\$274.00	134652	134653
105214	M65/3.0	48mm	51mm			
	_					
Cincinnati						
105179	1-1/2"-12	1/2"	2"	\$210.00	134652 134	134653
105210	1-3/4"-8	3/4"	1-3/4"	138.46		101000
Farrel						
105222	1-3/4"-8	1"	1-3/4"	\$274.00	134652	134653
	_	,				
Fellows						
105166	1-1/4"-10	3/4"	1-3/8"	\$274.00	134652	134653
		<u></u>				
НРМ						
105141	1-5/8"-12 Fem	3/4"	5/8"			
105210	1-3/4"-8	3/4"	1-3/4"			
105195	2-1/2"-8	1"	1-1/2"	\$274.00	134652	134653
105217	3-1/8"-8	1"	1-1/4"			
105142	3-1/8"-8*	1"	2-3/16"			

continued on next page

Call 866-467-9001 or email sales@imscompany.com for ordering information



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

е-тап

Make of Press		Dimensions		Unit	Recommende	d Heater Bands
Item #	Thread Size (A)	Rear Opening (B)	Thread Length (C)	Price	120 Volt	240 Volt
Impco						
105226	1-1/4"-12	3/4"	1-5/8"	\$274.00	134652	134653
105854	1-3/4"-12	3/4"	1 - ³ / ₁₆ "	Inquire	134032	134033
JSW						
105227	M50/3.0	15mm	57mm	\$274.00	134652	134653
Kawaguchi						
105163	1-3/4"-8	1-5/16"	1-1/4"	\$210.00		
105167	M45/3.0	16mm	32mm	\$274.00	134652	134653
Klockner		1	22			
105215	1" B.P.T.	0.394"	1.41"	\$274.00	134652	134653
Mitsubishi						,
140619	1-1/2"-12	3/4"	1.1"	\$274.00	134652	134653
		,-		V21 1100	10 1002	10 1000
Natco 105134	2-1/4"-8 Fem	0.6"	1.075"	\$274.00	134652	134653
100101	2 /4 0 1 0 11	0.0	1.070	+27 1100	10 1002	10 1000
Newbury						
105191	1-1/2"-12	²⁷ / ₃₂ "	1.44"	\$274.00	134652	134653
Nissei						
114777	M40/2.0	20mm	37mm	\$274.00	134652	134653
105180	M50/2.0	26mm	42mm	Ψ274.00	104002	104000
Reed						
105210	1-3/4"-8	3/4"	1-3/4"	\$210.00	134652	134653
Stokes						
105175	1-3/4"-8	1-1/4"	1-3/4"	\$274.00	134652	134653
	1 74 0	1 /-	1 /-	V21 1100	10 1002	10.1000
Toshiba		T				1
105131	1-1/2"-12	0.59"	1-3/8"			
105168	3-1/4"-8	2.047"	2-1/4"	\$274.00	134652	134653
105843	M60/4.0	32mm	42mm			
Van Dorn						
105226	1-1/4"-12	3/4"	1 - ⁵ / ₈ "			
105200	1-3⁄4"-8	3/8"	1-3/4"	\$274.00	134652	134653
105175	1-3⁄4"-8	1-1/4"	1-3/4"			

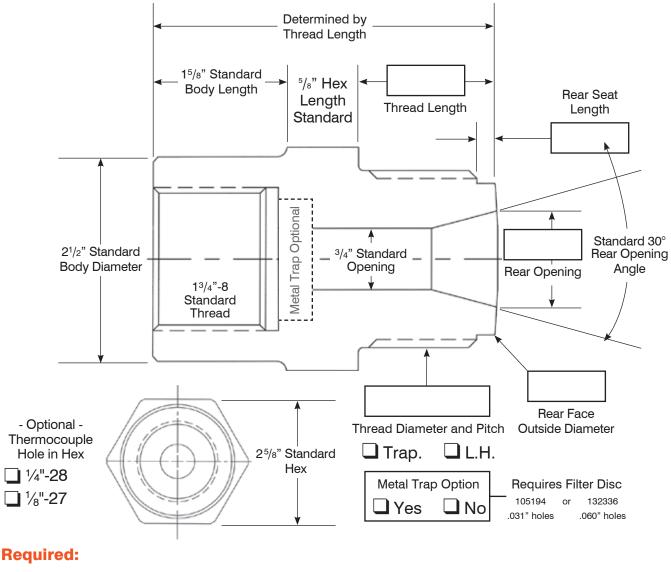
	Ask about other sizes			
105194	Twin filter disc with .031 av. opening	\$46.13		
132336	Twin filter disc with .060 openings	65.00		
112600	Press pin (for twin filter disc) — 2 required for each filter disc	0.15		



Custom Nozzle Thread Adapter Form

Converts Any Thread To Industry Standard 13/4" - 8

Fill in the following basic dimension blanks



1. Press Make and Model

Date:	_ Quantity:	Phone:()		Fax: ()
Name:			Title:		
Company Name:			Email:		
Address:					
City			Ctata		7in.



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Injection Molding Nozzle Tips



IMS Exclusive Replacement Nozzle Tips



IMS precision made nozzle tips are designed from high quality, heat-treated tool steel and are perfect for everyday use in the molding shop. The technicians at IMS have worked hard to bring you quality at an affordable price.

At IMS, we put our customers' satisfaction as the highest priority. When it comes to our nozzle tips, we think you will agree that they are a great value.

Here are 10 reasons to buy IMS nozzles:

- 1. All IMS Tips are guaranteed to meet our certified material and hardness requirements.
- 2. All IMS Tips are machined using state-of-the-art machines by experienced technicians who use the most up-to-date practices so you can be assured they are made with care and quality.
- 3. All IMS Tips are finished to perfection using hand polishing.
- 4. All IMS Tips are protected from rust and corrosion.
- 5. All IMS Tips are protected from thread damage and
- 6. All IMS Tips are stamped with sizes and styles for easy re-ordering.
- 7. All IMS Tips are tested using the latest computerized measuring and checking equipment.
- 8. All IMS Tips are warrantied against premature failure and defects in workmanship.
- 9. All IMS Tips are quality inspected in our facility using the strictest approval practices.
- 10. Your satisfaction is guaranteed!

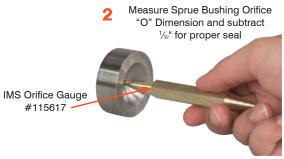
If your application requires higher wear resistance, sizes not listed, etc. please contact an IMS technician for a prompt quote, see the "Request for Quotation Form" on page 553 of the catalog, or fill out a digital form at imscompany.com

Beryllium Copper: Nozzle tips made of heat treated beryllium copper ensure maximum heat transfer plus strength and toughness. Beryllium Copper nozzle tips will help prevent tip freeze-ups, will let you lower nozzle temperature, and will enable electrical use reduction while shortening cycle times.

NOTE: Beryllium Copper Nozzle Tips are not recommended for use with abrasive materials.

Before Ordering, Please Gather The Following Dimensions:







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

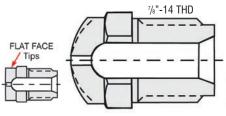


IMS Standard Nozzle Tips

Heat Treated Tool Steel and Beryllium Copper Nozzle Tips

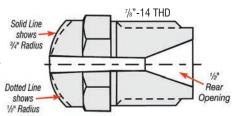
General Purpose Internal Design

Used for Styrene, Polyethylene and other General Purpose Materials



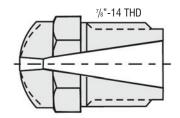
Nylon Internal Design

Minimizes Drool when molding with Nylon



Full Taper Internal Design

Used with Acrylics, ABS, Sulfone and other engineering materials



General purpose nozzle tips

Used for styrene, polyethylene and other general purpose materials

High Quality, Heat Treated Tool Steel



11/2" Length

....... \$16.55 each



2¾" Length \$35.00 each

(1" x 1" Heater Band Recommended)

Orifice	½" Radius	¾" Radius
1/16"	101527	101529
3/32"	116602	136160
1/8"	101440	101444
1/8"	108390 (Flat Face)
5/32"	101448	101442
3/16"	101446	101441
7/32"	132046	121078
1/4"	101445	101439
9/32"	143733	143735
5/16"	101443	101447
11/32"	143734	143736
3/8"	105244	105246
⁷ / ₁₆ "	144242	143737
1/2"	109012	121081

Orifice	½" Radius	¾" Radius
1/16"	109627	108343
3/32"	108347	108341
1/8"	101491	101453
5/32"	101477	101518
3/16"	101467	101506
7/32"	108338	108344
1/4"	101522	101482
9/32"	108348	108342
5/16"	108346	108339
11/32"	143738	143739
3/8"	105288	105272
1/2"	129042	143740



4" Length \$48.75 each (1" x 2" Heater Band Recommended)

Orifice	½" Radius	¾" Radius
1/16"	108396	112107
3/32"	108406	112103
1/8"	101493	101457
5/32"	108402	112115
3/16"	101468	101510
⁷ / ₃₂ "	108399	112110
1/4"	101524	101486
9/32"	108407	112105
5/16"	108404	112017
3/8"	108403	112098



6" Length \$66.50 each (1" x 3" Heater Band Recommended)

Orifice	½" Radius	³∕₄" Radius
1/16"	108397	112109
3/32"	108395	112104
1/8"	101495	101459
5/32"	108392	109157
³ / ₁₆ "	101470	101512
⁷ / ₃₂ "	108388	112112
1/4"	101449	101490
9/32"	108408	112106
5/16"	108405	112102
3/8"	108394	112100

General Purpose Nozzle Tips

Used for styrene, polyethylene and other general purpose materials

High Quality, Heat Treated Tool Steel







8" Length .. \$150.70 each

(TWO 1" x 3" Heater Band Recommended)

Orifice	½" Radius	¾" Radius
1/16"	145554	145566
3/32"	145555	145567
1/8"	145556	145568
5/32"	145557	145569
3/16"	145558	145570
⁷ / ₃₂ "	145559	145571
1/4"	145560	145572
9/32"	145561	145573
5/16"	145562	145574
11/32"	145563	145575
3/8"	145564	145576
1/2"	145565 - RFQ	145577 - RFQ

1½" Length \$41.95 each

Orifice	½" Radius	¾" Radius
1/16"	161958	170327
3/32"	119019	170328
1/8"	101501	101466
3/16"	101489	101456
1/4"	101476	101521

Nylon Nozzle Tips

Minimizes drool when molding nylon

High Quality, Heat Treated Tool Steel



11/2" Length \$17.65 each 2¾" Length

\$40.00 each

(1" x 1" Heater Band Recommended)

Orifice	½" Radius	3/4" Radius
3/32"	143744	143750
1/8"	101479	101511
5/32"	110366	112111
3/16"	101458	101488
⁷ / ₃₂ "	143745	143751
1/4"	101523	101475
9/32"	143746	143752
⁵ / ₁₆ "	129336	143753
11/32"	143747	143754
3/8"	143748	143755

Orifice	½" Radius	¾" Radius
3/32"	108322	108325
1/8"	101455	101472
5/32"	108327	108321
3/16"	101508	101451
7/32"	143758	143764
1/4"	101498	101517
9/32"	143759	143765
5/16"	143760	143766
11/32"	143761	143767
3/8"	143762	143768



4" Length \$53.00 each

(1" x 2" Heater Band Recommended)

Orifice	½" Radius	³∕₄" Radius	
1/8"	106559	110073	
3/16"	108571	110072	
1/4"	147989	168601	

Tech Tips

Nozzle orifice size should be 10% smaller than the sprue bushing.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

Nylon Nozzle Tips

Minimizes drool when molding nylon

Beryllium Copper



11/2" Length \$41.95 each

Orifice	Drifice ½" Radius ¾" Radiu	
1/8"	101509	101473
3/16"	101499	101464
1/4"	101485	101452

Full Taper Nozzle Tips

Used with acrylics, ABS, sulfone and other engineering materials

High Quality, Heat Treated Tool Steel



(1" x 1" Heater Band Recommended)

Orifice	½" Radius	¾" Radius
3/32"	143777	143783
1/8"	101520	101463
5/32"	143778	116810
3/16"	101497	101516
⁷ / ₃₂ "	143779	143785
1/4"	101484	101505
9/32"	143780	143786
5/16"	107509	107512
11/32"	143781	143787
3/8"	142793	143788

Orifice	½" Radius	³⁄₄" Radius
3/32"	143791	143799
1/8"	101481	101525
5/32"	143792	143800
3/16"	101469	101513
⁷ / ₃₂ "	143793	143801
1/4"	101460	101502
9/32"	143794	143802
5/16"	143795	143803
11/32"	143796	143804
3/8"	143797	143805

Beryllium Copper



11/2" Length \$41.95 each

Orifice	½" Radius	³⁄₄" Radius	
1/8"	101461	101503	
3/16"	101526	101492	
1/4"	101514	101478	

Test Blanks



- · Solid stress proof steel
- 1/8"-14 Threads \$13.00 each

Orifice	½" Radius	¾" Radius	
_	136499	136486	

Tech Tips

If you are having shear problems with Acrylic materials try a Full Taper nozzle.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

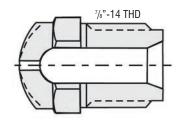
IMS Metric Nozzle Tips





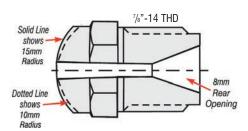
General Purpose Internal Design

Used for Styrene, Polyethylene and other General Purpose Materials



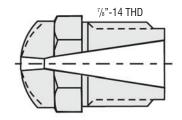
Nylon Internal Design

Minimizes Drool when molding with Nylon



Full Taper Internal Design

Used with Acrylics, ABS, Sulfone and other engineering materials



General Purpose Nozzle Tips

Nylon Nozzle Tips

Orifice	10mm Radius	15mm Radius
2mm	143741	143810
2.5mm	143742	143811
3mm	143826	143812
4mm	143809	143813
5mm	144241	144265
6mm	144254	134489

Orifice	10mm Radius	15mm Radius
2mm	143774	143815
2.5mm	143775	143816
3mm	124322	143817
4mm	143814	143818
5mm	122907	145295
6mm	123064	145296

Full Taper Nozzle Tips



11/2" Length \$20.00 each

Orifice	10mm Radius	15mm Radius
2mm	143806	143820
2.5mm	143807	143821
3mm	143808	143822
4mm	143819	143823



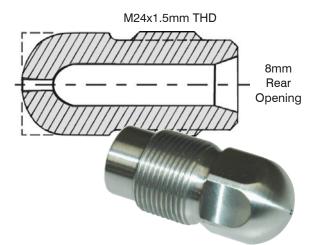
IMS Arburg Nozzle Tips

Heat Treated Tool Steel Nozzle Tips

General Purpose Arburg Nozzle Tips

Used for styrene, polyethylene and other general purpose materials

High Quality, Heat Treated Tool Steel



2.08" Length

Orifice	½" Radius	¾" Radius	Flat Face
1/16"	145544	144266	145370
3/32"	145322	144267	145371
1/8"	144178	144268	145372
5/32"	144233	144269	145373
3/16"	144234	144270	145374
⁷ / ₃₂ "	144235	144271	145375
1/4"	144236	144272	145376
9/32"	144237	144273	145377
5/16"	144238	144274	145378
		\$39.25 each	

2¾" Length

3¾" Length

Orifice	½" Radius	¾" Radius	Flat Face
1/16"	144239	144278	145382
3/32"	144243	144279	145383
1/8"	144244	144280	145384
5/32"	144245	144281	145385
3/16"	144246	144282	145386
⁷ / ₃₂ "	144247	144283	145387
1/4"	144248	144284	145388
9/32"	144249	144285	145389
5/16"	144250	144286	145390
	\$60.80 each		

Orifice	½" Radius	¾" Radius	Flat Face
1/16"	144240	144290	145394
3/32"	144255	144291	145395
1/8"	144256	144292	145396
5/32"	144257	144293	145397
3/16"	144258	144294	145398
7/32"	144259	144295	145399
1/4"	144260	145506	145400
9/32"	144261	145293	145401
5/16"	144262	145294	145402
		\$79.80 each	·

continued on next page

Optional Accessory

Arburg Nozzle Tip Adapter

Adapts OEM Arburg thread to a standard IMS 1/8"-14 tip

Item #	Style	OAL	Rear Thread	Rear Opening	Unit Price
121345	General Purpose	2.07"	M24 x 1.5	.315	\$66.60
135204	General Purpose	2.07"	M36 x 2.0	.315	83.65





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

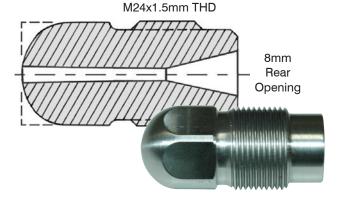
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Nylon Arburg Nozzle Tips

Minimizes drool when molding nylon

High Quality, Heat Treated Tool Steel



2.08" Length

Orifice	½" Radius	¾" Radius	Flat Face
1/8"	145300	145336	160856
5/32"	145301	145337	160857
3/16"	145306	145338	160858
⁷ / ₃₂ "	145303	145339	160859
1/4"	145304	145340	160860
9/32"	145305	145341	160861
5/16"	145302	145342	160862
		\$41.80 each	

2¾" Length

Orifice	½" Radius	¾" Radius	Flat Face	
1/8"	145312	145348	160866	
5/32"	145313	145349	160867	
³ / ₁₆ "	145314	145350	160868	
⁷ / ₃₂ "	145315	145351	160869	
1/4"	145316	145352	160870	
9/32"	145317	145353	160871	
⁵ / ₁₆ "	145318	145354	160872	
	\$63.30 each			

3¾" Length

Orifice	½" Radius	¾" Radius	Flat Face	
1/8"	145324	145360	160876	
5/32"	145325	145361	160877	
3/16"	145326	145362	160878	
7/32"	145327	145363	160879	
1/4"	145328	145364	160880	
9/32"	145329	145365	160881	
5/16"	145330	145366	160882	
	\$83.60 each			

IMS Maxx Flow Tips

Maxx Flow Nozzle Tips

Used for styrene, polyethylene and other general purpose materials

High Quality, Heat Treated Tool Steel

13/4" Length \$52.30 each

(11/4"-12 THD and 3/4" Rear Opening)

Orifice	½" Radius	¾" Radius
1/8"	148728	160020
5/32"	150532	160021
³ / ₁₆ "	148565	148559
7/32"	160025	160022
1/4"	138477	148518
9/32"	160026	160023
5/16"	160027	150490
11/32"	160028	160024
3/8"	160029	145701
1/2"	160030	149896





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

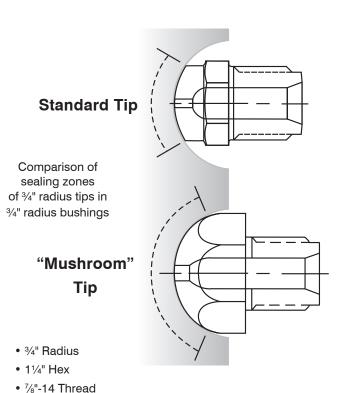


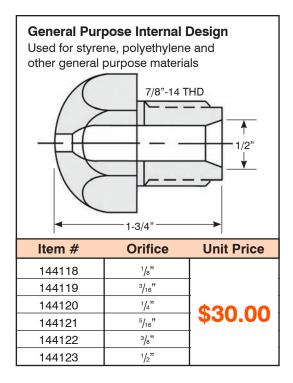
Maximum Contact "Mushroom" Tips

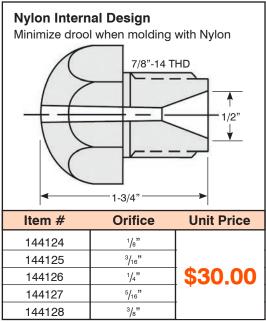


Extended radius surface allows greater contact between nozzle and sprue bushing —

Helps Stop Leakage









• 1/2" Rear Opening

• 13/4" Long

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

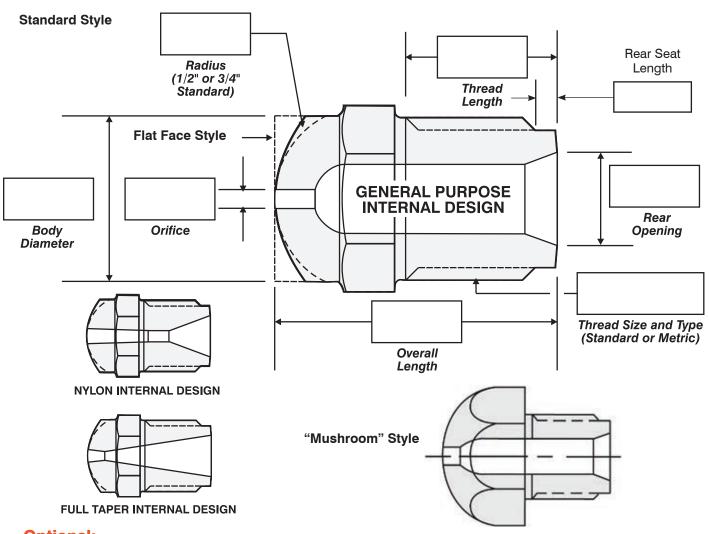
Custom Nozzle Tip Form



Specify:

1. External Style of Nozzle Tip:
Standard "Mushroom" Flat Face*
2. Internal Design of Nozzle Tip:
General Purpose Nylon Full-Taper
*Diameter (if other than standard)

Fill in the following basic dimension blanks



Optional:

3. Material To Be Molded

Date:	Quantity:	Phone:()		Fax: ()	
Name:			Title:		
Company Name: _			Email:		
Address:					
City			State:	7in:	



4. Operating Temperature



IMS Metric to Standard Nozzle Tip Thread Adapters

Saves You Money - No need to buy expensive, special tips or special adapters

Increase Nozzle Versatility - Lets you use ANY standard nozzle tip with 1/8" -14 thread

Specifications

- 1-3/8" Body Diameter
- 1-1/4" Wrench Flats
- 1/2" Opening at back of female nozzle tip threads
- Adds 0.94" to overall length of assembled nozzle body and tip



Make of Press		Dimensions		Unit
Item #	Thread Size	Rear Opening	Overall Length	Price
	_	,	'	
Arburg				
121345	M24 x 1.5mm RH	.315"	2.07"	\$83.65
135204	M36 x 2.0mm RH	.315"	2.07"	\$63.65
	_			
Воу				
120623	M24 x 1.5mm RH	14mm	2.07"	\$66.60
121073	M24 x 1.5mm LH	14mm	2.07"	\$83.65
	_			
Engel				
126882	M28 x 1.5mm RH	.472"	2.07"	\$83.65
	_			
Kawaguchi				
137258	M30 x 1.5mm RH	.315"	2.07"	\$66.60
121349	1"-12 RH	.625"	2.07"	Inquire
Toyo				
142715	M36 x 2.0mm RH	23mm	1.75"	\$127.65

Need a different size? Call our techs and we will find it!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

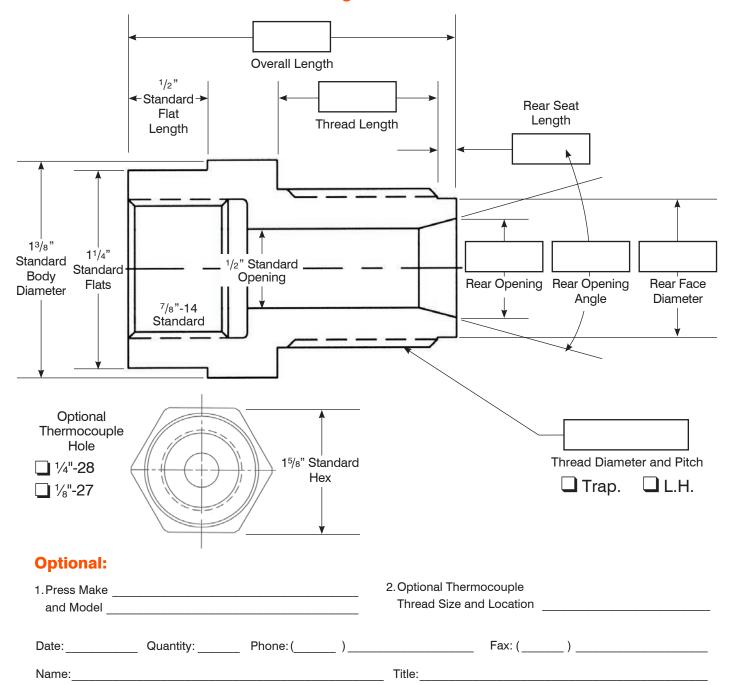
tech support toll-free (USA & Canada)
1.866.467.9001

Custom Nozzle Tip Thread Adapter Form



Converts Any Thread to Industry Standard 1/8"-14

Fill in the following basic dimension blanks





www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

Address:

Company Name: Email:

City: State: Zip:



IMS Radius Refacing Tools

Extend Nozzle and Bushing Life

Put Your Damaged Parts Right Back on the Line • Quickly and Easily with Our Refacing Tools

- Create good sealing surfaces that stop leaks
 — Cut costs
- Cut clean, new radii and shoulders
 Extend nozzle and bushing life
- Ensure a good nozzle seat Stop sprue sticking
- Improve sprue pull-out Reduce contamination
- Carbide cutting tips (C-2)
- Durable 4140 hot rolled, heat-treated steel

Note: For resurfacing only. Not for cutting radii from blank steel.

Metric Sizes

Standard Sizes

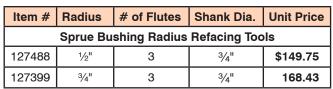


Item #	Radius	# of Flutes	Shank Dia.	Unit Price
126252	1/2"	3	3/4"	\$264.58
127806	3/4"	3	3/4"	251.75



Item #	Radius	# of Flutes	Shank Dia.	Unit Price	
Nozzle Radius Refacing Tools					
169501	10mm	3	1/2"	Inquire	
121727	15mm	3	1/2"	Inquire	
169332	20mm	3	1/2"	Inquire	







Item #	Radius	# of Flutes	Shank Dia.	Unit Price	
Sprue Bushing Radius Refacing Tools					
121731	10mm	4	1/2"	Inquire	
121729	15mm	4	1/2"	Inquire	
165278	20mm	3	1/2"	Inquire	

Buy Kits and Save!

Item #	Radius # of Flutes Shank Dia.		Unit Price	
Nozzle and Bushing Tool Combination Offer				Offer
126639	1/2"	3	3/4"	\$430.67
127807	3/4"	3	3/4"	395.75



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

tech support toll-free (USA & Canada)

e-maii

Anti-Drool Nylon Nozzle Tips with Spreader Insert

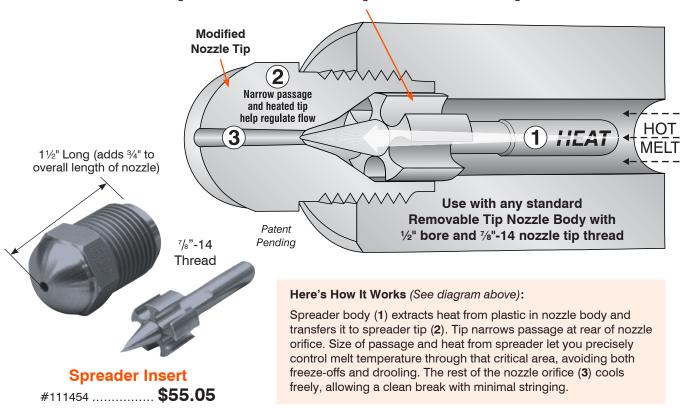


Lets You Reduce Nozzle Temperatures

Stop drooling, stringing and freeze-offs - run faster cycles • Prevent material degradation - mold better parts

Unique Spreader Insert

• Eliminates Dangerous and Troublesome Cold Slugs • Provides Clean, String-Free Breaks



1-1/2" OAL Nylon Nozzle Tips ONLY (Spreader Sold Separately)

Orifice	½" Radius	¾" Radius	Nozzle Tip Unit Price
1/8"	111447	111452	
5/64"	136660	162822	
3/32"	159755	162823	¢110 0E
5/32"	140320	162814	\$113.25
³ / ₁₆ "	111444	111448	
⁷ / ₃₂ "	149852	162824	
1/4"	125162	147894	

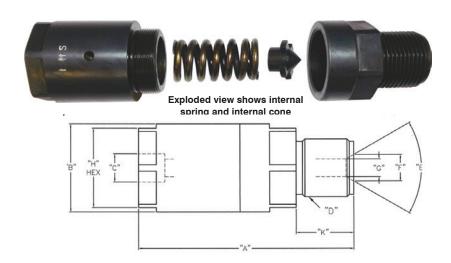
Same Insert fits all Special, Modified Nylon Nozzle Tips

For best results, clean seat before installing tip and insert.



IMS Add-On, Self-Actuating Nozzle Shutoff

Converts Standard Nozzles into Shutoff Nozzles



Specifications

- · 4140 Pre-Hardened and Nitrided
- For use on any molding machine*
 (* Van Dorn Machines must use
 modified Shut-Off Nozzle Inquire)
- Use with any thermoplastics with drooling issues such as Nylon
- Includes (1) 1/4"-28 Thd Thermocouple Hole
- Recommend (2) Heater Bands:
 (1) 2-1/2" Diameter x 1" Wide
 (1) 2-1/2" Diameter x 1-1/2" Wide

Spring Cracking Pressure: 400 psi Max Temp: 750° F

Item #	Male Thd	Α	В	С	D	E	F	G	Н	K	Price
162880	⅓"-14 Thd	5.8"	2.500"	⁷ / ₈ "-14	⁷ / ₈ "-14	60°	.500"	.500"	2.250"	1.42"	\$2,300.00
162881	1-¾"-8 Thd	6"	2.500"	⁷ / ₈ "-14	1-3/4"-8	60°	.750"	.500"	2.250"	1.62"	2,350.00
For Gas Assist Shut-Off Nozzle with $\frac{1}{8}$ " NPT Gas Port - see Page 518											
Spare Parts											
165347	Replacement internal spring						\$196.00				
165348	Replacement internal cone						318.00				



Shutoff Nozzle Tips

Use In Any Nozzle Body with 1/2" Bore

Item #



 1_{16} " orifice requires 7_{32} " minimum sprue bushing 1_{8} " orifice requires 9_{32} " minimum sprue bushing 3_{16} " orifice requires 5_{16} " minimum sprue bushing

Spring Cracking Pressure: 1000 psi



The spring loaded valve in nozzle tip restricts movement of material until activated by pressure.

Nozzle Assemblies

Orifice

Radius

142351	1/2"	¹ / ₁₆ "	\$139.45	5				
142353	1/2"	1/8"	139.45					
142355	1/2"	³ / ₁₆ "	139.45					
142352	3/4"	1/16"	139.45					
142354	3/4"	1/8"	139.45					
142356	3/4"	³ / ₁₆ "	139.45					
Spare Parts	Spare Parts							
½" Radius Tips	147872 (¹ / ₁₆ ")	147873 (½")	147874 (³ ⁄ ₁₆ ")	\$23.67				
¾" Radius Tips	147875 (¹ / ₁₆ ")	147876 (½")	148266 (³ ⁄ ₁₆ ")	75.65				
Stems	147865 (½16")	147866 (1/8")	142357 (³ ⁄ ₁₆ ")	30.74				
Torpedo	142358			25.30				
Spring	142359			6.90				

Berylium Copper Tips Available - Inquire

Minimize nozzle drool and sink patterns



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

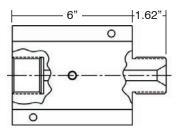
sales@imscompany.com

Unit Price

IMS Rotary Resin Shutoff Valve

Save Money and Improve Quality at the Same Time

100% Stops Drool



Patent #5,494,254

Specifications

For use with 375 Ton Presses and Up

Throughput Limits:

 $\frac{1}{2}$ " Bore = 3.3lbs per second @ 1000 PSI $\frac{3}{4}$ " Bore = 7.4 lbs per second @ 1000 PSI

600° F Maximum Continuous Temperature

Operational Requirements:

Cartridge Heaters, Qty 4, 3/8" Diameter x 6" Long

Hydraulic 4-way spring return solenoid-operated control valve

Hydraulic Power Unit capable of providing 2 GPM flow and set at 500 PSI Max

Hydraulic hoses rated at 1000 PSI with fittings to accommodate 1/4"-18 NPT ports



Item #	Model	(Front) Female Thd	(Rear) Male Thd	Thru Bore	Rear Opening	Unit Price
132376	RSOV-III-C (Gas Only)	13⁄4"-8	1¾"-8	1/2"	1"	\$4,950.00
148146			1½"-12	1/2"	.590"	RFQ
123957	RSOV-IV		1¾"-8	1/2"	1"	5,337.00
160795			1¾"-8	3/4"	1"	5,580.00
132581			1¾"-8	3/4"	11/4"	5,580.00
170190	Complete Seal Kit For IMS Rotary Shut-Off Model RSOV-III-C					
131211	Complete Seal Kit For IMS Rotary Shut-Off Model RSOV-IV 1/2" Bore					640.80
170191	Complete Seal Kit For IMS Rotary Shut-Off Model RSOV-IV 3/4" Bore					705.32

See more Gas Assist Nozzles and Accessories on Page 516 - 517



EZ Flow Mixing Nozzles

The most common use of mixing nozzles is to *improve the distribution of color concentrates*, improving the appearance or reducing the scrap rate due to poor color distribution. Mixing nozzles can provide benefits often overlooked that improve the quality of the molded part as well as improve the performance and output of the machine.

Improved Overall Cycle Time — Overcoming mixing problems by use of the machine's back pressure slows the screw recovery and in many cases increases the total cycle time. Increased temperature settings often result in improved melt quality but increases the required part cooling time. The use of an effective mixing nozzle will allow for faster screw recovery and lower temperature settings that results in faster cycle times.



Part Surface Finish — Variations in the melt temperature of the plastic from the layered flow effect in both the barrel and nozzle can result in "Seams" or "Flow Lines" in the molded part. Blending the molten polymer just prior to the mold improves thermo homogeneity and results in improved flow into and through the mold.

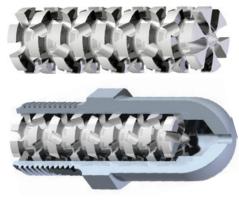
EZ Flow 20 Mixing Nozzle Tip

The EZ Flow 20 custom nozzle tip is recommended for smaller injection units with 20 oz. shot sizes or less. Because this mixing tip uses the common \(^1/6\)"-14 thread, simply remove your current nozzle tip and thread the EZ Flow 20 into place. It's that simple.

#143018 EZ Flow 20 Mixing Element Only: 0.650" OD, 2.275" OAL, 17-4PH Stainless Steel\$230.47

Nozzle Tip Only: 3-1/2" OAL

Orifice	1/2" Radius	3/4" Radius	Unit Price
1/16"	162838	162849	
3/32"	162840	162850	
1/8"	162839	162851	
5/32"	162841	162852	
3/16"	162842	150265	
7/32"	162843	162853	
1/4"	162844	162854	\$223.00
9/32"	162845	162855	Ψ
5/16"	162846	162856	
11/32"	162859	162861	
3/8"	162847	162857	
7/16"	162860	162862	
1/2"	162848	162858	



— Recommended Heater Band — #134604 (120V) or #134605 (240V)

NOTE: For use in applications using less than 15,000 psi injection pressure

Tech Tips

Still can't quite get the mix you need? Consider placing a Color Dispersion Disc (Pages 514-515) behind the nozzle tip for added agitation.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888,288,6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)

е-тан

EZ Flow 95 Mixing Nozzle

EZ Flow 95 is a one piece drop-in insert held in place with standard nozzle tip. The design offers very aggressive mixing action in an easy-to-use and clean design.

(1) $\frac{1}{4}$ "-28NPT & (1) $\frac{1}{8}$ "-27NPT Installed On Hex. Uses standard $\frac{1}{8}$ "-14 Nozzle Tips.

Minimum 8" OAL with Tip

OAL with Tip	Heated Area	Heaters Required
8"	4-1/2"	(1) 1-½" x 4"
9"	5-1/2"	(1) 1-½"x 5"
10"	6-1/2"	(2) 1-½" x 3"
12"	8-1/2"	(2) 1-½" x 4"
14"	10-1/2"	(2) 1-½" x 5"
16"	12-1/2"	(2) 1-½" x 6"
18"	14-1/2"	(2) 1-½" x 6"
20"	16-1/2"	(3) 1-½" x 5"



#138352 EZ Flow 95 Mixing Element Only; 5/8" OD, 6.100" OAL, 17-4PH Stainless Steel

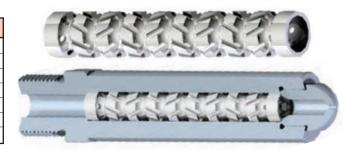
EZ Flow 180 Mixing Nozzle

The large EZ Flow 180 is a one piece drop-in insert held in place with a large standard 1-1/4"- 12-thread tip. The design offers very aggressive mixing action in an easy-to-use and clean design.

(1) 1/4"-28NPT & (1) 1/8"-27NPT Installed On Hex. Uses standard 1-1/4"-12 Nozzle Tip.

Minimum 9" OAL with Tip

OAL with Tip	Heated Area	Heaters Required
9"	5-1/2"	(1) - 2" x 5"
10"	6-1/2"	(2) - 2" x 3"
12"	8-1/2"	(2) - 2" x 4"
14"	10-1/2"	(2) - 2" x 5"
16"	12-1/2"	(2) - 2" x 6"
18"	14-1/2"	(2) - 2" x 6"
20"	16-1/2"	(3) - 2" x 5"



#144166 EZ Flow 180 Mixing Element, 0.937" OD, 6.10" OAL, 17-4PH Stainless Steel

EZ Flow 260 Mixing Nozzle

The large EZ Flow 260 is a one piece drop-in insert held in place with a custom nozzle tip adapter. The design offers very aggressive mixing action for improved color homogeneity in an easy-to-use and clean design.

(1) 1/4"-28NPT & (1) 1/8"-27NPT Installed On Hex. Uses 1-1/4"-12 Nozzle Tips.

Minimum 10" OAL with Tip

OAL with Tip	Heated Area	Heaters Required
8"	4-1/2"	(1) - 2-½" x 4"
9"	5-1/2"	(1) - 2-½" x 5"
10"	6-1/2"	(2) - 2-½" x 3"
12"	8-1/2"	(2) - 2-½" x 4"
14"	10-1/2"	(2) - 2-½" x 5"
16"	12-1/2"	(2) - 2-½" x 6"
18"	14-1/2"	(2) - 2-½" x 6"
20"	16-1/2"	(3) - 2-½" x 5"



#144167 EZ Flow 260 Mixing Element, 1.250" OD, 7.00" OAL, 17-4PH Stainless Steel

EZ Flow 360 Mixing Nozzle

The super large EZ Flow 360 is a one piece drop-in insert held in place with a custom nozzle tip adapter or a nozzle body to provide added length as required. This unit offers very aggressive mixing action in an easy-to-use and easy-to-clean design. It also provides a blending action for greatly improved color mixing.

(1) $\frac{1}{4}$ "-28NPT & (1) $\frac{1}{8}$ "-27NPT Installed On Hex. Uses 1- $\frac{1}{4}$ "-12 Nozzle Tips.

Minimum 15" OAL with Tip

OAL with Tip	Heated Area	Heaters Required
14"	10-1/2"	(2) - 2-½" x 5"
16"	12-1/2"	(2) - 2-½" x 6"
18"	14-1/2"	(2) - 2-½" x 6"
20"	16-1/2"	(3) - 2-½" x 5"



#144168 EZ Flow 360, Mixing Element, 1.250" OD, 10.50" OAL, 17-4 Stainless Steel

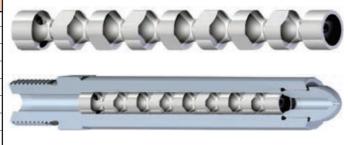
EZ Flow Xtra 80 Mixing Nozzle

EZ Flow Xtra 80 is a one piece drop-in insert held in place with standard nozzle tip. The design offers a very specialized mixing action for flow restrictive or shear sensitive materials.

(1) $\frac{1}{4}$ "-28NPT & (1) $\frac{1}{8}$ "-27NPT Installed On Hex. Uses standard $\frac{1}{8}$ "-14 Nozzle Tip.

Minimum 8" OAL with Tip

OAL with Tip	Heaters Required
8"	(1) - 1-½" x 4"
9"	(1) - 1-½" x 5"
10"	(2) - 1-½" x 3"
12"	(2) - 1-½" x 4"
14"	(2) - 1-½" x 5"
16"	(2) - 1-½" x 6"
18"	(2) - 1-½" x 6"
20"	(3) - 1-½" x 5"



#144169 EZ Flow RSS 80 Mixing Element, 5%" OD, 4.70" OAL, 17-4 Stainless Steel

continued on next page



In-Line Helix Style Mixing Nozzle

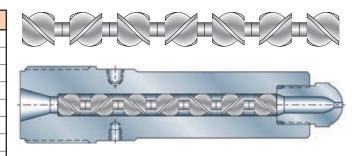
The In-Line color mixing nozzle has seven drop-in insert pieces, held in place with a standard nozzle tip. The dynamic design offers the most aggressive mixing action for improved color homogeneity.

(1) $\frac{1}{4}$ "-28NPT & (1) $\frac{1}{8}$ "-27NPT Installed On Hex. Uses standard $\frac{7}{8}$ "-14 Nozzle Tips.

See pages 564-565 for ordering information

Minimum 8" OAL with Tip

OAL with Tip	Heaters Required
8"	(1) - 1-½" x 4"
9"	(1) - 1-½" x 5"
10"	(2) - 1-½"x 3"
12"	(2) - 1-½" x 4"
14"	(2) - 1-½" x 5"
16"	(2) - 1-½" x 6"
18"	(2) - 1-½" x 6"
20"	(3) - 1-½" x 5"



#105084 In-Line Mixing Elements, 1/2" OD, 5" OAL, H-13 Steel, Set of 7 Helix

EZ Groove 95 Mixing Nozzle

EZ Groove 95 is a one piece drop-in insert held in place with standard nozzle tip. The design offers very aggressive mixing action in an easy-to-use and clean design.

(1) $\frac{1}{4}$ "-28NPT & (1) $\frac{1}{8}$ "-27NPT Installed On Hex. Uses standard $\frac{7}{8}$ "-14 Nozzle Tips.

Minimum 8" OAL with Tip

OAL with Tim	Heatava Damvivad
OAL with Tip	Heaters Required
8"	(1) - 1-½" x 4"
9"	(1) - 1-½" x 5"
10"	(2) - 1-½" x 3"
12"	(2) - 1-½" x 4"
14"	(2) - 1-½" x 5"
16"	(2) - 1-½" x 6"
18"	(2) - 1-½" x 6"
20"	(3) - 1-½" x 5"

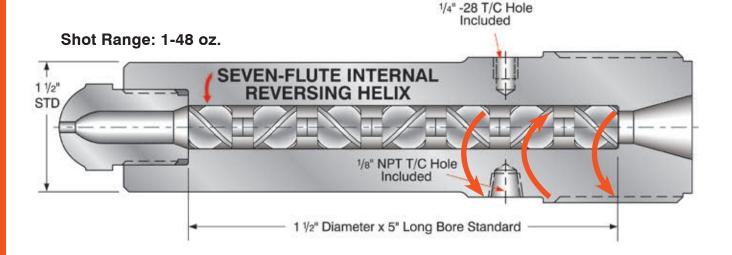




#148517 EZ Flow RSS 80 Mixing Element, 5/8" OD, 6.100" OAL, 17-4 Stainless Steel

IMS In-Line Color Mixing Nozzle

Provides Optimum Color Mixing with Minimum Flow Restriction





多多多多多少少

Individual Mixing Segments easily replaced at Low Cost!

Why buy an IMS In-Line Color Mixing Nozzle?

IMS exclusive In-Line Color Mixing Nozzles with their unique, individual mixing segments perform exceptionally well, and for a lot less money than similar units.

Flow restriction is minimal. These mixers let you use less colorant, and they reduce maintenance time and expense. The original IMS In-Line Color Mixing Nozzle — you can't buy a comparable mixing nozzle for less!

See price list on next page

Non-Stock Nozzles

IMS can manufacture Custom In-Line Color Mixing Nozzles

Use The Request For Quotation Form On Page 510.

Tech Tips

Do NOT exceed 48 oz. May create excess pressure build up. See EZ Flow Mixing Nozzles on pages 506-509



IMS In-Line Color Mixing Nozzles



Standard with $\frac{1}{4}$ "-28 and $\frac{1}{8}$ NPT T/C Holes in Hex. Use Standard $\frac{7}{8}$ "-14 Nozzle Tips - See pages 489-497 for Tips

Mixing Bodies (see mixing elements below)				
Item #	Length With Tip	Thread Size	Rear Opening	Unit Price
160928	7"			\$217.75
115220	7-3/8"			217.75
160929	8"			226.50
160930	9"	11/4"-12	3/4"	240.40
160931	10"			278.75
160932	12"			322.30
160933	14"			410.80
115212	7-3/8"			Inquire
160935	8"			\$217.75
160936	9"	11/2"-12	²⁷ / ₃₂ "	226.50
160937	10"	1/2 12	/ 32	278.75
160938	12"			322.30
160939	14"			410.80
160940	7"			\$217.75
104742	7-3/8"			252.60
160941	8"			226.50
160942	9"	1¾"-8	3/4"	240.40
160943	10"			278.75
160944	12"			322.30
160945	14"			410.80
160947	8"			\$226.50
105034	8-1/4"			226.50
160948	9"	13/4"-8	11/4"	240.40
160949	10"	1,40	1 /4	278.75
160950	12"			322.30
160951	14"			410.80

Required Heater Band				
	Item #			
I.D. x Width (Qty)	120 Volt	240 Volt		
1-½" x 3"	134625	134626		
1-½" x 4"	134629	134630		
1-½" x 4"	134629	134630		
1-½" x 5"	134631	134632		
1-½" x 3" (2)	134625	134626		
1-½" x 4" (2)	134629	134630		
1-½" x 5" (2)	134631	134632		
1-½" x 4"	134629	134630		
1-½" x 4"	134629	134630		
1-½" x 5"	134631	134632		
1-½" x 3" (2)	134625	134626		
1-½" x 4" (2)	134629	134630		
1-½" x 5" (2)	134631	134632		
1-½" x 3"	134625	134626		
1-½" x 4"	134629	134630		
1-½" x 4"	134629	134630		
1-½" x 5"	134631	134632		
1-½" x 3" (2)	134625	134626		
1-½" x 4" (2)	134629	134630		
1-½" x 5" (2)	134631	134632		
1-½" x 4"	134629	134630		
1-½" x 4"	134629	134630		
1-½" x 5"	134631	134632		
1-½" x 3" (2)	134625	134626		
1-½" x 4" (2)	134629	134630		
1-½" x 5" (2)	134631	134632		

Mixing	Elements	Unit Price
105084	60 oz color mixing helix set (2 flat face, 2 right and 3 left flutes)	\$181.85
104921	Flat face helix	22.02
104785	Right flute helix	34.10
104855	Left flute helix	34.10
107331	Helix set (2 flat face, 2 right and 3 left flutes) CVD coated for abrasion and corrosion resistant surface	187.01

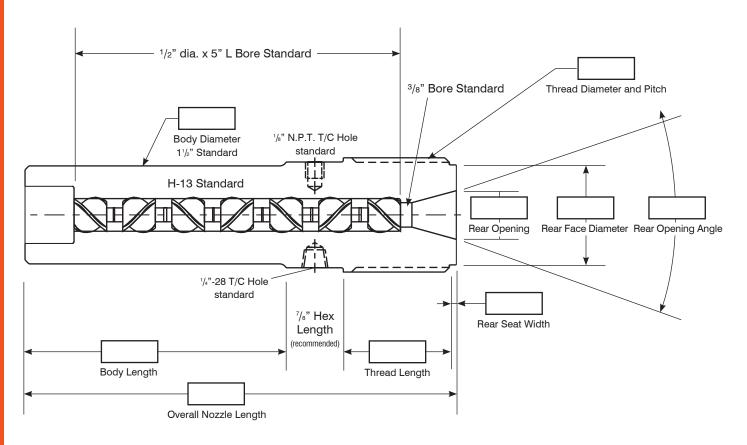


www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Non-Stock In-Line Color Mixing Nozzle Body Form

Fill In The Following Basic Dimension Blanks



S	pe	ci	fy:
_			

1.Press Make _____

and Model _____

2. Thermocouple

Thread Size and Location

Date:	Quantity:	Phone:()		Fax: ())
Name:			Title:		
Company Name: _			Email:		
Address:					
City:			State:		7in:



Note: External heating standard

IMS Radius Gauges

Measure Nozzle and Sprue Bushings

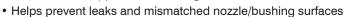


Gauge is marked to show the Sealing Zone as well as the Radius. Correctly matching radius and seal stops drooling and extends nozzle and sprue bushing life.

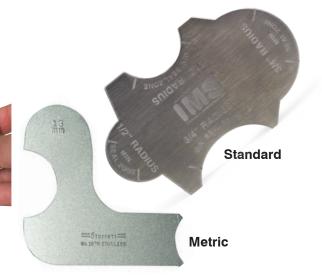
- · Avoid leaks from too little relief
- · Avoid nozzle tip crushing from too much relief
- Avoid leaks from mismatched nozzle/bushing surface

The IMS Advantage

- Measures BOTH nozzle and sprue
- · Simplifies checking of sealing zones
- Standard Radius Gauge is permanently etched (no guessing) to show both the radius and the approximate sealing zone



- 100% Stainless steel
- Accuracy: ±0.005"



Item #	Description	Unit Price
107337	Standard Radius Gauge 1/2" and 3/4" radius	\$4.76
119111	Metric Radius Gauge (10mm)	13.05
119105	Metric Radius Gauge (13mm)	13.05
132852	Metric Radius Gauge (15mm)	20.97

IMS Orifice Gauges



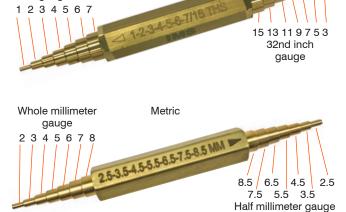
16th inch

gauge



Use IMS Orifice Gauges to measure the hole size of your nozzle and sprue bushings. The standard gauge measures in $\frac{1}{16}$ " and $\frac{1}{32}$ " and the metric gauge measures in whole and half millimeters. These gauges are machined from brass to avoid nozzle damage.





Standard

Item #	Description	Unit Price
115617	Standard Orifice Gauge	\$17.05
117755	Metric Orifice Gauge	17.05



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



IMS Color Dispersion Plug

For Use In Modified Nozzles

Provides Good Color Dispersion with Minimum Pressure Drop at an Economical Price!

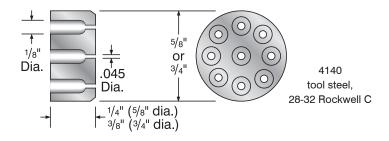
IMS Color Dispersion Plugs provide consistent color blending, minimum pressure drop and less chance of blockage from foreign matter.

5%" Dia. Plugs fit in a special recess machined into the nozzle tip seat. (See below)

3/4" Dia. Plugs fit in a special recess machined into the rear opening. (See below)

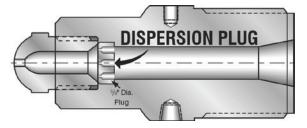


Specifications and Prices

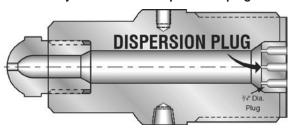


Item #	Item # Description			
105029	5⁄8" dia. Color Dispersion Plug	\$10.00		
104958	3/4" dia. Color Dispersion Plug	10.00		

Body modified to accept 5/8" dia. plug



Body modified to accept 3/4" dia. plug



Buy any RT body and we retrofit it for a dispersion plug — Inquire for Price



fax order toll-free (USA & Canada)

1.888,288,6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Color Dispersion Plug

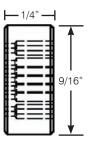
For Use In Modified Nozzle Tips

Color Dispersion Plugs

for use in modified Nozzle Tips

IMS#	Diameter	Depth	Hole Count	Hole Size	Unit Price
144182	9/16"	1/4"	19	.025"	\$23.75
144183	9/16	1/4"	19	.050"	15.35





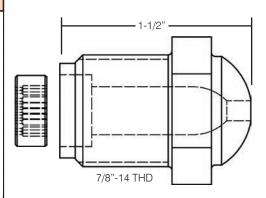
Nozzle tip needs to be counterbored to receive plug

Special Color Dispersion Nozzle Tips

Pre-Counterbored to accept

Color Dispersion Plugs 144182 & 144183

Orifice	½" Radius	¾" Radius	Unit Price
1/16	145520	145531	
3/32	145521	145532	
1/8	145522	145533	
5/32	145523	145534	
3/16	145524	145535	440.00
7/32	145525	145536	\$46.00
1/4	145526	145537	
9/32	145527	145538	
5/16	145528	145539	
11/32	145529	145540	
3/8	145530	145541	



IMS Color Dispersion Disc

For Use with Standard Nozzle Tips

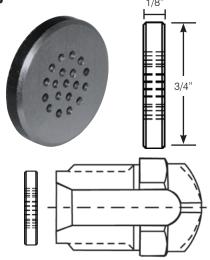
Color Dispersion Disc

for external application

IMS#	Diameter	Depth	Hole Count	Hole Size	Unit Price
144173	3/4"	1/8"	19	.025"	\$23.75
144174	3/4"	1/8"	19	.050"	16.10

No tip modification necessary

Goes between nozzle body and nozzle tip!





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

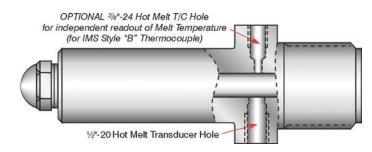
tech support toll-free (USA & Canada) 1.866.467.9001

Direct Melt Pressure-Reading Nozzles

Expressly Made with Oversize Hex To Withstand High Injection Pressures Externally Heated Only

Specify Overall Nozzle Length (without tip attached), Thread Size/Type (standard, metric or trapezoidal) and Rear Opening

- 3/8"-24 T/C hole available if required
- Plugs available for 1/2"-20 transducer hole and 3/8"-24 T/C hole



Item #	Description	Unit Price
105115	Plug for transducer hole (1/2"-20 THD)	Inquire
104720	Plug for Style B thermocouple hole (3/8"-24 THD)	\$23.85

Direct Melt Temperature-Reading Nozzles

Externally Heated, Removable Tip Style Nozzle with General-Purpose Internal Design standard. Inquire about other internal designs. Other lengths, thread sizes and rear openings available to order.

For One-Piece and Internally Heated Nozzles, inquire for price and specify Nozzle Thread, R.O., Length, Radius and Orifice.

Length

3/s"-24 Hot Melt T/C Hole

Included

Nozzle Tips sold separately

Length With Tip	Thread Size	Rear Opening	Item #	Unit Price
	11/4"-12"	3/4"	104834	Inquire
	1½"-12"	1/2"	104762	Inquire
5"	1¾"-8"	3/4"	105276	Inquire
	13/4"-8"	11/4"	105093	Inquire
7"	11/4"-12"	3/4"	105026	Inquire
	1½"-12"	1/2"	104955	Inquire
	13/4"-8"	3/4"	104885	Inquire
	13/4"-8"	11/4"	104818	Inquire
	1½"-12"	1/2"	104681	Inquire
9"	13/4"-8"	3/4"	105073	Inquire
	13/4"-8"	11/4"	105008	Inquire

Recommended Heater Band
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134619 / #134620
#134627 / #134628
#134627 / #134628
#134627 / #134628
#134627 / #134628
#142084 / #110042
#142084 / #110042
#142084 / #110042

See form on page 481 for Custom Removable Tip Nozzles



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

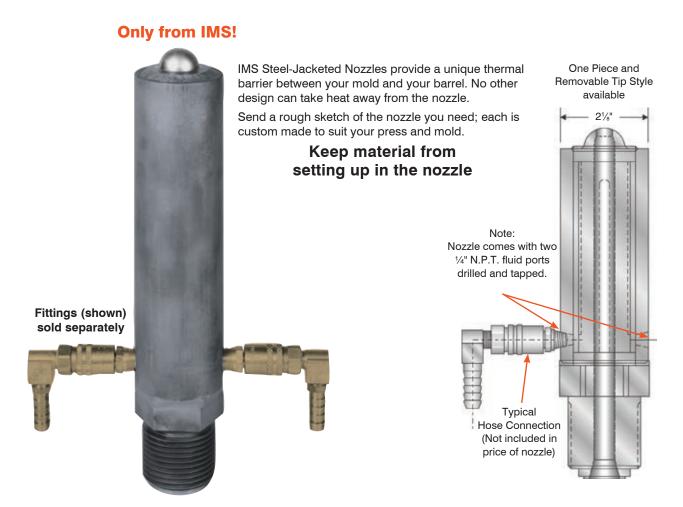
tech support toll-free (USA & Canada) 1.866.467.9001

IMS Liquid Cooled Heat Barrier Nozzle

Ideal for Thermosets

Can also be heated for thermoplastics

Water Jacket Provides Positive Heat Barrier Between The Mold And The Nozzle



Price Quoted Promptly Upon Request

Specify: Length, Radius, Orifice, Thread Size and Rear Opening

Useful In Many Thermoplastic Operations



IMS

Gas Assist Nozzles and Accessories

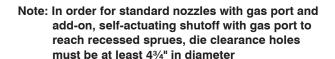
Save Money and Improve Quality at The Same Time

Gas-assist injection molding results in stronger parts with better uniformity of cross section, while reducing injection pressure. It is ideal for long or irregularly-shaped, hollow parts.

We offer a complete line of accessories for nitrogen gas-assist molding. Included are add-on gas ports and nozzle bodies with gas ports, shutoffs and valves, check valves and in-mold gas injection pins. These components are compatible with all gas assist molding systems.

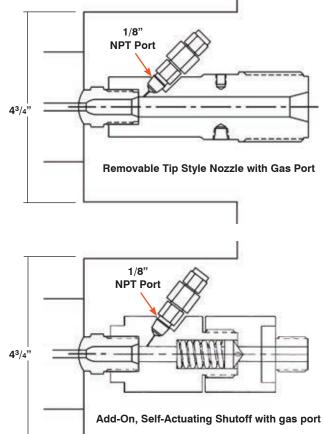
- Rotary Resin Shutoff Valve prevents nitrogen from entering the barrel during the nitrogen injection phase.
 This valve is hydraulically actuated for positive shutoff.
 Use it in conjunction with removable tip style nozzle bodies having a gas injection port.
- Add-On, Self-Actuating Shutoff with Gas Port also prevents nitrogen from entering the barrel during the

- nitrogen injection phase. The nitrogen gas pressure actuates an internal spring to effect shutoff. This nozzle includes a gas-assist port.
- Add-On Gas Port converts with any standard nozzle to a gas-assist nozzle.
- Cone (needle) check valve prevents plastic from backing up and plugging the nitrogen injection line. It's easy to install and made of stainless steel.
- Spring-loaded check valve also prevents plastic from backing up and plugging the nitrogen line. This type allows increased nitrogen gas flow while reducing nitrogen injection pressures.
- In-Mold gas pins permit injection of nitrogen gas directly into the mold rather than the nozzle.





Make Stronger, More Uniform Parts



Custom Threads Available



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

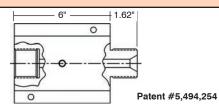
Specifications and Prices

Rotary Resin Shutoff Valve

- · Use with or without gas assist
- · Stainless steel

Operating Temperature: 550° F to 600° F Hydraulic Pressure: 500 psi max. Nozzle Thread: 13/4"-8 female Barrel Thread: 13/4"-8 male Hose Fitting: 1/8"-27 N.P.T.

Dimensions: $7\frac{5}{8}$ " I x 9" w x $4\frac{3}{4}$ " h



Requires only two hydraulic hoses, four $\frac{3}{8}$ dia. x $5\frac{1}{2}$ long heater rods and a source of hydraulic power able to deliver 500 psi max.

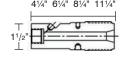
at 3 gpm with a simple 3-way spring return valve

123957	Rotary Resin Shutoff Valve (1/2" thru bore — 1" rear opening)	\$5,337.00
132581	Rotary Resin Shutoff Valve (¾" thru bore — 1¼" rear opening)	5,580.00

Removable Tip Style Nozzle Bodies with Gas Port

- For use with Rotary Resin Shutoff Valve
- 4140 heat treated steel

Tip Thread: female $\frac{7}{8}$ "-14



Patent #5,149,546

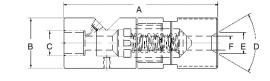
Removable Tip Style Nozzle Bodies with Gas Port for use with Rotary Resin Shutoff Valve Complete with $1\frac{3}{4}$ "-8 rear thread, $\frac{3}{4}$ " rear opening and $\frac{1}{4}$ "-28 and $\frac{1}{8}$ " N.P.T. T/C holes

123964	3964 (5" overall length with tip)				
123895	(7" overall length with tip)	250.95			
123896	(8¾" overall length with tip)	351.63			
123897	(12¾" overall length with tip)	298.00			

Add-On, Self-Actuating Shutoff with Gas Port

- 4140 Pre-Hardened and Nitrided
- Includes 1/8" NPT Gas Port

Spring Cracking Pressure: 400 psi Max Temp Usage: 750° F



	Male Thd	Α	В	С	D	Е	F	Hex	Thd Length	
162882	⁷ / ₈ "-14	6"	1.750"	⁷ / ₈ "-14	60°	.585"	.500"	1 -½"	.750"	\$2,375.00
162883	1-3/4"-8	6"	1.750"	⁷ / ₈ "-14	60°	.750"	.500"	1-1/2"	1.62"	2,425.00
165371	Replacement Internal Shut-Off Spring							144.00		
165372	Replacement Internal Shut-Off Spring Retainer							244.00		
165373	Replacemen	t Interr	nal Shut-	Off Cone)					220.00

Add-On Gas Port

• For use with any standard nozzle and tip • 4140 heat treated steel

Rear Opening: ½" dia. **Tip Thread:** $\frac{7}{8}$ "-14 female **Nozzle Thread:** $\frac{7}{8}$ "-14 male Overall Length: 3\%"



Patent #5,149,546

123925 Add-On Gas Port for use with any standard nozzle tip (shutoff required) \$322.30

Check Valves

Fittings included

• Cone (needle) and spring loaded styles

Patent #5,149,564



Patent Pending



\$156.06 310.23

123927	Check Valves with Fittings — Stainless steel cone (needle) style
126733	Check Valves with Fittings — Stainless steel spring loaded style

Accessories and Spare Parts

147174	6' length gas assist hose	Inquire
160063	8' length gas assist hose	Inquire
147175	10' length gas assist hose	Inquire
147176	15' length gas assist hose	Inquire
147177	20' length gas assist hose	Inquire
160064	25' length gas assist hose	Inquire

	147809	Gas assist gas hose line connector - 1/8 NPT	Inquire
	147810	Gas assist gas hose line connector - 1/4 NPT	Inquire
	160062	Nitrogen gas line connector*	Inquire
I	130634	Replacement internal spring for Item #126733	Inquire
•			

^{*}For joining (2) hoses for extended length. Open union - No check valve function

Feeler Gauges



Thumbwheel locking

Sizes

136488 (mm): .05, .10, .15, .20, .25, .30, .35, .40, .45, .50, .55, .60, .65, .70, .75, .80, .85, .90, .95, 1.00

136489 (inches): .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025

Item #	Description	Unit Price
136488	20 Leaf Feeler Gauge (Metric)	\$12.82
136489	26 Leaf Feeler Gauge (SAE)	10.70

Pitch Gauges

Determine Pitch Quickly and Easily

Thumbwheel locking

Sizes

#136490 (mm between threads): .25, .30, .35, .40, .45, .50, .55, .6, .65, .70, .75, .8, .85, .9, 1.0, 1.1, 1.2, 1.25, 1.3, 1.4, 1.5, 1.6, 1.7, 1.75, 1.8, 1.9, 2.0, 2.5

#136492 (threads per inch): 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 25, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42

#136491 (threads per inch): 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84



Item #	Description	Unit Price
136490	28 Leaf Pitch Gauge (Metric)	\$8.20
136492	31 Leaf Pitch Gauge (SAE)	8.20
136491	51 Leaf Pitch Gauge (SAE)	19.10

Tech Tips

For faster setups, ensure you have the proper tools at hand.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-mail

Nozzles, Nozzle Tips & Supplies

Nozzle Tip Blanks

Great For Testing Equipment



- Solid stress proof steel
- 1/8"-14 Threads



Item #	Description	Unit Price
136499	½" Nozzle Tip Blank	\$13.00
136486	¾" Nozzle Tip Blank	13.00

See Also Combination Wrenches on Page 57

Heat Treated Chrome Vanadium Alloy Steel

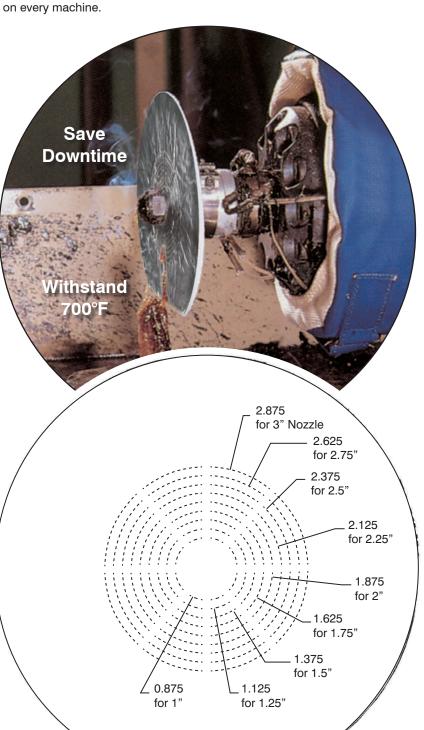




IMS Drool Disc™

Stops Drool from Damaging Heater Bands and Wiring

IMS Drool Disc™ Heater Band Protectors protect your equipment by preventing material drool from oozing back onto your heater bands, wiring and insulation blankets. The disc obstructs the path of the drool and keeps it in front of the nozzle. IMS Drool Discs™ are inexpensive enough to place on every machine.



Perforated inside diameter to fit most nozzles — just trim to size!



Fiberglass Core with Adhesive Bonded Foil

Designed and engineered expressly for this application

Specifications

Max. Temperature: 700° F

Size: 6" dia. by 1/8" thick

IMS Drool Disc™

Heater Band Protectors

Item #174431

(Perforated)

\$14.75 ea

Item #174432 (Blank)*

\$14.50 ea

*User cuts to size



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

e-mail

IMS High Heat — Copper Flake Thread Lube

Anti-Seize Compound

An excellent anti-seize compound for use on end cap bolts, and nozzle and screw tip threads. It consists of copper and graphite powders blended into a grease carrier to allow it to be applied. The grease carrier will break down at 350° F, but the product will continue to lubricate up to the listed temperature limits of the copper and graphite powders.





Helps Prevent Seizing And Galling

Facilitates Removal

Specifications

Melting point of Copper: 1981° F

Melting point of Graphite: in air, 750° F to 1100° F

in a reduced oxygen environment, 6700° F



A limited use Anti-Seize Compound formulated for continuous use up to 350° F

Item #	Description	Unit Price
107280	2-oz. jar Copper Flake Thread Lube with brushtop	\$6.53
103783	16-oz. jar Copper Flake Thread Lube with brushtop	21.86

Tech Tips

Copper Flake Thread Lube is the preferred compound for nozzle threads, but you can also use High Heat Tape with PTFE — see page 195



Nozzle Leak Detector

Detect Nozzle Leaks Before They Cause Damage and Extensive Down Time

- Prevent Heater Band and Thermocouple damage
- · Perfect for all unattended machines or lean manufacturing shops
- · Use as just an audible alarm or connect to your machine to stop injection immediately
- · Reduce machine clean up time by inhibiting unchecked leakage

How It Works

The sensor assembly mounts easily using a single worm gear style clamp (can be mounted directly on top of a heater band). The other end connects to the receptacle on the control box.

Adjust control box set point approximately 100 to 150°F below nozzle zone temperature. If leaking plastic comes into contact with the sensor, the audible alarm will sound and the alarm light will come on.

If connected to your injection machine with supplied plugs, the internal relay can set off a remote alarm and light or if wired to the purge guard circuit will stop the machine.

Detects Drool caused by:

- · Misaligned nozzle
- · Cracked tip
- · Plugged gates



Nozzle and Hose Clamp (sold separately)

Bracket Assembly



Thermocouple Sensor



Available in 3", 6" and 9" thermocouple length

Item #	Description	Price
171707	Control Box ONLY with Alarm, Relay and Power Cord (115V)	\$851.37
170895	Bracket Assembly ONLY (requires thermocouple sensor below)	\$57.50
170896	Thermocouple Sensor Straight x 3" - for medium nozzles such as 6", 7" or 8" long. Complete with 60" stainless steel armored leads and mini plug	\$29.84
170897	Thermocouple Sensor Straight x 6" - for long nozzles such as 8", 9", or 10" long. Complete with 60" stainless steel armored leads and mini plug	29.84
170898	Thermocouple Sensor Straight x 9" - for extra long nozzles such as 12" and longer. Complete with 60" stainless steel armored leads and mini plug	29.84



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



Free Flow Screw Tips Pages 534 - 550

Ball Check Screw Tips

Pages 524 - 533

IMS Evolve Ball Valve Pages 551

Components & Supplies

BRODY-Ring® Seals Pages 553 - 555

Screw Tips, Screws & Barrels



Feed Screw Repair Service Pages 558 - 559

> **Feed Screws** Pages 560 - 573

Barrel Repair Service Pages 574 - 579

End Cap Repair Service Pages 580 - 583

IMS Exclusive SPIRAL™ System Pages 584 - 585

Purgers & other Maintenance Products Pages 586 - 592



Most items IN STOCK for Same Day Shipment

www.imscompany.com fax order toll-free (USA & Canada)

phone order toll-free (USA & Canada) 1.800.537.5375

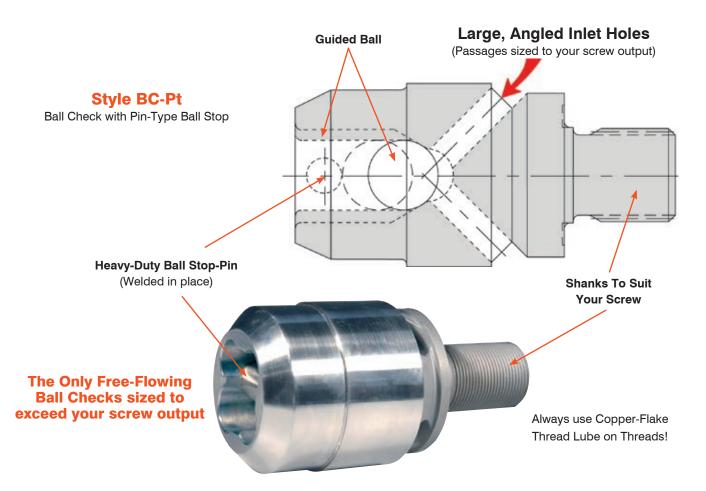
phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Pin-Type One-Piece Ball Check Screw Tips

With Welded-In Pin

The Original Ball Valve Tip! Modified For Today's Materials!



Features

- Guided Ball Ball travels in a straight line shuts off faster
- Heavy Duty Pin Welded in place, H-13 Tool Steel Pin. gelps minimize contamination and failure.
- Passages Sized Right Inlet, outlet, ball and openings are sized to your screw capacity.
- Hard Outer Wear-Surface Tool-Steel Screw Tips outlast other types many times over. Wear-resistant coatings are available at extra cost.

For all-around use

For most general-purpose work, the IMS Style BC-PT tip should be specified. It is joint-free and provides long-life, proven in hundreds of plants as the sure way to cut sliding ring valve costs.

MATERIAL: High-Quality H-13 Steel. IMS uses special wear resistant tool steel in all tips. Chromium 5.00, Vanadium 1.00, Silicon 1.00, Carbon .40, Molybdenum 1.00. Heat Treated to 46-48 Rockwell "C".

This steel machines 40% slower than cheaper types like 4140. But the extra cost gives you extra life and less downtime due to wear and shank failures - SO YOU SAVE!

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

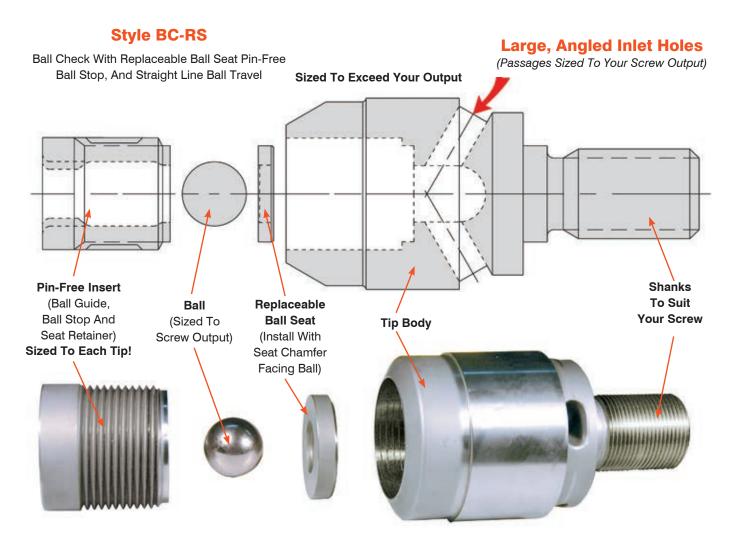
fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Insert-Type Ball Check Screw Tips

With Replaceable Ball Seat and Pin-Free Retainer



Features

- Guided Ball Ball travels in a straight line shuts-off faster
- Pin-Free Ball Retainer Allows unrestricted material flow.
- Replaceable Seat Hardened Ball Seat easily replaced when worn.
- Passages Sized Right Each insert, ball and seat is sized to your screw capacity (unlike cheap designs, where one size of ball and insert is used on many sizes of screw tips).
- Hard Outer-Wear Surface Tool Steel Screw Tips outlast other types many times over. Wear-resistant coatings are available at extra cost.

Ideal For Filled Plastics

IMS Style BC-RS insert tips are for use on plastics with more than 10% abrasive filling or where much tramp metal is found. Tip can have external surfaces hard coated with PVD or CVD (both titanium nitride coatings). Inquire for prices of specially treated tips for filled plastics.

The Original Ball-Type Screw Tip

IMS Tool Steel Tips were the first American-made ball-type, non-return valves to replace old-style sliding rings. Avoid cheap imitations! Look for the genuine IMS mark on the end of the shank! You'll cut your press downtime costs with IMS Chrome-Vanadium Tool-Steel Screw Tips.

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone 1.888.288.6900 001.8

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

		IMS	ltem #
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Seat
Arburg			
25mm	M12 x 1.75mm RH	102430	RFQ*
30mm	M12 x 1.75mm RH	102479	RFQ*
35mm	M18 x 1.5mm RH	113471	124020
40mm	M18 x 1.5mm RH	125193	124019
Autojector		·	
1"	½"-13 LH	122082	RFQ*
Battenfeld			
18mm	M8 x 1.25mm LH	120982	RFQ*
18mm	M18 x 1.25mm LH	RFQ*	127089
25mm	M10 x 1.5mm LH	102679	102507
35mm	M16 x 1.5mm LH	RFQ*	102716
45mm	M20 x 2.0mm LH	102497	102753
70mm	M30 x 3.5mm LH	RFQ*	102707
70mm	M40 x 2.0mm LH	RFQ*	102743
75mm	M40 x 2.0mm LH	RFQ*	102691
75mm	M30 x 3.5mm LH	RFQ*	102682
Beloit			
1-1/2"	3⁄4"-16 LH	102454	RFQ*
1-1/2"	¾"-16 LH	RFQ*	102610
2-1/4"	7⁄8"-9 LH	RFQ*	102721
2-1/2"	1-1/8"-7 LH	RFQ*	115465
2-1/2"	1"-8 LH	102404	102695
3"	1-1/4"-7 LH	102538	RFQ*
Воу			
24mm	M12 x 1.75mm LH	113852	119788
28mm	M14 x 2.0mm LH	RFQ*	136407
38mm	M16 x 2.0mm LH	116073	RFQ*
Cincinnati			
28mm	M12 x 1.75mm LH	RFQ*	137370
40mm	M20 x 2.5mm LH	125115	RFQ*
55mm	M27 x 3.0mm LH	110870	112117
90mm	M48 x 5.0mm LH	124120	143343
100mm	M52 x 5.0mm LH	137757	RFQ*
110mm	M56 x 5.5mm LH	131641	137806

^{*}RFQ=Request for Quote continued on next page



		IMS	tem #
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Seat
Cincinnati			
1-3⁄4"	3⁄4"-16 LH	RFQ*	102681
1-5/8"	¾"-10 LH	RFQ*	RFQ*
2"	1"-8 LH - 30° Nose	102458	102613
2"	1"-8 LH - 45° Nose	113302	RFQ*
2"	3/4"-16 LH	RFQ*	102740
2-1/4"	1"-8 LH	110283	RFQ*
2-1/2"	1-1⁄4"-7 LH	RFQ*	102751
2-1/2"	1-1/4"-12 LH	102398	102713
2-1/2"	1-1⁄4"-7 LH	144139	RFQ*
2-3/4"	1-1/4"-12 LH	102534	102688
2-3/4"	1-1⁄4"-7 LH	102409	142137
3-1/4"	1-½"-6 LH	RFQ*	102701
3-1/4"	1-½"-12 LH	102513	RFQ*
3-1/2"	1-½"-12 LH	RFQ*	102641
3-1/2"	1-½"-6 LH	102525	RFQ*
3-1/2"	1-½"-12 LH	102489	RFQ*
4-1/2"	2"-6 LH	130827	102653
4-1/2"	2"-12 LH	102465	102757
5-1/4"	2-1/4"-6 LH	102476	102630
6"	2-1/2"-6 LH	102452	102768
6"	2-1/2"-12 LH	102415	RFQ*
Egan		•	
1-3/4"	3⁄4"-10 LH	102532	102762
2"	7/ ₈ "-9 LH	102519	115465
2-1/2"	1-½"-7 LH	102487	RFQ*
2-1/2"	1-3/4"-6 LH	102470	RFQ*
3"	1-5/8"-6 LH	129353	102669
3-1/2"	1-3/4"-6 LH	RFQ*	102645
4-1/2"	2-1/4"-6 LH	102495	102711
5-1/4"	2-¾"-6 LH	102463	RFQ*
6"	3"-6 LH	102396	RFQ*

^{*}RFQ=Request for Quote

continued on next page



			IMS Item #	
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Seat	
Engel				
25mm	M12 x 1.75mm RH	112792	RFQ*	
30mm	M12 x 1.75mm RH	112797	RFQ*	
35mm	M12 x 1.75mm RH	111034	119166	
40mm	M16 x 2.0 RH	RFQ*	119161	
60mm	M30 x 3.5 RH	136426	115440	
70mm	M36 x 4mm RH	RFQ*	122969	
Farrel				
2.1"	1"-8 LH	102481	102612	
2.8"	1-3/8"-8 LH	RFQ*	102725	
3"	1-5/8"-6 LH	112879	RFQ*	
3-1/4"	1-½"-8 LH	102408	102676	
4-1/4"	2"-8 LH	102499	RFQ*	
4-3/4"	2-1/4"-8 LH	102475	102700	
5-1/4"	2-3/4"-6 LH	RFQ*	137144	
Fellows		•		
1-3/4"	5⁄8"-11 LH	RFQ*	102745	
2"	3⁄4"-10 LH	102427	RFQ*	
3"	1-5/8"-6 LH	102537	RFQ*	
3-1/2"	1-¾"-8 LH	102518	RFQ*	
НРМ				
1-1/2"	5⁄8"-11 LH	RFQ*	102731	
1-3/4"	¾"-10 LH	102494	102710	
2"	7∕ ₈ "-9 LH	102531	102761	
2-1/4"	1"-8 LH	RFQ*	118990	
2-1/2"	1-1/8"-7 LH	102420	102756	
3"	1-5/8"-6 LH	102445	102737	
3-1/2"	1-¾"-6 LH	102395	102685	
4"	2"-6 LH	102510	142078	
4-1/2"	2-1/4"-6 LH	102486	102618	
5-1/4"	2-3/4"-6 LH	RFQ*	102660	
6"	3"-6 LH	RFQ*	141674	
7"	3-1/2"-6 LH	RFQ*	109809	

^{*}RFQ=Request for Quote continued on next page



		IMS	Item #
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Sea
Husky			
55mm	M27 x 2.0mm LH	102438	RFQ*
70mm	M36 x 4.0mm LH	125363	RFQ*
85mm	M48 x 4.5mm LH	123995	RFQ*
85mm	M48 x 5.0mm LH	RFQ*	RFQ*
100mm	M52 x 5.0mm LH	144148	144714
110mm	M52 x 5.0mm LH	123932	123994
IMPCO			
2"	7⁄8"-9 LH	102432	RFQ*
2-1/4"	1-1/4"-7 LH	102811	RFQ*
2-1/2"	1-1/8"-7 LH	102388	110175
2-13/16"	1-1/4"-8 LH	RFQ*	102717
3-1/2"	2"-4.5 TPI-LH	RFQ*	137118
3-1/4"	2"-8 LH	121560	RFQ*
3-1/4"	1-5/8"-6 LH	102413	102692
4-1/4"	2.250 x 4.5" LH	120868	RFQ*
Jaco			
1-1/4"	5⁄8"-11 LH	RFQ*	RFQ*
Kawaguchi			
50mm	M30 x 3.0mm LH	RFQ*	RFQ*
70mm	M40 x 4.0mm LH	102509	RFQ*
80mm	TR42 x 4.0mm LH	RFQ*	126949
Klockner		·	•
80mm	M48 x 4.0mm LH	110550	RFQ*
Krauss-Maffei		•	•
45mm	M24 x 3.0mm LH	RFQ*	124682
Lombard			
1-5/8"	3⁄4"-10 LH	111155	RFQ*
3-1/2"	1-5/8"-8 LH	RFQ*	120151
McNeil			
1-3/8"	5%"-18 LH	RFQ*	120149
MIR			
100mm	1-¾"-5 LH	RFQ*	114280

^{*}RFQ=Request for Quote continued on next page



		IMS	IMS Item #		
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Sea		
Mitsubishi					
70mm	M39 x 4.0mm LH	RFQ*	120127		
		,	ļ.		
Natco		1	1		
2-1/4"	1"-8 LH	102401	102765		
70mm	1-1/8"-12 LH	102450	RFQ*		
70mm	1-1/8"-6 LH	102540	RFQ*		
90mm	1-½"-12 LH	102406	RFQ*		
90mm	1-½"-6 LH	130692	102649		
105mm	1-¾"-6 LH	102523	102626		
120mm	2"-6 LH	RFQ*	102715		
New Britain					
2-1/2"	1-1/4"-8 LH	RFQ*	127041		
3-1/2"	1-¾"-8 LH	RFQ*	126200		
30mm	TR18 x 2.5mm LH	RFQ*	102760		
45mm	TR27 x 3.0mm LH	102516	RFQ*		
55mm	TR35 x 3.0mm LH	102443	102683		
Newbury			•		
1"	½"-13 LH	102485	102616		
1-1/4"	5/8"-11 LH	RFQ*	102754		
1-3/8"	5%"-11 LH	102387	102656		
1-1/2"	3/4"-10 LH	102461	RFQ*		
1-3/4"	7/8"-9 LH	102437	102704		
2"	1"-8 LH	102412	102680		
2-1/4"	1"-8 LH	RFQ*	144210		
		ļ			
Niigata 76mm	M42 x 3.0mm LH	110208	RFQ*		
7011111	W42 X 3.UIIIII LH	110206	nru		
Nissei					
71mm	TR44 x 3.0mm LH	110266	142056		
80mm	TR48 x 3.0mm LH	RFQ*	125537		
90mm	TR55 x 3.0mm LH	110264	RFQ*		
Reed					
2"	1"-8 LH	102514	102632		
2-1/8"	1"-8 LH	RFQ*	102611		
2-1/4"	1"-8 LH	102448	RFQ*		
2-1/2"	1-1/4"-8 LH	102424	102714		
2-3/4"	1-1/2"-8 Acme LH	102399	102722		

^{*}RFQ=Request for Quote

continued on next page



		IMS	IMS Item #		
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Sea		
Reed					
3"	1-3/8"-8 LH	102521	102672		
3-3/4"	1-7/8"-8 LH	RFQ*	102625		
3-5/16"	1-¾"-5 LH	102496	102648		
4-1/8"	2-1/4"-8 LH	121133	RFQ*		
4-1/4"	2"-8 LH	102405	RFQ*		
Stokes					
1-1/4"	½"-20 LH	102441	RFQ*		
1-1/4"	½"-13 LH	121096	113912		
1-7/8"	3/4"-16 LH	RFQ*	110405		
2"	1"-8 LH	111103	RFQ*		
2"	1"-12 LH	102435	RFQ*		
2-1/2"	1-1/8"-12 LH	102459	102664		
2-1/2"	1-1/4"-10 LH	102416	RFQ*		
2-3/4"	1-¼"-12 LH	102410	102642		
3"	1-3/8"-12 LH	102506	RFQ*		
3"	1-5/8"-6 LH	102490	RFQ*		
3-1/2"	1-%"-12 LH	102386	RFQ*		
Stubbe					
45mm	M24 x 3.0mm LH	102526	RFQ*		
Toshiba		•			
25mm	M12 x 1.5mm LH	114153	RFQ*		
40mm	M22 x 2.0mm LH	124107	RFQ*		
95mm	M45 x 4.0mm LH	RFQ*	127231		
100mm	M50 x 4.0mm LH	RFQ*	RFQ*		
105mm	M50 x 4.0mm LH	126788	RFQ*		
115mm	M60 x 4.0mm LH	126625	RFQ*		
Trubor					
31mm	%"-11 LH	110753	RFQ*		
Uniloy - Milacron					
45mm	M24 x 3.0mm LH	102526	RFQ*		
45mm	M18 x 1.5mm LH	124339	RFQ*		

^{*}RFQ=Request for Quote continued on next page



		IMS I	IMS Item #		
Make of Press Screw Tip OD	Screw Tip Thread	With Welded in Pin	With Replaceable Seat		
Van Dorn					
1-3/8"	1"-3/8"-8 LH	RFQ*	138205		
25mm	½"-13 LH	114309	RFQ*		
30mm	5⁄8"-11 LH	102397	102646		
35mm	3/4"-10 LH	102414	102694		
40mm	3/4"-10 LH	102488	102670		
45mm	TR20 x 2.0 LH	RFQ*	143067		
50mm	1"-8 LH	102422	102624		
57mm	1-1⁄4"-7 LH	102389	102662		
65mm	1- ³ / ₈ "-6 LH	102471	102763		
69mm	1- ³ / ₈ "-6 LH	102533	102739		
80mm	1- ³ / ₈ "-6 LH	102512	102720		
90mm	1-¾"-8 LH	102447	102712		
105mm	1-¾"-8 LH	102464	102687		
115mm	2"-8 LH	111192	106406		

^{*}RFQ=Request for Quote

Check Out These Other Useful IMS Products!

Heat Resistant Gloves

Durable Work Gloves For Higher Temperature Jobs!

Use them for quick transfer of hot Nozzles, Screws, Screw Tips, Molds, Water Lines, Heater Bands, etc.



• Up to 300° F (intermittent)
• Band topped cuff
• One size fits all

30 oz
Hot Mill Gloves
Item No. 136370

For More Gloves and Pricing see Page 446-449



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

· Reinforced sewn knuckle straps

e-maii

S7.9001 sales@imscompany.com

Tech Tips

Screw Tip Wear Issues

Cracked Ring: Excessive barrel wear in the metering area. Unmelted plastic in the valve

can cause a situation where the ring will not seat against the rear seat.

This is usually due to a poor start up or shut down.

Broken Stud: This is usually due to a poor start up or shut down procedures. Failure to

make sure barrel is up to operating temperature at start up or failure to

properly purge barrel and screw at shut down.

Slow Recovery: Excessive back pressure is the most common cause. However, if there is

excessive wear between the front seat and ring it can impede the movement

of plasticized material and screw recovery can be drastically affected.

Failure To Hold Cushion: Excessive wear on the seating areas can allow material to pass back over

the valve or ball check.

Poor Quality Consistency: Excessive wear on the seating areas can allow material to pass back over

the valve or ball check.

D-2 Tool Steel

Heat treated to Rc 58-60, D-2 is a relatively inexpensive, high carbon-high chromium steel with proven, uniform wear resistance surpassing most other steels.

H-13 Nitrided

Tool steel with good strength that is thru-hardened and ground dimensionally then nitrided for 72 hours. A tough material good for general applications.

CPM9V

Highly wear resistant tool steel with a high percentage of vanadium carbide. Excellent for abrasive applications.

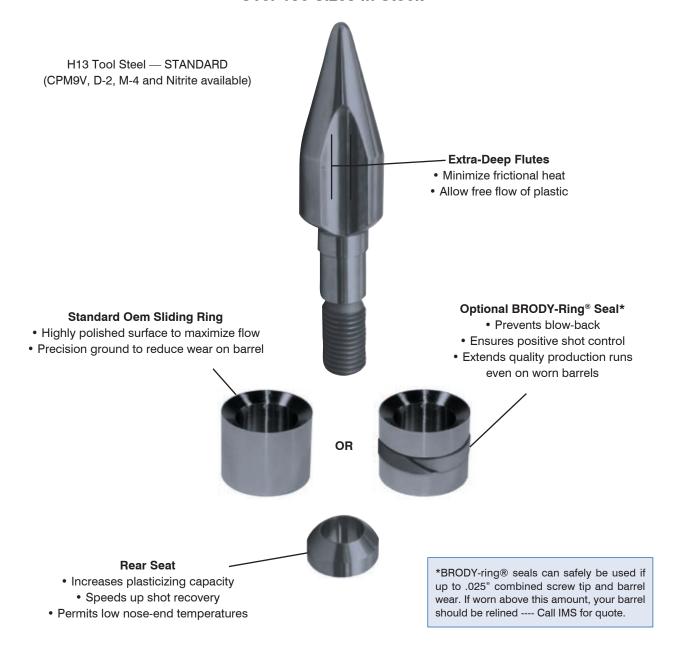
CPM420V

Ideal for highly corrosive applications. 420V also has significant wear resistant characteristics.

NOTE: If your screw is turning during injection, it's a good indication that your non return valve is leaking.



Over 150 Sizes In Stock



Optional PVD And CVD Surface Treatments Help Extend Tip Life — Inquire

Tech Tips

Hand tighten screw tips. Use a wrench, only if needed, to remove the tips.





BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS Item #		
	Screw Tip Thread	Nose	Style / Material		
Make of Press Screw Tip OD		Angle	H13	CPM9V	
Arburg					
15mm	M8x1.25 RH	40°	170753	160913	
15mm	M8x1.25 RH	60°	170754	160912	
18mm	M10x1.5 RH	20°	170751	147858	
18mm	M10x1.5 RH	70°	160915	162974	
18mm	M10x1.5 RH	90°	170752	160914	
20mm	M10x1.5 RH	60°	170360	132379	
22mm	M12x1.75 RH	30°	147821	147820	
22mm	M12x1.75 RH	60°	100905	119050	
25mm	M12x1.75 RH	30°	167779	167780	
25mm	M12x1.75 RH	70°	168360	144113	
25mm	M12x1.75 RH	120°	167781	132342	
30mm	M14x1.5 RH	40°	160911	150349	
30mm	M14x1.5 RH	80°	150348	136275	
30mm	M14x1.5 RH	120°	160909	160910	
35mm	M18x1.5 RH	40°	147867	144101	
35mm	M18x1.5 RH	120°	100857	144100	
40mm	M18x1.5 RH	40°	145598	167775	
40mm	M18x1.5 RH	90°	145597	167774	
45mm	M22x1.5 RH	60°	123993	167776	
45mm	M22x1.5 RH	90°	150388	167777	
45mm	M27x3.0 RH	90°	170462	170889	
Autojector					
3/4"	⁷ ∕ ₁₆ "-14 LH	40°	160074	160075	
1-1/4"	5⁄8" - 11 LH	52°	124696	123472	
1-1/2"	3/4"-10 LH	40°	126019	167782	
1-3/4"	7∕ ₈ " -9 LH	50°	150433	132450	
1-3⁄4"	3/4"-10 LH	49°	164669	164670	
Battenfeld					
22mm	M12x1.75 LH	90°	149442	151057	
25mm	M12x1.75 LH	90°	170882	171574	
30mm	M14x1.5 LH	90°	160079	160080	
35mm	M16x1.5 LH	90°	160908	133706	
40mm	M20x2.0 LH	90°	132367	131629	
45mm	M24x2.0 LH	90°	167679	148539	
50mm	M24x2.0 LH	90°	158272	160081	
55mm	M24x2.0 LH	90°	132942	131657	
60mm	M24x2.0 LH	90°	160082	132162	
65mm	M24x2.0 LH	90°	160084	123905	
70mm	M30x3.5 LH	90°	167681	122780	
75mm	M30x3.5 LH	90°	172357	172358	
85mm	M35x2.0 LH	90°	160072	160073	

Any Tip Available — Call for Quote

continued on next page



Free Flow Screw Tip Assemblies BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS I	tem #
		Nose	Style / Material	
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V
Воу				
14mm	M8x1.25 LH	90°	150342	150341
22mm	M10x1.5 LH	90°	140489	167766
24mm	M12x1.75 LH	45°	133444	121753
28mm	M12x1.75 LH	60°	144859	147839
28mm	M12x1.75 LH	90°	148519	148520
32mm	M14x2.0 LH	90°	168391	168392
32mm	M14x2.0 LH	60°	162797	162798
38mm	M16x2.0 LH	90°	150344	150343
38mm	M16x2.0 LH	90°	144753	143022
42mm	M16x2.0 LH	90°	144207	144206
42mm	M16x2.0 LH	90°	144209	144208
48mm	M18x2.5 LH	90°	170755	148575
Cincinnati				
18mm	M9x1.5 LH	60°	160002	160004
18mm	M10x1.5 LH	90°	160003	160005
22mm	M12x1.75 LH	60°	168317	148590
22mm	M12x1.75 LH	90°	170790	148591
22mm	M10x1.5 LH	60°	148586	170788
26mm	M12x1.75 LH	60°	170789	168174
26mm	M14x2.0 LH	60°	147154	147152
26mm	M16x2.0 LH	90°	147153	147151
28mm	M12x1.75 LH	60°	148605	148606
28mm	M16x2.0 LH	60°	148604	162796
28mm	M16x2.0 LH	90°	123548	150491
32mm	M18x2.5 LH	60°	147887	132330
32mm	M18x2.5 LH	90°	147129	145670
32mm	M18x2.5 LH	60°	162809	162811
32mm	M18x2.5 LH	90°	162810	162812
35mm	M18x2.5 LH	60°	148527	148526
36mm	M20x2.5 LH	60°	150316	132319
36mm	M20x2.5 LH	90°	150315	150314
36mm	M20x2.5 LH	60°	133243	170787
40mm	M20x2.5 LH	60°	142153	137553
40mm	M20x2.5 LH	90°	133420	123954
40mm	M20x2.5 LH	60°	162775	162774
42mm	M22x2.5 LH	60°	160010	170786
44mm	M24x3.0 LH	60°	148554	148555
44mm	M24v3 O I H	OU ₀	137623	1/21/5

Any Tip Available — Call for Quote

142145 continued on next page



44mm

137623

BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS Item #	
Make of Press Screw Tip OD	Screw Tip Thread	Nose	Style / Material	
		Angle	H13	CPM9V
Cincinnati	(continued)			
45mm	M22x2.5 LH	60°	144703	137686
48mm	M24x3.0 LH	60°	167613	RFQ*
50mm	M24x3.0 LH	60°	138535	145553
52mm	M30x3.5 LH	90°	164626	167759
52mm	M30x3.5 LH	60°	164625	167760
55mm	M27x3.0 LH	60°	147791	147792
56mm	M30x3.5 LH	90°	145549	RFQ*
56mm	M30x3.5 LH	60°	RFQ*	RFQ*
56mm	M30x3.5 LH	90°	145549	147853
56mm	M30x3.5 LH	60°	167608	145552
60mm	M27x3.0 LH	60°	160018	167609
64mm	M36x4.0 LH	90°	160055	160056
64mm	M36x4.0 LH	60°	160057	160058
65mm	M30x3.5 LH	60°	132654	160976
70mm	M36x4.0 LH	60°	162913	162915
70mm	M36x4.0 LH	22°	161045	161046
80mm	M42x4.5 LH	60°	137819	144151
90mm	M48x5.0 LH	60°	143426	164623
100mm	M52x5.0 LH	60°	134367	137428
110mm	M56x5.5 LH	60°	150340	132936
125mm	M64x6.0 LH	60°	132313	160076
140mm	M72x6.0 LH	60°	147883	137895
200mm	M100x6.0 LH	60°	147130	147131
1-5/16"	5⁄8"-11 LH	90°	168440	168441
1 -5⁄ ₁₆ "	5⁄8"-11 LH	120°	170196	168439
1-5/8"	3⁄4"-10 LH	120°	132986	132164
1-5/8"	¾"-10 LH	90°	150351	150350
2"	1"-8 LH	90°	160923	160925
2-1/4"	1"-8 LH	90°	170783	132165
2-1/2"	1-1⁄4"-7 LH	90°	140388	162929
2-1/2"	1-1⁄4"-12 LH	120°	160006	170782
2-3/4"	1-1/4"-12 LH	90°	162832	131626
2-3/4"	1-1/4"-12 LH	120°	162833	162834
3-1/4"	1-½"-6 LH	120°	170780	132321
3-1/4"	1-½"-6 LH	90°	148538	131963
3-1/4"	1-½"-12 LH	120°	136130	170779
3-1/2"	1-½"-6 LH	90°	145612	132166
4-1/2"	2"-6 LH	90°	133438	133439
5-1/4"	2-1/4"-6	90°	167360	170778

Any Tip Available — Call for Quote

continued on next page



BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS I	tem #
	Screw Tip Thread	Nose	Style / Material	
Make of Press Screw Tip OD		Angle	H13	CPM9V
Demag				
18mm	M10x1.5 RH	60°	170750	148572
22mm	M10x1.5 RH	30°	160045	160044
25mm	M10x1.5 RH	22°	142324	142322
25mm	M10x1.5 RH	60°	142325	142323
30mm	M12x1.75 LH	60°	145641	145642
35mm	M14x2.0 LH	60°	164679	134162
40mm	M16x2.0 LH	60°	162763	134068
45mm	TR20x3.0 LH	60°	138125	140303
50mm	TR22x3.0 LH	60°	150372	150373
60mm	TR27x3.0 LH	60°	147200	144156
70mm	TR30x3.0 LH	60°	140540	137794
80mm	TR35x3.0 LH	60°	140260	145643
95mm	TR40x3.0 LH	60°	150374	150375
110mm	TR50x3.0 LH	60°	132154	148576
Dong Shin Promax				
80mm	M40x3.0 LH	30°	166950	170749
Egan				
1-1/4"	½"-13 LH	30°	164700	164701
1-1/2"	5%"-11 LH	30°	167592	167593
2"		30°	167594	167595
2-1/2"	1-½"-7 LH	30°	165841	164702
3-1/2"	1-¾"-6 LH	30°	147137	147136
Enaiviv				
32mm	M16x2.0 RH	30°	170343	170345
50mm	M24x3.0 RH	30°	169143	170342

Any Tip Available — Call for Quote

continued on next page





BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS Item #	
	Screw Tip Thread	Nose	Style / Material	
Make of Press Screw Tip OD		Angle	H13	CPM9V
Engel				
18mm	M10x1.5 LH	60°	150317	162975
22mm	M12x1.75 RH	60°	150512	138877
25mm	M12x1.75 RH	60°	167610	132235
30mm	M12x1.75 RH	60°	144146	136413
35mm	M16x2.0 RH	60°	147785	147786
35mm	M12x1.75 RH	60°	147787	137179
40mm	M16x2.0 LH	60°	136011	147789
45mm	M20x2.5 RH	60°	150676	144147
50mm	M24x3.0 RH	60°	147150	150313
55mm	M24x3.0 RH	60°	145593	136133
60mm	M30x3.5 RH	60°	136429	131617
70mm	M36x4.0 RH	60°	160008	160009
80mm	M36x4.0 RH	60°	136200	131625
90mm	M42x4.5 RH	60°	135009	132681
105mm	M42x4.5 RH	60°	145685	145684
120mm	M54x2.0 RH	60°	165591	167748
135mm	M64x2.0 RH	60°	167623	167624
150mm	M64x2.0 RH	60°	145458	145459
150mm	M64x2.0 RH	60°	170893	170894
160mm	M74x2.0 RH	60°	167625	167626
Farrel			•	
3.6"	1-5/8"-8 LH	45°	145444	145445
4-3/4"	2-1⁄4"-8 LH	45°	161748	167747
Goldstar				
28mm	M16x1.5	40°	168437	168438
40mm	M22x2.0	34°	147180	147179
50mm	M28x2.0	30°	135011	167677
55mm	M28x2.1	30°	167683	167680
60mm	M28x2.3	30°	167684	167682
65mm	M28x2.5	30°	167685	167686
75mm	M40x2.0	30°	167687	167688
80mm	M42x3.0	30°	167689	167690
85mm	M42x3.0	30°	170817	170818
90mm	M50x3.0	30°	167692	167693
100mm	M52x3.0	30°	167694	167695
105mm	M55x3.0	30°	158234	167696
115mm	M62x3.0	40°	167697	167698

Any Tip Available — Call for Quote

continued on next page



BRODY-Ring® OPTIONAL — See Pages 555-557

				tem #
Make of Press Screw Tip OD	O a war Tim Thomas d	Nose	Style / Material	
	Screw Tip Thread	Angle	H13	CPM9V
Haitian				
26mm	M12x1.75 LH	23°	167699	167700
28mm	M12x1.75 LH	30°	168389	168390
30mm	M12x1.75 LH	23°	167701	167702
32mm	M16x2.0 LH	23°	167703	167704
36mm	M16x2.0 LH	30°	167705	167706
40mm	M20x2.5 LH	30°	166276	167707
45mm	M20x2.5 LH	30°	167047	167708
50mm	M24x3.0 LH	30°	167709	167710
55mm	M24x3.0 LH	30°	167711	167712
60mm	M27x3.0 LH	60°	167713	167714
65mm	M30x3.5 LH	60°	167715	167716
70mm	M36x3.5 LH	60°	167717	167718
75mm	M36x3.5 LH	60°	167719	167720
75mm	M36x4.0 LH	60°	173708	RFQ
80mm	M38x4.0 LH	60°	167721	167722
85mm	M39x4.0 LH	60°	167738	167739
90mm	TR48x4.0 LH	60°	164703	167723
100mm	TR55x4.0 LH	60°	167724	167725
110mm	TR60x4.0 LH	60°	167726	167727
НРМ				,
1-3/4"	3⁄4"-10 LH	60°	147145	147146
1-3/4"	3/4"-16 LH	60°	170745	169289
1-3/4"	3/4"-16 LH	42°	160849	160850
2"	7⁄8"-9 LH	60°	131977	160849
2-1/4"	1"-8 LH	60°	160115	160116
2-1/2"	1-1/8"-7 LH	60°	138591	160850
2-5/8"	1-1/4"-8 LH	60°	162890	170746
3"	1-5//"-6 LH	60°	150335	151066
3-1/4"	1-¾"-6 LH	60°	160614	164682
3-1/4"	1-5//"-6 LH	60°	170747	170748
3-1/2"	1-¾"-6 LH	60°	160047	160049
4"	2"-6 LH	60°	148560	131438
4-1/2"	2-1/4"-6 LH	60°	147840	147841
6"	3"-6 LH	60°	160013	167664
40mm	M20x2.5 LH	50°	167770	167771
50mm	M24x3.0 LH	50°	167772	167773
55mm	M27x2.0 LH	50°	137636	167663
60mm	M30x2.0 LH	60°	167662	137496
70mm	M36x2.0 LH	22°	148611	148609
70mm	M36x4.0 LH	50°	150318	140376

Any Tip Available — Call for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001

tech support toll-free (USA & Canada)



BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS	Item #	
		Nose	Style /	Material	
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V	
Husky					
42mm	M20x2.5 LH	60°	137022	167657	
50mm	M20x2.0 LH	60°	160899	167658	
50mm	M24x3.0 LH	60°	160900	167659	
60mm	M30x3.5 LH	60°	132080	167660	
60mm	M30x2.0 LH	60°	164622	170744	
70mm	M36x4.0 LH	60°	145619	145620	
80mm	M42x4.5 LH	60°	164641	144397	
100mm	M52x5.0 LH	50°	167651	167652	
100mm	M60x5.5 LH	60°	167653	167654	
135mm	M68x6.0 LH	50°	167655	167656	
140mm	M72x6.0 LH	60°	167665	144157	
Impco					
2"	7⁄8"-14 LH	40°	161546	170743	
2-1/2"	1-½"-8 LH	40°	140237	170740	
4-1/4"	2-1/4"-4.5 LH	40°	170741	170742	
Jaco	·				
1-1/4"	5%"-11 LH	50°	137822	136417	
1-74	78 - I I L∏	50	13/022	130417	
JSW					
28mm	M16x2.0 LH	30°	147189	137605	
28mm	M12x1.5 LH	30°	162790	162791	
35mm	TR20x3.0 LH	18°	162970	167761	
40mm	TR22x3.0 LH	22°	160189	138217	
45mm	M24x3.0	20°	168248	168249	
45mm	TR24x3.0	20°	147190	167762	
45mm	TR27x3.0	20°	162904	144193	
45mm	M22x2.5	60°	170209	170210	
45mm	TR24x3.0	90°	170361	170362	
46mm	TR24x3.0	17°	147192	147193	
53mm	TR28x3.0	16°	162940	170737	
58mm	TR36x3.0	18°	134131	167740	
60mm	TR35x3.0	23°	170209	170210	
66mm	TR38x3.0	14°	162868	162869	
72mm	TR40x3.0	16°	167763	162917	
76mm	TR40x3.0	16°	170738	170739	
84mm	TR47x3.0	18°	147195	145671	
84mm	TR42x3.0	18°	170735	170736	
92mm	TR48x3.0	20°	164695	164696	
100mm	TR52x3.0	30°	168352	168353	
110mm	TR55x3.0	30°	168354	168355	
130mm	TR65x3.0	30°	168358	168359	

Any Tip Available — Call for Quote

continued on next page





BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS	tem #	
		Nose	Style /	Material	
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V	
Kawaguchi					
30mm	TR15x2.0 LH	40°	148592	167764	
30mm	M16x1.5 LH	40°	144227	145412	
34mm	M18x2.0 LH	40°	162938	162939	
35mm	M20x2.0 LH	23°	144116	162941	
36mm	M20x2.0 LH	40°	168343	168344	
36mm	TR20x2.0 LH	40°	167736	167737	
40mm	M20x2.0 LH	40°	135795	132815	
40mm	3⁄4"-10 LH	40°	164593	170733	
40mm	M22x2.0 LH	40°	164594	164595	
42mm	TR24x3.0 LH	40°	164596	170734	
45mm	TR24x3.0 LH	40°	137107	167730	
45mm	TR25x3.0 LH	40°	164655	167731	
50mm	TR30x3.0 LH	40°	167732	136280	
50mm	TR24x3.0 LH	40°	150345	167733	
55mm	TR30x3.0 LH	40°	168362	168363	
60mm	TR34x4.0 LH	40°	119222	167734	
63mm	TR34x4.0 LH	40°	145689	145690	
70mm	TR38x4.0 LH	40°	145682	167729	
72mm	TR40x4.0 LH	40°	137842	145407	
85mm	TR46x5.0 LH	40°	132437	145408	
90mm	TR46x5.0 LH	40°	145691	145692	
100mm	TR52x5.0 LH	40°	145693	145694	
115mm	TR58x6.0 LH	40°	145695	168247	
Kaiming					
55mm	M30x2.0 LH	30°	170203	170204	
Klockner-Windsor					
90mm	M52x3.0 LH	90°	167675	167676	
115mm	M68x4.0 LH	90°	147132	147133	
KHM					
65mm	M33x3.0 LH	40°	161525	170731	
70mm	M35x3.0 LH	60°	163959	170732	

Any Tip Available — Call for Quote

continued on next page

Call 866-467-9001 for a Product Specialist





BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS I	tem #	
		Nose	Style / Material		
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V	
Krauss-Maffei					
30mm	M16x2.0 LH	60°	160902	160903	
35mm	M18x2.5 LH	23°	159991	170728	
35mm	M18x2.5 LH	60°	159992	148540	
40mm	M20x2.5 LH	60°	123530	133390	
50mm	M27x3.0 LH	60°	150370	142243	
60mm	M33x3.5 LH	60°	149037	160122	
70mm	M36x4.0 LH	60°	162060	160926	
80mm	M42x4.5 LH	60°	158286	160927	
90mm	M48x5.0 LH	60°	164642	164643	
95mm	M48x5.0 LH	60°	170308	170309	
100mm	M56x5.5 LH	60°	167750	167749	
105mm	TR55x3.0 LH	60°	148542	148543	
Meiki					
50mm	M24x2.0 LH	26°	150977	170388	
55mm	M30x2.0 LH	30°	169309	168310	
60mm	M30x2.0 LH	26°	170729	170730	
Mitsubishi					
28mm	M12x1.75 LH	15°	148598	148600	
28mm	M16x2.0 LH	15°	148599	148601	
36mm	M22x2.5 LH	22°	150337	150338	
45mm	M27x3.0 LH	26°	150463	150464	
50mm	M27x3.0 LH	26°	135708	167649	
57mm	M33x3.5 LH	20°	148568	148603	
62mm	M36x4.0 LH	26°	148522	150450	
70mm	M39x4.0 LH	26°	148657	144219	
80mm	M45x4.5 LH	26°	162806	144221	
90mm	M48x5.0 LH	30°	148678	162808	
105mm	M56x5.5 LH	30°	164668	167674	
120mm	M60x5.5 LH	30°	162758	162759	
135mm	M64x6.0 LH	30°	162760	162761	

Any Tip Available — Call for Quote

continued on next page

Call 866-467-9001 for a Product Specialist





BRODY-Ring® OPTIONAL — See Pages 555-557

				tem #	
Mala of Busines Community CD	O	Nose	Style / Material		
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V	
Negri Bossi					
38mm	M16x1.5 LH	90°	164665	164666	
40mm	M18x1.5 LH	90°	150693	167591	
45mm	M22x2.0 LH	75°	167643	167644	
52mm	M22x2.0 LH	40°	167587	167588	
70mm	M26x2.0 LH	90°	167621	167622	
80mm	M36x2.0 LH	60°	167589	167590	
110mm	M48x2.0 LH	60°	170340	170341	
135mm	M60x3.0 LH	60°	167585	167586	
New Britain					
13/8"	% ₁₆ "-18 LH	60°	160886	160887	
2"	1"-8 LH	60°	160848	147187	
36mm	TR20x3.0 LH	20°	167666	167667	
Newbury				•	
1"	½"-13 LH	45°	147142	133308	
1"	½"-13 LH	90°	147143	134331	
1"	½"-13 LH	1-1/4"	160031	160032	
11/4"	5%"-11 LH	60°	167783	RFQ*	
11/4"	5⁄8"-11 LH	1-1/2"	143726	RFQ*	
13/8"	5%"-11 LH	120°	144701	136276	
13/8"	5/8"-11 LH	60°	144149	136401	
1½"	3⁄4"-10 LH	30°	147868	147870	
1½"	¾"-10 LH	60°	147869	147871	
13/4"	%"-9 LH	60°	162756	RFQ*	
13/4"	%"-9 LH	11/2"	148516	162874	
21/4"	1"-8 LH	60°	124735	167645	
Niigata					
35mm	M18x2.5 LH	70°	160017	142327	
40mm	M20x2.5 LH	70°	160040	137893	
45mm	M24x3.0 LH	70°	145258	132171	
52mm	M27x3.0 LH	70°	147860	143012	
60mm	M30x3.5 LH	70°	164647	167647	
68mm	M36x3.0 LH	70°	162802	169054	
76mm	M42x3.0 LH	70°	140544	167671	

Any Tip Available — Call for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS	tem #		
		Nose	Style / Material			
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V		
Nissei						
14mm	M7x.75 LH	30°	170391	148635		
16mm	M9x1.0 LH	20°	170390	132232		
19mm	M10x1.5 LH	30°	170389	150346		
22mm	TR12x2.0 LH	60°	133784	147831		
26mm	TR14x2.0 LH	60°	147140	147141		
26mm	M12x1.75 LH	60°	164628	164629		
28mm	TR14x2.0 LH	40°	148634	136181		
30mm	TR16x2.0 LH	60°	167603	132187		
32mm	TR16x2.0 LH	40°	164712	164713		
32mm	TR18x2.0 LH	40°	136410	138355		
36mm	TR20x2.0 LH	40°	133149	132785		
36mm	M18x2.5 LH	40°	170428	170207		
40mm	TR24x3.0 LH	40°	150347	134294		
45mm	TR26x3.0 LH	40°	133751	133207		
50mm	TR28x3.0 LH	40°	140526	136428		
56mm	TR32x3.0 LH	40°	144850	138123		
58mm	TR36x3.0 LH	40°	160113	160114		
63mm	TR36x3.0 LH	40°	144205	144204		
71mm	TR44x3.0 LH	40°	142053	158282		
72mm	TR44x3.0 LH	40°	144109	167641		
75mm	TR44x3.0 LH	40°	149115	167642		
80mm	TR48x3.0 LH	40°	134584	150387		
84mm	TR52x3.0 LH	40°	143219	170387		
90mm	TR55x3.0 LH	40°	145591	162906		
100mm	TR65x3.0 LH	40°	132325	150284		
112mm	TR65x3.0 LH	40°	150278	148613		
120mm	TR75x4.0 LH	40°	160077	160078		
125mm	TR75x4.0 LH	40°	131863	167646		

Any Tip Available — Call for Quote

continued on next page

Call 866-467-9001 for a Product Specialist





BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS Item #			
Mala d Brand Or Ti OF	O Ti - Ti I	Nose	Style /	Material		
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V		
Reed						
1-3/4"	3⁄4"-10 LH	45°	123544	170756		
2"	1"-8 LH	45°	170776	170777		
2"	1"-8 LH	60°	170757	140169		
2"	1"-8 LH	120°	170758	160853		
2-1/2"	11/4"-8 LH	45°	170759	170760		
2-1/2"	11⁄4"-8 LH	60°	167598	167599		
2-1/2"	11⁄4"-8 LH	120°	170761	170762		
3"	1-3/8"-12 LH	45°	170763	135031		
3"	1-3/8"-12 LH	60°	132188	170764		
3"	1-¾"-12 LH	120°	170765	170766		
3-3/8"	1-5/8"-8 LH	45°	160895	170767		
3-3/8"	1-5/8"-8 LH	60°	160894	170768		
3-3/8"	1-5/8"-8 LH	120°	170769	170770		
3-3/4"	1-7/8"-8 LH	45°	170771	170772		
3-3/4"	1- ⁷ / ₈ "-8 LH	60°	160562	170773		
3-3/4"	1-7/8"-8 LH	120°	170774	170775		
Sandretto						
30mm	M12x1.75 LH	40°	163169	162794		
35mm	M14x2.0 LH	40°	162795	143031		
40mm	M18x2.5 LH	30°	160921	170382		
40mm	M16x2.0 LH	40°	160922	170383		
45mm	M20x2.5 LH	40°	162773	170384		
55mm	M27x3.0 LH	40°	150585	170385		
65mm	M30x3.5 LH	40°	129603	170386		
80mm	M36x4.0 LH	40°	171590	170883		
Shen Zhou						
60mm	M30x2.0 LH	30°	170380	170381		
Shinwa-Seiki						
35mm	M18x2.5 LH	36°	170363	170364		
35mm	M18x2.5 LH	60°	170365	160890		
40mm	M20x2.5 LH	36°	170366	150669		
50mm	M27x3.0 LH	50°	142237	160891		
60mm	M36x3.0 LH	50°	142242	160892		
70mm	M40x3.0 LH	36°	170311	170312		
70mm	M40x3.0 LH	60°	170313	170314		
70mm	M42x4.5 LH	36°	170315	170316		
, 0111111						

Any Tip Available — Call for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS	tem #
		Nose	Style /	Material
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V
Stokes				
1-5/8"	3⁄4"-10 LH	90°	170367	170368
2-1/2"	1-1/8"-12 LH	90°	170369	145582
3-1/2"	1-5/8"-12 LH	60°	164707	164709
		•		•
Sumitomo	M8x1.0 LH	70°	147156	165000
16mm				165023
18mm	M9x1.0 LH	60°	145607	145606
20mm	M10x1.25 LH		168328	168329
22mm	M10x1.25 LH	60°	167639	136416
25mm	M18x2.0 LH	60°	168308	168309
28mm	M12x1.5 LH	60°	168330	168331
32mm	M16x1.5 LH	60°	131881	165027
36mm	M16x1.5 LH	60°	125404	165092
36mm	M18x2.0 LH	60°	145587	160854
40mm	M20x2.0 LH	60°	148551	148552
45mm	M20x2.0 LH	60°	138127	160855
50mm	M24x2.0 LH	60°	145588	144388
56mm	M24x2.0 LH	60°	164605	164606
63mm	M33x3.0 LH	60°	145589	145633
71mm	M33x3.0 LH	60°	145590	162804
80mm	M40x3.0 LH	60°	147863	147862
90mm	M52x4.0 LH	60°	145635	145634
Toshiba				
18mm	M8x1.0 LH	30°	145410	137468
22mm	M10x1.25 LH	60°	170350	170351
25mm	M12x1.5 LH	30°	150366	150367
25mm	M12x1.5 LH	50°	145584	145578
30mm	M12x1.5 LH	60°	150368	150369
28mm	M15x1.5 LH	60°	160065	160067
28mm	M15x1.5 LH	30°	160068	160069
32mm	M18x2.0 LH	25°	160011	132374
36mm	M22x2.0 LH	30°	170352	170353
36mm	M22x2.0 LH	60°	144114	145686
40mm	M22x2.0 LH	60°	144213	144212
40mm	M22x2.0 LH	23°	144215	144214
45mm	M26x1.5 LH	60°	148514	123390
50mm	M28x2.0 LH	60°	162800	162801
50mm	M28x2.0 LH	60°	123545	145545

Any Tip Available — Call for Quote

continued on next page



BRODY-Ring® OPTIONAL — See Pages 555-557

			IMS Item #			
		Nose	Style / I	Material		
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V		
Toshiba						
55mm			124275	134132		
60mm	M28x2.0 LH	23°	160124	160125		
60mm	M28x2.0 LH	60°	137779	160108		
70mm	M36x3.0 LH	23°	147819	160107		
70mm	M36x3.0 LH	60°	145672	170371		
70mm	M36x3.0 LH	60°	160106	143327		
80mm	M42x3.0 LH	23°	150431	150432		
80mm	M42x3.0 LH	60°	136427	129178		
90mm	M45x4.0 LH	23°	164639	164640		
90mm	M45x4.0 LH	60°	160059	160061		
95mm	M45x4.0 LH	60°	167606	167607		
100mm	M50x4.0 LH	23°	164687	167672		
100mm	M50x4.0 LH	60°	164689	167673		
105mm	M50x4.0 LH	60°	160050	160052		
120mm	M60x4.0 LH	60°	167627	167628		
125mm	M64x6.0 LH	60°	167629	167630		
Тоуо						
24mm	M12x1.5 LH	30°	160104	150332		
24mm	M12x1.5 LH	45°	160105	150331		
28mm	M16x2.0 LH	30°	160095	160096		
28mm	M16x2.0 LH	45°	160097	160098		
32mm	M18x2.5 LH	30°	147844	147843		
32mm	M18x2.5 LH	45°	160100	160102		
36mm	M18x2.5 LH	30°	167635	167636		
36mm	M18x2.5 LH	45°	167637	167638		
40mm	M22x2.5 LH	30°	144154	138527		
40mm	M22x2.5 LH	45°	164671	164672		
46mm	M24x3.0 LH	30°	147880	138011		
46mm	M24x3.0 LH	45°	167631	167632		
50mm	M27x3.0 LH	30°	134113	162830		
50mm	M27x3.0 LH	45°	162831	147134		
55mm	M27x3.0 LH	30°	138881	147155		
55mm	M27x3.0 LH	45°	167633	167634		
60mm	M30x3.0 LH	30°	148614	137451		
68mm	M33x3.5 LH	30°	137061	160103		
75mm	M36x4.0 LH	30°	167741	167742		
75mm	M36x4.0 LH	45°	163201	167743		
83mm	M39x4.0 LH	30°	160099	160101		

Any Tip Available — Call for Quote

continued on next page



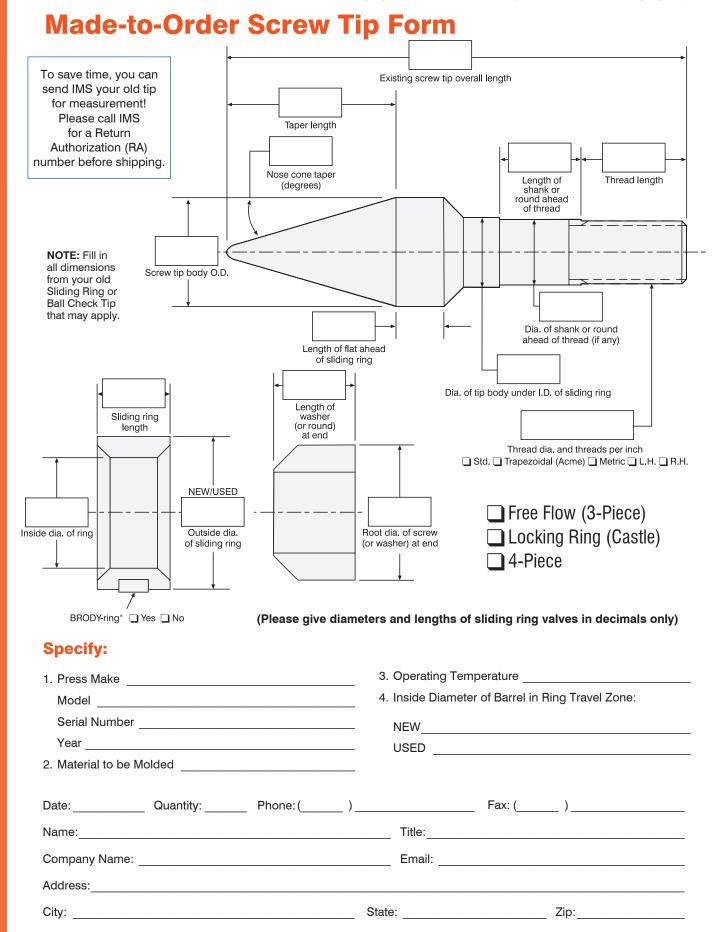


BRODY-Ring® OPTIONAL — See Pages 555-557

				tem #
Asks of Duese Covery Tip OD	Caraur Tim Thread	Nose		Material
Make of Press Screw Tip OD	Screw Tip Thread	Angle	H13	CPM9V
Trubor				
25mm	½"-13 LH	30°	148795	162667
31mm	5⁄ ₈ "-11 LH	30°	134356	126583
35mm	5/8"-11 LH	30°	134350	170373
38mm	3⁄4"-10 LH	30°	170374	170375
41mm	3⁄4"-10 LH	30°	170376	170377
Trueblood				
1"	½"-13 LH	60°	150687	170378
1-1/4"	5/8"-11 LH	90°	170379	149113
1-1/2"	5%"-11 LH	90°	167808	167597
2"	7%"-9 LH	90°	167809	167596
UBE				
100mm	M42x4.5 LH	31°	167751	167752
100mm	M56x5.0 LH	31°	167753	167754
100mm	M48x5.0 LH	60°	167755	167756
112mm	M48x5.0 LH	31°	150692	170372
120mm	M60x4.0 LH	31°	167757	167758
·				101100
Van Dorn	5/11 4 4 1 1 1		450074	104505
30mm	5/8"-11 LH	30°	150371	134585
25mm	3⁄4"-10 LH	45°	143621	131965
38mm	3/4"-10 LH	30°	158257	145599
40mm	3⁄4"-10 LH	30°	132941	140287
50mm	1"-8 LH	30°	144104	132159
57mm	1-1/4"-7 LH	30°	138259	137853
65mm	1-3/8"-6 LH 1-3/8"-6 LH	30°	136680	131611
69mm	1-% -6 LH	30°	160851	160852 150378
75mm 80mm	1-% -6 LH	30°	150377 135729	145622
90mm	1-% -0 LH	30°	143620	145022
105mm	1-¾"-8 LH	30°	147899	134152
115mm	2"-8 LH	45°	147899	160123
135MM	2-½"-8 LH	40°	150379	150380
	£-/2 -U LI I	<u> </u>	150079	130300
Yudak	549.4	1 1		T
32mm	5⁄8"-11 LH	34°	170663	170339
Weltec				
60mm	M27x3.0 LH	60°	137266	137138

Any Tip Available — Call for Quote





Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.		C.		F.	C.		F.		C.		F.
-17.8	0	32.0		10.0	50	122.0	38	100	212		288	550	1022
-17.2	1	33.8		10.6	51	123.8	43	110	230		293	560	1040
-16.7	2	35.6		11.1	52	125.6	49	120	248		299	570	1058
-16.1	3	37.4		11.7	53	127.4	54	130	266		304	580	1076
-15.6	4	39.2		12.2	54	129.2	60	140	284		310	590	1094
-15.0	5	41.0	Ī	12.8	55	131.0	66	150	302		316	600	1112
-14.4	6	42.8		13.3	56	132.8	71	160	320		321	610	1130
-13.9	7	44.6		13.9	57	134.6	77	170	338		327	620	1148
-13.3	8	46.4		14.4	58	136.4	82	180	356		332	630	1166
-12.8	9	48.2		15.0	59	138.2	88	190	374		338	640	1184
-12.2	10	50.0		15.6	60	140.0	93	200	392		343	650	1202
-11.7	11	51.8		16.1	61	141.8	99	210	410		349	660	1220
-11.1	12	53.6		16.7	62	143.6	100	212	413.6		354	670	1238
-10.6	13	55.4		17.2	63	145.4	104	220	428		360	680	1256
-10.0	14	57.2		17.8	64	147.2	110	230	446		366	690	1274
- 9.44	15	59.0		18.3	65	149.0	116	240	464		371	700	1292
- 8.89	16	60.8		18.9	66	150.8	121	250	482		377	710	1310
- 8.33	17	62.6		19.4	67	152.6	127	260	500		382	720	1328
- 7.78	18	64.4		20.0	68	154.4	132	270	518		388	730	1346
- 7.22	19	66.2		20.6	69	156.2	138	280	536		393	740	1364
- 6.67	20	68.0		21.1	70	158.0	143	290	554		399	750	1382
- 6.11	21	69.8		21.7	71	159.8	149	300	572		404	760	1400
- 5.56	22	71.6		22.2	72	161.6	154	310	590		410	770	1418
- 5.00	23	73.4		22.8	73	163.4	160	320	608		416	780	1436
- 4.44	24	75.2		23.3	74	165.2	166	330	626		421	790	1454
- 3.89	25	77.0		23.9	75	167.0	171	340	644		427	800	1472
- 3.33	26	78.8		24.4	76	168.8	177	350	662		432	810	1490
- 2.78	27	80.6		25.0	77	170.6	182	360	680		438	820	1508
- 2.22	28	82.4		25.6	78	172.4	188	370	698		443	830	1526
- 1.67	29	84.2		26.1	79	174.2	193	380	716		449	840	1544
- 1.11	30	86.0	Ī	26.7	80	176.0	199	390	734		454	850	1562
- 0.56	31	87.8		27.2	81	177.8	204	400	752		460	860	1580
0	32	89.6		27.8	82	179.6	210	410	770		466	870	1598
0.56	33	91.4		28.3	83	181.4	216	420	788		471	880	1616
1.11	34	93.2		28.9	84	183.2	221	430	806		477	890	1634
1.67	35	95.0		29.4	85	185.0	227	440	824		482	900	1652
2.22	36	96.8		30.0	86	186.8	232	450	842		488	910	1670
2.78	37	98.6		30.6	87	188.6	238	460	860		493	920	1688
3.33	38	100.4		31.1	88	190.4	243	470	878		499	930	1706
3.89	39	102.2		31.7	89	192.2	249	480	896		504	940	1724
4.44	40	104.0		32.2	90	194.0	254	490	914		510	950	1742
5.00	41	105.8		32.8	91	195.8	260	500	932		516	960	1760
5.56	42	107.6		33.3	92	197.6	266	510	950		521	970	1778
6.11	43	109.4		33.9	93	199.4	271	520	968		527	980	1796
6.67	44	111.2		34.4	94	201.2	277	530	986		532	990	1814
7.22	45	113.0		35.0	95	203.0	282	540	1004		538	1000	1832
7.78	46	114.8		35.6	96	204.8				1			
8.33	47	116.6		36.1	97	206.6							
8.89	48	118.4		36.7	98	208.4							

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column.

Look to left column for Celsius conversion.

210.2

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column.

Look to right column for Fahrenheit conversion.



9.44

www.imscompany.com

37.2

120.2

phone order toll-free (USA & Canada) 1.800.537.5375

Need a replacement Screw Tip fast?

Call IMS

Many Ready To Ship Same Day! Our shop works with:

- H-13
- 920 Stainless
- D-2
- CPM-M4
- S-7
- CPM10V
- CPM9V

We understand downtime kills the bottom line, so "Our tech's #1 priority is to get you up and running"

Questions? Call 866-467-9001

IMS supplies screw tips for all makes and models of molding machines.

- Arburg
- Autojector
- Battenfeld
- Boy
- Bucher
- Cincinnati
- Cincinnati Sentry
- Cincinnati Vista
- Demag
- Egan
- Engel
- Farrel
- Ferromatic
- Goldstar
- Haitian
- HPM

- Hunter
- Husky • Impco
- JSW
- Kawaguchi
- Klockner
- Kraus-Maffei
- Lombard
- Mitsubishi
- Natco
- Negri-Bossi
- Netstal
- New Britain
- Newbury
- Niigata
- Nissei

- Pyramid
- Reed
- Sandretto
- Shinwa Seiki
- Stokes
- Sumitomo
- Toolex
- Toshiba
- Toyo
- Trubor
- Trueblood
- Van Dorn
- Wabash
- ... and MORE!

Check Out These Other Useful IMS Products

Multimeters

Pages 97-99

True RMS Multimeter with Infrared Thermometer

Two Useful Instruments In One Compact Case At One Great Price!

Item #132602

Includes: Meter, Test Leads, Type K Temperature Probe, Protective Holster, 9V Battery and Three Year Limited Warranty





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Tech Tips

IMS Screw Tip BRODY-Ring®

Postpone Barrel Repairs ---- Improve Press Performance

- · Shorter screw travel for faster cycles.
- End all O.D. blow-back.
- Positive injection pressure.
- · Consistent shot control.
- · Color changes made quicker.
- · Retrofit MOST tips.
- Give new press performance on any injection machine — even with a worn barrel.

Extend Barrel Life 2 to 3X!



BRODY-ring® is a registered trademark of IMS Company

Stop Screw Tip Blow-By With A BRODY-Ring®!

The introduction of the BRODY-Ring® was a major breakthrough in improving Reciprocating-Screw Press efficiency. Try a tip with a BRODY-Ring®. It will make your old press perform better than new. If your barrel is worn, the results are even more positive because you can postpone a barrel relining job until your job is completed and you can afford the downtime.

The IMS BRODY-Ring® molds with a cushion, allowing you to mold better parts. This ensures perfect fills every time. It maximizes part strength and lets you hold critical part dimensions more closely because you exert the same pressure on every shot. Helps minimize part strains.

The BRODY-Ring® prevents blow-by around the sliding ring or ball check tip. It speeds color changes because there is

no space between the ring and the tip where material can hang up, burn and contaminate.

Positive shut-off of the BRODY-Ring® stops the jetting back of plastic around the O.D. of the sliding ring or tip body. This reduces frictional heat created by the plastic as it leaks back around the tip while you are trying to fill the part.

BRODY-Rings® can allow you to cut cycle time too. You do not have to OVER-STROKE (or over-retract) your screw to compensate for all the plastic that leaks back past ordinary tips of whatever design. By allowing you to shorten your screw stroke, you save cycle time. So mold with a cushion and make better parts faster!





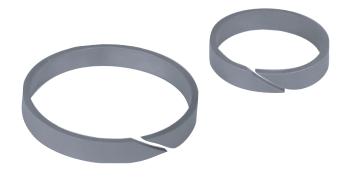
IMS BRODY-Ring® Seals

Improve machine performance — Extend barrel life

BRODY-ring® Pricing Guide (Screw Tips NOT Included): Specify actual screw tip O.D. and machine make

BRODY-ring® Pricing Guide (Screw Tips NOT In						
Metric						
Nominal Screw Tip O.D.	Item #	Unit Price				
(Up to and including)						
15mm	136177	_				
18mm	117933	_				
20mm	164569	\$46.30				
22mm	124150					
24mm	124151					
25mm	101603					
26mm	110655					
28mm	107972	7				
30mm	101590	7				
31mm	105612	\$47.85				
32mm	105684	1				
34mm	124315	1				
35mm	101573	†				
36mm	101608					
37mm	143077	┪				
38mm	105263	┪				
		┥				
40mm	101595	¢52.50				
41mm	124736	\$52.50				
42mm	105362	4				
44mm	128171	_				
45mm	101583	_				
46mm	115425					
48mm	127764					
50mm	101569	\$55.60				
52mm	123323	7				
55mm	101605					
56mm	114045	\$60.20				
57mm	101599	1 *				
58mm	101593					
60mm	101615	†				
62mm	133962	┪				
		-				
63mm	110462	-				
65mm	101612	- \$66.40				
66mm	135727	4				
68mm	143064	4				
69mm	101622	4				
70mm	101620	_				
71mm	110465	_				
72mm	101617					
75mm	103820					
76mm	120972					
80mm	101613	1				
83mm	114663	7				
84mm	120498	\$78.75				
85mm	105257	7				
90mm	101621	1				
95mm	128149	1				
	<u> </u>	┥				
99mm	140235	-				
100mm	101619					
105mm	101618	-				
110mm	129815	-				
112mm	129285	\$100.35				
115mm	101616	1 7.00.00				
120mm	101614					
125mm	123328					
135mm	137021					
140mm	141690					
150mm	145456	\$115.75				
155mm	133629	7 4113.73				
160mm	120525	1				
170mm	10000	6121.00				

Standard						
Nominal Screw Tip O.D. (Up to and including)	Item #	Unit Price				
1"	101571					
11/4"	101606	1 1				
1 ⁵ / ₁₆ "	101600	\$47.85				
13/8"	101594	1 1				
1½"	101588	i				
15/8"	101582					
1¾"	101577	1				
2"	101567	\$60.20				
2.1"	101598	i				
21/8"	101592	i				
21/4"	101587					
23/8"	105249	i . i				
21/2"	101576	\$66.40				
2.7"	101611	i i				
23/4"	101604	i i				
2.8"	101597					
213/16"	106513	\$72.55				
3"	101591	1				
31/4"	101585					
35/16"	101579	1				
31/2"	101575	\$78.75				
3¾"	101610	1 1				
4"	101602	i				
41/8"	107463					
41/4"	104131	\$92.60				
41/2"	101589	Ψ32.00				
43/4"	132458	1				
51/4"	101584	\$100.35				
5½"	108269	- φ100.35				
6"	101570	\$131.20				
6½"	143059	7 \$151.20				



170mm

128339

\$131.20

Instructions for IMS BRODY-Ring®

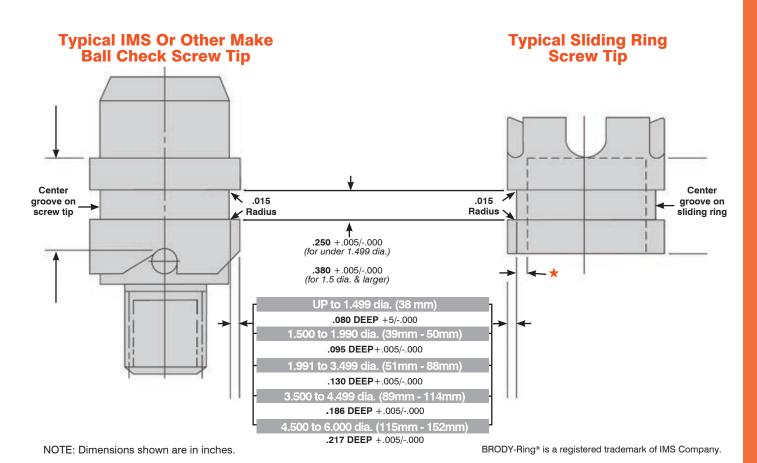
Grooving & Installation Instructions

(See drawing for proper groove depth)

- 1. Machine your sliding ring or tip body in lathe, or grind (if above 48 Rockwell C).
- 2. Be sure to protect all polished surfaces and threads.
- 3. Recommended lathe speed: 80 surface feet per minute.
- 4. Use groove cutting tool.
- If groove is cut into a case-hardened surface, screw tip or check ring should be heat treated through to 46-48 Rockwell C prior to installation of BRODY-Ring[®].
- If groove is cut into a nitrided surface, screw tip or check ring should be renitrided prior to installation of BRODY-Ring[®].
- 7. Slowly and carefully slide BRODY-Ring® over tip body or sliding ring until it snaps into groove.
- To install in barrel, use hose clamp or piston ring compressor to compress BRODY-Ring[®].

Special Notes

- 1. BRODY-Rings® take up a temporary maximum of .025" total wear between screw tip and barrel.
- BRODY-Rings® are only a temporary solution to worn barrel problems and should only be used until complete barrel resleeving (also available from IMS) is possible.
- 3. If any questions, please call an IMS Customer Service Representative.
- Wall thickness under groove must be equal to groove depth for adequate check ring strength. ★





www.imscompany.com

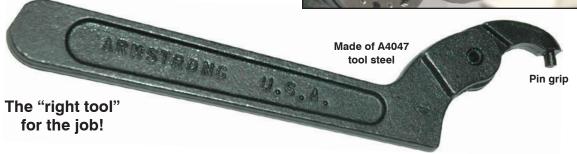
phone order toll-free (USA & Canada) 1.800.537.5375

Ball Check Spanner Wrench

Designed for Safer, Easier Screw Tip Removal

Adjustable Pin Spanner Wrenches from IMS are just what you need for safe, easy installation and removal of ball check type screw tips. These quality wrenches adjust automatically to the diameter of the tip. They fit snugly and securely, and will not harm tips if used as intended. A long, heavy duty handle provides good leverage and strength. The IMS line of Spanner Wrenches will fit any screw tip diameter from 3/4" to 61/4". See chart below for specific diameter ranges.





Item #	Capacity Range for Diameters	Pin Height x Diameter	Length Overall (fully open)	Weight	Unit Price		
Ball Check Spanner Wrench Without Coated Handle							
130560	3/4" to 2"	¹ / ₈ " × ¹ / ₈ "	63/8"	0.27 lbs.	\$50.95		
130561	11/4" to 3"	³ / ₁₆ " × ³ / ₁₆ "	81/8"	0.53 lbs.	Inquire		
130562	2" to 4¾"	1/4" × 1/4"	11 ³ ⁄ ₈ "	1.07 lbs.	104.82		
130563	4½" to 6¼"	1/4" × 3/8"	12 ¹ / ₈ "	1.20 lbs.	78.70		

Screw Carrying/Handling Tool

For Carrying, Removing and Installing Feed Screws

The Superior Screw Handling Device!

- High Strength Aluminum welded Aluminum Long Lasting, Durable
- Light weight Won't dramatically increase weight of already cumbersome screw
- Includes comfortable rubber hand grips provides user comfort while transporting screws
- Adjustable Screw Positioning Pins with Aluminum Handles - No tools required to adjust tool. Quick adjustments = less time wasted
- · Brass Screw Positioning Pins won't scratch new screws, easy to replace if damaged or worn
- · Fits most screws for most presses. Adjustable from 1%6" to 31/2" Diameter Screws





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

#165153 (set of two): \$525.00

IMS Fluted Screw Tip Wrench

Fully Adjustable — 3, 4 or 5 Flute



The IMS Fluted Screw Tip Wrench is the ideal tool for removing fluted screw tips. It avoids costly damage caused by other removal methods. The wrench is compatible with hundreds of screw tip sizes. It adjusts up to a 3" screw tip body diameter. And you can use it for screw tips with 3, 4 and 5 flutes.

- Specifically designed for removing fluted screw tips
- · Avoids damage to fluted screw tips
- · Requires virtually no adjustment
- Safer than makeshift removal methods

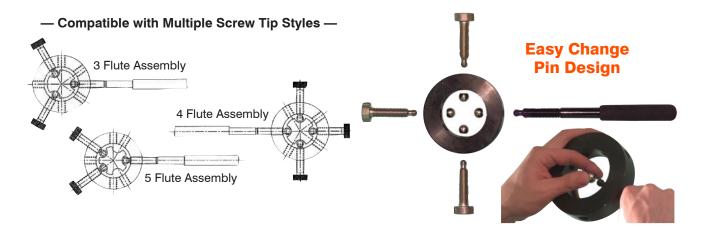




· High Heat Thread Lube, page 521



Specifica	ations and Prices		
4140 tool steel handle		Fits 3, 4 and 5 flute screw tips	
Black oxide f	inish	Fits screw tip body diameter up to 3"	
1750 ft. lbs. r	nax. torque rating		
Item #	Description		Unit Price
123894	Fluted Screw Tip Wrench		\$235.50



Tech Tips

Hand tighten screw tips. Use a wrench, only if needed, to remove the tips. Always use anti-seize on the threads when installing.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Screw Repair Service

All repairs are by experienced machinists using state-of-the-art equipment.

Contact the IMS Engineering at sales@imscompany. com for a Return Authorization (RA) number before shipping screws to IMS Company for repair. Ship your worn or damaged screws as Class 85 Machine Parts to:

IMS Company 10373 Stafford Road Chagrin Falls, Ohio 44023

You will receive an inspection report covering repair cost and delivery dates. If you authorize a screw repair, we won't charge for inspection. If you should decide not to repair or replace the screw, you will be billed for out-of-pocket costs incurred in handling and inspecting.

Screw Rebuilding Steps

- 1. Strip off any plating
- 2. Weld undersized or damaged flights
- 3. Straighten screw
- 4. Grind O.D. to size
- 5. Mill welded flights
- 6. Polish flights
- 7. Turn back welded bearing diameter, if necessary
- 8. Hand polish and chrome plate
- 9. Inspect

Optional Screw Modifications

- Re-cut and sandblast feed zone flight for better feeding
- Re-cut screw and deepen flights for improved throughput
- Replace worn out valves with IMS Tool Steel Replacement Non-Return Valves
- Install thermal insert to transfer excess front-end heat back to the transition zone

YES...
Even damaged screws like this can be salvaged





Before



After

If your screw is beyond feasible repair, remember that IMS stocks popular models of new OEM-design reciprocating screws. If it's not in stock, you will be quoted a price and delivery of a replacement screw. Typical STOCK models include: Arburg - Cincinnati - JSW - Kawaguchi - Nissei - Toshiba - Van Dorn.

IMS can also quickly design, manufacture and ship custom screws. Use The Request For Quotation Form On Pages 570 - 573.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Screw Tips, Screws & Barrels

IMS OEM Replacement Screws

Stocked In Many Popular Sizes

OEM Replacement Screws promote smooth material flow without material degradation. Screws with chrome-plated and nitrided surface treatments are also available. Contact the IMS Sales Team at **sales@imscompany.com** for more information.

Purchasers also order:

• Purgex, pages 586-587



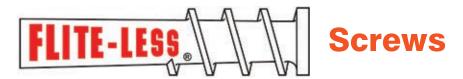
Ask about Screw & Barrel Package Deals



Contact the IMS Components Team at sales@imscompany.com



IMS Exclusive



Help You Produce Stain-Free, More Dimensionally Stable Parts!
Unique Proven Design Promotes:



Flite-Less® Screws, an IMS exclusive, offer important advantages over standard screws. The flights in the feed zone are deeper with a narrower pitch compared to standard screw flights. This design supplies more material during each cycle and enhances part consistency. In the metering and transition zones these screws have no flights, minimizing shear heat and providing more heat control.

Made Exclusively by IMS to Upgrade Any Injection Molding Machine!

Inquire Today For Price And Delivery



IMS Thermally-Compensated Reciprocating Screws



Outside, you cannot tell the IMS Thermally-Compensated Screw from any other. But inside, it's quite different!



BACK

REALLY

COUNTS

EXCESS

FRONT

HEAT...

The time-tested concept has proven the merit of transferring excess heat from the compression zone of the screw back to the transition zone.

There, the internally modified screw returns the unneeded front-zone heat to a point where it can be reused to finish melting incoming pellets that otherwise get through on regular screws.

Unmelted pellets cause screw wear, especially if glass-filled; meaning frequent screw replacement. By eliminating unmelted pellets, a thermally-compensated screw will easily give three times the life of a normal screw.

At the same time, the new screw allows you to reduce front end-heat with a direct effect on cycle, part quality and reject rate.

This service is available from IMS for injection machine screws. Most existing screws can be drilled out for this modification. For those that cannot, you might consider letting IMS supply you a Thermally-Compensated Screw, instead of putting good money into a screw repair — money which would go a long way toward buying a new IMS thermally-compensated one instead.

It is worth considering! Our aim is to allow your existing presses to outperform the best of the new ones.

Try an IMS Thermally-Compensated Screw Now!



Tech Tips

Screw Material Guidelines

В	Acceptability For Resin Wear Conditions							
					Abrasive		Corrosiv	e (7)
Material Designation	Treatment(1)	Rc (2)	Fh (3)	Normal (4)	Moderate (5)	Severe (6)	Moderate	Severe
	Alloy Steels							
4140	Flame-hardened	48-55	no	Acceptable	Poor	N/A	N/A	N/A
4140	Chrome-plated	60-65	yes	Good	Acceptable	N/A	Good	N/A
Nitralloy 135-M	Nitrided	63-70	yes	Good	Acceptable	N/A	Poor	N/A
			То	ol Steels				
CPM 9V	Heat-treated	54-56	no	Excellent	Excellent	Good	Acceptable	N/A
CPMM4	Heat-treated	62-64	no	Excellent	Good	Acceptable	Poor	N/A
CPM 420	Heat-treated	54-56	no	Acceptable	Poor	N/A	Good	Poor
Special Alloys								
Monel K-500	Age hardened	37-39	opt'l	Acceptable	N/A	N/A	Excellent	Good
Nickel 718	Age hardened	43-45	opt'l	Acceptable	N/A	N/A	Excellent	Good
Encapsulations	Carbide coatings	70 +	no	Excellent	Excellent	Good	Good	Poor

CPM - Crucible Materials Corporation N/A - Not Acceptable

- (1) Includes chrome-plating to .003"-.005" and gas or ion nitriding for 24+ hour cycle.
- (2) Rockwell C hardness.
- (3) Flight hardsurfacing required.
- (4) Thermoplastics with no reinforcements.
- (5) Thermoplastics with up to 30% reinforcement.
- (6) Thermoplastics with more than 30% reinforcement.
- (7) Moderate includes cellulosics, acetals and others containing corrosive additives.

Material Options

Feed screws are manufactured from conventional tool steels such as 4140, D-2 or H-13. Particle Metallurgy processing such as CPM9V, S90V, CPMM4 is also used.

Nitralloy 135M

Excellent low-cost, prehardened steel machined and Nitrided for 72 hours. For wear-resistant or general purpose materials. Low-cost alternative when excessive wear is not a primary consideration.

D-2 Tool Steel

A high carbon/high chrome (12%) tool steel with good wear resistance, but low on torque strength.

H-13 Tool Stee

A good high strength pre-hardened tool steel which is machined, thru-hardened, and ground dimensionally, then nitride hardened for 72 hours for better wear resistance. H-13 is tough and can handle pressure and torque.

CPM9V Tool Stee

Highly wear resistant tool steel with a high percentage of vanadium carbide developed for high wear (abrasive) applications. It resists wear from abrasive fillers in resin.

CPM10V Tool Steel

Excellent wear-resistant tool steel. Contains 10% vanadium. Ideal for highly abrasive plastics.

CPM420V Tool Steel

Stainless tool steel best suited for corrosion resistant applications.

CPMM4 Tool Steel

Crucible's CPM®-M4 is a high vanadium, special purpose, high speed steel exhibiting better wear resistance and toughness than D2 or CPM®-9V. CPM®-M4 has a hardness rating of 64.0.

M-4

M4 has higher resistance to heat than 9V The heat tolerance for CPM 9V is only 800 and the heat tolerance for M4 is 1200°F

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

phone order toll-free (Mexico)

tech support toll-free (USA & Canada)
1.866.467.9001

1.888.288.6900 | 001.888.304.1307

Tech Tips

Hard Facing On Screw Flights

4140

A tool steel with good strength when surface treated or hard faced.

STELLITE #6

4140 based. Recommended for resins with a low percentage of filled materials. 37-42 RC hardness.

STELLITE #12

Save as above with 40-47 RC hardness.

COLMONOY 56

Nickel based. More wear resistant than Stellite. Recommended for glass-filled or resins. 50 to 55 RC hardness. More wear resistant than Stellite Recommended for glass-filled resins. 50-55RC.

Nitridina

Increases the hardness and life of tool steel screws such as 135M and 4140. Very cost effective.

A 4140 alloy steel screw can be nitrided satisfactorily, however, a nitriding steel (such as Nitralloy 135M) has aluminum added to give a better response in nitriding hardness, both as to consistency and depth.

Gas Nitriding is used to create a surface hardness on the screw. The hard layer of steel will vary in depth from .007" to .015" depending upon the length of the nitriding cycle. The hard layer (usually well above 60 RC) is achieved by heating the steel in an atmosphere of nitrogen (ammonia gas) at temperatures of 950 to 1050°F. The nitrogen atoms are diffused into the surface of the steel, combining with nitride-forming elements, such as chromium, aluminum, molybdenum, vanadium, tungsten and titanium, to produce a very hard surface, particularly for the first .002" to .005" depth. Nitrided screws have a very good wear resistance until the surface hardness is worn away. After the surface is worn .007", wear accelerates and the screw may quickly be worn to a condition that is beyond repair.

Chrome Plating

Offers hardness and low friction with corrosion protection. Double and triple chrome plating often used for corrosive applications.

Although most processors are familiar with chrome-plating, there is an important specification to be considered in purchasing a chromeplated screw or having a repaired screw chrome-plated. The critical specification is the depth of the plating.

Most of the screws that are not manufactured from solid tool steels or special alloys have a flight hard-surfacing material welded to form the outside diameter of the screw flights.

The hard-surfacing materials are predominantly cobalt-based or nickel-based. The most common cobalt-based materials include the Stellites (6 and 12) which exhibit uniform wear and are satisfactory in non-corrosive environments.

Carbide Coating

Carbide coating - Guaranteed to double the life of a CPM9V screw.

Particle Metallurgy Tool Steels

Examples of tool steels made by the PM process that are used for screws include CPM9V, CPMM4, and CPMS90V, all from Crucible Materials Corporation. However, there are other manufacturers of PM steels that offer comparable characteristics to the CPM products.

Nickel Allovs

Processing fluoropolymers must be done with nickel alloy screws or screws that are totally encapsulated with a relatively iron-free material. Monel K-500 and Inconel 718 are both nickel alloys that can be hardened into the low 40's RC. Both resist corrosion quite well and, although very expensive, provide an acceptable solution to the extreme corrosiveness of PVC.

Total Encapsulation

There are several methods used to totally encapsulate a screw with wear and/or corrosion resistant material. The methods include detonation guns. HVOF systems and various spray weld processes. A wide selection of materials can be used ranging from the types of materials used for flight hard-surfacing to customized products containing very hard wear resistant carbides.

NOTE: Screw and Barrel wear over time, will reduce screw recovery, increase scrap rates and increase energy consumption. While molders may recognize the costs of wear, they usually accept it as a necessary part of their business. Using a nozzle tip blank such as IMS's 136499 or 136486, try to inject slowly forward at reduced pressure to quantify the ability of the press to hold cushion. You can quickly spot a problem before it becomes serious.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

		IMS Item Nos. (Materials)				
Make of Press Screw OD	OAL	4140 w/Colmonoy #56	Nitralloy 135M	CPM9V	D-2	4140 w/ Stellite #12
Arburg	I					
15mm	29.25"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
18mm	23.00"	RFQ*	RFQ*	119171	RFQ*	RFQ*
20mm	28.8"	RFQ*	RFQ*	132378	RFQ*	RFQ*
22mm	17-1/8"	RFQ*	111676	RFQ*	RFQ*	RFQ*
25mm	28-1/4"	RFQ*	121160	RFQ*	RFQ*	RFQ*
25mm	34"	RFQ*	122213	RFQ*	RFQ*	RFQ*
25mm	22.7"	RFQ*	144098	132341	137631	RFQ*
30mm	20.17"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
30mm	22.687"	RFQ*	RFQ*	RFQ*	127277	RFQ*
30mm	38.51"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
35mm	27.562"	RFQ*	145585	144099	127777	RFQ*
35mm	27.562"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
Autoiootor					,	
Autojector 3/4"	21.649"	RFQ*	RFQ*	121642	RFQ*	RFQ*
1"	25.44"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
	28.62"	RFQ*	124165	145463	RFQ*	RFQ*
1-1/2"	32-5/8"	RFQ*	125816	RFQ*	RFQ*	RFQ*
1-1/4"	23.922"	132069	124695	RFQ*	RFQ*	RFQ*
1-1/4"	22.68"	RFQ*	RFQ*	144138	RFQ*	RFQ*
						ļ
Battenfeld	45.71	1.45005	DEO*	DEO.*	DEO.*	DEO+
35mm	45.7"	145065	RFQ*	RFQ*	RFQ*	RFQ*
35mm	47.0"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
45mm	35"	RFQ*	136257	RFQ*	RFQ*	RFQ*
45mm	52.3"	144186	RFQ*	RFQ*	RFQ*	RFQ*
50mm	61-13/16"	125402	RFQ*	RFQ*	RFQ*	RFQ*
Воу	I					
22mm	25.60"	RFQ*	RFQ*	RFQ*	137886	RFQ*
24mm	25.63"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
32mm	31.50"	RFQ*	RFQ*	127577	RFQ*	RFQ*
38mm	38.898"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
Cincinnati	I					•
1"	30-1/4"	RFQ*	122108	RFQ*	RFQ*	RFQ*
2"	43"	124866	RFQ*	RFQ*	RFQ*	RFQ*
2-3/4"	69.69"	RFQ*	RFQ*	RFQ*	RFQ*	137142

^{*}RFQ=Request for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

			IMS Iter	n Nos. (Materia	ıls)	
Make of Press Screw OD	OAL	4140 w/Colmonoy #56	Nitralloy 135M	CPM9V	D-2	4140 w/ Stellite #12
Cincinnati						
16mm	20-5/16"	RFQ*	120492	RFQ*	RFQ*	RFQ*
18mm	27-1/8"	RFQ*	120494	RFQ*	RFQ*	RFQ*
28mm	33.687"	RFQ*	RFQ*	122046	RFQ*	RFQ*
32mm	37.32"	RFQ*	RFQ*	133550	RFQ*	RFQ*
40mm	43.063"	RFQ*	RFQ*	137555	RFQ*	RFQ*
45mm	52.63"	142411	RFQ*	RFQ*	RFQ*	RFQ*
50mm	52.68"	RFQ*	144170	RFQ*	RFQ*	RFQ*
50mm	59.13"	RFQ*	RFQ*	RFQ*	RFQ*	144171
65mm	66.375"	132653	128372	RFQ*	RFQ*	RFQ*
80mm	81.18"	RFQ*	137820	RFQ*	RFQ*	RFQ*
90mm	80.18"	RFQ*	RFQ*	RFQ*	RFQ*	145600
90mm	92.63"	RFQ*	RFQ*	RFQ*	RFQ*	145602
90mm	102.05"	RFQ*	RFQ*	RFQ*	RFQ*	145603
Demag						
22mm	30-1/4"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
35mm	40.55"	RFQ*	RFQ*	RFQ*	RFQ*	125641
60mm	65.91"	RFQ*	145507	145509	RFQ*	RFQ*
70mm	78.3"	148594	164609	RFQ*	RFQ*	RFQ*
Engel						
18mm	24.4"	RFQ*	RFQ*	142282	RFQ*	144142
25mm	27.56"	RFQ*	RFQ*	120658	RFQ*	RFQ*
25mm	34"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
30mm	31.81"	RFQ*	118821	RFQ*	132170	RFQ*
30mm	36.61"	RFQ*	RFQ*	122315	RFQ*	RFQ*
30mm	23.8"	RFQ*	RFQ*	RFQ*	RFQ*	119247
30mm	24.3"	RFQ*	RFQ*	RFQ*	RFQ*	121891
45mm	44.5"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
Fu Chen						
42mm	37.45"	RFQ*	RFQ*	132355	RFQ*	RFQ*
Goldstar						
85mm	107.8"	144194	RFQ*	RFQ*	RFQ*	RFQ*
	•	1				•

*RFQ=Request for Quote continued on next page

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900
00

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

		IMS Item Nos. (Materials)					
Make of Press Screw OD	OAL	4140 w/Colmonoy #56	Nitralloy 135M	CPM9V	D-2	4140 w/ Stellite #12	
HPM							
1"		132275	RFQ*	RFQ*	RFQ*	RFQ*	
1-1/2"		RFQ*	134877	RFQ*	RFQ*	RFQ*	
2"	65.25"	RFQ*	125349	RFQ*	RFQ*	RFQ*	
Husky							
70mm	74.41"	145618	145617	RFQ*	RFQ*	RFQ*	
Impco							
2-1/2"	77.25"	132799	RFQ*	RFQ*	RFQ*	RFQ*	
Jaco							
1-1/4"	29.0"	RFQ*	RFQ*	136349	RFQ*	RFQ*	
JSW		•	•			•	
28mm	29"	RFQ*	130672	RFQ*	RFQ*	RFQ*	
35mm	37-1/2"	RFQ*	130671	RFQ*	RFQ*	RFQ*	
40mm	42.625"	RFQ*	RFQ*	138218	RFQ*	RFQ*	
46mm	54.21"	RFQ*	144187	RFQ*	RFQ*	144188	
46mm	47.4"	RFQ*	144189	RFQ*	RFQ*	144190	
58mm	54.53"	RFQ*	RFQ*	173718	RFQ*	RFQ*	
Kawaguchi							
30mm	31.01"	RFQ*	144225	RFQ*	RFQ*	144226	
36mm	36.6"	RFQ*	129622	RFQ*	RFQ*	RFQ*	
50mm	53.312"	RFQ*	127304	RFQ*	RFQ*	RFQ*	
Killion							
1-1/4"	35.62"	RFQ*	142346	RFQ*	RFQ*	RFQ*	
Lester		•	•		•	•	
2"	51-1/4"	RFQ*	130892	RFQ*	RFQ*	RFQ*	
2-1/2"	65"	RFQ*	129060	RFQ*	RFQ*	RFQ*	
Lombard							
1-1/2"	44"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*	
Mitsubishi							
55mm	57.62"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*	
		1			1		

^{*}RFQ=Request for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

	IMS Item Nos. (Materials)							
Make of Press Screw OD	OAL	4140 w/Colmonoy #56	Nitralloy 135M	CPM9V	D-2	4140 w/ Stellite #12		
Natco								
1"	18.50"	107967	RFQ*	RFQ*	RFQ*	RFQ*		
70mm	64.44"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*		
NBY								
1"	18.5"	RFQ*	RFQ*	107967	RFQ*	RFQ*		
Negri Bossi								
45mm	41"	RFQ*	RFQ*	RFQ*	130599	RFQ*		
Nestal								
25mm		RFQ*	137321	RFQ*	RFQ*	RFQ*		
						•		
New Britain					т			
1-5/8"	40.125"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*		
36mm		RFQ*	142190	RFQ*	RFQ*	RFQ*		
55mm	33-5/16"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*		
65mm		RFQ*	RFQ*	RFQ*	RFQ*	RFQ*		
Newbury								
1"	18.5"	RFQ*	124350	126826	RFQ*	RFQ*		
1"	24.31"	RFQ*	138202	132438	RFQ*	RFQ*		
1"	27.25"	160037	160036	160038	RFQ*	RFQ*		
1-1/2"	28.625"	RFQ*	RFQ*	RFQ*	RFQ*	131955		
1-1/4"	22.81"	RFQ*	119437	132510	RFQ*	137413		
1-3/4"	42.47"	RFQ*	RFQ*	120221	RFQ*	RFQ*		
1-3/4"		RFQ*	RFQ*	137027	RFQ*	RFQ*		
1-3/8"	27.32"	RFQ*	RFQ*	143042	RFQ*	RFQ*		
1-3/8"	33.125"	RFQ*	RFQ*	136404	144702	RFQ*		
2"	31.75"	RFQ*	RFQ*	145645	RFQ*	RFQ*		
2"	52.5"	RFQ*	RFQ*	145646	RFQ*	RFQ*		
2-1/4"	41.75"	RFQ*	RFQ*	145647	RFQ*	RFQ*		
Niigata								
18mm	28.62"	RFQ*	RFQ*	145465	145464	RFQ*		
35mm	32.25"	RFQ*	133621	RFQ*	RFQ*	RFQ*		
35mm	25.75"	RFQ*	RFQ*	RFQ*	136676	RFQ*		

*RFQ=Request for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

			IMS	tem Nos. (Materi	als)	
Make of Press Screw OD	OAL	4140 w/Colmonoy #56	Nitralloy 135M	CPM9V	D-2	4140 w/ Stellite #12
Nissei						
16mm	18.75"	RFQ*	RFQ*	132231	RFQ*	RFQ*
19mm	18.6"	145467	145466	145468	RFQ*	RFQ*
22mm	18.41"	RFQ*	RFQ*	RFQ*	132369	RFQ*
22mm	22,44"	RFQ*	RFQ*	RFQ*	145648	RFQ*
26mm	24.32"	RFQ*	145649	RFQ*	RFQ*	RFQ*
26mm	26.4"	RFQ*	145650	RFQ*	RFQ*	RFQ*
28mm	31.3"	RFQ*	RFQ*	126906	RFQ*	RFQ*
30mm	24.39"	145470	145469	145471	RFQ*	RFQ*
32mm	31.1"	RFQ*	145651	RFQ*	RFQ*	RFQ*
32mm	35.06"	RFQ*	RFQ*	138503	RFQ*	RFQ*
36mm	30.81"	RFQ*	145652	RFQ*	RFQ*	RFQ*
36mm	34.87"	132887	RFQ*	135691	131960	RFQ*
36mm	39.05"	144211	RFQ*	132784	133148	RFQ*
40mm	34.4"	RFQ*	145653	RFQ*	RFQ*	RFQ*
40mm	38.8"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
40mm	44.09"	148585	145654	RFQ*	RFQ*	RFQ*
45mm	38.5"	RFQ*	145472	145474	RFQ*	145473
45mm	38.5"	RFQ*	138880/PVC	RFQ*	RFQ*	RFQ*
45mm	49.8"	RFQ*	145655	RFQ*	RFQ*	RFQ*
50mm	49.56"	145479	145475	145477	RFQ*	RFQ*
50mm	53.6"	RFQ*	145656	RFQ*	RFQ*	RFQ*
56mm	49.25"	RFQ*	145478	145480	RFQ*	RFQ*
56mm	53.375"	RFQ*	RFQ*	138290	RFQ*	RFQ*
56mm	60.2"	145482	145481	145483	RFQ*	RFQ*
63mm	53.35"	145485	145484	145486	RFQ*	RFQ*
63mm	59.88"	RFQ*	145657	RFQ*	RFQ*	RFQ*
63mm	68.1"	RFQ*	145658	RFQ*	RFQ*	RFQ*
71mm	59.5"	RFQ*	RFQ*	RFQ*	RFQ*	142138
71mm	67.75"	145488	145487	145489	RFQ*	RFQ*
72mm	62.75"	RFQ*	145625	RFQ*	RFQ*	145626
75mm	72.95"	142338	RFQ*	RFQ*	RFQ*	RFQ*
Reed						
1"		RFQ*	125584	RFQ*	RFQ*	RFQ*
2"	44.25"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
2"	29.5"	RFQ*	142228	RFQ*	RFQ*	RFQ*
2-3/4"	48.312"	RFQ*	129530	RFQ*	RFQ*	RFQ*

^{*}RFQ=Request for Quote

continued on next page

Call 866-467-9001 for a Product Specialist



phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

			IMS Iter	n Nos. (Materia	ls)	
Make of Press Screw OD	OAL	4140 w/Colmonoy #56	Nitralloy 135M	CPM9V	D-2	4140 w/ Stellite #12
Sandretto	I					
45mm	46.875"	RFQ*	124149	RFQ*	RFQ*	RFQ*
50mm	75.5"	RFQ*	144191	RFQ*	RFQ*	RFQ*
55mm	68.375"	RFQ*	138813	RFQ*	RFQ*	RFQ*
Sumitomo						
25mm	28.14"	145491	145490	145492	RFQ*	RFQ*
32mm	38.56"	145501	131879	RFQ*	RFQ*	RFQ*
56mm	65.04"	145504	145503	145505	RFQ*	RFQ*
-		•				•
Toshiba	04.07"	DEO+	l pro+ l	101071	DEO#	I pro+
28mm	31.37"	RFQ*	RFQ*	131374	RFQ*	RFQ*
32mm	34.34"	RFQ*	RFQ*	132351	RFQ*	RFQ*
32mm	37.75"	RFQ*	RFQ*	122748	RFQ*	RFQ*
36mm	40.75"	144105	RFQ*	RFQ*	130869	RFQ*
40mm	43.81"	RFQ*	133739	RFQ*	RFQ*	RFQ*
55mm	61.6"	168251	124079	168250	RFQ*	RFQ*
60mm	75.25"	RFQ*	RFQ*	133443	RFQ*	RFQ*
Toyo						
40mm	40.46"	RFQ*	RFQ*	RFQ*	RFQ*	RFQ*
68mm	68.375"	124197	RFQ*	RFQ*	RFQ*	RFQ*
UBE	1					
30mm	24.48"	RFQ*	132663	RFQ*	RFQ*	RFQ*
V D		•				•
Van Dorn 30mm	31.48"	RFQ*	RFQ*	124101	RFQ*	RFQ*
30mm	33"	RFQ*	RFQ*	RFQ*	131434	RFQ*
35mm	35.34"	145510	140520	131964	RFQ*	RFQ*
38mm	36.81"	145518	145517	145519	RFQ*	RFQ*
40mm	38.18"	RFQ*	142176	140612	119183	RFQ*
50mm	50"	136208	121178	137561	127325	RFQ*
57mm	54.33"	127699	131864	125533	RFQ*	RFQ*
65mm	59.7"	124224	137260	137259	RFQ*	RFQ*
69mm	68.19"	145512	145511	145513	RFQ*	RFQ*
80mm	75.6"	122466	131696	120644	RFQ*	RFQ*
90mm	85.62"	145515	145514	145516	RFQ*	RFQ*

^{*}RFQ=Request for Quote

Call 866-467-9001 for a Product Specialist



Screw Tips, Screws & Barrels



Custom Designed Feed Screws — **Injection & Extrusion**

Solve Your Processing Problem for Good

Capabilities to design screws from 3/4" to 26" in diameter and up to 45 feet long



Custom designed screws and screw tips help in many ways:

• Part failure problems

· Short shots

· Mixing issues

· Component wear failures

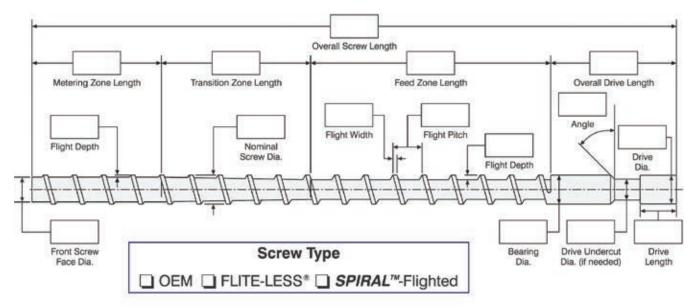
Screws can be responsible for up to 70% energy consumption — Custom designed screws minimize process temperature, decreasing total energy consumption

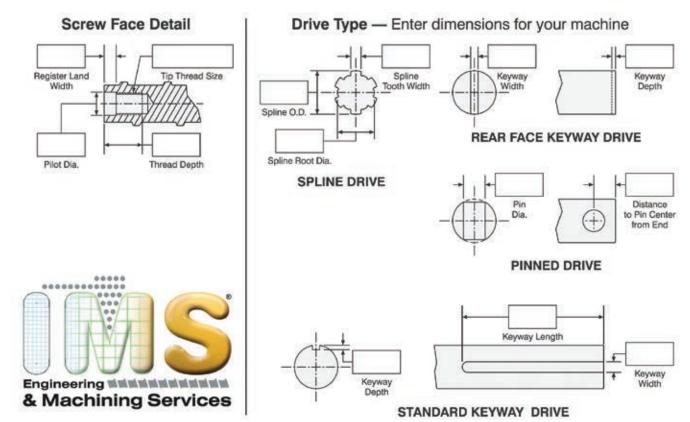
> Throwing money away gets expensive. Let IMS solve your processing issues.



Non-Stock or Custom Reciprocating Screw Form







— Page 1 of 2 —

See next page to compete Injection Screw Form. See page 573 to complete Extrusion Screw Form.





Injection Screw Design Form

SPECIFY:

Intent: Improve Process New Project Screw Repair	
1. Machine Information:	5. Existing Equipment Information:
OEM: Type:	Mixing Device: Yes No (Located) Transition Metering
Machine Age:	Describe Mixing Device:
Nominal Screw Size: in / mm L/D::1	6. Process Information:
MAX. Screw Stroke: in / mm Drive: ☐ Electric ☐ Hydraulic	Shot Size: oz. / grams Existing Recovery Time: SEC
MAX. Screw RPM / KPM: in / mm MAX Torque: FT. LB. NM	Existing RPM: Backpressure: PSI
2. Resin Information:	Screw Stroke: in / mm Recovery Time Target: SEC
Type: Material No: MFG:	Nozzle Shut Off Available: 🔲 Yes 🔲 No
MFI: % Additives:	What Products are Molded:
☐ Color ☐ Master Batch ☐ Powder ☐ Liquid	7. State Any Other Information That May Help to Recognize
3. Existing Problems:	and Understand the Situation:
☐ Recovery ☐ Quality ☐ Corrosion ☐ Temperature	
☐ Wear Of ☐ Screw Flights ☐ Screw Root ☐ Screw Tip	
Please be specific:	
4. Expectation:	
Recovery: OZs per SEC / Grams per SEC	
Dispersion: (Mixing Device is Mandatory)	
Change of MAX. Shot Size Required:	
Date: Quantity: Phone:()	Fax: ()
Name:	Title:
Company Name:	
Address:	
	ate: Zip:



Screw Tips, Screws & Barrels

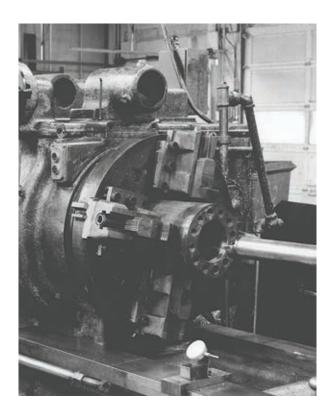
Extrusion Screw Design Form



SPECIFY:	Made in the U.S.A
Intent: Improve Process New Project Screw Repair	
1. Machine Information:	4. Expectation:
OEM: Type:	Rate: LBS/HR Melt Temp: °F or ° C Color Mix:
Machine Age:	Please Explain:
Nominal Screw O.D.: in / mm	
MAX. HP: MAX. RPM: Typical Operating RPM:	5. Existing Equipment Information:
MAX. AMPS: Typical Operating AMPS:	Mixing Device: Yes No (Located) Transition Metering
Base Motor Speed (1750, 2300, etc): Gear Reduction Ratio:	Type Mixing Devices: Maddock Short Barrier Helical Pins
PSI @ Discharge End: 2. Resin Information:	☐ Slotted Rings ☐ Blister Ring ☐ Long Barrier ☐ Straight Pins ☐ Other
Type: Grade: Manufacturer:	Compression Ratio: :1 Screw Meter Depth: No. of Stages:
Melt Index: Melt Flow Rate: % Regrind:	Vented Barrel: ☐ Yes ☐ No What Gasses: Vent Vacuum: ☐ Yes ☐ No
Bulk Density: Melt Density: Pellets OR Powder	Injection Ports Used: Yes No What is Injected:
Viscosity VS Shear Rate Curves:	Grooved Feed Machine: Yes No Number of Grooves:
☐ Yes ☐ No Additive / Filler Types:	6. Process Information:
3. Existing Problems:	Existing Rate: LBS/HR @ RPM Existing Melt Temp:
☐ Rate ☐ Quality ☐ Temperature ☐ Surging	Temp Measured by: No. of Barrel Zones:
Type Wear (Flight, Root):	Machine Temp Settings from Feed:
	Products Extruded:
	State Any Other Information That May Help to Recognize and Understand the Situation:
Date: Quantity: Phone: ()	Fax: ()
Name:	Title:
Company Name:	Email:
Address:	
City: State	e: Zip:



IMS Barrel Repair Service



IMS Company refurbishes barrels and installs barrel liners to your specifications. For liners, choose from D-2, CPM-10V CRUCIBLE® or Bimetallic materials:

D-2 Steel

In the 1950's, IMS developed standard, wear resistant D-2 liners for longer barrel life. D-2 is hardened throughout to combine hardness and toughness. When nitrided, it gives outstanding performance, even on glass-filled plastics.

CPM-10V CRUCIBLE® Tool Steel for heavily filled materials

CPM-10V is an abrasion-resistant steel from CRUCIBLE® Specialty Metals Division. Produced by a patented process, it incorporates high amounts of carbon, chromium, and vanadium to give a toughness not found in other tool steels. So far, it's the smart molders first choice for barrel liners used to melt glass-filled and other abrasive-filled plastics.

Bimetallic

IMS offers bimetallic liners from the supplier of your choice. If you have a preference based on your experience, ask IMS for a quotation on a bimetallic liner using the specific grade or trade name you prefer.

Barrel Repair Ordering Instructions

IMS will repair barrels and get them back to you as soon as possible. All repairs are by experienced machinists using state-of-the-art equipment.

Contact IMS at sales@imscompany.com for a Return Authorization (RA) number before shipping barrels to IMS Company for repair. Ship your worn or damaged barrels as Class 85 Machine Parts to:

IMS Company 10373 Stafford Road Chagrin Falls, Ohio 44023

You will receive an inspection report covering repair cost and delivery date information. If a barrel repair is authorized, there is no charge for inspection. If you should decide not to repair or replace the barrel, you will be billed for out-of-pocket costs incurred in handling and inspecting.

If your barrel is beyond feasible repair, remember that IMS stocks some new barrels. If it is not in stock, you will be quoted a price and delivery of a replacement barrel.

IMS can also quickly design, manufacture and ship custom barrels shortly after receipt of order.

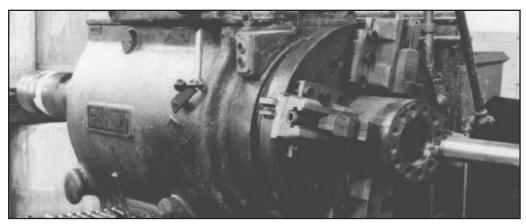
Use The Request For Quotation Form On Page 579.

CRUCIBLE® is a registered trademark of Crucible Steel Co.

IMS OEM Replacement Barrels

YES — IMS was first to offer Sleeved Barrels! We have repaired thousands of barrels over a 50+ year period!

Prompt Service still counts!



1. D-2 Steel

In the 1950's, IMS developed standard, wear resistant D-2 liners for longer barrel life. D-2 is hardened throughout to combine hardness and toughness. When nitrided, it gives outstanding performance, even on glass-filled plastics.

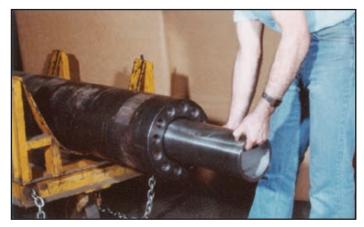
2. CPM-10V CRUCIBLE® Tool Steel for heavily filled materials

CPM-10V is an abrasion-resistant steel from CRUCIBLE® Specialty Metals Division. Produced by a patented process, it incorporates high amounts of carbon, chromium, and vanadium to give a toughness not found in other tool steels. So far, it's the smart molders first choice for barrel liners used to melt glass-filled and other abrasive-filled plastics.

3. Bimetallic

IMS offers bimetallic liners from the supplier of your choice, such as Bimex, Xaloy and Wexco. If you have a preference based on your experience, ask IMS for a quotation on a bimetallic liner using the specific grade or trade name you prefer.





Order Instructions

Always phone an IMS Technical Specialist BEFORE you ship your barrels to IMS. You will be given a Return Authorization (RA) Number to ensure that your barrel is scheduled with minimum delay.

Ship worn or damaged barrel to:

IMS Company, 10373 Stafford Road, Chagrin Falls, Ohio 44023 Ship as Class 85 Machine Parts.

You save money when crate is reusable!

FREE Inspection when Repair is Authorized

Every barrel repair requires careful study so that a correct price can be quoted to you in advance. If repair, salvage or replacement is authorized by you, there is no extra charge for our inspection. If you decide NOT to repair or replace the barrel, it is necessary to bill you for out-of-pocket costs incurred in handling and inspecting it to determine its salvageability. Yes, IMS makes new barrels! Repairs include replacement of cracked or broken front end, refacing and reworking end cap or supplying a new one of the standard or new spiral design.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Tech Tips

Essential Barrel Information

Tool Steel-Lined Barrels

Premature and uneven cylinder wear is expensive in terms of both replacement costs and lost process efficiency. IMS barrels are lined with your needs in mind. For low abrasion applications, we keep your costs down by using D-2 tool steel.

Barrel Liner Material Guidelines

D-2 Tool Steel

Heat treated to RC 58-60, D-2 is a relatively inexpensive, high carbon-high chromium steel with proven, uniform wear resistance surpassing most other steels.

Nitrided Barrels

Nitrided barrels are lined with Nitralloy 135M. Gas nitriding is available on barrels.

Nitrided barrels are not recommended for use with abrasive or corrosive resins due to their inability to resist wear over an extended period of time.

CPM Family

CPM tool steels are premier products of Crucible Specialty Metals Division. The process of producing CPM tools involves gas atomization of pre-alloyed molten steel to form powder that is then isostatically compressed into 100% dense compacts. CPM steels have no alloy segregation and exhibit extremely uniform carbide distribution. The CPM process produces very homogeneous, high quality steel characterized by superior dimensional stability, grindability, and toughness compared to steels produced by conventional processes.

CPM9V

With a lower carbon and vanadium to improve toughness and heat check resistance, CPM9V performs well in problem applications where high carbon, high chromium tool steels, such as CPM10V or the high speed steels, lack sufficient toughness or heat check resistance, or where lower alloy tool steels and hot work tool steels lack sufficient wear resistance.

CPM10V

CPM10V has its vanadium content optimized to provide superior wear resistance while maintaining toughness and fabrication characteristics comparable to D2 and M2. Its exceptional wear resistance and good toughness make it an excellent candidate to replace carbide and other highly wear resistant materials in cold work tooling applications, particularly where tool oughness is a problem or where cost effectiveness can be demonstrated. Due to it's 10% vanadium content, this steel is one of the most abrasion resistant materials available.

CPM15V

CPM15V is intended for applications requiring exceptional wear resistance. It has more vanadium carbides in its composite than CPM10V and provides more wear resistance and longer tool life. CPM15V also offers an alternative to solid carbide where carbide fails by fracture or where intricate tool design makes carbide difficult or risky to fabricate. Due to it's 15% vanadium content CPM15V will outwear CPM10V.

CPMS90V

A stainless steel with a high volume of vanadium carbides for exceptionally good wear resistance. Due to its high vanadium content for wear resistance and it's sufficient chromium content, to provide good corrosion resistance, the wear and corrosion resistance of S90V make it an excellent candidate where increased wear is a primary concern. It can be heat treated to a lower hardness for use as a screw material or to a higher hardness (RC 58-60) for barrel lining.



Nitrided Barrels

Nitrided barrels may be made from 4140 but a nitriding steel, such as Nitralloy 135M enables a better nitrided interior surface to be achieved. Two nitriding methods are available: gas nitriding and ion nitriding.

Gas Nitriding

Gas Nitriding is used to create a surface hardness on the screw. The hard layer of steel will vary in depth from .007" to .015" depending upon the length of the nitriding cycle. The hard layer (usually well above 60 Rc) is achieved by heating the steel in an atmosphere of nitrogen (ammonia gas) at temperatures of 950°F to 1050°F. The nitrogen atoms are diffused into the surface of the steel, combining with nitride-forming elements, such as chromium, aluminum, molybdenum, vanadium, tungsten and titanium, to produce a very hard surface, particularly for the first .002" to .005" depth. Nitrided screws have a very good wear resistance until the surface hardness is worn away. After the surface is worn .007", wear accelerates and the screw may quickly be worn to a condition that is beyond repair.

Ion Nitriding

Ion nitriding is similar to gas nitriding, using an electrical potential to ionize low pressure nitrogen gas. The ions produced are accelerated to the surface of the steel, heating it to a temperature for diffusion to take place (i.e., the uniting of the atomic nitrogen with the nitride-bearing elements in the steel). Because the temperatures are lower and pressures more controllable, a more uniform surface hardness depth may be achieved. The ionization occurs in a plasma discharge process which creates a glow, hence, this type of nitriding is also referred to as the 'plasma method' or 'glow discharge' nitriding.

Nitrided barrels are not recommended for use with abrasive or corrosive resins because of their inability to resist wear over an extended time period.

Bimetallic Barrels

Cast bimetallic barrels are manufactured by metallurgically bonding the lining alloy to the inner surface of a premachined, seamless steel tube, forging or bar stock. The bonding is achieved by heating the barrel (and the lining alloy) to the point where the alloy is melted. The barrel is then spun and cooled, centrifugally casting the alloy on the inner surface of the barrel. The casting is typically .040" - .080" in depth.

The linings range from standard abrasion-resistant, to corrosion-resistant, to premium. Each provides different degrees of wear resistance.

IMS manufactures bimetallic barrels in-house using top of the line cast bimetallic barrel blanks. We carry in inventory most common sizes of these barrel blanks in order to meet our customer's needs.

Standard Bimetallic

Standard wear-resistant liner. Nickel-Boron alloy with good abrasion resistance and low friction co-efficient.

Carbide Bimetallic

Super wear-resistant tungsten carbide liner. For highly abrasive applications. Some corrosion resistance.

Premium Bimetallic

Corrosion resistant liner. Cobalt-nickel based with high chromium content. Provides excellent wear resistance in highly corrosive conditions.

continued on next page



Relined Barrels

IMS offers full-length relining of barrels up to eight (8) inches in diameter and 180" inches in length, using premium tool steels and special alloys, depending upon the customer's need.

Upon receipt of your barrel, our engineers will do a thorough inspection of your barrel. We will then contact you with a quote for repair, either by phone or fax. At that time you will have the option of proceeding with the work (upon IMS's receipt of your purchase order approval), having IMS return the barrel to you or having us dispose of it.

AN IMS ALTERNATIVE: R215 Carbide bound liner: We start with a solid piece of 4100 series tool steel with a bored ID. CO56 powder is then placed in the 4100 series barrel, heated up and spun. This makes the CO56 melt and stick to the inside of the barrel, similar to a sleeve. It is then bored to manufacturer specs and polished. This barrel can be later bored out and resleeved w/carbide or tool steel if necessary.

Bonding is achieved by heating the barrel (and the lining alloy) to the point where the alloy is melted. The barrel is then spun and cooled, centrifugally casting the alloy on the inner surface of the barrel. The resulting lining is about 1/16" (.0625") thick throughout the barrel. Due to the temperatures reached in the spin-casting process, the 4100 series backing material is annealed. In larger barrels, a pressure sleeve made from heat treated or forged alloy steel is placed over the nozzle end of the barrel by shrink fitting.

	Acceptability For Resin Wear Conditions							
Barrel Lining Material		Abrasive		Corrosive				
	Normal (4) Moderate (5) Severe (6)			Moderate	Severe			
NITRIDE: (Gas or Ion)								
4140 or equivalent	Acceptable	Poor	N/A	Poor	N/A			
Nitralloy 135 M or equivalent	Acceptable	Poor	N/A	Poor	N/A			
		BIMETALLIC:						
Standard	Good	Acceptable	Poor	Poor	N/A			
Corrosion Resistant	Good	Acceptable	Poor	Excellent	Good			
Premium	Excellent	Excellent	Good	Excellent	Excellent			
		TOOL STEELS:						
D-2	Good	Acceptable	Poor	Acceptable	N/A			
CPM10V	Excellent	Excellent	Good	Acceptable	N/A			
CPM15V	Excellent	Excellent	Excellent	Acceptable	N/A			
CPMS90V	Good	Acceptable	Poor	Good	Poor			
		SPECIAL ALLOY	S:					
Nickel 718 (Inconel or Pyromet)	Acceptable	N/A	N/A	Excellent	Excellent			
Monel K-500	Acceptable	N/A	N/A	Excellent	Excellent			
Hastelloy C-276	Acceptable	N/A	N/A	Excellent	Excellent			
C-2 Tungsten Carbide	Excellent	Excellent	Excellent	Excellent	Good			

CPM - Crucible Materials Corporation N/A - Not Acceptable

- (1) All Thermoplastics without reinforcement or abrasive fillers.
- (2) Thermoplastics with abrasive reinforcement or fillers up to 30%.
- (3) Thermoplastics with 30% or more reinforcements or abrasive fillers and thermosets.
- (4) Cellulosics, Ionomers, Acetals and others containing corrosive additives.
- (5) Fluoropolymers.

Measuring Barrel Wear

- · Clean the barrel ID, while hot, with a soft wire or brass brush, preferably wrapped with copper gauze. Allow to cool to room temperature.
- · Set dial bore gage to nominal bore diameter of the barrel. Record your findings, taking a reading along the ID of the barrel every 2 - 3 inches. Examine condition of barrel ID, looking for any "washed out" areas, cracks and gouges. Inspect feed throat area and end cap.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

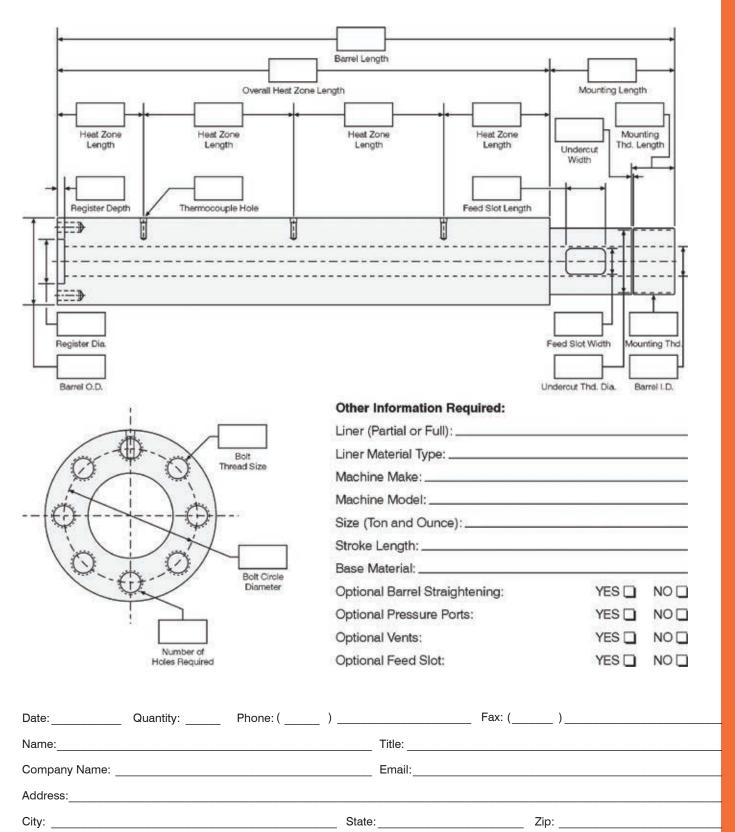
fax order toll-free (USA & Canada)

001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Screw Tips, Screws & Barrels

Non-Stock or Custom Barrel Form





www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Front End Cap Repair Service

OEM Front End Caps

IMS Company can get you any popular end cap or make them to your exact specifications. Choose from such materials as H13, Nitralloy, 4140, CPM-10V Crucible® and D-2, all of which offer excellent durability and wear-resistance. Nonstocked items can often be manufactured and shipped in one to three weeks, depending on your requirements. Optional surface treatments such as chrome plating, PVD coating and conventional nitriding are also available.

SPIRAL™ Front End Caps

IMS Spiral-curve retrofit front end caps are helping more and more molders get better molding performance and fewer rejects from existing injection machines.

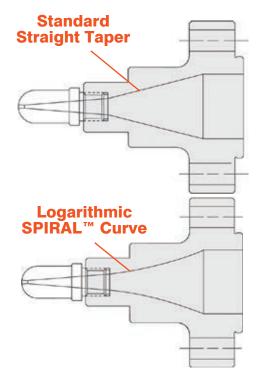
The object is to promote a uniform melt, unstrained and properly oriented molecularly to allow the plastic to retain maximum strength with minimum strains.

Once the hot melt enters the end cap, compression is applied by the spiral passage calculated mathematically to coalesce the melt without destroying its molecular bonds.

The plastic easily conforms to the change it must undergo to reach the size of the nozzle orifice.

The spiral discharge system follows the principle of Least Action. Here, minimal material stress results in a reduced amount of flow resistance. The aim is to maintain molecular homogeneity that results in retention of material strength.

Now proven in a growing number of installations, the IMS Spiral-Curve Retrofit Front End Package is not only bringing existing injection machines up to date, but enabling them to produce a far more uniform melt than the best new press you can buy today.



IMS Company can get you any popular SPIRAL™ End Cap size or make them to fit your specific machine. Choose from any material including H13, Nitralloy, 4140, CPM-10V Crucible® and D-2, all of which offer excellent durability and wear-resistance. Various surface treatments such as chrome plating, PVD coating and conventional nitriding are available at an additional cost. Nonstocked items can often be manufactured and shipped in one to three weeks, depending on your requirements.

End Cap Repair Ordering Instructions

All repairs are by experienced machinists using state-of-the-art equipment.

Contact the IMS Engineering Team at sales@imscompany.com for a Return Authorization (RA) number before shipping end caps to IMS Company for repair. Ship your worn or damaged end caps as Class 85 Machine Parts to:

IMS Company 10373 Stafford Road Chagrin Falls, Ohio 44023

You will receive an inspection report covering repair cost and delivery date information. If an end cap repair is authorized, there is no charge for inspection. If you should decide not to repair or replace the end cap, you will be billed for out-of-pocket costs incurred in handling and inspecting.

If your end cap is beyond feasible repair, remember that IMS stocks many popular models of new end caps. If it is not in stock, you will be quoted a price and delivery of a replacement end cap.

IMS can also quickly design, manufacture and ship custom end caps.

Use The Request For Quotation Form On Page 583.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

IMS OEM Replacement Front End Caps

Prompt Delivery on Made-To-Order End Caps

- IMS can replace, and in some cases repair, any barrel end cap.
- Traditional end caps have evenly spaced bolt holes. Some press end caps have non-concentric bolt patterns. Another common style in use consists of a nozzle that threads directly into the barrel. IMS can replace all of these styles, and more. Just provide information, or a sample, and IMS will replace it, or repair it.
- IMS will inspect it, and quote what items can be fixed, and what they will cost. If an end cap cannot be repaired, IMS will quote a new replacement.
- IMS can build end caps from any material: H13, Nitralloy, 4140 steel, D2. You name it, we will build it from that material.
- Various surface treatments are also available: chrome plating, PVD (Titanium Nitride), conventional nitriding, and many others.



Compare Our Quality, Price And Delivery!

Order Instructions

Call for a Return Authorization Number

Always phone an IMS Technical Specialist before you ship your end cap to IMS. You will be given a Return Authorization (RA) Number to ensure that your end cap is scheduled with minimum delay.

Ship worn or damaged end cap to:

IMS Company, 10373 Stafford Road, Chagrin Falls, Ohio 44023 Ship as Class 85 Machine Parts.

You save money when crate is reusable!

- Free Inspection when Repair is Authorized -

Every end cap repair requires careful study so that a correct price can be quoted to you in advance. If repair, salvage or replacement is authorized by you, there is no extra charge for our inspection. If you decide NOT to repair or replace the end cap, it is necessary to bill you for out-of-pocket costs incurred in handling and inspecting it to determine its salvageability.

End Cap Repairs

Are No Problem For Ims

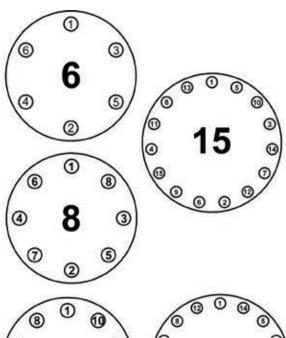


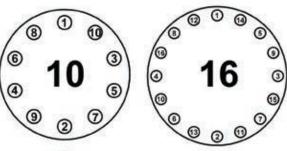
Expert Service!



www.imscompany.com

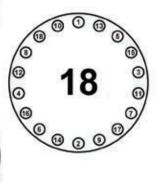
phone order toll-free (USA & Canada) 1.800.537.5375











End Cap Assembly Instructions

STEP 1: Lubricate bolt threads in area of engagement. Also, lubricate face of bolt using a nickel based anti-seize compound (Item #130787—see page 653).

STEP 2: Install all bolts finger tight.

STEP 3: Number bolts so that torquing requirements can be met.

STEP 4: Apply torque in 20% (1/5) increments of required torque, loading all bolts at each increment before proceeding to the next sequence.

STEP 5: Repeat final torque sequence when the barrel is at operating temperature.

End Cap Bolt Specs

Bore Diameter	Torque Ft. LBS.
30mm	22
36mm	27
38mm	30
40mm	24
50mm	64
57mm	83
65mm	98
69mm	145
75mm	150
80mm	195
90mm	301
105mm	512
115mm	886
135mm	1110
155mm	1750

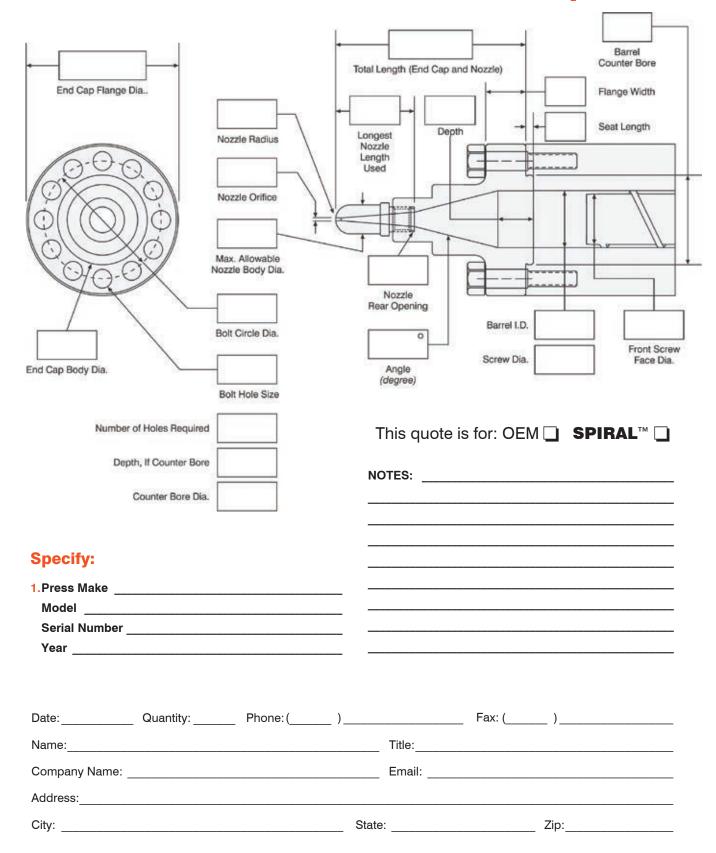
Tech Tips

It is highly important to tighten all end cap and nozzle sealing surfaces properly. All mating surface must come together evenly and squarely to ensure a proper seal.

When thread on end caps are used and a torque wrench is not available, it is important to use extreme care when tightening bolts. Over tightening can cause damage to the sealing surfaces.



Non-Stock or Custom Front End Cap Form





CUT CYCLE TIME

Exclusive **SPIRAL**™ End Caps, Screw Tips, R-Screws and Hoppers will help you do both!

Logarithmic spiral curves promote a faster, freer flow of material than conventional, flat tapers. A smoother, unencumbered flow produces better parts. These are facts and also the reasons why IMS incorporates spiral curves in each component of it's exclusive SPIRAL™ System. The following is a brief history of how the IMS SPIRAL™ System developed.

The introduction of electronic process controls back in the early 1980's was without a doubt a technological breakthrough. For a lot of OTHER industries this was a huge step forward. For the injection molding industry, however, IMS questioned the logic of trying to computerize a process so full of variables and lacking in standardization.

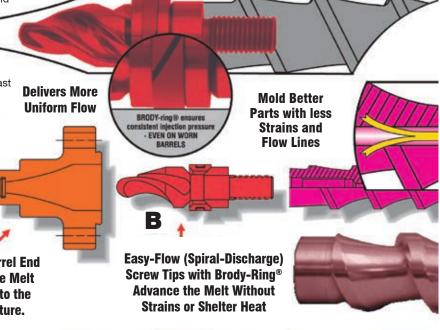
Prior to process controls, IMS had developed numerous individual products aimed specifically at improving part quality. Full Taper Nozzles and Screw Tip BRODY-Rings® are just a couple of examples. Each addressed a specific need and they all were and remain solid, successful products. It was the emergence of the process control, however, that really started us thinking about the injection process as a whole (both the machinery and the material) and what could and should be changed in order to mold better parts.

It was already a proven fact that the current, restrictive R-Screw Process was stretching and deforming the molecular bonds of our plastics and seriously affecting finished part strength. We needed to find ways to get the plastic from the hopper to the mold with the least amount of damage possible. We found that this problem could be solved, in large part, by the replacement of all standard, flat internal tapers with smoother, gentler, logarithmic spiral curves.

that made IMS SPIRAL™ SCREW TIPS the least restrictive tips ever produced. The reduction of strains, flow lines and shear-induced heat in the melt improved part strength and quality significantly.

Another innovation that followed later was the introduction of the THERMALLY COMPENSATED R-SCREW. Research showed that installation of a heat tube in the front end of the screw would effectively transfer excess heat from the compression zone back to the transition zone, where it could be reused to assist in the melting of incoming pellets. Screw wear from unmelted pellets was dramatically reduced. But perhaps even more important, the ability to turn down front end heat had a direct and positive effect on cycle time, part quality and reject rate.

C The other component of the injection process, previously ignored, was the feed hopper. No matter what their diameter or height, they all had the same straight taper to the machine intake. At least that's the way it was prior to 1988. Consequently, they were all



FULL-TAPER NOZZLES

continue the gentle

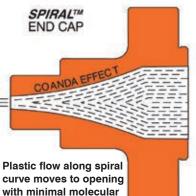
progressive compression of the melt

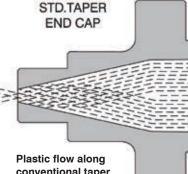


Spiral-Passage Barrel End Caps Coalesce The Melt Without Damage to the Molecular Structure.

(See End Cap illustrations at right.) The more gradual compressing of the material, plus the resulting coanda effect (that is, the phenomenon of material flow tending to follow closely along the wall contour of a passage), greatly eased the strain on the plastic's molecules and the effects on the material's inherent properties.

- A In 1986, IMS first used this technology in the development of their revolutionary SPIRAL™ END CAPS. The results, as projected, were impressive. Parts were stronger and more dimensionally stable. Older presses equipped with these new end caps were actually producing higher quality parts than new presses with traditional style caps.
- B Next IMS focused its attention at the screw tip. Their existing melt valves with narrow sliding ring and anti-blow-by BRODY-Ring[®] seal were already proven effective at maintaining shot control. But it was the development, in 1988, of a unique, SPIRAL™ front end



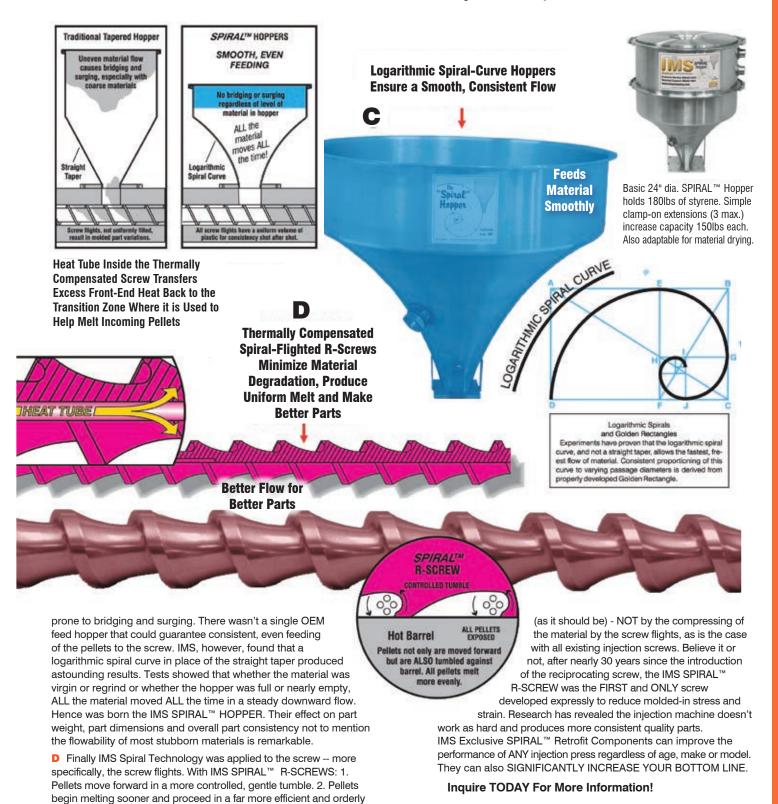


Plastic flow along conventional taper is impeded, sheared and strained.

disruption

MOLD BETTER PARTS

Each component sold separately.
All available for ANY injection press.



manner. 3. Pressure is provided by the lateral movement of the screw



Minimize Purge Time - Maximize Production Time

- Effectively cleans and removes residual contamination from barrels, screws, check valves, extrusion dies, cold or hot runner systems, melt pumps and accumulators
- · Fast, efficient color, resin and tooling changeovers
- · Eliminates black specks and streaking
- Reduces scrap you will manufacture more good parts to sell!

Continued on next page

Select your process, resin and temperature to find your Purgex Grade

Products	Purgex 465 Plus	Purgex 457 Plus	Purgex 459 Plus	Purgex 461
		Process		
Injection Molding	•	•	•	
Injection Blow Molding	•	•	•	
Extrusion: Blow Molding	•	•	•	
Extrusion: Profile	•	•	•	
Extrusion: Coumpounding		•	•	
Extrusion: Sheet	•	•	•	•
Blown Film				•
Primary Application	General Purpose	General Purpose and Filled Resins	Automotive Interiors and General Purpose	Blown Film
Works best on Resins:	PP-Copolymer, PP- Homopolymer, PVC- Flexible, LDPE, HDPE	ABS, HDPE, PVC-Rigid, PU, PP-Copolymer, PP- Homopolymer, PMMA	PP-Copolymer, PC/ ABS,TPOs, TPEs	LDPE, LLDPE
Also Useful For:	TPEs, TPOs, PVC- Rigid, Startup, Shutdown, many other resins processed in this temperature range TPEs, TPOs, PVC- Rigid, Startup, Shutdown, Pl PVC-Flexible, TPOs, LDPE, TPEs, PBT, man other resins processe in this temperature range		ABS, Nylon, Startup, Shutdown, HDPE, PP- Homopolymer, PVC- Rigid, PVC-Flexible, many other resins processed in this temperature range	
		Amount Needed		
Amount	depend	to 1.5 times barrel capacit ding on condition of machi nd colorant/additive loadin	ne/tool	Use 15 lbs of Purgex™ 461 per 100 lbs of throughput Note: After use on a regular basis, the amount used to purge can often be reduced by 25 to 50%
		Temperature Range		
Fahrenheit / Celsius	380	0°F - 550°F / 193°C to 288	3°C	250°F - 450°F / 120°C -232°C
		Recommended For:		
Hot Runners	•	•	•	
Cold Runners	•	•	•	
Mixing Nozzles	•	•	•	
Extrusion: Dies	•	•	•	•
Check Valves	•	•	•	
Melt Pumps	•	•	•	•
Accumulators		•	•	
100lb Item # & Price	122704: \$385.51	127906: \$390.35	169540: \$403.25	168663: \$503.26
1000lb Item # & Price	131191: \$3,516.34	131876: \$3,564.73	169836: \$3,709.90	169837: \$4,548.66



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Purgex Purging Compounds

Minimize Purge Time - Maximize Production Time

Continued from previous page

- Thorough cleaning of melt pumps and is safely processed though dies as small as .030" (0.75mm)
- · Active components in most Purgex grades neutralize acid gases generated by PVC or polystyrene
- With regular use, Purgex forms a temporary barrier which protects steel surfaces from oxidation, extending the cleaning process





Products	Purgex 602 Plus	Purgex 742	Purgex 3056 Plus	Purgex 3057 Plus
		Process		
Injection Molding	•	•	•	•
Injection Blow Molding				
Extrusion: Blow Molding				
Extrusion: Profile				
Extrusion: Coumpounding			•	•
Extrusion: Sheet			•	•
Blown Film				
Primary Application	Clear Resins	Automotive Interiors Polypropylene Copolymers	Engineering Resins and General Purpose	Engineering Resins and Glass Filled
Works best on Resins:	PC, PS, SAN	PP-Copolymer, TPOs, PE	Nylon, PBT, POM	Nylon, PBT, POM, PET, PPO, PPA
Also Useful For:		PP-Homopolymer, HDPE, LDPE	PVC-Flexible, PVC- Rigid, Startup, Shutdown, PET, PPO, PPA, many other resins processed in this temperature range	PVC-Flexible, PVC-Rigid, Startup, Shutdown, many other resins processed in this temperature range
		Amount Needed		
Amount	1 to 1.5 times barrel capacity, depending on condition of machine/ tool and colorant/ additive loading	barrel capacity, depending on condition of machine/tool and colorant/additive loading		pacity, depending on condition I colorant/additive loading
		Temperature Range		
Fahrenheit / Celsius	360°F to 550°F / 183°C to 288°C	375°F - 475°F / 191° C to 246° C		°F / 193°C - 316°C
		Recommended For:		
Hot Runners	•	•	•	•
Cold Runners	•	•	•	•
Mixing Nozzles	•	•	•	•
Extrusion: Dies			•	•
Check Valves	•	•	•	•
Melt Pumps			•	
Accumulators				
100lb Item # & Price	161951: \$661.33	169838: \$409.70	122705: \$409.70	129493: \$424.22
1000lb Item # & Price	131009: \$6,290.70	167122: \$3,613.12	131877: \$3,790.55	132085: \$3,919.59



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.		C.		F.	C.		F.		C.		F.
-17.8	0	32.0		10.0	50	122.0	38	100	212		288	550	1022
-17.2	1	33.8		10.6	51	123.8	43	110	230		293	560	1040
-16.7	2	35.6		11.1	52	125.6	49	120	248		299	570	1058
-16.1	3	37.4		11.7	53	127.4	54	130	266		304	580	1076
-15.6	4	39.2		12.2	54	129.2	60	140	284		310	590	1094
-15.0	5	41.0		12.8	55	131.0	66	150	302		316	600	1112
-14.4	6	42.8		13.3	56	132.8	71	160	320		321	610	1130
-13.9	7	44.6		13.9	57	134.6	77	170	338		327	620	1148
-13.3	8	46.4		14.4	58	136.4	82	180	356		332	630	1166
-12.8	9	48.2		15.0	59	138.2	88	190	374		338	640	1184
-12.2	10	50.0		15.6	60	140.0	93	200	392		343	650	1202
-11.7	11	51.8		16.1	61	141.8	99	210	410		349	660	1220
-11.1	12	53.6		16.7	62	143.6	100	212	413.6		354	670	1238
-10.6	13	55.4		17.2	63	145.4	104	220	428		360	680	1256
-10.0	14	57.2		17.8	64	147.2	110	230	446		366	690	1274
- 9.44	15	59.0		18.3	65	149.0	116	240	464		371	700	1292
- 8.89	16	60.8		18.9	66	150.8	121	250	482		377	710	1310
- 8.33	17	62.6		19.4	67	152.6	127	260	500		382	720	1328
- 7.78	18	64.4		20.0	68	154.4	132	270	518		388	730	1346
- 7.22	19	66.2		20.6	69	156.2	138	280	536		393	740	1364
- 6.67	20	68.0		21.1	70	158.0	143	290	554		399	750	1382
- 6.11	21	69.8		21.7	71	159.8	149	300	572		404	760	1400
- 5.56	22	71.6		22.2	72	161.6	154	310	590		410	770	1418
- 5.00	23	73.4		22.8	73	163.4	160	320	608		416	780	1436
- 4.44	24	75.2		23.3	74	165.2	166	330	626		421	790	1454
- 3.89	25	77.0		23.9	75	167.0	171	340	644		427	800	1472
- 3.33	26	78.8		24.4	76	168.8	177	350	662		432	810	1490
- 2.78	27	80.6		25.0	77	170.6	182	360	680		438	820	1508
- 2.22	28	82.4		25.6	78	172.4	188	370	698		443	830	1526
- 1.67	29	84.2		26.1	79	174.2	193	380	716		449	840	1544
- 1.11	30	86.0		26.7	80	176.0	199	390	734		454	850	1562
- 0.56	31	87.8		27.2	81	177.8	204	400	752		460	860	1580
0	32	89.6		27.8	82	179.6	210	410	770		466	870	1598
0.56	33	91.4		28.3	83	181.4	216	420	788		471	880	1616
1.11	34	93.2	-	28.9	84	183.2	221	430	806	-	477	890	1634
1.67	35	95.0		29.4	85 86	185.0	227	440 450	824		482	900	1652
2.22	36 37	96.8 98.6		30.0	86	186.8	232	450 460	842 860		488	910	1670
2.78	37 38			30.6	87 88	188.6	238	460 470			493	920	1688
3.33 3.89	38 39	100.4 102.2		31.1 31.7	88 89	190.4 192.2	243 249	470 480	878 896		499 504	930 940	1706 1724
4.44	40	104.0	-	32.2	90	194.0	254	490 490	914	1	510	950	1742
5.00	41	104.0		32.8	91	194.0	260	490 500	932		516	960	1742
5.56	42	103.6		33.3	92	193.6	266	510	950		521	970	1778
6.11	43	107.0		33.9	93	199.4	271	520	968		527	980	1796
6.67	44	111.2		34.4	94	201.2	277	530	986		532	990	1814
7.22	45	113.0	+	35.0	95	203.0	282	540	1004	1	538	1000	1832
7.78	46	114.8		35.6	96	204.8				J			
8.33	47	116.6		36.1	97	206.6							
8.89	48	118.4		36.7	98	208.4							
9.44	49	120.2		37.2	99	210.2							
			L										

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column. Look to left column for Celsius conversion.

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column. Look to right column for Fahrenheit conversion.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico)

tech support toll-free (USA & Canada)

Purge Hopper

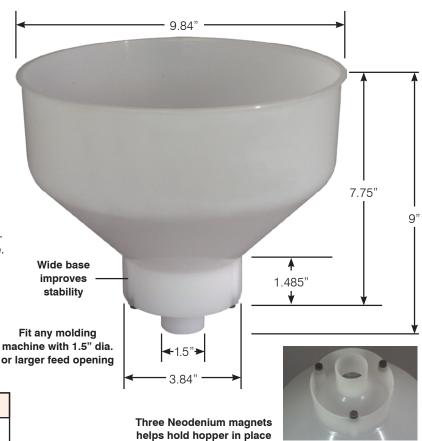
Simplifies the Loading of Purging Compounds

- Lightweight
- Portable
- Durable
- Easy to install
- Inexpensive

Looking for a better way to feed purger into your machines?

IMS Temporary Purge Hoppers are just what you need. Use them on any machine with a 1.5" diameter or larger feed opening. Powerful magnets hold the hopper in place. They're lightweight yet durable and very inexpensive.

IMS Purge Hoppers also work well on 55 gallon drums for applications such as waste oil.



Specifications

Capacity: 12 lbs. polyethylene
Construction: High density polyethylene

Color: White Weight: 10.88 oz.

Item #	Description	Unit Price	
127716	Purge Hopper	\$15.75	

Plastic Resin Scoops



Item	Size	Style	Color	Unit Price
132787	32 oz	Flat Bottom	White	\$5.63
132788	82 oz	Flat Bottom	White	7.00
146497	128 oz	Flat Bottom	White	15.40



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001



Heavy Duty Barrel Cleaning Brushes

For Easy, Thorough Cleaning of Internal Barrel Surfaces

- High-carbon steel bristles
- Double stem, double spiral design



	istle Diameter: 0.0 Brush Length: 4½	012" ½"		0	verall Length: 7½	2"	
Item #	Brush Diameter	NPT	Unit Price	Item #	Brush Diameter	NPT	Unit Price
	•		Stand	dard			•
101012	3/4"	1/4"	\$8.31	100941	3"	1/4"	\$8.81
100981	1"	1/4"	8.74	101117	31/4"	1/4"	9.79
100949	11/4"	1/4"	7.53	101086	31/2"	1/4"	9.79
101127	11/2"	1/4"	8.58	101057	3¾"	1/4"	9.95
101094	13/4"	1/4"	7.65	101028	4"	1/4"	9.76
101063	2"	1/4"	9.66	100996	41/2"	1/4"	11.26
101034	21/4"	1/4"	9.87	100963	51/4"	1/4"	13.55
101003	21/2"	1/4"	8.29	101142	6"	1/4"	14.65
100972	23/4"	1/4"	10.16	112376	all 17 Standard B	rushes	147.33
	•	•	Met	tric			-
119802	14mm	⁵ / ₁₆ "-18	\$10.50	100944	40mm	1/4"	\$8.50
140255	15mm	⁵ / ₁₆ "-18	11.02	101031	45mm	1/4"	7.81
119796	16mm	⁵ / ₁₆ "-18	11.44	101000	50mm	1/4"	8.16
101076	18mm	1/4"	8.76	100969	55mm	1/4"	8.02
140256	20mm	1/4"	10.76	100937	57mm	1/4"	8.19
101017	22mm	1/4"	9.08	101113	60mm	1/4"	8.79
100986	24mm	1/4"	8.50	101083	65mm	1/4"	8.95
100954	25mm	1/4"	9.16	101025	69mm	1/4"	10.27
101122	27mm	1/4"	8.10	100992	70mm	1/4"	9.18
101132	28mm	1/4"	8.29	100961	80mm	1/4"	9.55
101099	30mm	1/4"	8.27	101139	90mm	1/4"	9.31
101067	32mm	1/4"	8.11	101105	105mm	1/4"	12.63
101040	35mm	1/4"	8.21	101074	115mm	1/4"	11.95
101008	36mm	1/4"	8.37	101046	135mm	1/4"	13.81
100976	38mm	1/4"	7.90				
Drill Extensi	ion Rods (for all excep	ot 119802, 1	40255, 119796))			
101035	3' fiberglas	ss	\$4.77	101004	3' twisted ste	eel	\$5.58
■ ■	36"		→	□	36"		<i>((((a, −, −, −)</i>))
For 119802	, 140255, 119796						
101128	Extension (5/16"-18 threa	d 24" length)	\$5.69	101064	T-handle on	ly	\$3.05
101095	Extension (5/16"-18 threa	d 36" lenath)	6.36		•		•



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

е-тап

001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

Silicone Grease

Ideal nozzle and screw tip thread lubricant

Apply Where Copper Or Graphite-Based Compounds Cannot Be Used

It's Clear & Clean Won't Carbonize

It's also an effective mold release for epoxy, polystyrene, PVC and polyester resins when spot lubrication is necessary

Other Features

- Inert to metals, plastics and most organic materials
- Insoluble in water, methyl or ethyl alcohol, glycerol or mineral oil
- Moisture resistant
- · Good chemical stability

Specifications

- Temperature Range: -40° to +400° F
- FDA rated 21CFR 178.3570 and 175.300
- Color: White to Translucent
- Non-Melting
- Low Volatility
- High Dielectric Strength

Item #	Description	Unit Price
172095	Silicone Grease (4.5 oz. tube)	\$7.80

Copper Gauze

For Safe Cleaning of Screw, Barrel and Mold

- Reversible medium grade mesh on the outside turn gauze inside out for heavier cleaning coarse mesh
- · Safe, soft copper will not mar surfaces
- · Knitted mesh keeps flat wire on edge for scraping
- · Tough, interlocking loops will not pull apart
- Pure Copper will not rust or contaminate
- Non-flammable will not burn, smoke or spark



Specifications and Prices								
Outside Cleaning Grit: Medium Inside Cleaning Grit: Coarse		Width: No Ribbon Dimensions: 0.						
Item #	Description		Unit Price					
123300	Copper Gauze (100' roll)		\$30.00					
122990	Copper Gauze (400' roll)		120.00					

Also See IMS High Heat - Copper Flake Thread Lube • Page 521





IMS Heat Transfer and Anti-Seize Compounds



INFRA-KOTE

These products consists of metal powders blended into a grease carrier to allow it to be applied. The grease carrier will break down at the temperature listed, but the products will continue to provide heat transfer up to the listed temperature limits of the metal powders.



Both excellent heat transfer compounds for use with cartridge heaters and heater bands.



Improve surface contact between heaters and equipment, extending heater life, providing better response times and reducing energy costs.



An affordable, high heat compound for continuous use up to 600°F

- Eliminates trouble- causing air pockets
- · Distributes heat more uniformly
- · Reduces scale and oxidation
- · Helps prevent seizing and galling

Limited use heat transfer compound formulated for continuous use up to 350°F

- · Prolongs heater life
- · Cuts energy costs
- · Ensures consistent heat transfer
- · Facilitates heater removal

Specifications

Melting point of Copper: 1981° F

*Max. Continuous Service 600°F - For Cartridge Heaters Temp. for Carrier Medium: and Threads (not exposed to air)

Also an excellent anti-seize compound for use on end cap bolts, and nozzle and screw tip threads.

Item #	Description	Unit Price

130787 12-oz. jar SAFEKOTE 60™ \$31.29 complete with brush top

Specifications

1981° F Melting point of Copper: **Melting point of Aluminum:** 1220° F

Melting point of Graphite: in air, 750°F to 1100°F

> in a reduced oxygen environment, 6700°F

Max. Continuous Service Point: 350°F Grease Media Decomposition: 550°F

Item # Description **Unit Price** 103781 16-oz. jar Infra-Kote with brush top \$23.15

Available ONLY from IMS!

SAFEKOTE 60™ is a trademark of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



Mold Bushings Pages 594 – 596

> Mold Pins Pages 597 – 603

Components & Supplies

Mold & Die Maintenance



Mold Supplies Pages 604 – 605

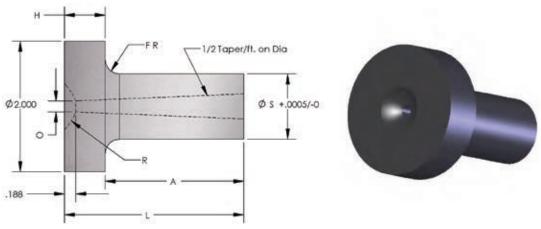
Compression Springs Pages 606 – 614

Most items IN STOCK for Same Day Shipment





Sprue Bushings - AB Series



							Number			
S (Shank)	H (Head)	F	0	Α	L	R=1/2	R=3/4			
				29/32	1 25/32	155022	155040			
				1 13/32	2 9/32	155023	155041			
			F/00	1 29/32	2 25/32	155024	155042			
			5/32	2 13/32	3 9/32	155025	155043			
				2 29/32	3 25/32	155026	155044			
				3 13/32	4 9/32	155027	155045			
		0.125		29/32	1 25/32	155028	155046			
				1 13/32	2 9/32	155029	155047			
0.75	0.875		0.125	0.125			7,00	1 29/32	2 25/32	155030
			7/32	2 13/32	3 9/32	155031	155049			
				2 29/32	3 25/32	155032	155050			
				3 13/32	4 9/32	155033	155051			
				29/32	1 25/32	155034	155052			
				1 13/32	2 9/32	155035	155053			
				1 29/32	2 25/32	155036	155054			
			9/32	2 13/32	3 9/32	155037	155055			
				2 29/32	3 25/32	155038	155056			
				3 13/32	4 9/32	155039	155057			

						Catalog	Number								
S (Shank)	H (Head)	F	0	Α	L	R=1/2	R=3/4								
				29/32	1 25/32	155094	155112								
				1 13/32	2 9/32	155095	155113								
				1 29/32	2 25/32	155096	155114								
				2 13/32	3 9/32	155097	155115								
	0.875		9/32	2 29/32	3 25/32	155098	155116								
				3 13/32	4 9/32	155099	155117								
				3 29/32	4 25/32	155100	155118								
				4 29/32	5 25/32	155101	155119								
1		0.25		5 29/32	6 25/32	155102	155120								
				29/32	1 25/32	155103	155121								
				1 13/32	2 9/32	155104	155122								
				1 29/32	2 25/32	155105	155123								
				2 13/32	3 9/32	155106	155124								
			11/32	11/32	11/32	11/32	11/32	11/32	11/32	11/32	11/32	2 29/32	3 25/32	155107	155125
				3 13/32	4 9/32	155108	155126								
				3 29/32	4 25/32	155109	155127								
				4 29/32	5 25/32	155110	155128								
				5 29/32	6 25/32	155111	155129								

						Catalog	Number																			
S (Shank)	H (Head)	F	0	А	L	R=1/2	R=3/4																			
				29/32	1 25/32	155058	155076																			
				1 13/32	2 9/32	155059	155077																			
				1 29/32	2 25/32	155060	155078																			
	0.875			2 13/32	3 9/32	155061	155079																			
			5/32	2 29/32	3 25/32	155062	155080																			
				3 13/32	4 9/32	155063	155081																			
				3 29/32	4 25/32	155064	155082																			
				4 29/32	5 25/32	155065	155083																			
1		0.25		5 29/32	6 25/32	155066	155084																			
				29/32	1 25/32	155067	155085																			
				1 13/32	2 9/32	155068	155086																			
							1 29/32	2 25/32	155069	155087																
				2 13/32	3 9/32	155070	155088																			
			7/32	2 29/32	3 25/32	155071	155089																			
				1/02	3 13/32	4 9/32	155072	155090																		
				3 29/32	4 25/32	155073	155091																			
										[1 [1 [1 [[i t				4 29/32	5 25/32	155074
				5 29/32	6 25/32	155075	155093																			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900

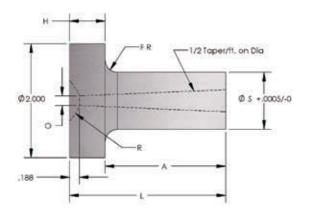
001.888.304.1307

1.866.467.9001

Mold & Die Maintenance

Sprue Bushings - AE/A Series







		A Ser	ies			Catalog	Number	
S (Shank)	H (Head)	F	0	Α	L	R=1/2	R=3/4	
				1 3/16	1 13/16	155208	155236	
				1 11/16	2 5/16	155209	155237	
				2 3/16	2 13/16	155210	155238	
			5/32	2 11/16	3 5/16	155211	155239	
				3 3/16	3 13/16	155212	155240	
				3 11/16	4 5/16	155213	155241	
				4 3/16	4 13/16	155214	155242	
				1 3/16	1 13/16	155215	155243	
				1 11/16 2 5/16	2 5/16	155216	155244	
				2 3/16	2 13/16	155217	155245	
	0.625		7/32	2 11/16	3 5/16	155218	155246	
				3 3/16	3 13/16	155219	155247	
				3 11/16	4 5/16	155220	155248	
1		0.218		4 3/16	4 13/16	155221	155249	
				1 3/16	1 13/16	155222	155250	
				1 11/16	2 5/16	155223	155251	
				2 3/16	2 13/16	155224	155252	
			9/32	2 11/16	3 5/16	155225	155253	
				3 3/16	3 13/16	155226	155254	
				3 11/16	4 5/16	155227	155255	
				4 3/16	4 13/16	155228	155256	
				1 3/16	1 13/16	155229	157648	
				1 11/16	2 5/16	155230	155257	
				2 3/16	2 13/16	155231	155258	
			11/32	2 11/16	3 5/16	155232	155259	
				/		3 3/16	3 13/16	155233
				3 11/16	4 5/16	155234	155261	
				4 3/16	4 13/16	155235	155262	

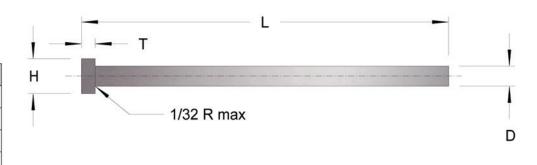
		AE Se	ries			Catalog	Number		
S (Shank)	H (Head)	F	0	Α	L	R=1/2	R=3/4		
				1 5/8	2 1/4	155196	157609		
				2 1/8	2 3/4	155197	157610		
			F/00	2 5/8	3 1/4	155198	157611		
			5/32	3 1/8	3 3/4	155199	157612		
				3 5/8 4 1/4	4 1/4	155200	157613		
0.75	0.625	0.188		4 1/8	4 3/4	155201	157614		
0.75	0.023	0.100		1 5/8	2 1/4	155202	157615		
				2 1/8 2 3/4	2 3/4	155203	157616		
			7/32	2 5/8	3 1/4	155204	157617		
				3 1/8	3 3/4	155205	157618		
						3 5/8	4 1/4	155206	157619
				4 1/8	4 3/4	155207	157620		



Nitrided Ejector Pins

Precision Made in Germany

Tolerances	
Pin Diameter (D)	0003 0008
Head Diameter (H)	+.000
Head Thickness (T)	+.000
Length (L)	+.062



								Length (L)					
D	н	Т	5	1	0	1	4	1	8	25	36	39	45
			std dia	std dia	.005 oversize	std dia	.005 oversize	std dia	.005 oversize	std dia			
3/64	1/4	1/8	152854										
1/16	1/4	1/8	152855	157633	157635	160221							
5/64	1/4	1/8		157634	157636								
3/32	1/4	1/8	152857	152858	157637								
7/64	1/4	1/8		152860	157638								
1/8	1/4	1/8	152732	152733	152734	152735	152736	152880		152879			
9/64	1/4	1/8		152737		152738							
5/32	9/32	5/32	152744		152746	152747	152748	152749		152881	152885		
11/64	11/32	3/16				152751							
3/16	3/8	3/16	152752	152739	152753	152754	152755	152756		152741		152865	
13/64	3/8	3/16		152757		152758							
7/32	13/32	3/16			152761	152762				152763			
15/64	13/32	3/16				152765				152882			
1/4	7/16	3/16	152766	152742	152767	152768	152769	152770	152771	152772	152874	152866	
17/64	7/16	1/4				152774				152775			
9/32	7/16	1/4			152778	152779		152780		152781			
19/64	1/2	1/4				152783							
5/16	1/2	1/4	152784		152786		152788	152728	152789	152790	152875	152867	
21/64	9/16	1/4				152792				152793			
11/32	9/16	1/4			152796	152797				152798			
23/64	5/8	1/4				152800							
3/8	5/8	1/4	152801	152743	152802		152804	152729	152805	152806	152864	152868	152890
13/32	11/16	1/4			152809	152810		152811		152812			
7/16	11/16	1/4	152813		152815	152816	152817	152818		152819	152876	152869	
15/32	3/4	1/4			152826	152878		152827		152828			
1/2	3/4	1/4	152829	152830	152831	152832	152833	152820		152821	152863	152870	152889
9/16	13/16	1/4	152822	152823		152824		152834		152835			
5/8	7/8	1/4	152836	152837		152838		152730		152731	152877	152871	
11/16	15/16	1/4		152839		152883		152840		152841			
3/4	1	1/4		152740		152843		152844		152845	152862	152872	152891
7/8	1 1/8	1/4		152846		152884		152847		152848			
1	1 1/4	1/4	152849	152850		152851		152852		152853	152861	152873	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

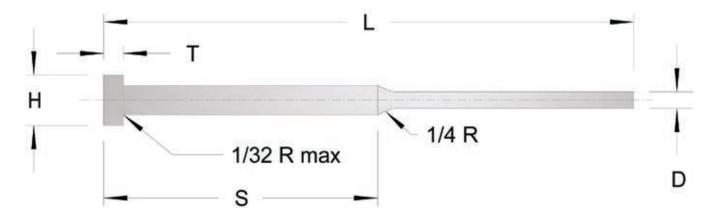
1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

1.866.467.9001

Nitrided Ejector Pins - Shoulder



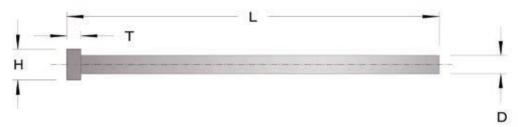


Tolerances	
Pin Diameter (D)	+.000
Shoulder Diameter (1/8)	+.000
Head Diameter (H)	+.000
Head Thickness (T)	+.000
Length (L)	+.062

D	Н	T	S	L=6	L=	:10	L=14
Pin dia	Head Dia	Head Thick	Shoulder Length	D std	D std	D .005 oversize	D std
3/64	1/4	1/8	1/2	152892	152893	152894	
	-, -	1,0	2	152895	152896	152897	152898
1/16	1/4	1/8	1/2	152899	152900	152901	
1,10	-, -	1,0	2	152902	152903	152904	152905
5/64	1/4	1/8	1/2	152906	152907	152908	
	-, -	1,0	2	152909	152910	152911	152912
3/32	1/4	1/8	1/2	152913	152914	152915	
5,62	-, -	1,0	2	152916	152917	152918	152919
7/64	1/4	1/8	1/2	152920	152921	152922	
, , , ,	, -	, -	2	152923	152924	152925	152926



Through Hardened Ejector Pins



Materials: 1.2344 (H-13)

Hardness: Core: 50-52 Rc; Surface: 65-70 Rc

D	н	т			Available	Lengths		
+0/0003	+0/010	+0/002	4	6	8	10	12	14
1/32	1/8	1/8	153328	153329				
3/64	5/32	1/8	153330	153331				
1/16	3/16	1/8	153332	153333	153334	153335		
5/64	13/64	1/8	153336	153337	153338	153339		
3/32	7/32	1/8	153340	153341	153342	153343		
7/64	15/64	1/8	153344	153345	153346	153347		
1/8	1/4	1/8	153348	153349	153350	153351	153352	153353
9/64	1/4	1/8	153354	153355		153356		153357
5/32	9/32	5/32	153358	153359	153360	153361	153362	153363
11/64	11/32	3/16	153364	153365		153366		153367
3/16	3/8	3/16	153368	153369	153370	153371	153372	153373
13/64	3/8	3/16	153374	153375		153376		153377
7/32	13/32	3/16	153378	153379	153380	153381	153382	153383
15/64	13/32	3/16	153384	153385		153386		153387
1/4	7/16	3/16	153388	153389	153390	153391	153392	153393
17/64	7/16	1/4	153394	153395		153396		153397
9/32	7/16	1/4	153398	153399	153400	153401		153402
19/64	1/2	1/4	153403	153404		153405		153406
5/16	1/2	1/4	153407	153408	153409	153410	153411	153412
21/64	9/16	1/4	153413	153414		153415		153416
11/32	9/16	1/4	153417	153418		153419		153420
23/64	5/8	1/4	153421	153422		153423		153424
3/8	5/8	1/4	153425	153426	153427	153428	153429	153430
25/64	37/64	1/4	153431	153432		153433		153434
13/32	11/16	1/4	153435	153436		153437		153438
27/64	11/16	1/4	153439	153440		153441		153442
7/16	11/16	1/4	153443	153444		153445		153446
29/64	45/64	1/4	153447	153448		153449		153450
15/32	3/4	1/4	153451	153452		153453		153454
31/64	3/4	1/4	153455	153456		153457		
1/2	3/4	1/4	153458	153459	153460	153461	153462	153463
17/32	25/32	1/4	153464	153465		153466	153467	153468
9/16	13/16	1/4	153469	153470	153471	153472	153473	153474
5/8	7/8	1/4	153475	153476	153477	153478	153479	153480
11/16	15/16	1/4	153481	153482	153483	153484	153485	153486
3/4	1	1/4	153487	153488	153489	153490	153491	153492
7/8	1 1/8	1/4	153493	153494	153495	153496	153497	153498
1	1 1/4	1/4	153499	153500	153501	153502	153503	153504



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

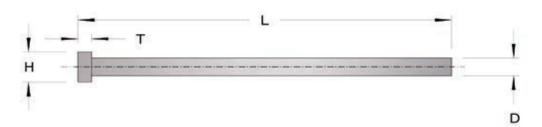
phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Nitrided Ejector Pins - Metric (DIN 1530A)



Precision Made in Germany



Materials: 1.2344 (H-13)

Hardness: Core: 40 - 44 Rc; Surface: 68-72 Rc

D	н	т					Avai	lable Lenç	gths				
g6	+0/02	+0/05	100	125	160	200	250	315	400	500	630	800	1000
1.5	3	1.5	153505	153506	153507	153508	153509	153510				ĺ	
2	4		153514	153515	153516	153517	153518	153519	153520				
2.2] "	2	153521	153522	153523	153524	153525	153526	153527				
2.5	5	2	153530	153531	153532	153533	153534	153535					
2.7			153536	153537	153538	153539		153540	153541				
3	6		153544	153545	153546	153547	153548	153549	153550	153551	153552	153553	
3.2			153556	153557	153558	153559	153560	153561	153562	153563	153564	153565	
3.5	7		153568	153569	153570	153571	153572	153573	153574				
3.7	_ ′		153575	153576	153577	153578	153579	153580	153581	153582	153583		
4		3	153586	153587	153588	153589	153590	153591	153592	153593	153594	153595	
4.2	8		153597	153598	153599	153600	153601	153602	153603	153604	153605	153606	
4.5			153609	153610	153611	153612	153613	153614	153615		153616		
5			153619	153620	153621	153622	153623	153624	153625	153626	153627	153628	
5.2	10		153630	153631	153632	153633	153634	153635	153636	153637	153638	153639	
5.5			153643	153644	153645	153646	153647	153648	153649	153650			
6			153655	153656	153657	153658	153659	153660	153661	153662	153663	153664	153665
6.2	12		153667	153668	153669	153670	153671	153672	153673	153674	153675	153676	
6.5			153677	153678	153679	153680	153681	153682	153683	153684			
7		_	153688	153689	153690	153691	153692	153693	153694	153695	153696	153697	153698
8			153703	153704	153705	153706	153707	153708	153709	153710	153711	153712	153713
8.2	14	5	153718	153719	153720	153721	153722	153723	153724	153725	153726	153727	153728
8.5			153731	153732	153733	153734	153735	153736	153737	153738	153739		
9			153740	153741	153742	153743	153744	153745	153746	153747	153748	153891	
10			153751	153752	153753	153754	153755	153756	153757	153758	153759	153760	153761
10.2	16		153765	153766	153767	153768	153769	153770	153771	153772	153773	153774	
10.5			153775	153776	153777	153778	153779	153780	153781	153782	153783		
11			153784	153785	153786	153787	153788	153789	153790	153791	153792		
12			153793	153794	153795	153796	153797	153798	153799	153800	153801	153802	153803
12.2	20		153806	153807	153808	153809	153810	153811	153812	153813	153814	153815	153816
12.5		7	153817	153818	153819	153820	153821	153822	153823	153824	153825	153826	
14	22		153827	153828	153829	153830	153831	153832	153833	153834	153835	153836	153837
16			153841	153842	153843	153844	153845	153846	153847	153848	153849	153850	153851
18	24				153856	153857	153858	153859	153860	153861	153862	153863	153864
20	26	8			153865	153866	153867	153868	153869	153870	153871	153872	153873
25	32	10				153875	153876	153877	153878	153879	153880	153881	153882
32	40					153883	153884	153885	153886	153887	153888	153889	153890



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



Through Hardened Ejector Pins - Metric (DIN 1530AH)



D	н	т				Available	Lengths														
g6	+0/02	+0/05	100	125	160	200	250	315	400	500											
1			154476	154477	154478	154479															
1.1	2.5	1.2	154480	154481	154482																
1.2	ĺ		154483	154484	154485	154486															
1.3					154487																
1.4			154488	154489	154490																
1.5			154475	154492	154493		154495	154496													
1.6	3	1.5	154497	154498	154499																
1.7			154501																		
1.8			154502	154503	154504																
1.9			154505		154506																
2			154510	154511	154512	154513	154514	154515													
2.1			154516	154517	154518																
2.2	4		154519	154520	154521	154522	154523														
2.3			154524	154525	154526	154527															
2.4		2	154528	154529	154530																
2.5			154531	154532	154533	154534	154535	154536	154537												
2.6			154538	154539	154540	154541															
2.7	5		154542	154543	154544	154545	154546	154547													
2.8					154548	154549	154550														
2.9			154551	154552	154553																
3														154557	154558	154559	154560	154561	154562	154563	154564
3.1									154565	154566	154567										
3.2	6		154568	154569	154570	154571	154572	154573													
3.3			154574	154575	154576																
3.4			154577	154578	154579																
3.5	ļ		154580	154581	154582	154583	154584	154585	154586												
3.6	ļ _		154587	154588	154589																
3.7	7	3	3	154590	154591	154592	154593	154594	154595												
3.8			154596	154597	154598	154599															
3.9			154600	154601	154602																
4		†	154606	154607	154608	154609	154610	154611	154612	154613											
4.1			154614	154615	154616																
4.2	8		154618	154619	154620	154621	154622	154623	154624												
4.3			154625	154626	154627																
4.4			154628	154629	154630	154631															
4.5			154632	154633	154634	154635	154636	154637	154638												

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Through Hardened Ejector Pins - Metric (DIN 1530AH)



continued from last page

D	н	Т					Available	Lengths				
g6	+0/02	+0/05	100	125	160	200	250	315	400	500	630	800
4.6			154639	154640	154641	154642						
4.7	١ .		154643	154644	154645	154646	154647					
4.8	8		154648	154649	154650							
4.9	ĺ		154651	154652	154653							
5		İ	154657	154658	154659	154660	154661	154662	154663	154664		
5.1	ĺ		154665	154666	154667							
5.2	ĺ		154668	154669	154670	154671	154672	154673	154674			
5.3		3	154675	154676	154677		154678					
5.4	10		154679	154680	154681							
5.5	"		154682	154683	154684	154685	154686	154687	154688	154689		
5.6			154690	154691	154692	154693						
5.7			154694	154695	154696							
5.8			154697	154698	154699							
5.9			154700	154701	154702							
6			154706	154707	154708	154709	154710	154711	154712	154713	154714	
6.1			154715	154716	154717							
6.2			154718	154719	154720	154721	154722	154723	154724	154725		
6.3			154726	154727	154728							
6.4			154729	154730	154731							
6.5	12		154732	154733	154734	154735	154736	154737				
6.6			154738	154739	154740							
6.7			154741	154742	154743							
6.9			154747	154748	154749							
7		_	154750	154751	154752	154753	154754	154755	154756			
7.2		5	154757	154758	154759	154760						
7.5			154761	154762	154763	154764						
8			154767	154768	154769	154770	154771	154772	154773	154774	154775	
8.2			154777	154778	154779	154780	154781	154782	154783			
8.5	14		154784	154785	154786	154787	154788	154789				
9			154790	154791	154792	154793	154794	154795				
9.5			154796	154797	154798	154799						
10			154801	154802	154803	154804	154805	154806	154807	154808	154809	154810
10.2	16		154811	154812	154813	154814	154815	154816	154817			
10.5	'*		154818	154819	154820	154821	154822	154823	154824			
11			154825	154826	154827	154828	154829	154830	154831			
12			154833	154834	154835	154836	154837	154838	154839	154840	154841	154842
12.2	18		154843	154844	154845	154846	154847	154848				
12.5			154849	154850	154851	154852	154853	154854				
13.5		7				154855						
14	22		154856	154857	154858	154859	154860	154861	154862	154863		
16	22		154864	154865	154866	154867	154868	154869	154870	154871	154872	
18			154873	154874	154875	154876	154877	154878	154879	154880		
20	26	8			154881	154882	154883	154884	154885	154886	154887	154888





Tolerances					
Pin Diameter (D)	+.001				
Head Diameter (H)	+.000				
Head Thickness (T)	+.000				
Length (L)	+.030				

Standard Hardness Rc 30 - 35								
D	Н	Т	Ca	talog Num	ber			
Pin Dia	Head Dia	Head Thick	L = 3	L = 6	L = 10			
3/32	1/4	1/8	153182	153183	153184			
7/64	1/4	1/8	153185	153186	153187			
1/8	1/4	1/8	153188	153189	153190			
9/64	1/4	1/8	153191	153192	153193			
5/32	9/32	5/32	153194	153195	153196			
11/64	11/32	3/16	153197	153198	153199			
3/16	3/8	3/16	153200	153201	153202			
13/64	3/8	3/16	153203	153204	153205			
7/32	13/32	3/16	153206	153207	153208			
1/4	7/16	3/16	153209	153210	153211			
9/32	7/16	1/4	153212	153213	153214			
5/16	1/2	1/4	153215	153216	153217			
11/32	9/16	1/4	153218	153219	153220			
3/8	5/8	1/4	153221	153222	153223			
13/32	11/16	1/4	153224	153225	153226			
7/16	11/16	1/4	153227	153228	153229			
15/32	3/4	1/4	153230	153231	153232			
1/2	3/4	1/4	153233	153234	153235			
9/16	13/16	1/4		153236	153237			
5/8	7/8	1/4		153238	153239			
3/4	1	1/4		153240	153241			

High Hardness Rc 50 - 55								
D	Н	Т	Ca	talog Num	ber			
Pin Dia	Head Dia	Head Thick	L = 3	L = 6	L = 10			
3/32	1/4	1/8	153242	153243	153244			
7/64	1/4	1/8		153246	153247			
1/8	1/4	1/8	153248	153249	153250			
9/64	1/4	1/8		153252	153253			
5/32	9/32	5/32		153255	153256			
11/64	11/32	3/16		153258	153259			
3/16	3/8	3/16	153260	153261	153262			
13/64	3/8	3/16		153264	153265			
7/32	13/32	3/16		153267	153268			
1/4	7/16	3/16	153269	153270	153271			
9/32	7/16	1/4		153273	153274			
5/16	1/2	1/4		153276	153277			
11/32	9/16	1/4		153279	153280			
3/8	5/8	1/4	153281	153282	153283			
13/32	11/16	1/4		153285	153286			
7/16	11/16	1/4		153288	153289			
15/32	3/4	1/4		153291	153292			
1/2	3/4	1/4	153293	153294	153295			
9/16	13/16	1/4		153296	153297			
5/8	7/8	1/4		153298	153299			
3/4	1	1/4		153300	153301			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) pl 1.888.288.6900 00

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Return Pins Precision Made in Germany H 1/32 R max

Nitrided to Rc 65-80 and polished to a surface finish of 4-5 micron.

L	1/2	5/8	3/4
3 9/16	153302		
4 1/16	153303	153309	
4 9/16	153304	153310	
4 15/16			153318
5 1/16	153305	153311	
5 7/16			153319
5 9/16	153306	153312	
5 15/16			153320
6 1/16	153307	153313	
6 7/16			153321
6 9/16	153308	153314	
6 15/16			153322
7 1/16		153315	
7 7/16			153323
7 9/16		153316	
7 15/16			153324
8 1/16		153317	
8 7/16			153325
8 15/16			153326
9 7/16			153327
D	.500	.625	.750
Н	.750	.875	1.00
Т	.250	.250	.250

Tolerances					
Pin Diameter (D)	+.000				
Head Diameter (H)	+.000				
Head Thickness (T)	+.000				
Length (L)	+.013				



Check out these other Useful Products from IMS!

Heavy Duty Mold Lifting Slings

Avoid Damage to Molds, Barrels and Feed Screws From Chains and Cables



Rugged, Sewn, Woven Nylon Web, **Double Ply construction**



Vertical Lift Capacity

1" Wide Sling: up to 3,200 lbs

2" Wide Sling: up to 6,400 lbs

3" Wide Sling: up to 8,800 lbs

4" Wide Sling: up to 11,500 lbs

See Page 30 For More Information



Chain Slings

For More Versatile Help With Heavy Duty Lifting Applications

- · Made of Grade 100 Alloy Steel for maximum abrasion and corrosion resistance
- Meets ASME B30.9 OSHA & NACM Standards
- Grade 100 has 25% greater work load limit than grade 80
- · User can experience more work load limit with a smaller diameter chain based on the application
- Grade 100 reduces overall wear on the links and extends the life of the chain

See Page 29 For More Information





Mold Handling Latch (G.A.I.M. T.O.I.

(Pronounced Game Toy) by G.A.I.M. Engineering



Keeps Mold Halves Together For Safe Handling

- · Avoid costly damage to your molds during installation, removal, transporting or storage
- Cost much less than conventional, custom strapping systems
- · Can be moved from one mold to another

Made of 100% Recycled Reinforced Nylon See Page 31 For More Information

No tools necessary to install! NOTE: Stationary Hoist Rings or Mold Half shoulder type eye bolts Fixed-Piece must be used Eyebolt with T.O.I Clearance Hole MOVABLE MOLD HALF **Cutting Guide** 5/2" Clearance Hole (not visible here) G.A.I.M. T.O.I.™ is a trademark of G.A.I.M. Engineering Inc



Original Formula® Mold Grease

Long Lasting Lubricant with PTFE — Good to 500°F



Forms an adherent, but slippery film. Won't wipe off through tight bushings.

- · Superior strength and load bearing ability
- Superior lubricity -40° F to +500° F
- Waterproof
- Anticorrosive
- Non-melting
- Non-silicone
- NSF listed



The Original and Still the Best!™

See Page 146 For More Information



IMS Paintable Ejector Pin Lube L T

Made for use on knock-out pins in forward position

IMS Paintable Ejector Pin Lube LT is a clean, paintable, load-bearing lubricant designed for spraying on close-fitting knockout pins. The lubricant produces minimal part marking, won't bleed out and can be used in a -65°F to +350°F temperature range.

No Chlorinated Solvents



IMS White Lithium Lubricant Spray

Ideal for injection molds and most other industrial applications

- Sprays Like a Fluid to Penetrate Into Tight Passages
- Thickens Into Grease to Lubricate
- Medium-bodied Grease
- Moisture Proof, and Resists Most Chemicals and Acids



Replaces #127364

See Page 145 For More Information

Brass Mold Surface Cleaning Brushes

Designed to operate at high speeds, these brass brushes effectively clean large mold surfaces, producing polished results.

See Page 85 For More Information





www.imscompany.com

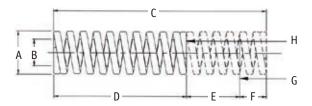
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Die/Compression Springs



A = Hole diameter (in) E = Operating travel (in) B = Rod diameter (in) F = Initial compression (in)

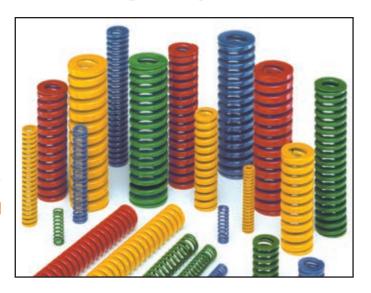
C = Free length (in) G = Pre-load (lbs)

D = Compression length (in) H = Load required to deflect E+F (lbs)

Tech Tips

Initial compression > 20% operating travel

Initial compression + operating travel < Maximum operating deflection



Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
		GRI	EN - Medium	Load		
162096			1"	14	0.54	Round
162097			11/4"	13.6	0.68	Round
162098			11/2	13.3	0.82	Round
162099	3/11	3/ 11	13/4"	13.2	0.97	Round
162100	3/8"	3/ ₁₆ "	2"	13.2	1.11	Round
162101			21/2"	13	1.4	Round
162102			3"	12.6	1.66	Round
162103			12"	11.9	6.62	Round
162104			1"	27	0.53	Round
162105			11/4"	26	0.67	Round
162106			11/2"	25.9	0.83	Round
162107			13/4"	25	0.96	Round
162108	1/2"	9/32"	2"	24.1	1.09	Round
162109			21/2"	23.9	1.38	Round
162110			3"	23.9	1.67	Round
162111			31/2"	23.5	1.96	Round
162112			12"	22.5	6.7	Round
162113			1"	54	53	Round
162114			11/4"	51.4	0.67	Round
162115			1 ½"	48.8	0.81	Round
162116			13/4"	46.9	0.94	Round
162117	5/8"	11/32	2"	46.9	1.09	Round
162118	78	/32	21/2"	46.7	1.38	Round
162119			3"	45.1	1.65	Round
162120			31/2"	44.8	1.94	Round
162121			4"	44.8	2.23	Round
162122			12"	42.9	6.75	Round
162123			1"	162	0.51	Rectangular
162124	3/4"	3/8"	11/4"	158	0.65	Rectangular
162125	74	78	1½"	150	0.78	Rectangular
162126			13/4"	150	0.92	Rectangular

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
162127			2"	150	1.06	Rectangular
162128			21/2"	147	1.33	Rectangular
162129			3"	147	1.62	Rectangular
162130			31/2"	144	1.87	Rectangular
162131	2/11	3/11	4"	144	2.16	Rectangular
162132	3/4 "	3/8"	41/2"	143	2.42	Rectangular
162133			5"	143	2.69	Rectangular
162134			51/2"	143	2.9	Rectangular
162135			6"	143	3.26	Rectangular
162136			12"	140	6.48	Rectangular
162137			1"	311	0.51	Rectangular
162138			11/4"	299	0.65	Rectangular
162139			11/2"	292	0.79	Rectangular
162140			13/4"	281	0.92	Rectangular
162141			2"	280	1.06	Rectangular
162142			21/2"	270	1.32	Rectangular
162143			3"	265	1.59	Rectangular
162144		1/11	31/2"	261	1.85	Rectangular
162145	1"	1/2"	4"	255	2.11	Rectangular
162146			41/2"	254	2.37	Rectangular
162147			5"	254	2.65	Rectangular
162148			5½"	255	2.93	Rectangular
162149			6"	255	3.21	Rectangular
162150			7"	255	3.67	Rectangular
162151			8"	255	4.33	Rectangular
162152			12"	255	6.5	Rectangular
162153			11/2"	433	0.75	Rectangular
162154			13/4"	415	0.87	Rectangular
162155			2"	411	1.01	Rectangular
162156			21/2"	400	1.26	Rectangular
162157			3"	400	1.53	Rectangular
162158			31/2"	400	1.8	Rectangular
162159			4"	397	2.07	Rectangular
162160	11/4"	5/8"	41/2"	397	2.35	Rectangular
162161	1 ./-	, ,	5"	390	2.6	Rectangular
162162			5½"	386	2.86	Rectangular
162163			6"	383	3.11	Rectangular
162164			7"	377	3.63	Rectangular
162165			8"	375	4.14	Rectangular
162166			10"	369	5.15	Rectangular
162167			12"	366	6.18	Rectangular
162168			2"	609	1.01	Rectangular
162169			21/2"	582	1.27	Rectangular
162170			3"	575	1.53	Rectangular
162171			31/2"	572	1	Rectangular
162172	11/2"	3/4"	4"	565	2.07	Rectangular
162173		, ,	41/2"	561	2.33	Rectangular
162174			5"	559	2.59	Rectangular
162175			51/2"	559	2.88	Rectangular
162176			6"	549	3.12	Rectangular

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
162177			7"	546	3.64	Rectangular
162178	41/7	2/11	8"	528	4.06	Rectangular
162179	11/2"	3/4"	10"	524	5.09	Rectangular
162180	-		12"	516	6.1	Rectangular
162181			21/2"	1148	1.28	Rectangular
162182	-		3"	1098	1.53	Rectangular
162183	-		31/2"	1076	1.8	Rectangular
162184			4"	1062	2.07	Rectangular
162185	-		41/2"	1044	2.33	Rectangular
162186	-		5"	1029	2.58	Rectangular
162187	2"	1"	5½"	1029	2.86	Rectangular
162188	-		6"	1017	3.12	Rectangular
162189	-		7"	1007	3.65	Rectangular
162190	-		8"	984	4.15	Rectangular
162191	-		10"	978	5.2	Rectangular
162192	-		12"	960	6.23	Rectangular
162193			3"	1640	1.49	
162194	-		31/2"	1575	1.75	Rectangular
	-		4"	1528	2	Rectangular
162195	-		41/2"			Rectangular
162196	-		5"	1490	2.25	Rectangular
162197	21/2"	11/2"	6"	1456	2.51	Rectangular
162198	-		7"	1440	3.02	Rectangular
162199	-			1412	3.52	Rectangular
162200			8"	1390	4.03	Rectangular
162201	-		10"	1345	5.02	Rectangular
162202		DI I		1330	6.02	Rectangular
100000		BLU	J <mark>E - Medium-High</mark> 1"		0.40	Round
162203 162204	-		11/4"	30.8 30	0.43 0.54	Round
	-		11/2"	29.3	0.65	
162205	-					Round
162206	3/8"	3/16	13/4"	28.8	0.76	Round
162207	-		2"	28.4	0.87	Round
162208	-		2½"	28.3	1.1	Round
162209	-			28	1.33	Round
162210			12"	27.6	5.42	Round
162211	-		1"	55.9	0.43	Round
162212	-		11/4"	54.9	0.55	Round
162213	-		11/2"	54.6	0.67	Round
162214	1/11	9/ 11	13/4"	53.2	0.79	Round
162215	1/2"	9/32"	2"	53	0.91	Round
162216			21/2"	52	1.15	Round
162217	-		3"	50.8	1.37	Round
162218	-		31/2"	51.3	1.62	Round
162219			12"	50.5	5.72	Round
162220	-		1"	81	0.42	Round
162221	-		11/4"	75.8	0.53	Round
162222	5/ ₈ "	11/32"	11½"	74.8	0.65	Round
162223	/8	/32	13/4"	72.4	0.76	Round
162224			2"	70.7	0.87	Round
162225			21/2"	69	1.1	Round



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

1.866.467.9001

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
162226			3"	68.1	1.33	Round
162227	5/11	11/ 11	31/2"	67.9	1.56	Round
162228	5/8"	11/32"	4"	67.7	1.79	Round
162229			12"	66	5.5	Round
162230			1"	227	0.44	Rectangular
162231			11/4"	212	0.55	Rectangular
162232			11/2"	206	0.66	Rectangular
162233			13/4"	197	0.76	Rectangular
162234			2"	194	0.87	Rectangular
162235			21/2"	189	1.09	Rectangular
162236	2/11	0.0	3"	186	1.31	Rectangular
162237	3/4"	3/8"	31/2"	186	1.54	Rectangular
162238	-		4"	186	1.75	Rectangular
162239	-		41/2"	184	1.98	Rectangular
162240	-		5"	184	2.21	Rectangular
162241	1		5½"	183	2.43	Rectangular
162242	-		6"	183	2.65	Rectangular
162243	-		12"	183	5.35	Rectangular
162244			1"	409	0.43	Rectangular
162245			11/4"	385	0.54	Rectangular
162246	-		11/2"	367	0.65	Rectangular
162247	-		13/4"	366	0.03	
162248	-		2"	366	0.89	Rectangular
	-		21/2"	350		Rectangular
162249	-		3"	<u> </u>	1.11	Rectangular
162250	-	1" 1/2"	3½"	346	1.34	Rectangular
162251	1"		4"	336	1.55	Rectangular
162252	-			333	1.77	Rectangular
162253	-		4½" 5"	332	2	Rectangular
162254	-		51/2"	332	2.25	Rectangular
162255	-			332	2.48	Rectangular
162256	_		6"	322	2.7	Rectangular
162257	_		7"	330	3.14	Rectangular
162258	_		8"	326	3.58	Rectangular
162259			12"	320	5.35	Rectangular
162260	-		11/2"	606	0.65	Rectangular
162261	-		13/4"	584	0.75	Rectangular
162262	-		2"	569	0.86	Rectangular
162263	-		21/2"	531	1.06	Rectangular
162264			3"	514	1.27	Rectangular
162265			31/2"	510	1.49	Rectangular
162266	11/4"	E / B	4"	510	1.71	Rectangular
162267		5/8"	41/2"	510	1.94	Rectangular
162268			5"	510	2.18	Rectangular
162269			51/2"	510	2.39	Rectangular
162270			6"	506	2.61	Rectangular
162271	-		7"	506	3.05	Rectangular
162272	-		8"	501	3.48	Rectangular
162273			10"	498	4.36	Rectangular
162274			12"	498	5.25	Rectangular

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
162275			2"	809	0.83	Rectangular
162276			21/2"	765	1.04	Rectangular
162277	-		3"	757	1.26	Rectangular
162278	-		3½"	736	1.47	Rectangular
162279	-		4"	733	1.69	Rectangular
162280	-		41/2"	720	1.89	Rectangular
162281	11/2"	3/4"	5"	720	2.12	Rectangular
162282	1 ./-	/-	5½"	720	2.33	Rectangular
162283			6"	714	2.55	Rectangular
162284			7"	709	2.99	Rectangular
162285	-		8"	707	3.42	Rectangular
162286	-		10"	707	4.33	Rectangular
162287	-		12"	703	5.17	Rectangular
162288			21/2"	1272	1.05	Rectangular
162289			3"	1197	1.25	Rectangular
162290			31/2"	1180	1.46	Rectangular
162291	-		4"	1180	1.7	Rectangular
162292	-		41/2"	1180	1.93	Rectangular
162293	-		5"	1160	2.13	Rectangular
162294	2"	1"	51/2"	1155	2.36	Rectangular
162295		'	6"	1160	2.59	Rectangular
162296	-		7"	1155	3.05	Rectangular
162297	-		8"	1140	3.47	Rectangular
162298	-		9"	1140	3.93	Rectangular
162299	-		10"	1140	4.39	Rectangular
162300	-		12"	1135	5.27	Rectangular
162301			3"	2240	1.29	Rectangular
161834	-		31/2"	2160	1.52	Rectangular
162302	-		4"	2104	1.74	Rectangular
162303	-		41/2"	2103	1.98	Rectangular
162304	-		5"	2080	2.22	Rectangular
162305	21/2"	11/2"	6"	2024	2.67	Rectangular
162306		1 /2	7"	1987	3.12	Rectangular
162307	-		8"	1960	3.57	Rectangular
162308	-		9"	1960	4.06	Rectangular
162309	-		10"	1960	4.56	Rectangular
162310	-		12"	1960	5.4	Rectangular
102010		R	D - Heavy Duty I		0.4	ricciarigalar
162311			1"	43	0.35	Round
162312			11/4"	43	0.46	Round
162313			11/2"	42	0.55	Round
162314	3/8"		13/4"	42	0.66	Round
162315		3/16"	2"	42	0.75	Round
162316			21/2"	42	0.97	Round
162317			3"	42	1.15	Round
162318			12"	41	4.74	Round
162319			1"	78	0.34	Round
162320	-		11/4"	76	0.44	Round
162321	1/2"	1/2" 9/32"	11/2"	74	0.44	Round
162321			13/4"	73	0.63	Round
IUZUZZ			174	1 10		continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

1.866.467.9001

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
161981			2"	73	0.75	Round
162323	1/2"		21/2"	73	0.95	Round
162080		9/32"	3"	73	1.15	Round
162324		"-	31/2"	73	1.33	Round
162325			12"	72	4.73	Round
162326			1"	170	0.34	Round
162327			11/4"	160	0.43	Round
162328			11/2"	160	0.54	Round
162329			13/4"	151	0.63	Round
162330	F / II	44 / 11	2"	151	0.74	Round
162331	5/8"	11/32"	21/2"	151	0.94	Round
162332			3"	151	1.15	Round
162333			31/2"	151	1.37	Round
162334			4"	151	1.57	Round
162335			12"	150	4.83	Round
162336			1"	436	0.33	Rectangular
162337			11/4"	418	0.42	Rectangular
162338			1½"	404	0.51	Rectangular
162339			13/4"	383	0.59	Rectangular
162340			2"	375	0.67	Rectangular
162341		2 (11	21/2"	377	0.86	Rectangular
162342			3"	373	1.03	Rectangular
162343	3/4"	3/8"	31/2"	371	1.21	Rectangular
162344			4"	371	1.39	Rectangular
162345			41/2"	371	1.58	Rectangular
162346			5"	371	1.75	Rectangular
162347			51/2"	371	1.92	Rectangular
162348			6"	371	2.11	Rectangular
162349	-		12"	360	4.18	Rectangular
162350			11/4"	663	0.42	Rectangular
162351	-		1½"	639	0.51	Rectangular
162352	-		13/4"	642	0.61	Rectangular
162353	-		2"	638	0.71	Rectangular
162354	-		21/2"	618	0.89	Rectangular
162355	-		3"	618	1.08	Rectangular
162356	-		31/2"	618	1.28	Rectangular
162357	1"	1/2"	4"	618	1.47	Rectangular
162358	•	/2	41/2"	618	1.66	Rectangular
162359			5"	618	1.86	Rectangular
162360			51/2"	618	2.06	Rectangular
162361			6"	618	2.24	Rectangular
162362			7"	618	2.62	Rectangular
162363			8"	618	3.02	Rectangular
162364			12"	618	4.6	Rectangular
162365			1½"	1052	0.49	Rectangular
162366			13/4"	1026	0.58	Rectangular
162367	11/4"	5/8"	2"	1007	0.67	Rectangular
162368	1 /4	/8	21/2"	1007	0.86	Rectangular
162369	-		3"	985	1.04	Rectangular

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction	
162370			31/2"	973	1.23	Rectangular	
162371			4"	974	1.41	Rectangular	
162372			41/2"	960	1.59	Rectangular	
162373			5"	985	1.8	Rectangular	
162374	44/11	5 / II	5½"	965	1.97	Rectangular	
162375	11/4"	5/8"	6"	965	2.15	Rectangular	
162376			7"	960	2.52	Rectangular	
162377			8"	947	2.87	Rectangular	
162378			10"	960	3.65	Rectangular	
162379			12"	951	4.36	Rectangular	
162380			2"	1388	0.69	Rectangular	
162381			21/2"	1350	0.88	Rectangular	
162382			3"	1340	1.07	Rectangular	
162383			31/2"	1340	1.27	Rectangular	
162384			4"	1333	1.47	Rectangular	
162385			41/2"	1340	1.69	Rectangular	
162386	11/2"	3/4"	5"	1337	1.87	Rectangular	
162387	1 /2	0/4	5½"	1335	2.08	Rectangular	
162388			6"	1347	2.28	Rectangular	
162389			7"	1343	2.67	Rectangular	
162390			8"	1343	3.07	Rectangular	
162391			10"	1332	3.85		
			12"	1332	+	Rectangular	
162392			2½"	2080	4.65 0.86	Rectangular	
162393				3"	2007	+	Rectangular
162394			3½"	1960	1.04	Rectangular	
162395			4"	_	1.22	Rectangular	
162396				1960	1.43	Rectangular	
162397		1"	4½" 5"	1960	1.63	Rectangular	
162398	2"			1935	1.79	Rectangular	
162399			51/2"	1910	1.97	Rectangular	
162400			6"	1910	2.15	Rectangular	
162401			7"	1910	2.55	Rectangular	
162402			8"	1910	2.91	Rectangular	
162403			10"	1875	3.62	Rectangular	
162404		\	12"	1875	4.45	Rectangular	
160405		YELLOV	<mark>V - Extra Heavy D</mark> I	1 -	0.00	Devised	
162405			1"	62	0.33	Round	
162406			11/4"	60	0.41	Round	
162407			1½"	60	0.52	Round	
162408	3/8"	3/16"	13/4"	60	0.6	Round	
162409	/8	/ 16	2"	60	0.68	Round	
162410			21/2"	60	0.86	Round	
162411			3"	60	1.05	Round	
162412			12"	59	4.2	Round	
162413			1"	119	0.35	Round	
162414	1/2"		11/4"	110	0.43	Round	
162415		9/32"	11/2"	110	0.52	Round	
162416	, <u>.</u>	7 32	13/4"	110	0.61	Round	
161982			2"	110	0.72	Round	
162417			2½"	110	0.9	Round	

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Die/Compression Springs (continued)

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
162081			3"	110	1.12	Round
162418	1/2"	9/32"	31/2"	110	1.31	Round
162419	1		12"	108	4.47	Round
162420			1"	256	0.35	Round
162421	1		11/4"	230	0.43	Round
162422	1		11/2"	221	0.51	Round
162423	1		13/4"	220	0.6	Round
162424	f	11 / 11	2"	220	0.71	Round
162425	5/8"	11/32"	21/2"	218	0.88	Round
162426	1		3"	216	1.06	Round
162427	1		3½"	215	1.26	Round
162428	1		4"	215	1.45	Round
162429	1		12"	214	4.43	Round
162430			1"	551	0.3	Rectangular
162431	1		11/4"	535	0.39	Rectangular
162432	1		11/2"	535	0.48	Rectangular
162433	1		13/4"	529	0.57	Rectangular
162434	1		2"	527	0.66	Rectangular
162435	1		2½"	525	0.84	Rectangular
162436	1	0.48	3"	522	1.02	Rectangular
162437	3/4"	3/8"	31/2"	516	1.19	Rectangular
162438	1		4"	508	1.36	Rectangular
162439	- %4" 		41/2"	508	1.52	Rectangular
162440			5"	505	1.71	Rectangular
162441			51/2"	505	1.87	Rectangular
162442	-		6"	505	2.04	Rectangular
162443	1		12"	505	4.16	Rectangular
162444			11/4"	799	0.4	Rectangular
162445	1		11/2"	768	0.48	Rectangular
162446	-		13/4"	749	0.57	Rectangular
162447	1		2"	733	0.65	Rectangular
162448	-		2½"	735	0.84	Rectangular
162449	-		3"	720	1.01	Rectangular
162450	-		31/2"	720	1.18	Rectangular
162451	1"	1/2"	4"	715	1.35	Rectangular
162452	1 '	/2	41/2"	715	1.55	Rectangular
162453	-		5"	715	1.72	Rectangular
162454	1		51/2"	715	1.91	Rectangular
162455			6"	715	2.11	Rectangular
162456			7"	715	2.48	Rectangular
162457			8"	715	2.48	Rectangular
162458			12"	715	4.31	Rectangular
162459			1½"	1231	0.44	Rectangular
162460			13/4"	1225	0.53	Rectangular
162461			2"	1222	0.62	Rectangular
162462	11/4"	5/8"	21/2"	1220	0.8	Rectangular
162463	1 /4	/8	3"	1200	0.97	Rectangular
162464			31/2"	1195	1.15	Rectangular
162465			4"	1160	1.3	Rectangular

continued on next page



Die/Compression Springs (continued)

Catalog Number	Outside Diameter	Inside Diameter	Length	Load (lbs)	Deflect (in.)	Wire Construction
162466			41/2"	1160	1.46	Rectangular
162467]		5"	1160	1.64	Rectangular
162468]		51/2"	1160	1.85	Rectangular
162469	11/4"	5/8"	6"	1160	2	Rectangular
162470	1 74	/8"	7"	1160	2.33	Rectangular
162471	1		8"	1160	2.69	Rectangular
162472	1		10"	1160	3.42	Rectangular
162473]		12"	1160	4.14	Rectangular
162474			2"	1964	62	Rectangular
162476			3"	1834	0.95	Rectangular
162477			31/2"	1802	1.12	Rectangular
162478	1½"		4"	1813	1.3	Rectangular
162479			41/2"	1796	1.47	Rectangular
162480		2/11	5"	1779	1.64	Rectangular
162481		3/4"	51/2"	1774	1.81	Rectangular
162482			6"	1754	1.97	Rectangular
162483]		7"	1733	2.31	Rectangular
162484]		8"	1730	2.65	Rectangular
162485	1		10"	1730	3.35	Rectangular
162486]		12"	1730	4.06	Rectangular
162487			21/2"	3140	76	Rectangular
162488	1		3"	3013	0.92	Rectangular
162489	1		31/2"	2929	1.08	Rectangular
162490	1		4"	2872	1.24	Rectangular
162491			41/2"	2828	1.41	Rectangular
162492	2"	1"	5"	2794	1.57	Rectangular
162493			51/2"	2790	1.75	Rectangular
162494			6"	2745	1.89	Rectangular
162495			7"	2712	2.21	Rectangular
162496			8"	2686	2.53	Rectangular
162497			10"	2653	3.18	Rectangular



Since **1949**





Material Handling/Processing Equipment

Pages 617-728

Production Equipment

Pages 729-764

Post-Production Equipment

Pages 765-800

Industrial Equipment

Table Of Contents

Industrial Equipment

Industrial Equipment

Material Handling Equipment

Additive Feeder618-619
Resin Bins, Resin Bin Loading Stand620-623
Storage Hoppers, Surge Bins624-627
Tilters / Dumpers628-631
Material Mixers, Tumblers, Drums & Accessories 632-649
Hopper Loaders, Hoppers & Accessories650-683
Material Dryers, Desiccant, Drying Ovens & Accessories684-715
Magnet Housings, Metal Detection & Hopper Magnets 716-728

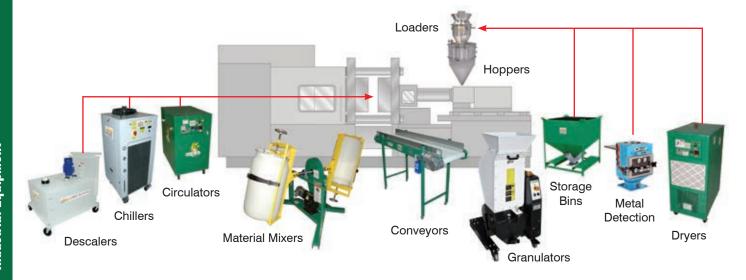
Production Equipment

Mold Temperature Controllers/Circulators	730-750
Chillers	751-758
LIME BLISTER™ Mold Water Passage Cleaners	750-763

Post-Production Equipment

Drop Chutes, Skirts, Trays & Diverting Systems	766-775
Part/Runner Conveyors & Separators	776-783
Plastic Granulators. Accessories & Services	784-800







Since **1949**

Additive Feeder Pages 618 – 619



Resin Bins Pages 620 - 621

Resin Bin Loading Stand Page 622

Material Handling/ Processing Equipment

Storage Hoppers, Surge Bins Page 624 – 627



Tilters / Dumpers Pages 628 – 631

Material Mixers, Tumblers, Drums & Accessories Pages 632 – 649

Hopper Loaders, Hoppers & Accessories Pages 650 – 683

Material Dryers, Desiccant, Drying Ovens & Accessories
Pages 684 – 715

Magnet Housings, Metal Detection & Hopper Magnets Pages 716 – 728

Most items IN STOCK for Same Day Shipment



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

		cess Trouble-Shoo		IC MATERIAL O
Problem		IE MATERIALS		IS MATERIALS
FIODIEIII	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
Splay	Injection Speed	Gate Size	Injection Pressure	
٠,٠.٠)	Mold Release Spray		Screw Speed	
			Hold Pressure Time	
			Venting	
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
Voids	Moisture Content	Gate Size	Moisture Content	Gate Size
voius	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
		Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time		Hold Pressure Time
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
1 0	Injection Pressure		Injection Pressure	
			Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
Olitika		Injection Speed		Venting
		Cushion		1 29
		Venting		
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Short		Injection Pressure		Injection Pressure
Shot		Hold Pressure Time	-	Hold Pressure Time
		Injection Speed		Injection Speed
	MILE	AA II T	MILE	Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
		Mold Temp		Mold Temp
Glossiness		Injection Pressure		Injection Pressure
GIOCOLLICOC		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
				Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spra
Parts	Mold Temp		Mold Temp	
Sticking	Injection Pressure		Injection Pressure	
Sucking	Hold Pressure Time		Hold Pressure Time	
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
	Mold Release Spray			
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed		Injection Pressure	Venting
	Melt Temp	Mold Temp	Moisture Content	Mold Temp
Delamination	Injection Speed	Gate Size		Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
	WORLING COLLECTION	· · · · · · · · · · · · · · · · · · ·	WOISTUIR COILLEIL	
		Mold Temp		Mold Temp
Weld		Gate Size	+	Gate Size
Lines		Injection Pressure		Injection Pressure
		Hold Pressure Time	-	Hold Pressure Time
		Injection Speed		Injection Speed
		Venting		Venting
	Injection Speed	Melt Temp	Injection Speed	Melt Temp
Jetting	Hold Pressure Time	Mold Temp		Mold Temp

Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	0.3969
1/32"	.03125"	0.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/32"	.15625"	3.9688
11/64"	.171875"	4.3656
3/16"	.1875"	4.7625
13/ ₆₄ "	.203125"	5.1594
7/32"	.21875"	5.5562
15/64"	.234375"	5.9531
1/4"	.25"	6.35
17/ ₆₄ "	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/16"	.3125"	7.9375
21/ ₆₄ "	.328125"	8.3344
11/32"	.34375"	8.7312
23/ ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
²⁵ / ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
²⁷ / ₆₄ "	.421875"	10.7156
7/16"	.4375"	11.1125
29/64"	.453125"	11.5094
15/32"	.46875"	11.9063
31/ ₆₄ "	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32"	.53125"	13.4938
35/64"	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/64"	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/64"	.671875"	17.0656
11/16"	.6875"	17.4625
45/64	.703125"	17.8594
23/32"	.71875"	18.2563
47/ ₆₄ "	.734375"	18.6531
3/4"	.75"	19.05
49/64	.765625"	19.4469
25/32"	.78125"	19.8438
51/64	.796875"	20.2406
13/16"	.8125"	20.6375
53/64	.828125"	21.0344
27/32"	.84375"	21.4312
55/64	.859375"	21.8281
7/8"	.875"	22.225
57/64"	.890625"	22.6219
29/32"	.90625"	23.0188
59/64"	.921875"	23.4156
15/16"	.9375"	23.8125
61/64"	.953125"	24.2094
31/32"	.96875"	24.6062
63/64"	.984375"	25.0031
1"	1.0"	25.4





Portable Resin Bins

Ideal for the Storage and Transfer of Material

High density food grade polyethylene

- Increases durability and life of the bin, easy to clean

Plastic infused with anti-static additive

- Permits compatibility with most plastic resins

Translucent sides

- Easily allows visibility of material levels

Standard Features:

- · Heavy duty welded steel frame, painted
- · Pocket folder for data sheet
- Side vacuum tube port accepts wands up to 4" in diameter (except 75lb bin which is 21/4" dia.)
- · Stainless steel slide gate for quick material evacuation
- Removable lid
- · Light weight
- · Fork lift capable

Stainless Steel Slide Gate



Portable!

Equipped with four heavy duty, non-marking casters



Stackable up to 3 High!*



*800 and 1200lb bins do not stack



75lb #137951 includes Tube Sock includes Tube Cap



Pocket folder

158lb #122649



368lb #122650 includes Tube Cap



includes Tube Cap



includes Tube Cap



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Portable Resin Bins (continued)

Specifications and Prices									
	75lb #137951	158lb #122649	368lb #122650	800lb #132633	1,20 #129				
Capacity†:	2.3 cu. ft.	4½ cu. ft.	10½ cu. ft.	22.7 cu. ft.	34.2	cu. ft.			
Dimensions:	18.8"w x 18.8"d x 30.1"h	23"w x 23"d x 37.6"h	31"w x 31"d x 42.8"h	37.5"w x 37.5"d x 52.4"h	43.5"w x 43.	5"d x 56.7"h			
Casters:	four,	4" locking swivel cas	sters	two, 5" rigid/two, 5" lo	ocking swive	l casters			
Ship Weight:	75 lbs.	90 lbs.	120 lbs.	250 lbs.	290	lbs.			
Unit Price:	\$369.94	\$512.15	\$683.02	\$1,229.32	\$1,34	6.19			
Spare Par	rts								
147967	Caster, 4" Diameter, Fl	ange Mount, Locking S	wivel and Wheel for 13	7951, 122649, 122650		\$33.70			
128074	Caster, 4" Diameter, S	Stud Mount, Non-Locki	ng Swivel, Locking Wi	neel for 137951, 12264	9, 122650	37.50			
142811	Caster, 5" Diameter, Flange Mount, Locking Swivel and Wheel for 132633, 129902								
142810	Caster, 5" Diameter, Flange Mount, Locking Fixed Wheel for 132633, 129902								
142807	Lid for 137951 (75lb)								
142808	Lid for 122649 (158lb	p)				42.90			
138237	Lid for 122650 (368lb	p)				Inquire			
142809	Lid for 132633 (800lk	o)				Inquire			
142083	Lid for 129902 (1,200	Olb)				Inquire			
Optional /	Accessories								
150554	1.5" Diameter Tube So	ock (seals out contami	nants between vacuum	tube) for bin 137951		\$22.05			
150555	2" Diameter Tube Sc	ck for bin 137951				22.05			
138215	1.5" Diameter Tube Sock for bins 122649, 122650, 132633 and 129902								
138756	2" Diameter Tube Sock for bins 122649, 122650, 132633 and 129902								
133871	Tube Cap 4" OD for	Vacuum Tube				3.25			
147578	Vacuum Tube, Plasti	c/Lexan for use with b	oin 137591			Inquire			
138120	Vacuum Tube, Plasti	c/Lexan for use with b	oins 122649 and 1226	50		Inquire			
147579	Vacuum Tube, Plasti	c/Lexan for use with k	oins 132633 and 1299	02		Inquire			

[†]Capacity based on styrene

Other Optional Accessories Stainless Steel and Aluminum Pick-Up Wands



4 Types: Standard Wand, Standard Wand with Bag Protector, Adjustable Wand and Adjustable Wand with Bag Protector

From 1" to 4" O.D. and 36" to 48" L

See page 668 for many more sizes and styles



Optional lid holders, push bars and handles available — Inquire

Resin Bin Loader Stand

Standard Features:

- · Welded steel frame construction
- · Telescoping loader mount adjustable height
- Toe locking, swivel casters
 - Loader Not Included

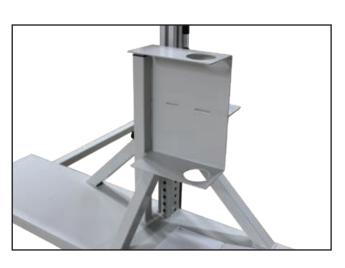




Starting Price:

\$1,795.00

Custom Order - Call For Information







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	0.3969
1/32"	.03125"	0.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/32"	.15625"	3.9688
11/ ₆₄ "	.171875"	4.3656
3/16"	.1875"	4.7625
13/ ₆₄ "	.203125"	5.1594
7/32"	.21875"	5.5562
15/64"	.234375"	5.9531
1/4"	.25"	6.35
17/ ₆₄ "	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/16"	.3125"	7.9375
21/64"	.328125"	8.3344
11/32"	.34375"	8.7312
23/ ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
25/ ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
27/ ₆₄ "	.421875"	10.7156
7/16"	.4375"	11.1125
29/ ₆₄ "	.453125"	11.5094
15/32"	.46875"	11.9063
31/ ₆₄ "	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32"	.53125"	13.4938
35/64"	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/64"	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/64"	.671875"	17.0656
11/16"	.6875"	17.4625
45/ ₆₄ "	.703125"	17.8594
23/32"	.71875"	18.2563
47/64"	.734375"	18.6531
3/4"	.75"	19.05
49/ ₆₄ "	.765625"	19.4469
²⁵ / ₃₂ "	.78125"	19.8438
51/ ₆₄ "	.796875"	20.2406
13/16"	.8125"	20.6375
⁵³ / ₆₄ "	.828125"	21.0344
27/32"	.84375"	21.4312
55/64"	.859375"	21.8281
7/8"	.875"	22.225
57/ ₆₄ "	.890625"	22.6219
²⁹ / ₃₂ "	.90625"	23.0188
59/64"	.921875"	23.4156
15/16"	.9375"	23.8125
61/ ₆₄ "	.953125"	24.2094
31/32"	.96875"	24.6062
63/ ₆₄ "	.984375"	25.0031
1"	1.0"	25.4





Heavy Duty Mobile Storage Hoppers

For Intermediate Storage Between Bulk Bins and Your Machine

Provide Optimum Efficiency—Flexibility—Portability



Stackable!
3 high for a
continuous flow
of material

Save Time & Space

Also available in Stainless Steel

Other Bulk Densities Available -Call to Inquire

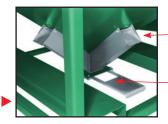
Construction:

14 gauge carbon steel hopper7 gauge carbon steel legs10 gauge carbon steel fork lift pockets

Hopper Capacity:

Photo shows two of four, 4" square entry ports for vacuum material removal. Contamination lids are provided for each port. Also shown is the adjustable slide gate shutoff for controlling hopper discharge.





Four way vacuum ports with contamination lids

Large 4" locking slide gate with plastic guides ensure smooth operation.

*Note: 60° Hoppers feature a larger 6" slide gate for hard to flow material

									Unit		Unit	
Cap	acity		Dii	mensions		Discharge	Max Weight	Item #	Price	Item #	Price	
Lbs	Cu. Ft.	L	W	H*(45°)	H*(60°)	Style	45lbs per cu. ft.	45° Hopp	45° Hopper Slope 60		60° Hopper Slope	
700	20	44"	44"	36"	43"	4 Ports & Slide Gate	900	143855	\$1,310.00	143856	\$1,565.00	
700	20	44"	44"	30"	43"	Slide Gate Only†	900	143860	1,208.00	143861	1,472.00	
1,050	30	44"	44"	46"	53"	4 Ports & Slide Gate	1350	107934	1,395.00	129380	1,581.00	
1,050	30	44"	44"	40"	53"	Slide Gate Only†	1350	143862	1,311.00	143863	1,570.00	
1,400	40	44"	44"	56"	63"	4 Ports & Slide Gate	1800	137680	1,462.00	138754	1,641.00	
1,400	40	44"	44"	50"	63"	Slide Gate Only†	1800	143864	1,428.00	143865	1,626.00	
1,750	50	44"	44"	66"	73"	4 Ports & Slide Gate	2250	136279	1,632.00	143857	1,750.00	
1,750	50	44"	44"	60"	73"	Slide Gate Only†	2250	142141	1,537.00	143866	1,683.00	
2,100	60	44"	44"	76"	83"	4 Ports & Slide Gate	2700	143858	1,941.00	143859	1,967.00	
2,100	60	44"	44"	70"	83"	Slide Gate Only†	2700	143867	1,739.00	143868	1,749.00	
*Add 3.5	" for stack	ing pad	s for ove	rall height	†Does no	ot include vacuum ports						

Hopper Covers	#107918	One Piece with 8" Center Opening	\$320.00
	#107904	Two Piece, Opens at Center with Piano Hinges	199.00
	#143851	Solid Lid	193.00
Caster Package	#133639	(2) 4" Swivel, (2) 4" Locking Casters (adds 1 7/16" to overall height)	461.00
Push Bar:	#143853	Used with Caster Package	179.00

Additional options available on page 625 — See Discharge Frames and Loading Platforms on page 634



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

Please refer to imscompany.com for current pricing ©Copyright 2021 IMS Company. All rights reserved.

Material Handling Equipment

IMS Heavy Duty Mobile Storage Hoppers Quote Form

Specify:			
1. Quantity:			
2. Capacity: 700 lbs / 20 cu ft 1,050 lb 1,750 lbs / 50 cu ft 2,100 lb			os / 40 cu ft
3. Slope Angle:			
4. Vacuum Ports (4) Tyes No			
5. Covers (No Cover STD):	Item #	Unit Price	
☐ Hopper Cover – one piece	143851	\$193.00	
☐ Hopper Cover – one piece with 8" dia. hole	107918	320.00	
Hopper Cover – two piece, hinged	107904	199.00	
6. Slide Gates (4" STD on 45° Hoppers):			
G" (STD on 60° Hoppers)	143871	Inquire	
☐ 8"	143872	Inquire	
☐ 10" NOTE: Hoppers with slide gates larger than 4" ca	143873 m't have v	Inquire	
	ui i iiave v	acuum pons	
7. Distribution Box for vacuum removal: 1 Hole 1.5" 2" 2.5" 3" 4'	,,	\$260	
2 Holes 1.5" 2" 2.5" 3" 4		317	
3 Holes	"	356	
8. Distribution Box Probe (required for Distribution	n Box):		
	3" \$205	4 " \$269	
NOTE: One probe required per distribution box hole	100600	\$464.00	
9. Caster Package:	133639	\$461.00	
10. Paints/Coatings:	4.40070		
Paint inside of hopperEpoxy coat inside of hopper (clear)	143878	\$269.00	
Paint outside (custom color)	143877 143870	269.00 298.00	
- Carrie Galoriae (Galoriani Golori)	143070	296.00	
11. Misc.			
4-way fork-lift pockets (2-way STANDARD)	142836	Inquire	
Pallet Jack OptionPush Bar (for when casters are installed)	143854 143853	Inquire \$179.00	
☐ 52" high Discharge Stand	107859	2,269.00	
Loading Platform	107889	Inquire	
Grate Magnet	143852	532.00	
☐ View Window	142837	Inquire	
☐ Vibrator Mounting Pads	143876	355.00	
Removable Bag Break GrateLexan Card Holder	158358 158382	522.00 62.00	
_			
Date: Quantity: Phone:()		Fax: ()
Name:	·	Title:	
Company Name:		Email:	
Address:			
City:			Zip:





Heavy Duty Surge Bins

For Dry Bulk Material Storage

- 45° hopper slope for free flowing material or 60° hopper slope for material prone to bridging
- Bolt down foot pads securely anchors bins to shop floor
- Hoppers and frames are constructed of 14-gauge carbon steel
- 11/4" half couplings with plugs standard Allows addition of high & low level indicators
- Provides quick accessible in-plant storage of blended or virgin material

Common Specifications

Lid Door: 12" x 14"; hinged
Lifting Lugs: Four per bin
Windows: One high / One low

• Discharge: 12" square



Сар	acity		Dimensions		II	Unit Date:	
Lbs	Cu. Ft.	Hopper Slope	L	W	н	Item #	Unit Price
1008	29	45°	54"	54"	55.50"	144001	\$2,834.00
1008	29	60°	54"	54"	64.25"	144002	2,919.00
1624	46	45°	54"	54"	68.50"	142709	3,430.00
1624	46	60°	54"	54"	77.25"	144003	3,483.00
2408	69	45°	60"	60"	77.50"	144004	4,377.00
2408	69	60°	60"	60"	87.75"	144005	4,395.00
3192	91	45°	60"	60"	91.50"	144006	5,157.00
3192	91	60°	60"	60"	101.75"	144007	5,074.00
4060	116	45°	60"	60"	106.50"	144008	5,955.00
4060	116	60°	60"	60"	116.75"	144009	6,032.00
4816	138	45°	72"	72"	97.50"	144010	7,370.00
4816	138	60°	72"	72"	110.75"	144011	7,500.00
5328	161	45°	72"	72"	107.50"	144012	8,183.00
5328	161	60°	72"	72"	120.75"	144013	8,354.00
6384	182	45°	72"	72"	116.50"	144014	8,722.00
6384	182	60°	72"	72"	129.75"	144015	8,923.00
7196	206	45°	72"	72"	126.50"	144016	9,536.00
7196	206	60°	72"	72"	139.75"	144017	9,778.00
8008	229	45°	72"	72"	136.50"	144018	10,813.00
8008	229	60°	72"	72"	149.75"	144019	10,866.00
9604	274	45°	84"	84"	129"	144020	12,170.00
9604	274	60°	84"	84"	145"	144021	12,314.00
11200	320	45°	84"	84"	143.25"	144022	13,282.00
11200	320	60°	84"	84"	159.25"	144023	13,311.00
12796	336	45°	84"	84"	157.75"	144024	14,998.00
12796	336	60°	84"	84"	173.50"	144025	15,083.00
14392	411	45°	84"	84"	172"	144026	20,242.00
14392	411	60°	84"	84"	188"	144027	20,631.00
16016	458	45°	84"	84"	186.50"	144028	21,737.00
16016	458	60°	84"	84"	202.25"	144029	22,041.00

*based on material with a density of 35 lbs per cu.ft. Specify custom dimensions for loader cut out and mounting holes (see next page)

Material Handling Equipment

IMS Heavy Duty Surge Bins Quote/Ordering Form

Specify:

. ,							
1. Quantity:							
2. Capacity:	☐ 1,008 lbs / 29 cu ft☐ 1,624 lbs / 46 cu ft☐ 2,408 lbs / 69 cu ft☐ 3,192 lbs / 91 cu ft☐	4,8 5,3	60 lbs / 116 16 lbs / 138 28 lbs / 161 84 lbs / 182	cu ft	06 lbs / 206 cu ft 08 lbs / 229 cu ft 04 lbs / 274 cu ft 200 lbs / 320 cu ft	☐ 12,796 lbs / 366 cu☐ 14,392 lbs / 411 cu☐ 16,016 lbs / 458 cu☐	ı ft
3. Slope Angle:	☐ 45° ☐ 60°						
	piece with 12" x 14" ver (Split $\frac{1}{3}$, $\frac{2}{3}$ design		NDARD): 143879	Loader Cut C \$484.00	out for Cover		
☐ Gate & Dra	in (for 45° bins) in (for 60° bins) in (for 45° bins-butterl in (for 60° bins-butterl		143881 143882 143883 143884 143885	422.00 556.00 556.00 655.00		$A \rightarrow A$	B/C
7. Distribution E 1 Hole	.5"	3"	4" 4" 4" 4"	\$260.00 317.00 356.00 718.00 874.00	(A) Loader	Cut Out Dia:	-D
1 .5" \$110	Box Probe (required 2 2 \$118 2 2 cobe required per dis	5" \$151 📮	3 " \$205	4 " \$269	(B) Mountir	ng Hole Dia:	
9. Indicator Pan	nel (Number of Bins):	_] 3 \$1,161	_ 4\$	\$1,290	. ,	r of Mounting Holes:	
10. Paints/Coati		_	_	•	(U) Mountir	ng Hole Pattern:	
Clear epo: (up to 72"	xy coat inside of hopp		143891	\$658.00			
(84" x 84" ☐ Paint outs	or more) ide (custom color)		143892 143870	\$885.00 298.00			
☐ 80" Flange ☐ Grating in ☐ Hatchway ☐ Additional ☐ Low Level ☐ High Leve	e to Floor Clearance (e to Floor Clearance (side bin (replaces cov Door Air Filter View Windows (2 sta I Indicator (paddle bla el Indicator (paddle bla cator Flange (extra)	20" STD) ver) ndard) de style)	143888 143889 143893 143886 142837 147688 147689 158380	\$652.00 849.00 885.00 114.00 Inquire 419.00 419.00 Inquire			
Date:	Quantity:	_ Phone:(_)		Fax: ()	
Name:				Title:			
Company Name	:						
Address:							
City:				State:		Zip:	

Air Operated Floor Level Gaylord Tilters

Ensure a Steady, Uninterrupted Flow of Material to Your Loader

Safe & Reliable Performance

- Easy floor-level loading with pallet jack
- Tilt Actuator: Heavy Duty, Multi-Ply Rubber Air Bag
- Rugged, 7 gauge steel construction
- Virtually maintenance-free
- Easy access to all components
- No assembly needed, just connect your air supply



Standard[†] Ratchet-Type Safety

Stops tilter from crashing down if air pressure is lost.

Standard Only on IMS Tilters

+Not included with #133309

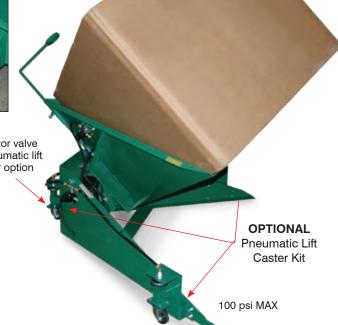
Optional Pneumatic Lift Caster Kit • Allows for easy mobility throughout your facility for multiple jobs • Raises/lowers empty tilter* with simple operational hand valve • For mobility, air source can be disconnected after tilter is lifted * Not intended to move full Gaylords Operator Attention Needed Operator Attention Needed Operator Attention Needed Operator Attention Needed

Easy to load and now easy to move!

- Valued Customer

(See next page for specifications and pricing)

"Provides flexibility — We don't lose valuable floor space when it is not in use."





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

Air Operated Floor Level Gaylord Tilters

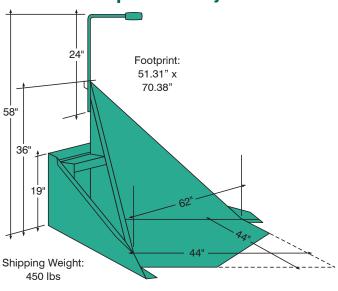


How They Work

Self-Balancing, Air Bag Design

Pre-adjusted air pressure: begins to tip the device only when the gaylord empties to about 900 lbs. The tilt angle automatically increases gradually until the gaylord is empty.

Accepts Most Gaylords



Now 5 Models To Suit Your Needs And Budget!



Complete with Ratchet-Type Safety Stop

Item #115952

\$2,898.00

#116291	Same as #115952 plus Air Vibrator (Recommended for acrylic & other hard-to-move materials)	\$3,677.00
#116288	Same as #115952 plus Timer-Controlled Electric Vibrator (Recommended for acrylic & other hard-to-move materials)	4,353.00
#148081	Same as #115952 plus Pneumatic Lift Caster Kit (see previous page)	4,267.00
#133309	Same as #115952 without Ratchet-Type Safety Stop	2,279.00
#142851	Same as #133309 includes Pneumatic Vibrator	3,058.00

Specifications

• Air Pressure: 40 - 100 psi (tilter regulator locked at 43 psi)

• Pneumatic Control Unit: Includes UP/STOP/DOWN Switch, Pressure Regulator and Gauge

• Optional Vibrator: 120/60/1, 1.4 Amp

Crated Size: 60"W x 72"L x 44"H

Bucket extension for extra large Gaylord available — Call to Inquire

See Gaylord Covers on Page 645



Retrofit Kits

#116246	For adding Ratchet-Type Safety Stop to IMS floor-level tipsters	Inquire
#148243	For adding Pneumatic Lift Caster Kit to IMS floor-level tipsters	Inquire
#129716	For adding Air Vibrator Assembly to IMS floor-level tipsters	Inquire
#105989	For adding Electric Vibrator Assembly w/ Timer to floor-level tipsters	Inquire

	Spare Parts	
#113001	Air Bag / Bladder	\$376.85
#132185	Wand Holder	Inquire
#130790	Air Vibrator Assembly	Inquire
#124995	Control Valve	108.00
#115879	Air Pressure Regulator	Inquire
#125179	Timer	Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



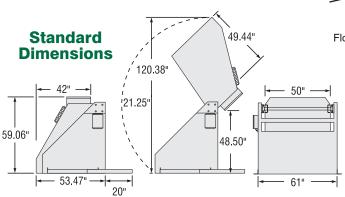
Hydraulic Gaylord/Box Dumper

Simplifies and Speeds the Transfer of Material From Gaylord to Mixers or Other Containers

- Top quality, certified components, plus heavy duty materials and construction
- Ensure long service life
- Stabilizers prevent tipping, even when dumper is not anchored to floor
- · Increase safety and versatility

Specifications

- Voltage: 115/60/1 (standard), 230/60/3, 460/60/3
- Amps: 17.2 at 115V, 4.6 at 230V, 2.3 at 460V
- Hydraulic Pump: 1.5 hp, 1725 rpm, TEFC
- Dump Cycle: 40 seconds to rise, 35 seconds to lower



Item #117995 (115/60/1)

Item #148775 (230/60/1)

Item #133294 (230/60/3)

Item #134007 (460/60/3)

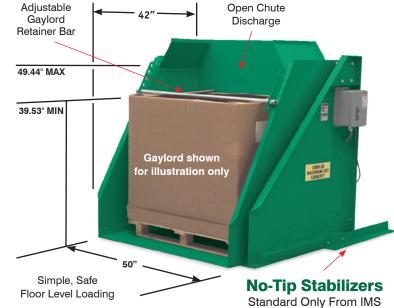
\$10,995.00

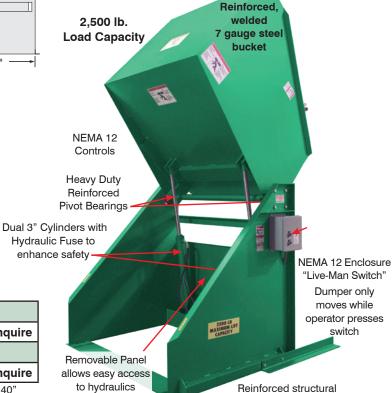
Options

Other capacities, dump heights, dump speeds, dump chutes, voltages and higher cycle units available to order — **Inquire**

Spare Part					
Item #136642	1½ hp motor (115/60/1)	Inquire			
	Optional Accessory				
Item #136278	24" Riser (Dump Height: 72")	Inquire			

Low cost risers can increase dump height from 48" up to 140" NOTE: Dumpers on risers MUST be anchored bolted to the floor







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

steel framework

High Speed Hurricane™ Mixers





Fast: Unique, Hurricane blending action cuts mixing time.

Portable: Mixers can be transported to material storage area, filled, operated, then delivered to any area of your plant by forklift.

Versatile: Entire mixer can be raised on a forklift for manual unloading or stacked on a support frame or hopper.

Consistent: Non-slip, direct drive, and automatic timer ensure complete color mixing every time.

Easy to Clean: Lift-Off Top and Removable Auger Assembly allow quick color/material changes.

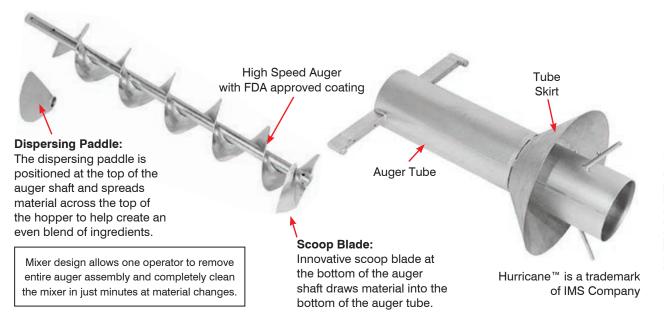
Every shop needs both a Drum Tumbler and a Hurricane Mixer

The Hurricane works faster for larger batches. It is ideal for mixing virgin with regrind and for coloring with concentrates. Cleanup is needed at color change, so use the Hurricane when you would not be changing color often. Not advised for dry-color use.

Drum Tumbler accept 1 or 2 drums at a time. It is good for dry-color mixing. Color and material changeover is a matter of changing drums.

Hurricane needs no cage. Easily moved by forklift, it offers a great deal of flexibility.







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)

1.866.467.9001

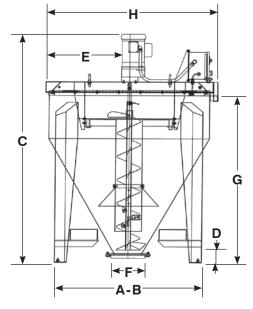


High Speed Hurricane™ Mixers

Fast, Safe & Consistent Pellet, Color & Additive Blending



Dimens	ions								
	Α	В	С	D	Е	F	G	Н	
148502	23"	23"	531/4"	N/A	12"	4"	41"	28"	
107927	44"	44"	63"	73/8"	16"	8"	431/2"	53"	
107896	44"	44"	71"	73/8"	16"	8"	51½"	53"	
143628	44"	44"	78"	73/8"	16"	8"	581/2"	53"	
143626	44"	44"	90"	73/8"	16"	8"	70½"	53"	
143627	52"	52"	103"	121/4"	22"	10"	87"	65"	



continued on next page



material clean-out

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Great for small jobs and tight spaces!







Hurricane Mixers employ a high-speed blending action that minimizes mixing time. An internal auger raises the pellets within a tube from the bottom to the top, where a high-speed rotating blade efficiently scatters them to the sides.

Use these mixers for blending virgin pellets with regrind and for coloring with concentrates (not advised for dry color mixing).

The rugged design withstands constant, everyday use. Additionally, you'll find it easy to clean and maintain.

Hurricane Mixers are built in six sizes. Call for stock sizes. Larger sizes may be special ordered.

- Unique blending action cuts color mixing time, improving productivity
- Nonslip, direct drive and automatic timer result in complete and consistent color blending with every mix
- Lift-off top and removable auger assembly permit dismantling and cleaning within minutes without tools
- Two-way entry pockets for forklift permits easy transport of the mixer
- Large, positive seal, 8" diameter slide gate allows you to quickly empty the mixer to prepare for the next batch
- Interlock safety switch stops mixing action whenever the lid is raised, improving operator safety
- 14-gauge carbon steel construction extends equipment life and decreases repair costs
- No safety cage required.

Specifications and Prices

Item No.: 148502 (Model HM250) **107927** (Model HM500) 107896 (Model HM850) Volume/Capacity: 5 cu. ft., 175 lbs.* 11.1 cu. ft., 380 lbs.* 19.3 cu. ft., 670 lbs.* Auger: 4" dia., 310 rpm 8" dia., 226 rpm 8" dia., 226 rpm Motor: 1/3 HP 11/2 HP 11/2 HP Amperage: 3 amp (115/60/1) 15.2 amp (115/60/1) 15.2 amp (115/60/1) **Power Cord Length: Shipping Size:** 26" W x 26" L x 60" H 44" W x 44" L x 63" H 44" W x 44" L x 71" H Weight: 495 lbs. 200 lbs. 565 lbs.

 Shipping Weight:
 300 lbs.
 550 lbs.
 650 lbs.

 Unit Price:
 \$7,722.00
 \$7,722.00
 \$8,735.00

Item No.:	143628 (Model HM1000)	143626 (Model HM1500)	143627 (Model HM3000)
Volume/Capacity:	26.6 cu. ft., 931 lbs.*	39 cu. ft., 1,360 lbs.*	80 cu. ft., 2,800 lbs.*
Auger:	8" dia., 226 rpm	8" dia., 226 rpm	8" dia., 226 rpm
Motor:	1½ HP	1½ HP	2HP
Amperage:	15.2 amp (115/60/1)	15.2 amp (115/60/1)	15.2 amp (460/60/3)
Power Cord Length:	6'	6'	6'
Shipping Size:	44" W x 44" L x 78" H	44" W x 44" L x 90" H	103" W x 52" L x 52" H
Weight:	555 lbs.	605 lbs.	785 lbs.
Shipping Weight:	675 lbs.	725 lbs.	850 lbs.
Unit Price:	\$9,736.00	\$10,748.00	\$15,959.00

^{*}Based on material with a density of 35 lbs. per cu. ft.

Stainless Steel Construction Also Available — Inquire

Replacement Parts

Motor, Reducer and Wear Blocks Available — Inquire

See next page for Mixer Discharge Frame and Loading Platform



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

Mexico) tech support toll-free (USA & Canada)
1.866.467.9001

e-mai

Discharge Frame And Loading Platform

For Use with Heavy Duty Storage Hoppers and Hurricane Mixers*

Improve Operator Safety and Convenience



Discharge Frame

Fits all 44" square Mixers and Mobile Storage Hoppers

For Drum & Gaylord Loading

Photo above shows a #107927 Mixer atop a 52" high Discharge Frame. When the mixing cycle has been completed, the operator needs only to open the mixer slide gate and allow the contents of the mixer to flow neatly into the gaylord below. The entire load is then easily transported to wherever it is needed via forklift.

Item #	Description	Unit Price
107859	Discharge Frame for Mixers and Mobile Storage Hoppers	\$2,133.00

^{*}Not for use with mixer #148502

Loading Platform

For discharge frame Enables operator to load, inspect & clean mixer without having to lower it to the floor



Mixer and Discharge Frame shown for illustration only, NOT included in price.

Item #	Description	Unit Price
107889	Loading Platform for Discharge Frame	Inquire

Hurricane™ is a trademark of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Mixer shown for

illustration only, NOT included in price.

52"

Material Handling Equipment

Material Mixing Drum Tumblers

Easily Blend Material While Saving Time, Labor and Money





IMS' Proven Performance

Optimum Mixing

 Exclusive 18 RPM and Drum Angle - provides the fastest, most complete mixing possible in the industry

Durable

- Solid steel frame for longevity
- High torque drive belt virtually adjustment free
- Built with components you can trust Dayton motor and Winsmith reducer

Available as convertible tumbler with Leg Extension Kit –

allows easy conversion from single to double tumbler

2 Year Warranty



Attention External Controls Required

Optional: Tumbler Control Panel Enables Safe and Easy Installation

- Motor starter with overload protection
- Provides open contact for safety cage tie in
- Fully enclosed panel
- Start/Stop switch
- Jog switch
- See page 638



Tech Tips

IMS Drum Tumblers have retained their usefulness in the mixing world because material can be stored in drums indefinitely, thereby eliminating the need to clean the mixing vessel.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**



IMS 1½ HP Single Drum Tumbler

Corner Design For Optimal Shop Floor Layout

Corner wall design

- Conserves floor space
- Cuts guarding costs

Smooth action, high torque belt drive -

Provides low maintenance

- Virtually adjustment free
- Absorbs start-up torques and stopping impacts
- Reduces wear and tear on expensive drive components

Low-wear high ratio gear reducer

- Transmits ample torque which permits a 1.5 hp motor to handle a startup load with less wear on components

Ample access to all components -

Enables simple maintenance

Drum tumbler must have enclosure for operator safety

Contact IMS for enclosure options



External Controls Required Optional: Tumbler Control Panel

Enables Safe and Easy Installation, See page 638

NOTE: Mounting anchor bolts included. Plastic drum (shown) sold separately. See page 638

Easily Converts from Single to Double Tumbler

- · Dayton motor and Winsmith reducer
- Heat treated main shaft
- 2" wide nylon quick release safety drum belt
- · Drawing included for protective enclosure
- · Drive belt requires no lubrication

Belt guard removed for illustration only.



Specifications and Prices

Load Limit: 280 lbs. (including drum) **Motor:** 1¹/₂ HP (TEFC) 1750 rpm,

208/240/480/60/3

Amperage: 5.1 (208v), 4.8 (240v), 2.4 (480v)

Tumbling Speed: 18 rpm **Separate Ship Weights**

Tumbler: 730 lbs Drive Belt: Heavy torque drive 30 gal Holder: 186 lbs

Operating Space: See illustration 55 gal Holder: 216 lbs

Drum Sizes and Holders	30 Gallon Holder	55 Gallon Holder	İ
Maximum / Minimum Drum Height	34" Max / 30" Min	37" Max / 33" Min	
Maximum / Minimum Drum Diameter	22" Max / 20" Min	25" Max / 211/2" Min	

Item #	Description	Unit Price
149886	11/2 HP Belt Drive Corner Tumbler only (no holder) and three anchor bolts	\$6,698.43
149887	Tumbler with one 30 gallon drum holder (#107873) and three anchor bolts	7,287.03
149888	Tumbler with one 55 gallon drum holder (#107857) and three anchor bolts	7,339.89
149892	Leg Extension Kit — Converts #149886 Single Tumbler to Double Tumbler	350.00
149893	Retrofit Kit — Converts older model IMS Single Tumbler to Double Tumbler	600.00

Ask about drums in steel, stainless steel and plastic.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

1.866.467.9001

tech support toll-free (USA & Canada)

sales@imscompany.com

636

MS 1½ HP Double Drum Tumbler

Industry Recommended For Quick and Constant Material Mixing



Smooth action, high torque belt drive

- Provides low maintenance
- Virtually adjustment free
- Absorbs start-up torques and stopping impacts
- Reduces wear and tear on tumbler parts

Low-wear high ratio gear reducer

- Transmits ample torque which permits a 1.5 hp motor to handle a startup load with less wear on expensive drive components

Ample access to all components -

Enables simple maintenance

Drum tumbler must have enclosure for operator safety — Contact IMS for enclosure options





Attention

External Controls Required Optional: Tumbler Control Panel

Enables Safe and Easy Installation, See page 638

NOTE: Mounting anchor bolts included. Plastic drum (shown) sold separately. See page 638

Amperage: 5.1 (208v), 4.8 (240v), 2.4 (480v)

- · Dayton motor and Winsmith reducer
- Heat treated main shaft

Single to Double Tumbler

- 2" wide nylon quick release safety drum belt
- Drawing included for protective enclosure
- · Drive belt requires no lubrication

Belt guard removed for illustration only.

Specifications and Prices

Load Limit: 280 lbs. per holder (including drum) Tumbling Speed: 18 rpm - Separate Ship Weights -Tumbler: 730 lbs

Motor: 11/2 HP (TEFC) 1750 rpm, 208/240/480/60/3

Drive Belt: Heavy torque drive

Operating Space: 110" x 59"

(with drums)

(2) 30 gal Holder: 186 lbs ea.

(2) 55 gal Holder: 216 lbs ea.

Leg Kit: 45 lbs

Drum Sizes and Holders	30 Gallon Holder	55 Gallon Holder
Maximum / Minimum Drum Height	34" Max / 30" Min	37" Max / 33" Min
Maximum / Minimum Drum Diameter	22" Max / 20" Min	25" Max / 211/2" Min

Maximum	Maximum / Minimum Drum Diameter 22" Max / 20" Min 25" Max			
Item #	Description	Unit Price		
149889	11/2 HP Belt Drive Double Tumbler only (no holders) and four anchor bolts	\$6,197.85		
149890	Tumbler with two 30 gallon drum holders (#107873) and four anchor bolts	8,646.21		
149891	Tumbler with two 55 gallon drum holders (#107857) and four anchor bolts	8,893.72		
Spare Part	ts			
122100	Reducing Gear Box (60:1, 11/2 & 2 HP Tumblers)	\$2,364.03		
163800	Motor (1½ HP, 208/230/460/60/3)	471.44		
107901	Pillow Block Bearing	112.13		
135703	Anchor Bolt Assembly for concrete floors	5.52		

Drum Tumbler Control Panel

Permits Safe, Remote Operation

Use this IMS Drum Tumbler Control Panel to operate tumblers from a safe distance. The Control Panel can be easily wired by an electrician and contains all essential controls (less the door switch).

OSHA compliant

Cage door interlock -

increases operator safety

Tumbler run timer - easily adjust mixing duration up to 60 minutes

110v signal-light receptacle
with separate Off/On switch provides visual notification of
completed mixing with user
provided light

Run/Jog - allows operator to correctly position drum holders for loading and unloading

- Transformer-isolated 120 VAC control circuits in panel
- Box is NEMA 12, resistant to moisture, oil and dust
- Sealed NEMA 12, receptacle for auxiliary warning light

Heavy-duty alarm horn with separate Off/On switch (pulsating) - notifies operator when mixing ceases

I DANGER WWW.imscompany.com www.imscompany.com soo.537-5375

On/Off

Amp meter - indicates load condition

Enables/Disables
Alarm/Light

Specifications

Depth: 9½"
Width: 12½"
Height: 15%"
Boxed Weight: 22 lbs.

Made Expressly For Tumbler Users!



Heavy duty industrial electrical components - provides years of trouble free service

Item #	tem # Description	
146621	Drum Tumbler Control Panel (240/60/3) for 11/2 HP tumblers	\$1,265.00
146622	Drum Tumbler Control Panel (480/60/3) for 11/2 HP tumblers	1,265.00
109879	Drum Tumbler Control Panel (240/60/3) 1.3 Amps for 1/4 HP tumbler	Inquire
109885	Drum Tumbler Control Panel (480/60/3) .65 Amps for 1/4 HP tumbler	Inquire

Ask about custom control panels (allow 2-4 weeks for delivery)

IMPORTANT: When ordering custom control panels, specify motor operating voltage (230 or 460), frequency, number of phases and horsepower so that proper load current meter and coils will be supplied.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Heavy Duty Drum Holders

Safe to Use and Simple to Load

For use with IMS Drum Tumblers

- OSHA yellow finish
- 2" wide nylon, quick-release safety belt
- · Welded steel construction



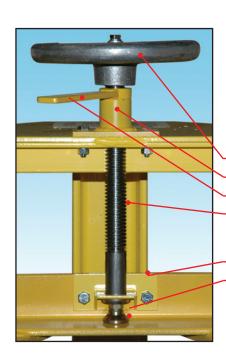


Only From IMS



Purchasers also order:

- Drums for mixing and storage, pages 641, 644
- Drum Cart, page 648



0000	0000

#163948 Hardware Kit

Item #	Description	Unit Price
107873	Style 1: fits 30 gal. Drums	\$1,203.00
107857	Style 2: fits 55 gal. Drums	1,528.00
Spare F	Parts	
109141	Complete Handwheel Assembly for Style 1 and 2 Drum Holders with 12" screws (includes: #107853, #107916, #107909, #108777 and #108776)	\$197.60
107853	8" diameter handwheel	52.62
107916	1"-6 acme threaded nut with bracket	45.35
107909	1"-6 acme lock nut and handle	43.58
108776	1"-6 acme 12" screw with swivel base for Style 2	81.80
109420	1"-6 acme 20" screw with leveling pad #109386 used with 30 gallon conversion drum kit #109419	140.00
108777	Sleeve assembly for 12" and 20" screws	24.00
109386	Complete leveling pad assembly	22.00
109420	1"-6 acme 20" screw with swivel base for Style 1	140.00
109419	Conversion Kit - Complete Handwheel Assembly with 20"screw for Style 2 drum holder. Converts 55 gallon drum holder to accommodate and securely fit 30 gallon drums (includes: #107853, #107916, #107909, #108777 and #109420)	259.95
107955	Style 1 Hub for 30 gal. drum	181.95
107887	Style 2 Hub for 55 gal. drum	168.90
165412	Hardware Kit for Style 1 Hub #107873 (2 bolt pattern)	18.23
163948	Hardware Kit for Style 2 Hub #107887 (4 bolt pattern)	15.00
107874	2" wide nylon quick release safety belt	41.54
107871	07871 V-bracket with left and right cleat for Style 1	
107855	V-bracket with left and right cleat for Style 2	225.00
107938	107938 Left-hand aluminum cleat	
107917	Right-hand aluminum cleat	10.07



phone order toll-free (USA & Canada) 1.800.537.5375



fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Mini-Tumblers

Ideal for Small Batch, Test Runs and Laboratory Work

Corner-over-corner design - efficiently blends dry or liquid materials

Blending of ordinary pails - reduces spills and prevents messy cleanups

Adjustable cross bar - screw down top bar with locking handle ensures quick changeovers

- Rotate one or two (1 gal to 5 gal) cans at the same time
- · Accepts steel or plastic containers
- · Painted steel frame and cabinet
- · Completely enclosed chain drives for safety
- · Ample access to all components



NOTE: IMS Mini-Tumblers rotate pails, cans or buckets at a constant 23 RPM in one direction. They do NOT shake or oscillate.

Specifications and Prices

Can Sizes: 4.5" to 16.5" height, 12" diameter

Tumbling Speed: 23 rpm Horsepower: 1/4

Max Capacity: 100 lbs per can

Ship Dimensions: 42"L x 42"W x 34"H

Weight: 205 lbs

Item #	Motor	Timer	Unit Price
167535	115V, 1 phase, 60 Hz	1-60 Minutes	\$2,491.44
161485	208-230/460V, 3 phase, 60 Hz	None	RFQ

Optional Accessory

Guard Enclosure

(Guard Enclosure shown installed with Chain Drive Tumbler)

OSHA Compliant - keep workers safe and avoid fines Retrofittable - use with your existing units

> #170852 (for #167535): \$1,500.00 #67481 (for #161485): 2,350.37





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Plastic Material Drums

High Quality Alternative to Heavy Steel Drums

- Lightweight and durable HDPE (High Density Polyethylene)
- · Impact- and stress-cracking resistant
- Translucent Lid Features: (1) ¾" NPS Threaded Opening, (1) 2" NPS Threaded Opening, Plugs with Urethane Gasket
- Blue Drums have solid lids, no openings
- Lever Lock Ring: Galvanized Steel with Powder Coated Paint
- DOT approved







Specifi	Specifications and Prices						
	Туре	30 gal. Translucent	55 gal. Translucent	55 gal. l	Blue Drum		
Outsi	de Diameter	18.75"	22.75"	2	2.9"		
Outside Height		30"	36"	36.8"			
Shipping Weight		15 lbs.	26 lbs.	20 lbs.			
Item #	Description				Unit Price		
175177	177 30 gal. translucent drum, lid w/ gasket, clamp ring, DOT rated				\$119.00		
175178 55 gal. translucent drum, lid w/ gasket, clamp ring, DOT rated			144.00				
122539 55 gal. blue drum, lid w/ gasket, clamp ring, DOT rated				129.49			

See Also IMS Exclusive Drum Tumblers - Page 636 - 637

Plastic Drum Liners

- Help protect regrind/virgin material from moisture and contaminants during manufacturing and storage
- · Help keep contents from leaking out of container
- · Can also be used to protect finished products and large parts
 - · Liners are shipped in neat, easy to store rolls
 - Fewer liners per roll make them Easier to Handle



FDA Approved

Made of translucent LDPE

Item #	Fits Drum Size	Size W x H	Thickness	Liners Per Roll	Per Roll 1-9	(Per Bag)	Per Roll 10+	(Per Bag)
137339	30 gal.	34" x 51"	2 mil.	250	Inquire			
137340	55 gal.	38" x 63"	2 mil.	200	\$157.90	(0.79)	145.27	(0.73)
137341	55 gal.	38" x 63"	4 mil.	100	169.32	(1.35)	123.65	(1.24)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001

Drum Covers

Keep Your Molding Material Clean — Contaminant-Free

Seal Out:

- · Dirt and dust
- · Metal Objects
- Trash

Works for Positive or Negative Applications

Replace cumbersome, Loose-fitting covers now! 2" dia. (±1/2") Elasticized Center Port helps hold loader probe in place

See-through vinyl windows let you check material level and probe position

Tie-Downs standard to accommodate positive-pressure applications

PATENTED

Lightweight, stretchable construction makes covers easy to install

Fits all 22" dia. (± 1") drums



Item #	Description	Unit Price
109468	Drum Cover — 1 port	\$42.05
127050	Drum Cover — 2 ports, 180° apart	43.15

Custom drum covers available — INQUIRE

Economical Drum Covers

Elastic Band expands to fit all standard size 55 gallon drums — holds cover in place

- Protects in-plant or bulk packaged products from outside elements
- Ideal for food, chemical and pharmaceutical applications
- Made of clear, 4-mil LDPE film



Item #	Description	Unit Price
137747	Drum Cover, 55 gallon, 4 Mil., Clear	\$2.10 ea.

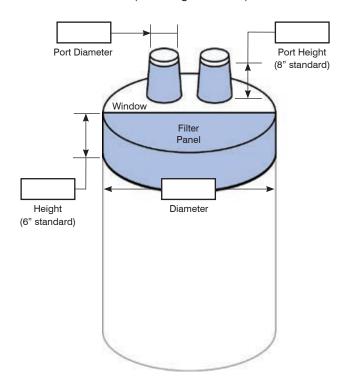


Custom Drum Cover Form

Fill In The Appropriate Dimension Blanks

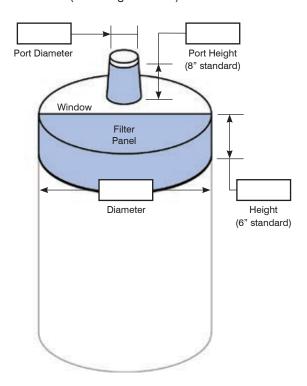
DP Style

(Featuring Two Ports)



DN Style

(Featuring One Port)



DN Style Quantity: ___

DP Style Quantity: ___

Specify:

1. Color Blue or Brown

Please enclose a drawing if more custom items are needed.

If you would like your logo silk screened in lieu of the IMS Logo please provide art file (JPEG, EPS or TIFF) — Minimum Order Quantity: 25

 $\label{eq:price:spinor} Price: \$150 \ for \ 1 \ color \ / \ Additional \ \$25 \ for \ PMS \ color \ matching \ / \ Additional \ \$6 \ per \ location \ for \ 2 \ color \ print \ Lead \ Time \ required \ -- \ Call \ for \ details$

Contact the IMS Supplies Team at sales@imscompany.com for details.

Date:	Quantity:	Phone: ()			Fax: (_)
Name:				Title:		
Company Name: _				Email:		
Address:						
City:			State:			Zip:



Stainless Steel Drums

For Medical and Food-Grade Applications

- Can be sanitized for medical and food grade applications
- · Perfect for use with abrasive materials
- 16 gauge, type-304 stainless steel with 2B finish and seamless chime
- · Easy to clean





55 gal.

\$39.32

Made of

translucent

LDPE

Perfect for Abrasive Materials & Food and Medical Applications

Specific	cations and	Prices				
Тур	эе	30 gal. Stainless Steel	55 gal. Stainless Ste	el		
Contents (n	o outage*)	33.06 gal.	59.2 gal.			
Outside D	Diameter	20"	24"			
Outside	Height	31"	32½"			
Tare W	/eight	49 lbs.	61 lbs.			
Item #	Descripti	on		Unit Price		
122141	16 gal. painte	d 20 gauge steel drum complete with I	id and gasket (not shown)	Inquire		
105574	30 gal. stainle	30 gal. stainless steel drum complete with lid, gasket and clamp ring				
105569	55 gal. stainle	5 gal. stainless steel drum complete with lid, gasket and clamp ring 1,411.05				
Spare Pa	rts		·			

^{*} Outage is DOT headspace (ex. 55 nominal gallons will hold 60.5 gallons)

Clamp ring (carbon steel) for 55 gal. stainless steel drum

Plastic Gaylord Liners

FDA Approved

105606

Help protect regrind/virgin material from moisture and contaminants during manufacturing and storage

Help keep contents from leaking out of container

Can also be used to protect finished products and large parts

- · Liners are shipped in neat, easy to store rolls
- Fewer liners per roll make them easier to handle

Compare our Everyday Low Prices!



^{*}Total width tolerance ±3"

Gaylord Covers

Seals Material in and Keeps Dirt Out

Keep Molding Material Clean and Contaminant-Free

- · Replace cumbersome loose-fitting covers now!
- · Seal out: dirt/dust, metal objects, trash
- · Help reduce parts rejects and press downtime

GAYLORD COVERS

Negative Pressure (for removing material) - 2 Ports

Complete with Belt and Buckle to securely hold the cover in place

Item #	Size Standard	Min.	Max	Unit Price
109462	34" x 42"	31" x 39"	37" x 45"	\$82.83
144062	39" x 44"	36" x 41"	42" x 47"	82.95
144064	41" x 48"	38" x 45"	44" x 51"	85.25
144066	44" x 48"	41" x 45"	47" x 51"	87.67
144068	48" x 48"	45" x 45"	51" x 51"	95.45

Positive Pressure (for adding material) - 1 Port Complete with Belt and Buckle to securely hold the cover in place

Item #	Size Standard	Min.	Max	Unit Price
144061	34" x 42"	31" x 39"	37" x 45"	\$77.00
144063	39" x 44"	36" x 41"	42" x 47"	76.50
144065	41" x 48"	38" x 45"	44" x 51"	77.85
144067	44" x 48"	41" x 45"	47" x 51"	82.28
144069	48" x 48"	45" x 45"	51" x 51"	99.36

Drum Cover

1 Port Complete with Special Tie Cord

Item #	Size Standard	Unit Price
109468	22" dia	\$42.05

Drum Cover

2 Ports Complete with Special Tie Cord

Item #	Size Standard	Unit Price
127050	22" dia	\$43.15

- Lightweight, stretchable construction makes covers easy to install
- Cloth Filter Panel allows make-up air in, keeps dirt out
- · Vinyl Window for visual level check
- Port(s) for entry of loader probe or blower discharge ducting/hose
 - 2 Port Gaylord Covers and all Drum Covers accept 2" to 2% dia. probes via elastic band
 - 1 Port Gaylord Covers accept 4" to 8" dia. ducting/ hose via adjustable drawstring
- · Handy Zippers let you seal off unused ports

Elastic Band on 10" skirt (All Models have an elastic band with belt and buckle)



Gaylord Cover Size Chart

Inches	38	30	40	41	42	43	44	45	46	47	48	4 0	50	51
30		00	70		72	1	<u> </u>	70	70		70	70	00	
31														
32														
33								Ш						
34					Х			Ш						
35	$ldsymbol{ldsymbol{ldsymbol{eta}}}$	L								_			_	_
36		L		ш				Ш		ш				
37	\vdash	_		Н			Н			=				
38	L	<u> </u>		Н			Н	H		Н				Н
39	H	H	H	Н			Х	Н		Н				Н
40	H	H	H	Н				Н						
41	Н	H	H	Н	Н		Н	Н	Н	-	Х			Н
42	\vdash	┢	-	_	_			Н	=	=	Н			Н
43			_			\vdash	Н	Н			Х			Н
44 45	Н					\vdash	H			_				_
46	Г							П						
47						İ								
48						Ī		П			Х			
49														
50														
51														

Carton Clips

Many molding shop uses:

Hold box flaps down

- Allow closer box to personnel placement eliminate leaning and reaching
- · Help prevent conveyed boxes from snagging each other/tipping

Great for holding gaylord liners in place

#137148 **\$0.94** ea.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

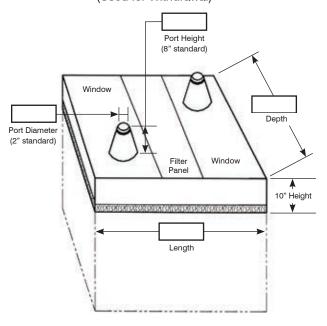
tech support toll-free (USA & Canada)
1.866.467.9001

Custom Gaylord Cover Form

Fill In The Appropriate Dimension Blanks

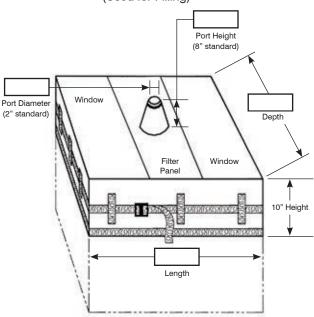
Negative Pressure - GN

(Used for Withdrawal)



Positive Pressure - GP

(Used for Filling)



GN Style

) (Qu	an	tit	V:				

lf	Fil	llir	ıg:

1. How many ports?	
2.Location of Ports:	

3. Are you	o Filling or	o Withdrawing Material?

- 1. Blower Size:
- 2. Blower Air Output:

GP Style Quantity: _____

3. Other Filling Type:

Please enclose a drawing if more custom items are needed.

If you would like your logo silk screened in lieu of the IMS Logo please provide art file (JPEG, EPS or TIFF) —

Minimum Order Quantity: 25

Specify:

Price: \$150 for 1 color / Additional \$25 for PMS color matching / Additional \$6 per location for 2 color print Lead Time required — Call for details

Contact the IMS Supplies Team at sales@imscompany.com for details.

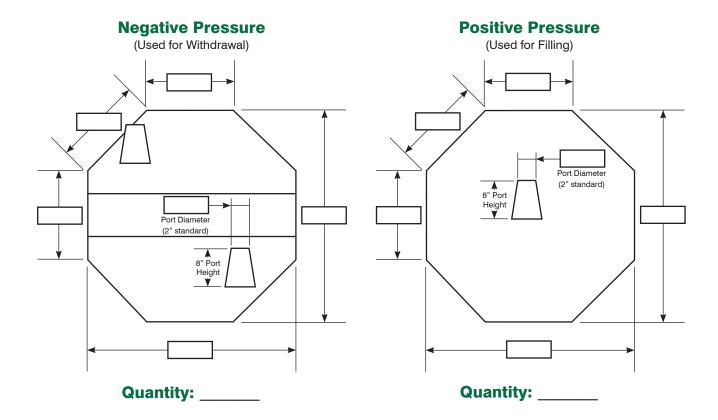
Date:	Quantity:	Phone: (.)		Fax: (_)	
Name:				Title:			
Company Name: _				Email:			
Address:							
City:			State	:		Zip:	



Material Handling Equipment

Custom Octagon Gaylord Cover Form

Fill In The Appropriate Dimension Blanks



Features: two access ports 2" in diameter and 8" tall (standard height). Breathable filter panel and two vinyl windows for quick visual level checks. The skirt is 10" long and has an elastic band to hold the cover in place.

Features: one center port 8" tall (standard height).

Breathable filter panel and two vinyl windows for quick visual level checks. The skirt is 10" long and has an elastic band and belt with buckle to hold the cover securely in place.

Ports can be located elsewhere if needed — please mark the appropriate drawing above if you prefer this option

Date:	Quantity:	Phone: ()		Fax: ()
Name:			Title:	
Company Name: _			Email:	
Address:				
City:			State:	Zip:



Grab-R-Arm[™] Drum Cart Lo-Profile Drum Caddy

Designed For Use With All 30 and 55 Gal. Drums

- Safe! Adjustable Grab-R-Arm[™] Holds Barrel Securely In Place
- Transport Barrels with Speed & Convenience
- · Reduce Accidents

Sturdy, All Welded Construction



\$402.22

• Quick
• Durable
• Easy to Use

Handles up to 1,000 lbs.

Sturdy, all welded construction

Item No. 163725 \$182.38

Drum Dollie

- Strong and Durable easily transports up to 55 gallon drums
- Welded Steel Frame with 31/8" cross straps with powder coat finish
- Heavy-Duty zinc-plated casters with non-marking 3" x 11/4" polyolefin treads

Specifications						
Dollie		Casters				
Capacity:	900 lbs.	Material:	Polyolefin			
Drum Size:	Up to 55 gal.	Size:	3" x 11/4"			
I.D.:	23¾"					
Weight:	28 lbs.					





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

0

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada) **1.866.467.9001**

Custom Take	OII B	ox Quot	e/U	rae	ering	g Form 🧱	
Variable Air Adjustment Example shown with 2 front 1 rear port and air adjustmen	G ports,	H	FT	A	B	Made i	n the U.S.A
		FD-				.ı1	
Specify: 1. Material: Aluminum (standard) Other:			VT	Ĭ		RIGIT.	>>
2. (A) Height:		D	M			E	
(B) Inside Depth: (C) Inside Width :				T.		J	
5. Flange Size - (D):				·			
6. (F) Number of Ports:							
(F) Port #1 OD:		Location: 🔲 Front	Back	Left	Right	Air Adjustment: 🔲 Yes	☐ No
(F) Port #2 OD:		Location: 🔲 Front	Back	Left	Right	Air Adjustment: 🔲 Yes	☐ No
(F) Port #3 OD:		Location: 🔲 Front	Back	Left	Right	Air Adjustment: 🔲 Yes	☐ No
(F) Port #4 OD:		Location: 🔲 Front	Back	Left	Right	Air Adjustment: 🔲 Yes	☐ No
(F) Port #5 OD:		Location: Tront	Back	Left	Right	Air Adjustment: 🔲 Yes	☐ No
(F) Port #6 OD:		Location: 🔲 Front	Back	Left	Right	Air Adjustment: 🔲 Yes	☐ No
7. (G) Hole Diameter:	Hole Cer	ter to Hole Center ((H):			x (I):	
8. (J) Bottom Cleanout: Hinged o	or 🔲 Bolted						
Date: Quantity:	Phone:()		F	ax: ()	
Name:		Tit	le:				
Company Name:		En	nail:				
Address:							
City:						Zip:	

email: sales@imscompany.com fax: 1 888 288 6900

2342

Material Handling Equipment

Material Loaders

ELECTRIC HOPPER LOADERS

Stainless Steel Body

IMS Series Stainless Steel Material Loaders

- Stainless steel construction on all material contact surfaces
- Adjustable no-load alarm horn and strobe light
- Conveying Capacity: Up to 440 lbs/hr
- 1.4HP vacuum motor
- Self-cleaning

See Pages 654-655

Shini Self-Contained Hopper Loader

- · Stainless steel construction on all material contact surfaces
- Conveying Capacity: Up to 880 lbs/hr
- Self-cleaning
- Microprocessor based controller with 3' cord
- Proportional valve

See Pages 656-657



IMS

Aluminum Body

IMS Mini Loader Series

- 4 styles available Standard, Self Cleaning, Proportional, and Powder
- Conveying Capacity: 250 lbs/hr to 1000 lbs/hr
- · Heavy gauge aluminum construction, stainless steel optional
- · Microprocessor based controller

See Pages 658-659





IMS Whisper Loader Series

- 4 styles available Standard, Self Cleaning, Proportional, and Powder
- Conveying Capacity: 950 lbs/hr to 2500 lbs/hr
- · Heavy gauge aluminum construction, stainless steel optional
- Microprocessor based controller

See Pages 660-663





IMS Series and Shini Self-Contained JIT Hopper Loaders

- Stainless steel construction on all material contact surfaces
- Sight glass standard
- · Self-cleaning
- Material shortage alarm







See Page 654 and 656



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Material Handling Equipment

Material Loaders

COMPRESSED AIR VENTURI LOADERS

JIT Venturi Style with Controller

IMS Compressed Air Loader

- Stainless steel construction on all material contact surfaces
- Compressed air design reduces ambient sound over vacuum style motors
- Automated, self-contained design conveys material to machine when needed
- Conveying Capacity: Up to 500 lbs/hr

See Page 666

Shini Compressed Air Venturi Hopper Loader

- Stainless steel construction on all material contact surfaces
- Compressed air design reduces ambient sound over vacuum style motors
- Automated, self-contained design conveys material to machine when needed
- Conveying Capacity: Up to 400 lbs/hr

See Page 667

NEW Shini Single Station/Vacuum Hopper Loader Systems

- Floor Level Blower & Controller
- · Separate Stainless Steel Receiver
- Microprocessor Controller

See Pages 669-670





Also Available

IMS Series and Shini Add-On Proportional Valves

- Conveniently converts loaders to dual inlet proportioning loaders
- Complete with everything you need
- · Interfaces with loaders control panel

See Page 655 and 657



Spare Parts for All Loaders

 Wide offering of itemized spare parts for convenient ordering and maintenance

See Pages 654, 655

NEW Shini Multi Station Hopper Loader Systems

- Floor Level Blower & Controller
- · 2 or 4 Hopper Loading System
- Separate Stainless Steel Receiver
- Microprocessor Controller

See Pages 671





Material Loaders

Quick Reference Price Chart

	Elec	etric Hoppe	er Loaders				
Item #	Model	Throughput	Construction	Inlet	Page	Unit Price	
	IMS Seri	ies Hopper Mo	unt Style Loaders	}			
137121	200	450 lbs/hr				\$825.00	
133758	400	650 lbs/hr	Stainless Steel	11/2"	655	890.00	
137122	800	900 lbs/hr				1,085.00	
	IMS Series Jus	st-In-Time Thro	oat Mount Style Lo	oaders			
133656	200JT	450 lbs/hr	Stainless Steel	1 ½"	655	\$1,225.00	
137123	300JT	650 lbs/hr		.,,		1,345.00	
	Shini	Hopper Mount	t Style Loaders				
162525	SAL-1U	66 lbs/hr				\$875.00	
149112	SAL-6U	660 lbs/hr	Stainless Steel	1½"	657	1,070.00	
149533	SAL-12U	900 lbs/hr				1,380.00	
	Shini Just-	In-Time Throat	Mount Style Load	der			
149026	SAL-3U-E	450 lbs/hr	Stainless Steel	1½"	657	\$1,390.00	
	1	250 Series Mi	ni Loaders				
115404	1250A (Standard)	600 lbs/hr			659	\$1,167.57	
115403	1250VPA (Self-Cleaning)	600 lbs/hr	Aluminum	11/4"		1,575.05	
115407	1250PLVPA (Proportional)	950 lbs/hr				3,098.64	
118317	PL1250 (Powder)	400 lbs/hr				2,294.84	
	1500	Series WHISI	PER® Loaders				
115402	1500A (Standard)	1600 lbs/hr				\$2,053.93	
115401	1500VPA (Self-Cleaning)	1600 lbs/hr	Aluminum	1 ½"	661	2,477.53	
115405	1500PLVPA (Proportional)	1600 lbs/hr				3,270.85	
118331	PL1500 (Powder)	950 lbs/hr				3.210.23	
	1750	Series WHIS	PER® Loaders				١,
132424	1750VPA (Self-Cleaning)	2000 lbs/hr	Aluminum	13/4"	663	\$3,321.35] `
	2000	Series WHIS	PER® Loaders				
170658	2000VPA-6M (Self-Cleaning)	2500 lbs/hr	Aluminum	2"	663	\$7,292.44	



	Compressed Air Venturi Loaders											
Item #	Model	Throughput	Construction	Inlet	Page	Unit Price						
	IMS Series CAL Compressed Air Loaders											
175076	CAL 1	125 lbs/hr	Stainless	11/4"	666	\$1,495.00						
175077	CAL 2	125 lbs/hr	Steel	174		1,495.00						
	Shini Compressed Air Venturi Hopper Loaders											
149534	VL-120I (110V)	400 lbs/hr	Stainless Steel	11/4"	667	\$1,175.00						





IMS Series Stainless Steel Loaders

Single Phase Hopper Loaders



5 Sizes and 2 Styles to Choose From!



Efficiently keeps your machine hopper full

Sight glass design for on demand loading



Maximize versatility with an

IMS Series Add-on Proportional Valve

- Conveniently converts all IMS Series Loaders to dual inlet proportioning loaders
- · Complete with everything you need
- · Interfaces with loaders control panel



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

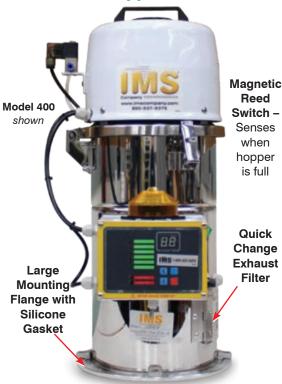
phone order toll-free (Mexico)

1.866.467.9001

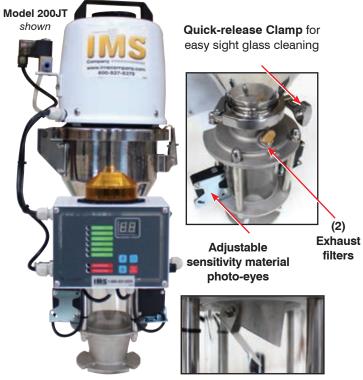
IMS Series Stainless Steel Material Loaders

Easy to Operate With Great Features, Reliable Performance and IMS Quality

Hopper Mount



Just-In-Time / Throat Mount



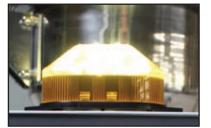
Sight Glass with Hopper Dump Flapper

Hinged Flip-top Lid



Hinged flip-top lid with quick-release clamps for easy filter changes

Features Alarm Strobe Light



Provides visual and audio alarm if loader doesn't sense material

Motor Screen



Safety screen in lid prevents resin pellets from destroying motor should filter damage occur

Corrosion free stainless steel construction

- Increases longevity of common wear parts

No-load alarm horn and strobe light - Avoids down-time

11/2" replaceable inlet - Saves time and money

Powerful 1.4HP vacuum motor (replaceable brushes)

- Handles demands (long lasting)

Self-cleaning filter with built-in solenoid valve -Keeps filter from clogging

Powder coated steel, sound-deadened motor hood and low noise motor - Minimizes ambient sound into facility

Heavy duty metal control panel - For industrial use

State of the art microprocessor - Easy to read and simple to operate

Interfaces with add-on proportional valve (sold separately) -Doesn't need an additional control panel to operate



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

IMS Series Stainless Steel Material Loaders

Includes:

- Stainless steel pick-up wand, 10' of 1½" grounded loader hose and hose clamps
- 15' grounded power cord and plug*
- · Quick release clamps
- Replaceable vacuum 11/2" OD inlet
- Cloth filter with reinforced stainless steel support screen
- *Avoid using extension cords. If you must, do not exceed 20'

Specifications

Required Voltage: 120/60/1

Full Load Amps: Dedicated 20-amp line Air Required: 70 PSI regulated and filtered

- · Replaceable Inlets
- Large View Window
- Stainless Steel
- High Performance Cylinders
- Includes: Probe, Hose and
 - Hose Clamps



Item #142842 Model 150



Specif	ications and	Prices							
Item #	Description	Throughput	Hopper Capacity	Dimensions	Weight	Unit Price			
		IMS Se	ries Hopper Moun	t Style Loaders					
137121	Model 200	450 lbs/hr	6.6 lbs	19.6" H x 13.5" D	26.45 lbs	\$825.00			
133758	Model 400	650 lbs/hr	13.2 lbs	24.4" H x 13.6" D	28.6 lbs	890.00			
137122	Model 800	900 lbs/hr	26.4 lbs	29.7 H x 13.6" D	33.0 lbs	1,085.00			
	IMS Series Just-In-Time Throat Mount Style Loaders								
133656	Model 200JT	450 lbs/hr	6.6 lbs	24.2" H x 12.2" D	28.6 lbs	\$1,225.00			
137123	Model 300JT	650 lbs/hr	13.2 lbs	28.9" H x 13.6" D	30.8 lbs	1,345.00			
		IM	S Add-on Proportion	oning Valve					
142842	Model 150 Add-on Proportioning Valve - Interfaces with Loader Control Panel Includes: Valve, Pick-Up Wand, Hose and Hose Clamps								
Spare	Parts								
Item #			Description			Unit Price			
143234	Spare Vacuum M	otor, 1.4 hp				\$149.50			
143377	Replacement Car	bon Motor Brushe	es (set of 2)			8.88			
143385	Cloth Motor Filter	Only for 200 & 20	0JT			24.00			
143237	Cloth Motor Filter	Only for 400, 800	, & 300JT			24.00			
160661	Motor Filter Asse	mbly for 200 & 200	JT (Includes Gasket,	Mesh Screen, & Filter))	90.00			
160662	160662 Motor Filter Assembly for 400, 800, 300JT (Includes Gasket, Mesh Screen, & Filter)								
143393	170.45								
143396	143396 Replacement Photo-Eye Sensors for 200JT & 300JT								
168566	168566 Exhaust Door Filter for 200								
168567	Exhaust Door Filt	er for 400 and 800				Inquire			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

SHINI Self-Contained Hopper Loaders

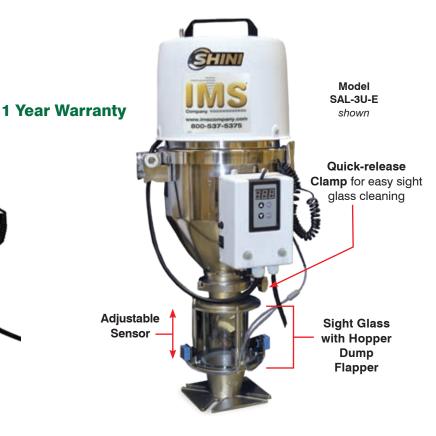
Material loading at a great price

Hopper Mount

Just-In-Time / Throat Mount



Large Mounting Flange with Silicone Gasket



Hinged Flip-top Lid



Hinged flip-top lid with quick-release clamps for easy filter changes

Motor Screen



Safety screen in lid prevents resin pellets from destroying motor should filter damage occur

Corrosion free stainless steel construction

- Increases longevity of common wear parts

Material shortage alarm - Avoids down-time

11/2" replaceable inlet - Saves time and money

Powerful 1.85HP* vacuum motor (replaceable brushes)

- Handles demands (long lasting)

*SAL-1U: 115V / .875 HP

Motor overload protection - Protects motor from voltage spikes

Adjustable automatic pneumatic filter cleaning - Keeps filter from clogging

Sound proof motor cover - Reduces operating noise

Heavy duty mounting flange - Allows easy installation for multiple mounting sizes

Detachable remote control (with 3' cord) -

Allows manual operation when machine mounted



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

SHINI Self-Contained Hopper Loaders

Includes:

- 10' grounded loader hose, 11/2" ID
- 12' power cord and plug
- 2 adjustable clamps
- 3' stainless steel pick-up wand



Specifications

Required Voltage: 115/60/1

Spec	Specifications and Prices											
IMS Item #	Shini #	Throughput	Hopper Capacity	_	_evel witch	Dimensions	Weight	Unit Price				
			Shi	ni Hopper M	ount Style Load	lers						
162525	SAL-1U	66 lbs/hr	1 lbs	Magnetic F	roximity Switch	21" H x 13" D	27 lbs	\$875.00				
149112	SAL-6U	660 lbs/hr	8.5 lbs	Magnetic F	roximity Switch	25¾" H x 161/4" D	31 lbs	1,070.00				
149533	SAL-12U	900 lbs/hr	17 lbs	Magnetic F	roximity Switch	29¾" H x 161/4" D	29 lbs	1,380.00				
			Shini Jus	t-In-Time Th	roat Mount Sty	le Loader						
149026	SAL-3U-E	450 lbs/hr	4.25 lbs	Phot	o Sensor	291/8" H x 141/2"	27 lbs	1,390.00				
Spare Parts												
Item #	Description				Item # Descri	otion						
161696	Control Panel	(Main Control Box	k, Board and k	(eypad)	165322 6" Filter and Gasket for SAL-1U							
161700	Control Panel	Housing Only			161706 11" Filter and Gasket for SAL-6U and 12U							
161697	Main Control C	Circuit Board Only	•		161704 9" Filter and Gasket for SAL-3U-E							
165728	Handheld Key	pad/Pendant with	Cord and Plu	g Assembly	167050 Metal 6" Filter Baffle Ring for SAL-1U							
161703	Solenoid Valve)			161707 Plastic	11" Filter Baffle Ring for SAL-6	U and 12U					
161702	Quick Release	Hold Down Latch	า		168234 Metal 1	1" Filter Baffle Ring for SAL-6L	J and 12U					
161705	Plastic 9" Filter	Baffle Ring for S	AL-3U-E		168734 Metal 9	Filter Baffle Ring for SAL-3U-	·E					
161695 Proximity Switch for SAL-6U and SAL-12U					163689 Baffle P	late/Dump Flap Assembly for	SAL-6U and	12U				
161708 Sight Glass Tube for SAL-3U-E					167518 Vacuum Motor with Fan (120V) for SAL-1U							
161709 Photo Sensor Assembly for SAL-3U-E					161692 Vacuum Motor with Fan (120V) for SAL-6U, 12U and 3U-E							
166288	4 Bolt Gasket/	Flange Seal for S	AL-1U		167326 Vacuum Motor Brush Kit for SAL-1U (2 Brushes)							
166286	Stainless Stee	l Material Inlet Pip	e for SAL-1U		161693 Vacuun	n Motor Brush Kit for SAL-6U,	12U and 3U-	E (2 Brushes)				

Shini Proportional Valves

Accurate Blending of Multiple Materials Into Single Inlet Receiver

Easily mounts directly onto loader inlet Single DIN cable connects to loader

Control Box Power: 115V

Efficient blending of virgin and regrind pellets reduces production costs



Control box models comply with electrical standards (CE, UL, CSA, JIS etc.) and allows compatibility with most OEM loaders

Includes:

- Stainless steel pick-up wand
- 12' loader hose with 4 adjustable clamps

IMS		Flow	Inlet/	Compressed	Dimensions				Unit
Item #	Shini #	Capacity	Outlet	Air Pressure	Height	Width	Depth	Weight	Price
148861 [†]	SPV-38U	770 lbs/hr	1.5"	40 PSI	9"	10"	6"	8 lbs	\$605.00
148801 [†]	SPV-50U	1200 lbs/hr	2"						675.00
158415*	SPV-38UC	770 lbs/hr	1.5"					10 lbs	735.00
158416*	SPV-50UC	1200 lbs/hr	2"						795.00

*For Shini Loaders Only *Control Panel included - allows usage with other loaders



1250 Series Mini Loaders

1250A & 1250VPA Standard and Self Cleaning **Mini Loaders**



Self Cleaning Model - Pulses of air to clean the filter (Includes air filter regulator and mounting bracket)

1250PLVPA **Proportional, Self Cleaning Mini Loader**



Proportional Model - For effective blending of two different materials

PL1250 Powder. **Mini Loader**

40-60 psi Remotely mounted control panel with 12' control cord

Powder Model - Pleated cartridge filter with automatic air pulses to effectively convey a wide variety of powders without blowing dust into the shop air

Quick release clamps - Easy maintenance of motor and filter

Pre-drilled flange - Quick installation onto hopper lid

Proximity switch - Improves accuracy and reliability of material loading

Microprocessor based controller with push button keypad and digital display inside NEMA-1 rated enclosure -

Provides user friendly, simple programming

- Heavy gauge aluminum body
- 120V/60/1 brush type motor with 10' cord, 8 amps
- CSA approved
- · Quiet-by-pass air cooled motor
- Built in circuit breaker overload protection
- 1½' control cord length (12' on powder loader)
- 11/4" inlet port

2 Year Warranty







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

1250 Series Mini Loaders

Includes:

- Aluminum pick-up wand*
- 10' of 11/4" grounded loader hose*
- 2 adjustable clamps
- 10' grounded power cord and plug
- *1250PLVPA includes 2 wands and 20' of hose



Specifications

Required Voltage: 120/60/1

Item #	Style	Model	Throughput**	Filter	Dimensions	Weight Unit / Ship	Unit Price
115404	Standard	1250A	600 lbs/hr	105986 Nylon	20.25" H x 11.75" D	14/26 lbs	\$1,167.57
115403	Self-Cleaning	1250VPA	600 lbs/hr	106036 Polyester Felt	20.25" H x 11.75" D	14/26 lbs	1,575.05
115407	Proportional	1250PLVPA	950 lbs/hr	106036 Polyester Felt	24.50" H x 11.75" D	23/35 lbs	3,098.64
118317	Powder	PL1250	400 lbs/hr	120065 Pleated Filter	35" H x 11.50" D	26/38 lbs	2,294.84

^{**}Test Conditions: 35# cu/ft of round polypropylene pellets (free flowing material/powder) conveyed 10' up and into loader

Stainless Steel Body and/or Brushless Motor Available — Inquire





Replacement Filters

	Replacement filters for Self Cleaning Loader					
105986	\$49.25					
106036	9" polyester filter	42.95				
106002	9" gasket	30.61				

PTFE coated filters available — Inquire



Specially-designed filters capture particles down to 5 microns (powder) .5 micron filter available — inquire

120065 powder loader filter

\$108.75

Additional Spare Parts and Accessories

See Page 664 Check before Printing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001



1500 Series WHISPER® Loaders

1500A & 1500VPA Standard and Self Cleaning WHISPER® Loaders



1500PLVPA Proportional, Self Cleaning WHISPER® Loader





Remotely mounted control panel with 12' control cord



Self Cleaning Model - Pulses of air to clean the filter (Includes air filter regulator and mounting bracket)

Proportional Model - For effective blending of two different materials

Powder Model - Pleated cartridge filter with automatic air pulses to effectively convey a wide variety of powders without blowing dust into the shop air

Quick release clamps - Easy maintenance of motor and filter

Pre-drilled flange - Quick installation onto hopper lid

Proximity switch - Improves accuracy and reliability of material loading

Microprocessor based controller with push button keypad and digital display inside NEMA-1 rated enclosure - Provides user friendly, simple programming

- · Heavy gauge aluminum body
- 120V/60/1 brush type motor with 10' cord, 8 amps
- CSA approved
- · Quiet-by-pass air cooled motor with sound deadening
- Built in circuit breaker overload protection
- 12' control cord length
- 11/2" inlet port



WHISPER® is a registered trademark of Pneumatic Conveying, Inc.



continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

660

1500 Series WHISPER® Loaders

Includes:

- Aluminum pick-up wand*
- 10' of 11/2" grounded loader hose*
- 2 adjustable clamps
- 10' grounded power cord and plug
- *1500PLVPA includes 2 wands and 20' of hose



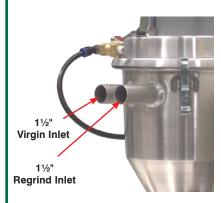
Specifications

Required Voltage: 120/60/1

Item #	Style	Model	Throughput**	Filter	Dimensions	Weight Unit / Ship	Unit Price
115402	Standard	1500A	1600 lbs/hr	105977 Nylon	30.875"H x 15"D	24/45 lbs	\$2,053.93
115401	Self-Cleaning	1500VPA	1600 lbs/hr	106026 Polyester Felt	30.875"H x 15"D	24/45 lbs	2,477.53
115405	Proportional	1500PLVPA	1600 lbs/hr	106026 Polyester Felt	30.875"H x 15"D	27/47 lbs	3,270.85
118331	Powder	PL1500	950 lbs/hr	105990 Pleated Filter	38"H x 15"D	32/52 lbs	3,210.23

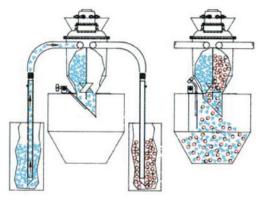
^{**}Test Conditions: 35# cu/ft of round polypropylene pellets (free flowing material/powder) conveyed 10' up and into loader

1500PLVPA Proportional Loader



Interblend is a static internal blender used to prevent layering with a proportioning loader







Replacement Filters

Re S		
105977	14" nylon filter	\$56.80
106026	14" polyester filter	44.20
105990	14" gasket	44.97

PTFE coated filters available — Inquire



Specially-designed filters capture particles down to 5 microns (powder) .5 micron filter available — inquire

120065 powder loader filter

(3 required)

\$108.75

Additional Spare Parts and Accessories

See Page 665 Check before Printing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001

Large Capacity

Large Capacity 1750 & 2000 Series WHISPER® Loaders

1750VPA Self Cleaning WHISPER® Loaders



Self Cleaning Model - Pulses of air to clean the filter (Includes air filter regulator and mounting bracket)

Quick release clamps - Easy maintenance of motor and filter

Pre-drilled flange - Quick installation onto hopper lid

Proximity switch - Improves accuracy and reliability of material loading

Microprocessor based controller with push button keypad and digital display inside NEMA-1 rated enclosure

- Provides user friendly, simple programming
 - Heavy gauge aluminum body
 - 120V/60/1 brush type motor with 10' cord, 8 amps
 - CSA approved
- · Quiet-by-pass air cooled motor with sound deadening
- Built in circuit breaker overload protection
- 12' control cord length
- 1750VPA: 13/4" inlet port 2000VPA: 2" inlet port

2 Year Warranty



2000VPA-6M Self Cleaning WHISPER® Loaders



Self Cleaning Model - Pulses of air to clean the filter (Includes air filter regulator and mounting bracket)



continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

1750 Series WHISPER® Loaders

Includes:

- · Aluminum pick-up wand
- 10' of 13/4" grounded loader hose
- 2 adjustable clamps
- 10' grounded power cord and plug



Specifications

Required Voltage: 120/60/1

Item #	Style	Model	Throughput**	Filter	Dimensions	Weight Unit / Ship	Unit Price
13242	Self-Cleaning	1750VPA	2000 lbs/hr	106026 Polyester Felt	34"H x 15"D	28 / 48 lbs	\$3,321.35

^{**}Test Conditions: 35# cu/ft of round polypropylene pellets (free flowing material/powder) conveyed 10' up and into loader

2000 Series WHISPER® Loaders

Includes:

- · Aluminum pick-up wand
- 10' of 2" grounded loader hose
- 2 adjustable clamps
- 10' grounded power cord and plug



Specifications

Required Voltage: 120/60/1

Item #	Style	Model	Throughput*	Filter	Dimensions	Weight Unit / Ship	Unit Price	
170658	Self-Cleaning	2000VPA-6M	2500 lbs/hr	106026 Polyester Felt	37.25"H x 15"D	28 / 48 lbs	\$7,292.44	
Add-on Proportioning Valve								
158416	158416 Model SPV-50UC Add-on Proportioning Valve - See page 659 for details. Includes: Control Box, Valve, Pick-Up Wand, Hose and Hose Clamps							

^{*}Test Conditions: 35# cu/ft of round polypropylene pellets (free flowing material/powder) conveyed 10' up and into loader



Replacement Filters

	eplacement filters for elf Cleaning Loade	
105977	14" nylon filter	\$56.80
106026	14" polyester filter	\$44.20
105990	14" gasket	\$44.97

PTFE coated filters available — Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900 0

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001



IMS 1250 Series Loaders

Mini Loader

Replacement Parts

Item #	Description	Unit Price
105986	9" dia. nylon filter (for 1250A)	\$49.25
106036	9" dia. polyester felt filter (for 1250VP and 1250PLVPA)	42.95
120065	Powder loader filter (for PL1250 — requires 1)	108.75
106002	9" gasket for all 9" filters	18.60
106021	Vacuum motor with fan (for 1250A, 1250VP and 1250PLVPA)	143.29
105987	Brush kit (change brushes every 300 hours)	18.40
138088	Programing Chip for EZ Module/PLC (for 1250VPA, 1500VPA, 1750VPA and 2000VPA)	85.20
118589	Toggle switch, on/off (for all 1250 and 1500s)	36.51
116286	Proximity switch (for all 1250's and 1500s)	103.43
106056	Solenoid valve, 4-way (1250VP and 1250PLVPA)	484.55
114245	Motor housing connector, 6 pin (for PLs and VPs)	69.94
107656	Motor housing connector, 7 pin (for PLVPAs)	36.92
116050	Proximity cord (for 1250A and 1500A)	17.70
106023	11/4" pick-up wand (see page 668 for more selections)	101.06

Tech Tips

Be sure and change the motor brushes regularly. Not doing so is the number one cause of motor failure and down time. If you use glass filled material, order a stainless steel unit to prevent plastic contamination from premature aluminum body wear.



Material Handling Equipment

IMS 1500 Series Loaders WHISPER® Loader



Replacement Parts

Item #	Description	Unit Price
105977	14" dia. nylon filter (for 1500A)	\$56.80
106026	14" dia. polyester felt filter (for 1500VP and 1500PLVPA)	44.20
120065	Powder loader filter (for PL1500 — requires 3)	108.75
105990	14" gasket for all 14" filters	20.70
106008	60 psi filter regulator (for 1500A, 1500VP and 1500PLVPA)	Inquire
106021	Vacuum motor with fan (for 1250A, 1250VP and 1250PLVPA)	143.29
105987	Brush kit (change brushes every 300 hours)	18.40
105970	Flapper only (for all 1500's)	36.55
105978	Lid, latch and sound hood (for 1500VP and 1500PLVPA)	Inquire
106052	Check valve assembly (for 1500PLVPA)	Inquire
119984	Proportional cylinder port plugs (for 1500PLVPA)	37.80
138088	Programing Chip for EZ Module/PLC (for 1250VPA, 1500VPA, 1750VPA and 2000VPA)	85.20
119393	Pulse valve assembly (for 1500VP and 1500PLVPA	226.68
118589	Toggle switch, on/off (for all 1250 and 1500s)	36.51
116286	Proximity switch (for all 1250's and 1500s)	103.43
106056	Solenoid valve, 4-way (1250PLVPA and 1500PLVPA)	484.55
106031	Motor housing connector, 5 pin (for 1500A)	39.71
114245	Motor housing connector, 6 pin (for PLs and VPs)	69.94
107656	Motor housing connector, 7 pin (for PLVPAS)	36.92
106014	12' Interconnect cord, 5 pin (for 1500A)	118.62
109118	12' Interconnect cord, 6 pin (for 1500A)	191.00
106714	12' Interconnect cord, 7 pin (for 1500A)	210.40
116050	Proximity cord (for 1250a and 1500a)	17.70
105999	Control box, complete assembly (for 1500A)	Inquire
106033	1½" pick-up wand (see page 668 for more selections)	80.00





IMS Series Compressed Air Loaders

Fully Automated, On-Demand Material Conveying

Replaces the DAC Compressed Air Loader

Compressed Air Design - Reduces ambient sound over noisy vacuum motors. Low maintenance, no motor brushes to change.

On-Demand Style - Can operate as a standalone unit for pulling from bags, drums, material bins, gaylords, granulators & material dryers.

Stainless Steel, Versatile Design - Clean operation, prevents contamination, wear resistant

- Up to 125 lbs conveying per hour at 15' vertical distance
- Simple to operate electrical controller (110V standard / 220V optional) limited adjustments
- · Quick and easy installation
- Replacable wear plate
- · Quick release clamp for ease of cleaning
- Minimal material transfer limits exposure to moisture
- Requires 90psi air pressure to operate
- 11/4" vacuum inlet port



- Stainless steel receiving unit w/ sight glass, adjustable proximity switch and pleated filter
- Controller w/ mounting bracket, adjustable air filter regulator and 6' power cord w/ grounded plug
- Mounting flange
- Line-Vac, gaylord/drum wand and take-off box wand
- 10' of 1¼" ID vacuum hose and clamps
- 8' of airline tubing to connect Line-Vac to controller





Item #	Style	Model	Model Throughput Shot Capacity Inlet O.D. Flange					
175076	Press Mounted	CAL-1	125 lbs/hr	s/hr 10 oz with 11/4" 6" x 6"				
175077	Hopper Mounted	CAL-2	CAL-2 continuous action 4" x 4"				1,495.00	
Spa	Spare Parts							
	175144	Control Bo	ox 110V (CAL)				Inquire	
	175145 Control Box 220V (CAL)						Inquire	
	175148	Filter (CAL	_)				Inquire	
	175149	Proximity	Switch / AC Senso	or (CAL)			Inquire	
	163070	Sight Glas	s for DAC-1 and D	AC-2*			\$20.00	
	125622	Line Vac™	/ Eductor*				151.00	
	163625	Wand Onl	y (no eductor) 11/4	' O.D.*			77.44	
	159734 Filter (DAC)							
	147555 Controller with Regulator (DAC)							
	112094	Proximity	Switch / Sensor wi	th cable (DAC)			114.08	

^{*}Compatible with DAC and CAL Models



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

666

SHINI US Compressed Air Venturi Hopper Loader

Fully Automated, On-Demand Material Conveying

Ideal for use with beside the press dryers or when you need to efficiently transfer small amounts of material on demand.

Stainless steel construction - Provides clean operation

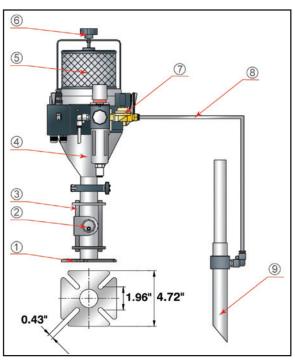
Adjustable level sensor - Signals material status for efficiency

Wide diameter hopper - Allows material to flow without bridging

Filtered exhaust - Keeps shop free of pollutants

Compressed air filter and regulator - Eliminates moisture and maintains steady air pressure

- · Quick release clamps for easy cleaning
- · Adjustable direction of hopper and base
- Faster material changes
- · Mounts directly onto machine throat
- · Low maintenance filter assembly
- · Compact and light weight



- 1. Base
- 2. Proximity sensor
- 3. Flange connecting rod
- 4. Hopper
- 5. Air filter
- 6. Filter hold-down knob
- 7. Compressed-air filter, regulator and solenoid valve
- 8. Air hose
- 9. Pick-up wand





INCLUDES:

- 12' grounded loader hose, 11/4" ID
- 3' stainless steel pick-up wand

IMS Item # 110V (Shini Model #)	Throughput	Hopper Capacity	Compressed Air Pressure	CFM	Level Switch	Inlet O.D.	Dimensions	Weight	Unit Price
149534 (VL-120I)	400*	0.1 cu ft	70-90 PSI	26	Proximity Sensor	11/4"	211/4" x 91/2"	15 lbs	\$1,175.00

*20' maximum conveying distance





Match your hose I.D. to the wand O.D.

Dual tube design adjusts airflow easily. Simply loosen the thumb screw, slide the inner tube up or down to achieve desired flow and retighten thumb screw



	O.D. x Length	Standar	d Wand	with Bag	Protector	Adjustable with	Bag Protector*
	1" x 36"	136284	RFQ	136285	RFQ	136319	RFQ
	11/4" x 36"	136287	170.00	136288	RFQ	136323	RFQ
.	1½" x 36"	136290	123.00	136291	170.00	136327	300.00
	1¾" x 36"	136294	RFQ	136295	404.00	136331	RFQ
П	2" x 42"	136298	197.00	136299	260.00	136335	RFQ
۱	21/4" x 42"	136302	RFQ	136303	RFQ	N/A	-
	2½" x 42"	136306	287.00	136307	289.00	136339	RFQ
	3" x 42"	136310	379.00	136311	381.00	136343	634.00
	4" x 42"	136314	RFQ	136315	RFQ	136347	RFQ

Aluminum Pick-Up Wands



Dual tube design adjusts airflow easily. Simply loosen the thumb screw, slide the inner tube up or down to achieve desired flow and retighten thumb screw



BETTER

	O.D. x Length	Standar	d Wand	with Bag	Protector	Adjustable with	Bag Protector*
	1" x 36"	136282	\$108.00	136283	\$110.00	136317	RFQ
•	11/4" x 36"	106023	126.00	136286	127.00	136321	RFQ
	1½" x 36"	106033	114.00	136289	114.00	136325	RFQ
	1¾" x 36"	136292	130.00	136293	130.00	136329	RFQ
:	2" x 42"	136296	100.00	136297	119.00	136333	225.00
	21/4" x 42"	136300	133.00	136301	153.00	N/A	-
•	2½" x 42"	136304	135.00	136305	154.00	136337	352.00
	3" x 42"	136308	145.00	136309	164.00	136341	296.00
	4" x 42"	136312	165.00	136313	227.00	136345	RFQ

Economical Aluminum & Stainless Steel Pick-Up Wands

Standard Features:

- 48" long body
- · Adjustable air flow
- Angle cut on end with bag protector loop





	O.D.	Length	Material	Item #	Unit Price	Material	Item #	Unit Price
)	11/4"			141925	\$61.39		165325	\$74.47
	1 ½"			141926	55.00		165326	70.00
	2"	48"	Aluminum	141927	65.00	Stainless Steel	163691	85.00
5	21/2"			165324	75.00		165327	Inquire
	3"			147838	85.00		165328	147.55

Custom Probes Made to Order — *Inquire*Hopper Loader Probe Magnets — See Page 804





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

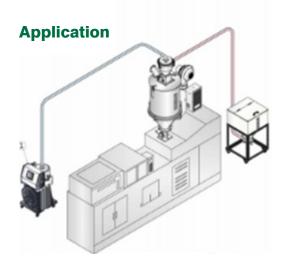
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

SHIMI Single Station Hopper Loader Systems

Heavy Duty Blowers with Separate Single Receiver Body



Features

- Floor Level Blower & Controller
- Separate Stainless Steel Receiver
- Microprocessor Controller
- Audible Material Shortage Alarm
- RS485 Communication Interface
- On board controller compatible with Shini SPV-U Proportional Valve (see page 657)



Single Station Loading System

Item #	Shini Model	Required Vacuum Receiver	Conveying Capacity*	Motor HP	Material Pipe (In)	Vacuum Pipe (In)	Power Supply	Dii L	nensio W	ons H	Weight (lbs.)	Unit Price
173864	SAL-5HP-UG	SHR-24U	2423 lbs./hr	5	2"	2"	460/60/3	19"	23"	54"	163	\$2,625.00
173788	SAL-10HP-UG	SHR-36U	4957 lbs./hr	10	2"	2.5"	460/60/3	23"	27"	72"	352	6,145.00

^{*} Test conditions: 40lbs/cu. ft. plastic material conveyed 13' vertical, 16' horizontal

Vacuum Receiver Bodies

Item #	Single Station Hopper Receiver	Hopper Capacity cu. ft.	Material Line Size	Vacuum Line Size	L	Dimension W	s H	Weight (lbs.)	Unit Price
171157	SHR-3U	0.1	1.5"	1.5"	15"	11"	23"	10	\$395.00
173865	SHR-6U	0.2	1.5"	1.5"	17"	12"	23"	18	515.00
173866	SHR-12U	0.4	1.5"	1.5"	24"	13"	27"	20	625.00
173896	SHR-24U	0.8	2"	2"	19"	13"	32"	31	795.00
173867	SHR-36U	1.3	2"	2.5"	19"	13"	40"	33	925.00

Just In Time Receiver Body also available. Call for details.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900 00

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

 ${\bf sales@imscompany.com}$

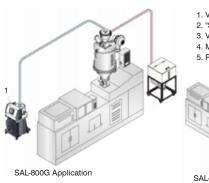
SHIMI Single Vacuum Hopper Loader Systems

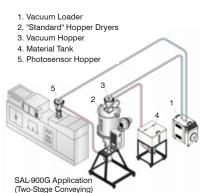
Floor Level Blowers with Separate Receiver Body

Shini USA SAL-G Single Vacuum Hopper Loader Systems are designed to convey material over long distances with a combination floor-level vacuum system & separate receiver body. The receiver body is mounted to the machine/hopper while the main unit's vacuum motor and controls are located on the blower for easy control and maintenance. Each unit comes with microprocessor controls, digital display, air filter, and low material alarm.

Features

- Floor Level Blower & Controller
- · Heavy Duty Casters
- Microprocessor Controller
- · Audible Material Shortage Alarm
- RS485 Communication Interface







Single Vacuum Hopper Loader System

Item #	Shini Model	Required Hopper Receiver	Conveying Capacity*	Motor HP	Motor Type	Power Supply	Conveying Pipe Size	Din L	nensio W	ons H	Weight (lbs.)	Unit Price
173874	SAL-810G	SMH-6L or	749 lbs./hr	1	Induction	230V	1.5"	17"	16"	26"	100	\$1,075.00
173875	SAL-810G	SVH-6L	ווי.סטו פדיז	'	i illudottoti	460V	1.0	''	10	20	100	1,075.00
173877	SVI 830C	SMH-12L or	1410 lbs./hr	2	Induction	230V	1.5"	17"	16"	26"	110	1,315.00
173878	SAL-82UG I	SVH-12L	1410 105./111		illuuciioii	460V	1.0	17	10	20	110	1,315.00

^{*} Test conditions: 40lbs/cu. ft. plastic material conveyed 13' vertical, 16' horizontal

Standard Hopper Mount (SMH) & Just-in-Time Sight Glass (SVH) Receiver Bodies

	Hopper	Hopper	Conveying		Dimensions		Weight	Unit	
Item #	Receiver	Capacity cu. ft.	Pipe Size	Filter	L	W	Н	(lbs.)	Price
173885	SVH-6L*	0.2	1.5"	Stainless Steel Mesh	12"	10"	23"	13	\$585.00
173886	SMH-6L [†]	0.2	1.5"	Stainless Steel Mesh	12"	10"	18"	16	285.00
173887	SVH-12L*	0.4	1.5"	Stainless Steel Mesh	14"	12"	27"	22	680.00
173888	SMH-12L [†]	0.4	1.5"	Stainless Steel Mesh	14"	12"	21"	16	405.00

^{*} Photo Sensor & Reverse Stop Flap

[†] Mechanical Flap & Micro Switch



SHINI Multi Station Hopper Loader Systems

Heavy Duty Blowers and Multi-Station Receiver Bodies

1 Year Warrantv

Shini SAL-UG-122/124 Multi-Station Loader Systems are designed to convey material to two or four separate stations with a combination floor-level vacuum system & separate receiver bodies. The receiver bodies are mounted to multiple machines/ hoppers while the main unit's vacuum motor and controls are located on the blower for easy control and maintenance. Each unit comes with microprocessor controls, digital display, air filter, and low material alarm.

Features

- Floor Level Blower & Controller
- · 2 or 4 Hopper Loading System
- · Separate Stainless Steel Receiver
- Microprocessor Controller
- · Audible Material Shortage Alarm
- RS485 Communication Interface
- 460 Volt/60/3 Phase





2 Station Mini Central Loading System

Item #	Blower Model	Required Receiver	Conveying Capacity (Lbs./Hr)*	Motor HP	Conveying Pipe OD	Vacuum/ Suction Pipe OD	Di H	mensio W	ns D	Weight (lbs.)	Unit Price
173403	SAL-5HP-UG122	SHR-12U-S (x2)	2666	5	1.5"	2"	55"	22"	24"	386	\$3,320.00
173890	SAL-10HP-UG122	SHR-36U-S (x2)	4076	10	2"	2.5"	79"	27"	32"	408	6,825.00

4 Station Mini Central Loading System

Item #	Blower Model	Required Receiver	Conveying Capacity (Lbs./Hr)*	Motor HP	Conveying Pipe OD	Vacuum/ Suction Pipe OD	Dimensions L W H		Weight (lbs.)	Unit Price	
171962	SAL-5HP-UG124	SHR-12U-S (x4)	2666	5	1.5"	2"	25"	23"	54"	385	\$3,650.00
173891	SAL-10HP-UG124	SHR-36U-S (x4)	4076	10	2"	2.5"	31"	29"	72"	407	7,995.00

Multi-Station Receiver Bodies (Used with 2 or 4 System Blowers Only)

Item #	Shini Model	Hopper Capacity cu. ft.	Conveying Inlet OD	Material Sensor	Н	Dimensi W	ons L	Weight (lbs.)	Unit Price
173893	SHR-3U-S	0.1	1.5"	Prox Sensor	23"	11"	15"	10	\$745.00
173894	SHR-6U-S	0.2	1.5"	Prox Sensor	22"	12"	15"	18	865.00
173443	SHR-12U-S	0.4	1.5"	Prox Sensor	19"	13"	24"	20	975.00
173404	SHR-24U-S	0.8	2"	Prox Sensor	32"	13"	19"	30	1,125.00
173892	SHR-36U-S	1.3	2"	Prox Sensor	41"	13"	19"	35	1,255.00

^{*} Test conditions: 40lbs/cu. ft. plastic material conveyed 13' vertical, 16' horizontal



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

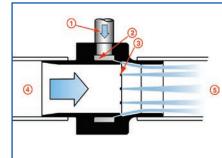
fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Line Vac™ Air Operated Material Conveyor

A fast, low cost way to convey large volumes of plastic pellets, regrind — even small parts — over long distances

- Standard Duty, Medium Duty and Heavy Duty
- Available in Aluminum, 303 Stainless Steel and Hardened Alloy Steel (316 Stainless Steel available for excellent corrosion resistance)
- · Connect with existing Vacuum Hose or NPT Couplings
- Maximum Temperature usage of 275° F/135°C (High heat up to 900°F / 482°C available)
- Multiple Line Vacs[™] can be put in a series to cover long distances
- Line Vacs[™] can be used with existing material loaders to assist in moving hard to transfer material
- NEW Heavy Duty Line Vacs[™] made of Hardened Alloy Steel are specially engineered to convey materials over longer vertical and horizontal distances and the construction helps prevent premature wear



HOW IT WORKS:

Compressed air flows through inlet (1) into an annular plenum chamber (2). It is then injected into the throat through directed nozzles (3). These jets of air create a vacuum at the intake (4) which draws material in and accelerates it through the unit (5) at long vertical or horizontal distances.

Line Vac™



The Line Vac™ is a material loader AND MORE! It is easy to install and use. Regulating the compressed air pressure provides infinite control of the conveying rate. It's compact. It's quiet, and, since there are no moving parts, it is virtually maintenance-free.

Threaded Line Vac™



The Threaded Line Vac attaches easily to plumbing pipe couplers, making it easy to build a complete, powerful conveying system using ordinary pipe and fittings.

Loader Hose, Hose Clamps (sold separately) and Pipe are shown for illustration only.

Best of all, a Line Vac™ costs far less than a typical, single purpose vacuum loader.

Non-Threaded Line Vac

	Item #	NPT	Air Inlet NPT	Material	Temp Rating	Corrosion Resistance	Air Cons	umption SLPM	Vacuum "H2O	Rating kPA	Unit Price
	126749	0.75	1/4"				10.70	303	-72	-18	\$141.00
	126750	1	1/4"				14.70	416	-42	-11	155.00
	125622	1.25	1/4"				25.90	733	-42	-11	176.00
Standard	125555	1.50	3/8"		275°F		33	934	-36.8	-9	214.00
Duty	125623	2	3/8"	Aluminum	(135°C)	FAIR	45	1,274	-28.5	-7	254.00
	126751	2.50	3/8"		(122 2)		59	1,656	-23.5	-6	368.00
	126752	3	1/2"				69	1,939	14.7	-4	581.00
	126753	4	1/2"				95	2,690	13.6	-3.4	814.00
	126754	5	1/2"				128	3.625	-10.5	-2.6	1,077.00

continued on next page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

continued on next page sales@imscompany.com

	Item #	NPT	Air Inlet NPT	Material	Temp Rating	Corrosion Resistance	Air Cons	umption SLPM	Vacuum "H2O	n Rating kPA	Unit Price
	126736	0.75	1/4"				10.70	303	-72	-18	\$408.00
	126738	1	1/4"				14.70	416	-42	-11	431.00
	126756	1.25	1/4"				25.90	733	-42	-11	446.00
Medium	126740	1.50	3/8"	303 Stainless	400°F	GOOD	33	934	-36.8	-9	507.00
Duty	126741	2	3/8"	Steel	(204°C)	4005	45	1,274	-28.5	-7	539.00
	126744	2.50	3/8"	Oloci			59	1,656	-23.5	-6	969.00
	126746	3	1/2"				69	1,939	14.7	-4	1,760.00
	126748	4	1/2"				95	2,690	13.6	-3.4	2,688.00
	168588	0.75	1/4"				26	736	-144	-36	\$544.00
	168589	1	1/4"				35	991	-105	-26	608.00
	168590	1.25	1/4"	Hardened			49	1,388	-83	-21	673.00
Heavy	168591	1.50	3/8"	Alloy	400°F	GOOD	55	1,557	-60	-15	725.00
Duty	168973	2	3/8"	Steel	(204° C)		75	2,124	-42	-10	794.00
	168592	2.50	3/8"				90	2,548	-28	-7	1,203.00
	168593	3	1/2"				108	3,058	-20	5	1,892.00

Threaded Line Vac

					Judou -	ille vac					
	Item #	NPT	Air Inlet NPT	Material	Temp Rating	Corrosion Resistance	Air Cons	sumption SLPM	Vacuum "H2O	n Rating kPA	Unit Price
	133930	0.75	1/4"				10.70	303	-72	-18	\$184.00
	133931	1	1/4"				14.70	416	-42	-11	203.00
	133932	1.25	1/4"]			25.90	733	-42	-11	254.00
Standard	133933	1.50	3/8"	Aluminum	275°F	FAIR	33	934	-36.8	-9	307.00
Duty	133934	2	3/8"]	(135° C)		45	1,274	-28.5	-7	366.00
	168584	2.50	3/8"]			59.50	1,656	-23.5	-6	509.00
	168585	3	1/2"				68.50	1,939	14.7	-4	794.00
	144335	0.75	1/4"				10.70	303	-72	-18	\$530.00
	144336	1	1/4"]			14.70	416	-42	-11	599.00
	144308	1.25	1/4"	303			25.90	733	-42	-11	648.00
Medium	144337	1.50	3/8"	Stainless			33	934	-36.8	-9	701.00
Duty	144338	2	3/8"	Steel			45	1,274	-28.5	-7	764.00
	168586	2.50	3/8"				59.50	1,656	-23.5	-6	1,384.00
	168587	3	1/2"		400°E		68.50	1,939	14.7	-4	2,037.00
	168594	0.75	1/4"		400°F (204° C)	GOOD	26	736	-144	-36	\$678.00
	168595	1	1/4"		(204 0)		35	991	-105	-26	811.00
l	168596	1.25	1/4"	Hardened			49	1,388	-83	-21	854.00
Heavy Duty	168597	1.50	3/8"	Alloy			55	1,557	-60	-15	972.00
Duty	168598	2	3/8"	Steel			75	2,124	-42	-10	1,050.00
	168599	2.50	3/8"				90	2,548	-28	-7	1,440.00
	168600	3	1/2"				108	3,058	-20	5	2,270.00

Mounting Brackets

for quick installation (One required per Line Vac)

Item #	Line Vac Size	Unit Price
126737	3/4" and 1"	\$36.00
126739	11/4" and 11/2"	38.00
126742	2" and 21/2"	41.00
126747	3" and 4"	50.00
126755	5"	62.00





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Pneumatic Hopper Agitator (Fluidizer)

The Solution to Hopper Product Bridging

· Easy to install and use

· Easy on the bottom line

· Easy to adapt to solve your unique problem

Includes Locking Nut and Steel Washer

Tough: 350°F (170°C) max temperature Tough: Silicone and EPDM material Tough: Steel or stainless steel







Air Consumption 10-20 CFM @20-30 PSI

Aeration loosens up the product allowing it to flow easier. Minimum back pressure puts air energy where it is needed the most — in the hopper or silo.

Directional Air Flow: The fluidizer disk forces air to move along the bin wall freeing up product and assuring good clean-out.

Gentle Vibration keeps the product flowing with-out allowing it to compact or plug.

No Airline Plugging: Patented disk seals tightly against the hopper or silo wall and prevents airline plugging.

Robust Design: The disk will not tear, pick up moisture and is unaffected by temperatures up to 350° F.

Material Compatible: Silicone rubber standard in blue or white (both food grade/FDA approved), or black or white EPDM.

Steel Pneumatic Agitator

Item No. 135221

\$38.90

Stainless Steel, Food Grade Pneumatic Agitator Item No. 135211

\$61.15

Mini Stainless Steel, Food Grade Pneumatic Agitator 2" O.D. 1/8" Female THD Item No. 144037

\$77.90



IMS Stainless Steel Feed Hoppers

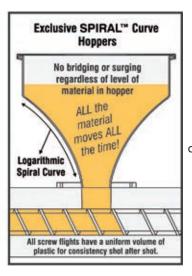
Choose the Style Best Suited for your Material

Exclusive SPIRAL™-Curve Hopper

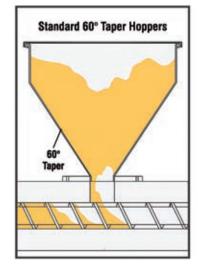
The IMS SPIRAL™-Curve Hopper uses a natural logarithmic curve to feed material at a remarkably consistent rate. No bridging or surging occurs. Whether full or nearly empty, the SPIRAL™-Curve Hopper steadily feeds any type or shape of material, including coarse or mixed material. The screw flights are consistently full. Your process becomes more predictable and repeatable, improving part quality.

Standard 60° Taper Hopper

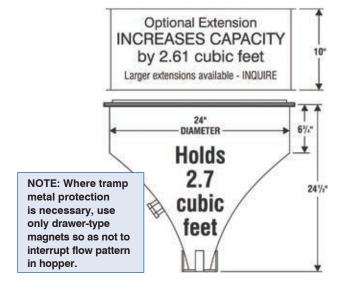
IMS standard 60° Taper Hoppers are designed to replace originally purchased equipment. A variety of sizes and extensions let you buy just the right equipment for your shop at an affordable price. The OEM Replacement Hopper from IMS is well suited for virgin material.

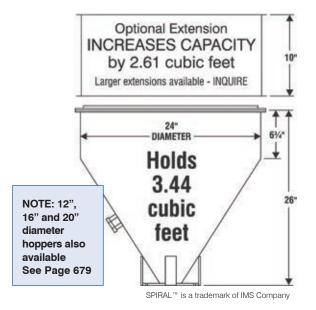


Ideal for coarse or mixed material



Works best with free flowing virgin material







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888,288,6900 001,888,304,1307

tech support toll-free (USA & Canada)

1.866.467.9001

IMSSPIRAL™-Curve Stainless Steel Hoppers

Feed Material at a Remarkably Consistent Rate

A press needs consistent, smooth intake from its hopper to assure quality products. Traditional tapered hoppers can feed material into the screw in surges, resulting in voids and clumps. But the IMS SPIRAL™-Curve Hopper makes smooth intake possible. Recognizing this, some press manufacturers install IMS SPIRAL hoppers as original equipment.

The IMS SPIRAL™-Curve Hopper uses a natural logarithmic curve to feed material at a remarkably consistent rate. No bridging or surging occurs. Whether full or nearly empty, the SPIRAL™-Curve Hopper steadily feeds any type or shape of material, including virgin or mixed material. The screw flights are consistently full. Your process becomes more predictable and repeatable, improving part quality.

- Logarithmic SPIRAL[™]-Curve design makes the flow of material more efficient, eliminating bridging
- · Minimizes part rejects
- · Retrofits any existing press
- · Heavy duty mounting flange customized to your press
- · Stainless steel construction



- · Stainless steel lid
- · Optional sight glass/drain shows material level
- Optional hopper extensions increase capacity up to nearly 400%



Conical, 60° Taper Stainless Steel Hoppers

For All Makes and Models of Injection Molding Machines

Excellent for free-flowing virgin material

IMS Standard, 60° Taper Hoppers are specially designed to replace OEM components. Thanks to our variety of sizes and economical, add-on extensions, IMS can provide exceptional quality hoppers at very affordable prices.

- Quality Type-304 spun stainless steel suitable for food grade applications
- See lids and other accessories on pages 681-683
- Optional sight glass/drain permits viewing level of material
- Optional clamp-on extensions expand capacity (24" Dia. ONLY)





SPIRAL™ is a trademark of IMS Company

Capacity



2.75 Cu. Ft. Capacity



3.44 Cu. Ft. Capacity



www.imscompany.com

Capacity

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

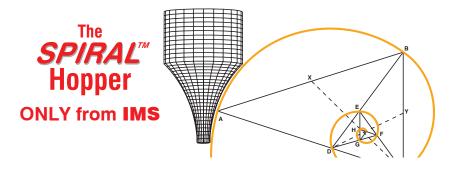
IMS Stainless Steel Feed Hoppers

	Spiral™-Curve Hopper With Blank Flange										
	Includes: Sight Glass/Drain										
_	Hopper Feed Flange Unit										
Item #	Item # Capacity Diameter Throat Size Price										
165862	165862 2.7 Cu. Ft. 24" 3" 8" x 8" \$1,900.00										



	Spiral™-Curve Hopper With No Flange										
Item #	Hopper Feed Flange Unit Item # Capacity Diameter Throat Size Price										
112134	2.7 Cu. Ft.	24"	No Opening	N/A	\$1,452.70						





	Conical Hoppers With Blank Flanges										
	Includes: Sight Glass/Drain										
Item #	Capacity	Hopper Diameter	Feed Throat	Flange Size	Unit Price						
145043*	.65 Cu. Ft.	12"	2"		\$430.00						
143349	1.57 Cu. Ft.		2"	6" x 6"	712.00						
143350	1.57 Cu. Ft.	16"	21/2"	0 x 0	712.00						
143351	1.57 Cu. Ft.		3"		712.00						
143887	2.75 Cu. Ft.	20"	21/2"		816.00						
143423	3.44 Cu. Ft.	24"	3"	8" x 8"	920.00						
143424	3.44 Cu. Ft.		4"	o x o	920.00						





See lids and other accessories on pages 679-681

See Custom Ordering Information on Page 683



^{* 145043} does NOT include Sight Glass/Drain

Stainless Steel Hoppers & Components

Customize your Hopper with all of the available accessories from IMS. Select from a wide variety of options - Flanges, Slide Gates, Sight Glasses, Lids, Extensions, and Drying packages - so that you have the exact hopper you need for your operation. Some of the options are pre-assembled and ready to ship today, while others are available with a short lead time.

A

	Stainless Steel Hopper Cone Only									
		Dian	neter							
	12" 16" 20" 24"									
Conical	120274	120283	120252	120208						
Capacity	.65 cu/ft	1.5 cu/ft	2.75 cu/ft	3.44 cu/ft						
lbs @ 35 lb/ft3	22.75	54.95	96.25	120.4						
Height	16"	22"	25½"	26"						
Spiral	N/A	N/A	N/A	112134						
Capacity	N/A	N/A	N/A	2.7 cu/ft						
lbs @ 35 lb/ft3	IN/A	IN/A	IN/A	94.5						
Height	N/A	N/A	N/A	241/2"						



Hopper with Custom Flange									
Diameter									
Style	Feed Throat Size	12"	16"	20"	24"				
Conical	Specify*	143353	143354	143355	143356				
Spiral™ - Curve Specify* N/A N/A N/A 14335									







В

Add a Slide Gate* Up to 8" x 8"				
Diameter				
12" 16" 20" 24"				
143111				

Includes 2 Spacers and Gate



C

Add A Sight Glass 2" x 4" Clear Poly				Add A Sight Glass & Drai			Drain	
Diameter			OR	Diameter	neter			
12"	16"	20"	24"	On	12"	16"	20"	24"
143338					143	352		





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

^{*}Flange dimensions required - see form on page 681

Stainless Steel Hopper Lids Diameter 12" Description 16" 20" 24" Standard Lid (not clampable) 120284 120280 120251 120207 Hopper Lid: handle, N/A N/A hanging hook, clamping flange N/A 112131 Hopper Lid: hanging hook, clamping flange, plus cut out to mount loader N/A N/A N/A 143110 Hopper Lid: hanging hook, N/A clamping flange (no handle) N/A N/A 113445



Ε

Extension Kits for 24" Diameter Hoppers (Spiral or Conical)				
Description	Height	Item #		
Cylinder Only				
Extension Kit: Includes 10" stainless steel cylinder, band clamp and silicone gasket		121868		
Drying Extension Cylinder Only	10"	113157		
Drying Extension Kit: Includes 10" stainless steel cylinder, dispersion cone kit, stainless steel band clamp and silicone gasket	· ·			
Cylinder Only	20"	125295		
Extension Kit: Includes 20" stainless steel cylinder, band clamp and silicone gasket	20	126124		
Replacement Parts				
Description	Diameter	Item #		
Band Clamp	24"	112139		
Gasket	24"	112136		

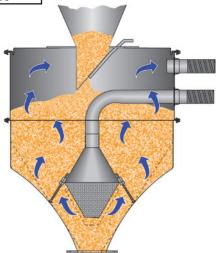


F

Hopper with Drying Kit				
Style	Description	Item #		
Conical	Complete Kit Includes: stainless steel hopper, lid, drying extension, 2 clamp rings, 2	121872		
Spiral	gaskets, dispersion cone, inlet elbow, exhaust pipe and custom flange under 8" x 8"	121858		







continued on next page

679



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

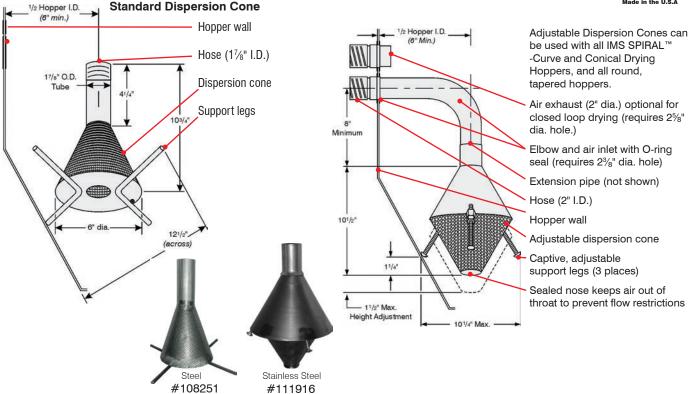
tech support toll-free (USA & Canada)
1.866.467.9001

 ${\bf sales@imscompany.com}$

IMS Replacement Hopper Dryer Dispersion Cones

Increase your air flow to more uniformly disperse drying air throughout your hoppers. Available in adjustable and standard models, IMS Dispersion cones feature heavy-duty welded construction for a long service life.





Item #	Description	Unit Price
108251	Steel Economy Hopper Dryer Dispersion Cone with Non-Adjustable Legs for all square or round material hoppers	\$130.00
111916	Stainless Steel Premium Hopper Dryer Dispersion Cone with Adjustable Legs for round material hoppers ONLY	240.25

Hopper Accessories

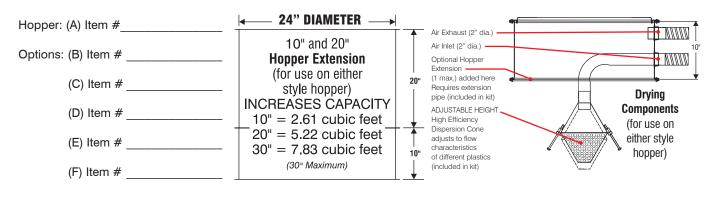
IMS provides a complete selection of all hopper connection needs. From pipes and inlets to seals and bolts, IMS can provide all your needs and if you do not see it on the list, IMS can get it for you.

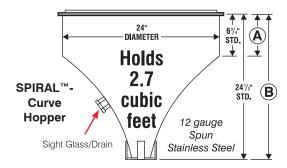


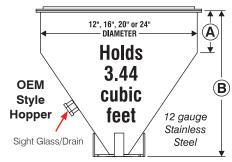
Item #	Description			Unit Price	
Pipe Exten	Pipe Extensions / Exhaust Fitting			Elbow Depth	
114317	Stainless steel extension pipe			N/A	\$62.90
109400	Elbow for 18" hopper and air inlet fitting with O-ring seal	2" 14½"		6½"	60.60
112330	Stainless steel elbow for 18" hopper and air inlet fitting with O-ring seal				126.15
112141	Elbow for 24" hopper and air inlet fitting with O-ring seal				75.55
Custom elbow sizes available — Inquire					
112144 Stainless steel air exhaust fitting with O-ring seal					\$50.00



IMS Stainless Steel Hoppers and Accessories







		HOPPER DIMENSIONS			
l	Dia.	Α	В		
	12"	7"	15 ⁷ /8"		
	16"	93/8"	21 ³ / ₄ "		
	20"	10"	25 ¹ / ₂ "		
	24"	63/4"	26"		

Custom Mounting Flange Dimensions (Specify)

	Date:				
	P.O.#:				
Hole Diameter	Name:				
or Thread Size	Title:				
	Company:				
Feed Opening O	Address:				
Diameter	City:				
1/4" Flange	State:				
Thickness STANDARD	Zip:				
	Phone: ()				
If rectangle - specify long					
or short end for slide gate	FAX:()				
	E-mail:				
Machine Make:					
Tonnage:					
I understand that this item will be made to my s	specifications. No changes can be made after receipt of order.				
It is a non-returnable item unless defective or IMS error.					

Note: Other flange configurations will be promptly quoted from your sketch or blueprint.

Signature:



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



IMS Low Material-Level Hopper Alarm

Automatically Senses Low Material Level In Hopper and Sounds Alarm

- · Perfect monitor for manually-fed machines
- · Great backup for automatic hopper loaders
- Durable construction For all molding shops
- Reliable Not affected by static in area

Only From IMS

Helps you Avoid Costly Empty Hopper Shut-Downs!

Typical Installation



Specifications

Proximity Sensor: Capacitive Type

Maximum Use Temp: 158° F
(475°F with Insulating Sensor Holder)

Control Box: Rugged Thermoplastic

Dimensions: 4" L x 4" W x 6" H

Weight: 3 lbs, 9 oz.



Optional Insulating Sensor Holder made of high temperature PTFE protects sensor from temperatures up to 475°F Also seals opening in hopper when sensor is not in place.

Low Material Level Alarm

Complete with Sensor, 78" Sensor Cord, Male HUBBELL® Plug, and 7' Grounded Line Cord with Plug.

Item No. 109821

\$462.25

#163468	Insulating Sensor Holder	\$115.00 ea.
#112094	Proximity Sensor with 78" Cord	158.10 ea.

HUBBELL® is a registered trademark of Hubbell Inc.





Adjustable Sensitivity

Easy To Install

Requires one, 11/4" diameter hole

Completely Sealed — Easy to Clean

Can be removed and replaced in seconds



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

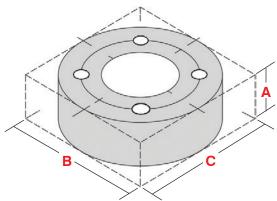
 tech support toll-free (USA & Canada)
1.866.467.9001

Replacement Hopper Lid/Vacuum Loader Stand **Quote/Ordering Form**

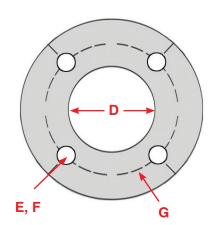
- Seals hopper from dirt
- Protects loader
- · Keeps loaders upright for maintenance on bench or floor
- · Custom made, quickly and affordably
- Square or round hoppers
- · Aluminum or stainless steel standard



Hopper Dimensions Needed



- A: Vertical space required below your loader flange when the dump flap is fully extended, plus 1" clearance.
- B: If your hopper is round or square, measure the outside of your hopper at the widest point (width - including the lip), plus 1" clearance.
- C: For rectangular hoppers, also measure the outside of the hopper at the longest point (length - including the lip), plus 1" clearance.



			-	
<u>~</u>		\mathbf{a}	ıŦ	\ / ·
	LJ		 	w.

1. Material: 🔲 Painted Steel / Color:			5. (D) Loader Cut Out Diameter:	
☐ Alur	minum 🔲	Stainless Steel	6. (E) Mounting Hole Diameter:	
2. (A) Stand Heigh	nt:			
G (D) D' 1 ////	5.10		7. (F) Number of Mounting Holes:	
3. (B) Diameter/Width:			8. (G) Diameter of Lid at the	
4. (C) Length (Red	tangular Only) :		Center of Mounting Holes:	
Date:	Quantity:	Phone:()	Fax: ()	
Name:			Title:	
Company Name: _			Email:	
Address:				



phone order toll-free (USA & Canada) 1.800.537.5375

Dryers

DESICCANT

Dual Bed

Dri-Air Desiccant Dryers

- Functions independent of ambient conditions
- Dries hygroscopic material to lowest moisture content for processing
- Complete closed loop system allows for dew point temperatures below -40°F
- Requires desiccant beads that adsorb and release moisture without changing size
- True energy efficiency, can save up to 50% energy costs
- Effectively dries all types of plastics in virtually all environments





COMPRESSED AIR

Dri-Air Compressed Air Dryer

- Insulated stainless steel hopper
- Machine mounted
- Allows for dew point temperatures as low as -40° F
- Temperature Range: 70°F to 350°F
- Process up to 75 lbs/hr

See Page 701



Honeycomb Wheel

Shini Honeycomb Desiccant Wheel Dryer

- Honeycomb rotor design
- PID temperature controller
- Return air filter mounted inside cabinet

See Page 696





less than full hoppers

See Page 694

• Insulated stainless steel construction

· Unique diffuser basket allows for drying

Standard sizes range from 5 to 2000 lbs

DRYING HOPPERS

- Great price for general purpose applications
- Machine mounted standard (mobile cart available)
- All material contact surfaces made of stainless steel
- Hopper capacity ranges from 25lbs to 1850lbs
- .2 hp to 2 hp blower
- See Page 706-707



IMS Mobile Drying Hopper

- Floor level hoppers allow for quick and easy changeover
- Stainless steel construction
- · Works with non-hygroscopic resins
- For open or closed loop drying
- Requires connection of dryer for complete system

See Pages 708-709

OVENS

Ovens

- · Ideal for small, multi-material batch drying
- Great for non-hygroscopic resins
- Function is dependent on ambient conditions
- Drawer and tray styles available
- Drying Temperature: 325°F
 518°F standard

See Pages 710-715



Shini Drying Hoppers

- · Stainless steel contact parts
- · Elongated sight glass is standard

See Page 705



phone order toll-free (USA & Canada) 1.800.537.5375



MDRI-AIR Desiccant Dryers

The Fastest Drying Time in the Industry

Hopper Mount, Dual Bed



By-the-Press, Dual Bed



Portable, Dual Bed



Energy efficient, temperature based desiccant regeneration adapts to ambient and material conditions — 50% more energy efficient than wheel dryers

The Dri-Air System / Airflow Schematic

A) Drying Hopper

- Insulated stainless steel
- Laser cut access door eliminates troublesome door gaskets

B) Temp Setback (optional)

- Prevents over-drying
- C) Return Line
- D) Dryer Filter Element

E) Single Blower Design

 Saves energy for both drying and regeneration air

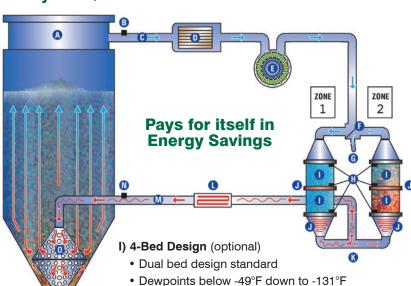
F) Electric Dryer Valve

- No compressed air required
- High temp, self-adjusting, long-life seals
- 5 year warranty

G) Vent

H) Thermocouple Controlled Regeneration

- On demand, energy efficient regeneration
- No temperature spikes



- J) Process/Regeneration Heaters
- K) Slip Stream of Dry Process Air
- L) Process Heater (on 50-CFM models and up)
- M) Supply Line
- N) Process Thermocouple
- O) Air Diffuser Basket



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

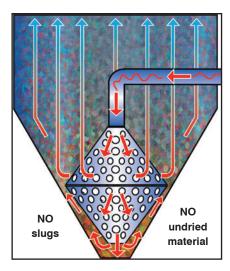
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

™DRI-AIR Features

Hopper Features

(see hoppers on page 696)



Unique diffuser basket dries resin down to the slide gate and allows for drying less than full hoppers.



Diffuser basket is constructed of spun stainless steel with a slip coupling for easy removal.



Laser-cut access doors provide a smooth, tight fit and eliminates troublesome gaskets.

DRI-AIR vs. Wheel

- 40-60% more energy efficient than wheel dryers with no moving parts!
- Dewpoints as low as -130°F
- Dryers sized to dry all materials not just Polycarbonate
- Faster drying in any ambient conditions
- Ideal for demanding medical resins and applications
- On demand regeneration provides stable temperatures at the drying hopper

Controller Features

Dri-Touch (Hopper Mount)
7" Color Touch Screen



ADC
Advanced Dryer Control



Energy Comparison @ 50 lbs/hr Cost Per Year @ 10¢ per kw/hr

\$3,360 \$1,587 DRI-AIR 1.8 kw Wheel 4.8 kw

- Dew point readout down to -49°F
- · Easy setting of process temperature
- Blower rotation and open thermocouple detection
- Set start and stop times daily / Date and time indication
- Monitoring of heater current to check heater and relay conditions
- Automatic learn mode for heater currents at local voltage

- Adjustable high temperature and dew point alarm
- · Closed-loop control valve position
- Actual fault indication no codes to look up / Event log
- Temperature calibration for ISO 9000
- Optional ethernet control
- 5 YEAR WARRANTY



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Common Features

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



MDRI-AIR Hopper Mount, Dual Bed Desiccant Dryers

Removable Plate for Loader Mount

Conserve Valuable Floor Space

AHM Series

Features Below are Standard on AHM-2 through AHM-4

(NOT AHM-1)

Optional Hinged Lid for manual filling

Lid Locking Latch -

Unique Internal Hopper Design keeps hot air out of loader

Easy Access Filter

Electric Bed Change Valve No compressed air required

5 Year Warranty

Temperature Range: 140°F to 300°F ±3°

NOTE: Water After-Cooler required for temps

above 250°F. See page 697

Temperatures up to 350°F possible with optional Booster Heater. See page 689

Material View Window Sight Glass

Hinged Laser Cut Access Door eliminates troublesome gaskets

Easily removable Stainless Steel Diffuser Basket (inside)

Slide Gate Shutoff

Power **Disconnect** Switch **High Pressure Vortex Blower** Model АНМ-3 shown

Dri-Touch 7" Color Touch Screen 6" x 6" Mounting

Dri-Air Diffuser Baskets dry resin down to the slide gate which allows drying less than full hoppers — see page 689 for details

Dryers Include 6" x 6" Cast Aluminum Flange Adapter with 21/2" ID Feed Throat and Material Drain Port



-49°F Dewpoint Monitor, 7 Day Timer, Diagnostic Functions, Alarms, Resin Library, Ethernet Capable and Dri-Link Mobile App



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888,288,6900

phone order toll-free (Mexico) 001.888.304.1307

Flange Standard

tech support toll-free (USA & Canada) 1.866.467.9001

DRI-AIR Hopper Mount, Dual Bed Desiccant Dryers (continued)

Common Features

- · Most energy efficient dryer in the market
- · Single blower design for process and regeneration air
- Press / Extruder mounted dryers free up floor space
- Balanced design reduces stress on feed throat
- · Process Rates up to 35 lbs/hr



ELC Control Module

(Standard on AHM-1)

The ELC Control Module has been factory programmed and does not require any additional input by the operator.

The module will automatically monitor and control the dryer's operating parameters by timing the regeneration cycle as well as monitoring and controlling the regeneration heaters and dryer alarms.



Item #	Item #	Dri-Air Model	Throughput lbs/hr	Hopper Capacity	Controller	Dimensions	Unit Price
110/60/1	220/60/1			Dryers with	n Basic Temperature Control		
144541	167972	AHM-1	10 lbs	30 lbs	ELC with High Temperature Alarm	22" x 21" x 28"	\$7,510.00
230/60/3	230/60/3 460/60/3 Dryers with ADC Advanced Dryer Control						
170092	170093	AHM-2	25 lbs	60 lbs		30" x 29" x 42"	9,050.00
170094	170095	АНМ-3	35 lbs	100 lbs	ADC Controller	30" x 29" x 38"	9,250.00
170096	170097	AHM-4	35 lbs	150 lbs		30" x 29" x 51"	9,500.00
			Optional Carts	s - For Conv	erting All Units to Mobile Dryers		
168205	For All	Conversion	on Kit - Cart, Va	cuum Takeo	off & Casters (11/4" VTO Box Outlet)		1,600.00
170098			on Kit - Cart, Va	of & Casters (11/2" VTO Box Outlet)	18" x 30" x 30"	1,600.00	
170099	Models	Convers	ion Kit - Cart, V	acuum Take	of & Casters (2" VTO Box Outlet)		1,600.00

Other Voltages Available - Inquire

Optional Accessories: Water After-Cooler (required for drying temps above 250° F),
Plasticizer Trap and more — See page 695

4 Bed High Performance AHM Dryers for More Demanding Environments Available - INQUIRE



Model AHM Dryer shown on Mobile Cart





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001



MDRI-AIR By-The-Press, Dual Desiccant Bed Dryers

Simplify placement and hook-up to hopper

Also good for use with hopper bank and multi-hopper systems

ADC Advanced Dryer Control:

- -49°F Dewpoint Monitor
- 7 Day Timer
- Diagnostic Functions
- Dewpoint, heater and temperature alarms

ARID-X Series

Model ARID-X25 shown

Temperature Range: 140°F to 350°F $\pm 3^{\circ}$

NOTE: Water After-Cooler required for temps above 250°F see page 695

With dewpoints down to -49°F, you can be confident these units will dry all materials, regardless of ambient conditions

Thermocouple Plug

Through the door disconnect is standard on all models

Electric Bed Change Valve

No compressed air required

5 Year Warranty

Textured-Gloss Powder Coat Exterior Finish



Energy efficient, temperature based desiccant regeneration adapts to ambient and material conditions

50% more energy efficient than wheel dryers



Heavy Duty
Dual-wheel casters



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

DRI-AIR By-The-Press, Dual Desiccant Bed Dryers

Common Features

- · Most energy efficient dryer in the market
- · Single blower design for process and regeneration air
- · On-demand regeneration; adapts to ambient conditions, materials and process rates
- Space-saving compact design available for process rates up to 200 lbs/hr.

ARID-X10 is the industry's smallest dual desiccant bed dryer - ONLY 21" high!

Ideal for lab, insert and micro-molding applications



ARID-X25 and ARID-X35



ARID-X50 and ARID-X100



ARID-X10 Includes:

6' of insulated process hose and
 6' non-insulated return hose

ARID-X25 and Larger Includes:

• Casters, 6' of insulated process hose and 8' of non-insulated return hose and through the door disconnect

Item #	Item #	Dri-Air Model	Throughput lbs/hr	Blower CFM	Max Temp	Supply Hose Dia.	Return Hose Dia.	Dimensions	Unit Price
115/60/1	115/60/1 230/60/1								
143403	170861*	ARID-X10	10 lbs	10	300°F	1"	1"	18" x 11" x 21"	\$6,460.00

230/60/3	460/60/3							,	
143404*	170862*	ARID-X25	25 lbs	25	300°F	11/2"	13/4"	24" x 17" x 38"	\$7,100.00
143405*	170863*	ARID-X35	35 lbs	35	300°F	1 ½"	13/4"	24" x 17" x 38"	7,350.00
143406	170864	ARID-X50	50 lbs	50	350°F	2"	13/4"	32" x 24" x 50"	9,425.00
143407	170865	ARID-X100	100 lbs	100	350°F	2"	13/4"	32" x 24" x 50"	11,175.00
143408	170866	ARID-X200	200 lbs	200	350°F	3"	3"	36" x 42" x 64"	15,990.00 [†]

^{*}Temp up to 350° with optional booster heater

Other Voltages Available - Inquire

Optional Accessories: Water After-Cooler (required for drying temps above 250°F)

Plasticizer Trap and more — See page 695

4 Bed High Performance ARID-X Dryers for More Demanding Environments Available - Inquire

For Desiccant see page 697 For Dryer Hose and Insulation see pages 407-409



^{†230}V available for \$700 upcharge

MDRI-AIR Portable, Dual Desiccant Bed Dryers

All In One Design Facilitates Placement, Hook-Up and Hopper Cleaning

With dewpoints down to -49°F,

you can be confident these units will dry all materials, regardless of ambient conditions

ADC Advanced Dryer Control:

- -49° F Dewpoint Monitor
- 7 Day Timer
- Diagnostic Functions
- · Dewpoint, heater and temp alarms

Hopper cover includes an internal ring to prevent over filling of material and protect loader flap valves

Stainless steel, insulated Hopper

Laser cut access door eliminates troublesome gaskets and provides a smooth contact surface when closed

Built-in Push Handle

Insulated lower cone on 60 – 1,000 lb capacity hoppers promote faster and more efficient drying

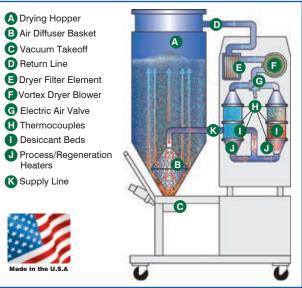
Vacuum Takeoff Port Standard

Temperature Range: 140° F to 350°F ±3°

NOTE: Water After-Cooler required for temps above 250°F see page 695

Textured-Gloss Powder Coat Exterior Finish

Hopper from 60 – 300 lb capacity are seamless – ideal for CD, DVD and medical molding









5 Year Warranty

GREEN Products

Electric Bed Change Valve – No compressed air required

50% more energy efficient than wheel dryers



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

™DRI-AIR Portable, Dual Desiccant Bed Dryers

Common Features

- · Most energy efficient dryer in the market
- · Temperature based regeneration; adapts to ambient and material conditions
- Single blower design will save up to 50% in energy costs
- · Stainless steel hoppers have laser-cut access doors

Pay for Themselves in Energy Savings





All Units Include:

 Casters, vacuum takeoff (specify port size) and through the door disconnect

Item # 230/60/3	Item # 460/60/3	Dri-Air Model	Throughput lbs/hr	Hopper Capacity	Blower CFM	Max Temp	Dimensions	Unit Price
144077*	170867*	APD-1	7.5-10 lbs	30 lbs	25	300°F	25" x 39" x 57"	\$10,385.00
144078*	170868*	APD-2	20 lbs	60 lbs	25	300°F	25" x 39" x 62"	10,850.00
144079*	170869*	APD-3	25 lbs	100 lbs	25	300°F	25" x 39" x 60"	11,375.00
144080*	170870*	APD-4	35 lbs	150 lbs	35	300°F	25" x 39" x 73"	12,000.00
144081	170871	APD-5	50 lbs	150 lbs	50	350°F	30" x 52" x 75"	13,950.00
142843	170872	APD-6	50 lbs	200 lbs	50	350°F	30" x 52" x 69"	14,625.00
144082	170873	APD-7	75 lbs	300 lbs	75	350°F	30" x 52" x 84"	16,050.00
144083	170874	APD-8	90 lbs	300 lbs	100	350°F	30" x 52" x 84"	16,650.00
144084	170875	APD-9	110 lbs	400 lbs	100	350°F	50" x 42" x 92"	19,000.00
144085 [†]	170876	APD-10	150 lbs	600 lbs	150	350°F	50" x 42" x 112"	22,950.00 [†]
144086 [†]	170877	APD-11	200 lbs	600 lbs	200	350°F	50" x 42" x 112"	24,000.00†

^{*}Temp up to 350°F with optional booster heater

[†]APD-10 and APD-11 230V available for \$700 upcharge

Other Voltages Available - Inquire

Optional Accessories: Water After-Cooler (required for drying temps above 250°F),
Plasticizer Trap and more — See page 695

4 Bed High Performance APD Dryers for More Demanding Environments Available - Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

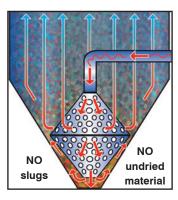
tech support toll-free (USA & Canada) 1.866.467.9001

MDRI-AIR Stainless Steel Drying Hoppers

Uniform Drying With Easy Accessibility for Cleaning

RH Series







Common Features

- · Exclusive basket design assures dried material down to the slide gate
- · Full length sight glass is standard on Models RH60 and larger
- Internal ring on hopper cover prevents damage to hopper loaders
- · Easy-close slide gate on all sizes
- · Insulated side walls eliminate heat loss and conserve energy

Item #	Dri-Air Model	Hopper Capacity	Flange	Feed Hole	Air Po In	rt Dia. Out	Dimensions	Unit Price
144625	RH5	5 lbs*	4 in²	2" dia.	1"	1"	8" dia. x 12" high	\$1,150.00
175070	RH5	5 lbs*	4 in ²	2" dia.	11/2"	13/4"	8" dia. x 12" high	1,150.00
144626	RH15	15 lbs*	4 in²	2" dia.	1"	1"	10" dia. x 18" high	1,725.00
175071	RH15	15 lbs*	4 in²	2" dia.	11/2"	13/4"	10" dia. x 18" high	1,725.00
144627	RH30	30 lbs*	6 in²	2" dia.	1"	1"	14" dia. x 28" high	2,125.00
175072	RH30	30 lbs*	6 in ²	2" dia.	1 ½"	13/4"	14" dia. x 28" high	2,125.00
144628	RH60	60 lbs	6 in ²	2" dia.	11/2"	13/4"	14" dia. x 40" high	2,775.00
144629	RH100	100 lbs	6 in ²	2" dia.	1 ½"	13/4"	18" dia. x 37" high	3,175.00
144630	RH150	150 lbs	6 in ²	2" dia.	1 ½"	13/4"	18" dia. x 50" high	3,450.00
144631	RH200	200 lbs	6 in ²	2" dia.	2"	13/4"	23" dia. x 47" high	4,350.00
144632	RH300	300 lbs	6 in²	2" dia.	2"	13/4"	23" dia. x 61" high	4,800.00
144633	RH400	400 lbs	8 in ²	4" dia.	3"	3"	27" dia. x 60" high	6,350.00
144634	RH600	600 lbs	8 in²	4" dia.	3"	3"	27" dia. x 80" high	7,400.00
				RH Hopper	Options			
144635		Flip Lid for hopper, allows manual filling – no hopper loader						
144636	Hopper Lid cut out to accept non Dri-Air hopper loader (Specifications Required)							180.00
144637		Drawer Magnet for 5 and 15 lb capacity hoppers						
144638			Drawer	Magnet for 30	lb capacity	/ hopper		1,200.00

^{*}NOTE: 5, 15 and 30 lb size Hoppers do not have access doors

Other size RH Hoppers, up to 2,000 lbs., available - Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

MDRI-AIR Desiccant Dryer Accessories

Item #	For Dri-Air Model	Description	Unit Price			
144617		Water After-Cooler* for drying temperatures above 250°F	\$325.00			
167971	AHM-1	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination				
144635		Flip Lid for hopper, allows manual filling – no hopper loader	125.00			
144618		Water After-Cooler* for drying temperatures above 250°F	455.00			
144619		Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	425.00			
170100	AHM-2 to 4	Booster Heater for drying at temperatures 301° F to 350°F	750.00			
143666		Temperature Set Back Alarm — prevents over drying of material	195.00			
144635		Flip Lid for hopper, allows manual filling – no hopper loader	125.00			
144706	ARID-X10	Water After-Cooler* for drying temperatures above 250°F	325.00			
144710	ANID-X10	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	275.00			
144707	ARID-X25 to 35	Water After-Cooler* for drying temperatures above 250°F	455.00			
144711	A111D-X25 to 55	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	425.00			
144708	ARID-X50 to 100	Water After-Cooler* for drying temperatures above 250°F	585.00			
144712	A111D-X30 to 100	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	425.00			
144709	ARID-X200	Water After-Cooler* for drying temperatures above 250°F	1,735.00			
144713	AIIID-AZOO	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	850.00			
142832	APD-1 to 4	Water After-Cooler* for drying temperatures above 250°F	455.00			
142833	AID-I to 4	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	425.00			
144087	APD-5 to 9	Water After-Cooler* for drying temperatures above 250°F	585.00			
144088	AI D-3 10 9	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	425.00			
144090	APD-10 to 11	Water After-Cooler* for drying temperatures above 250°F	1,735.00			
144091	Al D-10 to 11	Plasticizer Trap** — traps volatiles when drying resins / prevents contamination	850.00			
144076		Low Material Level Light/Sensor on hopper indicates low levels of material	640.00			
143666	ALL APD	Temperature Set Back Alarm — prevents over drying of materia	215.00			
168159	Models	Adjustable Fill Sensor (for RH60 hoppers and larger only)	540.00			
143665		Filter Alarm (Blue)	350.00			
143664		System Alarm (Red)	230.00			

^{*}Requires user to supply waterline hook up for cooling coil

Desiccant Mini PD Portable Dryers

The Mini PD portable dryer replaces press mounted drying hoppers so material changes can be made off the press/extruder. Dryers can be staged outside the molding area for preparation for the next material run, eliminating downtime on material changeovers.



Hopper Banks



- One dryer connects to multiple hoppers for a centralized drying system.
- Dry different materials at each hopper as each has its own booster heater for temperature control.



phone order toll-free (USA & Canada) 1.800.537.5375



Ask about...

^{**}Requires Water After-Cooler installed

SHINI Honeycomb Desiccant Wheel Dryer

Great Value for Drying Material

Twin condensers with mounted return air filter

- Prevents contamination to the honeycomb
- Regenerative air is quickly and accurately cooled

PID temperature controller - Accurately controls process system for seal temperature and regenerative temperature settings

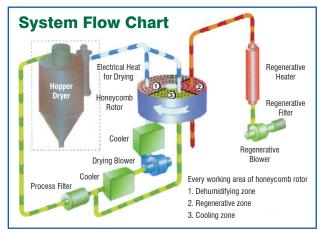
Return air filter mounted inside cabinet - Prevents contamination to the honeycomb rotor

Timing Belt Drive - Eliminates slippage problems of traditional chain driven designs

- Built-in dew point meter
- Drying temp up to 320°F
- Up to 35% operating savings from similar designs
- · Works great on hygroscopic resins
- Can supply dehumidified air with a dewpoint of -40°F

Control Panel





1 YEAR WARRANTY



Honeycomb Rotor Working Principle						
Air after dehumidified Cooling air Regenerative hot air 1 Dehumidifying Zone 2 Regenerative Zone 3 Cooling Zone dehumidified Regenerative air exhaust						

IMS II 230V	tem # 460V	Shini #	*Pounds Per Hour	Process Heater	Regenerative Heater	Process Blower	Regenerative Blower	Dir H	nensio W	ons D	Weight (LBS)	Unit Price
171259	171260	SD-40H-PHC-D	40	3.0 kW	3.0 kW	0.25 HP	.27 HP	50"	19"	30"	320	\$7,170.00
171250	171249	SD-80H-PHC-D	70	6.0 kW	3.0 kW	1.2 HP	.27 HP	54"	21"	32"	374	8,195.00
171252	171251	SD-120H-PHC-D	90	6.0 kW	3.0 kW	1.2 HP	.27 HP	54"	21"	32"	374	9,450.00
171254	171253	SD-200H-PHC-D	300	7.2 kW	4.0 kW	2.4 HP	.67 HP	61"	26"	41"	583	10,725.00
171255	171256	SD-400H-PHC-D	550	18.0 kW	7.2 kW	6.0 HP	1.2 HP	69"	28"	49"	726	15,605.00
171257	171258	SD-700H-PHC-D	900	24.0 kW	10.0 kW	8.6 HP	2.4 HP	76"	35"	54"	1056	24,035.00

*Based on polycarbonate material



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

e-maii

Molecular Sieve Desiccant

Highest Quality Desiccant - Ideal for Most Dryers



Why Buy High-Quality Desiccant?

- Good drying depends on good airflow. Better desiccant provides better airflow by creating less dust to clog your filters.
 Clean desiccant also helps prevent material contamination.
- The desiccant you buy today is going to dry tons of your material for tens of thousands of cycles. The per-part cost of high quality desiccant is almost too small to compute. The quality and productivity advantage is too great to ignore.

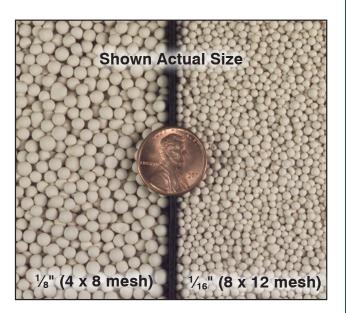
Molding problems, particularly in humid months, often trace back to poor drying caused by stale desiccant. The fact is this: desiccant goes bad. Desiccant captures moisture in its pores, which become blocked with contamination over time. And only fresh desiccant gives your dryers a chance to thoroughly dry your material in hot, humid weather.

Type 4A has smaller pores. It is less subject to contamination but adsorbs slightly less moisture.

Type 13X has larger pores. It adsorbs more moisture but is more subject to contamination. Most dryer manufacturers recommend Type 13X for most applications.

1/8" Beads (4 x 8) allow better airflow, but adsorb less moisture.

 $\frac{1}{16}$ " Beads (8 x 12) adsorb more moisture, but allow less airflow.



Regeneration Temperature: between 375°F and 600°F

Tech Tips

Desiccants can get contaminated or ruined by off-gases of certain resins. A general rule is to change the desiccant every 18 months.

Item #	Bead Size	Mesh	Container Size	Unit Price				
	Type 4A							
127918*	1/8"	4 x 8	30 lbs. steel pail	\$134.32				
127919*	1/8"	4 x 8	110 lbs. fiber drum	438.31				
127920*	1/8"	4 x 8	308 lbs. steel drum	1,066.81				
127921	1/16"	8 x 12	30 lbs. steel pail	134.32				
127922	1/16"	8 x 12	110 lbs. fiber drum	438.31				
127923	1/16"	8 x 12	308 lbs. steel drum	1,227.27				
		Type 13X						
127924*	1/8"	4 x 8	25 lbs. steel pail	\$136.93				
127925*	1/8"	4 x 8	110 lbs. fiber drum	525.04				
127926*	1/8"	4 x 8	275 lbs. steel drum	1,169.34				
127927	1/16"	8 x 12	25 lbs. steel pail	136.93				
127928	1/16"	8 x 12	110 lbs. fiber drum	525.04				
127929	1/16"	8 x 12	275 lbs. steel drum	1,169.34				

^{*} Ideal for all Dri-Air models



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



Portable Dew Point Meter/Monitor

Monitor And Spot Check The Performance Of Your Desiccant Style Drying Equipment

- · Establish a repeatable, controlled drying process
- Alerts you to potential problems with desiccant style material dryers
- Verify the accuracy of your material dryers built-in Dew Point Meter (if equipped)
- Built-in Self Test
- · Manufactured using NIST*-traceable equipment
- · Available with current calibration certificate / Can be recalibrated as needed
- Monitor case is compact, lockable, self-contained and completely portable
- Adjustable alarm set points and changeable temperature display (F to C)
- *National Institute of Standards and Technology

Dew Point Range:

-40°F to +30°F (-40°C to -1.1°C)

How They Work

The meter draws a dried-air sample from the dryer output. The sample's moisture level affects the electrical resistance of the meter's hygrosensor. By reading that resistance, the meter can give the Dew Point Temperature of the sample — the drier the air, the lower the dew point.





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**

Portable Dew Point Meter/Monitor

Desiccant Dryer Performance Testing

Specifications

The sampling tubing supplied with the monitor can tolerate temperatures up to 275°F (135°C). Higher process air temperatures can be cooled to a safe level by sampling through a few feet of 1/4" copper tubing.

Sample Air Temperature Limits: Up to 500°F Dew Point Range: -40° to +30°F (-40° to -1.1°C)

Typical Accuracy: $\pm 3^{\circ}F$ (1.7°C) Alarm Set Point: -10°F (-23°C) Sensor Item #: 172054

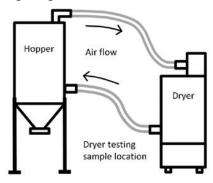
Analog Output Scaling: -40°F to +70°F (-4°C to -9°C)

Power Requirements: 115VAC 50/60HZ / 0.15A max

(230VAC optional)

Dimensions: 10.75" x 9.75" x 4.75"

Shipping Weight: 7 lbs.



Model 1072A Portable Dew Point Monitor

Item #171760

Includes: Meter/Monitor in a Durable Case, Desiccant Tube, In-Line Air Filter, Air Sampling Tubing, Manufactured using NIST Traceable Equipment, 6 Foot Grounded Line Cord, and User Manual.

\$1,404.97

	Ψ 1, 10 1101			
#172019 Model 1072A Dewpoint Meter with current NIST Calibration Certificate				
	Spare Parts			
#103796	Desiccant Tube, Dew Point Meter/Monitor, Capped Air Tight both ends	\$38.58		
#103808	Inline Air Filter, Dew Point Meter/Monitor	14.08		
#172054	Standard Hygrosensor for -40°F to +30°F Dew Point Readings (Compatible with all 1072 Moldels)	Inquire		
#172055	High Range Hygrosensor B for -5°F to +50°F Dew Point Readings (Compatible with all 1072 Moldels)	Inquire		
*For higher of	dew point ranges, inquire with our specialists for a variety of opi	tions		

High Temp Range Model 1072B



Also Available for Hot Air or Refrigerant Dryers (Non Desiccant)

This meter has similar features to the Model 1072A, but monitors higher temperature ranges.

Model 1072B Portable Dew Point Monitor

Item #172020

Includes: Meter/Monitor in a Durable Case, Desiccant Tube, In-Line Air Filter, 6' Air Sampling Tubing, Built-In Audible Alarm, Silence Switch, Manufactured using NIST Traceable Equipment, 6 Foot Grounded Line Cord, and User Manual.

Inquire

#172022	Dew Point Meter/Monitor w/Digital Meter, Model 1072B with NIST Calibration Certificate, -5 to +50°F 115/50/60/1 Volts	Inquire
	Spare Part	
#172055	Hygrosensor for Model 1072B	Inquire

Tech Tips

Always do a pre-test or self test the meter to ensure accurate readings before sampling your dryer's dew point and change the filter every 3 months to preserve the sensor.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Dew Point Chart Recorder

Permanently Records the Dew Point of a Dryer's Output Over a 7 Day Period

(Time-frame adjustable — Inquire)

Model 4027A

Molded Case can be surface or panel mounted.

Door easily opened for access to chart, yet has gasket and sealed glass window to protect internal components.

Analog and digital filters with fixed time-constants smooth input-signal to microprocessor.

Chart and Pen driven by microprocessor-controlled stepper motors.

- · Records stability of drying process.
- · Isolates drying conditions at time of quality problems and successes.
- · Produces document for quality records.

Preset and wired for use with the Model 8072A* **Dew Point Meter/Monitor**

No Adjustments Necessary



6' Power Cord

Specifications

Ambient Temperature: 32° F to 131° F (0 to 55° C) **Relative Humidity:** 5 to 90% RH at 104° F (40° C) Mounting Positions (from vertical): Tilted Forward 5° Tilted Backward 90°

Tilted to Side 20°

Voltage (VRMS): 115 (230 field-selectable)

Frequency: 50/60Hz

Power Consumption: 9 watts maximum

Span Step Response Time: 7 seconds maximum

Reproducibility: 0.1 percent of span

Sampling Rate: Input sampled 2 times every 1.3 seconds **Input Filter:** Analog with time constant of 3 seconds and

digital with time constant of 1 second

Case: Molded, foamed-Noryl® with gasketed door to meet NEMA 3 enclosure requirements

Pen: Disposable fiber-tip ink cartridge, line length per

cartridge more than 100 ft. One Pen: Purple

Size: 14"H x 14"W x 6"D

Weight: 12 lbs.



Easy To Use

Simply connect to Dew Point Meter and plug in. Single pen recorder draws analog traces on 10" circular chart. Replace paper weekly.

Precision crafted by Honeywell, Inc.

Item #168522

for Model 8072A (#171760)

Includes: Chart Recorder; 15 foot Signal Cord; 6 foot Power Cord with Grounded Plug; 100 sheets of 7-Day Circular Chart Paper and Mounting Bracket.

\$2,449.27

#115615	for Model 8072	\$2,620.27					
	Spare Part						
#115608	Circular Chart Paper, 100 sheets	\$111.30					
#115611	Pens, 6 Pack (purple)	141.93					

*NOTE: Due to the connector differences, confirm which model Dew Point Meter you have before ordering.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

MDRI-AIR Hopper Mounted Compressed Air Dryer

Compact, Easy to Use Dryer



- Dry-Pak membrane Assures -40°F dewpoint air at the hopper and allows fast drying of hygroscopic resins
- Press/Extruder mounted dryer Frees up critical shop floor space
- Trouble free design No moving parts is ideal for low throughput with minimal maintenance
- User friendly operation Just set the temperature and the machine does the rest
- Automatic restart Dryer settings are restored on power outages less than 30 seconds in duration
- · Insulated stainless steel hopper
- Dryer control includes high temp alarm and shutdown
- Process up to 15 lbs/hr
- 70°F to 350°F drying temperature without the need for water cooled after-cooler
- CAHM-60 includes access door and full length site glass





Standard ADC Control (shown)

- Alpha numeric display
- -49°F dewpoint monitor
- 7 day timer, alarm history, thermocouple alarms and optional temp set back to prevent over drying



IMS I	tem #	Dri-Air	Process	Capacity	Compressed		Dimensions		ıs	Unit
110V	220V	Model	Rate		Air Required	Heater	Height	Width	Depth	Price
161409	161410	CAHM-30	10 lbs/hr	30 lbs	2.5 cfm	1.25 kW	28"	21"	22"	\$8,150.00
161411	161638	CAHM-60	15 lbs/hr	60 lbs	2.5 cfm	2 kW	42"	29"	30"	8,550.00

110 or 220 volt phase 1 electrics, 100 psi clean compressed air required @ 1.5-2.5 scfm

	Optional Accessories						
143666	Temperature Set Back Alarm	\$195.00					
168205	Mobile Cart and Vacuum Take-Off Box Accessory	1,415.00					
170098	Mobile Cart and Vacuum Take-Off Box Accessory	1,415.00					
170099	Mobile Cart and Vacuum Take-Off Box Accessory	1,415.00					



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

		cess Trouble-Shoo		
	CRYSTALLIN	IE MATERIALS		US MATERIALS
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce	Raise/Increase
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size
	Injection Speed	Gate Size	Injection Pressure	
Splay	Mold Release Spray		Screw Speed	
, ,	Mola Holoado Opiay		Hold Pressure Time	
			Venting	
	Malt Tanan	Clamp Pressure	_ -	Clamp Pressure
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure
	Mold Temp		Mold Temp	
Flash	Injection Pressure		Injection Pressure	
	Hold Pressure Time		Injection Speed	
	Injection Speed			
	Melt Temp	Mold Temp	Melt Temp	Mold Temp
	Moisture Content	Gate Size	Moisture Content	Gate Size
Voids	Cooling Time	Injection Pressure	Cooling Time	Injection Presure
	j j	Back Presure	Injection Speed	Back Pressure
		Hold Pressure Time	injection opeca	Hold Pressure Time
	Molt Tomp		Melt Temp	Hold Pressure Time
	Melt Temp	Cooling Time	<u> </u>	
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time
	Injection Pressure		Injection Pressure	
			Back Pressure	
	Mold Temp	Melt Temp	Mold Temp	Gate Size
		Gate Size		Injection Pressure
		Injection Pressure		Hold Pressure Time
Sinks		Hold Pressure Time		Injection Speed
Siliks		Injection Speed		Venting
		Cushion		venting
		Venting		
		Melt Temp		Melt Temp
		Mold Temp		Mold Temp
Short Shot		Gate Size		Gate Size
		Injection Pressure		Injection Pressure
		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		geometric epison		Venting
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp
	Wold Release Spray		Wold Nelease Spray	<u> </u>
		Mold Temp		Mold Temp
Glossiness		Injection Pressure		Injection Pressure
GICCOIIICCC		Injection Speed		Hold Pressure Time
		Venting		Injection Speed
				Venting
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray
	Mold Temp		Mold Temp	
Parts	Injection Pressure		Injection Pressure	
Sticking	Hold Pressure Time		Hold Pressure Time	
-				
	Cooling Time		Cooling Time	
	Injection Speed		Injection Speed	
	Melt Temp	Gate Size	Moisture Content	Gate Size
	Moisture Content	Venting	Injection Pressure	Venting
	Injection Pressure		Back Pressure	
	Back Pressure		Screw Speed	
Brittleness	Screw Speed		Hold Pressure Time	
	Hold Pressure Time		Cushion	
	Cushion		Regrind	
	Regrind		Mold Release Spray	
			Word Helease Spray	
D	Mold Release Spray	Maratin a	Malt Tanan	0-1-0-
Burn	Injection Pressure	Venting	Melt Temp	Gate Size
Marks	Injection Speed		Injection Pressure	Venting
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp
	Injection Speed	Gate Size		Gate Size
	Moisture Content	Melt Temp	Moisture Content	Melt Temp
		Mold Temp		Mold Temp
		Gate Size		Gate Size
Weld				Injection Pressure
Lines		Injection Pressure		
		Hold Pressure Time		Hold Pressure Time
		Injection Speed		Injection Speed
		Venting		Venting
	Injection Speed	Melt Temp	Injection Speed	Melt Temp
	<u> </u>			
Jetting	Hold Pressure Time	Mold Temp		Mold Temp

Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	0.3969
1/32"	.03125"	0.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/32"	.15625"	3.9688
11/ ₆₄ "	.171875"	4.3656
3/16"	.1875"	4.7625
13/64"	.203125"	5.1594
7/32"	.21875"	5.5562
15/64"	.234375"	5.9531
1/4"	.25"	6.35
17/64"	.265625"	6.7469
9/32"	.28125"	7.1438
19/64"	.296875"	7.5401
5/16"	.3125"	7.9375
21/ ₆₄ "	.328125"	8.3344
11/32"	.34375"	8.7312
23/64"	.359375"	9.1281
3/8"	.375"	9.525
25/ ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
27/64"	.421875"	10.7156
7/16"	.4375"	11.1125
29/ ₆₄ "	.453125"	11.5094
15/32"	.46875"	11.9063
31/ ₆₄ "	.484375"	12.3031
1/2"	.5"	12.7

Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32"	.53125"	13.4938
35/64"	.546875"	13.8906
9/16"	.5625"	14.2875
37/64"	.578125"	14.6844
19/32"	.59375"	15.0812
39/64"	.609375"	15.4781
5/8"	.625"	15.875
41/64"	.640625"	16.2719
21/32"	.65625"	16.6688
43/64"	.671875"	17.0656
11/16"	.6875"	17.4625
45/ ₆₄ "	.703125"	17.8594
23/32"	.71875"	18.2563
47/64"	.734375"	18.6531
3/4"	.75"	19.05
49/ ₆₄ "	.765625"	19.4469
²⁵ / ₃₂ "	.78125"	19.8438
51/ ₆₄ "	.796875"	20.2406
13/16"	.8125"	20.6375
⁵³ / ₆₄ "	.828125"	21.0344
27/32"	.84375"	21.4312
55/64"	.859375"	21.8281
7/8"	.875"	22.225
57/ ₆₄ "	.890625"	22.6219
²⁹ / ₃₂ "	.90625"	23.0188
59/64"	.921875"	23.4156
15/16"	.9375"	23.8125
61/ ₆₄ "	.953125"	24.2094
31/32"	.96875"	24.6062
63/ ₆₄ "	.984375"	25.0031
1"	1.0"	25.4



Replacement Parts

For IMS Hot Air and Refrigerant Type Hopper Dryers

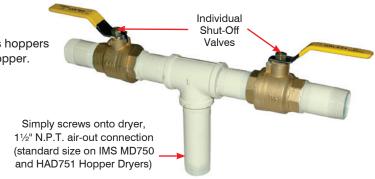
Item #	Description	Unit Price					
	Hot Air Model MD100						
108363	Heater Coil and Rack, 460/60/3, 86.53 Ohms (± 5%), 7.5 KW	\$432.00					
108372	Heater Coil and Rack, 230/60/3, 19.87 Ohms (± 5%), 7.5 KW	189.05					
112805	Main Temperature Controller	282.64					
	Hot Air Model HAD751						
108363	Heater Coil and Rack, 460/60/3, 86.53 Ohms (± 5%), 7.5 KW	\$270.00					
112805	Main Temperature Controller	359.30					
	Refrigerant Model HD75050						
108361	Heater Coil and Rack, 460/60/1, 52.98 Ohms (± 5%), 7.5 KW	Inquire					
108677	Circuit Breaker, 40 Amp	Inquire					
112805	Main Temperature Controller	\$359.30					
	Refrigerant Model MD750-50						
108363	Heater Coil and Rack, 460/60/3, 86.53 Ohms (± 5%), 7.5 KW	\$364.05					
108372	Heater Coil and Rack, 230/60/3, 19.87 Ohms (± 5%), 7.5 KW	189.05					
112805	Main Temperature Controller (Note: Model MD750-50A uses a West Controller - Inquire)	359.30					
113743	Metal Air Flow Filter, 14" x 16" x 1"	Inquire					
114177	Condenser Fan Motor (230 volt)	137.20					
	Refrigerant Model MD750						
112805	Main Temperature Controller	\$359.30					

IMS Hopper Dryer Air Manifold

Lets You Serve Two Presses at Once

Use this manifold to connect your dryer to two press hoppers or one press hopper and an IMS Twin Bin Drying Hopper.

- Quick installation, just screw it on
- · Easily modified to fit any size application
- T-valves are 11/2" N.P.T. for 17/8" I.D. hose
- Individual shutoff valves
- · Fitting for dryer air-out connection



Item #	Description	Unit Price
110503	Hopper Dryer Air Manifold	Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001

SHINI Drying Hoppers

Great Value For Drying Material

Common Features

- · Stainless steel contact parts
- Elongated sight glass is standard on models (except DH-300U)
- Insulated side walls eliminate heat loss and conserve energy





Item #	Shini Model	Hopper Capacity**	Inlet Pipe Diameter	Outlet Pipe Diameter	Weight	Width (In.)	Height (In.)	
169872	DH-40U	50 lbs	2"	1.5"	50	15	30	
170829	DH-80U	80 lbs	2.5"	2"	80	19	37	
170830	DH-120U	150 lbs	2.5"	2"	100	19	48	
170831	DH-160U	200 lbs	3"	2.5"	125	22.5	48	
170832	DH-230U	285 lbs	3"	2.5"	160	22.5	60	
170833	DH-300U	370 lbs	3"	2.5"	180	27	57	
170834	DH-450U	550 lbs	3"	2.5"	220	27	73	
170835	DH-600U	740 lbs	4"	3"	250	36	72	
170836	DH-750U	925 lbs	4"	3"	310	36	83	
155759	DH-900U*	1110 lbs	4"	4"	375	41	81.5	
170837	DH-1200U*	1500 lbs	4"	4"	550	41	98.5	
	Optional Floor Stands							
170839	FSU-40	For Model DH-4	.0U					
170840	FSU-80	For Models DH-	80U and DH-120	U				
170841	FSU-160	For Models DH-	160U and DH-23	0U				
170842	FSU-300	For Models DH-	300U and DH-45	0U				
170843	FSU-600	For Models DH-	600U and DH-75	0U				
		Option	al Material Suct	ion Box				
161472	SBU-20-38S	Single Tube with	n 1½" Material Pi	pe for Models DH	-20U – DH-1	60U		
160451	SBU-160-38S	Single Tube with	n 1½" Material Pi	pe for Models DH	230U and U	p		
170849	SBU-20-50S	Single Tube with	n 2" Material Pipe	for Models DH-2	0U – DH-160	DU		
163617	SBU-160-50S	Single Tube with	n 2" Material Pipe	for Models DH-2	30U and Up			
170850	SBU-20-38D	Double Tube with 11/2" Material Pipe for Models DH-20U – DH-160U						
170106	SBU-160-38D	Double Tube with 11/2" Material Pipe for Models DH230U and Up						
170851	SBU-20-50D	Double Tube with 2" Material Pipe for Models DH-20U – DH-160U						
170105 SBU-160-50D Double Tube with 2" Material Pipe for Models DH230U and Up								

^{*}Floor Stand included with DH-900U and DH-1200U

^{**} Based on a material with a bulk density of 35 lbs. per cu. ft.



SHIMI Hot Air Hopper Dryer

Great Value for Drying Material

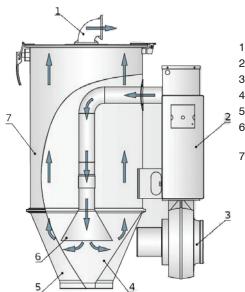
Stainless steel construction on all contact surfaces - avoids contamination with material

PID microprocessor controller - provides accurate temp control, digital display and auto start/stop functions

Unique hot air inlet design - prevents dust collection Insulated blower - prolongs blower life expectancy

- Overheat protection to ensure reliable operation
- Removable hopper base from dryer
- 7-day automatic start/stop timer and sight glass

1 Year Warranty



- 1. Air Exhaust Pipe
- 2. Control Box
- 3. Blower
- 4. Inner Hopper
- 5. Outer Hopper
- Hot Air Intake Pipe
- 7. Hopper





Double Layer Insulated Hopper Design



RS485 Communication Interface

How It Works

In the drying process, hot air with constant temperature is moved by a blower into a two-layer insulated hopper to dry the materials. Moisture will be separated out and taken away by hot air, thus drying material.

Through the screen and shade separator, hot air can be equally dispersed in the material of the hopper (see illustration).

IMS I1 230V	tem # 460V	Shini #	Hopper Capacity cu ft	Heater (kW)	Blower (hp)	Di H	mensio W	ns D	Weight (lbs)	Unit Price
173204	173205	SEHD-12	0.42	2.2	0.1	34"	26"	14"	80	\$745.00
173206	173207	SEHD-25	0.88	3	0.2	40"	29"	16"	90	830.00
173208	173209	SEHD-50	1.76	4	0.2	45"	33"	19"	100	925.00
173210	173211	SEHD-75	2.64	4	0.2	49"	36"	22"	125	1,245.00
173212	173213	SEHD-100	3.53	6	0.3	53"	38"	24"	155	1,495.00
173214	173215	SEHD-150	5.29	6	0.3	62"	38"	24"	165	1,780.00
173216	173217	SEHD-200	7.06	12	0.5	62"	49"	30"	220	2,515.00
173218	173219	SEHD-300	10.59	15	0.5	78"	49"	30"	265	2,995.00
173220	173221	SEHD-400	14.12	18	1	83"	54"	36"	370	3,450.00
173222	173223	SEHD-500	17.65	19.5	1	90"	54"	36"	375	3,725.00
173224	173225	SEHD-600	21.18	21	1	100"	54"	37"	530	3,995.00
173226	173227	SEHD-800	28.25	24	1	106"	56"	24"	620	7,995.00
173228	173229	SEHD-1000	35.31	32	2	118"	56"	24"	670	8,340.00

Blower inlet filters, exhaust air filters, hot air regulators, floor stands, material suction box available — Inquire

SHINI Hot Air Hopper Dryer Accessories

Blower Inlet Filters

Filters 80% of dust to dryer Blower output is adjustable



Item #	Shini Model	For Dryer Models	Air Inlet	Air Outlet	Unit Price
170819	AIF-12	SEHD-12	1.5"	2"	\$125.00
170147	AIF-25	SEHD-25	1.5"	2"	115.00
170624	AIF-50	SEHD-50/75	2"	3"	135.00
167935	AIF-100	SEHD-100/150	2.5"	3"	145.00
170820	AIF-200	SEHD-200 - 300	2.5"	4"	180.00
170821	AIF-600	SEHD-400 - 600	2.5"	4"	285.00

Exhaust Air Filters

Filters 90% of dust contained in air which is discharging from dryer



Item #	Shini Model	For Dryer Models	Air Inlet	Air Outlet	Unit Price
165656	ADC-1	SEHD-12	1.5"	2"	\$105.00
171195	ADC-2	SEHD-25 - 150	1.5"	2"	Inquire
169752	ADC-3	SEHD-200 and up	2"	3"	215.00

Hot Air Recyclers

Keeps factory air clean Save energy by up to 40%



Item #	Shini Model	For Dryer Models	Air Inlet	Air Outlet	Unit Price
169349	HAR-12	SEHD-12	2"	2"	\$275.00
170822	HAR-25 EH	SEHD-25	2.5"	2.5"	285.00
163883	HAR-50 EH	SEHD-50/75	3"	3"	305.00
168710	HAR-100 EH	SEHD-100/150	3"	3"	305.00
168708	HAR-200 EH	SEHD-200 - 300	4"	4"	395.60
173480	HAR-600 EH	SEHD-400 - 600	4"	4"	525.00
173478	HAR-800 EH	SEHD-800 - 1000	4"	4"	595.00

NOTE: Replaces both the ADC and AIF

Floor Stands



Item #	Shini Model	For Dryer Models	Dimensions	Unit Price
163884	FSN-50	SEHD-12 thru 75	27.5" W x 25" L x 24" H	\$225.00
167048	FSN-100	SEHD-100 & 150	31.5" W x 28" L x 24" H	350.00
163616	FSN-200	SEHD-200 & 300	47" W x 40" L x 24" H	695.00
170823	FSN-400	SEHD-400 & 600	59" W x 47" L x 27" H	850.00
170824	FSN-800	SEHD-800 & 1000	51" W x 51" L x 27" H	995.00

Material Suction Box



Item #	Shini Model	For Dryer Models	Tubes	Material Pipe	Unit Price
161472	SBU-20-38S	SEHD-12 - 75		11/2"	\$125.00
160451	SBU-160-38S	SEHD-100 and up	Single	11/2"	155.00
170825	SBU-20-50S	SEHD-12 - 75	Sirigle	2"	195.00
163617	SBU-160-50S	SEHD-100 and up		2"	250.00
170826	SBU-20-38D	SEHD-12 - 75		11/2"	255.00
170106	SBU-160-38D	SEHD-100 and up	Double	11/2"	240.00
170827	SBU-20-50D	SEHD-12 - 75	Double	2"	295.00
170105	SBU-160-50D	SEHD-100 and up		2"	270.00



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001



A Better Way To Dry — Minimize Downtime

For Open or Closed-Loop Drying

- Convenient floor level hoppers allow quicker, easier and safer change-overs of materials and colors
- Unique, logarithmic Spiral™ curve hopper design ensures smooth, even material flow for difficult materials
- Stainless steel hopper and components sturdy, rust free construction
- Portable design allows quick and easy cleaning for decreased downtime

2 Hopper Styles Available

- Logarithmic Spiral[™] Curve
- OEM Conical



2 Year Warranty

Stainless Steel Lid, Clamp and High Temp Silicone Gasket Hopper Extension Clamp and Gasket 24" Diameter Hopper Cart Big, 4" dia. Rubber, 6" x 71/2" Slide Gate w/3" dia Feed Hole Swivel Casters for easy movement Spiral™ Model [‡]113228 shown

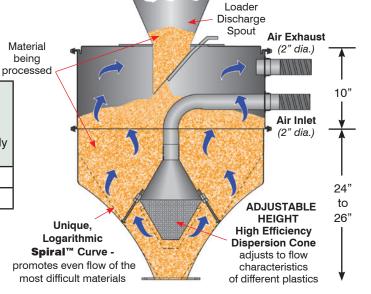
300 lb. Capacity (Based on 35 lbs per sq. ft.) Easily increased with

clamp-on extensions

Unit Price

Includes: Cart w/ casters, hopper assembly (**Spiral**™/OEM hopper, hopper extension, stainless steel lid, two high temp silicone gaskets, two clamps, slide gate) and drying assembly (2" inlet elbow, dispersion cone and 2" exhaust)

113228	with Spiral ™ Curve Hopper	\$4,282.53
134006	with OEM - Conical Hopper	\$3,550.00





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) pho 1.888.288.6900 001

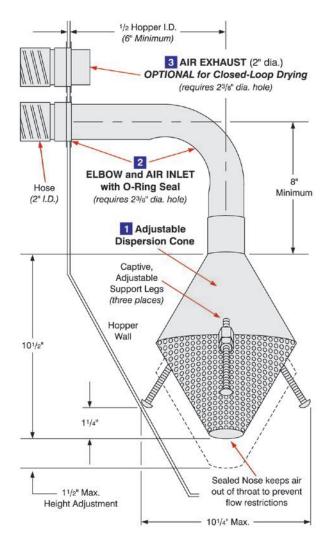
phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001



S Mobile Drying Hoppers





High-Efficiency Dispersion Cone

for IMS **Spiral**™ and Conical Drying Hoppers and ALL Round, Tapered Hoppers

- · For difficult-to-feed materials
- Rugged, all-welded cone construction
- · Adjustable cone-height for variable flow characteristics
- Swaged hose fittings for quick and easy removal when cleaning
- · Rigid assembly for maximum performance

Unit Price

Adjustable Dispersion Cone	#111916 (stainless steel)	204.10 ea.
2. Elbow for 18" hopper and Air Inlet Fitting with O-Ring Seal	#109400 (carbon steel) #112144 (stainless steel)	\$55.40 50.00
(Other elbo	w sizes available - inquire)	
3. Air Exhaust Fitting with O-Ring Seal	#112144 (stainless steel)	\$50.00

Optional Add-On Air Take-Off Components

(Bolts to bottom of slide gate)



#114318 Hopper Extension Kit

(150 lb add-on capacity)

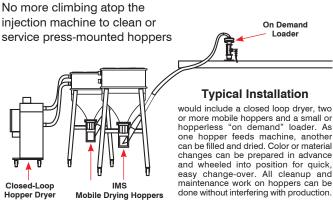
Includes 10" high extension cylinder, gasket, clamp and dispersion extension pipe

\$650.70 ea.

SPIRAL™ is a trademark of IMS Company

Use with any "On Demand" loader

(Such as the IMS ME-20 Material Express)



For Dryer Hose and Insulation see pages 407-409



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

e-maii

IMS 6 and 9 Tray Convection Bench Ovens

Need to dry, anneal, or test in small batches? Each tray of the 6 or 9 Tray Bench Oven can hold up to 3.5 lbs. of (styrene) plastic pellets. The 6 Tray Bench Oven heats up to 518° F; the 9 Tray Bench Oven up to 392° F. Hotter temperatures dry the material quickly, increasing productivity. Corrosion resistant trays, shelves and interiors prevent contamination and help ensure a long service life.

- · Incoloy sheathed heating elements
- Mercury thermometer
- Graduated knob type thermostat control
- · Adjustable shelves
- Mineral-wool insulation
- 6' cord (plug included on 120 volt models)
- Damper controlled induced-air circulation
- Brushed metal

Note: DO NOT use any oven where flammable solvents can be given off, as in paint drying, etc. NEVER leave any oven unattended. Use these ovens for surface drying only; not recommended for hygroscopic plastics. For hygroscopic plastics, see desiccant type dryers.



bench type oven, complete with thermostat control and drying trays

Specifications and Prices

#108288 #108287 and #108276

Model Number: DG0106-120 DG0209-120 and DG0209-240

Maximum Temperature: 518°F 392°F

Internal Wall Material: Galvanized steel Galvanized steel
Tray Material: Nickel-plated steel Nickel-plated steel

Thermostat Control Accuracy: ±21° F ±21° F

Incoloy Heating Elements: One 800W Two 800W

Amperage: 6.7 amps (120/60/1) 13.4 amps (120/60/1) 6.7 amps (240/60/1)

Tray Size (Inside): 4½"W x 8½"L x 2½"D 4½"W x 8½"L x 2½"D

Oven Size (Outside): 17"W x 17%"L x 24"H 20"W x 14"L x 25"H

(Inside): 13"W x 13"L x 13"H 18"W x 12"L x 16"H

Crated Weight: 75 lbs. 75 lbs.

Item #	Description	Unit Price
108288	6 Tray bench oven (120 volt)	\$2,310.53
108287	9 Tray bench oven (120 volt)	2,295.04
108276	9 Tray bench oven (240 volt)	2,295.04



fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

IMS 10 Tray Heavy-Duty Convection Oven



Designed for the production floor, this heavy-duty oven comes with 10 trays that each hold 31.5 lbs. of (styrene) plastic for drying in small batches. Convection type heating prevents fine material from blowing around. Corrosion resistant trays, shelves and interiors prevent contamination and help ensure a long service life.

- · Freestanding for placement anywhere on production floor
- Convection heating design (no fan)
- · Chrome-steel sheathed strip heaters
- Maximum temperature: 325°F
- Knob type thermostat control calibrated in degrees
- · High temperature safety switch
- · Heavy duty, offset door hinges
- · 315 lbs. of (styrene) plastic capacity
- Available with optional closed loop ports for desiccant drying.



Note: DO NOT use any oven where flammable solvents can be given off, as in paint drying, etc. NEVER leave any oven unattended.

Specifications and Prices

Model Number: DG0410

Maximum Temperature: 325°F

Internal Wall Material: Type 430 stainless steel

Tray Material: Nickel plated steel

Thermostat Control Accuracy: ±10° F

Sheathed Strip Heaters: 4 kW, chrome steel

Rockwool Insulation: 2" thick

Amperage: 18 amps (240/60/1)

Tray Size (Inside): 15"W x 24"L x 21/2"D

Oven Size (Outside with stand): 483/4"W x 30"L x 44"H (Inside): 16"W x 25"L x 20"H

Crated Weight: 600 lbs.

Unit Price Item # **Description**

108271 10 Tray Freestanding Oven (240 volts)

> Complete with sheathed strip heaters and high temperature safety switch \$16,256.77

Ask about a closed loop unit with desiccant dryer attachment for hygroscopic plastics

See Desiccant Dryers on pages 688-697





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



8 Tray Forced-Air Bench Oven

Each tray holds up to 16 lbs. of (styrene) plastic for drying small batches. Corrosion resistant trays, shelves and interiors prevent contamination and help ensure a long service life.

- Fan-forced air heats more consistently, improving quality
- Four, removable and adjustable nickel-plated shelves
- Maximum temperature: 350°F
- Fully adjustable thermostat control
- High temperature safety switch
- 6', 3-wire line cord with molded 5-20p plug (120 volt model only)
- · Brushed metal
- · Capacity: 128 lbs. (styrene)



Note: DO NOT use any oven where flammable solvents can be given off, as in paint drying, etc. NEVER leave any oven unattended.

Specifications and Prices

Model Number: NB350 Amperage: 19 Amps (120/60/1) Maximum Temperature: 350°F 10 Amps (240/60/1) Internal Wall Material: Stainless steel Tray Size (Inside): $11\frac{1}{2}$ "W x 20"L x 2"D

Tray Material: Nickel plated steel Oven Size (Outside): 41"W x 30"L x 23"H

Thermostat Control Accuracy: ±10°F (Inside): 28"W x 24"L x 18"H

Incoloy Heating Elements: Two 1 kW Crated Weight: 250 lbs.

Item #	Description	Unit Price
114615	8 Tray bench oven (120 volt)	\$4,770.02
114623	8 Tray bench oven (240 volt)	5,125.82
Optional A	Accessories	
115170	Individual unit stand (331/2" high)	791.86
155749	60 minute automatic oven shutoff timer	Inquire
108273	12 hour automatic oven shutoff timer	581.64
108268	Indicating dial thermometer (50°-550°F)	157.70
108286	Replacement set of 8 trays	1,233.41

Ask about a closed loop unit with desiccant dryer attachment for hygroscopic plastics

See Desiccant Dryers on pages 688-697



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

712

8 Drawer Forced-Air Bench Oven



Drawers reduce heat loss and temperature changes compared to tray ovens with doors. Corrosion resistant trays, shelves and interiors prevent contamination and help ensure a long service life.

- Each drawer holds up to 20.5 lbs. (styrene), permitting small batches
- · Fan-forced air heats more consistently, improving quality
- · Fully adjustable thermostat control
- · High temperature safety switch
- 6', 3-wire line cord with molded 5-20p plug (120 volt model only)
- Brushed metal
- · Capacity: about 165 lbs. (styrene)



Note: DO NOT use any oven where flammable solvents can be given off, as in paint drying, etc. NEVER leave any oven unattended.

Specifications and Prices

Amperage: Model Number: DR350 19 amps (120/60/1)

Maximum Temperature: 350°F 10 amps (240/60/1) Internal Wall Material: Drawer Size (Inside): 113/4"W x 25"L x 2"D Stainless steel

Tray Material: Type 430 stainless steel (will accept 3½" high pieces)

Thermostat Control Accuracy: ±10°F Oven Size: 41"W x 30"L x 23"H

Incoloy Heating Elements: Two 1 kW Crated Weight: 285 lbs.

Item #	Description	Unit Price			
115827	8 Drawer Thermoplastic Bench Oven (120 volts)	\$4,718.07			
115823	8 Drawer Thermoplastic Bench Oven (240 volts)	5,070.91			
Optional Acc					
115170	Individual unit stand (33½" high)	\$566.58			
155749	60 minute automatic oven shutoff timer	Inquire			
118481	12 hour automatic oven shutoff timer	Inquire			
108268	Indicating dial thermometer (50°-550°F)	116.02			

Ask about a closed loop unit with desiccant dryer attachment for hygroscopic plastics

See Desiccant Dryers on pages 688-697



Custom Drying Oven Quote Form

1. PROCESS (Description):				
2. MATERIAL HEATED:				
			oss Section:	
Condition of Pieces: 🔲 W	/et 🔲 Dry 🔲 Oily 🛄 Ot	her (explain under	comments)	
3. FLAMMABLE SOLVENTS	S OR VAPORS INVOLVE	O IN PROCESS		
Туре:	Amount:_	gallons per bat	ch (or per hour of continuo	us processing)
4. INERT ATMOSPHERE (if	f required): 🔲 Nitrogen 🛭	Argon 🔲 Other	(explain under comments)	
6. TEMPERATURE Operating Temperature:_		°F Maximum Ter	mperature:	°F
-			arts to heat up; assume prehe belt and conveyor or rotary	
Required Uniformity within	n Workspace:			
6. MATERIAL HANDLING Batch: Shelf Tray	☐ Basket ☐ Fixture ☐	Other (explain und	er comments)	
-	per Batch or Produ		onveyor 🔲 Other (explain und	der comments)
Length Load Zone:		Length Unloa	d Zone:	
Pass Line:		Production Ra	ate:	
Length Cooling Zone:		sxit Temperature from Cooling Zone: °F		
7. CLEAN ROOM/PHARMA	CEUTICAL			
door locks/interlockpressurizing blower	HEPA fresh air inl	et ogenation cycle		erature
8. DESIGN				
Type of Equipment::		Similar to Standard	d Model:	
Work Space Size:	Wide x		Deep x	High
			wn 🔲 Other (explain und	
Special Features:				

Page 1 of 2



Material Handling Equipment

Custom Drying Oven Quote Form

9. SPECIFICA	TIONS APPLICA	BLE:				
Condition of	Pieces: 🔲 JIC [FM 🗀 IRI 🗀 M	IIL Military Spe	ecification #		
10. SERVICES	;					
Electrical Se	ervice:	Volts	🔲 1 or 🔲 3	Phase 🔲 50 or 🗔) 60 Hz	
To Be Heate	ed By: 🔲 Electric	☐ Natural Gas ☐	Propane 🔲	Steam 🔲 Other (ex	xplain under comr	ments)
11. EQUIPMEN	NT TO BE INCLU	DED IN BASE PR	ICE:			
12. EQUIPME	NT TO BE INCLU	DED AS OPTIONS	S:			
	ening through wh	nich unit must pass ors and existing m		Wide xs, or ducts.		High
Floor space	Limitations:		Wide x		Deep	
Headroom L	_imitations:					
Floor or Ele	vator Load Limita	tions:				
Date:	Quantity:	Phone: ()	Fax: ()	
				l:		
					Zip:	

Page 2 of 2



IMS Hopper Magnet Specifications

Why You Should Specify and Purchase Only IMS Magnets

IMS uses only the best magnetic materials and stainless steel to construct the easiest to clean, most powerful holding and best-reachout hopper magnets in the plastics industry. IMS offers 4 basic designs with different degrees of reachout and holding power, and different levels of cost.

IMS has been your #1 source for positive tramp-metal protection since 1949. We have developed virtually every hopper-magnet breakthrough by constantly searching and trying every magnetic material known to man and assembling them in different configurations to optimize your protection.

	Super	Lc (Low Cost)	Economy	Drawer
Diverters:	N/A	1" wide, 16 ga., 90° bend, 5%" legs	11/8" wide, 14 ga., 90° bend, 3/4" legs	N/A
Space (between diverters):	N/A	1"	7/8"	N/A
Webs:	Rod Supports	11 ga.	14 ga.	N/A
Web Size:	³⁄ ₈ " dia.	¾" high	1%" high	N/A
Magnetic Tubes:	1" O.D. (.049 wall)	1" O.D. (.049 wall)	1" O.D.	1" O.D.
Magnets:	Rare Earth	Ceramic	Ceramic	Rare Earth
Spacing on Center:	1½" bar to bar	2" bar to bar	2" bar to bar	2" bar to bar
Space Between Tubes:	1/2"	1"	1"	1"
Construction:	Tack to rods	Tack welded 2 places each tube	Punched webs plus track welding	Bolted
Finish:	80-Grit, Glass Bead Blasted	80-Grit, Glass Bead Blasted	Glass Bead Blasted	80-Grit, Glass Bead Blasted
Type of Stainless:	304	304	304	304
Overall Height:	13/8"	21/8"	23/8"	Varies

Caution

Never lay magnets on or near electric motors or electric power sources. Keep cell phones and electronic devices away from magnets

Tech Tips

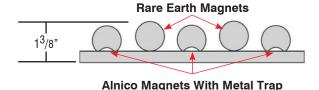
NOTE: ALL magnets tend to lose some magnetic power as ambient temperature increases. Inquire for recommendations and performance comparisons if your application calls for temperatures over 400°F.



Super Hopper Magnets

Our Exclusive, Top-Of-The-Line Hopper Magnets — Combining Rare Earth and Alnico in One Assembly

- · Rare Earth magnet bars provide exceptional holding power
- · Alnico magnet bars provide outstanding pull-in power
- · Concave bar design traps tramp metal and keeps it from wiping off
- · Low profile (diverter-free) design takes up less room in the hopper
- · Available for round hoppers only





Specifications and Prices

Diverters: N/A Spacing on Center: 11/2" bar to bar

Space between Diverters: N/A Space between Tubes: 1/2"

> Webs: Rod supports Construction: Tack to rods

Web size: %" dia. Finish: 80-grit glass bead blasted

Magnetic Tubes: 1" O.D. (.049 wall) Type of Stainless: 304

Magnets: Rare earth Overall Height: 1%"

Item #	Diameter	Unit Price
109954	6"	Inquire
106091	8"	Inquire
108417	10"	Inquire

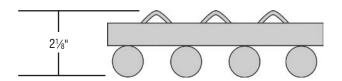
Other sizes made to order



IMS LC Hopper Magnets

Basic Protection Against Tramp Ferrous Metal

- Diverters force material to flow across magnetic surfaces
- · Ceramic magnet bars provide excellent holding power
- · Low profile design takes up less room in the hopper
- · Available for rectangular hoppers only





Standard 2" tube spacing is based on Maximum Magnetic Flux Field Pattern

to catch the finest ferrous particles (steel, etc.)

Specifications and Prices

Diverters: 1" wide, 16 gauge, Magnets: Ceramic

90° bend, 5/8" legs Spacing on Center: 2" bar to bar

Space Space Between Tubes: 1"

(between diverters): 1" Construction: Tack welded 2 places each tube Webs: 11 ga.

Finish: 80-grit glass bead blasted

Web Size: 3/4" high Type of Stainless: 304 Magnetic Tubes: 1" O.D. (.049 wall) Overall Height: 21/8"

Width (Tube Length)

	4"		6	6"		8"		10"		12"	
Length	Item #	Prices	Item #	Prices	Item #	Prices	Item #	Prices	Item #	Prices	
31/2"	N/A	_	109137	Inquire	N/A	_	110174	Inquire	110156	Inquire	
51/2"	107990	\$74.86	108161	\$99.05	109745	Inquire	110084	Inquire	110170	Inquire	
71/2"			107321	Inquire	106422	Inquire	110106	Inquire	106561	\$229.49	
91/2"	110078	Inquire	110165	Inquire	110145	Inquire	107818	Inquire	110116	Inquire	
111/2"	110103	Inquire	110093	Inquire	110178	Inquire	110161	Inquire	110141	Inquire	



IMS Economy Hopper Magnets

Great Value for Multi-Industrial Use

- Diverters force material to flow across magnetic surfaces
- · Ceramic magnet bars provide excellent holding power
- Available for round or square hoppers

Now available with 60° or 90° diverters







Arrangement Of Diverters

forces material to travel within 7/16" of magnetic surface

Specifications and Prices

Diverters: 11/8" wide, 14 gauge, Magnets: Ceramic

3/4" legs Spacing on Center: 2" bar to bar

Space Space Between Tubes: 1"

(between diverters): 7/8" Construction: Punched webs plus tack welding Webs: 14 ga.

Finish: Glass bead-blasted

Web Size: 17/8" high Type of Stainless: 304 Magnetic Tubes: 1" O.D. Overall Height: 23/8"

Diameter	Item #	Diverter Angle	Unit Price	Item #	Diverter Angle	Unit Price
4"	143608	60°	\$50.55	101181	90°	\$50.55
6"	143609	60°	55.97	101168	90°	55.97
8"	143610	60°	75.70	101159	90°	55.57
10"	143611	60°	71.00	101147	90°	154.32
12"	143612	60°	125.43	101208	90°	183.74

Standard Type For Square/Rectangular Hoppers

- tunium i jpo i oi oquinojitootungum riopporo									
Size	Item #	Diverter Angle	Unit Price	Item #	Diverter Angle	Unit Price			
4" x 4"	143603	60°	\$49.63	101227	90°	\$49.63			
4" x 6"	144386	60°	Inquire						
6" x 6"	143604	60°	56.50	101327	90°	70.00			
6" x 8"	144387	60°	82.51						
8" x 8"	143605	60°	69.60	101309	90°	51.43			
10" x 10"	143606	60°	82.07	101290	90°	70.14			
12" x 12"	143607	60°	139.64	101273	90°	248.44			

14" Units available upon request — Inquire



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 1.866.467.9001

tech support toll-free (USA & Canada)

IMS Magnet Housings And Rare Earth Magnets

The Best Drawer Magnet in the Industry

Magnet Housings Features:

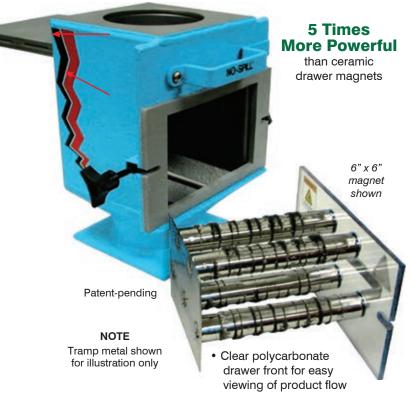
- · Non-magnetizing, stainless steel construction so no magnetic power is lost to the housing. Mild steel flanges for low cost.
- Patented No-Spill[™] Slide Gate with exclusive magnetic latch to ensure gate stays in full open position during production yet permits easy closing for purging and color changes.
- · EPDM drawer gasket resists heat aging and compression set.
- Drawer guide to facilitate drawer removal and cleaning.
- · Drawer locking knobs made of high-torque, break-resistant nylon
- 1/4" thick steel flanges

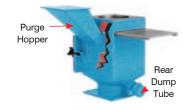
Drawer Magnets Features:

- · The superior pulling and holding power of Neodymium Rare Earth Magnets
- · Will retain their strength even at temperatures well above 175°F
- 2 rows of 1" dia. cartridges on 2" centers
- · 80-grit glass beadblasted finish

Options:

- Purge Hopper
- Rear Dump Tube
- Liquid Port







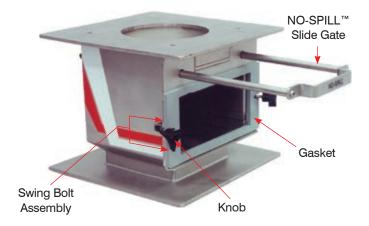
Available in 100% Stainless Steel Housing with Stainless Steel Flanges

When all Stainless Steel Construction is Necessary

These Premium Stainless Steel Housings from IMS are nonmagnetizing. This means that all the magnetism remains concentrated in the magnetic inserts. No power will be lost to the housing. A 1/4" thick slide gate stops material flow so you can easily remove and clean the magnet.

Optional

- Purge Hopper speeds clean-out
- Rear Dump Tube lets you empty the drawer housing and material hopper after run has been completed
- · Liquid Port allows you to inject liquid color additive





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



IMS Magnet Housings and Rare Earth Magnets

Our Best Drawer Magnet Value for Metal Separation

Stainless Steel Housings with Carbon Steel Flanges Undrilled (mounting holes to be drilled by user) — IN STOCK										
Item #	Top Opening	Unit Price								
134349	2"	2"	4" x 4"	4" x 4"	10½"	\$913.00				
135383	41/4"	27/8"	6" x 6"	61/4" x 61/4"	105/8"	1,141.00				
140338	41/4"	27/8"	6" x 6"	8" x 8"	105/8"	1,141.00				
136728	6"	51/2"	8" x 8"	81/4" x 81/4"	11 ⁷ / ₈ "	1,488.00				
M	ounting holes o	Irilled per you	specifications	s* — Custom (2-4 week delive	ery)				
Item #		ines with w Opening	Magnet Size		sing ght	Unit Price				
133917	7/8" -	21/8"	4" x 4"	10	1/2"	\$913.00				
133918	13/4"	- 37/8"	6" x 6"	10	5/8"	1,141.00				
133919	31/8"	- 6"	8" x 8"	11	⁷ / ₈ "	1,488.00				
	Op	tional Acces	sories for Cu	stom Housin	igs					
134373 Purge Hopper (Steel) - to speed clean-out of barrel										
134375										
134377	Liquid Port (Steel) - to inje	ct liquid color	additives		98.00				



Optional Accessories for Custom Housing cannot be added to STOCK units

Replacement Parts for Drawer Magnets and Housings											
	— 4	" x 4" —	— 6	" x 6" —	— 8" x 8" —						
Magnet Housing	Item #	Unit Price	Item #	Unit Price	Item #	Unit Price					
Face Plate for Drawer Front	143342	\$47.40	126299	\$71.70	143344	\$85.00					
Gasket for Drawer Front	123245	36.40	143345	52.20	143347	64.40					
Drawer Magnet 2005-Present	138364	703.30	138365	771.30	138366	1,287.50					
Swing Bolt Assembly (includes knob)	132570					30.40					
Swing Bolt Knob Only		13.40									

	Stainless Steel Housings with Stainless Steel Flanges Mounting holes drilled per your specifications* — Custom (3 week delivery)									
Item #	For Machines with Magnet Housing 1 # Feed Screw Opening Size Height									
123340	⁷ / ₈ " - 2 ¹ / ₈ "	4" x 4"	10"	RFQ						
105913	1¾" - 3¾"	1¾" - 3¾" 6" x 6" 10"								
118036	31/8" - 6"	8" x 8"	111/4"							
	Optional Acces	sories For Custom	Housings							
134374	Purge Hopper (Stainless S	Steel) - to speed clea	n-out of barrel	\$283.00						
134376 Rear Dump Tube (Stainless Steel) - to empty the housing and hopper after run has been completed										
134377	Liquid Port (Steel) - to inje	ct liquid color additiv	/es	98.00						



^{*}When ordering, use the form on pages 722-723 to provide your flange specifications and options



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900

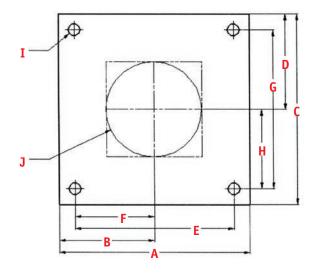
phone order toll-free (Mexico) 001.888.304.1307

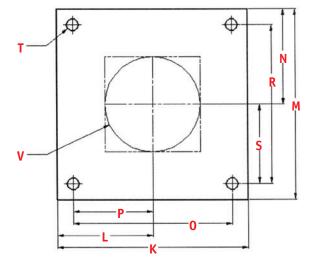
tech support toll-free (USA & Canada) 1.866.467.9001

Drawer Magnet Housing Flange/Accessory Form

SPECIFY:

See next page for Isometric / 3 Dimensional View





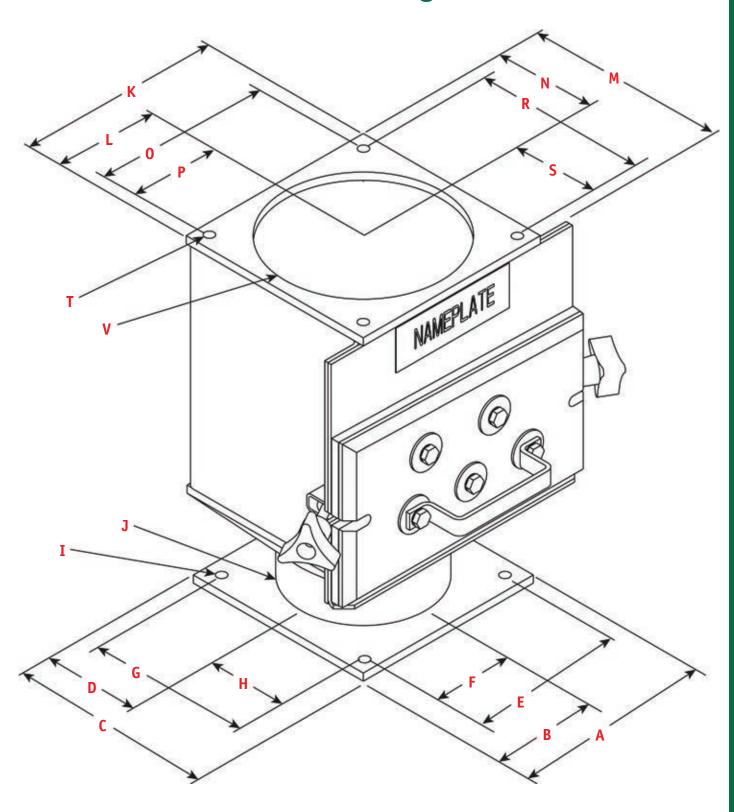
	Bottom Flange erator Side (Front)			op Flange tor Side (Front)	
Α	H	K		_ S	
В	_				
C				//L L L L D	
D	Round	N _		_ V — Opening	
E	_				
F					
G					
	Side to Side			Front to Back	
*Studs will be required if bolt	pattern falls on housing body			Side to Side	
Make of Press:		Serial N	lumber:		
Model:		Screw Size:		Ounce:	
Make of Hopper:			Hopper Capacity	/:	bs
Optional Equipment:					
✓ Slide Gate Shut-off	Ţ	☐ With Discharge D	ump Tube: 🔲 Rear	Other	
☐ Tapped Hole for Liquid☐ Other	Dispensing System	_	: 🔲 R.H. Side 🔲 L.	H. Side	
Date: C	Quantity: Phone:(_)	Fa:	x: ()	
Name:			Title:		
Company Name:					
Address:					



State:

Material Handling Equipment

Isometric View of Flange Dimensions





Pre-Production All-Metal Detectors

Metal removal at higher flows, prior to final processing

Gravity style design with adjustable reject time

Detects and rejects metal as small as 0.4 mm in diameter

Works on ferrous and non-ferrous materials

CE certified - meets EU health, safety and environmental requirements

Accurate even with difficult materials

High-speed reject mechanics minimizes good material diversion

- · Self-monitoring and auto-test standard
- · Integral brackets simplify mounting
- Works great in plastics, recycling and other applications
- 30-200mm (11/4-8") feed hole range
- 100-240 VAC

1 Year Warranty





Item #	Feed Hole O.D.	Reject Port Diam.	Throughput lbs/hr*	Sensitivity	D Height	imension Width	s Depth	Weight	Unit Price
161774	1 ³ / ₁₆ " (30mm)	31/8" (80mm)	1,000	0.4mm	16½"	13"	97/8"	44	\$6,599.00
161775	2" (50mm)	31/8" (80mm)	3,000	0.4mm	16½"	13"	97/8"	44	6,599.00
161776	2¾" (70mm)	31/ ₈ " (80mm)	6,000	0.6mm	16½"	13"	97/8"	44	6,846.00
161777	31/8" (80mm)	31/8" (80mm)	7,500	0.7mm	22¾"	16 ⁷ / ₈ "	13"	70	7,546.00
161778	3 ⁷ / ₈ " (100mm)	37/8"(100mm)	12,000	0.8mm	22¾"	167/8"	13"	70	8,948.00
161779	4¾" (120mm)	4¾" (120mm)	17,000	0.9mm	22¾"	16 ⁷ / ₈ "	13"	70	9,573.00
161780	5 ⁷ / ₈ " (150mm)	57/8" (150mm)	27,000	1.2mm	255/8"	187/8"	15"	110	12,074.00
161781	7 ⁷ / ₈ " (200mm)	7 ⁷ / ₈ " (200mm)	48,000	1.75mm	271/2"	207/8"	181/8"	135	15,198.00

^{*}Rated at 10lbs/ft3

Custom Form on next page

Accessories

Drawer Magnets to minimize contaminated resin - see pages 720-721 Loader Hose and Clamps - see pages 410-414 Replacement Inlet/Outlet Stub Assemblies available - Inquire





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Custom Inline All-Metal Detector Quote Form

1. Product (Descript	ion):				
Characteristics o	f the Product (Check all that app	ly): 🔲 Dusty 🔲 High	n Static 🔲 Product can be we	et at times	
High percenta	ge of carbon in the product	Product is very abras	sive 🔲 Larger particles can be	e intermingled	
2. Particle Size/Dime	ension:		3. Moisture Content:		%
4. Feed Rate:		lbs/hr	5. Bulk Density:		LBS/FT ³
6. Product Temperat	ure:	°F			
8. Material Feeding	Ō:		Note: Freefall height to inlet	of detector not to exceed	18"
Additional Applicatio	n Details:				
Detector Details					
1. Feed Hole OD:	1 3/16" (30mm) 3 7/8" (100mm)	☐ 2" (50mm) ☐ 4 ¾" (120mm)	☐ 2 ¾" (70mm) ☐ 5 ½" (150mm)	☐ 3 ⅓" (80m ☐ 7 ⅙" (200ı	m) nm)
2. Detached Control	s: 🔲 Yes 🏻 Cable Length Require	ed:		feet. <i>Note: Not availa</i>	able on all models
3. Location: 🔲 Indo	or 🔲 Outdoor Environment 1	Temperature:		°F min /	°F max
Note: Inline all mot	al detectors are NOT to be use	d in food applications	s. Feed rate must be calculate	ed on a continuous basi	S
		• •			
4. Construction:	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e	ruction (standard in thi frame and diverter (wi extreme wash down wi	pe down only)	t	
4. Construction:	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e	ruction (standard in thi frame and diverter (wi extreme wash down wi red in heavy wash do	pe down only) th high pressure) wn or corrosive environment		Phase
4. Construction:5. Voltage: ☐ 110-2	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil requi	ruction (standard in thi frame and diverter (wi extreme wash down wi fred in heavy wash do ① Other:	pe down only) th high pressure) wn or corrosive environment	V /	
4. Construction:5. Voltage: 110-26. Sensitivity Require	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil requi	ruction (standard in thi frame and diverter (wi extreme wash down wi fred in heavy wash do Other:FE	pe down only) th high pressure) wn or corrosive environment	V / NFE	
4. Construction:5. Voltage: 110-26. Sensitivity Require	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil requi. 240 VAC 50/60 Hz, Single Phase ement: ☐ Test Ball Retrieval Kit (G	ruction (standard in thi frame and diverter (wi extreme wash down wi fred in heavy wash do Other: FE Good Port)	pe down only) th high pressure) wn or corrosive environment	V / NFE	
 4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options:	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil requi. 240 VAC 50/60 Hz, Single Phase ement: ☐ Test Ball Retrieval Kit (G	ruction (standard in thi frame and diverter (wi extreme wash down wi red in heavy wash do Other: FE Good Port)	pe down only) th high pressure) wen or corrosive environment Test Ball Retrieval Kit (Reject Po	V / NFE ort)	SS
 4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options:	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil required vac 50/60 Hz, Single Phase ement: ☐ Test Ball Retrieval Kit (G	cuction (standard in thing frame and diverter (with extreme wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down	pe down only) th high pressure) wen or corrosive environment Test Ball Retrieval Kit (Reject Po	V / NFE ort)	SS
4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options: Inlet Hopper Outlet Transition Floor Stand ATEX Hazard standa	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil required vac 50/60 Hz, Single Phase ement: ☐ Test Ball Retrieval Kit (Gft³ Don (Clean Product)	cuction (standard in thing frame and diverter (with extreme wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down	pe down only) th high pressure) the winder corrosive environment Test Ball Retrieval Kit (Reject Po Drawer Magnet on infeed Outlet Transition (Reject Product Inlet Stub	NFE Outlet OD ertain detectors. (ATEX is the	SS European Union
4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options: Inlet Hopper Outlet Transitie Floor Stand ATEX Hazard standa NOTE	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil requirement: ☐ Test Ball Retrieval Kit (©	cuction (standard in thing frame and diverter (with extreme wash down with the frame and diverter (with extreme wash down with the frame and of the NEC North Americal frame and explosion proof rates of the NEC North American	pe down only) th high pressure) the winder corrosive environment Test Ball Retrieval Kit (Reject Po Drawer Magnet on infeed Outlet Transition (Reject Product Inlet Stub	NFE Outlet OD ertain detectors. (ATEX is the	SS European Union
4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options:	☐ Utility grade painted constr☐ Painted coil with stainless☐ Stainless steel complete (e Note: Stainless coil requirement: ☐ Test Ball Retrieval Kit (© ft³ In (Clean Product) Distance from floor to cous Environment - Will this unit required, which meets all of the requirement: Available only as 5.1 Touch	cuction (standard in thing frame and diverter (with extreme wash down with the frame and diverter (with extreme wash down with the frame and of the NEC North Americal frame and explosion proof rates of the NEC North Americal frame and explosion proof rates of the NEC North Americal frame and explosion proof rates and explosion p	pe down only) th high pressure) nwn or corrosive environment Test Ball Retrieval Kit (Reject Po Drawer Magnet on infeed Outlet Transition (Reject Product Inlet Stub ing? ATEX ratings are available on co can Standard.) A chart is available to	NFE Ort) Outlet OD ertain detectors. (ATEX is the o explain the classification term	European Union ms for ATEX.
4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options: Inlet Hopper	Utility grade painted constr Painted coil with stainless Stainless steel complete (e Note: Stainless coil requir 240 VAC 50/60 Hz, Single Phase ement: Test Ball Retrieval Kit (6 ft³ on (Clean Product) Distance from floor to ous Environment - Will this unit required, which meets all of the requirement: Available only as 5.1 Touch Classification	cuction (standard in thing frame and diverter (with extreme wash down with red in heavy wash down with red in heavy wash down with red in heavy wash down with red in heavy wash down with red in heavy wash down wash d	pe down only) th high pressure) nwn or corrosive environment Test Ball Retrieval Kit (Reject Po Drawer Magnet on infeed Outlet Transition (Reject Product Inlet Stub ing? ATEX ratings are available on co can Standard.) A chart is available to	NFE Ort) Outlet OD ertain detectors. (ATEX is the o explain the classification term : ()	European Union ms for ATEX.
4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options:	Utility grade painted constr Painted coil with stainless Stainless steel complete (e Note: Stainless coil requi 240 VAC 50/60 Hz, Single Phase ement: Test Ball Retrieval Kit (6 ft³ on (Clean Product) Distance from floor to ous Environment - Will this unit required, which meets all of the requirement Available only as 5.1 Touch Classification Quantity: Pho	cuction (standard in thing frame and diverter (with extreme wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down	pe down only) th high pressure) we or corrosive environment Test Ball Retrieval Kit (Reject Po Drawer Magnet on infeed Outlet Transition (Reject Product Inlet Stub ing? ATEX ratings are available on co can Standard.) A chart is available to Fax:	NFE Ort) Outlet OD ertain detectors. (ATEX is the o explain the classification term : ()	European Union ms for ATEX.
4. Construction: 5. Voltage: 110-2 6. Sensitivity Require 7. Detector Options:	Utility grade painted constr Painted coil with stainless Stainless steel complete (e Note: Stainless coil requir 240 VAC 50/60 Hz, Single Phase ement: Test Ball Retrieval Kit (6 ft³ on (Clean Product) Distance from floor to ous Environment - Will this unit required, which meets all of the requirement: Available only as 5.1 Touch Classification Quantity: Pho	cuction (standard in thing frame and diverter (with extreme wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down with fred in heavy wash down w	pe down only) th high pressure) we or corrosive environment Test Ball Retrieval Kit (Reject Po Drawer Magnet on infeed Outlet Transition (Reject Product Inlet Stub ing? ATEX ratings are available on co can Standard.) A chart is available to Fax: Title: Email:	NFE Ort) Outlet OD ertain detectors. (ATEX is the o explain the classification term : ()	European Union ms for ATEX.



phone order toll-free (USA & Canada) 1.800.537.5375

x order toll-free (USA & Canada) p. 1.888.288.6900 00

phone order toll-free (Mexico) **001.888.304.1307**

1.866.467.9001



Machine Mounted All-Metal Detectors/Separators

Great for extrusion, injection and blow molding machines

Provides efficient detection and rejection of both ferrous and nonferrous metal contaminants within all materials, whether loose or encapsulated, without process interruptions. Designed for mounting on an injection molding machine or extruder as a "last chance" metal detector. This type of detector, also available in a high-temperature rated model uses a pneumatic rejection mechanism to remove metal that were detected previously in the process flow.

- · Fast pneumatic rejection helps conserve good material
- · Separators install directly above in-feed/feed throat
- · Works on ferrous and non-ferrous materials
- · CE certified meets EU health, safety and environmental requirements
- · Rugged housings allow mounting of other equipment



1 Year Warranty

Item #	Feed Hole	Reject			Di	mensions	•		Unit
	Diameter	Port Diam.	lbs/hr*	9 1		Width Depth		Weight	Price
161782	2" (50mm)	3" (75mm)	1,000	0.4mm	12"	101/4"	16¾"	60	RQF
161783	3" (75mm)	3" (75mm)	3,200	0.4mm	12"	101/4"	16¾"	60	

Installation Accessory Guide

High Temperature Units Available — Inquire / Custom Form on next page



Photo shows Loader, Drawer Magnet and All-Metal Detector

#162530 _____ Remote Reset Pushbutton with 10' Cable

\$262.40

#162526 - 2" Dia. Hole #162528 - 3" Dia. Hole Top Flange (blank) Mounting Kit \$212.60 Custom Available - RFQ Reject Hose and Clamps See pages 456-460 #162705 - 2" Dia. \$423.90 #162706 - 3" Dia. #162527 - 2" Dia. \$487.10 #162529 - 3" Dia. Custom Available - RFQ Bottom Flange (blank) Standard Discharge Mounting Kit (blank) Riser Kit \$212.60 8" sq base x 61/4" h



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phoi

phone order toll-free (Mexico) **001.888.304.1307**

Custom Available - RFQ

tech support toll-free (USA & Canada)
1.866.467.9001

e-maii

Custom Machine Mounted All-Metal Detector Quote Form

Application Details 1. Material Type:	
	3. Bulk Density: LBS/FT ³
4. Maximum Particle Size:	5. Maximum Product Temperature: °F
 Characteristics of the Product (Check all that apply): High per Larger p Details on Injection or Blow Molding Operation: 	rcentage of carbon in the product particles can be intermingled Dust particles are present
Shot Size: (weight) Cycle Time:	Seconds
8. Details on Extrusion Operation:	
Flow Rate: LBS/hr Bulk Density:	LBS/FT ³
9. Material Feeding From:	
☐ Vacuum Loader (intermittently)	Dryer - Maximum Temperature: °F
Other:	
TOTAL WEIGHT of ALL equipment on top of Metal Detector:	LBS
Top Flange	Bottom Flange
J G G C	T N N N N S S N N N N N N N N N N N N N
A H	K
B	L T M V
D Opening:	N Opening:
E Round	O Round
F Square	P Square
G Rectangle	R Rectangle
Date: Quantity: Phone: ()	Fax: ()
Name:	Title:
Company Name:	Email:
Address:	
04	01-1

IMS Hopper Loader Probe Magnet

Hopper Loader Probe Magnet traps tramp iron as you load material from drums, gaylords, or bins. Use it in conjunction with our hopper magnets to provide an extra measure of protection against tramp iron in your plastic material. (NOT intended to be used alone.)

- Aids in preventing screw and barrel wear, hopper loader damage and clogged nozzles
- · Powerful alnico magnets provide strong pulling power
- · Easy installation
- · Corrosion and abrasion resistant
- · Easily adjusts to different types of plastic
- · Polished stainless steel
- All welded construction
- Weight: 2 lbs.
- Stainless steel worm-drive clamps (sold separately)



Item #	Description	Unit Price
108027	Hopper Loader Probe Magnet	\$73.00

IMS Oil Tank Sludge Magnet

Removes Tramp Iron From Hydraulic Circuits

Simply place magnet in oil tank of any hydraulic circuit. It will pick up fine iron worn from valves, cylinders, etc. Cuts maintenance costs.

- · Reduces filter clogging
- · Lengthens pump life

Size: 61/2"L x 35/8"W x 21/2"H



Item #	Description	Unit Price
105321	Oil Tank Sludge Magnet	\$120.15



Since **1949**



Mold Temperature Controllers & Fluids Pages 730 – 750

Production Equipment

Chillers Pages 751 – 758



LIME BUSTER™ Mold Water Passage Cleaners
Pages 759 – 763

Most items IN STOCK for Same Day Shipment



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) pl 1.888.288.6900 00

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Fluid Circulating Process Temperature Controllers

WATER CIRCULATING

Tank Style / Closed Loop

- Process water or water/ethylene glycol
- · Process water isolated from cooling water circuit
- · Can use the addition of glycol to obtain elevated temperatures above boiling and inhibit rust and corrosion

Air Cooled

IMS Hydra Air Cooled Circulator

Works great in areas where cooling water is scarce or expensive

- "Waterless" cooling system reduces operating costs and pays for itself in water, sewer or cooling tower savings
- · Portable, no cooling water hook up required
- Temperature Range: Slightly above ambient air up to 250°F (with glycol)

See Pages 732-733



Water Cooled

IMS Hydra Water Cooled Circulator

Closed loop system minimizes corrosion problems

- 14 gallon stainless steel tank and pump
- Temperature Range: Up to 250°F (with glycol)
- · Uses your shop cooling water supply

See Pages 736-737



No Cooling

IMS Hydra Temkon SS Circulator

Perfect for mold preheating and small mold temperature control

- 41/4 gallon stainless steel tank
- 100% non-ferrous construction
- Temperature Range: Up to 250°F (with glycol)

See Page 735



Vacuum

IMS Hydra Negative Pressure Circulator

Eliminate down time caused by coolant leaks in your process

- 41/4 gallon stainless steel tank
- Operates as either a positive or negative pressure circulator
- Temperature Range: 50°F to 205°F

See Pages 738-739





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Production Equipment

Fluid Circulating Process Temperature Controllers

WATER CIRCULATING

Pressurized / Open Loop

- · Minimum capacity process water circuit
- · Cooling water combines with process water
- Pressure used to achieve elevated temperatures above boiling (212° F) up to 250° F standard
- When used in combination with chiller as cooling water source, glycol can be added to achieve elevated temperatures and as a corrosion inhibitor

OIL CIRCULATING

Tank Style / Closed Loop

- · Process fluid is heat transfer oil, isolated from cooling water circuit
- Used for elevated temperatures up to 550° F

IMS Hydra Pressurized Water Circulator

For precise, automatic mold temperature control

- Now up to 70% more flow
- 3/4 hp to 5 hp pumps available
- Long life, 9 kW to 24 kW heating elements
- Temperature Range: Up to 250°F
- Stackable

See Pages 740-741



IMS Hydra High Heat Oil Circulator

For close tolerance molding at temperatures up to 550°F

- · Oil to water heat exchanger provides better control and faster cool down
- Temperature Range: Up to 550°F
- Two 8 kW steel sheathed heating elements
- 8 gallon cold fill insulated steel tank

See Page 746-747



Shini Pressurized Hot Water Circulator

Great value for multi-industrial use

- 1 hp stainless steel centrifugal pump
- 9 kW insulated heater
- Temperature Range: Up to 250°F

See Page 743



Shini Hot Oil Circulator

Great values for process temperature control up to 450°F

- Temperature Range: Up to 450° F
- 1 or 2 hp stainless steel pump, centrifugal and magnetic drive pumps available
- 9 kW to 24 kW stainless steel insulated heating elements

See Page 748





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



IMS Hydra Air Cooled Mold Temperature Controller/Circulator

The Ultimate in Performance, Versatility and Efficiency!

Pays For Itself In Water, Sewer Or Cooling Tower Savings

2 Year Warranty



Waterless Cooling System

- Minimizes water consumption, cutting overall operating costs
- A necessity for shops where water is expensive or poor quality

Portable - Does not require cooling water

Quality Components - Stainless steel pump, tank and heating element ensures long service life

Vertical Mounted Fan Design - Keeps operators and shop cool

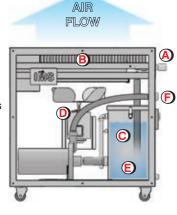
Solid State PID Temperature Controller - Provides accuracy up to $\pm 1^{\circ}$ F

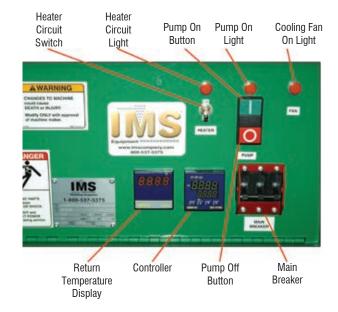
- 1/16 DIN size
- PID Control Auto-tuning on cold or warm start
- Bright 0.40" (10 mm) red LED process display 0.31" (8 mm) green LED setpoint display
- · Swivel casters provide mobility
- Low fluid level electrical shut off
- Operating temperature range from just above ambient to 250°F (with glycol)



How it works

- (A) Return water from the mold/ process enters back into the circulator.
- **(B)** The water passes through a heat exchanger into the tank.
- (C) Tank holds 12 gallons of water and glycol mix.
- (D) A powerful fan is activated when cooling is required. Heated air is removed upwards and away from the operator.
- **(E)** 9kW heater is activated when heat is required to raise the water temperature.
- **(F)** Returns water to mold/process.







www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone of the control of the con

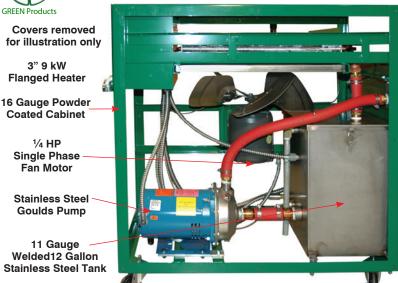
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

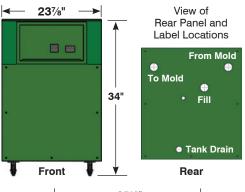
GREEN Products

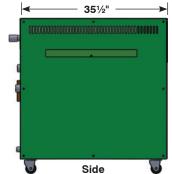
IMS Hydra Model MC90AC (continued)





Dimensions





Copper Tube Aluminum Finned Heat Exchanger

Washable
Air Filter easily removed
without tools



Full Load Amps: 30 @ 230 V — 15 @ 460 V Controller: Control Circuit: 120 Vac

Range: Slightly Above Plant Air Temperature

To 250°F

Graduation: Increments of 1°F

Accuracy: ±1°F

Cooling: Air-Cooled, Copper Tube Aluminum Finned

Heat Exchanger (20" X 20" X 31/2")

Fan: Horsepower: 1/4

RPM: 1,725

Blade: 18" Blade, Quiet Pitch

Air Filter: 21" X 23" X 1"

Pump/Motor: Type: Centrifugal, Close-Coupled To Motor

Horsepower: 1 RPM: 3,900

GPM: 30 At 88 Foot Head (38 psi) **Heater:** Wattage: 9 Kw Quantity: 1

Sheath: Copper For Water/Glycol

Tank: Capacity: 12 Gallons

Construction: Welded Stainless Steel

Mold:

Connections: Output To Mold: 1" N.P.T.

Return From Mold: 1" N.P.T.

Other: Overall Size: 36"L X 24"W X 38"H Crate Size: 44"L X 32"W X 45"H

Weight: 365 Lbs. Crated / 295 Uncrated

IMS Hydra Air Cooled Mold Temperature Controller

Item #163525 for 230/60/3 (30 amps) Item #164036 for 460/60/3 (15 amps)

\$7,418.00

Item #	Description	Unit Price							
138216	Chiller Flushing Fluid	\$290.34							
F	or Circulator Hose see pages 444	1-448							
Co	Common Replacement Parts								
148639	230V Heating Element	\$450.14							
148812	460V Heating Element	450.14							
148749	Heater Gasket	6.10							
161851	Pump/Motor Assembly	1,030.66							
162676	Standard Temp Controller	Inquire							
164838	Molding Machine Interfacing Capable Temp Controller	245.00							
161984	Fan Motor	271.17							
162609	Filter	68.80							



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

0

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.		C.		F.	C.		F.	C.		F.
-17.8	0	32.0	1	10.0	50	122.0	38	100	212	288	550	1022
-17.2	1	33.8		10.6	51	123.8	43	110	230	293	560	1040
-16.7	2	35.6		11.1	52	125.6	49	120	248	299	570	1058
-16.1	3	37.4	1	11.7	53	127.4	54	130	266	304	580	1076
-15.6	4	39.2	1	12.2	54	129.2	60	140	284	310	590	1094
-15.0	5	41.0	1	12.8	55	131.0	66	150	302	316	600	1112
-14.4	6	42.8		13.3	56	132.8	71	160	320	321	610	1130
-13.9	7	44.6		13.9	57	134.6	77	170	338	327	620	1148
-13.3	8	46.4		14.4	58	136.4	82	180	356	332	630	1166
-12.8	9	48.2		15.0	59	138.2	88	190	374	338	640	1184
-12.2	10	50.0		15.6	60	140.0	93	200	392	343	650	1202
-11.7	11	51.8		16.1	61	141.8	99	210	410	349	660	1220
-11.1	12	53.6		16.7	62	143.6	100	212	413.6	354	670	1238
-10.6	13	55.4		17.2	63	145.4	104	220	428	360	680	1256
-10.0	14	57.2		17.8	64	147.2	110	230	446	366	690	1274
- 9.44	15 16	59.0		18.3	65 66	149.0	116	240	464	371	700	1292
- 8.89	16 17	60.8 62.6		18.9	66 67	150.8	121	250	482	377	710	1310
- 8.33 - 7.78	17 18	64.4		19.4 20.0	67 68	152.6 154.4	127 132	260 270	500 518	382 388	720 730	1328 1346
- 7.76	19	66.2		20.6	69	154.4	138	280	536	393	730 740	1364
- 6.67	20	68.0		21.1	70	158.0	143	290	554	399	750	1382
- 6.11	21	69.8		21.7	71	159.8	149	300	572	404	760	1400
- 5.56	22	71.6		22.2	72	161.6	154	310	590	410	770	1418
- 5.00	23	73.4		22.8	73	163.4	160	320	608	416	780	1436
- 4.44	24	75.2		23.3	74	165.2	166	330	626	421	790	1454
- 3.89	25	77.0	2	23.9	75	167.0	171	340	644	427	800	1472
- 3.33	26	78.8		24.4	76	168.8	177	350	662	432	810	1490
- 2.78	27	80.6	2	25.0	77	170.6	182	360	680	438	820	1508
- 2.22	28	82.4		25.6	78	172.4	188	370	698	443	830	1526
- 1.67	29	84.2	2	26.1	79	174.2	193	380	716	449	840	1544
- 1.11	30	86.0		26.7	80	176.0	199	390	734	454	850	1562
- 0.56	31	87.8		27.2	81	177.8	204	400	752	460	860	1580
0	32	89.6		27.8	82	179.6	210	410	770	466	870	1598
0.56	33	91.4		28.3	83	181.4	216	420	788	471	880	1616
1.11	34	93.2		28.9	84	183.2	221	430	806	477	890	1634
1.67	35	95.0		29.4	85	185.0	227	440	824	482	900	1652
2.22	36 37	96.8		30.0	86	186.8	232	450	842	488	910	1670
2.78 3.33	37 38	98.6 100.4		30.6 31.1	87 88	188.6	238 243	460 470	860 878	493	920 930	1688 1706
3.89	38 39	100.4		31.1 31.7	89	190.4 192.2	243	470 480	878 896	499 504	930	1706
	40				90		254		914	510	950	
4.44 5.00	40 41	104.0 105.8		32.2 32.8	90 91	194.0 195.8	260	490 500	914	510	950 960	1742 1760
5.56	42	105.6		33.3	92	195.6	266	510	952 950	521	970	1778
6.11	43	107.0		33.9	93	199.4	271	520	968	527	980	1776
6.67	44	111.2		34.4	94	201.2	277	530	986	532	990	1814
7.22	45	113.0		35.0	95	203.0	282	540	1004	538	1000	1832
7.78	46	114.8		35.6	96	204.8	202	040	1007	000	1000	1002
8.33	47	116.6		36.1	97	206.6						
8.89	48	118.4	3	36.7	98	208.4						
9.44	49	120.2	3	37.2	99	210.2						

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column. Look to left column for Celsius conversion.

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column. Look to right column for Fahrenheit conversion.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Hydra Temkon SS™ Mold Circulator

For mold preheating/small mold temp control



Hinged, Bolt-Down Tank Fill



2 Year Warranty

100% non-ferrous construction - Eliminates risk of rust or contamination

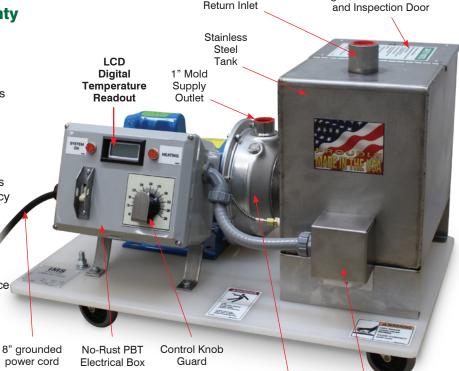
Closed-loop circuit - Decreases water consumption

Pakstat™ temperature controller - Provides simple, accurate control with ±4° accuracy

Thick polypropylene base - Provides solid mobile base that won't rust

Permanently greased pump and motor bearings - Eliminates routine maintenance

- 230/60/1 volt
- · Heating light
- · System on light



1" Mold

Stainless Steel Pump with ½ HP Motor Low Watt Density Heating Element for longer service

Specifications

Thermostat: Range: 50° To 250°F

Graduation: 2° Increments

Accuracy: ±4°F

Operating Range: 90° To 250°F

Pump/Motor: Horsepower: 1/2

Rpm: 3,450

Gpm: 30 At 30 Foot Head (13 Psi)

Heater: Wattage: 3,000 Quantity: 1

Sheath: Copper for water

Tank: Capacity: 41/4 Gallons
Construction: Welded Stainless Steel

Connections: Mold Supply Outlet: 1" N.P.T.

Mold Supply Inlet: 1" N.P.T.

POWER: 230/60/1 (17 Amps)

60hz, Single Phase

Other: Size Overall: 25"W X 14"D X 17"H

Weight: 90 Lbs. Crated

TEMKON SS™ is a Trademark of IMS Company PAKSTAT™ is a Trademark of Paktronics Controls, Inc.

Item #108141

230/60/1 (17 amps)

\$2,675.00

To Prevent Mold Rust

Use Ethylene Glycol and water solution (30% glycol recommended)
Good for temperatures up to 250° F

(See page 744 for UG-10 and EG-17 Ethylene Glycol Fluid)

	Replacement Parts				
Item #	Description	Unit Price			
112360	Pump and Motor	\$925.00			
131720	Motor Only	Inquire			
108448	Heater Element	11.67			
133277	Temperature Controller	106.14			
160139	LCD Digital Readout	96.31			
121352	Pump Seal Repair Kit	130.94			
160305	Thermocouple	Inquire			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001



IMS Hydra Water Cooled Mold Temp Controller/Circulator

The First and Still The Best "Tank Style" Circulator



2 Year Warranty

Tank Style Design - Process water isolated from cooling circuit allows usage of ethylene glycol

Stainless Steel Base and Tank - Protects against corrosion

Compact Design - Takes up very little floor space

All Swivel Casters - Portable to all areas of your shop

Open Construction - Easy access to all components — decreasing maintenance time

Low Fluid Level Electrical Shut Off - Protects against heater and pump failure

PBT Control Box with hinged clear polycarbonate lid

- Protects electrics and discourages tampering



TEC-9001 Temperature Controller



- 1/16 DIN size
- PID Control Auto-tuning on cold or warm start
- Bright 0.40" (10 mm) red LED process display / 0.31" (8 mm) green LED setpoint display











IMS Hydra Model MC90WC (continued)



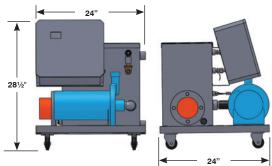
Furnace Brazed Copper Cooling Coil



3/4"-24 Stainless Steel Liquid Level Switch Fluid Tank



Dimensions



Full Load Amps: 21.7 @ 230 V — 10.8 @ 460 V

Controller: Control Circuit: 120 Vac

Range: 120°F Up To 250°F (With Glycol)

Graduation: Increments of 1°F

Accuracy: ±1°F

Cooling: External Cold Water Supply

Inlet/Outlet: 1/2"

Pump/Motor: Type: Centrifugal, Close-Coupled To Motor

Horsepower: 1 Rpm: 3,500

Gpm: 30 at 88 Foot Head (38 psi) **Heater:** Wattage: 9 Kw Quantity: 1

Sheath: Copper for Water/Glycol

Tank: Capacity: 14 Gallons

Construction: Welded Stainless Steel

Mold

Connections: Output To Mold: 1" N.p.t.

Return From Mold: 1" N.p.t.

Other: Size Overall: 24" W X 24" D X 281/2" H

Weight: 161 Lbs. Crated

IMS Hydra Water Cooled Mold Temperature Controller

Item #162713 for 230/60/3 (21.7 amps)
Item #162714 for 460/60/3 (10.8 amps)

\$5,835.43

Also available with bigger pumps or as oil circulating units — Inquire

Item #	Item # Description				
138216	Chiller Flushing Fluid	\$225.00			
	See page 747 for details				
	For Circulator Hose see pages 400-402				



IMS Hydra Negative and Positive Pressure Mold Temperature Controller/Circulator

Eliminate downtime caused by coolant leaks in your process



1 Year Warranty

- Negative pressure mode Stops leaks and decreases
- Tank type, closed-loop design Minimizes corrosion and deposits in mold water passages
- Stainless and non-ferrous components (pump / tank / heat exchanger / heater element sheaths) - Protects against corrosion
- Vacuum adjusting valve Eliminates leaks without pulling in air
- Dual low watt density, stainless steel sheathed heater -Provides increased durability and built-in standby
- Adjustable temperature deviation indicator with audible alarm and silencer - Permits easy programming of custom operating parameters
 - Non-ferrous construction of all components in water bath
 - · Premium quality solenoid valves
 - Easy to read digital readout of "To Process" and "Set Point" temperatures
 - 24/7 programmable timer for automatic start/stop
 - Inlet strainer to remove debris from water
 - · Vented cabinet with removable panels



Two Operational Modes

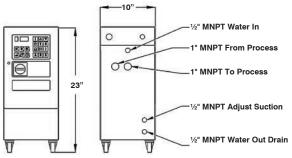
- In the negative pressure mode, the pump pulls fluid through the mold, creating a vacuum that eliminates leaks and prevents pulling any air into the line.
- In the positive pressure mode, the pump pushes fluid through the mold just like any standard mold temperature controller.

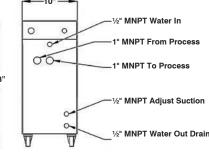


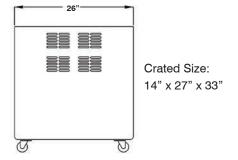
IMS Hydra Model RV092 (continued)

last longer

Dimensions







centrifugal pump provides enough flow for large molds

Powerful 2 hp stainless steel



Rust resistant stainless steel pump,

tank, and heater element sheaths

Covers removed for illustration only

Itama # | Dagawinstian

Powder coated cabinet provides a durable finish

Pump has non-rotating seals for greater leak resistance

> Solenoid valve automatically fills tank to simplify setup and prevent heater damage

Inlet strainer protects against debris in water

Variable vacuum adjustment valve allows precise settings to

meet your needs!

Copper heat exchanger

4 swivel casters for easy mobility

Electrical

Temperature Controller: Microprocessor controls

discharge temperature

Voltage: 230/60/3 or 460/60/3

Full-Load Amps: 30 @ 230V or 15 @ 460V

Control Voltage: 110 VAC Control Range: 50° to 205°F Accuracy: ±1° F

Incoloy sheathed Heating Elements (two, 4.5 kW): 9 kW

Pump/Motor

Type: Centrifugal pump,

close-coupled to motor

Horsepower: 2

Speed: 3,400 rpm

Flow: 21 gpm @ 67 ft. head (29 psi)

Mold Connections: 1" N.P.T. Cooling Capacity*: 50,000 btu/hour Cooling Water Connections: 1/2" N.P.T.

Cooling: Copper tube heat exchanger

mounted in reservoir

Tank: 41/2 gallons, insulated, welded

stainless steel

Tank Drain: 1/2" N.P.T. Weight (uncrated): 100 lbs (crated): 125 lbs

*Based on 50° F water temp, 140° ▲ T and 190° F set point

IMS Hydra Negative and Positive **Pressure Mold Temperature Controller**

Item #133703 for 230/60/3 (30 amps) Item #132944 for 460/60/3 (15 amps)

\$6,415.00

Oil Units and bigger pumps also available — Inquire

Item #	Description	Unit Price		
138216	Chiller Flushing Fluid (see page 745 for details) \$225.00			
	For Circulator Hose see pages 444-4	48		
C	ommon Replacement Pa	arts		
125117	Motor only (230V)			
129680	Motor only (460V)			
130246	Pump only			
127957	Solenoid valve, no coil			
127958	Solenoid coil			
141685	3/8" check valve			
131012	Water level sensing probe			
138058	Gland for water level sensor			



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



IMS Hydra Pressurized, Open-Loop Mold Temperature Controller/Circulator

Now Up To 70% More Flow Without Increased Pump Size!

Maximum Performance

- High-Flow Energy Efficient Pumps
- Long Life Heaters
- Temperature Range Up to 250°F

Reliability

- High Quality 24 VDC Control Circuit Power
- Long Life Pump Seals with Integral Flush System
- Leak Proof Pump/Heater Assembly
- High Performance Modulating Valves

Ease Of Use

- User-Friendly Operator Interface
- Temperature & Pressure Display
- Tools-Free Removable Cabinet
- · Automatic Air Purge
- Four Swivel Casters Easy Movement

Exceptional Warranty

Coverage On Defects And Workmanship:

- 3 Year on Parts/Labor and 5 Year on Control Board Parts
- Lifetime Pump/Heater Casting and Standard Pump Seal
- Lifetime \$175.00 Control Board Exchange

Control Panel Features:

- Automatic Air Purge with 120°F Air Purge Cancel
- Seal-Saver Program
- · Digital Flow Meter
- Pump Running Hours Display
- Temperature Deviation Warnings and Alarms
- Supply and Return Temperature Display
- Alarm Horn and Silence Switch
- Modbus RTU
- Trending Data

Internal Microprocessor Control Features:

- Low voltage 24 VDC control keeps the control circuit signals free from AC interference
- Adjustable automatic air vent sequence at start-up with safety cancellation above 120°F
- Programmable high temperature safety set for 260°F





Improved Design • In Stock





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Hydra Model RQT (continued)

Long-life, low-watt density incoloy heaters reduces maintenance

Leak-proof, cast twin tank/pump assembly

eliminates pipe fittings Lifetime Warranty

Modulating Cooling Valve holds most accurate temperatures

Seal-Saver automatically cools process water down to 90°F when unit shuts off extending life of seal and for operator's safety

Extended motor power cord

motor is easily removed for pump seal replacement without electrical wiring disconnect

Removable cabinet no tools required

Internal bypass line protects pump and heater

under low flow conditions

High Capacity Pump

Leak-resistant, silicon carbide, severe-duty pump seal Lifetime Warranty

Internal pump seal flush and built-in sediment trap

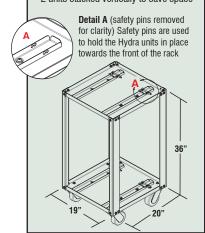
extends life of pump seal by removing contaminants

Swivel Casters (4) allow for easy movement



Maximize Your Space Add Stacking Racks #168515: \$830.00

Stainless Steel Racks designed to hold 2 units stacked vertically to save space



Key Features:

- High performance modulating cooling valve
- High capacity pump Up to 70% more flow than previous models
- Digital Flowmeter
- · Leak-resistant, silicon carbide severeduty pump seal with seal flush
- · Long-life low watt density corrosion resistant incoloy heaters
- · Easy to read microprocessor controller and gauges
- Exceptional warranty
- Compact design: 25"L x 14"W x 25"H
- · Supply and return temp and pressure



Back View - Inlets/Outlets

Item #	Heater	HP	GPM	PSI	Voltage	Amps	Weight	Price*
174728	9 kW	3/4	50	20	230/60/3	26	280 lbs	\$3,360.00
174729	9 kW	3/4	50	20	460/60/3	13	280 lbs	3,360.00
174730	12 kW	3/4	50	20	230/60/3	34	280 lbs	3,450.00
174731	12 kW	3/4	50	20	460/60/3	17	280 lbs	3,450.00
174732	9 kW	2	75	30	230/60/3	28	300 lbs	3,745.00
174733	9 kW	2	75	30	460/60/3	14	300 lbs	3,745.00
174734	12 kW	2	75	30	230/60/3	36	300 lbs	3,835.00
174735	12 kW	2	75	30	460/60/3	18	300 lbs	3,835.00

^{*}Price reflects mechanical heater contactor. For solid state add \$305.00.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Hydra Pressurized Circulator Quote Form

3/4 hp 40 26 □ 0 kW □ 1 hp 50 28 □ 9 kW □ 2 hp 75 30 □ 12 kW □ 3 hp 85 32 □ 18 kW □ 5 hp 100 46 □ 24 kW □ 7½ hp 125 54 □ 36 kW	Heater Options OPTIONAL - select one N/A Solid State relay heater contactor (9kW) Solid State relay heater contactor (12kW) Solid State relay heater contactor (18kW) Solid State relay heater contactor (24kW) Solid State relay heater contactor (24kW) Solid State relay heater contactor (36kW) Solid State relay heater contactor (48kW)
one 208/3/60 - N/A for 48 kW 230/3/60 460/3/60 575/3/60 (Only includes 575V components, CL-UL508A option not included, must select) Electrical Options OPTIONAL - select all that apply Rotary Non-Fused Disconnect UL Branch Circuit Fusing Disconnect C-UL508A Industrial CP Construction Controls and Control Options REQUIRED - select one	☐ Power Cord, 10' (ships loose) Mechanical Options ☐ '¼" Solenoid Valve (Standard) ☐ '¾" Solenoid Valve ☐ 3.00 ☐ '½" Solenoid Valve ☐ 4.00 ☐ '¾" Solenoid Valve ☐ 11.50 ☐ 1" Solenoid Valve ☐ 12" Modulating Valve† ☐ 12" Modulating Valve† ☐ 10.00 ☐ 34" Modulating Valve† ☐ 10.00 ☐ 34" Modulating Valve† ☐ 30.00 ☐ 1" Modulating Valve† ☐ 30.00 ☐ *Cv (flow coefficient) is the flow of water through a valve at 60° F
□ Standard Controller (Standard) □ PC (Premium Controller) □ PC w/ Remote Hand-Held Control Panel (Provides local pc won the unit as well as in a remote enclosure with 50-foot cab □ PC w/4-20mA Supply Output* □ PC w/ RS-485 port for Modbus RTU* (allows interface w/your machine) □ PC w/ RS-485 port for SPI* *not available with remote Hand-Held CP Premium Controller Options OPTIONAL - select all that □ Crash cool - quick circulator cool down (CC sequence dineater and opens cooling valve for 1 minute) □ Remote heat/cool contact - remote heat/cool contact on/Premium Controller Mold Purge OPTIONAL - select one	Max Temp OPTIONAL 300° F Max Set-point Operation (Only available with 1/4" high-temp solenoid valve [Cv=0.24] requires a minimum if 75 psi cooling water supply) Stainless/Non-Ferrous Options OPTIONAL - select one Stainless/Non-Ferrous Option for 0 to 36kW, 3/4 to 3 hp Stainless/Non-Ferrous Option for 0 to 36kW, 5 to 10 hp Stainless/Non-Ferrous Option for 46kW, 3/4 to 3 hp Stainless/Non-Ferrous Option for 46kW, 5 to 10 hp
(Allows compressed air to purge circuit of water) ☐ Mold water purge non-ferrous (Select if choosing non-ferrous option in right column) ☐ Mold water purge ferrous Other Control Options OPTIONAL - select all that apply ☐ Remote Alarm Dry Contact ☐ Remote temp sensor, local high temp safety (Shipped loose with unit, adds a local high temp switch) ☐ Alarm Strobe light (red)	Other OPTIONAL - select all that apply Special Color - requires Pantone Number Stacking Rack (stainless steel) for stacking two units vertically Add-on Heat Exchangers OPTIONAL Request Heat Exchanger Sizing If molding at high temperatures where the return fluid temperature is higher than the process/leaving fluid temperature, your circulator may require a heat exchanger to cool the return water to an acceptable temperature. Select this option to request more information.
Name:	
Company Name:Address:	
City:	



SHIMI Pressurized Hot Water Mold Circulator

Great Value For Mold Temperature Control

- Omron PID multi-stage controller Maintains temperature accuracy ±1°F
- · High efficiency centrifugal pump Allows precise mold temperature control
- Process alarms (phase reverse protection / low level / pump overload / over temperature) - Allows full diagnostics and protection against loss of power, phase reversal, motor overload, high temperature and loss of water pressure
- Siemens Electrical Components
- Max Temperature: 248°F (120°C)
- · 29 PSI Cooling Water Required



1 Year Parts Warranty

Additional Features

- Inlet strainer
- · Time delay pressure switch
- · Stainless steel piping
- Stainless steel flanged pump with silicon carbide seal
- · Copper gauge piping
- · Insulated heaters

- · Circuit protectors for motor and heater
- Heavy duty powder coated cabinets
- Casters
- Illuminated pump/heater on/off switches
- 10' power cord



	IMS	tem #	Shini	Heater		Flow (GPM))	Control	Diı	nensio	ns	Weight	Unit
Į	230V	460V	Model #	(kW)	HP	@30 PSI	Amps	Valve Size	Н	W	D	(LBS)	Price
Ī	149617	149618	STM-910W	9	1	15	12.3/24.6	1/2"	23.6"	12.5"	29.3"	132	\$2,270.00



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Ethylene Glycol Heat Transfer Fluids

Inhibited Against Acidity and Corrosion

A Quick Comparison Of Heat Transfer Mediums

- Water Limited use range: 32° to 212°F. Encourages corrosion.
- Uninhibited Glycols Allow temperatures to 250°F, but 21/2 times more corrosive than water, if not neutralized.
- · Automotive antifreeze Contains corrosion inhibitors, but can foul heat transfer surfaces in less turbulent systems.
- UG-10 Ethylene Glycol Low silicate formula provides good corrosion protection at a relatively low price.
- EG-17 Ethylene Glycol Industrial inhibitors coat surfaces and impact pH for maximum corrosion protection.

UG-10 Moderately inhibited



Temperature and Concentration Chart

Temperature ranges versus Ethylene Glycol concentration

°F	% Ethylene Glycol	% Water	Specific Heat in BTU/lb. at 70° F
10° to 205°	25	75	.901
3° to 208°	30	70	.886
-13° to 211°	40	60	.839
-36° to 215°	50	50	.789
-70° to 220°	60	40	.738
N/A to 230°	70	30	.688
N/A to 246°	80	20	.633
N/A to 274°	90	10	.585
NOTE: The ter	mnerature ranges sh	own above ar	e for fluid systems

NOTE: The temperature ranges shown above are for fluid systems operating at atmospheric pressure. Low temperature is freeze point. High temperature is 10° below boiling point.

EG-17 Highly inhibited



Usage:

- Use at least 25% Ethylene Glycol for corrosion resistance.
- Use the lowest concentration (above 25%) for the appropriate temperature range to achieve maximum heat transfer. Use chart above as a guide.
- Avoid using over 60% if possible, since heat transfer is very low above that level.

Good Corrosion Protection at a Great Price

Contains pH adjuster and metal protectant

UG-10 Ethylene Glycol Heat Transfer Fluid

Item No.		Quantity	
125174 (5 gallon pails)	1	2-5	6+
	\$109.68	104.20	98.71
125175 (55 gallon drum)	1-3	4+	
	\$831.00	789.45	

Great Corrosion Protection at a Good Price

Multi-metal inhibitor package —beyond the UG-10 package

EG-17 Ethylene Glycol Heat Transfer Fluid

Item No.	Quantity			
105580 (5 gallon pails)	1	2-5	6+	
	\$104.85	99.61	94.36	
105584 (55 gallon drum)	1-3	4+		
	\$669.40	635.93		



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

 tech support toll-free (USA & Canada)
1.866.467.9001

Pro-17 Inhibited Propylene Glycol

Non-Toxic Heat Transfer Fluid With Maximum Protection Against Acidity and Corrosion

- · Non-toxic to people, animals and the environment
- · Flushable to sewer and septic systems
- · High-end corrosion inhibitor package to protect your equipment

Contains undiluted propylene glycol for environmental safety, plus our industry-leading inhibitor package to prevent corrosion - the same inhibitor as our EG-17.

Avoid the toxicity of Ethylene Glycol

Avoid the corrosive acid formation of straight Propylene Glycol

Specifications

(Undiluted Pro-17)

Color: Pink

pH: 8.5-10.0:

Flash Point: 215°F

Specific Gravity: 1.13 ± 0.01 **BP @ 760 mm Hg:** 310° F (154° C)

VP mm Hg @ 68°F: <1

NOTE: In most cases, Propylene Glycol can be substituted for Ethylene Glycol. It is thicker than Ethylene Glycol and a little harder to pump; so the pump might not be able to deliver quite as much pressure.



Temperature and Concentration Chart

Temperature ranges versus Pro-17 concentration

° F	% Pro-17	% Water
9° to 216°	30	70
2° to 217°	35	65
-6° to 220°	40	60
-28° to 223°	50	50

Pro-17 Propylene Glycol Heat Transfer Fluid

Item No.	Quantity				
132562 (5 gallon pails)	1	2-5	6+		
	\$220.30	209.28	198.82		
132561 (55 gallon drum)	1-3	4+			
	\$1,709.78	1,624.29			

Mold Chiller Flushing Fluid

Removes Scale and Deposits From Chiller Components



- Decreases cycle times Improves flow and heat transfer in water and glycol systems
- Use in 1% to 2% concentration in water

Item No. 138216 (5 gallon pails) \$225.00



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001



MS HH16 High Heat, Oil Type Mold Temp Controller/Circulator

For Close Tolerance Molding at Temperatures up to 550°F



Perfect for Precise, High Temperature Molding

Oil-to-water Heat Exchanger - Provides better control and faster cool-down

Self-tuning PID-Type Controller - Ensures consistent temperature

Mercury Relay - Provides fast response and long service life

Dual 8 kW Heaters - Heats mold fast

Vented Cabinet - Helps pump run cooler and last longer

Insulated Heating Tank - Makes mold heating faster and more efficient

Hinged Control Box - Simplifies wiring

All Swivel Casters - Portable to all of your shop



2 Year Warranty

User Friendly Control

Continuous Display:

- Setpoint
- Process
- Return Temperatures





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001





High Heat
Oil Circulators



IMS HH16 High Heat Oil Type Mold Temperature Controller

Item #121009 for 230/60/3 (39.4 amps) Item #121008 for 460/60/3 (20.3 amps)

\$11,810.00

Electrical

Temperature Controller: Self-tuning PID-type

Voltage: 230/60/3 or 460/60/3

Full-Load Amps: 39.4 @ 230V or 20.3 @ 460V

Control Voltage: 120 VAC

Control Range: Approx. 90° to 550° F Accuracy: ±.25% of span ±LSD (1° F)

Heating Elements (two, 8 kW): 16 kW steel sheath - for use in oil

Pump/Motor

Type: Centrifugal pump, coupled to AC motor with air-cooled

seal cavity Horsepower: 1/2 Speed: 1,750 rpm

Flow: 47 gpm @ 10 ft. head (4.3 psi) Weight: 500 lbs crated / 465 lbs uncrated

Mold Supply Outlet: 1" N.P.T. **Mold Return Inlet:** 1" N.P.T.

Cooling: Oil-to-water heat exchanger mounted in reservoir

Tank: welded steel, insulated Fluid Capacity: Min. 8 gallon Tank Drain: 3/4" N.P.T.

Item #	Description	Unit Price			
105578	\$207.93				
137087	137087 FF1 Oil System Flushing Fluid (5 gal)				
137086	PSC Plus Oil System Cleaner (1 gal)	\$115.02			
	See page 751 for details				

High Heat Circulator Hose Required see page 402



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

SHIMI Hot Oil Mold Circulator

Process Temperature Control up to 500°F

Omron PID multi-stage controller - Maintains temp accuracy ±1°F

Process alarms (low level / pump overload / over temperature) - Allows easy operation and performance management

Heavy duty powder coated cabinet - Stands up to the harshest operating conditions

Siemens Electrical Components

Magnetic "seal-less" drive pump* - Decreases maintenance downtime by eliminating pump seal failures

*See chart for available models

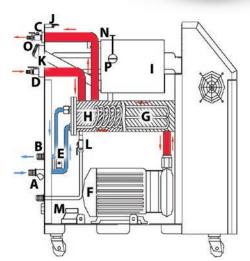
29 psi Cooling Water Required

- Automatic by-pass line and air vent
- Low pressure switch
- Y strainer
- Stainless steel tank and pipe heaters
- Phase reverse protection
- Shell and tube closed loop cooling
- Expansion tank with sight glass
- Main disconnect
- · Completely insulated
- Casters

1 Year Parts Warranty

- A. Cooling water inlet
- B. Cooling water outlet
- C. To process
- D. From process
- E. Cooling solenoid valve
- F. Magnetic-drive pump
- G. Heater
- H. Heat exchanger

- I. Reservoir
- J. Pressure gauge
- K. Sight glass
- L. Oil drain
- M. Temp sensor
- N. Level switch
- O. Oil inlet
- P. Level Indicator





IMS II 230V	tem # 460V	Shini #	Temp Rating	Heater (kW)	Flow (GPM)	Pump Style	Dimensions Height Width Depth			Weight (LBS)	Unit Price
160208	160209	STM-910	375°F	9	15	Centrifugal	31.5"	13.5"	33.5"	221	\$2,775.00
149595	149596	STM-1220	375°F	12	20	Centrifugal	31.5"	13.5"	33.5"	221	3,995.00
149423	149594	STM-2440	375°F	24	40	Centrifugal	35.5"	15.5"	37.0"	320	5,645.00
158418	158419	STM-1220-M	375°F	12	20	Magnetic Drive	31.5"	13.5"	33.5"	221	4,495.00
160210	160211	STM-907-HT	500°F	9	10	Magnetic Drive	31.5"	13.5"	32.5"	221	4,295.00
149597	149598	STM-1215-HT	500°F	12	15	Magnetic Drive	31.5"	13.5"	32.5"	221	6,230.00

 $Construction \ to \ comply \ with \ worldwide \ electrical \ safety \ standards \ (CE, UL, CSA, JIS \ etc.) \ available -- \ Inquire$



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888,288,6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Production Equipment

Hi-Heat Transfer & System Maintenance Fluids

for IMS HH16 and other Oil Type Circulators



PG-1 Hi-Heat Transfer Fluid

The Ultimate, Non-Toxic Fluid For Non-Pressurized Heating To 600°F

Features

- Totally Non-Toxic (certified for both FDA and USDA requirements for service with food and pharmaceuticals — contains no PCB's or MCB's)
- · Colorless, Odorless and Tasteless
- · Non-Corrosive, Stable, Non-Carbonizing
- Non-Fouling; carbon granules stay in suspension and will not build up deposits
- High Flash & Flammability Points
- · Excellent heat transfer and flow
- Excellent BTU/GPM rate
- Low Pumping HP allows use of smaller pumps, which cost less to buy, rebuild maintain and operate
- · Non-irritating to skin or eyes
- Insoluble in (won't mix with) water
- · Disposable by local motor oil recyclers

CAUTION: Avoid mixing water or any other fluid with High-Heat Fluids

Physical Characteristics

Pour Point, ASTM D97	-40°F (-40°C)
Density @ 75° (24°C)	7.27 lb/gal.
Specific Heat at 75° F	
Fire Point, coc, ASTM D92	340°F (171°C)
Autoignition Temperature, ASTM D2155	690°F (366°C)
Atmospheric Boiling Point, (10%) ASTM D1160	657°F (347°C)
Average Molecular Weight	350
Optimum Use Range	(·
Pumpable, Centrifugal @ 2000 centipoise	-13°F (-25°C)
Weight (5 gal. pail)	

PG-1 Heat Transfer Fluid

Item No. 1	05578	Item No. 106519				
1-2, 5 gal. pail	\$207.93	55 gal. drum	\$2,159.08			
3+pails	197.53ea.					

FF-1 Oil System Flushing Fluid

Improves heat transfer for faster cycles

- Can flush your Hot Oil Circulators while they're still operating
- Flushes fouled oil in existing systems; flushes out solder pieces and weld splatter in new systems

NOTE: FF-1 is meant for flushing. To clean varnished or cooked-on oil, use PSC Plus below.

FF-1 Oil System Flushing Fluid Item No. 137087: 5 gal. pail \$160.95

PSC Plus Oil System Cleaner

Maximizes heat transfer for more parts and increased quality

- · Cleans your Hot Oil Circulators while they're still operating
- Non-Hazardous non corrosive, non toxic, non flammable (flash point: 392°F)
- Inexpensive only 4% concentration needed

Blend with your existing oil to create a powerful cleaning solution. Run system for 48 hours. Drain oil when cool enough to handle. Refill with fresh oil. If badly fouled, clean and flush for two days before filling with fresh oil.

PSC Plus Oil System Cleaner

Item No.	137086
1 gal. pail	\$103.45

Hi-Heat Transfer and System Maintenance Kit

Item No. 149590: 5 gal. pail PG-1, 5 gal. pail FF-1 and 1 gal. pail PSC Plus \$395.45



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001





Works With All lec Circuit Breakers

- · Keep your machines running safely
- · Protects against accidental turn on/off
- · Anodized aluminum construction
- · Red or black color
- Compatible with Airpax/Sensata, Heinemann, Carling Switch, Potter-Brumfield, CBI and more

Custom Lockouts Available — Inquire







Contact the Sales Team for pricing and additional information: sales@imscompany.com
OR Call: 1.886.467.9001





Great for the Aerospace, Medical and Food Industries

- Prevents operator from accidentally turning on/off important switches to the process
- · Stainless steel construction

Contact the Sales Team for pricing: sales@imscompany.com







IEC Circuit Breakers

- All OEM's available Heinemann, Carling Switch, CBI and more
- 1, 2, 3 or 4 poles

Contact the Sales Team for pricing: sales@imscompany.com









www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Chillers



IMS Hydra Air Cooled Chillers

Maximum cooling capacity for multi-industrial use

- 1 Ton to 30.6 Ton Standard
- 20°-80°F Set Point Standard on NQ Series (4+ Ton) 20°-65°F Set Point Standard on EQ Series (1-3 Ton)
- Maximum Cooling Capacity: Tonnage rated at 50°F fluid leaving temperature with 95°F ambient air
- Many Options Available to meet your requirements
- Casters Standard on All Sizes

18 Month Warranty



IMS MC Series and MicroMax Air Cooled Chillers

Industry standard quality

- 1/8 Ton to 20 Ton Standard
- 50°F 90°F Set Point Range
- MicroMax Stainless Steel Cabinet Perfect for medical and food applications
- Cooling Capacity: Tonnage rated at 65°F fluid leaving temp with 95°F ambient air
- Casters Standard up to 5 Ton
- · Outdoor and Tankless Chillers Available
- Several Optional Accessories to meet your requirements

1 Year Warranty





Shini Portable Air Cooled Chillers

Great value for multi-industrial use

- 3 Ton to 40 Ton Standard
- 50-95° F Set Point Range
- · Many Sizes IN STOCK for Quick Delivery
- Cooling Capacity: Tonnage rated at 50°F fluid leaving temp with 90°F ambient air
- Worldwide Electrical Safety Standards Available
- Casters Standard up to 15 Tons
- Fully Tested in the U.S.A.

1 Year Warranty





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Tech Tip

Sizing a Chiller for Injection Molding

The Right Type

Most refrigeration is designed for static loads, like in a meat cooler. In plastics processing, heat is added to and removed from the mold during every cycle. Select a chiller designed for active heat loads.

The Right Size

Although an undersized chiller will cost less to buy, the chiller will be running at full capacity, resulting in higher operating costs. And even then, you may have trouble consistently keeping the mold cold.

Chillers are rated in tons; one ton equals the ability to transfer 12,000 BTUs/hr. The tonnage rating should be stated at a specific "leaving water temperature and at a specific ambient temperature".

Choose a chiller that can achieve the anticipated water temperature that your process will need and the rate of BTU's required. Producing colder water than necessary will cost in two ways; initially

IMS Chillers are Rated based on actual testing. Avoid arbitrary Tonnage claims and select the chiller producing enough BTU's and a temperature required for your process.

Overall Chilling System Losses

for the equipment and continually to operate it.

IMS recommends a 20% allowance for radiation losses through the lines, mold base and platen, and for such factors as heat input from the pump. The easiest way to factor this in is to use 12,000 BTU/hp/hr at 50°F as the chilling system capacity, even though the chiller itself is rated for 12,000 BTU at 44°F.

The Right Temperature

The colder the water needs to be, the less efficient the chiller is, mainly because the tank and lines absorb more heat from the ambient air. A chiller removes heat most efficiently when set at 50°F to 55°F. The tonnage rating at 50°F is cut in half at 30°.

Water Flow through the Mold

At a flow of 10 gpm, chilled water must rise 12°F through the mold to remove 1,000 BTU/minute. At a flow of 3 gpm, the temperature must rise 40°F to remove 1,000 BTU.

If low flow is due to the mold's design, the only solution is having the mold reworked. But if normally occurring water deposits are clogging the lines, water line cleaner, IMS Lime Buster III, can greatly boost mold flow and increase heat transfer.

Avoiding Antifreeze

Water transfers heat better than antifreeze. Due to turbulence through the heat exchanger, TrueTon™ Mold Chillers can run at temperatures down to 35°F without using antifreeze. TrueTon™ Chillers are designed so that the units will not be damaged, even if freezing does occur.

Antifreeze Selection

If antifreeze is needed, add only inhibited ethylene glycol with high corrosion resistance (available as EG-17 from IMS in 5-gallon pails and 55-gallon drums). Avoid straight ethylene glycol as it becomes acidic and corrosive in use. Automotive antifreeze is also acidic and contains silica-based inhibitors that form a gel within two years in open-air systems such as chillers.

Computing Size for IMS TrueTon™ Chillers (2 Methods) Method 1 (Based on coolant temperature and flow rate)

To determine chiller tonnage required, you must calculate the delta T between the inlet and outlet water temperatures and the rate of flow in gallons per minute. Measuring the delta T requires a thermocouple or thermometer. To perform a load test: 1.) Strap a thermocouple to the inlet water line of the processing equipment and

wrap it with tape to hold it in place. 2.) Strap a thermocouple on the outlet water line of the processing equipment to record the amount of heat the water is picking up in your equipment.

To measure flow rate of the water place a flow meter on the outlet water line of your equipment. If a flow meter is not available, simply disconnect the outlet line and let the water pour into a five gallon bucket while you time it with a watch. This provides you with the "GPM" (gallons per minute) rate of discharge.

Now you have the necessary information to size a unit properly. Use the following formula to calculate your equipment's BTU's of required cooling.

BTU = Constant (weight of water) x GPM x Temperature Differential

Multiply the fluid flow (GPM) by 500. Multiply the result by the temperature differential or rise (return water temperature minus the input or supply water temperature). Divide the result by 12,000 and you now have your required rating.

Example: 500 Constant (weight of water)

x 10 GPM (gallons per minute)

5000

x 12° Temperature Differential (or rise)

60,000 Required BTU's per hour

12,000 EACH 12,000 BTU's requires 1 Ton of Cooling

= 5 Ton (This equipment would require a 5 Tons capacity)

Method 2 (Based on material use and melt temperature)

You can also calculate the proper tonnage using the following formula:

Tonnage = $A \times (B - C)$ Removal Capacity

where: A = Material use in lbs./hr.

Use actual lbs./hr., not machine's

capacity rating

B = Temperature of melt

C = Temperature of part when it comes

out of mold

Removal = 12,000 BTU/hr./ton removal capacity of chiller system Capacity set at 50°F, which includes estimated radiation losses,

set at 50°F, which includes estimated radiation losses, etc. At 40°F, use 8,000. At 30°F, use 6,100. At 20°F,

use 5,800.

Example: 100 lbs./hr.

450° F melt temperature

150° F part temperature when mold opens

Tonnage = $\frac{100 \times (450 - 150)}{12,000}$ 100×300

12,000

30,000 12,000

= 2.5

Use the next size up, in this case a three ton chiller, to avoid problems caused by using an undersized chiller.

For assistance with sizing, contact the IMS Equipment Team at sales@imscompany.com



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Tech Tip

Sizing a Chiller (continued)

Blow Molding

40#/Hr HDPE = 1 Ton45#/Hr LDPE = 1 Ton 40#/Hr PET = 1 Ton 45#/Hr PP = 1 Ton

Minimum process flow = 4.8 GPM/ton @ 65 PSI

Extrusion

Coating

40#/Hr LDPE = 1 Ton

Process flow required = 12 GPM/ton for direct roll cooling

Pipe & Profile

80 #/Hr ABS = 1 ton 90#/Hr PVC = 1 Ton

Sheet

40#/Hr UHMWPE = 1 Ton 55#/Hr PP = 1 Ton

80#/Hr PVC = 1 Ton

 $50\#/Hr\ HDPE = 1\ Ton$ 75#/Hr PS = 1 Ton $55\#/Hr\ LDPE = 1\ Ton$ 75#/Hr ABS = 1 Ton

Process flow = 8 GPM/ton for direct roll cooling

Equipment Cooling

Gearbox cooling = 0.5 Ton/Inch of extruder barrel Screw cooling = 0.5 Ton/Inch of extruder barrel Feed throat cooling = 0.33 Ton/ Inch of extruder barrel Barrel cooling = 1 Ton/Inch of extruder barrel Eddy current clutch (light load) = 0.2 Ton/HP Eddy current clutch (normal operation) = 0.05 Ton/HP

Injection Molding

Mold Cooling

 $30\#/Hr\ HDPE = 1\ Ton$ 40#/Hr Nylon = 1 Ton

65#/Hr PVC = 1 Ton

50#/Hr PS = 1 Ton $35\#/Hr\ LDPE = 1\ Ton$

40#/Hr PET = 1 Ton

35#/Hr PP = 1 Ton50#/Hr ABS = 1 ton

Hot runner molds = 1 Ton/10.5 KW hot runner

Machine Cooling

10 HP Hydraulic Motor HP = 1 Ton

Feed throat cooling = 1 Ton (machines under 400 ton use 1/2 ton)

Thermoforming

180#/Hr PE = 1 Ton 250#/Hr HIPS = 1 Ton 240#/Hr PVC = 1 Ton Rail Cooling = 3 Tons

Minimum process flow of 4.8 GPM/Ton

Other

Mold room heating = 25 BTU/FT2 Vacuum pump = 0.1 Ton/HP Non-mold room heating = 50 BTU/FT2 Water pump = 0.2 Ton/HP Mold room cooling = 80 BTU/FT2

Air compressor without after cooler = 0.15 Ton/HP Air compressor with after cooler = 0.20 Ton/HP

Common Conversion Factors

To Convert From	То	Multiply By
Boiler HP	Btu/Hour	33445.7
Cubic Centimeters	Gallons (US)	0.00026
Cubic Feet	Gallons (US)	7.48052
Cubic Inches	Gallons (US)	0.00433
Cubic Meters	Gallons (US)	264.172
Feet	Meters	0.3048
Gallons (US)	Cubic Meters	0.003785
Gallons (US)	Liters	3.7854
Gallons (US)/Minute	e Liters/Second	0.06309
Inches	Millimeters	25.4
Kilowatts	Btu/Hour	3414.4
Motor HP	Btu/Hour	2547.16
Motor HP	KW	0.746
Ounces	Grams	28.3495
Pounds	Kilograms	0.4536
Pounds/Sq Inch	Bar	0.06895
Pounds/Sq Inch	Kilograms/Sq Cm	0.07031
Pounds/Sq Inch	Kilopascals	6.89476
Pounds/Sq Inch	Feet of Water	2.3067
Square Feet	Square Meters	0.0929
Square Inch	Square Centimeter	6.4516

	1
320'-	160
305'-	-150
290'	140
275'	130
200	
245	120
230'-	110
212"-	100
2007-	- 90"
185'-	
170"-	80,
155*	70"
140"	-60"
125	50"
10"-	40"
95'	-
80"	-30"
65'	- 20"
50'	-10"
32	Ep_
20'	
5	-10
-10"	- 20
-25	33
401	-45
	1
1	/

 $(^{\circ}C \times 9/5) + 32 = ^{\circ}F$

Weighted Water Tests	% Ethylene Glycol	vs Freeze
$\frac{\text{GPM x }\Delta T}{\text{ = Chill Ton}}$	by Volume	Protection
24	10%	25°F
$\frac{\#/\text{Min x }\Delta T}{}$ = Chill Ton	20%	15°F
200	30%	0°F
$\frac{GPM \times \Delta T}{DPM} = Twr Ton$	40%	-15°F
30	50%	-40°F
$\frac{\#/\text{Min x }\Delta T}{250} = \text{Twr Ton}$		

Flow Rates vs Temp Difference Per Ton

 $1.2 \text{ GPM} = 20^{\circ}\text{F} \Delta T$ $4.8 \text{ GPM} = 5^{\circ}\text{F} \Delta T$ $2.4 \text{ GPM} = 10^{\circ}\text{F} \Delta T$ $9.6 \text{ GPM} = 2.5^{\circ}\text{F} \Delta T$

Pipe Sizing Guide for Schedule 40 Steel Pipe

(10'HD/100' Run,10'/Sec Velocity Max)

1/2" = 3 GPM 11/4" = 25 GPM $2\frac{1}{2}$ " = 120 GPM 6" = 900 GPM11/2" = 40 GPM $\frac{3}{4}$ " = 6 GPM 3'' = 200 GPM8" = 1500 GPM 1" = 12 GPM 2'' = 75 GPM4" = 400 GPM10" = 2400 GPM

Commonly Used Equivalents & Formulae

1 HP = 2547.16 Btu/Hr 1 Cu Ft = 7.48 gallons (water) 1 Gallon = 8.33 lbs (water) 1 KW = 3414.4 Btu/Hr

Q = 4.5xCFMxDH = Btu (air cooling) 1 KW = 1.341 HP $PSI = \frac{\text{ft of head}}{}$ GPM x P(feet of head) 3960x(0.65 to 0.75) (Pump Eff) 2.31

 $KW = \frac{Amps \times Volts \times 0.85 \times 1.73}{Amps \times Volts \times 0.85 \times 1.73}$ 1,000

Tower water make-up requirements: untreated 2% of flow rate, treated 1.5% of flow rate.

Water cooled requires 3 GPM/Min/Ton

Lose 1.5% capacity per degree lower than rating



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



IMS Hydra Air Cooled Chillers



Manufactured at an ISO 9001:2015 facility

Tested at full capacity prior to shipping

Maximum Cooling Capacity For Multi-Industrial Use

Allows you to mold better parts in less time with fewer rejects.

Set Point Temperature as low as 20°F Standard

Galvanized multi-blade propeller fans 7" Color Touch Screen

Microprocessor controller

- accurate temperature control (±1°F) and

extensive diagnostics

Primary Chiller Controller

- PLC with 7" Color Touch Screen
- (7) Display Parameters
- (10) Alarms and Warnings
- (4) Communications and Remote Interfaces

Direct Drive Scroll Compressors

- Hermetically sealed
- Low maintenance
- Efficient

Compressor Protection Technology

- Start-to-start logic limits cycling under low-load, extends compresssor life, via hot gas by-pass capacity control

Stainless & Non-ferrous Process Circuit

- Insulated poly tank
- Stainless, braze-plate evaporator, pump

Process Protections

- Phase monitor
- Low reservoir alarm
- Temperature deviation alarms with time adjustability
- Compressor and pump run-time display
- Evaporator inlet, contaminant strainer

Physical

- Heavy-gauge, no-tools, easy access door panels
- Low noise fans, high efficiency, top mounted for operator comfort
- Removable, cleanable air filter

Warranty

- 18 month parts
- 12 months labor in your facility

1 to 3 Ton units have one of the smallest footprints in the industry.

See next page for additional specifications and pricing.

Exceptional Warranty No manufacturer offers a better/more comprehensive warranty:

- 18 months on parts
- One full year on labor
- Five full years on micro-processor with lifetime controller exchange price of \$200



Inlet air filter cleanable, durable and ensures maximum operating efficiency



External sight glass fill/drain connection



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

IMS Hydra Air Cooled Chillers (continued)

- Non-ferrous construction Includes reservoir, evaporator, pump and piping to resist corrosion
- Air-cooled condenser Generously sized for industrial environments with ambient temp up to 115°F
- Removable side panel Allows easy access to interior components
- Internal insulated polyethylene reservoir With removable top
- Process Y-strainer Protects the evaporator from contaminants in the water
- Evaporator freeze-up protection
- · Heavy gauge steel cabinet
- · Casters standard on all sizes
- Refrigerant: R407C (EQ Series), R410A (NQ Series)

Mechanical Features:

- Scroll compressor(s) Energy efficient and reliable
- Generously sized copper tube/aluminum finned air-cooled condensers - Designed for industrial environments (includes air inlet filters)
- · Stainless steel process pump with pressure gauge
- · Refrigerant TXV, filter/drier and sight glass
- Stainless steel brazed plate evaporator Higher heat transfer coefficients due to reduced fouling
- Electronic hot gas bypass Handles varying load conditions
- · Freezestat safety switch with solid state sensor
- Encapsulated high and low refrigerant pressure safeties

			EQ S	eries	Chille	rs (Se	t Poin	t Ra	nge: 2	0°-6	5° F)			
Cooling	inio item w		AMPS		Tank			DOI	In/Out	Dimensions (in)		` '	Weight	Unit Price
Capacity	230/60/3	460/60/3	230V	460V	(GAL)	HP	(GPM)	PSI	NPT	L	W	Н	(LBS)	
1 Ton	149619*	N/a	11	N/A	3	1/4	2	80	1"	34	19	28	255	\$7,575.00
2 Ton	149620	149621	16	8	11	1	5	39	1"	40	24	42	423	9,520.00
3 Ton	149622	150186	22	11	11	1	7	38	1"	40	24	42	430	10,965.00

^{*230/60/1}

	NQ Series Chillers - Refrigerant R410A (Set Point Range: 20°-80° F)													
Cooling	. I illio itelli "		AMPS		Tank				In/Out		ensions	(in)	Weight	Unit Price
Capacity	230/60/3	460/60/3	230V	460V	(GAL)	HP	(GPM)	PSI	NPT	L	W	н	(LBS)	
5 Ton	168455	168456	33	18	11	1 ½	12	39	1 ½"	48	34	61	720	Inquire
11 Ton		168460	62	31	22	3	27	48	11/2"	75	34	61	1,195	Inquire

	NQ Series Chillers - Refrigerant R454B (Set Point Range: 20°-80° F)													
Cooling Capacity	IMS It	em # 460/60/3	AN 230V	AMPS 230V 460V		Pump Flow HP (GPM)		PSI	In/Out NPT	Dim	ensions W	(in)	Weight (LBS)	Unit Price
4 Ton	175405	175406	32	16	(GAL)	2	10	43	11/2"	48	34	61	720	\$13,745.00
5 Ton	175407	175408	33	18	14	2	12	41	1 ½"	48	34	61	720	15,605.00
8 Ton	175409	175410	52	26	30	2	19	41	11/2"	75	34	61	1,195	17,410.00
11 Ton	175411	175412	62	31	30	3	27	48	11/2"	75	34	61	1,195	19,750.00
13 Ton	175413	175414	74	37	30	3	30	46	11/2"	75	34	61	1,215	23,515.00
15 Ton	175415*	175416	88	44	60	3	36	40	2"	87	41	94	3,200	27,115.00*
21 Ton	175417•	175418	111	56	60	5	48	45	2"	87	41	94	3,300	32,670.00*
26 Ton	175419†	175420	140	70	67	5	60	48	2"	105	41	94	3,800	44,030.00†
31 Ton	175421‡	175422	166	83	67	5	72	43	2"	105	41	94	4,150	46,695.00‡

Inquire about Water Cooled Chillers, Remote Condensers and Tankless Chillers

Accessories: S = Standard O = Optional NA = Not Available

Description	EQ	NQ	Description	EQ	NQ
C-UL508A Controls with a 7" color touch screen PLC	NA	S (Av	railable on Refrigerant R454B Types only)		
Alarm Horn and Silence Switch	0	S	Low Water Level Light	0	S
Automatic Water Makeup & Low Level Light	0	0	Remote Alarm Dry Contact	0	NA
Extend Set Point Range to 80° F (1-3 Ton)	0	S	Remote On/Off Contacts	0	0
Extend Set Point Range to 80° F (5.5 Ton)	0	S	Return Water Temperature Display	0	S
Hand Held Remote with 50' cable	0	0	Special Color Air Dry Enamel Paint	0	0
SPI Communications Port	0	0	3-Phase Monitor	0	S
SPI Communications Port	0	0	3-Phase Monitor	0	S
Inlet Air Filter (for #149622 and #150186)	S	S	575 volt add	0	0



Made in the U.S.A.

IMS Hydra S Series Air Cooled Chillers

Industry Standard Quality



Vertical Air Discharge with Cleanable Air Filters - allows/affords operator comfort

Removable Panel Doors - allows easy access and maintenance of components

Built-In Sub Cooling Circuit on Condensers - improves efficiency and reduces refrigerant charge

Brazed Plate Evaporators - provide most efficient thermal transfer

Chillers

- 50-95° F Set Point Range
- Powder Coated, Sheet Metal Cabinet
- Digital Temperature Controller
- Casters standard on units up to 5 Tons
- R-407C Refrigerant
- Self Contained Unit with Re-Circulating Pump
- Hot Gas Bypass Freeze Protection
- Fused Disconnect
- Non-Ferrous Welded Components
- Manual Fluid Bypass



IMS It 230/60/3	em # 460/60/3	Ton*	Pump HP	Flow (GPM)	Tank (gal)	In/Out NPT	Di L	mensio W	ns H	Crated Weight	Unit I 230V	Price 460V
171219‡	171218‡	3	2	10 @ 45	36	1 ½"	341/2"	37"	65"	1100 lbs	14,278.00	\$11,770.00
171221	171220‡	5	2	15 @ 45	36	1 ½"	341/2"	37"	65"	1100 lbs	14,528.00	12,020.00
N/A	171222	7.5	2	25 @ 40	60	2"	57"	37"	65½"	1600 lbs	N/A	16,012.00
N/A	171223	10	3	30 @ 40	60	2"	57"	37"	651/2"	1600 lbs	N/A	16,585.00
N/A	171224	15	5	60 @ 45	86	2"	57"	61½"	65½"	2550 lbs	N/A	26,090.00
N/A	171225	20	5	60 @ 45	86	2"	57"	61½"	651/2"	2550 lbs	N/A	28,070.00

^{*}Tonnage rated @ 65°F fluid leaving temp @ 95°F ambient *Indoor and outdoor capable Include automatic make-up water fill

Inquire about Water Cooled, Tankless and Outdoor Chillers

Optional Accessories

Auto water fill (standard on indoor units only), Inlet Water Filter, Anti Backflow Kit and Remote Control — INQUIRE



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Hydra J Series MicroMax Air Cooled Chillers

Great Cooling Capacity for Smaller Jobs





1/8 to 11/2 Ton Sizes Available

18 Month Warranty

Removable Panel "Lift Out Doors" - Allows easy access and maintenance of internal components

Stainless Steel Cabinet - Heavy duty anti-corrosive enclosure

Digital Temperature Controller - Allows for easy operation

- 50-80°F Set Point Range
- Ambient Temperature Range: 50-95°F
- · Closed-Loop Style
- UL 1995 Certified
- Casters Standard
- R-134A Refrigerant

- · Indoor Use Only
- · Corrosion-Free Reservoir
- Non-Ferrous Welded Components
- Submersed Copper Coil
- High Flow Re-Circulating Pump



Item #	Cooling Capacity*	Voltage	AMPS	Pump HP	Flow (GPM @ PSI)	Tank (GAL)	In/Out NPT	Dimen L	sions W	н	Weight (LBS)	Unit Price
170858	2100	115/60/1	11.7	1/3	2 @ 50	5	1/2"	211/8"	22"	285/8"	290	\$4,700.00
170856	4300	115/60/1	15.5	1/3	4 @ 50	5	1/2"	211/8"	22"	285/8"	345	5,590.00
170857	5000	230/60/1	8.0	1/3	4 @ 50	5	1/2"	211/8"	261/2"	285/8"	345	5,930.00
171391**	12000	230/60/3	12.6	1	10 @ 35	10	1"	251/8"	311/8"	331/4"	530	8,170.00
171122	12000	460/60/3	7	1	10 @ 35	10	1"	251/8"	351/2"	33¾"	530	8,340.00
170686**	12000	230/60/3	12	1/2	4 @ 50	10	1/2"	251/8"	311/8"	33¾"	530	7,810.00
168098**	12000	460/60/3	6.1	1/2	4 @ 50	10	1/2"	251/8"	351/2"	33¾"	530	8,060.00
167990**	18000	230/60/1	24	1/3	4 @ 50	10	1/2"	251/8"	351/2"	31"	570	8,060.00
170855**	18000	230/60/3	17	1/2	4 @ 50	10	1/2"	251/8"	311/8"	331/4"	570	8,130.00
170859**	18000	460/60/3	7.5	1/2	4 @ 50	10	1/2"	251/8"	351/2"	33¾"	570	7,820.00

^{*}Rated In BTUs Per Hour 65° F fluid leaving temp @ 95° F ambient 12,000 BTUs = 1 Ton. (ex: 5040 BTU / 12,000 = .42 Tons)



^{**} Includes Auto Water Fill - automatically maintains the water level of the reservoir. Customer needs to supply water line to the automatic valve

SHIMI Portable Air Cooled Chillers

Great Value for Multi-Industrial Use

Vertical Discharge - Allows/affords operator comfort

Hot Gas Bypass Valve - Handles varying load conditions

Automatic Water Bypass Valve - Protects against freeze up

Non-Proprietary Temp Controller - Maintains an accuracy of $\pm~1^{\circ}F$

Siemens Electrical Components

Compressor and Pump Overload Protection

- 45°-70°F Operational Temperature Range
- Full Diagnostics Panel
- Non-Ferrous Water Components
- Fully Insulated Stainless Steel Reservoir
- Heavy Duty Powder Coated Cabinet
- Automatic Fill Valve
- · Casters standard for portability
- R-407C/R410A* Refrigerant (*both available on some models)
- 10' Power Cord

Most Sizes In Stock 1 Year Warranty



- Stainless steel water tank
- 2. Big flow 3-phase pump
- 3. High / low system pressure gauges
- 4. Main power switch
- 5. Pump pressure gauge
- Copeland scroll compressor(s) for super high efficiency and low noise
- 7. Expansion valve for accurate adjustment of R-407C refrigerant
- 8. Condenser features quick heat transfer and heat radiation
- 9. Shell-and-tube evaporator ensures efficient cooling
- 10. Powder coated frame



23	IMS It 30/60/3	em # 460/60/3	Shini #	Ton*	Compressor HP	Pump HP	Flow Rate (GPM)†	Tank Size (gal)	In/Out NPT	Din H	nensio W	ons D	Weight (LBS)	Unit 230V	Price 460V
17	73627	173628	SIC-12A-R2-P	5	5	1	11	13	1"	59"	30"	51"	450	\$8,995.00	\$9.670.00
17	73629	-	SIC-24A-R2-P	10	10	1.5	22	22	11/2"	59"	36"	51"	500	13,250.00	-
17	73631	173632	SIC-38A-R2-P	15.3	15	3	32	40	11/2"	59"	30"	51"	850	19,995.00	19,995.00

^{*}Tonnage rated @ 50° F fluid leaving temperature with 90°F ambient air

Inquire about Water Cooled Chillers

Worldwide electrical safety standards available (CE, UL, CSA, JIS etc.) — Inquire



[†] Gallons per minute @ 40 psi



Lime Buster Water-Passage Descaler



Quickly Dissolves and Flushes Away Scale, Rust, Lime and Calcium Deposits from Internal Mold Passages, Water Lines and Heat Exchangers

The Problem:

Water circulators provide mold temperature control, but water can leave deposits that insulate the mold from the circulating water; as little as $\frac{1}{64}$ can reduce heat transfer 40%. Full temperature change takes longer. Cycle times and electricity use go up as part quality goes down.

The Solution:

The IMS Lime Buster circulates a mild acid through your mold water passages, dissolving mineral deposits and flushing them away. Circulating water can then have direct contact with the metal in the mold, restoring heat transfer. You'll see shorter cycles and better parts.



Before



Minerals in water passages block heat transfer. You lose time every cycle. You can even lose temperature control in parts of your mold.

After



Lime Buster flushes deposits from passages. Heat transfer becomes faster; cycles get shorter. You get full temperature control over the entire mold.

Designed for all mold materials & Heat Exchangers



Routine Use of Lime Buster Keeps Molds Running at Peak Performance!



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) **1.866.467.9001**



Lime Buster IIIWater-Passage Descaler

Keeps mold productivity UP and press operating costs DOWN!





After cleaning water passages use IMS Foaming Rust Inhibitor to ensure rust-free mold storage.

See Page 139

Convenient Plumbing Kit

Now standard equipment to make mold hook-up fast & easy!

#110469 Kit Includes:

Barbed Polyethylene Fittings: 1/2" I.D. x 1/2" N.P.T	Qty
½" I.D. x ½" N.P.T.	
½" I.D. x ¼" N.P.T.	
Plugs (for unused ports in manifold) ½" N.P.T.	6
3/4" Nylon Hose Clamps	16

See Next Page for Pricing





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) **1.888.288.6900**

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001





Use as Scheduled Mold Maintenance or Whenever a Mold is Removed for Storage

Plumbing Kit includes an assortment of fittings, plugs and clamps



Why do you need an acid and a neutralizer?

- Non-acid solvents don't dissolve mineral scale nearly as well as acid does. That is simple chemistry.
- The EPA requires acids to be neutralized before disposal.
- IMS Gardacid 4294 acid powder has a color marker to help you know when the solution is acidic (ready to use as a descaler) or neutral (ready for disposal).





Gardacid 4294 Acid (powder)

Supplier's Tip

Avoid "watered-down", premixed descaling solutions that use more fluid, require more time and end up costing more money.

Item #175140

Complete with one 41-lb container of Gardacid 4294 Powdered Acid, one 5-gal container of Gardobond® Additive H 7212 Neutralizer, Plumbing Kit, 50 ft of Vinyl Hose, one vial of Neutral Litmus Paper Strips, Instructions and one 16 oz. can of IMS Foaming Water-Passage Rust Inhibitor with hose, fitting and clamp.

\$2,285.00

For 115/60/1 operation

#110226	IMS LIME BUSTER III™ ONLY Complete with Plumbing Kit and 50 ft. of vinyl hose	\$1,693.75					
	— Supplies and Spare Parts —						
#110221	Gardacid 4294 (41 lbs)	\$418.09					
#175200	Gardobond® Additive H 7212 Neutralizer (5 gal)	335.85					
#110469	Plumbing Kit, Standard Size	35.25					
#110504	½" I.D. Vinyl Hose	0.75/ft.					
#121711	Vial of 100 Neutral Litmus Paper Strips	5.86					
#155320	Chemical Resistant Gloves (pair)-Neoprene	2.87					
#145852	Chemical Resistant Apron-Nitrile Coated	18.68					
#113406	Pump and Motor Assembly	675.95					

Specifications

Operating Capacity: 5 to 11 gal.
Maximum Operating Temp: 140° F
Pump/Motor: Centrifugal Pump, Close Coupled to AC Motor
Voltage 115V
Full Load Amps 2.8
Power
Speed
Flow 18 gpm Open Discharge
Inlet & Outlet Connections: ½" N.P.T.
Base Dimensions: 18" wide x 23" long
Height Overall:
Weight (crated) Lime Buster only: 96 lbs
Lime Buster Complete Kit: 180 lbs

Tech Tips

The general rule of thumb is ½ lb of acid per gallon of water.

Lime Buster III™ is a trademark of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



Lime Buster XL™Water-Passage Descaler

Keeps Mold Productivity Up And Press Operating Costs Down!

- · Designed for all Mold Materials & Heat Exchangers
- · Big 30 Gallon tank capacity



Optional XL Plumbing Kit #144843

INCLUDES (2) 4 Port
PVC Manifolds with ½" Ports,
Fitting Kit*, Hose and
Hose Clamps

#110469 Kit Includes:

Barbed Polyethylene Fittings:	Qty				
½" I.D. x ½" N.P.T	16				
½" I.D. x 3/8" N.P.T	8				
½" I.D. x ¼" N.P.T	8				
Plugs (for unused ports in manifold) ½" N.P.T.	6				
3/4" Nylon Hose Clamps	16				
See Next Page for Pricing					





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) p 1.888.288.6900 00

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Lime Buster XL



Use as Scheduled Mold Maintenance



Why do you need an acid and a neutralizer?

- Non-acid solvents don't dissolve mineral scale nearly as well as acid does. That is simple chemistry.
- The EPA requires acids to be neutralized before disposal.
- IMS Gardacid 4294 acid powder has a color marker to help you know when the solution is acidic (ready to use as a descaler) or neutral (ready for disposal).





Gardacid 4294 Acid (powder)

— Supplier's Tip —

Avoid "watered-down", premixed descaling solutions that use more fluid, require more time and end up costing more money.

Item #175150

Complete with one 1" Female NPT Flowmeter, two 41-lb containers of Gardacid 4294 Powdered Acid, one 5-gal container of Gardobond® Additive H 7212 Neutralizer, two vials of Neutral Litmus Paper Strips, Plumbing Kit (Manifolds/Fittings/Hose)* and Instructions.

\$3,650.00

For 115/60/1 operation

#136666	IMS LIME BUSTER XL [™] ONLY Complete with one 1" Female NPT Flowmeter	\$2,750.00				
	— Supplies and Spare Parts —					
#110221	Gardacid 4294 Powdered Acid (41 lbs)	\$418.09				
#175200	Gardobond® Additive H 7212 Neutralizer (5 gal)	335.85				
#103776	Foaming Mold Water Passage Rust Inhibitor (16 oz)	8.29				
#121711	Vial of 100 Neutral Litmus Paper Strips	5.86				
#144843	*Plumbing Kit: Includes (2) 4 Port Manifolds with ½" Ports, Fitting Kit, 50' of Hose and Hose Clamps	340.00				
#110504	½" I.D. Vinyl Hose	0.75/ft.				
#145211	1" Female NPT Flow Meter	179.31				
#155320	Chemical Resistant Gloves (pair)-Neoprene	2.87				
#145852	Chemical Resistant Apron-Nitrile Coated	18.68				
#131295	Pump and Motor Assembly	970.25				

Foaming Rust Inhibitar and cleaner For use during mole storage For storage out of

After cleaning water passages use IMS Foaming Rust Inhibitor to ensure rust-free mold storage.

See Page 139

Specifications

Operating Capacity:	
Maximum Operating Temp:	140° F
Pump/Motor: Centrifugal Pump,	Close Coupled to AC Motor
Voltage	115V
Full Load Amps	3.8
Power	1/4 hp
Speed	2850 rpm
Flow	. 44 gpm Open Discharge
Inlet & Outlet Connections:	1½" N.P.T.
Base Dimensions:	27" wide x 35" long
Height Overall:	32½"
Weight (crated):	

Tech Tips

The general rule of thumb is $\ensuremath{\ensuremath{\mathcal{I}}}\xspace_2$ lb of acid per gallon of water.

Lime Buster XL™ is a trademark of IMS Company



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900 00

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

		Process Trouble-Shoo				
		LINE MATERIALS	AMORPHOUS MATERIALS			
Problem	Lower/Reduce	Raise/Increase	Lower/Reduce Raise/Increase			
	Injection Pressure	Melt Temp	Melt Temp	Mold Temp		
	Holding Pressure Time	Mold Temp	Moisture Content	Gate Size		
Splay	Injection Speed	Gate Size	Injection Pressure			
	Mold Release Spray		Screw Speed			
	mera ricicado opray		Hold Pressure Time			
			Venting			
	Melt Temp	Clamp Pressure	Melt Temp	Clamp Pressure		
	Mold Temp	Clamp Flessure	Mold Temp	Ciamp Fressure		
	· · · · · · · · · · · · · · · · · · ·					
Flash	Injection Pressure		Injection Pressure			
	Hold Pressure Time		Injection Speed			
	Injection Speed					
	Melt Temp	Mold Temp	Melt Temp	Mold Temp		
Voids	Moisture Content	Gate Size	Moisture Content	Gate Size		
voius	Cooling Time	Injection Pressure	Cooling Time	Injection Presure		
		Back Presure	Injection Speed	Back Pressure		
		Hold Pressure Time		Hold Pressure Time		
	Melt Temp	Cooling Time	Melt Temp	Hold Pressure Time		
Warpage	Mold Temp	Injection Pressure	Mold Temp	Cooling Time		
mai page	Injection Pressure		Injection Pressure			
			Back Pressure			
	Mold Temp	Melt Temp	Mold Temp	Gate Size		
		Gate Size		Injection Pressure		
		Injection Pressure		Hold Pressure Time		
0		Hold Pressure Time				
Sinks				Injection Speed		
		Injection Speed		Venting		
		Cushion				
		Venting				
		Melt Temp		Melt Temp		
		Mold Temp		Mold Temp		
		Gate Size		Gate Size		
Short		Injection Pressure		Injection Pressure		
Shot		Hold Pressure Time		Hold Pressure Time		
		Injection Speed		Injection Speed		
		Injection opeod		Venting		
	Mold Release Spray	Melt Temp	Mold Release Spray	Melt Temp		
	Wold Helease Spray	Mold Temp	Wold Nelease Spray	Mold Temp		
		•		<u> </u>		
Glossiness		Injection Pressure		Injection Pressure		
		Injection Speed		Hold Pressure Time		
		Venting		Injection Speed		
				Venting		
	Melt Temp	Mold Release Spray	Melt Temp	Mold Release Spray		
Dorto	Mold Temp		Mold Temp			
Parts	Injection Pressure		Injection Pressure			
Sticking	Hold Pressure Time		Hold Pressure Time			
	Cooling Time		Cooling Time			
	Injection Speed		Injection Speed			
	Melt Temp	Gate Size	Moisture Content	Gate Size		
	Moisture Content	Venting	Injection Pressure	Venting		
	Injection Pressure		Back Pressure	9		
	Back Pressure		Screw Speed			
Brittleness						
Brittleness	Screw Speed		Hold Pressure Time			
	Hold Pressure Time		Cushion			
	Cushion		Regrind			
	Regrind		Mold Release Spray			
	Mold Release Spray					
Burn	Injection Pressure	Venting	Melt Temp	Gate Size		
Marks	Injection Speed		Injection Pressure	Venting		
Delamination	Melt Temp	Mold Temp	Moisture Content	Mold Temp		
- signification	Injection Speed	Gate Size		Gate Size		
	Moisture Content	Melt Temp	Moisture Content	Melt Temp		
		Mold Temp		Mold Temp		
		Gate Size	+	Gate Size		
Weld						
Lines		Injection Pressure		Injection Pressure		
==		Hold Pressure Time		Hold Pressure Time		
		Injection Speed		Injection Speed		
		Venting		Venting		
	Injection Speed	Melt Temp	Injection Speed	Melt Temp		
Jetting	Hold Pressure Time	Mold Temp		Mold Temp		
001111119						





Part Drop Chutes, Skirts, Trays & Diverting Systems Pages 766 – 775

Post-Production Equipment



Part/Runner Conveyors & Separators Pages 776 – 783

Plastic Granulators, Accessories & Services
Pages 784 – 800

Most items IN STOCK for Same Day Shipment



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001



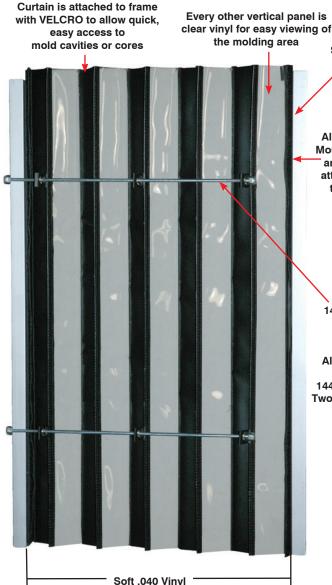
Mold Side Curtains

Effectively Contain Molded Parts of Multi-Cavity Molds That Have a Tendency to Fly Out The Sides

Help Reduce the Risk of Part Contamination, Loss or Damage

Shown OPEN

Aluminum Angle
Mounting Brackets
are designed to
attach directly to
the mold, not
the platen



Typical Installation

Tie bar sleeves sold separately For custom Tie Bar Sleeves



sold separately

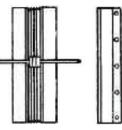
Steel Alignment Rod stops curtain

144429-144432 (4" to 10" Mold Open) NO Alignment Rod Required

from collapsing into the mold

144433 (12" Mold Open) One Alignment Rod in the Center Required

144434-144437 (14" and 20" Mold Open) Two Alignment Rods Required (as shown)



Shown Closed

End View

INCLUDE: Two $1\frac{1}{2}$ " x $\frac{3}{4}$ " aluminum angle mounting brackets for attaching to the mold; Velcro for attaching the curtain to the brackets. $\frac{1}{4}$ " Steel Alignment Rods may or may not be included depending on size of curtain (see above).

Item #	Mold Open	Approximate Mold Close	Length	Unit Price
144429	4"	3/4"	12"	\$69.41
144430	6"	3/4"	15"	86.88
144431	8"	1"	18"	100.00
144432	10"	11/4"	21"	116.13
144433	12"	11/4"	24"	124.31
144434	14"	1 ½"	27"	150.00
144435	16"	1¾"	30"	159.67
144436	18"	1¾"	33"	175.66
144437	20"	2"	36"	196.66

NOTE: The Curtains above are Standard and will fit a variety of applications for custom curtains. Use form on the following page.



www.imscompany.com

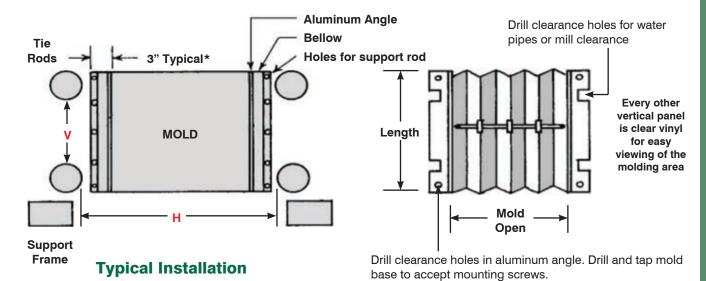
phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

Custom Mold Side Curtains Request Form



*Note:

Side curtains require 3" gap between mold and tie bar. The curtain can only be as long as the tie bar spacing if adequate space does not exist.

Ensure adequate clearance between waterline fittings on the parting line, to allow the curtain to collapse in between when the mold is closed.

Curtain open stroke and curtain length should not exceed 36".

Mounting Bracket is always 1" shorter than the curtain length.

Curtain length received will be $1\!/\!2"$ shorter than ordered for adjustment purposes.

1. (H) Distance between Tie Rods:

Mold Open	Approximate Mold Close
3" - 6"	½" bellows + ¼" for mounting bracket
7" - 9"	3/4" bellows + 1/4" for mounting bracket
10" - 12"	1" bellows + 1/4" for mounting bracket
13" - 15"	11/4" bellows + 1/4" for mounting bracket
16" - 18"	11/2" bellows + 1/4" for mounting bracket
19" - 21"	13/4" bellows + 1/4" for mounting bracket
22" - 24"	2" bellows + 1/4" for mounting bracket
25" - 27"	21/4" bellows + 1/4" for mounting bracket
28" - 30"	2-1/2" bellows + 1/4" for mounting bracket
31" - 32"	23/4" bellows + 1/4" for mounting bracket
33" - 36"	3" bellows + 1/4" for mounting bracket

2. Mold Width:			Mold Height:		
3. Mold Open:					
4. Curtain Length:					
Date:	Quantity:	Phone:()		Fax: ()
	-				
Company Name: _					
Address:					
City:			State:		Zip:



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

(V) Distance between Tie Rods:

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001



Tie Bar Sleeves

Inexpensive Method to Reduce Contamination of Molded Parts While Extending the Life of Tie Bars and Bushings

Shown In Extended Mold Open Position



Shown in Mold Closed Position

MAX Use Temp: 240° F



· Prevent tie bar grease from contacting molded parts

- Protect tie bars and bushings from abrasive airborne particles
- Opens and closes with mold stroke to provide continuous provide continuous protection
- Provides a cleaner, more professional appearance at the press
- Constructed of Neoprene Coated Nylon
- Custom made to any tie bar diameter and length
- Sized to the molding press, not individual molds

Tabs with Eyelets



Used with the magnetic mounting kit to connect to the mold

Air Vent



Allows air flow while mold is closing



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

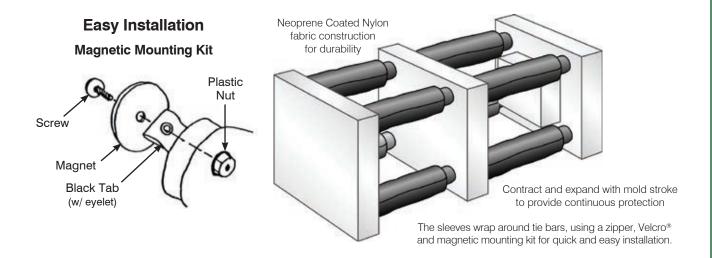
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

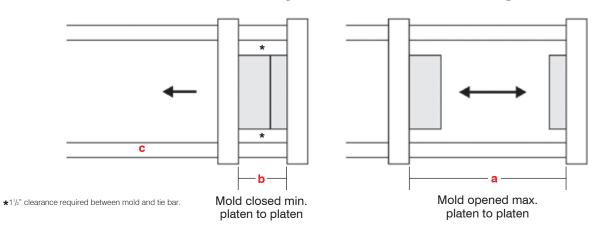
Tie Bar Sleeves



Keep Tie Bar Grease In / Keep Abrasive Airborne Particles Out



Custom Made To Any Tie Bar Diameter And Length



Specify:

a. Mold Open: _					_
					max open length = 3X closed length (max ratio = 3:1)
c. Tie Bar Diame	eter:				_
d. Quantity:					_
Date:	Quantity:	Phone: ()		Fax: ()
Name:				Title:	
Company Name:					
Address:					
					Zip:



phone order toll-free (USA & Canada) 1.800.537.5375



Detachable Part Chute Guideskirts

Great For Automating Injection Machine Part Distribution and Sorting
8 Styles to Suit Most Any Application

HB Hard Bottom Style

Detachable Chute Guideskirts with cushion insert is specifically designed to transfer molded parts by gravity from under the machine to a conveyor or container

	Mold	Rod		Chute	Unit
Item #	Open	Clearance	Height	Length	Price
144450	6"	12"	8"	24"	\$188.32
144451	12"	18"	10"	30"	225.42
144452	18"	22"	12"	34"	255.84
144453	18"	26"	14"	38"	291.38
144454	18"	30"	16"	42"	321.54

SB Soft Bottom Style

Soft Chute Guideskirts are made of soft, pliable, abrasion resistant material to protect delicate parts from surface damage, typical applications are conical or spherical shaped small parts below 200°F

Item #	Mold Open	Rod Clearance	Height	Chute Length	Unit Price
144455	6"	12"	8"	24"	\$116.22
144456	12"	18"	10"	30"	123.25
144457	18"	22"	12"	34"	147.40
144458	18"	26"	14"	38"	166.00
144459	18"	30"	16"	42"	172.30

Metal Side Plates

Illustration Represents both HB and SB Styles

8"

Typical

8

Typical

Height

 Provide rigidity and extended life to Guideskirts

Common Specifications

• Available in 26 ga. stainless steel or .025" thick aluminum

Mold

• Can be mounted to the inside or outside the skirting system

Waterproof

· Impervious to oil

and grease

Magnets (Item #124325)

Unit

Kevlar® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates

Rod

Clearance

Tie Bars

30° Typical

Chute

Length

Mold

Open

• 2¾" dia. x ¾" thick, 70# pull force (sold separately)

Additional unique styles from which to choose

Ad	ditional	unique style	es from v	which to
Item #	Mold Open	Rod Clearance	Height	Unit Price
		T Tapered Sty	le	-
144460	6"	12"	18"	\$100.81
144461	12"	18"	18"	102.00
144462	18"	22"	26"	104.63
144463	18"	26"	26"	131.82
144464	18"	30"	26"	135.66
	;	S Tapered Sty	le	
144465	6"	12"	18"	95.01
144466	12"	18"	18"	104.36
144467	18"	22"	26"	108.32
144468	18"	26"	26"	131.25
144469	18"	30"	26"	140.00
	SS Sid	de/Side Divide	ed Style	
144475	6"	12"	14"	\$455.46
144476	12"	18"	16"	480.42
144477	18"	22"	18"	515.52
144478	18"	26"	20"	559.97
144479	18"	30"	22"	594.29



Rod

	SL Split Leg Style									
144485	6"	12"	18"	\$150.80						
144486	12"	18"	18"	158.87						
144487	18"	22"	26"	175.80						
144488	18"	26"	26"	191.93						







Optional Hi-Temp material for thermoset parts

PTFE-coated, 10 mil. Kevlar® is recommended when parts ejected from the mold retain heat in excess of 300°F



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada) 1.866.467.9001

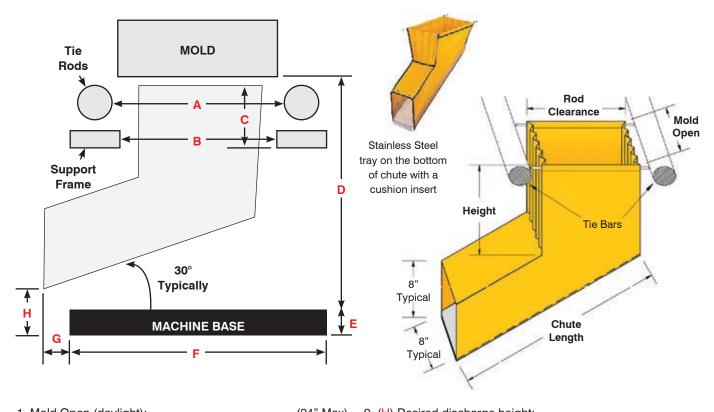
e-maii

sales@imscompany.com

770

Post-Production Equipment

Custom Detachable Guideskirts Request Form



1. Moid Open (daylight): (24 Max)	9. (h) Desired discharge height.
2. (A) Width between tie rods:	10. Size of parts: L x W x H
3. (B) Width between frame:	11. Runner system: ☐ No ☐ Yes
4. (C) Clearance Height (chute):	12. Size of runner: L x W x H
5. (D) Machine Clearance mold to base:	13. Do you require high temp material
6. (E) Base to floor:	(for parts over 180°): ☐ No ☐ Yes
7. (F) Width of base:	14. Style: ☐ Hard Bottom ☐ Soft Bottom
8. (G) Desired extension past base:	

All dimensions must be completed in order for a Quote to be given.

All guideskirts come with mounting hardware.

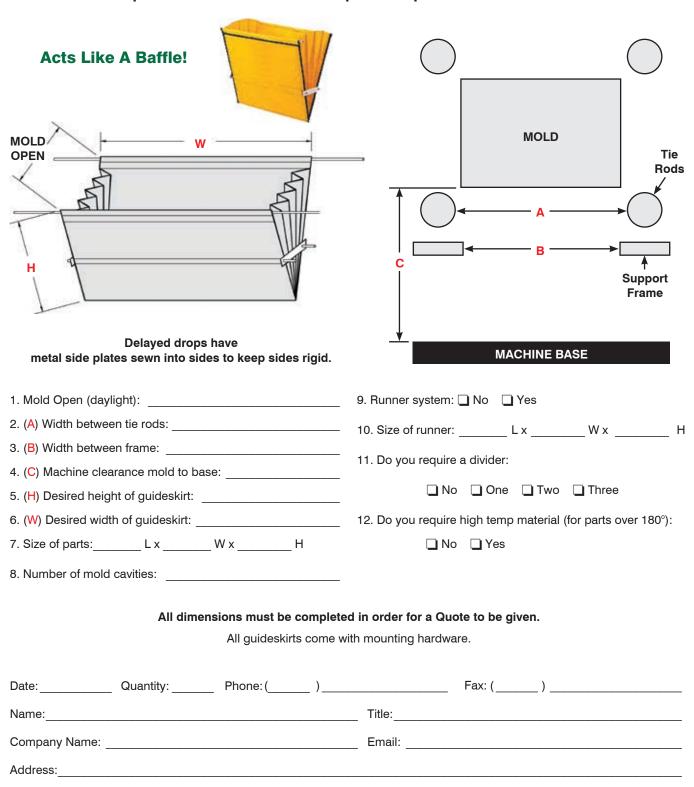
Date:	Quantity:	Phone:()		Fax: ()	
Name:			Title:		
Company Name:			Email:		
Address:					
City:			State:		Zip:





Custom Delay Drop Part Chute Guideskirts (Soft Drop) Form

Drop End Closes When Mold Opens - Opens When Mold Closes





fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

State: Zip:

Part Diverting Systems

Automatically Sort Bad Parts From Good Parts



General Description: A part diverter is used to change the direction of a shot of parts, the discharge of a complete cycle or cycles of parts from an injection molding machine. IMS offers two different styles of part diverters (also known as "part discriminators" in the injection molding industry) custom built to your specifications.

- 1) Under the press part diverters: Units sit or hang directly from the injection molding machine and based upon a specified signal from a IMM or process controller a pneumatically operated tipping tray internal to the diverter housing will discharge parts out the opposite end from where all "Good" shots discharge. The two different styles of under press part diverters are a free standing unit and a quick change type:
 - The free standing S1 diverter is either a square or rectangular stainless steel housing

A) Free standing S1:

with an internal pivoting tray actuated by a pneumatic air cylinder positioned either under the internal tray, or alongside the housing. The unit is typically supported by a mild steel T-type

support stand that is 20" tall and allows the housing to adjust vertically. An air control kit consisting of a ready to mount plate supporting a solenoid valve with filter and regulator/gauge and 1/4" air hose from air valve to cylinder is included. Optional chute extensions in standardized lengths are available to add to the housing on either side to aid in part discharge.

B) Quick Change Rail S1: The quick change rail S1 type is a square or rectangular stainless steel housing with an internal pivoting tray actuated by a pneumatic air cylinder positioned either under the internal tray, or alongside the housing. This unit is typically supported by an optional QCRA1 or QCRA2 quick change rail

attachment kit for either press depths up to 36" or 48" deep. The rail attachments support the load and provide for easy installation, removal or movement. An air control kit consisting of a ready to mount plate

supporting a solenoid valve with filter and regulator/ gauge and 1/4" air hose from air valve to cylinder is included.

- Optional chute extensions in standardized lengths are available to add to the housing on either side to aid in part discharge. Many other options are available.
- 2) Conveyor Mounted Part Diverters: IMS offers 6 different orientations for conveyor mounted parts diverters. These are used either at the in-feed or discharge end of the conveyors. Four of the six may be used with a flat or cleated type conveyor belts. Uses at the in-feed end of a conveyor are primarily when the IMM cycle time is very fast, and/or where a reversing belt conveyor may not be feasible. Primary use at the discharge end is when the good part container and bad part container need to be on the same side of the IMM.
 - A) PD1: Pneumatically operated rail that has a pivot point and an air cylinder to angle the rail across the belt surface to side discharge the product. Includes air control kit. This is for non-cleated belts only, must use slider bed on conveyor frame and hard durometer belt surface.
 - B) PD2: Similar to PD1 without the pneumatic controls.
 - PD3: QCRS1 style housing in standard dimensions with flanged bottom to mount to either the conveyor frame or the side rails, when using a top return on rails. The unit is mounted at the in-feed end and directs products in the direction of belt travel for good parts and off the end of the conveyor for rejected parts. Includes air control kit package.
 - D) PD4: QCRS1 style housing in standard dimensions with flanged bottom or flanged top to mount with special brackets to the discharge end of the conveyor, which may be the drive end or the idle end. The unit is mounted at the discharge end and directs the flow of products in the direction of belt travel for good parts and off the end of the conveyor for rejected parts. Includes air control kit package.
 - E) PD5: QCRS1 style housing in standard dimensions with flanged bottom to mount to either the conveyor frame or the side rails, when using a top return on rails. The unit is mounted at the in-feed end and directs the flow of products perpendicular to the direction of belt travel. Includes air control kit package.
 - F) PD6: QCRS1 style housing in standard dimensions with flanged bottom or flanged top to mount with special brackets to the discharge end of the conveyor, which may be the drive end or the idle end. The unit is mounted at the discharge end and directs the flow of products perpendicular to the direction of belt travel. Includes air control kit package.

See Form on Next Page



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

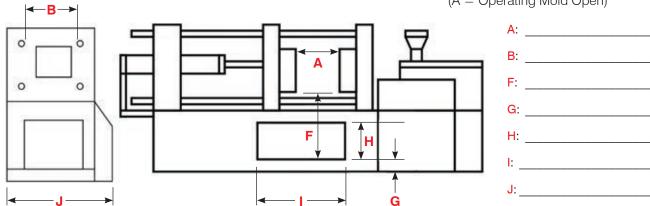
fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

Part Diverting Systems Request Form — Part 1 of 2

SPECIFY:

Please indicate dimensions in inches or feet (A = Operating Mold Open)



S1-Sorter

(shown with optional extensions and leg stand)



Will the S1-Sorter be discharging into a container?:

If Yes: Length: _____ Depth: _____ Depth: _____ If No, than what?:

Position:

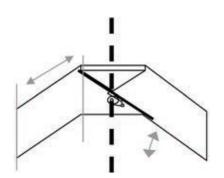
Optional Extensions

Desired extension length:

- **6**"
- **1**2"
- ☐ 18" ☐ Other

(Custom charges may apply for lengths over 18")

■ No extensions desired



Desired angle:

☐ 25° ☐ 30° (Standard)

Other____°

(Custom charges may apply for angles over 30°)

Leg Stand

Required height from the floor:

- **7**"
- ☐ 7" 12"
- **1**2" 20"
- Other "

(Custom charges may apply for heights over 20")

☐ No leg stand desired



(Continued on next page)



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

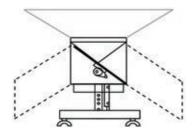
1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Post-Production Equipment

Part Diverting Systems Request Form — Part 2 of 2

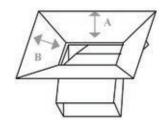
Optional Flared Top (Not available with Quick-Change Rail System — below)



Desired Flare length:

8" Other:

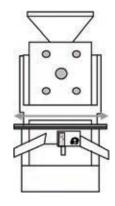
(A & B are normally the same length custom charges may apply for lengths over 8")



Optional Quick-Change Rail System

(This system mounts to the press with our "Sliding Track System")

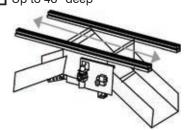


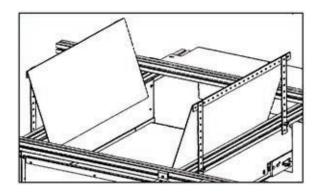


What is the depth of your press?:

Up to 36" deep

Up to 48" deep





Quick-Change Containment Package

These components are used to create custom part containment. This is designed for the end-user to cut to fit. Includes standard hardware.

- Yes, please include this package on my quotation.
- ☐ No, I am not interested in this optional package.

(Serves as a hopper for the QCRS System)

Date:	Quantity:	Phone: ()		Fax: (_)	
Name:				Title			
Company Name: _				Email:			
Address:							
City:			State	:		Zip:	







Durable Conveyors Built for Injection Molders

Horizontal, Incline & Horizontal to Incline Conveyors in a variety of sizes



- Frequency Drive Controlled Motor UL & CSA Listed
- Direct Drive Gear Box No drive belts or chains
- White two-ply PVC laced belt FDA approved
 Custom Conveyors Available see page 781





Durable Low Maintenance Conveyors Built with High Quality Components

IMS Select Line Conveyors were designed and built with the molder in mind. These portable and versatile conveyors, even under heavy shop use, will provide years of trouble free service.

Compare the features of our conveyors to the competition and you'll find dollar for dollar "IMS Select Line" Conveyors are designed, engineered, and built better.

Frames/Structures

- · Heavy duty 14 gauge formed steel powered coated side rails
- Welded tubular steel connector hars
- 18 gauge steel slider beds
- 41/2" tall aluminized steel part deflectors

Legs

- Rugged welded steel legs with 3" dia. swivel locking casters
- Adjustable conveyor angle with pivoting leg holder design

Belts

Every IMS Select Line conveyor comes with a resilient 2-ply PVC coated monofilament belt which is FDA approved and has a 160°F continuous temperature rating.

All belts include a stainless steel Uni-Bar clipper lace making them easy to replace should they reach the end of their life cycle.

Attached to the bottom of the belt is a solid center-lined V-Guide to track the belt with the matching V-Guided rollers.

Incline conveyors come with 1" high bonded cleats that are equally spaced 18" apart. The amount of cleats varies with the length of the conveyor.

*Other belt designs, temperature ratings, colors and styles are available with short lead times.

Rollers

- Precision made welded steel
- 21/2" dia. rollers with 3/4" dia. shaft and V-Guide

Belt Tensioners

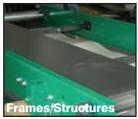
- Engineered, custom fabricated spring loaded belt tensioners
- Easily adjustable

Frequency Drive Controlled Motor

- Strong worm geared 1/3 HP motor standard.
- Motor housing, bearing covers and terminal boxes made of corrosion resistant aluminum die castings.
- Aluminum die cast rotor ensures high reliability at high starting torques and low starting currents

Direct Drive Gear Box No drive belts or chains

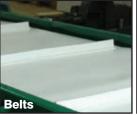
- Right angle compact direct drive gear box is ideal for preventing lubrication loss and dirt build-up
- · Gear wheels made of high tensile strength case hardened steel
- Low noise gearing
- · Impervious to shock
- · Completely enclosed, sealed against messy shop dust and/or water spray
- · Designed to operate under harsh conditions













Model KBWA Standard Variable **Speed Controller**

Model ESV25 **Advanced Variable Speed Controller**



Conveyor Controllers

Versatility to fit your application!

IMS offers two different control style choices to give you options. Choose from either a "Standard Variable Speed" Controller or an "Advanced Programmable Variable Speed" Controller. Both Controllers are prewired, ready to plug in and are set to run up to 30 feet per minute, which is suitable for most applications. They both include: Motor Overload Protection / 120/60/1 VAC Operation / 8 foot grounded power cord.

Standard Variable Speed Controller Model KBWA (Item #164889) has a selectable Forward/Stop/Reverse switch and a simple speed dial control for ease of operation.

Advanced Programmable Variable Speed Controller Model ESV25 (Item #164866) has user adjustable settings such as max speed, indexing ability, photo-eye capability and can interface with a signal from the Molding Machine.



phone order toll-free (USA & Canada) 1.800.537.5375

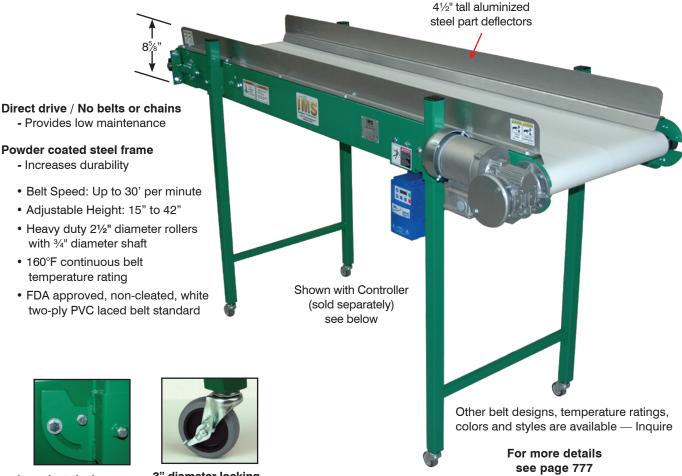
fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001



IMS Horizontal Conveyors

High Quality Part Handling At A Great Price



Leg pivot design - easily changes angle of conveyor



2 Year Warranty

Belt Width	Length	Overall Width	Model #	Item #	Unit Price	Spare Belt	Unit Price
12"	6'	211/4"	SLH-1206	165041	\$2,761.75	161918	\$152.77
	8'	2174	SLH-1208	165044	2,800.92	161921	206.35
18"	6'	271/4"	SLH-1806	165042	2,828.46	161919	205.57
10	8'	27/4	SLH-1808	165045	2,804.40	161922	288.15
24"	6'	331/4"	SLH-2406	165043	3,014.18	161920	340.88
27	8'	0074	SLH-2408	165046	3,285.37	161923	333.61

Controller Required - Choose Standard Or Advanced When Ordering

Prewired w/8 Foot Cord & Plug	Power	Model #	Item #	Unit Price					
Standard Variable Speed Controller	120/60/1	KBWA	164889	\$311.94					
Advanced Variable Speed Controller	120/00/1	ESV25	164866	502.36					
Spare Parts									
#160815 Direct Drive Motor and Gearbox	\$566.72	#161076 Idler Side Flange Bea	\$24.23						
#161077 Drive Side Pillow Block Bearing	\$24.79								

Custom Conveyors Available — see page 781



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone of the control of the con

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



High Quality Part Handling At A Great Price





2 Year Warranty

Leg pivot design easily changes angle

of conveyor



Width	Length	In Feed Height	Discharge Height	Model #	Item #	Unit Price	Spare Belt	Unit Price
12"	6'	14"	52"	SLI-1206	165047	\$2,929.09	162505	\$206.75
12	8'	15"	53"	SLI-1208	165050	3,172.83	162508	311.28
18"	6'	14"	52"	SLI-1806	165048	3,237.18	162506	371.15
10	8'	15"	53"	SLI-1808	165051	3,324.02	162509	480.00
24"	6'	14"	52"	SLI-2406	165049	3,566.84	162507	442.19
24	8'	15"	53"	SLI-2408	165052	3,599.07	162510	489.98

Controller Required - Choose Standard Or Advanced When Ordering

Prewired w/8 Foot Cord & Plug	Power		Model #	Item #	Unit Price					
Standard Variable Speed Controller	100/60/1		KBWA	164889	\$311.94					
Advanced Variable Speed Controller	120/60/1		ESV25	164866	502.36					
	Spare Parts									
#160815 Direct Drive Motor and Gearbox \$566.72 #		#1610	76 Idler Side Flange Bearing		\$24.23					
#161077 Drive Side Pillow Block Bearing	21.22									



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



IMS Horizontal to Incline Conveyors

High Quality Part Handling At A Great Price



Belt Width	Overall Width	In Feed Height	Discharge Height	Model #	Item #	Unit Price	Spare Belt	Unit Price
12"	21.79"			SLX-120306	163544	\$5,659.06	163796	325.97
18"	27.86"	10" to 21"	56" to 73"	SLX-180306	163545	4,200.00	163797	460.12
24"	33.86"			SLX-240306	163546	4,550.00	163798	545.95

Controller Required - Choose Standard Or Advanced When Ordering

Prewired w/8 Foot Cord & Plug	Pov	wer	Model #	Item #	Unit Price
Standard Variable Speed Controller	120/	(60/1	KBWA	164889	\$311.94
Advanced Variable Speed Controller	120,	00, 1	ESV25	164866	502.36
		Spare Parts			
#165078 Direct Drive Motor and Gearbo	ОХ	\$715.00	#161076 Idler Side Flang	e Bearing	\$24.23
#161077 Drive Side Pillow Block Bearin	g	21.22			

Custom Conveyors Available — see page 781



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone 1.888.288.6900 001.5

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

IMS Custom Conveyors

Select Type

Horizontal	Horizontal to Incline	Incline
Style: Flat top	C B	A
A A		
Belt width Part Discharge	E	
Height	Horizontal Length (A)	0 0
0 0	Incline Length (B)	Overall Length (A)
Overall Length (A)	Discharge Height (C)	Discharge Height (B)
Belt Width (B)	Infeed Height (D)	Infeed Height (C)
Height (C)	Belt Width (E)	Belt Width (D)
Belt - (Standard Lacing) Optional - Seamless Belt Select one: Color Green Black White Other	Cleats - Yes No Std Cleat Height is 1.5" : other Cleats spacing 18" Standard Other than standard - Cleat spacing required :	Note: If overall width of conveyor is critical, please specify max width dimension:
Other color specify : Temperature / Type of Material Conveyed :		Injection Machine -
Std - 19 fpm □ Inde Variable speed - 0-27.5 fpm □ Rev	tions - (check one or more) exing - Specify Part deflector at discharge end ersing Photoelectric eye Photoelectric eye vy Duty Slider Bed (to withstand heavier part load	
Motor Position - Mark the desired drive location	n. Co. 4 November	(A)
6 Mark the desired drive locality 10 Belt Direction 9 1 5	1, 2, 3, 4 - Mounted underneath. (standard) 5, 6, 7, 8 - Mounted on side. (up-charge) 9, 10 - Mounted on end. (up-charge	(E)
Date: Quantity:		Fax: ()
Name:		
Company Name:		
Address:		
City:	State:	Zip:

Replacement Conveyor Belts

Conveyor Model:					Serial I	No.:			
A) Belt Width :					(in.)				
B) Belt Overall Length:					(in./ft.)				
C) Overall Belting Thicknes	ss:								
D) Number of Plies:		Carcas	s:		Botton	Cover:		Color:	
E) Cleat Information: Heigh	nt:		Width	:	Centers	s: Type:			
Indent:									
F) V-Guide Information: Lo	cation	:			Notched: _				
V-Guide Size (Base x He	eight):	☐ 00-sec	tion (⁵ /16"	X ³ /16")	_ 0-	section (³/8" x ¹/4")			
		A-section	on (¹/₂" x	⁵ / ₁₆ ")	☐ B-	section (5/8" x 3/8")		C-section (7/8" x 7/16")	
G) Splice Type:		Laced		Vulcanized		Endless		Prepared Ends	
H) Food Grade:		Yes		No					
Other Information (If Applic	cable):								
I) Head Pulley Size :				(in.)	<mark>J)</mark> Tail Pul	ley Size :			(in.)
K) Temperature and type o	of mate	erial being conv	eyed:						
L) Size and weight of produ	uct be	ing conveyed:							
M) Horizontal or Incline Co	nveyo	r:				N) Degrees	of Incline	e:	
0) Chemicals or Petroleum	n prod	ucts contacting	belt:						
Other Specifications:									
Typical Specifications Plies: Lightweight belting Carcass: Type of fabric th Belt Covers: Top cover is Overall Belt Gauge or Thi under and over side rails a Cleat Information: Standa distances. All cleat types of V-Guides: V-guides are av Splice Type: Usually the sp	usual icknes and no ard tee can be	lised in plies: in ly smooth, and is: This dimens ise bars. I cleats are ava is increased to f e in O, A, B or	the bottomis us ilable fro it under it C sizes;	n polyester, som cover is a sually used as m 1/2" to 3" rails or guide	a friction s s a possib in height a s. usually lo	urface (FS). le check of the belt spec nd can be welded on m cated on the bottom cer	ost cente	er-to-center f the belting.	it
Date: Q	uanti	ty:	Phone:	()		Fax:	(_)	
Name:									
Company Name:									
Address:									
City:					State:			Zip:	





S Drum Type Part/Runner Separator



Rugged Construction for High Volume Operations

Fast Separation - Keeps up with fast-cycling presses and multiple-cavity molds

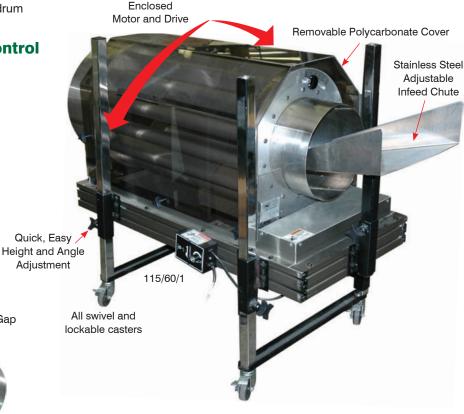
Unique Single-Point Gap Adjustment - Moving just one knob sets all the vanes at the same time

Use With Any Conveyor Up To 18" Wide

Rugged Steel Support Frame - with extruded and anodized aluminum upper frame, side rails and drum

0-15 RPM Variable Speed Control

Built Tough For Continuous 24 Hour, 7 Day Use!





Here's How It Works

Adjust gap between vanes so smaller pieces drop through gaps into box or conveyor. Larger pieces remain in drum and exit through the discharge ring.

Gap size is easily adjusted from a single knob. Drum speed and angle, and infeed chute height and angle are also adjustable to provide complete sorting.

Specifications

Part Drop Gap Width	0-1⁵⁄₁₅"
Drive Motor	1/12 hp, variable-speed DC gearmotor with flexible drive coupling and 7 ft grounded power cord
Dimensions	44"L x 25"W x 29" to 44" infeed height
Shipping Weight	320 lbs.

Price Complete As Shown, Item No. 115675

\$6,995

Send us a box of your parts and runners for a free automation evaluation and quote. Please call for an RA number before shipping.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Granulator Quotation Request/Order

Application:	s Under-the-press Other
Largest Part	
Material	_:
(chemical description)	Unfilled Other
Size of Parts	: Sprues/Runners Pipe/Profile Film
(dimensions)	☐ Sheet ☐ Thermoformed ☐ Blow Molded ☐ Other
Heaviest Or Toughest Part	
Material	_:
(chemical description)	☐ Unfilled ☐ Other
Size of Parts	: Sprues/Runners Dipe/Profile Difilm
(dimensions)	☐ Sheet ☐ Thermoformed ☐ Blow Molded ☐ Other
Requested Particle Size	: Recommended Screen Size
	□ 1/8" □ 3/16" □ 1/4" □ 5/16" □ 3%" □ Other
Industry: Injection Blow Molding	☐ Extrusion ☐ Recycling ☐ Other
Mode of Feeding:	
Desired Throughput Pounds/H	our
Mode of Discharge: 🔲 Bin with 11/8" Takeof	f Blower/Cyclone with Fine Separation System
ElectricalV/3PH/60HZ	Other
Audial Requirement:	ndard)
Existing Granulator for Similar Application:	Manufacturer Model Number
	Throat Size HP Rotor Design
	Options
Requested Delivery Date	
Date: Quantity:	Phone:() Fax: ()
Name:	Title:
Company Name:	Email:
Address:	
City:	State: Zip:



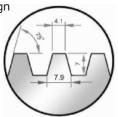
SHINI Screenless Granulators

High Quality Regrind Material With Minimal Dust And Fines

Shini SG-24 Series Screenless Granulators are top feed / low speed which create fewer fines and less dust than standard high speed grinders. These models are ideal for grinding sprues, runners, and rejected parts and produce consistent high quality regrind with minimal noise. The SG-24N models use a single heavy duty gear motor while the SG-24T series use two gear motors and two cutting chambers to work simultaneously.

Features:

- · Top-Feed hopper
- · Screenless Low Dust/Low Noise Design
- · Auto Reverse prevents blockage
- · Heavy Duty Gear Motor
- Transparent Polycarb Hopper
- 11/2" Material Take-off Port
- · Casters Standard



Standard Teeth Cutter (only for SG-24N)



Section View of Trapezoid Teeth Cutter



Double Teeth Cutter



IMS Item #	Shini #	Power Supply	Motor HP	RPM	Cutting Chamber	Blades	Through- put	Dir L	mensioi W	ns* H	Weight (lbs)	dBA	Unit Price
173295	SG-2427N	460/60/3	1.0	33	9.4" x 10.6"	2 Staggered/	15 lbo/br	34.4"	16.7"	52.4"	529	80-85	\$7,745.00
173916	3G-2427N	230/60/3	1.2	33	9.4" X 10.0"	3 Teeth	15 lbs/hr	34.4	10.7	J2.4	329	00-03	\$1,145.00
173871	00 0400N	460/60/3		00	0.40.44.40	3 Staggered/	00 11 //-	38.2"	16.7"	52.4"	567	80-85	9,980.00
173917	SG-2436N	230/60/3	2.3	33	9.4" x 14.4"	4 Teeth	20 lbs/hr	30.2	10.7	J2.4	307	00-03	9,500.00
173872	00 0440N	460/60/3	0.4	00	0.411.40.411	4 Staggered/	05 11 //-	42.1"	16.7"	58.3"	728	80-85	13,500.00
173918	SG-2446N	230/60/3	3.4	33	9.4" x 18.1"	5 Teeth	25 lbs/hr	42.1	10.7	30.3	720	00-00	13,300.00
173873	SG-2446T	460/60/3	3.4 x2	33	19.9" x 18.1"	9 Large & 2 Small	55 lbs/hr	53.7"	30.4"	53.5"	1235	80-85	22,100.00
173919	30-24401	230/60/3	J.4 AZ	33	19.9 X 10.1	Staggered (Dual)	33 lb3/111	33.7	30.4	33.3	1233	00-03	22,100.00

More Granulator Options Available Pages 786 - 789





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001



SHINI Beside-the-Press Granulators

For Consistently High-Quality Regrind

Top Feed hopper - Allows manual or robot feed

Sound-proof material hopper - Brings a quieter operation environment

Obstruction alarm - Notifies operator when blockage occurs

Clamshell cutting chamber - Allows easy cleaning

Siemens electrical components

- Emergency stop
- No specialty tools required for maintenance
- Reversible screen
- Low energy consumption
- Main power disconnect
- Casters included



Tilt back hopper makes components accessible for easy cleaning, maintenance and quick blade replacement.



Staggered blade design made of hardened D2 steel.

Blade design doesn't require adjustment after resharpening.

1 Year Warranty



	tem # 460/60/3	Shini #	НР	RPM	Opening	Throat Size	Throughput (lbs/hr)	Screen Size	Din L	nensio W	ons H	Weight (lbs)	Unit Price
164890	149562	SG-1635NH	4	348	15" x 18.5"	13.5" x 6.3"	170	5mm	24"	24"	51"	565	\$5,095.00
158414	150659	SG-2042NH-C	5.5	348	16.5" x 22"	16.5" x 7.8"	280	6mm	28"	24"	51"	763	6.295.00



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)

1.866.467.9001

SHINI Staggered Blade Central Granulators



High Capacity Granulator For Medium To Large Parts

Sound-proofed material hopper - Provides a guieter operating environment

Cyclone dust separator and blower - Removes dust from regrind and evacuates material

Collection Bag - Traps contamination for easy disposal

Adjustable angle on inlet chute - Increases ease of part feeding

- Low energy consumption
- High amp alarm and amp meter
- · Safety interlocks
- · Motor overload relays
- Reversible screen
- · No specialty tools required for maintenance
- · Vacuum bin discharge
- · Tangential feed
- Outboard sealed bearings





Staggered blade design made of hardened D2 steel.

Decentralized working load to increase efficiency.



Air spring assisted tilt back adjustable hopper makes components accessible for easy cleaning, maintenance and quick blade replacement.

IMS I 230/60/3	Item # 460/60/3	Shini #	НР	RPM	Throat Size	Throughput (lbs/hr)	Screen Size	Dim L	ensio W	ns* H	Feed Height	Weight (lbs)	Unit Price
149569	149570	SG-2324	8.4	320	9" x 9.4"	250	8mm	54"	38"	57"	45"	1041	\$9,125.00
149571	149572	SG-2336	11.5	320	9" x 14.2"	300	8mm	54"	42"	57"	45"	1151	9,865.00
149573	149574	SG-2348	16.9	320	9" x 19"	400	8mm	54"	47"	57"	45"	1332	11,175.00

^{*}Dimensions do not include dust collector





SHINI Open Rotor Central Granulators

High Capacity Granulator For Large Parts

Sound-proofed material hopper - Provides a quieter operating environment

Cyclone dust separator and blower - Removes dust from regrind and evacuates material

Collection Bag - Traps contamination for easy disposal

Adjustable angle on inlet chute - Increases ease of part feeding

Low energy consumption

- High amp alarm and amp meter
- · Safety interlocks
- · Motor overload relays
- · Reversible screen
- No specialty tools required for maintenance
- Vacuum bin discharge
- · Tangential feed
- Outboard sealed bearings



Paddle-Type Rotor Design



V-Type Rotor Design



Air spring assisted tilt back adjustable hopper with 3 angle positions makes components accessible for easy cleaning, maintenance and quick blade replacement

1 Year Warranty

Open rotor blade design made of hardened D2 steel.

Decentralized working load to increase efficiency.



IMS I 230V	tem # 460V	Shini #	НР	RPM	Rotor	Throat Size	Throughput (lbs/hr)	Screen Size	Dii L	mensi W	ons H	Weight (lbs)	Unit Price
149582	149583	SG-3060HP	25	500	Paddle	12" x 24"	600	8mm	59"	52"	87"	1634	\$15,990.00
149579	148757	SG-3675P	40	650	Paddle	14" x 29"	1900	10mm	61"	80"	124"	3814	26,800.00
160213	160214	SG-4360H	55	630	Paddle	17" x 24"	2000	10mm	75"	84"	124"	5181	40,850.00
160215	160216	SG-4390H	70	630	V Type	17" x 32"	2500	10mm	75"	92"	124"	6019	45,925.00

^{*}Dimensions do not include dust collector



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)

1.866.467.9001

SHINI Granulator Common Replacement Parts

Specification	ons and Prices		
Item #	For Shini Model	Description	Unit Price
159748	SG-2042 Models	Rotating (Staggered Cut) Blade	\$47.00
159749	SG-2042 Models	Stationary Blade	125.00
163676	SG-2348 Models	Stationary Blade	170.00
163675	All SG-23 Series All SG-30 Series	Rotating (Staggered Cut) Blade	65.00
169244	All SG-16(N) Series Only Does NOT fit other SG-16 Series	Rotating (Staggered Cut) Blade	25.00
169245	SG-1635(N) Models Only Does NOT fit other SG-1635 Series	Stationary Blade	38.00
159747	All SG-20 Series	Drive Belt	80.00

Call for More Options





Converting Fractional Inches To Decimals And Millimeters

Fraction	Decimal	ММ
1/64"	.015625"	0.3969
1/32"	.03125"	0.7938
3/64"	.046875"	1.1906
1/16"	.0625"	1.5875
5/64"	.078125"	2.3812
3/32"	.09375"	2.3812
7/64"	.109375"	2.7781
1/8"	125"	3.175
9/64"	.140625"	3.5719
5/32"	.15625"	3.9688
11/64"	.171875"	4.3656
3/16"	.1875"	4.7625
13/ ₆₄ "	.203125"	5.1594
7/32"	.21875"	5.5562
¹⁵ / ₆₄ "	.234375"	5.9531
1/4"	.25"	6.35
17/64"	.265625"	6.7469
9/32"	.28125"	7.1438
¹⁹ / ₆₄ "	.296875"	7.5401
5/16"	.3125"	7.9375
²¹ / ₆₄ "	.328125"	8.3344
11/32"	.34375"	8.7312
²³ / ₆₄ "	.359375"	9.1281
3/8"	.375"	9.525
²⁵ / ₆₄ "	.390625"	9.9219
13/32"	.40625"	10.3188
27/64"	.421875"	10.7156
7/16"	.4375"	11.1125
29/64"	.453125"	11.5094
15/32"	.46875"	11.9063
31/64"	.484375"	12.3031
1/2"	.5"	12.7

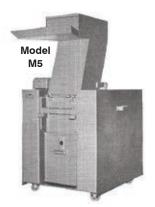
Fraction	Decimal	ММ
33/64"	.515625"	13.0969
17/32	.53125"	13.4938
³⁵ / ₆₄ "	.546875"	13.8906
9/16"	.5625"	14.2875
37/64	.578125"	14.6844
19/32"	.59375"	15.0812
39/64	.609375"	15.4781
5/8"	.625"	15.875
41/64	.640625"	16.2719
21/32"	.65625"	16.6688
43/64	.671875"	17.0656
11/16"	.6875"	17.4625
45/ II	.703125"	17.8594
23/32"	.71875"	18.2563
47/ ₆₄ "	.734375"	18.6531
3/4"	.75"	19.05
49/ ₆₄ "	.765625"	19.4469
²⁵ / ₃₂ "	.78125"	19.8438
51 _{/64} "	.796875"	20.2406
¹³ / ₁₆ "	.8125"	20.6375
53/ ₆₄ "	.828125"	21.0344
27/ ₃₂ "	.84375"	21.4312
55/ ₆₄ "	.859375"	21.8281
7/8"	.875"	22.225
57/ ₆₄ "	.890625"	22.6219
²⁹ / ₃₂ "	.90625"	23.0188
59/ ₆₄ "	.921875"	23.4156
¹⁵ / ₁₆ "	.9375"	23.8125
61/64"	.953125"	24.2094
31/32"	.96875"	24.6062
63/ ₆₄ "	.984375"	25.0031
1"	1.0"	25.4



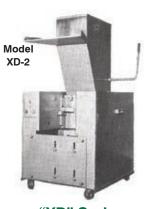
Post-Production Equipment

Typical IMS Granulators

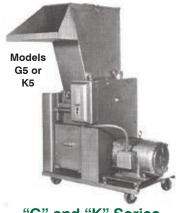
(Since 1956)



"M" Series 1956-1965



"XD" Series 1961-1965



"G" and "K" Series 1966-1968

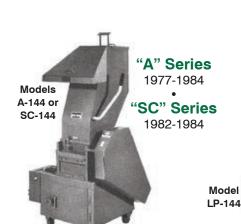








1974-1976





Which Series IMS Grinder Do You Have?

Before ordering replacement parts, use this chart to help identify your granulator, it will help us serve you better.

Tech Tip

Sizing a Granulator

- · What plastic material do you want to grind?
- · What size is the scrap or part?
- · How much do you want to grind?
- · How will you feed the granulator?
- · What will you do with the regrind?

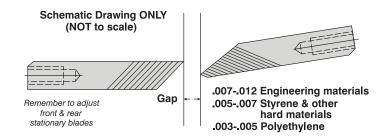
Complete form on page 784 and let our technicians help properly size your next granulator.

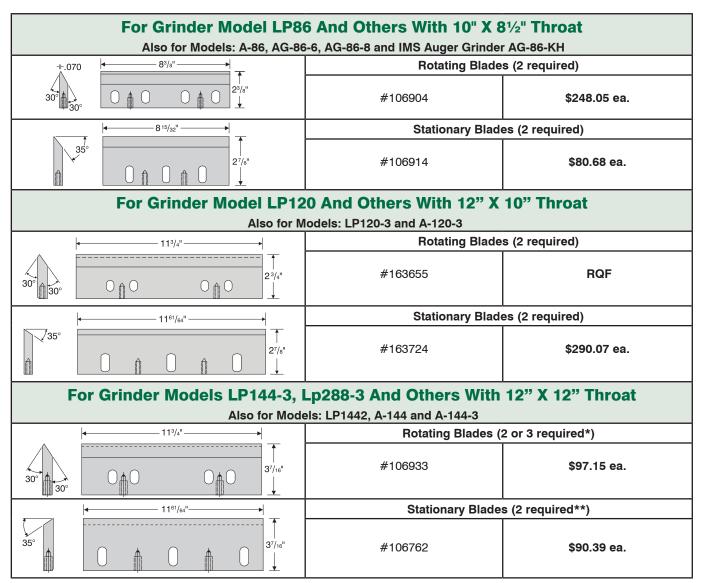


Replacement Blades for IMS Grinders

IMS can furnish blades for any IMS Granulator ever made. When ordering blades for older grinders, always give machine serial number.

IMS can quote almost any brand of replacement grinder blades. Please provide the manufacturer, model number, serial number and blade dimensions if possible. Please call 866.467.9001 or email: sales@imscompany.com for more information.

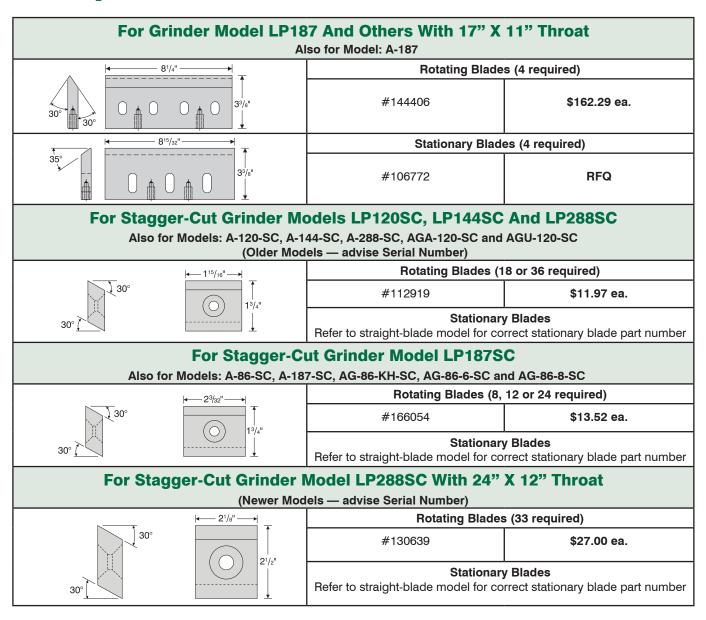




^{*}LP288-3 requires 6 **LP288-3 requires 4



Replacement Blades for IMS Grinders



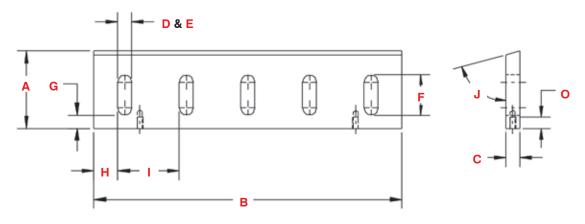
Don't see what you need? Contact our Equipment Team today: sales@imscompany.com

Available in several material options — Inquire



Post-Production Equipment

Granulator Bed Knife Form



SPECIFY:

Press Make: _____

Press Model:

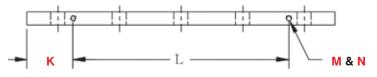
OEM# (if available):

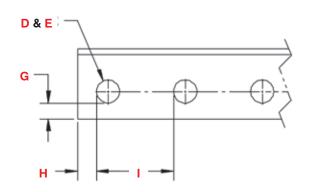


- A. Height:
- B. Length:
- C. Thickness:
- 2) Hole/Slot information:

Type of holes:

- D. Quantity of holes:
- E. Slot width/Hole diameter:
- F. Slot length:
- G. Bottom edge to hole/slot edge: _____
- H. End to first hole/slot edge:
- I. Typical hole/slot spacing: _____
- J. Bevel angle:





- 3) Tapped hole information:
- K. End to tapped hole center:
- L. Tapped hole center to center:
- M. Quantity of tapped holes:
- N. Tapped hole size & pitch:
- O. Tapped hole depth:
- 4) Note any special features:

Date:	Quantity:	Phone:()_		Fax: ()
Name:			Title:	
Company Name: _			Email:	
Address:				
City:			State:	Zin:

Post-Production Equipment

Granulator Fly Knife Form

Specify:		_
Press Make:	D	
Press Model:		
OEM# (if available):		
1) Note any part numbers or markings on the knife:	H - 1 -	K - J - I
A. Height:	BEVEL O	PTIONS - N
B. Length:		
C. Thickness:	/	
2) Hole/Slot information:		
Type of holes:	L	L — M
D. Quantity of holes:	Keen Edge	Reverse Bevel
E. Hole diameter:	N	> N-
F. C'bore/C'sink diameter:		V -
G. Bottom edge to hole/slot edge:	7 / -	
H. End to first hole/slot edge:		
I. Typical hole/slot spacing:	₹ ∐	
J. C'bore/C'sink depth:		├ C
3) Taper angle (if applies):	High Shear	Hook Fly
K. Taper angle:	HOLE OF	
L. Bevel angle (1):		
M. Bevel angle (2):		10 %
N. Horizontal bevel point:	Counterbored Hole	Through Hole
4) Note any special features:	E \	E
		TH TO FE
	_ / 9 9 1	\ U \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	Countersunk Hole	Slotted Hole
Date: Quantity: Phone: ()	Fax: ()
Name:		
Company Name:		
Address:		

City: _____ State: ____ Zip:____

IMS Replacement Granulator Catchpans

Heavy-Duty Polypropylene

Do you have an older Model IMS Granulator?

Did you know that parts are still available?

For instance the following LP Series Granulator catchpans are still available — call to inquire.

For Granulator Model	Item #	L	Dimensions W	н	Handles	Unit Price
LP49	107083	14"	14"	91/4"	2	
LP86	107073	14½"	14½"	91/4"		
LP120	107064	15"	15"	91/4"		
LP144	107053	151/4"	171/4"	91/4"		Inquire
LP187	107042	137/8"	18½"	97/8"	4	
LP288 (Right)	107099	18"	12¾"	11½"		
LP288 (Left)	107113	18"	12¾"	11½"		

IMS Granulator Catchpan Metal Trap™ Magnets

Help Keep Tramp Metal Out of Your Regrind

We custom manufacture these magnets to fit the dimensions of your catchpan. The close $\%_{16}$ " spacing between bars eliminates the need for diverters.

- Ceramic inserts provide excellent holding ability (Alnico or rare earth available)
- Exclusive concave Metal Trap[™] retains metal pieces

How to order:

Contact the IMS Equipment Team with exact inside dimensions (length x width) of your catchpan. Also include the wall thickness of the catchpan if it is more than ½". The length measurement (also magnet rod length) is the distance front to back of your granulator catchpan. Magnets will hang about 1" below the top of the catchpan.



Concave metal trap[™] under rods holds ferrous scrap like no round-bar magnet can Large contact area under magnetic rod grabs ferrous object and protects it from being wiped off by material flowing around magnetic bar.

Price

Specifications

Magnet bar spacing: %16"

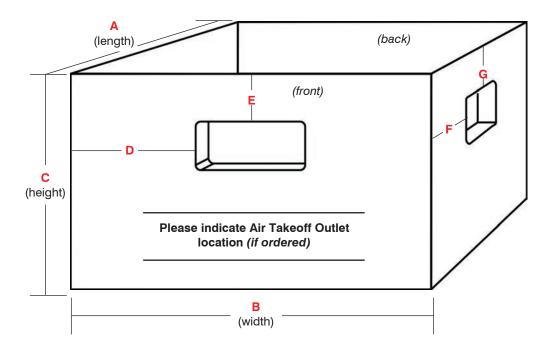
Description

Granulator Catchpan Metal Trap™ Magnets — custom sized (Tubes run lengthwise and are spaced across pan width)

Inquire for Details



Granulator Catchpan



Catchpan Dimensions:						
Outside						
A: (Length)						
B: (Width)						
C: (Height)						

	2☐ or 4☐ Handle Locations:								
	Front/Back Sides								
D:	F:								
E:	G:								
	Standard recessed handles are $4^{1/2}$ " long x $1^{3/4}$ " high x 1" deep								

Granulator Make:	Model:	Serial #:	

Date:	Quantity:	Phone: ()		Fax: ()	
Name:				Title:			
Company Name: _				Email:			
Address:							
City:			State			Zin:	



Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.		C.		F.		C.		F.	C.		F.
-17.8	0	32.0	Ī	10.0	50	122.0		38	100	212	288	550	1022
-17.2	1	33.8		10.6	51	123.8		43	110	230	293	560	1040
-16.7	2	35.6		11.1	52	125.6		49	120	248	299	570	1058
-16.1	3	37.4		11.7	53	127.4		54	130	266	304	580	1076
-15.6	4	39.2		12.2	54	129.2		60	140	284	310	590	1094
-15.0	5	41.0		12.8	55	131.0		66	150	302	316	600	1112
-14.4	6	42.8		13.3	56	132.8		71	160	320	321	610	1130
-13.9	7	44.6		13.9	57	134.6		77	170	338	327	620	1148
-13.3	8	46.4		14.4	58	136.4		82	180	356	332	630	1166
-12.8	9	48.2		15.0	59	138.2		88	190	374	338	640	1184
-12.2	10	50.0		15.6	60	140.0		93	200	392	343	650	1202
-11.7	11	51.8		16.1	61	141.8		99	210	410	349	660	1220
-11.1	12	53.6		16.7	62	143.6		100	212	413.6	354	670	1238
-10.6	13	55.4		17.2	63	145.4		104	220	428	360	680	1256
-10.0	14	57.2		17.8	64	147.2		110	230	446	366	690	1274
- 9.44	15	59.0		18.3	65	149.0		116	240	464	371	700	1292
- 8.89	16	60.8		18.9	66 67	150.8		121	250	482	377	710	1310
- 8.33	17	62.6		19.4	67	152.6		127	260	500	382	720	1328
- 7.78 - 7.22	18 19	64.4 66.2		20.0 20.6	68 69	154.4 156.2		132 138	270 280	518 536	388 393	730 740	1346 1364
			-										
- 6.67 - 6.11	20 21	68.0 69.8		21.1 21.7	70 71	158.0 159.8		143 149	290 300	554 572	399 404	750 760	1382 1400
- 5.56	22	71.6		22.2	72	161.6		154	310	590	410	760 770	1418
- 5.00	23	73.4		22.8	73	163.4		160	320	608	416	780	1436
- 4.44	24	75.2		23.3	74	165.2		166	330	626	421	790	1454
- 3.89	25	77.0	ŀ	23.9	75	167.0		171	340	644	427	800	1472
- 3.33	26	78.8		24.4	76	168.8		177	350	662	432	810	1490
- 2.78	27	80.6		25.0	77	170.6		182	360	680	438	820	1508
- 2.22	28	82.4		25.6	78	172.4		188	370	698	443	830	1526
- 1.67	29	84.2		26.1	79	174.2		193	380	716	449	840	1544
- 1.11	30	86.0		26.7	80	176.0		199	390	734	454	850	1562
- 0.56	31	87.8		27.2	81	177.8		204	400	752	460	860	1580
0	32	89.6		27.8	82	179.6		210	410	770	466	870	1598
0.56	33	91.4		28.3	83	181.4		216	420	788	471	880	1616
1.11	34	93.2		28.9	84	183.2		221	430	806	477	890	1634
1.67	35	95.0		29.4	85	185.0		227	440	824	482	900	1652
2.22	36	96.8		30.0	86	186.8		232	450	842	488	910	1670
2.78	37	98.6		30.6	87	188.6		238	460	860	493	920	1688
3.33	38 39	100.4		31.1	88	190.4		243	470	878 806	499	930 940	1706
3.89		102.2		31.7	89	192.2		249	480	896	504		1724
4.44	40	104.0		32.2	90	194.0		254	490	914	510	950	1742
5.00	41	105.8		32.8	91	195.8		260	500 510	932	516	960	1760
5.56	42 43	107.6 109.4		33.3 33.9	92 93	197.6 199.4		266 271	510 520	950	521 527	970 980	1778 1796
6.11 6.67	43 44	111.2		33.9 34.4	93 94	201.2		277	520 530	968 986	532	990	1814
									540				
7.22 7.78	45 46	113.0 114.8		35.0 35.6	95 96	203.0 204.8		282	540	1004	538	1000	1832
8.33	47	116.6		36.1	97	206.6							
8.89	48	118.4		36.7	98	208.4							
9.44	49	120.2		37.2	99	210.2							
			L		-		I						

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column. Look to left column for Celsius conversion.

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column. Look to right column for Fahrenheit conversion.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001 | sales@imscompany.com

Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.	C.		F.	C.		F.	C.		F.
-17.8	0	32.0	10.0	50	122.0	38	100	212	288	550	1022
-17.2	1	33.8	10.6	51	123.8	43	110	230	293	560	1040
-16.7	2	35.6	11.1	52	125.6	49	120	248	299	570	1058
-16.1	3	37.4	11.7	53	127.4	54	130	266	304	580	1076
-15.6	4	39.2	12.2	54	129.2	60	140	284	310	590	1094
-15.0	5	41.0	12.8	55	131.0	66	150	302	316	600	1112
-14.4	6	42.8	13.3	56	132.8	71	160	320	321	610	1130
-13.9	7	44.6	13.9	57	134.6	77	170	338	327	620	1148
-13.3	8	46.4	14.4	58	136.4	82	180	356	332	630	1166
-12.8	9	48.2	15.0	59	138.2	88	190	374	338	640	1184
-12.2	10	50.0	15.6	60	140.0	93	200	392	343	650	1202
-11.7	11	51.8	16.1	61	141.8	99	210	410	349	660	1220
-11.1	12	53.6	16.7	62	143.6	100	212	413.6	354	670	1238
-10.6	13	55.4	17.2	63	145.4	104	220	428	360	680	1256
-10.0	14	57.2	17.8	64	147.2	110	230	446	366	690	1274
- 9.44	15	59.0	18.3	65	149.0	116	240	464	371	700	1292
- 8.89	16	60.8	18.9	66	150.8	121	250	482	377	710	1310
- 8.33	17	62.6	19.4	67	152.6	127	260	500	382	720	1328
- 7.78	18	64.4	20.0	68	154.4	132	270	518	388	730	1346
- 7.22	19	66.2	20.6	69	156.2	138	280	536	393	740	1364
- 6.67	20	68.0	21.1	70	158.0	143	290	554	399	750	1382
- 6.11	21	69.8	21.7	71	159.8	149	300	572	404	760	1400
- 5.56	22	71.6	22.2	72	161.6	154	310	590	410	770	1418
- 5.00	23	73.4	22.8	73	163.4	160	320	608	416	780	1436
- 4.44	24	75.2	23.3	74	165.2	166	330	626	421	790	1454
- 3.89	25	77.0	23.9	75	167.0	171	340	644	427	800	1472
- 3.33	26	78.8	24.4	76	168.8	177	350	662	432	810	1490
- 2.78	27	80.6	25.0	77	170.6	182	360	680	438	820	1508
- 2.22	28	82.4	25.6	78	172.4	188	370	698	443	830	1526
- 1.67	29	84.2	26.1	79	174.2	193	380	716	449	840	1544
- 1.11	30	86.0	26.7	80	176.0	199	390	734	454	850	1562
- 0.56	31	87.8	27.2	81	177.8	204	400	752	460	860	1580
0	32	89.6	27.8	82	179.6	210	410	770	466	870	1598
0.56	33	91.4	28.3	83	181.4	216	420	788	471	880	1616
1.11	34	93.2	28.9	84	183.2	221	430	806	477	890	1634
1.67	35	95.0	29.4	85	185.0	227	440	824	482	900	1652
2.22	36	96.8	30.0	86	186.8	232	450	842	488	910	1670
2.78	37	98.6	30.6	87	188.6	238	460	860	493	920	1688
3.33	38	100.4	31.1	88	190.4	243	470	878	499	930	1706
3.89	39	102.2	31.7	89	192.2	249	480	896	504	940	1724
4.44	40	104.0	32.2		194.0	254	490	914	510	950	1742
5.00	41	105.8	32.8	91	195.8	260	500	932	516	960	1760
5.56	42	107.6	33.3		197.6	266	510	950	521	970	1778
6.11	43	109.4	33.9	93	199.4	271	520	968	527	980	1796
6.67	44	111.2	34.4	94	201.2	277	530	986	532	990	1814
7.22	45	113.0	35.0	95	203.0	282	540	1004	538	1000	1832
7.78	46	114.8	35.6	96	204.8						
8.33	47	116.6	36.1	97	206.6						
8.89	48	118.4	36.7	98	208.4						
0.44	40	100.0	27.2	99	210.2	I					

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column. Look to left column for Celsius conversion.

210.2

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column.

Look to right column for Fahrenheit conversion.



9.44

49

120.2

37.2

Converting Fahrenheit To Celsius/Celsius To Fahrenheit

0 to 99 (in 1° increments)

100 to 1000 (in 10° increments)

C.		F.	С			F.	C.		F.		C.		F.
-17.8	0	32.0	10.	0 5	0	122.0	38	100	212		288	550	1022
-17.2	1	33.8	10.		51	123.8	43	110	230		293	560	1040
-16.7	2	35.6	11.		2	125.6	49	120	248		299	570	1058
-16.1	3	37.4	11.		3	127.4	54	130	266		304	580	1076
-15.6	4	39.2	12.		4	129.2	60	140	284		310	590	1094
-15.0	5	41.0	12.		55	131.0	66	150	302		316	600	1112
-14.4	6	42.8	13.		6	132.8	71	160	320		321	610	1130
-13.9	7	44.6	13.		7	134.6	77	170	338		327	620	1148
-13.3	8	46.4	14.		8	136.4	82	180	356		332	630	1166
-12.8	9	48.2	15.		9	138.2	88	190	374		338	640	1184
-12.2	10	50.0	15.		0	140.0	93	200	392	1 [343	650	1202
-11.7	11	51.8	16.		31	141.8	99	210	410		349	660	1220
-11.1	12	53.6	16.		2	143.6	100	212	413.6		354	670	1238
-10.6	13	55.4	17.		3	145.4	104	220	428		360	680	1256
-10.0	14	57.2	17.		64	147.2	110	230	446		366	690	1274
- 9.44	15	59.0	18.		55	149.0	116	240	464		371	700	1292
- 8.89	16	60.8	18.		6	150.8	121	250	482		377	710	1310
- 8.33	17	62.6	19.		7	152.6	127	260	500		382	720	1328
- 7.78	18	64.4	20.		8	154.4	132	270	518		388	730	1346
- 7.22	19	66.2	20.		9	156.2	138	280	536		393	740	1364
- 6.67	20	68.0	21.		'0	158.0	143	290	554		399	750	1382
- 6.11	21	69.8	21.		' 1	159.8	149	300	572		404	760	1400
- 5.56	22	71.6	22.		2	161.6	154	310	590		410	770	1418
- 5.00	23	73.4	22.		' 3	163.4	160	320	608		416	780	1436
- 4.44	24	75.2	23.	3 7	' 4	165.2	166	330	626		421	790	1454
- 3.89	25	77.0	23.		'5	167.0	171	340	644		427	800	1472
- 3.33	26	78.8	24.		' 6	168.8	177	350	662		432	810	1490
- 2.78	27	80.6	25.		7	170.6	182	360	680		438	820	1508
- 2.22	28	82.4	25.		8	172.4	188	370	698		443	830	1526
- 1.67	29	84.2	26.		'9	174.2	193	380	716		449	840	1544
- 1.11	30	86.0	26.		80	176.0	199	390	734		454	850	1562
- 0.56	31	87.8	27.		81	177.8	204	400	752		460	860	1580
0	32	89.6	27.		32	179.6	210	410	770		466	870	1598
0.56	33	91.4	28.		33	181.4	216	420	788		471	880	1616
1.11	34	93.2	28.		34	183.2	221	430	806		477	890	1634
1.67	35	95.0	29.		35	185.0	227	440	824		482	900	1652
2.22	36	96.8	30.		86	186.8	232	450	842		488	910	1670
2.78	37	98.6	30.		37	188.6	238	460	860		493	920	1688
3.33	38	100.4	31.		88	190.4	243	470	878		499	930	1706
3.89	39	102.2	31.		19	192.2	249	480	896		504	940	1724
4.44	40	104.0	32.		0	194.0	254	490	914		510	950	1742
5.00	41	105.8	32.)1	195.8	260	500	932		516	960	1760
5.56	42	107.6	33.		2	197.6	266	510	950		521	970	1778
6.11	43	109.4	33.		3	199.4	271	520	968		527	980	1796
6.67	44	111.2	34.		14	201.2	277	530	986		532	990	1814
7.22	45	113.0	35.)5	203.0	282	540	1004		538	1000	1832
7.78	46	114.8	35.		96	204.8							
8.33	47	116.6	36.		7	206.6							
8.89	48	118.4	36.		8	208.4							
9.44	49	120.2	37.	₂ 9	9	210.2							

To convert from Fahrenheit to Celsius: Find Fahrenheit temperature in center column. Look to left column for Celsius conversion.

To convert from Celsius to Fahrenheit: Find Celsius temperature in center column.

Look to right column for Fahrenheit conversion.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

Terms & Conditions of Sale

Pages 803-806



Business Credit Application

Pages 807-808

Terms, Index & Forms

Alphabetical Index

Yellow Pages

Numerical Index

Blue Pages

Request for Quote & Order Forms

Pages 879-930



Industrial Molding Supplies

- Mold Releases
- Heater Bands
- Degating Tools

see pages

21-468



Engineered Components & Supplies

- · Nozzles & Screw Tips
- Screws & Barrels
- Mold Care Accessories

see pages

471-614



Industrial Equipment

- · Hoppers & Loaders
- Chillers & Circulators
- · Dryers & Granulators

see pages

617-800



www.imscompany.com

fax order toll-free (USA & Canada)

tech support toll-free (USA & Canada)

phone order toll-free (USA & Canada) 1.800.537.5375

001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

IMS COMPANY TERMS AND CONDITIONS OF SALE

Seller's Terms and Conditions of Sale apply to all purchases made by Buyer from Seller and all Invoices, emails, packing lists, or any other method of confirming an Order conveyed from Seller to Buyer. All Orders shall be subject only to Seller's Terms and Conditions unless Seller expressly agrees otherwise, in writing, making express reference to Seller's Terms and Conditions.

1. Definitions

- (a) Seller: IMS Company;
- (b) Buyer: a business or individual customer who purchases Goods from Seller through any method offered by Seller, including any successor thereof;
- (c) Goods: any products and materials manufactured, imported, supplied and/or delivered for or by Seller to Buyer;
- (d) Invoice: Issued by Seller in confirmation of an Order received from Buyer, which shall include, among other information, the part descriptions, quantity, the total order price, tracking numbers, order date, shipping date, billing information, shipping information, and payment method; and
- (e) Order: Goods that Buyer has requested delivery of and are confirmed in Seller's packing list, Invoice, or by any other means, and which shall be subject only to Seller's Terms and Conditions unless otherwise specified in writing by Seller.

2. Offer

Seller's Terms and Conditions constitute an immediately acceptable offer to sell Goods to Buyer. Buyer shall be bound by Seller's Terms and Conditions upon purchase of Goods from Seller. Seller shall be bound by Seller's Terms and Conditions when Buyer's Order is received by Seller

ANY TERMS PROPOSED IN BUYER'S ACCEPTANCE (WHETHER IT BE IN A PRINTED PURCHASE ORDER OR IN ANY OTHER WRITING, OR OTHERWISE) THAT DELETE, ADD TO, OR WHICH COULD IN ANY WAY BE CONSTRUED AS VARYING FROM OR CONFLICTING WITH THE TERMS AND/OR CONDITIONS STATED HEREIN, ARE HEREBY OBJECTED TO AND REJECTED. SUCH PROPOSED TERMS AND/OR CONDITIONS SHALL BE VOID AND THE TERMS AND CONDITIONS HEREOF SHALL CONSTITUTE THE COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS AND CONDITIONS OF THE CONTRACT BETWEEN BUYER AND SELLER AND MAY HEREAFTER BE MODIFIED ONLY BY WRITTEN INSTRUMENT EXECUTED BY AN AUTHORIZED REPRESENTATIVE OF SELLER.

IF SELLER'S TERMS AND CONDITIONS HAVE BEEN ISSUED BY SELLER IN RESPONSE TO AN OFFER MADE BY BUYER, AND IF ANY OF SELLER'S TERMS AND CONDITIONS ARE ADDITIONAL TO OR DIFFERENT FROM BUYER'S TERMS AND CONDITIONS, THEN THE ISSUANCE OF SELLER'S TERMS AND CONDITIONS SHALL CONSTITUTE AN ACCEPTANCE OF BUYER'S OFFER, SUBJECT TO THE EXPRESS CONDITION PRECEDENT THAT BUYER ASSENT TO SUCH ADDITIONAL OR DIFFERENT TERMS AND ACKNOWLEDGE THAT SELLER'S TERMS AND CONDITIONS CONSTITUTE THE ENTIRE AGREEMENT BETWEEN BUYER AND SELLER WITH RESPECT TO THE SUBJECT MATTER OF BUYER'S OFFER. BUYER SHALL BE DEEMED TO HAVE ACKNOWLEDGED AND ASSENTED TO SELLER'S TERMS AND CONDITIONS UNLESS BUYER NOTIFIES SELLER IN WRITING WITHIN TEN (10) DAYS OF PLACING AN ORDER, WHICH IS SUBJECT TO SELLER'S TERMS AND CONDITIONS. BUYER AGREES THAT NO CONTRACT SHALL EXIST BETWEEN SELLER AND BUYER EXCEPT AS EXPRESSLY SET FORTH HEREIN.

3. Price and Specification

The selling price of each product is specified for each Order. Seller's product specifications and prices are subject to change without notice. For the most up-to-date information, please refer to the Seller's website: imscompany.com.

4. Sales Tax

Seller charges state and local sales tax for all sales unless Buyer has provided Seller with a Sales Tax Exemption Certificate. To receive an exemption, Seller must have a copy of an up-to-date Tax Exemption Certificate prior to Buyer placing an Order or sales tax will be added, without exception, to that Order. Seller may request a Tax Exemption Certificate from Buyer if Seller does not have one on file.

5. Disclaimer of Offer to Sell where Legally Prohibited

By placing an Order, Buyer represents to Seller that it has the authority to order and/or use the Goods purchased without violating any federal, state or local law. To the extent that any federal, state or local law precludes the sale and/or use of specific aerosols, chemicals or other products described on Seller's website or in Seller's catalog, Seller makes NO OFFER TO SELL such regulated Goods, nor does viewing Seller's webpage or receipt of Seller's catalog by Buyer constitute an offer to sell such Goods.

6. Delivery

Seller charges for shipping and handling on all Orders. Special delivery services are available for an additional charge; including a courier service, urgent delivery, prepaid freight and air, and 3-day-select shipment of aerosol/chemical products. All Orders are sold F.O.B. Seller's place of shipment. Time is not of the essence with respect to delivery dates. Also, unless otherwise notified, Seller may make a reasonable adjustment to the delivery date at its sole discretion. The acceptance of a shipment by Buyer shall constitute proper delivery. Unless otherwise specified in writing authorized by Seller, all charges, expenses or taxes associated with the delivery, including but not limited to, shipping and



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

handling, charges for special delivery services, and for refused deliveries, shall be paid by the Buyer; unless Buyer's refusal is for damaged Goods (see Returns, ¶7). Freight charges for refused shipments will be charged to Buyer. Buyer can get shipping information, including C.O.D. charges, freight charges, and special services by calling IMS Technical Sales/Service Team at (440) 543-1615 or (800) 537-5375. Seller requests that Buyer call for additional details.

Seller recommends that Buyer's receiving personnel ask for a redelivery rather than refusing a shipment on the first day if the shipment cannot be identified, or if there is no payment ready for a C.O.D., etc. (UPS will make three delivery attempts before returning a package to Seller). Buyer can receive additional shipping information, including C.O.D. charges, freight charges, and special services by calling Seller's Technical Sales/Service Team at (440) 543-1615.

7. Returns

Regardless of the nature of a return, Buyer shall call Seller before attempting to make the return in order to obtain a Return Authorization Number (R/A #). Buyers wishing to make a return may call Seller at (800) 537-5375 to coordinate Buyer's request. Requests for a return must be made to, and authorized by, Seller within 30 days after the Invoice Date. Returns requested more than 30 days after the Invoice Date will not be honored unless the request relates to a defective product as part of a warranty claim. Goods must be returned to and received by Seller within 30 days of the return authorization date.

Returned Goods must be in new and resalable condition, in its original packaging with all original accessories, manuals and warranty registration cards, etc. In addition, a return must be adequately packed. Buyer will be responsible for items damaged during return shipment. Goods approved for return must be sent standard ground freight prepaid. Seller will not pay for freight brokerage fees.

Seller may refuse to receive any returned Goods that are returned without a R/A # clearly noted on the package or shipping documents/label. Buyer assumes the responsibility to reconcile the returned freight cost. Seller will not issue credit for any used, damaged, or incomplete Goods or for Goods returned without a R/A #.

Any approved returns due to Buyer error, decision change, or any other customer/subjective reason will be subject to a 15% restocking charge. A defective product can be returned at any time within the product's warranty period, under the terms of Seller's Limited Warranty. Buyer must call for details to receive a R/A # BEFORE sending anything back.

Custom and/or made-to-order Goods of any kind, discontinued Goods, and any special sale or promotional Goods cannot be returned for any reason unless defective or agreed to in writing by Seller.

If a return is needed for a repair or warranty claim, Buyer must call Seller for information and a R/A #. If a return relates to a repair, Seller will contact the Buyer

and quote a price before a repair is done. An inspection fee will be charged if the Buyer chooses not to have the necessary repairs made; unless the customer immediately places an order to purchase a new replacement item that directly replaces the inspected item.

8. Free Testing Service

Seller provides free testing as a service to help Buyers choose IMS's products best suited to their needs. Buver shall provide a sample on which Seller can test the Goods. Buyer's use of this testing service may prevent returns. In order to utilize testing service, Buyer must call Seller's Sales/Service Team for information; and to receive a R/A # for the sample.

9. Export Shipments

"Exports" shall be defined as shipments to Buyers located outside the United States. For Buyers who are export customers, all amounts, including freight and insurance, shall be required in advance for all Exports. This pre-payment may be waived for Buyers who are existing and established export customers. Foreign Buyers with an established open account can maintain that status as long as all Invoices are paid within 30 days. New accounts may be opened for foreign Buyers when a corporate guarantee from a U.S. parent company, four U.S. trade references, bank references and appropriate financial data are supplied and approved by IMS. Payment on open accounts is required in U.S. funds. Export crating or packaging will be an additional charge (time and materials) on some items if required.

10. Risk of Loss and Damage/Transfer of Title

The risk of loss or damaged Goods passes to Buyer upon shipment of Goods as specified herein. Title to Goods shall pass to Buyer upon receipt of valid payment by Seller.

11. Changes

Seller may at any time change the method of shipment or the manner of packing the Goods ordered. If any change causes an increase or decrease in cost of, or time required for performance, an equitable adjustment shall be made in price or delivery schedule or both. No claim by Buyer for adjustment shall be allowed unless made in writing within 20 days from the date notice of such change is received by Buyer.

12.Limited Warranty

All Seller's auxiliary and testing equipment are warranted to be free of defective material or workmanship for a period of 2 years from the date of shipment from Seller; unless a different warranty term is specified in writing by Seller, without limitation, in its catalog or product manuals. All basic consumables, including, but not limited to, consumable machinery components and commodity items including, but not limited to, fuses, heater bands, immersion heaters, elements, brushes, belts, O-rings and otherwise renewable parts shall be warranted against defects for a period of 90 days from the date of purchase. If any product is found by Seller to



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307 tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

be defective, Seller's sole obligation under this limited warranty shall be, at its option, the repair or replacement of such product or any part(s) thereof, at no charge to Buyer. Seller's limited warranty does not cover, and Seller EXPRESSLY DISCLAIMS AND WARRANTS with respect to, any defect, failure, deficiency or error which is: see next page (a) not reported to Seller within the applicable warranty period and returned to Seller within 30 days of notification of Buyer's warranty claim; (b) due to product modification, abuse, misuse, improper storage, unauthorized repair or maintenance or abnormal conditions of temperature, humidity, dirt or corrosive matter: (c) due to the application of the product, either intentional or otherwise, in an improper manner; or (d) due to normal wear and tear of the product or any part(s) thereof. For processing a warranty claim, see instructions under Returns, ¶7.

SELLER'S LIMITED WARRANTY IS IN LIEU OF AND **EXCLUDES ANY AND ALL OTHER WARRANTIES** REGARDING PRODUCTS, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. IMPLIED WARRANTIES AGAINST DEFECTS IN DESIGN, MATERIALS AND WORKMANSHIP, AND THE WARRANTY AGAINST REDHIBITORY DEFECTS. BUYER AGREES THAT THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE WARRANTIES CONTAINED HEREIN. BUYER WAIVES ALL OTHER CLAIMS AGAINST SELLER.

SELLER'S TOTAL LIABILITY RELATED TO ANY PRODUCT IS LIMITED TO THE REPAIR OR REPLACEMENT OF SUCH PRODUCT AND IN NO EVENT SHALL EXCEED THE PURCHASE PRICE OF SUCH PRODUCT PAID TO SELLER BY BUYER. SELLER SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE PURCHASE, STORAGE OR USE OF THE PRODUCT, INCLUDING, BUT NOT LIMITED TO: (A) DAMAGES FOR LOSS OF USE, INCOME OR PROFIT; (B) LOSSES SUSTAINED AS A RESULT OF INJURY (INCLUDING DEATH) TO ANY PERSONS; AND/OR (C) DAMAGES TO PROPERTY, OTHER THAN THE PRODUCT.

13. Confidentiality and Proprietary Information

Seller retains ownership of all Proprietary Data and other information that may be disclosed or discoverable by Buyer in connection with the Order. "Proprietary Data" includes, but is not limited to, all design, engineering and technical information (whether patentable or not) and other information concerning Seller's trade secrets, customer lists and specification for Goods.

14. Patent, Trademark and Copyright

Buyer agrees to indemnify and hold harmless Seller from and against any and all losses, costs, damages and expenses, including any and all attorneys' fees, for any infringement or alleged infringement of any U.S. or foreign patent, trademark or copyright by reason of the sale or use of any Goods sold to Buyer. Seller will promptly notify Buyer of any claim for infringement and cooperate, at Buyer's request, in the defense thereof.

15. Credit and Payment Policy

(a) Requests for Open Credit. Seller offers 30-day-net credit terms to customers with approved credit. To apply for credit, all interested parties must complete a credit application with Seller, provide trade references with fax numbers and emails, and sign page 2 of the credit application. Once complete, the credit application can be emailed to credit@imscompany.com or faxed to (440) 543-1070. Upon approval of credit application by Seller, a credit limit will be established by Seller and the customer will be notified that the account is open with net 30 day terms.

Any Buyer who has not placed any orders within the most recent 36-month period is considered an Inactive Buyer. An Inactive Buyer may place an Order, but shall first resubmit a new credit application and be approved by Seller. Upon approval of Buyer's new credit application by Seller, a credit limit will be established and Buyer will be notified that the account is open with Net 30 day terms.

If any Order exceeds a Buyer's existing credit limit, Seller's credit department may request updated credit information from Buyer or run a D&B report. If approved, Buyer's credit limit will be raised accordingly and the Order will be released. If not approved, Seller may cancel Buyer's Order and allow Buyer to resubmit the Order when sufficient credit is obtained. The Buyer is liable for all collection expenses including any and all legal fees when outside debt collection efforts are required.

(b) Payment by Check. Buyer shall make check payable to IMS Company. Buyer shall send checks to: **IMS Company** P.O. Box 75799 Cleveland, Ohio, 44101-4755

There will be a \$30.00 charge assessed to Buyer for insufficient funds to Seller.

- (c) Domestic Electronic (ACH) and Wire Transfer Policy. Buyer shall contact Seller for routing numbers for ACH and wire transfers. There is no charge for domestic electronic transfer (ACH). A charge shall be assessed to Buyer for any domestic and international wire transfers. The charge assessed will be a minimum of \$15.00.
- (d) Acceptable Advance Payment Methods for Exports. Foreign wire transfer (SWIFT) to Seller's bank are preferred for Exports and will help expedite shipment of an Order. Buyer shall pay any fees or deductions associated with such a wire transfer.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Direct international transfers to:

Huntington National Bank

7 Easton Oval (EA2W47) Columbus, Ohio 43219 Swift Address: HUNTUS33 Contact Seller for routing numbers.

- (e) Payment by Credit Card. Seller accepts only VISA, MasterCard, American Express and Discover.
- (f) Payment by International Money Orders. Seller generally accepts payment by international money order if approved by Seller's bank. Any fees charged to Seller related to payment by international money order shall be passed on to Buyer.
- (g) Payment by Foreign Checks. Seller accepts payment by foreign check only if drawn in U.S. dollars on a U.S. bank. Buyer's Order will be processed only after final collection of funds covering Goods and all fees associated with the Order are paid by Buyer.
- (h) Irrevocable Letters of Credit. Seller generally accepts payment by irrevocable letters of credit if approved by Seller's Bank. Buyer must pay all confirmation charges and other fees associated with payment by irrevocable letters of credit.

16. Shipment of Catalogs to Potential **Foreign Customers**

Catalogs will be shipped to foreign customers only if the foreign customer's Federal Express, DHL, United Parcel Service, or other acceptable freight account number can be utilized.

17. Compliance with Laws

Buyer warrants that by placing an Order with Seller it will comply with all applicable federal state and local laws, rules, regulations or orders, and the same shall be deemed incorporated herein by this reference. Such reference includes, but is not limited to, applicable requirements of Federal Acquisition Regulations, Consumer Products Act, the Electronic Signatures in Global and National Commerce Act, the Occupational Safety and Health Act, Toxic Substances Control Act, the Fair Labor Standards Act, Workers' Compensation laws, the U.S. Department of Labor, EEOC, the Civil Rights Act of 1964 and Executive Order 11246, all of which may be amended from time to time. Upon Seller's request, Buyer will furnish Seller with certification of compliance with the foregoing.

18. Enforceability of Electronic Signature and Records

By agreeing to Seller's Terms and Conditions, Buyer also agrees that information relating to any transaction with Seller (the "Record") may be provided to Buyer in electronic form. For all Orders placed, an electronic Record will be sent to Buyer via email for Buyer's reference after the Order is shipped. Buyer has the option to withdraw consent to receiving the Record in electronic form and may choose to receive the Record

in paper or other non-electronic form for each Order. Choosing to receive the Record in non-electronic form may result in Buyer being charged reasonable costs or fees associated with production of the nonelectronic Record and Seller may choose to terminate its relationship with Buyer. Buyer's consent to receive an electronic record shall apply to all future orders unless Buyer informs Seller in writing of its decision to receive the Record in a non-electronic form and provides Seller with updated contact information for non-electronic delivery of the Record to Buyer.

19. Assignment

Except as otherwise provided, Seller's Terms and Conditions shall be binding upon and inure to the benefit of the parties' successors and lawful assigns.

20. Severability

The invalidity of any part of Seller's Terms and Conditions shall not affect the remaining provisions.

21. Limitation of Period for Action on Contract

Parties agree, notwithstanding the applicable statute of limitations prescribed under Ohio law, no action, regardless of form, arising out of any transaction between Buyer and Seller under these Terms and Conditions may be brought by Buyer more than one year after the cause of action has accrued.

22. Choice of Law

Seller's Terms and Conditions, or any contract based hereon and any question with respect to the construction, interpretation or performance hereof shall be governed by and determined in accordance with the laws of the State of Ohio.

23. Consent to Jurisdiction and Venue

Seller and Buyer agree that any dispute arising in relationship to Seller's Terms and Conditions or any contract created between them, shall be resolved in the Court of Common Pleas located in Geauga County, Ohio, and in the Federal District Court for the Northern District of Ohio, Eastern Division, and that no action shall be filed in any other court pertaining to any dispute arising out of, or connected to Seller's Terms and Conditions. Seller and Buyer also hereby waive any issues of personal jurisdiction or venue for purposes of carrying out this provision.

24. Entire Agreement

Seller's Terms and Conditions and the operative provisions of any Invoice issued by Seller, sets forth the entire agreement and understanding among the parties as to the subject matter hereof, and merges and supersedes all prior discussions, agreements, and understandings of every kind and nature among them.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375



10373 Stafford Road Chagrin Falls, OH 44023-5296 Tel: 440.543.1615 Fax: 440.543.1070

Toll-Free Tel (USA & Canada): 800.537.5375Toll-Free Tel (Mexico): 001.888.304.1307
Toll-Free Fax (USA & Canada): 888.288.6900

Tech-Support Hot Line Toll-Free Tel (USA & Canada): 866.467.9001

Online Catalog: www.imscompany.com

E-mail: credit@imscompany.com

Business Credit Application

(Confidential)

Please complete, sign and send the IMS credit application to credit@imscompany.com if you have a standard sheet with your company's credit information, including references, you can send it in lieu of completing the trade reference section.

Company Name:				Date:
Billing Address:				
C	ty:		State:	Zip:
Accounts Payable Contact:		Accounts Payal	ole Phone:	()
Accounts Payable E-mail:		Accounts Pa	yable Fax:	()
Shipping address:				
Ci	ty:	5	State:	Zip:
Phone: () Fax: ()_	E-r	nail:	
Business Organization: Proprietors	hip 🔲	Partnership _) (Corporation 🔲
If Incorporated: State of Inc.:	Y	ear of Inc.:	_ NAICS co	de:
Type of Business: Manufacturing	Resale [(provide resale cert	ificate)	
Owner or key management member	ers:			
Name:		Las	st 4 of SS	#:
Date business established:	Years at	present location: _	# o	f employees:
D&B #:		Tax I.D.	#:	<u></u> - <u></u>
If any bankruptcy, please provide da	ıte(s): _			
Sales Tax Exemption # (if applicable	∍):		(сору	of certificate required)
Banking Information:				
Bank Name:		Branch Name:		
Routing #:		Account #:		
Contact Name:				
Address:				
	City:		State:	7in·



Business Credit Application

(Confidential)

Please Send Completed Credit Application to credit@imscompany.com

Trade References (Preferably U.S. Accounts):

1. Name:	Acct#:	Phone:()
E-mail:		Fax:()
Address:	City:	State:	Zip:
2. Name:	Acct#:	Phone:()
E-mail:		Fax:()
Address:	City:	State:	Zip:
3. Name:	Acct#:	Phone:()
E-mail:		Fax:()
Address:	City:	State:	Zip:
☐ I have read, under Officer's Consent:	rstand and accept IMS Cor	npany Terms and C	onditions of Sale
credit application or in authorize any person of information in response property whether or no	itor to make whatever inquiring the course of the review or reconsumer reporting agency eto credit inquiries and agreet to credit is extended. All inforting the credit requested.	r collection of any cr y to compile and furni ee that this informatic	redit extended. I/we ish to the lender any on shall remain your
Printed Name:		Date:	
Signature:		Title:	
Printed Name:		Date:	
Signature:		Title:	

Company terms of Net 30. A credit limit will be set at the discretion of IMS Company. A credit application may be denied if the customer's credit references, payment history or financial records indicate any potential difficulty in meeting IMS Company's payment policy.

A	
A4 Mold Release116, 117, 124, 126, 127,	128, 129, 130
Absorbent Products and Spill Kits, Oil	455-456
AC Voltage and Current Detector	100
Accessories, Mold Circulator402,	
Accessories, NozzleAccessories, Operator Safety	55, 519-521
Accessories, Operator Salety	
ACRAWAX® C, Material Lubricant	
Acrylic Purging Compound	
Adaptor Plates (West Temp Controllers)	257
Adaptors, Nozzle Thread	482-485
Adaptors, Nozzle Thread (Metal Trap)	
Adaptors, Nozzle Tip	498-499
Adaptors, Thermocouple	
Add-On, Self Actuating Shutoff	
Adjustable Arm Safety Glasses	
Adjustable Mold Clamps	
Adjustable-Angle Conveyors	776-781
Adjustable-Gap Drum Type Separators	
Aerosol Can Holders	
Aerosol Mold Cleaners	
Aerosol Rust Preventives	137-139
Aerosols	
Agitator, Pneumatic (Fluidizer)	674
Air Actuator System	466
Air Amplifier Tips	
Air Cannon, Ion	
Air Challed Mold Chillers	
Air Cooled Mold ChillersAir Cooled Mold Temperature Controller	
Air Curtain	
Air Differential Blow Off System	467
Air Dispersion Cone	680
Air Ejectors/Vacuum Breaks, Molded Part	464
Air Filter Regulator	304-312
Air Fittings	
Air Gale Culters	
Air Gun, COBRA™ Static-Neutralizing	435
Air Guns	
Air Hose, Self-Coiling Nylon	433
Air Line Filter, Oiler and Pressure Regulator	
Air Manifold, FasTie	
Air Manifold, Hopper Dryer	704
Air Manifold, MiniFold™	361
Air Wipe	
Air-Knife Ionizers	
Air-Operated Ionizers	434-443
Air-Powered Gate Cutter Reconditioning Services	314
Air-Powered Gate Cutter Suspension Kit, Heavy D	outy312
Air-Powered Gate Cutters	303-312
Alarm and Monitor, Temperature	
Alarm, Low Material Level HopperALL-IN-ONE, Hose Clamp Thermocouples	
All-Metal Detectors	
Aluminum Mold Hammers	
Aluminum Part Removal Tools	90
Amplifier Tips, Air	
Antifreeze	744
Anti-Seize Thread Compounds	
Anti-Seize Thread Sealant Tape	
Anti-Static Devices	
Arbor for Cut-Off Wheel	
Arburg Ball Check Screw Tips	526
Arburg Feed Screws	620
Arburg Nozzle Thread Adaptors	482, 486
Arburg Nozzle Tip Thread Adaptors	108

Arburg Nozzie Tips		
Arburg Screw Tip Assemblies		535
Arm Protection Sleeves		
Armor Wire Covering		194
ASG Power Packs		
ASG Tool Positioner		
ASG Tool Support Stand		
ASG Torque-Controlled Drivers		
ASG Torque-Controlled Drivers, Brushless		459
Assembler, Hose/Fitting		
Atomizer, Sure Shot (bulk spray)		151
Auger Mixer		
Autojector Ball Check Screw Tips		
Autojector Feed Screws		564
Autojector Screw Tip Assemblies		535
Automatic Mold Release Spray Systems		
Automatic Moid Helease Spray Systems	. 150-	150
В		
D		
Delement ACC Teel		460
Balancer, ASG Tool		400
Ball Check - EVOLVE™		551
Ball Check Screw Tips	.524-	533
Ball Check Spanner Wrench		556
Ball Valves		
Ball Valves, Economy Full Port		369
Ball Valves, Full Port Female/Male		370
Ball Valves, Mini		
Band Heater Voltage Controllers		
Bands, Heater	. 160-	189
Bands, Hot Sleeves 170-174, 178-181,	185-	189
Barbed Inserts, Push-On		387
Barrel Cart (for all types of drums)		648
Barrel Cleaning Brushes		500
Darrer Clearling Drusties		590
Barrel End Caps		
Barrel Heater Bands	.174-	181
Barrel Insulation System, UniVest™	199-	202
Barrel Mixer		
Barrel Repair, Injection and Extrusion		
barrer nepair, injection and Extrusion	3/4-	379
Barrel Tape Measure, Injection		
Barrel Tumblers	635-	640
Barrels (Plastic and Stainless Steel)	641-	642
Barrels, Injection Machine (New and Repair)	574-	579
Bars, Die		
Dais, Die		19
Battenfeld Ball Check Screw Tips		526
Battenfeld Feed Screws		
Battenfeld Metal Trap Nozzle Thread Adaptors		486
Battenfeld Nozzle Thread Adaptors		EOE
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies		
Battenfeld Nozzle Thread Adaptors		217
Battenfeld Nozzle Thread Adaptors		217
Battenfeld Nozzle Thread Adaptors		217 526
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor		217 526 482
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part	.776-	217 526 482 782
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V	.776-	217 526 482 782 799
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors	.776- .798-	217 526 482 782 799 782
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens	.776- .798- .710-	217 526 482 782 799 782 715
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens	.776- .798- .710-	217 526 482 782 799 782 715
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads	.776- .798- .710- .374-	217 526 482 782 799 782 715 375
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips	.776- .798- .710- .374- .491-	217 526 482 782 799 782 715 375 492
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves	.776- .798- .710- .374- .491- .182-	217 526 482 782 799 782 715 375 492 189
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material 620-621,	.776- .798- .710- .374- .491- .182- .624-	217 526 482 782 799 782 715 375 492 189 627
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves	.776- .798- .710- .374- .491- .182- .624-	217 526 482 782 799 782 715 375 492 189 627
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V	776- 798- 710- 374- 491- 182- 624- 620-	217 526 482 782 799 782 715 375 492 189 627 621
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens Bench Ovens BerNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge.	.776- .798- .710- .374- .491- .182- .624- .620- .626-	217 526 482 782 789 782 715 375 492 189 627 621 627
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens Bench Ovens BerNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge. Biodegradable Mold Cleaner	.776- .798- .710- .374- .491- .182- .624- .620- .626-	217 526 482 782 799 782 715 375 492 189 627 621 134
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer	.776- .798- .710- .374- .491- .182- .624- .620- .626-	217 526 482 782 799 782 715 375 492 189 627 621 134 316
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips Birls Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer. Blades, Knife	776- 798- 710- 374- 491- 182- 624- 620- 626-	217 526 482 782 789 785 375 492 189 627 621 134 316 324
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips Birls Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer. Blades, Knife	776- 798- 710- 374- 491- 182- 624- 620- 626-	217 526 482 782 789 785 375 492 189 627 621 134 316 324
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 326-	217 526 482 782 799 782 715 375 492 189 627 621 316 324 328
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets	776- 798- 710- 374- 491- 182- 624- 626- 317- 326- 720-	217 526 482 782 799 782 715 375 492 189 627 621 627 134 316 324 328 721
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Knife Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets Blank Flange, Material Hoppers	776- 798- 710- 374- 491- 182- 624- 626- 317- 326- 720-	217 526 482 782 799 782 715 375 492 189 627 621 324 328 721 677
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets Blanket, Insulation	776- 798- 710- 374- 491- 182- 624- 626- 317- 326- 720-	217 526 482 789 782 715 375 492 189 627 621 134 324 328 721 677 202
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, RoUT-A-BURR Blank Flange, Drawer Magnets Blanket, Insulation Blanks, Nozzle Tip	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 3126- 720-	217 526 482 789 782 715 375 492 627 621 627 134 328 721 677 202 519
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, RoUT-A-BURR Blank Flange, Drawer Magnets Blanket, Insulation Blanks, Nozzle Tip	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 3126- 720-	217 526 482 789 782 715 375 492 627 621 627 134 328 721 677 202 519
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets Blanket, Insulation Blanks, Nozzle Tip Blenders, (Drum Tumblers)	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 317- 720- 199- 635-	217 526 482 782 799 782 715 375 492 189 627 621 627 134 328 721 677 202 519 640
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets Blank Flange, Material Hoppers Blanket, Insulation Blanks, Nozzle Tip Blenders, (Drum Tumblers) Blenders, High Speed, Bulk Material	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 326- 720- 199- 635- 631-	217 526 482 782 799 782 715 375 492 189 627 621 627 134 328 721 677 202 519 640 633
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets Blank Flange, Material Hoppers Blanket, Insulation Blanks, Nozzle Tip Blenders, (Drum Tumblers) Blenders, High Speed, Bulk Material Blow Guns	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 326- 720- 199- 635- 631- 428-	217 526 482 782 789 782 715 375 492 627 621 627 324 328 721 667 202 519 640 633 430
Battenfeld Nozzle Thread Adaptors Battenfeld Screw Tip Assemblies Bayonet Adaptors (Thermocouple) Beloit Ball Check Screw Tips Beloit Nozzle Thread Adaptor Belt Conveyors, Plastic Runner/Molded Part Belt, V. Belts, Replacement for Conveyors Bench Ovens BERNZOMATIC, Torch Heads Beryllium Copper Nozzle Tips BIG Band Hot Sleeves Bins, Material Bins, Portable Resin Bins, Surge Biodegradable Mold Cleaner Blades, Flash Trimmer Blades, Knife Blades, ROUT-A-BURR Blank Flange, Drawer Magnets Blank Flange, Material Hoppers Blanket, Insulation Blanks, Nozzle Tip Blenders, (Drum Tumblers) Blenders, High Speed, Bulk Material	776- 798- 710- 374- 491- 182- 624- 620- 626- 317- 326- 720- 199- 635- 631- 428-	217 526 482 782 789 782 715 375 492 627 621 627 324 328 721 667 202 519 640 633 430

B continued	
Blowoff System, Injection Mold, External46	37
Blue Label Silicone Spray Mold Release	
Bobs, Polishing	H 75
Bolt Clamps, Zinc Plated Carbon Steel Spiral Double41	1
Bolts, Mold Clamp, Standard and Metric51-5	53
Bolts, T-Slot Head	55
BONES, SAFETY	
Borescope9	
Box Clips42	20
Box Dumper – Hydraulic	30
Box Liners, Plastic	
Boy Ball Check Screw Tips	26
Boy Feed Screws	34
Boy Nozzle Tip Thread Adaptor	86
Boy Screw Tip Assemblies	73
Brass Brushes 83-8	
Brass Extension Plugs – FJT37	77
Brass Fittings	96
Brass Hammer	
Brass Scrapers86-8	
Brass Screwdriver9	91
Brass Tools	
Break-Away Knife 32 BRODY-rings® 553-55	
Bronze Tools, Bronze Sprue Puller Tools88-8	39
Brushes, Barrel Cleaning59	90
Brushes, Brass	
Brushes, Cleaning83-85, 59 Bucket Mixer/Tumbler635-64	
Bulk Bins, Plastic	
Bulk Material Blenders, High Speed631-63	33
Bulk Mold Cleaners	35
Bulk Mold Release Air Sprayer	58
Bulk Mold Releases116-12	28
Bulk Silicone	
Bulk Spray System	
Burst Plugs (Rupture Disks)	
Bushing Hex	
Bushing, Radius Gauge (Sprue)51	1
Bushings - Sprue - AB Series)4
Bushings, Platen Hole	
Butt Connectors	
By-The-Press Granulators784-78	39
C	
C-FOAM Foaming Citrus Mold Cleaner	36
Cable Ties)6
Cable X Checker23	
Cables, Hot Runner	
Calibrator, Microprocessor, Thermometer	
Cam & Groove Couplings398-39	
CAN GUN, Can Trigger14	19
Can Holders, Aerosol	
Cannon, Ion Air	
Cart, Drum (for fiber, steel or plastic drums)64	
Cart, Mold Setup3	38
Carton Clips 42	
Cartridge Heaters, Built-In Thermocouple	
Cartridge Heaters, Hot Stix250-25	

Cartridge Heaters, Internally-Heated Nozzle			209
Cartridge Type Thermocouples	216,	222	223
Catchpan Magnets			796
Catchpans, Granulator			
Ceramic Flash Trimmer			316
Ceramic Heater Band Post Protectors			197
Ceramic Insulated Heater Bands	182-	189,	183
Chain Slings			29
Chart Recorder, Dew Point			700
Checker -Mold and Cable Hot Runner Testing		237-	240
Chilled Air Guns			112
Chiller Flushing Fluid			
Chillers Injection Mold Water		751	752
Chillers, Injection Mold, Water Chronograph, HEAT Watch™ Heat Index		751	107
Oliveta - Bart			421
Chutes, Part	•••••	. / / 0-	-//1
Cincinnati Ball Check Screw Tips			
Cincinnati Feed Screws			
Cincinnati Metal Trap Nozzle Thread Adaptors			486
Cincinnati Nozzle Thread Adaptors			482
Cincinnati Screw Tip Assemblies		536-	537
Circulator Accessories, Mold402, 7	744-	755,	749
Circulator Hose	388	400-	402
Circulators, Acid, (Lime Buster)		759-	763
Circulators, Air Cooled		732-	733
Circulators, High-Heat			
Circulators, Hot Oil			
Circulators, Hot Oli		740	740
Circulators, Mold	•••••	730-	748
Circulators, Pressurized		738-	742
Circulators, Water Cooled		736-	742
Circumference Tape Measure, Injection Barrel			462
Citrus-50 Spray Mold Cleaner			134
Clamps, Hose	4	404,	411
Clamps, Mold		3	3-51
Clamps, Zinc Plated Carbon Steel Spiral Double Bo	olt		411
Cleaners, Die and Mold		132-	136
Cleaning Brushes			
Cleaning Fluids, Oil System			
Cleaning Place (Costob Prito™ Equivalent)			149
Cleaning Pads (Scotch-Brite™ Equivalent)			421
Cleaning Rags			420
Clear Coat ³ Rust Preventive Spray			
Clips, Carton			
Clips, Waterline Fitting Locking			385
Closed-Loop Temperature Control Module			
Closed-Toe Mold Clamps	3	9-46	, 50
COBRA™ Static-Neutralizing Air Gun		434	435
Code, Date, Insert			103
Coil Heater			
Coiling Air Hose			
Cold Air Guns, Air Chilling			112
Color Dispersion Nozzle Tip			
Color Dispersion Plug			
Color Feeder			
Color Mixing Drums			
Color Mixing Nozzles		.508	513
Colored Hose and Wire Ties			406
Compound, Heat Transfer (INFRA-KOTE)		213,	592
Compounds, Diamond, Synthetic Virgin			141
Compounds, Polishing		166	167
Compounds, Purging		586	558
Compressed Air Sprayers, Refillable			
Compression Rings		553	555
Compression Springs		606.	614
Cones, Hopper Dryer Dispersion			
Connector Plugs (Male)			
Connectors, Mold Hose		276	305
Connectors, Wold nose		050	292
Connectors, Temperature Controllers			
Connectors, Thermocouple			
Connectors, Water			
Connectors, Wire			
Control Modules, Temperature			
Control Panel, Tumbler			638
Controller, Granulator WATT WATTCHER™			790
Controllers, Heater Band		242	262
Controllers, Mold Temperature, Hot Runner		237-	240

Controllers Mold Towns and the Cit Cit	roulating 740.740
Controllers, Mold Temperature, Oil Ci Controllers, Mold Temperature, Water	
Controllers, Temperature	
Controllers, Voltage	
Convection Oven	710-714
Conversion Measuring Tape	464
Conveyor, Line Vac [™] , Pneumatic Ma	terial672-673
Conveyors, Plastic Runner/Molded Pa	art776-781
Conveyors/SeparatorsCopper Flake Thread Lube	//0-/83
Copper Gauze	
Copper Nozzle Tips (Beryllium)	491-492
Core Pins	602
Corner Tumbler	
Cots, Leather Finger	
Cotton Gloves	
Counters, Mold Cycle	76
Couplers	390-392, 394-395, 398-395
Couplers, fridustrial interchange Couplers, Straight Through	
Coupling	
Couplings, Cam & Groove	398-399
Covers, Drum and Gaylord	642-643,645
Covers, Hopper Loader Stand	683
CPM Screw Tip Assemblies	
Crimping Tool, Wire	
Crow Bars (Die) Current and Voltage Detector	٤/
Curtain, Mold Side	
Custom-Made Gate Cutters	
Cut-Off Wheel	
Cut-Resistant Forearm Sleeves	
Cut-Resistant Gloves	448
Cutter Repair Service	302, 314
Cutters, Air-Powered	
Cutters, Gate Cutters, Hose and Plastic Pipe	
Cutters, Pneumatic	
Cutters, Super	
Cutters, Trimming	
Cutters, Wire	196
Cycle Timers (Stopwatches)	425-427
Cylinder, Aerosol1	16-117, 119-122, 124-125
, , , , , , , , , , , , , , , , , , , ,	,
,	,,
D	
D	
Date Code Insert	103
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II Deburring Tools, ROUT-A-BURR	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II Deburring Tools, ROUT-A-BURR Deflashers	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II Deburring Tools, ROUT-A-BURR Deflashers Deflashing Tools, ROUT-A-BURR	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II Deburring Tools, ROUT-A-BURR Deflashers Deflashing Tools, ROUT-A-BURR Degators	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II Deburring Tools, ROUT-A-BURR Deflashers Deflashing Tools, ROUT-A-BURR Degators Degreasers, Mold	
Date Code Insert Dawg Oil Absorbent Products and Sp Day Bin Deburring Tool, Ceramic Deburring Tool, Mango II Deburring Tools, ROUT-A-BURR Deflashers Deflashing Tools, ROUT-A-BURR Degators Degreasers, Mold Dehumidifying Hopper Dryers	
Date Code Insert	100 100 100 100 100 100 100 100 100 100
Date Code Insert	103 bill Kits
Date Code Insert	
Date Code Insert	100 100 100 100 100 100 100 100 100 100
Date Code Insert	
Date Code Insert	
Date Code Insert	
Date Code Insert	
Date Code Insert	103 bill Kits

Die Grinder Kit, Pneumatic	78-79
Die-Setter Bars	77
Die Springs	600 616
Die Springs	.000-010
Digital Electronic Multimeter	96-98
Digital Scales	422-424
Digital Stopwatch, Timer75,	405 407
Digital Stopwatch, Timer75,	425-427
Digital Thermometer	.230-231
Discharge Frame for Mixers	634
Discharge France for Mixers	
Dispersion Cones, Hopper Dryer	
Dispersion Plugs	.514-515
Disposable Gloves	110
Disposable Gloves	449
Disposable Rags	
Diverter, Magnet	.716-717
Diverter, Part	770 775
DME Coil Heater	191
Dollie, Drum	
Dollie, Diulii	040
Double Bolt Spiral Hose Clamps	411
Drawer Type Hopper Magnets	720-721
Dri Air O Air Dri	701
Dri-Air Compressed Air Dryer	
Dri-Air Compressed Air Loader	666
Dri-Air Dryers	.000-090
Drills, Nozzle Orifice	519
Driver, Screw, Torque-Controlled91,	458-460
Drool Disc	520
Drool, No-Drool Nozzle Tip	.501-502
Drop Chute	770 771
Drum Caddy	648
Drum Covers	642 643
Drum Cart	648
Drum Dollie	648
Driver Heldere (Timeleler)	000 041
Drum Holders (Tumbler)	.030-041
Drum Liners, Plastic	641
Drum Mixer	
Diditi wixei	.035-040
Drum Tumbler Accessories	641-642
Drum Tumbler Control Panel	638
D. T. I.I. 4/4 I D.O.I. D.' M.'.	
Drum Tumbler, 1/4 HP Chain Drive Mini	636
Drum Tumbler, 1-1/2 HP Belt Drive	627
Drum Tumbler, 1-1/2 III Belt Drive Corner	606
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel	636 .636-641 638
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels	636 .636-641 638 .642-643
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels	636 .636-641 638 .642-643
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels Drum Type Separators	636 .636-641 638 .642-643
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels Drum Type Separators Drums, Plastic and Stainless Steel	636 .636-641 638 .642-643 783 .641-642
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels Drum Type Separators Drums, Plastic and Stainless Steel DRY-21 Paintable PTFE Powder Mold Release	636 .636-641 638 .642-643 783 .641-642
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels Drum Type Separators Drums, Plastic and Stainless Steel DRY-21 Paintable PTFE Powder Mold Release	636 .636-641 638 .642-643 783 .641-642
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641 638 .642-643 783 .641-642 129
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641 638 .642-643 783 .641-642 129 .636-641
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407 .702-703
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407 .702-703 .686-696
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407 .702-703 .686-696 .686-695 .690-691
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407 .702-703 .686-696 .686-695 .690-691
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641 638 .642-643 783 .641-642 129 .636-641 .408-409 407 .702-703 .686-696 .686-695 .690-691 694 .688-689 .692-693 .702-703
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .675-676 .708-709 .710-714
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .675-676 .708-709 .710-714
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .708-709 .710-714
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .708-709 .710-714112
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .708-709 .710-714112
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air On Machine Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Hopper, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .675-676 .708-709 .710-714112409
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air On Machine Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Drying Hoppers, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air On Machine Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Hopper, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .710-71412409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air On Machine Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Drying Hoppers, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .710-71412409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .710-71412409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air On Machine Dryers, Refrigerant Type Drying Hopper, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Drying Hoppers, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic Dust Cover, Drum Dust Masks	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .710-71412409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .710-71412409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air On Machine Dryers, Refrigerant Type Drying Hopper, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Drying Hoppers, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic Dust Cover, Drum Dust Masks	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .710-71412409630 .358-360
Drum Tumbler, 1-1/2 HP Belt Drive Corner	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112630 .358-360 .642-643
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type. Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System. Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum Dust Masks Eagle Replacement Timer	636 .636-641638 .642-643783 .641-642129407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .675-676 .708-709 .710-714112409630 .358-360 .642-64377
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant. Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type. Drying Hoppers, SPIRAL™-Curve (Mobile) Drying Hoppers, SPIRAL™-Curve and 60° Taper Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System. Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum Dust Masks Eagle Replacement Timer	636 .636-641638 .642-643783 .641-642129407 .702-703 .686-696 .686-695 .690-691694 .688-689 .692-693 .702-703 .708-709 .675-676 .708-709 .710-714112409630 .358-360 .642-64377
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels Drum Type Separators Drums, Plastic and Stainless Steel DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hopper, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System Ducting Hose Dust Cover, Drum Dust Masks E Eagle Replacement Timer Ear Plugs (Hearing Protection)	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112630 .358-360 .642-643452
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant Dryers, Dri-Air Dryers, Dri-Air By the Press Dryers, Dri-Air Hoppers Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hopper, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum Dust Masks E Eagle Replacement Timer Ear Plugs (Hearing Protection) Easy-Emptying Resin Bins	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112409451451 .620-621
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels. Drum Type Separators Drums, Plastic and Stainless Steel. DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant Dryers, Dri-Air Dryers, Dri-Air By the Press Dryers, Dri-Air Hoppers Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hopper, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Dual Point, Cold Gun System Ducting Hose Dumper, Box, Gaylord, Hydraulic DuoFlow Manifolds Dust Cover, Drum Dust Masks E Eagle Replacement Timer Ear Plugs (Hearing Protection) Easy-Emptying Resin Bins	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112409451451 .620-621
Drum Tumbler, 1-1/2 HP Belt Drive Corner Drum Tumblers Drum Tumblers, Safety Control Panel Drum Tumbling Barrels Drum Type Separators Drums, Plastic and Stainless Steel DRY-21 Paintable PTFE Powder Mold Release Dry-Color Tumblers Dryer Hose Dryer Hose Insulation Dryers, Dehumidifying Dryers, Desiccant Dryers, Dri-Air Dryers, Dri-Air Dryers, Dri-Air Hoppers Dryers, Dri-Air On Machine Dryers, Dri-Air Portable Dryers, Hopper Dryers, Refrigerant Type Drying Hopper, SPIRAL™-Curve (Mobile) Drying Hoppers, Stainless Steel Drying Ovens Dual Point, Cold Gun System Ducting Hose Dust Cover, Drum Dust Masks E Eagle Replacement Timer Ear Plugs (Hearing Protection)	636 .636-641638 .642-643783 .641-642129 .636-641 .408-409407 .702-703 .686-696 .686-695 .690-691694 .688-689 .702-703 .708-709 .710-714112630 .358-360 .642-643452

E continued	
Economy Ethylene Glycol, UG-10	744
Economy Mold Cleaner	133
Economy Paintable Mold Release Economy Silicone Mold Release	
Egan Ball Check Screw Tips	
Egan Feed Screws	565
Egan Screw Tip Assemblies	538
Ejector Bar Tie In, FasTie Ejector Pin Lubricant	62-69
Ejector Pins - Nitrided	
Ejector Pins - Nitrided - Metric	599
Ejector Pins - Nitrided - Shoulder	597
Ejector Pins - Through Hardened Ejector Pins -Through Hardened - Metric	598
Ejectors, Vacuum Break	
Elbow, Plumbing, 45° Female	369
Elbow, Plumbing, 45° Street	369
Elbow, Plumbing, FemaleElbow, Plumbing, Reducing Female	368
Elbow, Plumbing, Street	
Electrical Connectors	195
Electrical Testers, Multimeters	
Electrical Wire Lugs	161
Electronic Multimeter, Digital Electronic Scales	
Electrostatic Meter	445
End Caps, SPIRAL™-Curve	580-583
Engel Ball Check Screw Tips	528
Engel Nozzle Tip Thread Adaptor Engel Screw Tip Assemblies	539
Enprox	761, 763
EQ Series Chillers	754-755
Equipment, Shop Safety	
Ergonomic Gate Cutters	
Ester Spray Mold Release (Paintable)	128
Ester Spray Mold Release (Paintable) Ethylene Glycol, UG-10 and EG-17	128 744
Ethylene Glycol, UG-10 and EG-17	744 40, 442-443
Ethylene Glycol, UG-10 and EG-17	744 40, 442-443 377
Ethylene Glycol, UG-10 and EG-17	744 40, 442-443 377 590
Ethylene Glycol, UG-10 and EG-17	744 40, 442-443590467612-614
Ethylene Glycol, UG-10 and EG-17	

Fiberglass Drill Extension Rod		592
Fiberglass Drool Disc		
Fiberglass Hose Insulation		
Fiberglass Hose Insulation	.400	408
Fiberglass Wire Sleeving		194
Filters, Air-Powered Gate Cutter	.304	312
Filters, Loader	.664	-665
Finger Cots		
Tiliger Cots		450
Finger Safety Tape		
Fingerless Gloves		446
Firerods, Cartridge Heaters	.206	212
Firesleeve Hose Insulation		
First Aid Kit		
Fitting and Hose Sizer		
Fitting Assembler, Hose		383
Fitting Locking Clips, Hose		385
Fittings, Air Gun		
Fittings, Mold Waterline 367-373,		
Fittings, Pipe	.367	373
Fixed-Blade Utility Knives	317	319
Flash Trimmer		
Flash Trimmer, Ceramic		
Flash Trimming Knives	.315	-329
Flat Conveyors	.776	.779
Flow Regulators, Mold Water	334	330
Flow negulators, word water	.004	.008
Flowmeter, SmartFlow	.340	351
Flowmeter, SmartFlow Tracer Electronic	.350	-351
Fluid Circulators	732	743
Fluid, Ethylene & Propylene Glycol	711	7/5
Tidia, Ethylerie & Fropylerie Glycol	. / 44	740
Fluid, High-Heat744-	745,	749
Fluidizer, Pneumatic Agitator, Material Hopper		674
Fluids, Heat Transfer744-	745.	749
Flushing Fluids, Oil System	,	740
Foaming Mold Waterline Rust Preventive		
Food Grade Loader Hose	412,	413
Food Grade Material Hose	412.	413
Food Grade PVC Hose		
Food Grade Suction Hose		
Food Grade Vacuum Hose	412,	413
Food Grade Vacuum Hose Folding Blade Pocket Knife	412, 	413 320
Folding Blade Pocket Knife		320
Folding Blade Pocket Knife	2	320 2-27
Folding Blade Pocket Knife	2	320 2-27 3-49
Folding Blade Pocket Knife	2	320 2-27 8-49 135
Folding Blade Pocket Knife	2	320 2-27 8-49 135
Folding Blade Pocket Knife	2	320 2-27 8-49 135
Folding Blade Pocket Knife	2	320 2-27 8-49 135
Folding Blade Pocket Knife	2	320 2-27 8-49 135
Folding Blade Pocket Knife	3	320 2-27 8-49 135 565
Folding Blade Pocket Knife	3	320 2-27 8-49 135 565
Folding Blade Pocket Knife	2:	320 2-27 8-49 135 565
Folding Blade Pocket Knife	3	320 2-27 8-49 135 565
Folding Blade Pocket Knife	.516	320 2-27 8-49 135 565 31 -517
Folding Blade Pocket Knife	.516	320 2-27 8-49 135 565 31 -517
Folding Blade Pocket Knife	2i	320 2-27 8-49 135 565 31 -517
Folding Blade Pocket Knife	2 3 .516 .263 302,	320 2-27 8-49 135 565 31 -517 -300 314 312
Folding Blade Pocket Knife	21 31 .516 .263 302,	320 2-27 3-49 135 565 31 -517 -300 314 312 314
Folding Blade Pocket Knife	2i 3i 3516 263 263	320 2-27 8-49 135 565 31 -517 -300 314 -331 312
Folding Blade Pocket Knife	2i 3i 3516 263 263	320 2-27 8-49 135 565 31 -517 -300 314 -331 312
Folding Blade Pocket Knife		320 2-27 8-49 135 565 31 -517 -300 314 312 314 -300 314
Folding Blade Pocket Knife		320 2-27 8-49 135 565 31 -517 -300 314 -300 -314 267
Folding Blade Pocket Knife	.516 .263 .302, .263 .303	320 2-27 8-49 135 565 31 -517 -300 314 312 314 -300 -314 267 -296
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 5517 -300 314 312 314 267 -296 301
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 517 -300 314 312 314 267 -296 301 -278
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 517 -300 314 312 314 267 -296 301 -278
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 -517 -300 314 -314 -314 -296 301 -278 300
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 517 300 314 267 296 301 278 300 314
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 -517 300 314 -300 -314 -278 301 -278 300 -314 -300 -314 -300 -314 -300 -314 -300 -314 -300 -314 -300 -314 -300 -314 -300 -314 -300 -300 -300 -300 -300 -300 -300 -30
Folding Blade Pocket Knife		320 2-27 8-49 135 565 31 517 300 314 300 314 267 296 301 314 300 314 300 314 300 314 2278 301 314 300 314 300 314 300 314 300 314 300 300 300 300 300 300 300 300 300 30
Folding Blade Pocket Knife		320 2-27 8-49 135 565 31 517 300 314 300 314 267 296 301 314 300 314 300 314 300 314 2278 301 314 300 314 300 314 300 314 300 314 300 300 300 300 300 300 300 300 300 30
Folding Blade Pocket Knife		320 2-27 8-49 135 565 31 517 300 314 331 267 296 301 278 300 314 300 314 2278 300 314 300 314 2278
Folding Blade Pocket Knife		3202-274 3203-291
Folding Blade Pocket Knife		320 2-27 3-49 135 565 31 -517 -300 314 331 -296 -301 -278 -300 -291 -274 -291 -329
Folding Blade Pocket Knife		3202-278 3-49135 565 314-517-300 314-300 314-296 301-278 300-314 2274 3291 3291 5205
Folding Blade Pocket Knife		3202-273-491 135 565311-517-300 3114-300 3144-300 2911-329 520 383
Folding Blade Pocket Knife		3202-273-491 135 565311-517-300 3114-300 3144-300 2911-329 520 383
Folding Blade Pocket Knife		3202-278-49135565311-517-300 3114-300 3214-300 2211-3295 520 383 511
Folding Blade Pocket Knife		3202-278-49135565311-517-3003144 3314 3304 -2916 -274 -329 -520 383 -511 -511
Folding Blade Pocket Knife		3202-278-49135565311-517-3003144-300314-2913-329155115115118
Folding Blade Pocket Knife		3202-273-491 135565 314 312 314 329 3314 329 3314 329 528 3511 518 511

Gauge, Sprue Bushing	94, 511	Heater Band, Big Band	174-18
Gauge, Surface Temperature Monitoring		Heater Band, Hot Sleeves	
Gauge, Thread	· ·	Heater Band, Key Lock	
Gauge, Tie Bar Strain	70	Heater Band, Metric	
		Heater Band, Mica Type	
G continued		Heater Band, S Type	184
		Heater Band, Stainless Steel	
Gauze, Copper		Heater Band, Super High Watt	
Gaylord and Drum Covers		Heater Band, V Type Heater Band, Xtreme	170 17
Gaylord Liners, Plastic		Heater Bands	
Gaylord Tilter		Heater, Cartridge	
Gaylord Tipper		Heater, Coil	
Glasses, Safety		Heater, Mold Circulating, TEMKON SS™	73ء
Gloves		Heater, Strip	
Gloves, Cotton		Heating Barrels (Repair)	57/
Gloves, Cut-Resistant		Heat-Transfer Compound, INFRA-KOTE	
Gloves, Disposable		Heat Transfer Compound, SAFEKOTE 60*	
Gloves, Fingerless		Heat Transfer Fluids	744-745. 749
Gloves, Heavy Duty Safety		Heavy Coat Mold Surface Protector	139
Gloves, Hot Nozzle		Heavy Duty Air Guns	
Gloves, Jersey		Heavy Duty Air-Powered Gate Cutter Suspe	
Gloves, Lint-Free Nylon		Heavy Duty Brass Brushes	
Gloves, Molders (Clean Part)		Heavy Duty Cotton Gloves	
Gloves, Open Finger Type		Heavy Duty Hoist Rings	
Gloves, Suede		Heavy Duty Hose	
Glycol, Ethylene		Heavy Duty Material Hose	
Glycol, Propylene		Heavy Duty Suction Hose	413-414
Goggles		Heavy Duty Vacuum Hose	413-414
Gold Label Silicone Spray Mold Release		Heavy Load Springs	610-612
Goldstar Feed Screws		Heavy Wear Loader Hose	
Goldstar Free Flow Screw tip Assemblies		Helix, Color Mixers	
Granulator Catchpan		Hex Key Set	
Granulator Controller WATT WATTCHER™		HH16 Hot Oil Circulator	
Granulators	784-789	High Speed Material Mixers	
Grate Magnets	716-719	High Visibility Utility Knives	
Grease, Original Formula Mold	146	High Volume Ionizers	
Grease, Silicone		High Volume Water Manifolds	
Grease, White Lithium	145	High/Low Temperature Alarm and Monitor.	
Grinder Catchpan Magnets	796	High-Heat Circulators	
Grinder Catchpans		High-Heat Hose	
Grinder Kit, Pneumatic Die		High-Heat Tape (Heater Band)	
Grinders, Plastic		High-Heat Tape, Plumbing	
Grippers (Sprue Puller)		High-Heat Thread Compound	
Grounded Hose		High-Heat Thread Seelant Tana with DTEE	
Guard Enclosure - Mini Tumbler		High-Heat Thread Sealant Tape with PTFE	
Guard Tex® Finger Tape		High-Heat Transfer Fluid	
Guideskirts, Part Chutes		Hi-Strength Lifting Eyes	
Guns, Air		Hoist Rings	
Guns, Mold Release Spray	150	Hoist Ring Bolt KitsHoist Ring Rack	20.2
		Holders, Aerosol Can	
H		Holders, Drum Tumbler	
<u></u>		Hole Savers, Platen	
Hammer, Aluminum	82	Holsters, Tool	
Hammer, Brass		Honeycomb Desiccant Wheel Dryer	
Hand Pads (Scotch-Brite™ Equivalent)	421	Hooked Replacement Blades	
Hand Tool, Multipurpose		Hooks, Lifting (Chain Slings)	
Hand Tools57, 82-92, 19		Hopper Alarm, Low Material Level	
Hand Truck	648	Hopper Cover/Loader Stand	68:
Handling Latch, Mold	31	Hopper Dryer, Refrigerant Type	
Hard Water Deposit Removal	759-763	Hopper Dryers	
Hearing Protection, Ear Plugs	452	Hopper Dryers, Dehumidifying	
Heat Index Chronograph, HEAT Watch™	427	Hopper Dryers, Desiccant Type	
Heat Resistant Gloves	447	Hopper Loader Intake Magnet	
HEAT Watch™ Heat Index Chronograph	427	Hopper Loaders, Mini	
Heat-Compensated Reciprocating Screws		Hopper Loaders, Pneumatic Type	
Heater Band Connectors, Crimp on	195	Hopper Loaders, Vacuum Type	
Heater Band Controllers		Hopper Magnets	
Heater Band Post Protectors (Ceramic)		Hopper, Drying (Replacement)	
Heater Band Terminal Tape		Hopper, Mini Sampling	
Heater Band Wire		Hopper, Purge	
Heater Band, Barrel	17/ 100	Hopper, SPIRAL™ Mobile Drying	

Hopper, SPIRAL™-Curve, Replacement	
Hopper, Standard 60° Taper	708-709
Hopper, Storage, Heavy Duty	624-625
Hopper, Temporary Purge	
Hopper-Dryer Air Manifold	704
Hopper-Dryer Dispersion Cones	
Hopper-Dryer Hose	
Hopper-Loader Hose	
Hopper-Loader Probe Magnet	
Horizontal to Incline Conveyors	776
Hose and Fitting Sizer, Gauge	383
Hose and Wire Ties, Colored	406
Hose Clamp Thermocouples, ALL-IN-ONE	221
Hose Clamps	
Hose Clamps, Spiral	411
Hose Connectors, Mold	376-396
Hose Cutters (Mold-Waterline)	403
Hose Fitting Assembly Tool	383
Hose Fittings, Barbed	
Hose Fittings, Circulator	
Hose Mender/Splicer, Push-On	
Hose, Combination Inserts	
Hose, Dryer	
Hose, Ducting	
Hose, Grounded Static Wire	410 414
Hose, High-Heat	400,400
Hose, Hopper Dryer	408-409
Hose, Hopper Loader	
Hose, Hydraulic	445
Hose, Insulation, Dryer	
Hose, Loader	410-414
Hose, Loader, Polyurethane	413-414
Hose, Mold Waterline	400-401
Hose, Neoprene	401
Hose, Self-Coiling Nylon Air	
	400
Hose, Silicone	400
Hose, Vacuum Loader	457
Hose, Vacuum Loader	457
Hose, Vacuum Loader	457 388, 400-401
Hose, Vacuum Loader	457 388, 400-401 405-406
Hose, Vacuum Loader	457 388, 400-401 405-406 383
Hose, Vacuum Loader	457 388, 400-401 405-406 383
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	457 388, 400-401 405-406 383 216 514 447
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	
Hose, Vacuum Loader	

IMS Brand Thermocouples	000 000
IMS Series Stainless Steel Loaders	
IMPCO Ball Check Screw Tips	529
IMPCO Feed Screws	566
IMPCO Metal Trap Nozzle Thread Adaptors	487
IMPCO Nozzle Thread Adaptors	100
IMPOO O Tire A	403
IMPCO Screw Tip Assemblies	541
Incline Conveyors	776-782
Industrial Cleaning Pads (Scotch-Brite™ Equivaler	nt)421
Industrial Interchange Couplers	
Industrial Interchange Nipples	
INFRA-KOTE Heat-Transfer Compound	
Infrared Thermometer	
Injection Barrel Circumference Tape Measure	
Injection Machine Barrels (New and Repair)	576-581
Injection Machine Heat-Exchanger Cleaner	
Injection Machine Hopper Magnets	
Injection Machine Mold Clamps	30-37
Injection Machine Mold Water Manifolds	354-365
Injection Machine Nozzles	
Injection Machine Tie Bar Sleeves	70-71
Injection Mold Chillers	
Injection Mold Cleaner	
Injection Mold External Blowoff System	
Injection Mold Eyebolts	
Injection Mold Lubricants	145-147
Injection Mold Releases	116-130
Injection Mold Rust Preventives	
Injection Mold Waterline Cleaner	750-763
Injection Screw Repairs	
Injector Adaptor, Nozzle (with Gas Port)	516-517
In-Line Color Mixing Nozzle	508-510
Inline Material Handling Metal Detectors	724-725
Inserts, Barbed, Push-On	
Inserts, Date Code	
Inserts, Thread (Hole Savers)	
Inspection Gloves	
Inspection Mirrors	
Insulation Sleeves	.199-202, 407
Insulation System, Barrel (UNI-VEST™)	199-202
Insulation, Dryer Hose	
Insulation, Firesleeve, Circulator Hose	402
insulation, Firesieeve, Circulator Hose	403
Insulation, Mold Board	
Insulation, Wire	
Insulators, Ceramic	197
Intake Magnet, Hopper Loader	728
Internally Heated Nozzles (Standard)	
Ion Air Cannon	
Ionizers. Molded Part	
ionizers, Moided Part	
	434-444
	434-444
	434-444
J	434-444
lacks and Plugs. Thermosouple	
Jacks and Plugs, Thermocouple	228
Jaco Ball Check Screw Tips	228
Jaco Ball Check Screw Tips	228 529 566
Jaco Ball Check Screw Tips	228 529 566
Jaco Ball Check Screw Tips	228 529 566 541
Jaco Ball Check Screw Tips	
Jaco Ball Check Screw Tips	228 529 566 541 448 566 487 483 541 381

K	Locating Rin	g, Plastic
	Landon Ann	s, Waterline Fitting385
Kawaguchi Ball Check Screw Tips		
Kawaguchi Feed Screws		Check Screw Tips
Kawaguchi Metal Trap Nozzle Thread Adaptors	1 O+ D-	ass Scrapers86
Kawaguchi Nozzle Thread Adaptors		emperature Alarm and Monitor234
Kawaguchi Nozzle Tip Thread Adaptors	Laure Laure I II	opper Alarm682
Kawaguchi Screw Tip Assemblies	LT 05 L \/	OC Mold Cleaner
Key Lock Heater Bands		ector Pin145
Killion Feed Screws	Landa all a santa da	jection Mold145-147
Kit. First Aid	1 N I	ozzle and Screw Tip Thread213, 523, 593
Klockner Ball Check Screw Tips	529 Lubricant, Pl	astic Material148
Klockner Metal Trap Nozzle Thread Adaptor		ow Clad Tape Measure464
Klockner Nozzle Thread Adaptor		195
Klockner Screw Tip Assemblies	542	
Knife - Safety		
Knifehandler Cut-Resistant Gloves	448	
Knives, Air		unted All-Metal Detectors726-727
Knives, Break-Away Blade	Machine Mo	unts93
Knives, Ceramic 322	323 Magnet Aer	osol Can Holder149
Knives, Flash Trimming315	Magnet Cat	chpan796
Knives, Pocket, Folding Blade	Magnet, Dra	wer Type720-721
Knives, Safety Trim	324 Magnet Grin	nder Catchpan796
Knives, Square Point	Magnet Hor	pper716-719
Knives, Utility		oper Loader Probe728
Knockout Rods	105 Magnet, Oil	Tank Sludge728
	FOO Wayner, nar	e Earth717
Krauss-Maffei Ball Check Screw Tips Krauss-Maffei Nozzle Thread Adaptor	E27 Wagnetic Ac	rosol-Can Holder149
Krauss-Maffei Screw Tip Assemblies	5/2 Magnetic LL	D Work Light419
Mauss-Mailer Ociew Tip Assemblies	iviagnetic op	ray Can Holder149
A Committee of the Comm		rface Thermometers96
L		ckup Tools and Inspection Mirrors94
		pe Measure
L-6 Paintable Lecithin Mold Release		Workstation34-35
Lamps, Work418		3
Latch, Mold Handling		ctor Plugs376
Latex Gloves		82 burring Tool Sets329
Lead Wire, MGTLeak Detector, Nozzle		704 mily 1001 Sets
Leak Detector, Nozzie		uminum
Leak Stopper, Water Circulator738		sTie Air62-69
Leather Finger Cots		gh Volume, Mold Water362-363
Lecithin Mold Release		opper Dryer Air704
LED Magnetic Corded Work Light		niFold361
Lester Feed Screws		old Waterline354-360
Lester Nozzle Thread Adaptor		eel361-363
Leveling Mounts, Machine		uoFlow358-360
Lift Rings	28 Markers, Wir	e197
Lifting Eye, Hi-Strength		453
Lifting Slings29		620-625
Lighting, Mold418		nders, High Speed631-633
Lighting, Portable418		iveyor, Line Vac™, Pneumatic 672-673 Food Grade
Lightweight Nips		e412
LIME BUSTER III™ Mold Waterline Cleaner760	701	el Sensor/Alarm682
LIME BUSTER XL™ Mold Waterline Cleaner762		ders
Limit Switch, Mold		ding Stand622
Line Vac™, Pneumatic Material Conveyor672-		ricants146-148 ers
Liners, Plastic Drum		ops148
Lint Free Mylen Gloves		age Drums641-642
Liquid-Heated/Cooled Nozzles (Thermoset)		age Liners641
Lithium Grease/Spray		age Platform634
Lo-Profile Drum Caddy		1blers
Loader Hose, Hopper410		Idling Equipment 617-728
Loader Hose, Polyurethane413		Check Screw Tips
Loader Probe Magnet		ape, Conversion462
Loader Stands, Hopper Cover		ape, Decimal & Fraction462
Loaders, hopper (Friedifialic)	667 Measuring T	ape, Injection Barrel Circumference462
Loaders, Hopper (Pneumatic)		ape, Injection Barrel Circumference462 Flowmeters340-351
Loaders, Hopper (Vacuum) 650- Loaders, Powder (Vacuum) 658-	667 Mechanical Medium Loa	

M continued

Meiki Screw Tip Assemblies	543
Melt Pressure Transducers & Transmitters	
Melt Pressure-Reading Nozzles	514
Melt Temperature Reading Nozzles	514
Mender, Hose (Push-On)	
Merchant Coupling	368
Metal Deburring Tools	.326-329
Metal Trap Adaptors	
Metal Trap Magnets (Catchpan)	,400-407 706
Metal Trap Nozzle Thread Adaptors	486-487
Meters, Dew Point	.698-699
Meters. Flow	.340-351
Meters, Multi, Combination	97-99
Meters, Static	445
Meters, Voltage	97-101
Metric Forged Steel Eyebolts	26-27
Metric Mold-Clamp Bolts	54
Metric Nozzle Heater Bands	
Metric Radius Gauges	511
Mica-Type Heater Bands	
Microbe Resistant Hose	413-414
MicroMax Air Cooled Mold Chiller	757
Microprocessor Calibrator Thermometer	
MICROSTAT® Temperature Controllers	.258-259
Mille Tie Wire Ties	405
Millipede Quick Strip	405
Mini Ball Valves	
Mini Die Grinder Kit	
Mini Hopper Loaders	
Mini Hurricane Mixer	.631-633
Mini IR Non-contact Thermometer	
Mini Multimeter	
Mini Purge HopperMini Tumbler	
Mini Tumbler, 1/4 HP	640 640
Mini Tumbler Guard Enclosure	640
MiniFold™ Manifold	361
Mini-Nippers (5")	300
MiniTemp™ Noncontact Thermometer	232
MIR Ball Check Screw Tips	529
MIR Nozzle Thread Adaptors	
Mist, Paintable, Mold Release	
Mist, Silicone, Mold Release	
Mist, Speed, Mold Release118,	121, 125
Mitsubishi Ball Check Screw Tips	
Mitsubishi Feed Screws	
Mitsubishi Metal Trap Nozzle Thread Adaptor	
Mitsubishi Screw Tip Assemblies	
Mixer Discharge Frame	
Mixer Loading Platform	
Mixer Material Loading Platform	
Mixers, Material	635-640
Mixers, Material, Drum Type	.635-640
Mixing Drums, Material	6/1 6/0
Mixing Nozzles, Color	
	.508-510
Mixing Nozzles, EZ Flow	.508-510 .504-507
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625 .244-249
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625 .244-249 .698-699 .237-240
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625 .244-249 .698-699 .237-240
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625 .244-249 .698-699 .237-240 21-67
Mobile Drying Hoppers (SPIRAL™) Mobile Storage Hoppers Modules, Temperature Control Moisture Analyzer Mold and Cable Checker - Hot Runner Testing Mold Accessories Mold Chiller, MicroMax Air Cooled Mold Chillers	.508-510 .504-507 .708-710 .624-625 .244-249 .698-699 .237-240 21-67
Mobile Drying Hoppers (SPIRAL™)	.508-510 .504-507 .708-710 .624-625 .244-249 .698-699 .237-240 21-67 757 .754-758
Mobile Drying Hoppers (SPIRAL™) Mobile Storage Hoppers Modules, Temperature Control Moisture Analyzer Mold and Cable Checker - Hot Runner Testing Mold Accessories Mold Chiller, MicroMax Air Cooled Mold Chillers Mold Chutes	.508-510 .504-507 .708-710 .624-625 .244-249 .698-699 .237-240 21-67 .754-758 .770-771

Mold Circulator Decoupings	700 740
Mold Circulator, Pressurized	
Mold Circulators	/31-/48
Mold Clamp Bolts, Standard and Metric	52-54
Mold Clamp Washers	56-57
Mold Clamps	38-49
Mold Cleaners/Degreasers	132-136
Mold Cleaning Brass Brushes	83-85
Mold Coolant Couplers and Plugs	380
Mold Cycle Counters	
Mold Date Code Insert	10
Mold Date Code Insert	103
Mold Die Bars	/9
Mold Fittings, Barstock	389
Mold Grease, Original Formula	146
Mold Grease, White Lithium	145
Mold Hammers, Aluminum	82
Mold Hammers, Brass	
Mold Handling Latch	
Mold Heat Circulators	
Mold Heater, TEMKON SS™	/31-/40
Mold Heater, TEMKON SS	/35
Mold Hose Connectors (Fittings)	. 376-396
Mold Hot Runner Controllers	244-251
Mold Insulation Board	204
Mold Lifting Eyebolts	22-27
Mold Lifting Slings	
Mold Part Chute	770-771
Mold Platen Hole Savers	00
Mold Polish, OLD PURPLE	140
Mold Polishing Compounds, Diamond	141
Mold Pry Bars	79
Mold Purger, Waterline	352-353
Mold Release	
Mold Release, Bulk	116-128
Mold Release, Bulk Spray System	154-158
Mold Pologoe Pulk Sprayor (ECONO CURE™)	154-150
Mold Release, Bulk Sprayer (ECONO-CUBE™) Mold Release, Nonflammable116-118, 121	104-100
Mold Release, Nonflammable 116-118, 121	, 124-125
Mold Release, Paintable	124-128
Mold Release, Silicone	116-123
Mold Rust Preventives	137-139
Mold Rust Preventives	
Mold Rust Preventives	137-139
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart.	137-139 759-763 36
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain	137-139 759-763 36 766-767
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings	137-139 759-763 36 766-767
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays 116	137-139 759-763 36 766-767 29-31 -165, 171
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple"	137-139 759-763 36 766-767 29-31 -165, 171
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories 402, 744	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 -745, 749
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories 402, 744 Mold Temperature Controller, Water Circulating	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 -745, 749 751-758
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 -745, 749 751-758
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner)	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil)	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Sprays Mold Stain Remover, "Old Purple" Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 751-758 751-758 731-748 237-240 735-748 738-742
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Stain Remover, "Old Purple" Mold Stain Remover, "Old Purple" Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 751-758 751-758 237-240 735-748 237-240 735-748 738-742 332-333
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 -745, 749 751-758 731-748 237-240 735-748 735-748 735-748 735-748
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Stain Remover, "Old Purple" Mold Stain Remover, "Old Purple" Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 -745, 749 751-758 731-748 237-240 735-748 735-748 735-748 735-748
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controllers Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Cleaner, LIME BUSTER	137-139 759-763 36 766-767 29-31 -165, 171 140 738-739 751-758 731-748 237-240 735-748 735-748 738-742 332-333 371-373 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Cleaner, LIME BUSTER Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Sall Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Sall Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Sall Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Sall Valves Mold Waterline Fittings Mold Waterline Sall Valves Mold Waterline Fittings Mold Waterline Fittings	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow Mold Materline Ball Valves Mold Waterline Cleaner, LIME BUSTER Mold Waterline Fittings 367-373 Mold Waterline Hose, Tubing and Fittings	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Manifolds	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion	137-139 759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Ionizers, Anti-Static	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Cleaner, LIME BUSTER Mold Waterline Hose, Tubing and Fittings Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold Y Checker Molded Part Ionizers, Anti-Static Molded Part/Runner Separators Molded-Part Blowoff System Molded-Part Conveyors	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Cleaner, LIME BUSTER Mold Waterline Hose, Tubing and Fittings Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Ionizers, Anti-Static Molded Part Weighing Scales Molded-Part Blowoff System Molded-Part Conveyors Molded-Part Vacuum Break/Air Ejectors.	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Cleaner, LIME BUSTER. Mold Waterline Hose, Tubing and Fittings Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Veighing Scales Molded-Part Blowoff System Molded-Part Vacuum Break/Air Ejectors. Molder's Gloves	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Veighing Scales Molded-Part Blowoff System Molded-Part Blowoff System Molded-Part Conveyors Molded-Part Conveyors Molded-Part Vacuum Break/Air Ejectors Molder's Gloves Mold-Release Spray Guns	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Weighing Scales Molded-Part Blowoff System Molded-Part Conveyors Molded-Part Conveyors Molded-Part Conveyors Molded-Part Vacuum Break/Air Ejectors Molder's Gloves Mold-Release Spray Guns Mold-Release Spray Systems	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Vacuum Break/Air Ejectors Molded-Part Conveyors Mold-Release Spray Systems Mold-Release Spray Systems Mold-Water Flow Regulators	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Weighing Scales Molded-Part Blowoff System Molded-Part Conveyors Molded-Part Conveyors Molded-Part Conveyors Molded-Part Vacuum Break/Air Ejectors Molder's Gloves Mold-Release Spray Guns Mold-Release Spray Systems	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers Mold Temperature Controllers Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Regulator, SmartFlow Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Rust Inhibitor Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold X Checker Molded Part Vacuum Break/Air Ejectors Molded-Part Conveyors Mold-Release Spray Systems Mold-Release Spray Systems Mold-Water Flow Regulators	137-139759-763
Mold Rust Preventives Mold Rust Stoppers Mold Scale Removal Mold Setup Cart. Mold Side Curtain Mold Slings Mold Sprays Mold Sprays Mold Stain Remover, "Old Purple" Mold Sucker, Water Circulating Temp. Control Mold Temp Controller Accessories Mold Temperature Controller, Water Circulating Mold Temperature Controllers (Hot Runner) Mold Temperature Controllers (Water & Oil) Mold Temperature Controllers, Hydra Mold Temperature Regulator, SmartFlow Mold Temperature Regulator, SmartFlow Mold Waterline Ball Valves Mold Waterline Fittings Mold Waterline Hose, Tubing and Fittings Mold Waterline Manifolds Mold Waterline Rust Inhibitor Mold Wiring Box, EZ Junxxion Mold Vater Scales Molded Part Ionizers, Anti-Static Molded Part Weighing Scales Molded-Part Conveyors Molded-Part Conveyors Molded-Part Vacuum Break/Air Ejectors Mold-Release Spray Guns Mold-Release Spray Systems Mold-Water Flow Regulators Mold-Water Flow Regulators Moldecular Sieve Desiccant	137-139759-763

M continued		Nozzle Thread Lubricants	592
Continued		Nozzle Tip Adaptors	
Monitor, Temperature (6 Zone)		Nozzle Tip Blanks, Testing	521
Mounting Base, Air Powered Gate Cutter		Nozzle Tip, Color Dispersion	
Mounts, Heavy Duty, Machine Leveling		Nozzle Tip, Maximum Contact	496
Multi Station Hopper Loader Systems, Shini		Nozzle Tip, Mushroom	496
Multimeter, Digital Electronic	97-99	Nozzle Tip, Shut Off	
Multipurpose Hand Tool		Nozzle Tips Nozzle Wrench	409-497
Mushroom Nozzle Tip	490	Nozzle-Orifice Drills	
		Nozzle-Orifice Gauge	
N		Nozzle-Radius Gauge	
		Nozzle-Radius Refacing Tools	500
Natco Ball Check Screw Tips		Nozzles, Color Mixing	
Natco Feed Screws	623	Nozzles, EZ Flow Color Mixing	504-507
Natco Metal Trap Nozzle Thread Adaptors		Nozzles, Gas Assist	
Natco Nozzle Thread Adaptors		Nozzles, Hot Melt Pressure Reading	
NBY Feed Screws Needle Nose Pliers		Nozzles, Injection Machine	474-483
Negative and Positive Pressure Circulator		Nozzles, Internally Heated	
Negri-Bossi Feed Screws		Nozzles, Liquid-Heated/Cooled (Thermoset)	515
Negri Bossi Screw Tip Assemblies		Nozzles, One-Piece	
Neoprene Hose		Nozzles, Removable Tip Nozzles, Special Application	
Neutral Oil Mold Release		Nozzles, Standardized Replacement	472-481
Neutralizers, Static		Nozzles, Thermoset	
New Britain Ball Check Screw Tips	530	NQ Series Chillers	
New Britain Feed Screws	567	Nylon Cable Ties	
New Britain Nozzle Thread Adaptors		Nylon Filter	
New Britain Screw Tip Assemblies	544	Nylon Gloves, Lint-Free	
Newbury Ball Check Screw Tips	530	Nylon Nozzle Tips with Spreader Insert	5031
Newbury Feed Screws		Nylon, Self-Coiling Air Hose	433
Newbury Metal Trap Nozzle Thread Adaptor Newbury Nozzle Thread Adaptor			
Newbury Screw Tip Assemblies		0	
Night Coat Rust Preventive			
Niigata Ball Check Screw Tips		Oil Absorbent Products and Spill Kits	455-456
Niigata Feed Screws		Oil Circulators	746-748
Niigata Nozzle Thread Adaptor		Oil System Flushing and Cleaning Fluids	749
Niigata Screw Tip Assemblies	544	Oil Tank Sludge Magnet	728
Nippers, End (Gate Cutter)		Oiler, Pressure Regulator, Air Line Filter	305-312
Nippers, Mini (5")		Original Formula Mold Grease	
Nipples, Industrial Interchange		OLD PURPLE Mold Polish	
Nipples, Pipe		One-Piece Nozzles	
Nissei Ball Check Screw Tips	530	Open Finger Gloves	
Nissei Feed Screws		Open-Loop Hydra, Pressurized	
Nissei Metal Trap Nozzle Thread Adaptors		Open-Loop, Refrigerant-Type Hopper Dryers	
Nissei Nozzle Thread Adaptors		Open-Toe Mold Clamps	
Nissei Screw Tip Assemblies		Operator Safety Equipment	
Nitrided Ejector Pins		Organic Oil Mold Release	
Nitrided Ejector Pins - Metric		Orifice Drills, Nozzle	
Nitrided Ejector Pins - Shoulder		Orifice Gauge, Nozzle	519
Nitrile Gloves Noncontact AC Voltage and Current Detector		Ovens, Plastic Drying	
Noncontact Infrared Thermometer		Overnight Mold Surface Protector	138
Noncontact Thermometer, Mini IR			
Noncontact Thermometers		P	
Nonflammable Mold Cleaner, Economy	133		
Nonflammable Mold Cleaner, White 2000		Pads, Abrasive Cleaning (Scotch-Brite™ Equiva	
Nonflammable Mold Releases 116-118		Pads, Mounting	
Non-Lock Quick Change Sockets		Paintable Dry Spray Mold Release Paintable Ejector Pin Lubricant	
Nozzle Accessories		Paintable Ester Spray Mold Release	
Nozzle Adaptors (Nozzle Bodies)	492 400	Paintable Mist Mold Release	
Nozzle Bands	160-189	Paintable Mold Releases	
Nozzle Cartridge Heaters		Paintable Neutral Oil Mold Release	
Nozzle Gloves, Hot		Paintable Organic Oil Mold Release	
Nozzle Heater Bands		Paintable Zinc Stearate Mold Release	
Nozzle Heater Bands, Metric	184	Part Diverting Systems	
Nozzle Injector Adaptor with Gas Port		Part Handling Gloves	
Nozzle Leak Detector		Part Removal Tools, Soft Aluminum Part/Runner Conveyors	
Nozzle Thread Adaptors (Motel Tran)		Part/Runner Separators	
Nozzle Thread Adaptors (Metal Trap) Nozzle Thread Cleanout Taps		Particulate Respirators	

Parting Agents (Mold Releases)	116-130
Parts Chutes	
Parts Conveyors	
Part-Weighing Scales	422-424
Personal Protective Equipment	
PG-1, Heat Transfer Fluid	
Pickup Tools - Magnetic	
Pick-Up Wands, Material	
Pin Extractor Tool	
Pins - Core	
Pins - Return	
Pipe Cap	
Pipe Cross.	467
Pipe Cutter, Hose Cutter	
Pipe Dope	
Pipe Fittings	
Pipe Nipples	
Pipe Tee	
Pipe Thread Data	366
Pipe Thread Sealant Compound	397
Pipe Thread Sealant Tape	397
Pitch Gauges, Thread,	
Plastic Catchpans	
Plastic Drum Liners	641
Plastic Drums (Material Storage)	
Plastic Gaylord Liners	
Plastic Straps, Wire and Hose	
Plastic-Material Handling Equipment	
Plastic-Material Lubricants	
Plastic-Material Storage Drums	
Plastic-Material Tumblers	
Plastic-Part Conveyors	776-782
Plastic-Part Weighing Scales	
Plastic-Pipe Cutter	
Plastic Safety Knife	
Plastics Drying Hoppers	
Plastics Drying Ovens	
Plastics Gate Cutters	
Plastics Granulators	784-789
Plastic-Tumbling Barrels	
Platen Hole Savers	
Plates, Adaptor, Control Panel (West Controllers)	
Platform, Loading	634
Platform, Material Storage	
Pliers	
Pliers, Bronze	
Pliers, Electrical	
Pliers, Needle Nose	
Plug-In Replacement Modules, Temp. Control	244-249
Plugs and Jacks, Thermocouple	
Plugs, Color Dispersion	
	512-513
Plugs, Connector, (Male)Waterline	512-513 376
Plugs, Ear	512-513 376 452
Plugs, Ear	512-513 376 452 377
Plugs, Ear	512-513 376 452 377 382
Plugs, Ear	512-513 452 377 382 438-439
Plugs, Ear	512-513 376 452 377 382 438-439 376-396
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674
Plugs, Ear	512-513 376 377 382 438-439 376-396 674 80-82
Plugs, Ear	512-513 376 382 382 438-439 376-396 674 80-82 398-399
Plugs, Ear	512-513 376 382 382 438-439 376-396 674 80-82 398-399 304-311
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674 80-82 398-399 304-311 666-667
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674 80-82 398-399 304-311 666-667 672-673
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674 80-82 398-399 304-311 666-667 672-673 398-399
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674 80-82 398-399 304-311 666-667 672-673 398-399 320
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674 80-82 398-399 304-311 666-667 672-673 398-399 320 320
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 674 80-82 398-399 304-311 666-667 672-673 398-399 320 228 141
Plugs, Ear	512-513 376 452 377 382 438-439 376-396 398-399 304-311 666-667 672-673 398-399 320 228 141

Polishing Compounds	140-141
Polishing Pads (Scotch-Brite™ Equivalent)	421
Polishing Rags	420
Polyester Felt Filter	
Polyurethane Loader Hose	
Polyurethane Wired Hose Food Grade	
Portable Drying Hopper	
Portable Resin Bins	
Portable Scale	
Positioner, ASG Tool	
Positive and Negative Pressure Circulator	
Post Protectors, Ceramic, Heater Band	
Powder Loaders	
Powdered Acid	761
Power Control Modules	
Power Pack, ASG	
Powered Gate Cutters, Air	
Powerstat® Equivalent Variable Transformer	
Pressure Meters, Waterline	340-351
Pressure Transducers & Transmitters	
Pressure, Air Line Regulator, Oiler and Filter	
Pressurized Mold Circulator	738-739
Pressurized, Hydra, Mold Temperature Controller	738-739
Preventive, Mold Rust	137-139
Pro-Lite 34 SMD LED Corded Task Light	
Pro-Lite LED Task Light	418
Pro-Lite 2 in 1 LED Pocket Light	
PRO SURVIVOR™ Stopwatch	426
Probe Magnet, Hopper Loader	728
Probe Type Thermocouples	216, 223
Probe, Material	668
Probe, Pick-Up	668
Probe, Temperature	
Propane Torch	374-375
Proportional Hopper Loaders	658-661
Propylene Glycol	745
Protectants, SAFESEAL™ Tool Steel	
Protection Sleeves, Arm	451
Trotection dieeves, Ann	431
Protection, Eye (Safety Glasses)	451
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs)	454 452
Protection, Eye (Safety Glasses)	454 452
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs)	454 452 197
Protection, Eye (Safety Glasses)	454 452 197
Protection, Eye (Safety Glasses)	454 197 137-139 79
Protection, Eye (Safety Glasses)	454 197 137-139 79
Protection, Eye (Safety Glasses)	454 197 137-139 79 749
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum)	454 452 197 137-139 79 749 102
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler PVC Loader Hose Pyrometers 97-10	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler PVC Loader Hose Pyrometers 97-10	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler PVC Loader Hose Pyrometers Quick Change Barb Type Sockets Quick Change Ejector Bar Systems	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler PVC Loader Hose Pyrometers Quick Change Barb Type Sockets Quick Change Ejector Bar Systems Quick Change Fittings	
Protection, Eye (Safety Glasses) Protection, Hearing (Ear Plugs) Protectors, Heater Band Post (Ceramic) Protectors, Mold Surface Pry Bars, Mold PSC Plus Oil System Cleaner Psychrometer, SuperHeat Pullers, Sprue (Soft Aluminum) Pullers, Sprue, Bronze Purge Hopper Purge Valve, SmartFlow Swap Valve PURGEX™ PLUS Purging Compounds Purging Compounds Push-On Barbed Inserts Push-On Hose Push-On Hose Connectors Push-On Sockets Push-To-Connect Fittings and Tubing Push-Type Hose/Fitting Assembler PVC Loader Hose Pyrometers Quick Change Barb Type Sockets Quick Change Ejector Bar Systems	

Quick Change Barb Type Sockets	379
Quick Change Ejector Bar Systems	62-69
Quick Change Fittings	376-378, 381, 384
Quick Change Hose Couplers	377-378
Quick Change Waterline Extension Plugs	377
Quick Disconnect Fittings, Water Line	376-378, 381, 384
Quick-Coupler Type Water Jumpers	38 ⁻

R

Rack, Hoist Ring32-33 Radius Gauge, Nozzle and Sprue Bushing92 Radius Refacing Tools, Nozzle and Sprue Bushing......502 Rags140, 420 Rare Earth Magnet, Hopper717 Reciprocating Screws......558-573 Reconditioning Services, Gate Cutter.....304, 314 Recorder, Dew Point Chart.....700 Red 2000 Mold Cleaner......133 Reducing Coupling, Plumbing368 Reducing Pipe Tee, Plumbing......368 Reed Ball Check Screw Tips530-531 Reed Feed Screws568 Reed Metal Trap Nozzle Thread Adaptors487 Reed Nozzle Thread Adaptors538 Reed Screw Tip Assemblies......546 Refacing Tools, Nozzle and Sprue Bushing500 Refillable Compressed-Air Sprayers151 Refrigerant-Type Hopper Dryers702-704 Regulators, Air Line Filter, Oiler and Pressure............ 305-312 Regulators, Mold-Water Flow334-339 Releases, Mold116-130 Releases, Mold, Paintable124-128 Releases, Mold, Silicone116-123 Removable Nozzle Tips489-497 Removable Tip Nozzle Bodies (Standard)......476-479 Repair Service, Barrel574 Repair Service, Gate Cutters......302, 314 Repair Service, Injection Barrel574 Repair Service, Injection Screw......588 Replacement Barrels, Injection......575-579 Replacement Blades, Flash Trimmer315-329 Replacement Feed Screws......558-563 Replacement Hopper (SPIRAL™-Curve)......675-681 Replacement Hopper (Standard 60° Taper)675-681 Replacement Nozzles473-481 Replacement Plug-In Modules, Temp. Control.....244-249 Replacement Screw Tips......522-550 Replacement Screws, Injection558-573 Resharpening, Gate Cutter......302 Resin Bins, Portable620-621 Resin Bin Loading Stand......622 Resin Scoop148, 589 Respirators, Particulate......452 Retractable-Blade Utility Knives......319-324 Return Pins603 Rings, BRODY®......553-555 Rings, Compression553-555 Rings, Eye (Eye Bolts)26-27 Rings, Hoist......22-24 Rings, Locating, Plastic58 RMS Multimeter with Infrared Thermometer98 Rods, Brass......91 Rotary Resin Shutoff Valve503 Rounded-Edge Safety Blades317 ROUT-A-BURR Deflashing Tools......326-328 Rubber Arm Safety Glasses453 Rupture Disks......104-106 Rust Preventive Spray, Clear Coat3137 Rust Preventive Spray, Heavy Coat139 Rust Preventive Spray, Step 2......138 Rust Preventive, Mold......137-139

S

S-6 Silicone Spray Mold Release		119
S Type Heater Band		
SafeKlean™ Mold Cleaner		135
SAFEKOTE 60™		
SAFESEAL™ Tool Steel Protectant		
Safety Accessories (Operator)		
Safety Air Gun		429
SAFÉTY BONES™		31
Safety Control Panel, Drum Tumbler		
Safety Ear Plugs		452
Safety Equipment, Shop	.446	454
Safety Glasses		
Safety Gloves		
Safety Knife		
Safety Mold Slings	or	1 20
Safety Sleeves		
Safety Straps		
Safety Tape, Finger		
Sampling Hopper		589
Sandretto Feed Screws		569
Sandretto Screw Tip Assemblies		546
Sawi Thermocouple		
Scale Removal (LIME BUSTER)		
Scales, Digital	.422-	424
Scales, Molded Part Weighing		
Scales, Portable		
Scales, Triple-Beam		
Scoop, Resin	148,	589
Scouring Pads (Scotch-Brite™ Equivalent)		
Scrapers, Brass	8	3-87
Screenless Granulators, Shini		
Screens, Screen Pack, Extrusion		
Screw Driver, Brass		
Screw Drivers	91,	461
Screw Handling Tool		557
Screw Tip Thread Lube		521
Screw Tip Wrench		
Screw Tips		
Screw Tips, Ball Check		
Screws, Injection (New and Repair)		
Screws, Reciprocating	.561	5/3
Sealant Compound, Pipe Thread		
Sealant Tape, Pipe Thread		397
Seals, Water Couplers		382
Self Actuating Gas Assist Shutoff Nozzle	.516-	517
Self-Adhesive Wire Markers		107
Self-Coiling Nylon Air Hose		
Self-Igniting BERNZOMATIC, Torch Head	074	975
Sensors, Temperature 96-99, 102, 229-		
Separators, Drum Type		
Separators, Metal	.724	727
Separators, Runner and Molded Part		783
Separators, Taco® Series		
Service, Air-Powered Gate Cutter, Reconditioning		
Service, Barrel Repair		
Service, Custom Gate Cutters		
Service, Gate Cutter Repair	302,	314
Service, Screw Repair		
Setup Cart, Mold		36
Shields, Face		
Shini Central Granulators		
Shini Compressed Air Venturi Hopper Loader		
Shini Drying Hoppers		
Shini Hopper Loader Systems		
Shini Honeycomb Desiccant Wheel Dryer		
Shini Hot Air Hopper DryerShini Hot Oil Circulator		

S continued

Shini Low-Speed Granulators	
Shini Portable Air Cooled Chillers	
Shini Pressurized Hot Water Circulator	
Shini Screenless Granulators	
Shinwa-Seiki Screw Tip Assemblies	
Shop Rags	140 420
Shop Safety Equipment	.446-454
Shutoff Nozzle, Self Actuating Gas Assist	
Shutoff Valve, Rotary Resin	503
Shutoff, Add-On, Self Actuating	502
Side Curtain, Mold	.766-767
Side Cutters (Gate Cutters)	
Sieve, Molecular, Desiccant	
Silicone Grease	
Silicone Mist Mold Release	
Silicone Mold Releases	
Silicone Washers	
Simulators, Thermocouple	
Single Point, Cold Gun System	112
Single Station Hopper Loader Systems, Shini	
Single Vacuum Hopper Loader Systems, Shini	
Single Zone Temperature Controller	
Sizer, Hose and Fitting	
Sleeve-Lock Fittings	
Sleeves, Arm Protection	
Sleeves, Hot	
Sleeves, Tie Bar	
Sleeving, Heater Band Wire	
Slim Line Safety Glasses	
Slings, Chain	
Slings, Mold Lifting	29-30
Sludge Magnet, Oil Tank	728
SMART CAPS™	31
SmartFlow62-69, 73-75, 332-335,	
SmartFlow, Aluminum Manifolds	.354-360 359 360
Static Eliminating Hose	
SmartFlow, FasTie	
SmartFlow, Flow Regulators	
SmartFlow, Flowmeter	.340-351
SmartFlow, Mold Temperature Regulators	.332-377
SmartFlow, Smartlock	
SmartFlow, Swap Valve	
SmartFlow, Taco® Series Separators	
SmartFlow, Thinswitch	
SmartFlow, Tracer Electronic Flowmeter	
SmartLock	
Socket Head Plug, Plumbing	367
Socket, Air/Pneumatic	398-399
Sockets, Push-On, Plumbing	378
Sockets, Waterline/Quick Change 378-381, 384,	390, 395
Soft Aluminum Mold Hammers	
Soft Aluminum Part Removal Tools	
Soft Brass Hammer	
Soft Cotton Gloves	446, 449
Solventol	
Spanner Wrench, Ball Check	.760-763
Oparition Wichon, Dan Ondor	.760-763 783
Specialty Gate Cutters	.760-763 783 556
Specialty Gate Cutters	.760-763 783 556
Specialty Gate Cutters	.760-763 556 .287-300
Speed Mist Mold Release116,	.760-763 556 .287-300 121, 125 .456-457

SPIRAL™ Hopper	.675-681
SPIRAL™ Mobile Drying Hoppers	
SPIRAL™-Curve Hoppers	
Splicer, Waterline Hose	
Spray Can Handle	149
Spray Can Holder, Magnetic	149
Spray Guns, Bulk Mold Release	
Spray Guns, Giant Aerosol Tank	
Spray Systems, Mold Release	
Spray, Atomizer	151
Spray/Robot Controller for Aerosol Tanks	153
Sprayers, Aerosol Tank Mold Release	
Sprayers, Bulk Mold Release	
Springs - Compression	.606-614
Springs for Gate Cutters	285
Sprue Bushing Radius Gauge	
Sprue Bushing Refacing Tool	
Sprue Bushings - AB Series	
Sprue Bushings - AE/A Series	595
Sprue Cutters	
Sprue Pullers	
Sprue Pullers, Soft Aluminum	
Sprue/Part Separators	783
Square Head Plug	
Stainless Steel Drums	
Other Drums	700 700
Stainless Steel Drying Hoppers 675-681, 694,	
Stainless Steel Heater Bands 161-165, 170-173,	174-181
Stainless Steel, Fluid/Air Manifolds	.360-363
Stamp, Date Code	
Standard Air Knife	
Standard Air Wipe	.110-111
Static Eliminator	445
Static Meter	
Static Mixing Nozzles	
Static Neutralizers	
Static Wire Hose, Loader	.413-414
Static-Neutralizing Air Gun, COBRA™	435
Steel Eyebolts, Lifting	
OtI Flui-I/Ain Man-if-I-I-	20-27
Steel, Fluid/Air Manifolds	.360-363
Step One Neutralizer, (Night Coat)	138
Step Two Rust Stopper	138
Stix, Hot	206-212
Stokes Ball Check Screw Tips	
Stokes ball Crieck Screw Tips	533
Stokes Metal Trap Nozzle Thread Adaptor	489
Stokes Nozzle Thread Adaptor	486
Stokes Screw Tip Assemblies	
Stopwatch, PRO SURVIVOR™	426
Stopwatch, Pho Sontiton	420
Stopwatch, SURVIVOR™ II	425
Stopwatches	
Storage Hoppers	.624-625
Straight Replacement Blades, Knife	315-320
Straight Through Couplers	
Straight, Flat Conveyors	
Straight-Through Water Manifolds	.354-363
Strain Gauge, Tie Bar	
Straps, Plastic, Wire and Hose	404 405
Strip Heater, Electric	.192-193
Stubbe Ball Check Screw Tips	533
Sucker, Water Circulating Temp. Control	
Suction Gun	
Suction Hose	
Suede Gloves	
Sumitomo Feed Screws	571
Sumitomo Nozzle Thread Adaptor	
Sumitomo Screw Tip Assemblies	
Super Air Knife	
Super Cutters	286-291
Super-Scrub Max™ Purging Compound	590
SuperHeat Psychrometer	

S continued	Thermometers, Noncontact232-233
	Thermoset Nozzles
Support Stand, ASG Tool462	Thinswitch72
SURE SHOT® Compressed Air Sprayer151	Thread Adaptors, Nozzle
Surface Thermometers, Magnetic95	Thread Adaptors, Nozzle (Metal Trap)486-487
Surge Bins626-627	Thread Gauge518
SURVIVOR™II Stopwatch425	Thread Lube, High Heat521, 592
Suspension Kits (Air-Powered Gate Cutter)312	Thread Lubricant, Silicone Grease591
Swanstrom Gate Cutters	Thread Sealant Compound, Pipe397
Swap Valve, SmartFlow352-353	Thread Sealant Tape with PTFE397
Switch Guards241	Threaded Inserts, Platen Hole Savers60
Switches, Limit71-73	Through Hardened Ejector Pins598
Swivel Head Adjustable Bolts49	Through Hardened Ejector Pins - Metric599-601
Synthetic Diamond Mold Polish141	Tie Bar Sleeves70-71
System, UNI-VEST™ Barrel Insulation199-202	Tie Bar Strain Gauges72
	Ties, Wire and Hose405-406
T	Tigerflex Hose411
<u> </u>	Tilter, Gaylord/Box
Table, ResQ Station32-33	Timers, Cycle (Stopwatches)425-427
Taco® Series Separators	Timers, Digital (Injection Press, Replacement)
Take-Off Boxes	Tip Blanks, Nozzle519
Tanks, Aerosol	Tipper, Gaylord/Box628-629
Tanks, Speed Mist116, 121, 125	Tips, Air Amplifier486
Tape Measure, Injection Barrel Circumference	Tips, Air Gun431, 486
Tape Measure, Standard464-465	Tips, Nozzle489-492
Tape, (PTFE)	Tips, Nozzle (Beryllium Copper)491-492
Tape, Conversion Measuring	Tips, Nozzle (Nylon) with Spreader Insert501
Tape, Finger Safety	Tips, Screw (Ball check/Free Flow)524-552
Tape, Heater Band Terminal195	Tonnage Indicator, Strain Gauge72
	Tool Holsters325
Tape, Pipe Thread Sealant397 Taps, Nozzle Thread Cleanout519	Tool Opening Interrupter31
Task Lights419-420	Tool Steel Protectants
TEMKON SS™ Mold Water Circulating Heater735	Tool Suspension Kit312
Temperature Alarm and Monitor	Tools, Brass82-87, 91
Temperature Control Modules244-249	Tools, Bronze88-89
Temperature Controller, Single Zone242-243	Tools, Hand57, 82-91, 196, 462-463, 556-557
Temperature Controllers242-259	Tools, Nozzle Radius Refacing500
Temperature Controllers Connectors250-251	Tools, Part Removal (Soft Aluminum)90
Temperature Controllers Main Frame246-249	Tools, Sprue Bushing Radius Refacing500
Temperature Controllers, Hot Oil Circulating746-748	Tools, Sprue Puller
Temperature Controllers, Mold Fluid Circulating731-748	Torch Heads, BERNZOMATIC374-375
Temperature Monitors, 6 Zone235	Torque-Controlled Drivers
Temperature Probe	Toshiba Ball Check Screw Tips
Temperature, Indicators95, 230-235	Toshiba Feed Screws
Temporary Purge Hopper589	Toshiba Metal Trap Nozzle Thread Adaptor
Terminal Tape, Heater Band195	Toshiba Nozzle Thread Adaptor
Testing Gauge, Tie Bar Strain70	Toshiba Screw Tip Assemblies
Testing Nozzle Tip, Blank519	Toyo Feed Screws
Testing System - Hot Runner237-240	Tracer Electronic Flowmeter, SmartFlow350-351
Therma Sleeve™ Dryer Hose Insulation407	Tramp-Iron Traps (Magnets)716-719
Thermally-Compensated Reciprocating Screws561	Tramp-Metal Trap (Magnets)
Thermocouple Accessories	
Thermocouple Adaptors220, 228	Transducers & Transmitters, Extrusion Melt Pressure 108-109
Thermocouple Calibrator	Transformer, Temperature Controller
Thermocouple Connectors228	
Thermocouple, All Types215-227	Transmitters & Transducers, Melt Pressure
Thermocouple, ALL-IN-ONE, Hose Clamp221	Trimmer Blades, Flash
Thermocouple, Cartridge Type216, 223	Trimmer, Ceramic, Flash
Thermocouple, Hot Melt Sensing216	Trimmers, Flash
Thermocouple, Lead Wire228	Trimming Knives, Flash
Thermocouple, Sawi215-220	Triple-Beam Scales
Thermocouple, Simulators	Trubor Ball Check Screw Tips
Thermolators	Trubor Screw Tip Assemblies
Thermometer, Digital	True RMS Multimeter (Multi-Tester)
Thermometer, Infrared (Noncontact)96, 232-233	Trueblood Screw Tip Assemblies
Thermometer, Microprocessor Calibrator229	T-Slot Head Bolts
Thermometer, Noncontact Mini IR232	Tubing, Cutter403 Tubing, Injection Mold Waterline388,400-402
TI	rabing, injection wold waterline

Thermometer, Surface (Magnetic)95

T continued		Water Jumpers	
		Water Manifold, Aluminum SmartFlow	
Tumbler Control Panel		Water Manifold, Bulkhead (Steel)	
Tumbler Drums, Plastic and Stainless Steel		Water Manifold, High Volume	
Two-Way Valved Mold Coolant Couplers and Plu		Water Manifold, Injection Machine	
Type K Digital Thermometer	230-231	Water Manifold, MiniFold	
		Water Manifold, Stainless Steel	
U		Water Manifold, Streight Through Design	
		Water Manifold, Straight-Through Design	
UBE Feed Screws	569	Water Meter, Inline Flow (SmartFlow)	
UBE Screw Tip Assemblies	549	Water-Emulsion Silicone Mold Release	
UG-10 Ethylene Glycol – Economy		Waterline Ball Valves Waterline Cleaner, LIME BUSTER	
Ultrasonic Leak Detector			
Uniloy-Milacron Ball Check Screw Tips	531	Waterline Combination Hose Inserts	
Union, Plumbing		Waterline Extension Plugs, Quick Change	
Universal Lift Rings		Waterline Fittings Locking Clips	
UNI-VEST™ Barrel Insulation System		Waterline Fittings	
Utility Knives		Waterline Hose	
,		Waterline Hose Splicer	
W		Waterline Hose, Tubing and Fittings	
V		Waterline Plugs	
V.T. ma Haster Band	166 167	Waterline Rust Inhibitor	
V Type Heater Band		Waterline Sockets, Quick Change Barb Type	
Vac-U-Gun, Vacuum		Waterline Sockets, Quick Change Non-Lock	
Vacuum Break/Air Ejectors, Molded Part		WATT WATTCHER™ Granulator Controller	
Vacuum Hose Clamps, Spiral		WD-40® All-Purpose Spray, Bulk Fluid	
Vacuum Hose, Loader		Wedge Lock Heater Bands	
Vacuum Loader		Weighing Scales, Plastic Part	
Vacuum Type Hopper Loaders		Wells, Thermocouple Adaptors	
Vacuum Water Circulator		Weltec Screw Tip Assemblies	
Valved Waterline Fittings		West Temperature Controllers	
Valved Waterline Plugs		WHISPER™ Hopper Loaders	
Valves, Ball Type		White 2000 Mold Cleaner	
Valves, Check (Screw Tip)		White Board Mold Insulation	
Valves, Non-Return (Screw Tip)		White Helix Hose	
Valves, Swap (SmartFlow)		White Lithium Grease	
Van Dorn Ball Check Screw Tips		Wipe, Air	
Van Dorn Feed Screws		Wiping and Polishing Rags	
Van Dorn Metal Trap Nozzle Thread Adaptors		Wire and Hose Ties	
Van Dorn Nozzle Thread Adaptors		Wire Connector Set	
Van Dorn Screw Tip Assemblies		Wire Crimping Tool	
Variable Transformers		Wire Lugs	
Variable-Speed Conveyors		Wire Markers	
V-Belts		Wire Ties, Milli Ties	
Venturi (Line Vac)		Wire, Heater Band and Cartridge Heater	
Venturi Hopper Loader, Shini Compressed Air		Wire, MGT Lead	
Venturi, Loader		Wire, Thermocouple	
Versa-Burr Equivalent Tools (Rout-a-Burr)		Work light	
Versaswitch, Limit Switch		Workstation - Maintenance	
Vibrator, (Pneumatic Agitator) Hoppers, Bins		Work Station (Tool Balancer)	
Video Borescope		Worm Gear Hose Clamps	
Virgin Diamond Polishing Compounds		Wrench, Ball Check, Spanner	
Voltage and Current Detector		Wrench, Nozzle	
Voltage Controllers	260-262	Wrench, Screw Tip	557
Voltage, Multimeter Tester	97-99		
		X	
W			
		Xtreme Hot Sleeves	170-173
Wands, Material Pick-Up			
Washers, Mold Clamp		7	
Washers, No-Turn	56-57		
Washers, Silicone		Zinc Stearate Material Lubricant	1/10
Watches, Cycle Timing		Zinc Stearate Mold Release	
Water Chillers		Zinc Stearate Mold Release	
Water Connectors	378-384	ZIP TIES	405-406
Water Fittings	378-384		
Water Fittings, Barbed	387		

100000		101000			590
100509	150	101000	500		83 83
100520		101003			83
100536		101004			590
100554		101005			85
		101006			83
100565		101008			590
100579		101010			590
100587		101012			91
100588		101013			719
100590		101014			378
100597		101015		101149	
100605		101017		101150	
100606		101020		101151	
100625		101023		101152	
100636	152	101025		101153	
100641	150	101028			378
100646	152	101029			378
100650	150	101029			719
100662	150	101031			400
100764		101034			378
100832		101035			387
100835	317	101037			378
100857	535	101040			378
100859		101042			378
100861		101042			387
100875		101044			719
100905					
100908		101046			378
		101050			378
100933		101052			378
100934		101053			387
100937		101057			378
100941		101058			387
100944		101059			397
100946		101063			719
100947		101064			378
100949		101065			378
100951	83	101066			378
100952	83	101067			387
100954	590	101068			378
100957	85	101070			387
100958	83	101073			400
100961		101074			378
100963		101076	590	101197	429
100965		101078			387
100967		101080			378
100969		101081			387
100909		101083			378
100972		101086			378
		101087	84	101207	387
100974		101088		101208	719
100975		101094	590		378
100976		101095	83	101210	363
100978		101097	83	101211	387
100979		101099	590	101213	378
100981		101100	446	101214	378
100983		101104			85
100984	83	101105	590	101221	85
100986	590	101109	91		719
100988	91	101111	85		85
100990	83	101113	590		85
100992		101117	590	101266	85
100996		101118	84		718
100998		101119			85
		101120			718
		101122			85
		101125	82		

101125......82

101000 continued	101501	491	101620	554
101000000000000000000000000000000000000	101502	492	101621	554
101306 83	101503	492	101622	554
101309719	101505	492	101623	167
101311 85	101506		101626	167
101327719	101508	491	101627	167
101344	101509			167
10141526	101510	······		167
101416	101511			167
10141726	101512			166
101417	101512			166
10141926	101514	·····		166
10142026	101516			166
101421 26	101517			167
10142226	101518			167
101423 26	101520			166
101424 371	101521	491		166
10142526	101522	490	101645	166
101439490	101523	491	101646	167
101440490	101524	490	101647	166
101441490	101525			167
101442490	101526			167
101443	101527	······		166
101444	101529			167
101445490	101534			166
101446490	101549			167
101447490	101567			167
101448490	101569	554		166
101449490	101570	554	101658	167
101451 491	101571	554	101659	167
101452 492	101573	554	101660	166
101453 490	101575	554	101662	166
101455 491	101576	554	101663	167
101456491	101577			166
101457490	101579			167
101458491	101582			167
101459	101583			167
101460	101584			167
101461492	101585			166
101463	101587			167
101464	101588			166
101466491	101589			167
101467490	101590			166
101468490	101591	554		167
101469492	101592	554		167
101470 490	101593	554	101679	167
101472491	101594	554	101680	166
101473 492	101595	554	101681	167
101475491	101597	554	101682	166
101476491	101598			166
101477490	101599			169
101478	101600			166
101479491	101602			169
	101603			
101481492				169
101482490	101604			169
101484492	101605			166
101485 492	101606			169
101486490	101608		101732	166
101488 491	101610	554	101733	169
101489491	101611	554	101738	169
101490490	101612		101746	169
101491490	101613			169
101492	101614			169
101493	101615			169
	101010			
101/05	101616	EE A	101771	160
101495	101616			169
101497 492	101617	554	101777	169
		554 554	101777 101779	

101000 continued		102414		102549	
		102415		102553	
01799	169	102416	531	102562	301
01801	169	102420	528	102567	301
01817	169	102422	532	102569	301
01823	169	102424	530	102571	272
01824	169	102427	528	102576	301
01838	183	102430		102580	
01844		102432		102588	
01849					
		102435		102589	
01854		102437		102594	
01858		102438	529	102596	
01863		102441	531	102610	526
01868	183	102443	530	102611	530
01873		102445	528	102612	528
01877	183	102447		102613	527
01881	183	102448		102616	
01883				102618	
01888		102450			
01892		102452		102624	
		102454		102625	
01900		102458	527	102626	530
01901		102459	531	102630	527
01905		102461		102632	530
01909	183	102463		102640	
01913		102464		102641	
01917	183			102642	
01927	183	102465			
01931		102470		102645	
01935		102471	532	102646	
01941		102475	528	102648	531
01949		102476	527	102649	530
		102479	526	102653	527
01954		102481		102656	530
01960	220	102485		102660	
100000		102486		102662	
102000				102663	
	407	102487			
02367		102488		102664	
02368		102489		102669	
02369		102490	531	102670	532
02371	194	102494	528	102672	531
02372	194	102495	527	102676	528
02373	194	102496	531	102679	526
02374		102497		102680	530
02375		102499			
02373	1 3 4				527
00070	407				
02376		102505	527	102682	
02377	194	102505 102506	527 531	102682 102683	526 530
02377 02378	194 195	102505	527 531	102682 102683 102685	526 530 528
02377	194 195	102505 102506	527 531 526	102682 102683	526 530 528
02377 02378	194 195 194	102505 102506 102507	527 531 526 530	102682 102683 102685	
02377 02378 02379	194 195 194 195	102505	527 531 526 530 529	102682	
02377	194 195 194 195 194	102505		102682	526 530 528 532 532 527
02377 02378 02379 02381 02382 02386	194 195 194 195 194 531	102505	527 531 526 530 530 529 528 532	102682	526 530 528 532 532 527 526
02377	194 195 194 195 194 531 530	102505	527 531 526 530 530 529 528 528 532 527	102682	526 530 532 532 532 527 526 528 532
02377	194 195 194 195 194 531 530 529	102505 102506 102507 102508 102509 102510 102512 102513 102514	527 531 526 530 529 528 528 532 527 530	102682	526 530 532 532 532 526 526 532 532
02377 02378 02379 02381 02382 02386 02387 02388	194 195 194 195 194 531 530 529 532	102505	527 531 526 530 529 528 528 532 527 530	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700	526 530 532 532 532 527 528 532 532 526 528
02377 02378 02379 02381 02382 02386 02387 02388	194 195 194 195 194 531 530 529 532	102505 102506 102507 102508 102509 102510 102512 102513 102514	527 531 526 530 529 528 528 532 527 530 530	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701	526 530 532 532 532 527 528 532 532 528 528
02377 02378 02379 02381 02382 02386 02387 02388 02389	194 195 194 195 194 531 530 529 532 528	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516	527 531 526 530 529 528 528 532 527 530 530 530	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700	526 530 532 532 532 526 528 532 532 526 527
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395	194 195 194 195 194 531 530 529 532 528	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518	527 531 526 530 529 528 528 532 527 530 530 530 528 527	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701	526 530 532 532 532 527 528 532 528 528 527 530
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395	194 195 194 195 194 531 530 529 532 528 527 532	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521	527 531 531 526 530 529 528 532 527 530 530 530 530 530 530 528 527 531	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701	526 530 532 532 527 527 528 532 528 528 527 530
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396	194 195 194 195 194 531 530 529 532 528 527 532	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523	527 531 536 526 530 529 528 528 532 527 530 530 530 528 527 531 530	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710	526 530 532 532 527 528 528 532 528 528 530 528 530 528
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398	194 195 194 195 194 531 530 529 532 528 527 532 532 532	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102518 102519 102521 102523 102525	527 531 536 528 528 532 527 530 530 530 528 527 530 530 528 527 531 530 530 527	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710 102711	526 530 532 532 527 528 528 528 528 528 528 528 528 528 528
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399	194 195 194 195 194 531 530 529 532 528 527 532 532 530 530	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102518 102519 102521 102523 102525 102526	527 531 536 538 529 528 532 527 530 530 530 530 530 530 530 528 527 531 530 530 531	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710 102711 102711	526 530 532 527 528 529 529 532 528 528 529 528 528 528 528 528 528 528
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401	194 195 194 195 194 531 530 529 532 528 527 532 532 530 530 530 530	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523 102525 102526 102531	527 531 536 538 529 528 532 527 530 530 530 530 530 530 530 528 527 531 530 530 531 530	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710 102711 102711 102712 102713	526 530 532 532 527 528 528 528 527 530 528 528 528 528 528 528 528 528 528 528
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401 02404	194 195 194 195 194 531 530 529 532 528 527 532 532 530 530 530 530 536 531	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102518 102519 102521 102523 102525 102526	527 531 536 538 529 528 532 527 530 530 530 530 530 530 530 528 527 531 530 530 531 530	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710 102711 102711 102712 102713 102714	526 530 532 532 527 528 528 528 527 530 528 528 527 532 527 532
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401	194 195 194 195 194 531 530 529 532 528 527 532 532 530 530 530 530 536 531	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523 102525 102526 102531	527 531 536 538 529 528 532 527 530 530 530 530 530 530 530 531 530 531 530 527 531 531 530 527	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710 102711 102711 102712 102713	526 530 532 527 532 532 532 532 532 532 532 532 532 532
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401 02404	194 195 194 195 194 531 530 529 532 528 527 532 532 527 530 530 530 536 531	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523 102525 102526 102531 102532	527 531 536 528 539 539 528 530 530 530 530 530 530 530 530 531 530 531 530 531 530 527 531 531 530 527 531 531 532	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102704 102707 102710 102711 102711 102712 102713 102714	526 530 532 527 528 532 529 532 528 527 530 528 527 530 530 530 530
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401 02404 02405 02406	194 195 194 195 194 531 530 529 532 528 527 532 530 530 530 530 536 531 530 538	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523 102525 102526 102531 102532 102533 102533 102534	527 531 526 530 529 528 528 532 527 530 530 530 530 530 530 530 528 527 531 530 527 531 530 527 531 530 527 531 530 527	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102701 102701 102711 102712 102713 102714 102715 102716	526 530 532 527 528 532 529 532 528 528 527 530 528 527 530 527 530 530 527 530
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401 02404 02405 02406	194 195 194 195 194 531 530 529 532 528 527 530 530 530 530 530 536 530 528 527	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523 102525 102526 102531 102532 102533 102534 102537	527 531 536 530 529 528 532 532 530 530 530 530 530 530 530 531 530 527 531 531 530 527 531 531 528 527 531 528	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102701 102701 102711 102712 102713 102714 102715 102716 102717	526 530 532 527 528 532 529 532 528 528 527 530 528 527 530 527 530 530 526 528 527 530 530
02377 02378 02379 02381 02382 02386 02387 02388 02389 02395 02396 02397 02398 02399 02401 02404 02405 02406	194 195 194 195 194 531 530 529 532 528 527 530 530 530 530 530 530 526 531 530 530 530 530 531	102505 102506 102507 102508 102509 102510 102512 102513 102514 102516 102518 102519 102521 102523 102525 102526 102531 102532 102533 102533 102534	527 531 536 538 539 529 528 532 532 530 530 530 530 530 530 531 530 527 531 531 530 527 531 528 527 531 528 527 531 528 527 531 528 527 532 527 532	102682 102683 102685 102687 102688 102691 102692 102694 102695 102700 102701 102701 102701 102711 102712 102713 102714 102715 102716	526 530 532 527 528 529 532 528 528 527 530 528 528 527 530 527 530 527 530 527 530 527 530 530

102000 continued	103848	60	104073	309
102000 continued	- 103851		104078	
10272552			104088	
10273152	8 103854	48	104093	308
10273752	8 103855	54	104098	
102739 53:			104105	
102740 52	7 103859	38	104108	
10274352		54	104111	306
10274552			104112	
10275152		56	104114	310
102753 52	6 103867	54	104118	312
10275453		38	104122	
10275652	6 103870	48	104123	
10275752		54	104124	46
102760 53	0 103875	38	104131	554
10276152	6 103880	56	104134	309
10276353			104135	
10276553			104136	
10276852		54	104137	312
10281152			104140	
10290828			104145	
	103896		104146	
103000	103897		104147	
	103900		104150	
10356622	0 103902		104152	
103571 22	6 103903		104159	
10357922	8 103904		104168	
10358522	8 103908		104173	
10361621	6 103909		104177	
10363922	8 103912		104179	
10364522	8 103913		104181	
10364822	8 103918		104184	
10366822	8 103922		104185	
10367722	8 103925		104189	
10368422	8 103926		104191	
10370422	8 103937		104192	
10371422	8 103938		104196	
10377676	3 103941		104198	
10377837	1 103948		104199	
103781 59	2 103953		104202	
103783 52	1 103954		104204	
103786 42	3 103958		104209	
103793 42	3 103961		104212	
10379669	9 103964		104214	
103800 42			104216	
103803 37	1 103968		104224	
10380869	9 103970		104225	
10380937	1 103975		104228	
10381442	3 103980		104229	
103820 55	4 103986		104231	
103821 4			104232	
103822 4			104234	
103823 4	1 104000		104240	
1038244			104242	
1038254	1 104001	308	104247	
1038264	0 104016	305	104248	
1038274	1 104017	307	104249	
1038294	1 104020	307	104250	
103830 4	1 104022	308	104251	
103831 4				
103833 4			104254	
103834 4			104255	
103836			104258	
1038393			104259	
103840			104262	
			104265	259
103841 5	4 104054	307	104260	040
103841 5 103844 5			104269 104272	

104273	104000 continued		104498	473	104583	479
104274	104000 Continued		104500	475	104584	479
104274	104273	251	104501	478	104586	474
104275						
104278						
104279						
104280						
104281						
104282						
104290						
104291 259 104511 473 104598 104290 104294 251 104513 478 104590 104295 262 104515 474 104600 104297 250 104516 479 104601 104297 250 104516 479 104601 104300 259 104517 474 104604 104301 251 104518 473 104605 104303 246 104519 475 104606 104303 247 104520 479 104607 104313 77 104522 478 104608 104317 400 104523 475 104608 104317 400 104523 475 104608 104317 400 104523 475 104609 104317 410 41						
104294						
104295						
104297 250 104516 479 104601 104300 259 104517 474 104604 104301 251 104518 473 104605 104301 251 104518 473 104605 104309 247 104520 479 104607 104313 77 104522 478 104608 104313 77 104522 478 104608 104313 77 104522 478 104608 104317 400 104321 431 104524 474 104610 104327 431 104525 473 104612 104333 112 104525 473 104612 104338 112 104526 473 104612 104336 112 104525 473 104612 104356 473 104614 104396 431 104530 478 104614 104396 431 104522 473 104618 104396 431 104522 473 104618 104396 431 104534 479 104620 104434 400 104536 474 104620 104446 440 104536 474 104623 104446 440 104536 474 104623 104448 111 104538 479 104626 104448 111 104538 479 104626 104448 111 104538 474 104626 104451 111 104540 473 104628 104628 104453 479 104626 104453 479 104626 104453 479 104626 104451 111 104540 473 104628 104628 104453 479 104626 104453 479 104626 104451 111 104540 473 104628 1						
104300			104515	474	104600	474
104301 251 104518 473 104605 104303 248 104519 475 104608 104309 247 104520 479 104607 104313 777 104522 478 104609 104313 777 104522 478 104609 104317 475 104609 104523 475 104609 104321 431 104524 474 104610 104337 112 104525 474 104611 104338 1112 104526 473 104612 104338 1112 104526 478 104613 104357 1112 104526 478 104613 104357 1112 104526 478 104613 104357 1112 104526 478 104613 104366 1112 104530 478 104614 104366 431 104532 478 104616 104396 431 104532 473 104618 104396 431 104532 473 104619 104396 431 104534 479 104620 104445 440 104535 479 104620 104444 440 104535 479 104620 104444 440 104537 479 104623 104447 440 104537 479 104623 104447 440 104537 479 104625 104448 111 104538 474 104626 104448 111 104538 474 104626 104450 440 104539 480 104627 104450 440 104539 480 104627 104451 111 104542 478 104628 104452 111 104542 478 104628 104452 111 104542 478 104628 104452 111 104542 478 104628 104452 111 104542 478 104628 104452 111 104542 478 104628 104452 111 104542 478 104628 104454 111 104545 479 104628 104454 111 104545 479 104628 104455 111 104546 479 104629 104451 111 104542 478 104629 104451 111 104542 478 104629 104451 111 104542 478 104629 104451 111 104542 478 104629 104451 111 104544 479 104629 104451 111 104544 479 104629 104451 111 104546 479 104629 104451 111 104546 479 104629 104469 148 104547 478 104639 104469 148 104547 478 104639 104469 148 104549 474 104639 104469 104469 439 104556 478 104716 104460 479 104556 478 104716 104460 479 104556 478 104716 104470 439 104556 478 104716 104470 439 104556 478 104716 104470 439 104556 478 104716 104470 439 104556 478 104716 104470 439 104556 478 104569 479 104572 104476 479 104556 478 104569 479 104572 104476 479 104595 479 104595 479 104595 104489 479 104595 479 104595 479 104595 104489 479 104566 479 104595 479 104595 104489 479 104595 479 104595 104489 479 104595 479 104595 479 104595 104489 479 104595 479 104595 479 104595 479 104595 104489 479 104595 479 104595 479 104595 104489 479 104595 479 104595 479 104595 104489 479 104595 479 104595 47			104516	479	104601	473
104303	104300	259	104517	474	104604	480
104309	104301	251	104518	473	104605	474
104313	104303	246	104519	475	104606	478
104313	104309	247	104520	479	104607	473
104317			104522	478	104608	480
104321			· - · - ··························			
104337						
104338						
104356						
104367						
104396						
104396				•		
104434						
104439						
104445			104533	473	104619	474
104446 440 104536 474 104623 104447 440 104537 479 104625 104448 111 104538 474 104626 104450 440 104539 480 104627 104451 111 104540 473 104628 104452 111 104542 478 104629 104453 445 104544 474 104630 104455 440 104546 473 104631 104455 440 104546 475 104631 104460 148 104547 478 104633 104461 148 104547 478 104633 104467 439 104550 474 104638 104468 439 104552 473 104640 104468 439 104552 473 104640 104470 439 104556 478 104716 104471 439<			104534	479	104620	480
104447	104445	440	104535	479	104621	473
104448 111 104538 474 104626 104450 440 104539 480 104627 104451 111 104540 473 104628 104452 111 104542 478 104629 104453 445 104544 474 104630 104455 440 104546 473 104831 104455 440 104546 475 104632 104460 148 104547 478 104638 104467 439 104550 474 104638 104467 439 104550 474 104638 104467 439 104550 474 104638 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104553 475 104681 104471 439 104559 479 104716 104472 473<	104446	440	104536	474	104623	478
104450 440 104539 480 104627 104451 111 104540 473 104628 104452 111 104542 478 104629 104453 445 104544 474 104630 104454 111 104545 473 104631 104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104638 104468 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104553 475 104681 104471 439 104553 475 104681 104472 473 104560 478 104716 104472 473<	104447	440	104537	479	104625	474
104450 440 104539 480 104627 104451 111 104540 473 104628 104452 111 104542 478 104629 104453 445 104544 474 104630 104454 111 104545 473 104631 104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104638 104468 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104553 475 104681 104471 439 104553 475 104681 104472 473 104560 478 104716 104472 473<	104448	111	104538	474	104626	480
104451 111 104540 473 104628 104452 111 104542 478 104629 104453 445 104544 474 104630 104454 111 104545 473 104631 104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104638 104468 439 104552 473 104640 104469 439 104552 473 104640 104469 439 104552 473 104640 104470 439 104559 475 104681 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473<						
104452 111 104542 478 104629 104453 445 104544 474 104630 104454 111 104545 473 104631 104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104566 478 104716 104472 473 104560 479 104720 104475 474 104561 475 104762 104476 473 104562 474 104762 104477 480<						
104453 445 104544 474 104630 104454 111 104545 473 104631 104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104556 478 104716 104471 439 104556 478 104716 104472 473 104560 479 104722 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473<						
104454 111 104545 473 104631 104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104720 104472 473 104561 479 104742 104472 473 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479<						
104455 440 104546 475 104632 104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104559 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104720 104475 474 104561 475 104762 104476 473 104562 474 104785 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104478 473 104565 473 104854 104480 479<						
104460 148 104547 478 104633 104464 148 104549 474 104638 104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104785 104476 473 104562 474 104785 104477 480 104563 479 104818 104477 480 104563 479 104818 104477 480 104564 474 104834 104480 479<						
104464 148 104549 474 104638 104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104564 474 104834 104480 479 104565 473 104854 104481 474 104566 479 104855 104482 474 104566 479 104855 104483 478<						
104467 439 104550 474 104639 104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104478 473 104565 473 104844 104480 479 104565 473 104854 104482 474 104565 473 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104486 479<						
104468 439 104552 473 104640 104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104481 474 104566 479 104855 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 479 104570 473 104955 104486 479<						
104469 439 104553 475 104681 104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104570 473 104920 104486 479 104571 480 104958 104488 475 104572 478 10494 104489 474 104573 474 104490 479 104574 474 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
104470 439 104556 478 104716 104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104958 104489 474 104573 474 104499 474 104573 474 104490 479 104574 474 104491 474 104575 480 104492						
104471 439 104559 479 104720 104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104489 474 104573 474 104490 479 104574 474 104490 479 104576 473 104491 474 104578 474 104492		100		=		514
104472 473 104560 479 104742 104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104480 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104489 474 104572 478 104994 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 104493 473 104578 474 105000 <td>104470</td> <td> 439</td> <td>104556</td> <td> 478</td> <td></td> <td></td>	104470	439	104556	478		
104475 474 104561 475 104762 104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104573 474 104491 474 104575 480 104492 480 104576 473 10493 473 104578 474	104471	439	104559	479	104720	514
104476 473 104562 474 104785 104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 10493 473 104578 474	104472	473	104560	479	104742	509
104477 480 104563 479 104818 104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 104493 473 104578 474	104475	474	104561	475	104762	514
104478 473 104564 474 104834 104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 10493 473 104578 474 10493 473 104578 474	104476	473	104562	474	104785	509
104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 10493 473 104578 474 105000	104477	480	104563	479	104818	514
104480 479 104565 473 104854 104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 10493 473 104578 474 105000			104564	474		
104482 474 104566 479 104855 104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 105000 104491 474 104575 480 104492 480 104576 473 105026 104493 473 104578 474 105020						
104483 478 104567 475 104885 104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104490 479 104574 474 105000 104491 474 104575 480 104492 480 104576 473 105026 104493 473 104578 474 105020						
104484 474 104568 474 104920 104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104489 474 104573 474 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 105026 104493 473 104578 474 105020						
104485 473 104569 480 104921 104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104489 474 104573 474 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 105026 104493 473 104578 474 105020						
104486 479 104570 473 104955 104487 478 104571 480 104958 104488 475 104572 478 104994 104489 474 104573 474 104490 479 104574 474 105000 104491 474 104575 480 105008 104492 480 104576 473 105026 104493 473 104578 474 105020						
104487 478 104571 480 104958 104488 475 104572 478 104994 104489 474 104573 474 104490 479 104574 474 105000 104491 474 104575 480 480 105008 105026 104493 473 104578 474 105020 105020						
104488 475 104572 478 104994 104489 474 104573 474 104490 479 104574 474 105000 104491 474 104575 480 104492 480 104576 473 104493 473 104578 474 105026 105030						
104489 474 104573 474 104490 479 104574 474 104491 474 104575 480 104492 480 104576 473 104493 473 104578 474 105008 105026 105020						
104490 479 104574 474 105000 104491 474 104575 480 104492 480 104576 473 105008 104493 473 104578 474 105026 105020 105020					104994	519
104491 474 104575 480 104492 480 104576 473 104493 473 104578 474 105026 105030					105000	
104492 480 104576 473 105008 104493 473 104578 474 105026	104490	479	104574	474	105000	
104493	104491	474	104575	480	105000	E4.4
104493	104492	480	104576	473		
105020	104493	473	104578	474		
104493	104495		104579			
104496 474 104580 474 105034						
104497					105044	519

105000 continu	ied	105239		105442	
		105241		105443	388
105073	514	105244	490	105444	339
105084	509	105246	490	105445	376
105093	514	105249	554	105448	379
105111	519	105257	554	105449	387
105115		105263		105450	401
105127		105272	490	105451	
105130		105276		105452	
		105288			
105131				105453	
105134		105295		105455	
105136	485	105302		105457	
105137	484	105306	475	105459	339
105138	482	105321	728	105460	338
05139	484	105323	709	105465	379
05141		105341	147	105466	
05142		105347		105467	
05144		105360		105469	
05148		105362		105470	
05150		105363		105471	
05151		105368		105474	387
05157	486	105369	338	105476	401
05158		105372	339	105477	338
05160		105373		105479	
05161		105374		105482	
05163		105375		105484	
05166		105376		105488	
05167		105378		105489	
05168	487	105379	379	105490	339
05171	485	105380	339	105491	376
05172	482	105382	379	105494	379
05173	484	105384	376	105495	387
05175		105386		105496	
05177		105388		105497	
		105389			
05179				105498	
05180		105390		105499	
05183		105392		105502	
05184	484	105393	379	105503	387
05185	485	105394	387	105504	401
05190	484	105397	339	105506	338
05191	487	105398	338	105510	379
05194		105401	339	105511	
05195		105402		105512	
05196		105403		105513	
05197		105404		105514	
05200		105406		105516	339
05205	484	105407	379	105517	379
05206	482	105409	339	105518	339
05207	482	105412	376	105519	376
05208		105414		105521	
05210		105415		105523	
05213		105416		105524	
05214		105417		105525	
05215	487	105418	401	105527	379
05216	486	105419	339	105528	387
05217	486	105420	338	105529	363
05219	484	105421	376	105532	338
05220		105423		105536	
05222		105424		105537	
05225		105425		105538	
05226		105429		105540	
05227		105430		105542	379
05228	486	105432	339	105545	379
05231		105435	339	105546	363
05232		105436		105547	
05233		105438		105549	
05236 05237	484 475	105439	379 387	105551	379
LIP.3.5 /			207		

105440 387

105237 475

105000 continued		106359	251	107463	
		106360		107485	
105552		106361		107490	
105569	644	106362	251	107492	339
105570		106406	532	107509	492
105571	402	106422	718	107512	492
105574	644	106426	285	107516	27
105577	402	106456	87	107519	258
105578	747	106460	87	107520	27
105579		106463	87	107521	
105580		106469		107522	
105584		106476		107526	
105588		106513		107557	
105589		106519		107577	
105591		106536		107579	
105597		106538		107647	
105605		106540		107653	
105606		106541		107654	
105612		106559	491	107656	
105620	371	106561	718	107722	234
105621	371	106602	467	107809	479
105684	554	106604	466	107818	718
105701	449	106605	468	107825	319
105702		106714		107826	319
105745		106718		107827	
105787		106720		107828	
105843		106723		107829	
		106724		107853	
105854					
105913		106762		107855	
105921		106766		107857	
105934		106772		107859	
105935		106778		107871	
105936		106811	799	107873	
105937	370	106900	799	107874	639
105938	370	106904	792	107887	639
105970	665	106909	799	107889	625
105977	665	106914	792	107896	632
105978	665	106933	792	107901	637
105986	659	106944	799	107904	624
105987		106953		107909	
105989		106973		107916	
105990		106983		107917	
105998		100903	199	107918	
105999		107000		107927	
105999	600	107000			
106000		107042	796		624
100000		107053		107938	
106002	650	107064		107955	
106008		107073		107960	
				107961	26
106009		107083		107967	567
106014		107099		107972	554
106021		107113		107990	718
106023	664	107280	521		
106026	665	107320	146	108000	
106028	411	107321	718		
106031	665	107331	509	108006	87
106033	665	107337	511	108027	
106036		107413		108041	
106041		107433		108042	
106043		107439		108046	
106044		107450		108092	
106052		107453		108127	
106056		107455		108140	
106067		107456		108141	
106091	717	107457		108157	246
100091					
	761	107459	467	108161	718
106097 106124		107459 107460		108161 108169	

108000 continued		108415		109419	639
		108417		109420	639
08185		108428		109459	
08186	404	108429	451	109462	645
08188	387	108448	735	109463	251
08189	384	108494	301	109464	253
08191	404	108500	27	109467	253
08192		108571		109468	642
08195	404	108587	404	109524	482
08196		108591		109622	
08199		108609		109626	
08200		108610		109627	
08201		108611		109640	
08204		108625		109643	
		108626		109645	
8205					
8206		108628		109647	
8207		108630		109660	
8209		108631		109662	
8212		108632		109667	
8214		108634		109672	
8219	384	108636		109674	402
8221	401	108651	315	109675	402
8222		108677	704	109676	40
8223	404	108699	407	109679	402
8225		108776	639	109681	
8227	387	108777	639	109694	402
8228		108831	79	109695	
8251		108834		109696	
8268		108859		109697	
8269		108871		109698	
8271		108877		109703	
8273		108879		109704	
8276		108882		109707	
8286		108883		109710	
8287		108884		109713	
8288	710	108972	182	109736	151
8321		400000		109745	
8322	491	109000		109781	27
8325	491	100010	400	109787	26
8327	491	109012		109794	2 ⁻
8338	490	109030		109809	528
8339	490	109031		109820	93
8341	490	109032	251	109821	682
8342	490	109034	251	109824	274
8343		109036	251	109827	
8344		109037	251	109828	
8346		109038	251	109833	
8347		109040	247	109835	
		109042			
8348		109046		109836	
8361		109111		109838	
8363		109118		109879	
8372	704	109137		109885	
8373	403			109954	71
8388	490	109141		109955	33
8390	490	109151			
8392	490	109157		110000	
8394	490	109186			
8395		109191		110042	
8396		109222	475	110046	169
8397		109241	317	110049	169
08399		109243	317	110053	
		109269		110054	
8402		109303		110055	
0.400	/(U/)			1 10000	109
		109323	253	110070	40
08404	490	109323		110072	
)8404)8405	490 490	109330	31	110073	49 ⁻
)8404)8405	490 490	109330 109348	31 475		491
08403 08404 08405 08406	490 490 490	109330		110073	491 718

109417......798

110093......718

111000 continued 110103	718	111242 111244 111245	184	112389 112391	376
110106 110116 110141 110145 110156	718	111245			
110116 110141 110145 110156			184	112600	
110141 110145 110156	718		404		487
110145 110156		111246		112695	
110156		111249		112697	
	718	111250		112701	
	718	111252		112718	
110161	718	111254		112792	
110165	718	111255		112797	
110170	718	111288		112801	
110174		111289		112803	228
110175		111375		112805	
110178		111376		112879	528
110186		111380		112919	793
110189		111381		112931	155
110194		111385		112947	155
110198		111387			
		111401		113000	
110208		111444		110001	000
110221		111447		113001	
110224		111448		113048	
110226		111452		113055	
110232		111454 111522		113058	
110264				113061	
110266	530	111533		113063	
110283		111598		113066	
110284	289	111916		113067	
110306	479	111967		113069	
110314	479	111969		113133	
110360	235	111971 111983		113147	60
110366	491	111903	123	113157	679
110405	531	112000		113184	339
110455		112000		113199	479
110462		112017	490	113228	708
110465		112075	134	113233	479
110469		112082	134	113265	403
110489		112083	134	113270	403
110503		112094	666	113302	527
110504		112098	490	113406	761
110550		112100	490	113445	679
110604		112102	490	113470	479
110605		112103	490	113471	
		112104	490	113569	475
110606		112105	490	113593	228
110609		112106	490	113640	247
110611		112107	490	113646	117
110655		112109	490	113649	124
110658		112110	490	113653	117
110671	447	112111		113658	124
110753	531	112112	490	113659	116
110796	402	112115	490	113661	
110826	479	112117	526	113711	125
110853	316	112127	679	113712	120
110870	526	112131	679	113716	122
110906	484	112134	677	113717	120
111034	528	112136	679	113718	119
111103		112139	679	113719	121
111140		112141	680	113743	
111155		112144		113749	87
111160		112160		113806	259
111192		112330		113852	526
111228		112360		113912	
111230		112368			
111231		112370		114000	
111232		112376			
		112381		114045	
111235			D.1	114153	

114000 continued		115957		117739	
		115958		117741	406
114165		115959		117742	406
114170	709	115961	23	117743	406
114177	704	115962	23	117755	511
114245	664	115963	23	117861	370
114276	259	115964	23	117862	370
114280	529	115966	23	117863	
114309	532	115967	28	117864	
114317	680			117865	
114318	709	116000		117866	
114343	152			117867	
114615	712	116009	······	117868	
114623		116050	664		
114663		116073	584	117870	
114706		116102		117871	
114707		116246	629	117872	
114777		116286	664	117874	
114970		116288	629	117875	
114972		116291	629	117876	370
114972	201	116364		117878	370
115000		116369		117879	367
115000		116518		117880	370
115170	712	116522		117881	
115212				117882	
115220		116526		117883	
		116557			
115348		116558		117884	
115401		116584	88	117885	
115402		116589	402	117886	
115403		116602	490	117887	
115404		116864	450	117888	
115405		116879	450	117889	367
115407	652			117890	370
115425		117000		117891	370
115440	528			117892	367
115465	526	117071	168	117893	
115608	700	117072	168	117894	
115611	700	117074	168	117895	
115615	700	117075	168	117897	
115617	511	117076		117898	
115675	783	117077			
115722	317	117078		117899	
115823	713	117079		117900	
115827	713			117901	
115879	629	117080		117902	
115924		117082		117903	370
115925		117084		117904	367
115927		117086	168	117905	370
115931		117089		117907	370
115932		117092	168	117909	
115934		117093	168	117910	367
		117094	168	117911	
115935		117095		117912	
115937		117096			
115938		117097		117933	
115939		117100		117995	630
115940				440000	
115941		117101		118000	
	23	117103		110000	070
115942		117105		118000	
115943			168	118004	
115943		117107		1100:0	
115943 115944	23	117108	168	118019	
115943 115944 115945	23 23		168	118036	721
115943 115944 115945 115946	23 23 23	117108	168 168	118036 118050	721 388
115943 115944 115945 115946	23 23 23 23	117108 117109	168 168 87	118036	721 388
115943	23 23 23 23	117108 117109 117110 117359		118036 118050	721 388 388
115943	23 23 23 23 23	117108 117109 117110 117359 117360		118036 118050 118052	
115943		117108 117109 117110 117359 117360 117554		118036	
115942		117108 117109 117110 117359 117360 117554		118036	
115943		117108 117109 117110 117359 117360 117554		118036	

118000 continued	120283	678	121217	406
777777		679	121218	406
118313 13	35 120342	363	121226	406
11831765	52 120480	158	121227	406
11832743		565		406
11833165		565		406
		554		406
11835243				
118353 43		554		406
11847540	,,,	554		406
118480 40	,	569	121257	406
1184817	₁₃ 120658	565	121345	498
11848440	00 120659	72	121349	498
11858966	34 120716	363	121352	735
118821	100711	363		430
118906		363		407
118990		363		407
110990 52	_0	363		
119000		363		407
119000				407
11902015		363	121437	407
	120702	363	121441	407
119050 53		141	121445	407
119101 5	120700	141		407
1191055		141		407
1191095		141		407
119111 5	120780	141		25
119161 52		141		
11916652		141		529
119171		141		564
119183			121677	452
			121698	234
119222 54		141	121711	761
119247 56		141	121727	500
119252 13		141	121728	500
119254 13	32 120793	141		500
11925913	32 120796	141		500
119271 40)1 120797	141		
11939366		141		25
119437		141		536
119499		141	121777	72
		141	121837	228
11950425			121838	228
11951125			121839	228
119788 52		141		28
11979659	,,	141		28
119802 59	90 120847	141		28
11981415	₅₈ 120852	141		
11984310	100000	529		679
11984613		484		679
	100015	343	121872	679
119850	100000	343	121891	565
11986325	100070	554	121964	450
11988213	100000	526	121965	451
11988413	35 120902		121966	453
119888 13	35 121000			451
11998466	35 121000			118
	121008	747	121900	110
120000		747	122000	
120000			122000	
12005248	₹2	483	122046	565
120065	1210/3	498		526
120092	121078	490		
120125	121081	490		637
	121096	531		564
12012753	121133	531		644
12014952	29 121160	564	122201	57
120151 52	121178	569	122213	564
12020767	7 9		122233	158
120221 56	191189			
100051	₃₇			363
120251 67	67 121182 79 121194	35	122303	363
120252	77 121182 121194 121197	35 406	122303 122315	565
	757 121182 79 121194 78 121197 78 121198	35 406 406	122303 122315 122385	565 483
12025267	121182 79 121194 78 121197 78 121198	35 406	122303 122315 122385	565

122000 continued	t	122748		123993	
20100		122761		123994	
22466		122780		123995	529
22635		122810	25		
22636	182	122841	25	124000	
22637	182	122861	25		
22638	182	122907	493	124019	520
2639	182	122916	25	124020	526
22640		122929		124061	230
22641				124079	
		122969		124101	
22642		122990			
22643	182	123000	400	124107	
22644		123019	25	124120	
2645	182	123040	161	124149	569
2646		123064	493	124150	554
2647		123067		124151	554
2648		123072		124165	
				124197	
2649		123136			
2650	621	123148	387	124209	
2656	377	123152	484	124271	483
2657	377	123174	25	124275	548
2658		123187		124315	554
2659		123198		124322	
2660		123204		124325	
2661	377	123224	25	124339	53 ⁻
2662	377	123245	721	124350	567
22663	377	123258	400	124395	482
2664		123278		124644	
2665		120270	20		
		123000		124682	
2666		123000		124695	
2667	377	123300	F04	124696	535
2668	377			124735	544
2669	377	123323		124736	
2670		123328	554	124866	
2671		123340	721		
		123342	379	124868	
2672		123390		124995	629
2673		123408			
2674	377	123453		125000	
2675	377				
2676	377	123454		125014	48
2677		123456		125026	565
		123464	277	125101	
2679		123472	535		
2680		123483	299	125115	
2681	377	123484	208	125117	739
2682	377	120101	200	125162	50 ⁻
2683		123486		125174	744
2684		123490		125175	
		123491			
2685		123492	125	125179	
2686		123493	377	125193	
2687	377	123494	273	125295	679
2688	377	123495		125307	420
2689	377	123530		125328	
2690					
		123544		125349	
2691		123545		125363	
2704		123548	536	125378	30
2705	587	123894	557	125379	30
2706	327	123895	517	125381	
2707	327	123896	517	125382	
2708		123897			
				125383	
2710		123898		125384	310
2711		123899		125401	72
2712	328	123905	535	125402	
2713	328	123925	517		
2714		123927		125403	
2715		123932		125404	547
7 1 13		120002		125533	560
		100054	506	12000	
22716 22720	328 461	123954 123957		125537	

123964 517

125555 672

		127388 127389		129000	
105504	500	127399		129004	005
125584					
125622		127391		129042	
125623	672	127399		129060	
125641	565	127414	401	129099	
125644		127488	500	129178	548
25816		127511	245	129234	459
25610	304	127577	564	129235	458
100000		127699		129236	
126000				129237	
		127716			
26019		127717	230	129285	
I 26124	679	127741	378	129336	
26200		127748	484	129353	527
26252		127764		129380	624
26253		127777		129447	297
				129468	
26254		127806		129493	
26255	395	127807	500		
26256	395	127808	327	129501	
26257	395	127906	586	129502	
26258		127908		129503	277
				129530	568
26259		127918		129532	
26260		127919		129533	
26299	721	127920			
26583	549	127921	697	129534	
26625		127922		129603	
26639		127923		129622	566
				129623	377
126674		127924		129624	377
26733	517	127925	697	129667	
26736	673	127926	697	129680	
26738	673	127927	697		
26739		127928		129683	
				129699	455
26740		127929		129716	629
26741		127957		129747	175
26742	673	127958	739	129748	178
26744	673			129749	
26746	673	128000			
26747				129750	
		128054	378	129751	
26748		128055		129753	402
26749				129815	554
26750	673	128071		129847	484
26751	673	128074	621	129900	
26752	673	128102	230	129901	
26753		128149	554		
		128171		129902	
26754	6/3			129907	
26755	673	128188		129916	367
26756	673	128189	87	129917	370
	531	128190	87	129918	
26788				120010	
		128191	87		260
26826	567			129919	
26826 26882	567 498	128192	87	129919 129920	368
26826 26882	567 498	128192 128193	87 87	129919	368
268262688226906	567 498 568	128192	87 87	129919 129920	368 390
268262688226906	567 498 568	128192 128193	87 87 86	129919 129920 129921 129922	368 390 390
26826 26882 26906 26949	567 498 568	128192 128193 128196 128197		129919 129920 129921 129922 129941	
26826 26882 26906 26949	567 498 568	128192 128193 128196 128197 128198		129919	
26826 26882 26906 26949		128192		129919	390 390 287 390 390 390
26826		128192 128193 128196 128197 128198 128199		129919	
26826		128192		129919	36i 39i 39i 39i 39i 39i 39i 39i 39i 39i
26826 26882 26906 26949 127000 27041 27050 27089		128192 128193 128196 128197 128198 128199	87 87 86 86 86 86 86 86	129919	368 390 390 287 390 390 390 390
26826 26882 26906 26949 127000 27041 27050 27089		128192 128193 128196 128197 128198 128199 128200 128201 128217	87 87 86 86 86 86 86 86 24	129919	368 390 390 287 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230	87 87 86 86 86 86 86 86 24	129919	368 390 390 287 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238	87 88 88 88 88 88 88 88 86 86 24 24 272	129919	368 390 390 287 390 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292	87 88 88 88 88 88 88 88 86 86 24 24 272	129919	368 390 390 287 390 390 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238	87 88 88 88 88 88 88 88 86 86 24 24 272	129919	368 390 390 287 390 390 390 390 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292 128313	87 88 88 88 88 88 88 88 88 86 24 24 272 272 401	129919	368 399 399 399 390 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292 128313 128339	87 88 88 88 88 88 88 88 88 86 24 24 272 272 257 401 554	129919	368 390 287 390 390 390 390 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292 128313 128339 128372	87 88 88 88 88 88 88 88 88 86 24 24 272 272 257 401 554	129919	368 390 287 390 390 390 390 390 390 390 390 390 390
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292 128313 128339 128372 128413	87 88 88 88 88 88 88 88 88 82 24 24 27 272 257 401 554 565	129919	368 390 287 393 393 393 393 391 391 391 391
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292 128313 128339 128372	87 88 88 88 88 88 88 88 88 82 24 24 27 272 257 401 554 565	129919	368 390 287 393 393 393 393 391 391 391 391
26826		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128238 128292 128313 128339 128372 128413 128416	87 88 88 88 88 88 88 88 88 88 24 24 24 272 272 257 401 554 565 401	129919	368 390 287 393 393 393 393 391 391 391 391
126788		128192 128193 128196 128197 128198 128199 128200 128201 128217 128230 128238 128292 128313 128339 128372 128413	87 88 88 88 88 88 88 88 88 88 24 24 24 272 272 257 401 554 565 401 390 387	129919	368 390 287 393 393 393 393 391 391 391 391 391 391

130000 continued	130096	398	130184	399
100000 continued	130097	398	130185	399
130013 78	130098	398	130186	399
13001478	130099	398	130187	399
130020 398	130100		130188	399
130021 398	130101	398	130192	399
130022 398	130108			399
130023 398	130109	398		399
130024398	130110	398		399
130025398	130111			399
130026	130112			399
130027398	130113			399
130028	130114			399
130029	130115			399
130030	130116			399
130031	130118			399
130032	130120			399
130033398	130122			399
130034398	130123			399
130034398	130124			
130037 398	130125			399
	130126			
130038398				399
130039398	130127			399
130040398	130128			399
130041	130129			399
130042	130130			399
130043398	130133			399
130050398	130136			399
130051 398	130137	= = =		399
130052 398	130138			399
130053 398	130139			399
130054398	130140			399
130055398	130141			399
130056398	130142	399	130223	399
130057 398	130143	399	130224	399
130058398	130144	399		399
130059398	130145	399	130226	399
130060 398	130146	399	130227	399
130061 398	130147	399	130228	399
130062 398	130148	399	130229	399
130063 398	130149	399	130230	399
130064 398	130150	399	130231	399
130065 398	130151	399	130232	399
130066 398	130152			399
130067 398	130154	399	130234	399
130068 398	130155	399	130235	399
130069398	130156	399	130236	399
130070 398	130157	399	130237	399
130071 398	130158	399	130238	399
130072 398	130159	399		399
130073 398	130165	399	130240	399
130078398	130166	399	130241	399
130079398	130167	399	130242	399
130080 398	130168		130246	739
130081 398	130169			272
130082398	130170			446
130083 398	130171	399	130560	556
130084398	130172	399		556
130085398	130173			556
130086	130174			556
130087398	130175			279
130088398	130176			280
130089398	130177			283
130090398	130178			567
130091398	130179			411
130092	130181			517
130092398	130182			387
100004	100102		100000	

130183......399

130671 566

130000 continued	131396		131885	
	131397	128	131886	109
30672 566	131398	130	131887	109
30676 318	131399	129	131888	109
30679435	131400	128	131889	109
30692 530	131401	121	131890	
30693 275	131404	124	131891	109
30787 213	131409		131892	
30790	131410		131893	
30814430	131411		131894	
30827 527	131430		131909	
30869 569	131431		131916	
30888 247	131432	390	131917	395
30892 566	131434	569	131955	567
30912279	131438	540	131960	568
30913280	131481	270	131963	537
30914283	131511		131964	
30935	131513		131965	
0948				
	131514		131968	
30952180	131515		131969	
80953 180	131516		131977	
30954 180	131517		131988	
30956 181	131518	369	131989	109
30957 181	131583	368	131990	109
30960 181	131584	367	131991	109
30961 180	131585		131992	
70001	131586		131993	
I31000	131587		131994	
101000				
31009587	131588		131995	
31012	131589		131996	
	131590		131997	109
31118368	131611	549	131998	109
31186292	131617	539	131999	109
31191586	131625	539		
31211 503	131626	537	132000	
31269 165	131629		102000	
31276 175			132000	109
71270	1316/11			
	131641			
31279 427	131657	535	132001	109
31279	131657 131662	535 274	132001 132002	109 109
31279 427 31295 763 31306 54	131657 131662 131665	535 274 289	132001 132002 132003	109 109
31279 427 31295 763 31306 54 31319 394	131657 131662 131665 131667	535 274 289 274	132001 132002 132003 132004	
31279 427 31295 763 31306 54 31319 394 31321 390	131657 131662 131665	535 274 289 274	132001 132002 132003	
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390	131657	535 274 289 274	132001 132002 132003 132004	
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370	131657		132001	
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370	131657		132001	
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370	131657 131662 131665 131667 131668 131669 131670		132001	109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394	131657 131662 131665 131667 131668 131669 131670 131696 131697		132001 132002 132003 132004 132005 132006 132007 132008 132009	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81324 370 81325 370 81326 394 81327 394	131657 131662 131665 131667 131668 131669 131670 131696 131697		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81324 370 81325 370 81326 394 81327 394 81328 394 81329 275	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81324 370 81325 370 81326 394 81327 394 81328 394 81329 275 81340 456 81341 456	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81325 370 81326 394 81327 394 81328 394 81329 275 81340 456 81341 456 81342 455 81343 456	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81325 370 81326 394 81327 394 81328 394 81329 275 81340 456 81341 456 81342 455 81343 456 81344 455	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81324 370 81325 370 81326 394 81327 394 81328 394 81329 275 81340 456 81341 456 81342 455 81343 456 81344 455 81344 455 81351 281	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018	109 109 109 109 109 109 109 109 109 109
81279 427 81295 763 81306 54 81319 394 81321 390 81323 390 81324 370 81325 370 81326 394 81327 394 81328 394 81329 275 81340 456 81341 456 81342 455 81343 456 81344 455 81351 281 81352 281	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31325 370 31326 394 31327 394 31328 394 31329 275 31341 456 31342 455 31343 456 31344 455 31343 456 31344 455 31351 281 31352 281 31353 284	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132019 132020	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132020 132020	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132019 132020	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31356 282 31356 285	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132020 132020	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31356 282 31356 285	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805	535 274 289 274 289 274 273 273 273 270 569 272 272 272 272 368 367 367 367 367 367 367 367 367 367 367	132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132020 132021	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31356 285 31370 400	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805 131805		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132020 132021 132022 132025 132026	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31356 285 31370 400 31371 400	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805 131839 131840		132001 132002 132003 132004 132005 132006 132007 132008 132009 132010 132011 132012 132013 132014 132015 132016 132017 132018 132019 132019 132020 132021 132022 132025 132026 132027	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31370 400 31374 569	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805 131839 131840 131863		132001 132002 132003 132004 132005 132006 132007 132008 132010 132011 132012 132013 132014 132015 132016 132017 132016 132017 132018 132019 132019 132019 132020 132021 132022 132025 132026 132027 132028	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31370 400 31371 400 31374 569 31387 394	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805 131839 131840 131863		132001	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31356 285 31370 400 31371 400 31374 569 31387 394 31392 117	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131699 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805 131839 131840 131863		132001 132002 132003 132004 132005 132006 132007 132008 132010 132011 132012 132013 132014 132015 132016 132017 132018 132017 132018 132019 132020 132021 132022 132025 132026 132027 132028 132029 132029	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 31306 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31370 400 31371 400 31374 569 31387 394 31393 126	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131700 131701 131720 131723 131724 131725 131726 131784 131786 131787 131804 131805 131839 131840 131863		132001	109 109 109 109 109 109 109 109 109 109
31279 427 31295 763 313106 54 31319 394 31321 390 31323 390 31324 370 31325 370 31326 394 31327 394 31328 394 31329 275 31340 456 31341 456 31342 455 31343 456 31344 455 31351 281 31352 281 31353 284 31354 284 31355 282 31370 400 31371 400 31374 569 31387 394 31394 126 31394 121 31395 127	131657 131662 131665 131667 131668 131669 131670 131696 131697 131698 131700 131701 131720 131721 131722 131724 131725 131726 131784 131786 131787 131804 131805 131839 131840 131863 131864 131866		132001 132002 132003 132004 132005 132006 132007 132008 132010 132011 132012 132013 132014 132015 132016 132017 132018 132017 132018 132019 132020 132021 132022 132025 132026 132027 132028 132029 132029	109 109 109 109 109 109 109 109 109 109

132000 continued		132653	565	132837	394
- SECO DOTAINGO		132654	537	132838	391
32046	490	132663	569	132839	391
32047	370	132664	371	132844	370
32048		132665		132845	
32049		132666		132859	
32050				132879	
		132667			
32051		132668		132880	
32052		132669	370	132881	367
32054	367	132670	367	132887	568
32057	367	132671	367	132909	367
32058	367	132672	368	132910	367
32059		132676		132911	
32060		132677		132919	
32069		132681		132920	
32080		132687		132936	
32085		132688	367	132941	549
32154	538	132689	369	132942	535
32155	377	132690	369	132944	739
32156		132691		132986	
32157		132692	= = =	102000	
				133000	
32159		132693		10000	
32162		132694		133035	304
32164	537	132695	368		
32165	537	132696	368	133036	
32166	537	132697	367	133037	
32170	565	132698	369	133091	
32171		132699		133093	178
32185				133130	282
		132701		133131	295
32187		132702		133142	
32188	546	132703	368	133148	
32231	568	132704	368		
32232	545	132705	369	133149	
32235		132706	369	133163	
32275		132707		133168	369
				133174	401
32313		132708		133192	367
32319		132709		133193	
32321	537	132710	397	133194	
32325	545	132711	370		
32330	536	132712	370	133195	
32336		132713	370	133207	
32341		132714		133233	393
32342		132715		133242	394
				133243	536
32351		132716	401	133277	
32355	565	132718	388		
32367	535	132719	388	133294	
32369	568	132729	371	133295	
32374	547	132730	370	133308	544
32376		132731		133309	629
				133313	175
32378		132732		133334	287
32379		132753		133389	
32419	56	132755	367		
32424	652	132756	371	133397	
32437	542	132757	370	133398	
32438		132758		133399	367
		132759		133400	367
32450				133401	369
32458		132770		133402	
32510	567	132779	367		
32561	745	132781	367	133403	
32562	745	132784	586	133404	
32570		132785		133405	
32581		132787		133406	370
				133407	
32602		132788		133409	
32633		132789		133410	
32640	368	132790	370		
32641	367	132799		133411	
				100 110	007
32642	367	132815	542	133412	367

133414	368	134000		134410	798
133420				134411	
133438		134006	708	134412	798
133439	537	134007	630	134413	799
133443	569	134018	394	134414	799
133444	536	134019	387	134415	799
133471	368	134022	394	134416	799
133472	367	134068	538	134417	799
133475	367	134085	402	134418	799
133476	368	134106		134419	798
133477	368	134107	395	134422	798
133478	367	134113	548	134466	799
133479		134126		134467	799
133480		134128		134468	
133481		134131		134469	
133482		134132		134470	
133483		134152		134471	
133484		134156		134486	
133485		134162		134489	
133486		134198		134496	
133487		134213		134497	
				134498	
133502		134214			
133503		134215		134499	=
133550		134223		134500	
133556		134224		134501	
133605		134225		134502	
133606		134240		134503	
133621		134242		134504	
133629		134245		134505	
133639		134248		134506	
133656		134249		134507	
133693		134250		134508	
133703		134255	111	134509	
133705	339	134256	111	134510	
133706	535	134257	111	134511	
133720	382	134258		134512	368
133739	569	134259	111	134513	368
133751	545	134260	111	134514	368
133758	652	134267	440	134515	368
133784	545	134268	440	134516	368
133801	339	134269	440	134517	369
133871	621	134272	443	134518	369
133885	446	134273	443	134519	369
133917	721	134274	443	134520	369
133918	721	134275	443	134521	369
133919	721	134277	443	134522	
133921	443	134294	545	134523	369
133922	443	134296	175	134524	369
133923	443	134304		134525	369
133924		134308	125	134526	369
133925	443	134310	121	134527	369
133926		134331		134528	
133927		134349		134529	
133928		134350	······································	134530	
133929		134353		134531	
133930		134356		134534	
133931		134360		134535	
133932		134367		134536	
133933		134373		134537	
133934		134374		134538	
		134374		134539	
133962 133971		134376		134540	
				134540	
133972		134377			
133996		134383		134542	
133998	391	134406		134543	
		134407		134544	
		134408		134545	
		134409	798	134546	370

134000 continued	134634	163	134702	163
104000 continued	134635	163	134703	
134547370	134636	163	134704	163
134548370	134637		134705	
134549370	134638		134706	
134550	134639		134707	
134551	134640		134708	
134552	134641		134709	
134553	134642		134710	
134554	134643		134711	
134555 370	134644		134712	
134556 370	134645	163	134713	164
134557 370	134646	163	134714	164
134558370	134647	163	134715	164
134559370	134648	164	134716	164
134560 370	134649	164	134717	164
134561370	134650	164	134718	
134562	134651		134719	
134563370	134652			
			134720	
134564370	134653		134721	
134565	134654		134722	
134566 370	134655		134723	
134567 370	134656		134724	
134568 370	134657	165	134725	164
134569370	134658	165	134727	164
134570370	134659	165	134728	164
134571 370	134660		134729	
134572	134661		134730	
134573	134662		134731	
134583				
	134663		134732	
134584 545	134664		134733	
134585 549	134665		134734	
134592394	134666	161	134735	164
134599 161	134667	161	134736	164
134600 161	134668	161	134737	164
134601 161	134669	161	134738	164
134602161	134670	162	134739	
134603 161	134671		134740	
134604	134672		134741	
134605	134673		134742	
			134742	
134606	134674			
134607161	134675		134744	
134608 161	134676		134745	
134609161	134677	162	134746	165
134610 161	134678	162	134747	165
134611 161	134679	162	134748	165
134612162	134680	162	134749	
134613 162	134681		134750	
134614162	134682		134751	
134615	134683		134752	
134616	134684		134753	
134617	134685		134754	
134618 162	134686		134755	
134619 162	134687	162	134756	165
134620 162	134688	162	134757	165
134621 162	134689	162	134758	165
134622162	134690	163	134759	165
134623162	134691		134760	
134624	134692		134761	
134625	134693		134762	
134626	134694		134763	
134627 162	134695		134764	
134628 162	134696		134765	
134629163	134697	163	134768	174
134630 163	134698	163	134769	174
10 1000 100				
	134699	163	134770	174
134631	134699 134700		134770 134771	

134773	175	134949	367	135366	376
134774		134950		135367	
134775		134957		135376	
134776	175	134958	377	135377	
134777	175	134959	369	135383	721
134778	175	134962	378	135384	391
134779	175	134967	368	135385	391
134780		134973		135411	
134781		134975		135412	
134782		134976		135413	
134783	175	134977	390	135414	367
134784	175	134978	390	135415	391
134786	175	134997	435	135416	391
134787		135009		135417	
134788		135011		135418	
134789		135013	399	135434	
134790				135440	
134791	176	135000		135465	391
134792	176		_	135466	393
134794	176	135014	339	135467	387
134795		135026		135470	
		135031		135497	
134796					
134797		135032		135499	
134798		135034		135686	
134799	177	135035		135687	255
134800		135036	433	135688	179
134801	177	135039	433	135690	27
134802		135041	433	135691	
		135042			
134803				135703	
134804		135043		135707	
134805	177	135045		135708	543
134806	177	135048	149	135727	554
134807	177	135062	162	135729	549
134808		135063	162	135754	
134809		135080		135755	
		135081			
134810				135760	
134811	178	135143		135761	
134812	178	135204		135764	
134813	178	135211	674	135765	411
134814	178	135221	674	135766	
134815		135240		135767	
134816		135263		135768	
		135294			
134817				135769	
134818	178	135295		135770	411
134819	178	135296	389	135777	411
134820	179	135297	389	135790	180
134821	179	135307	391	135795	542
134822	179	135308	391	135799	
134823		135309		135800	
		135311		135801	
134824		135312			
134825		—		135811	
134826	179	135319		135818	
134827	179	135331	381	135819	207
134828	179	135339	394	135820	207
134829		135342	377	135821	207
134830		135345		135822	
		135348			
134831				135823	
134832		135349		135824	
134833		135350		135825	
134858	382	135352	389	135826	
134860	367	135353	389	135827	207
134877		135358	381	135828	
134878		135359	381	135829	
		135360		135830	
134894		135361			
134895				135831	
134897		135362		135832	
134903		135363		135834	
134948	367	135364	377	135835	207

135000 continued

135000 continued	
135836207	
135837	
135838	
135839	
135840	
135841	
135842207	
135843207	
135844 207	
135845 207	
135846207	
135847 207	
135848 207	
135849208	
135850	
135851	
135852	
135854	
135855	
135856	
135857	
135858	
135859 208	
135860 208	
135861 208	
135862 208	
135863	
135864	
135865	
135867	
135868	
135869	
135870 208	
135871 208	
135872 208	
135873 208	
135874208	
135875208	
135876	
135877	
135879	
135880	
135881	
135882209	
135883 209	
135884209	
135885 209	
135886209	
135887209	
135888	
135889	
135891	
135892 209	
135893	
135894209	
135896210	
135897210	
135898210	
135899210	
135900	
135901	
135902210	

135903	. 210
135904	. 210
135905	. 210
135906	. 210
135907	. 210
135908	. 210
135909	. 210
135910	. 210
135911	. 210
135912	. 210
135913	. 210
135914	. 210
135915	. 210
135916	. 210
135917	. 210
135918	. 210
135919	. 210
135920	. 210
135921	. 210
135922	. 210
135923	. 210
135928	. 371
135929	. 371
40000	

136000	
136011	539
136104	
136105	
136106	
136108	
136110	210
136111	211
136112	211
136113	211
136114	
136115	
136116	
136117	
136118	
136119	
136120	
136121	
136122	
136124	
136126	
136127	
136129	
136130 136133	
136135	
136136	
136151	
136154	
136160	
136171	
136177	
136179	
136181	
136200	539
136208	569
136216	
136217	399
136218	399
136219	
136220	
136221	
136222	399

136223 399	9
136224 399	
136225399	
136226 399	9
136227 399	9
136228 399	9
136229	
136230	
136231 399	
136232 399	9
136233 399	9
136236 399	9
136237399	
136238	
136241 399	
136243 399	9
136257 564	4
136275 535	ร
136276	
136278 630	
136279624	
136280 542	2
136282 668	3
136283	
136284	
136285 668	
136286 668	
136287 668	3
136288 668	3
136289 668	3
136290	
136291 668	
136292 668	
136293 668	3
136294 668	3
136295 668	
136296	
136297668	
136298668	
136299 668	3
136300 668	3
136301 668	3
136302	
136303	
136304668	3
136305 668	3
136306 668	3
136307 668	3
136308	
136309	
136310 668	
136311 668	3
136312 668	3
136313 668	3
136314668	
136315	
136317668	
136319 668	3
136321 668	3
136323 668	3
136325	
136327668	
136329668	
136331 668	3
136333 668	3
136335 668	3
136337668	
136339	
100003 000	ر

136341	660	136471	205	136623	207
136343	668	136472		136624	387
136345	668	136473	385	136626	387
136347	668	136474	385	136627	387
136349		136475	385	136628	
136362		136476		136629	
136364	454	136477	385	136630	387
136365	453	136478	370	136631	387
136366	453	136479	370	136632	387
136367		136481		136633	
136368	446	136482	370	136634	
136369	447	136486	492	136636	387
136370	447	136488	518	136637	387
136373		136489		136638	
136374	5/	136490		136639	387
136375	449	136491	518	136640	387
136376	449	136492	518	136642	630
136377		136499		136660	
136392		136527		136666	
136400	369	136528	403	136676	567
136401	544	136529	403	136680	549
136404		136532		136725	320
136407		136533		136726	
136410	545	136534	409	136728	721
136413	539	136535	409	136739	320
136416	547	136536	409	136753	393
		136537		136761	
136417					
136424	485	136538		136781	367
136426	528	136539	409	136782	367
136427	548	136540	409	136783	367
136428		136541		136797	
136429		136542		136815	
136430	369	136543	409	136818	391
136431	367	136544	409	136819	391
136432		136545	<i>4</i> ∩0	136820	301
136433		136546		136821	
136434	367	136547	409	136822	393
136435	367	136548	409	136845	230
136436	367	136549	409	136861	181
		136550		136862	
136437					
136438	370	136551	409	136863	
136439	370	136552	409	136867	323
136440	370	136553	409	136868	323
136441		136590		136897	
	070		024	130097	400
136442	370	136595	1/6	407000	
136443	368	136600	387	137000	
136444	370	136601	387		
136445		136602		137009	165
				137021	554
136446		136603		137022	
100117		136604	.10 /		
136447				197094	164
136447 136448		136605		137024	
136448	370	136605	387	137024 137027	
136448 136454	370 370	136605 136606	387 387		567
136448	370 370 370	136605	387 387 387	137027 137033	567 395
136448	370 370 370 370	136605	387 387 387 387	137027 137033 137034	567 395 395
136448	370 370 370 370	136605	387 387 387 387	137027 137033 137034 137035	567 395 395 395
136448	370 370 370 370 370	136605	387 387 387 387 387	137027 137033 137034 137035 137036	567 395 395 395
136448	370 370 370 370 370 367	136605 136606 136607 136608 136609	387 387 387 387 387 387	137027 137033 137034 137035	567 395 395 395
136448 136454 136455 136456 136457 136458	370 370 370 370 370 367 368	136605 136606 136607 136608 136609 136610	387 387 387 387 387 387 387	137027 137033 137034 137035 137036	567 395 395 395 395
136448 136454 136455 136456 136457 136458 136459 136460	370 370 370 370 370 367 368 370	136605 136606 136607 136608 136609 136610 136611	387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037	567 395 395 395 395 395
136448 136454 136455 136456 136457 136458	370 370 370 370 370 367 368 370	136605 136606 136607 136608 136609 136610	387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038	567 395 395 395 395 395 394
136448 136454 136455 136456 136457 136458 136459 136460	370 370 370 370 370 367 368 370	136605 136606 136607 136608 136609 136610 136611	387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039	567 395 395 395 395 395 394 548
136448 136454 136455 136456 136457 136458 136459 136460 136461	370 370 370 370 370 367 368 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614	387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038	567 395 395 395 395 395 394 548
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463	370 370 370 370 370 367 368 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615	387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039	567 395 395 395 395 395 394 548 137
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464	370 370 370 370 370 367 368 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616	387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084	567 395 395 395 395 395 394 548 137 147
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463	370 370 370 370 370 367 368 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615	387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086	567 395 395 395 395 395 394 548 137 147
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464	370 370 370 370 367 368 370 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616	387 387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086 137087	567 395 395 395 395 395 394 548 137 147 747
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464 136465 136466	370 370 370 370 370 367 368 370 370 370 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616 136617 136618	387 387 387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086	567 395 395 395 395 395 394 548 137 147 747
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464 136465 136466 136467	370 370 370 370 370 367 368 370 370 370 370 370 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616 136617 136618 136619	387 387 387 387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086 137087	567 395 395 395 395 395 395 394 548 137 147 747 747
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464 136465 136466 136467	370 370 370 370 370 367 368 370 370 370 370 370 370 370 370 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616 136617 136618 136619 136620	387 387 387 387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086 137087 137107	567 395 395 395 395 395 394 548 137 147 747 747 742 542
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464 136465 136466 136467 136468	370 370 370 370 370 367 368 370 370 370 370 370 370 370 370 370 370 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616 136617 136618 136619 136620 136621	387 387 387 387 387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086 137087 137107 137112	567 395 395 395 395 395 395 394 548 137 147 747 747 542 323 323
136448 136454 136455 136456 136457 136458 136459 136460 136461 136462 136463 136464 136465 136466 136467	370 370 370 370 370 367 368 370 370 370 370 370 370 370 370 370 370 370 370 370	136605 136606 136607 136608 136609 136610 136611 136612 136613 136614 136615 136616 136617 136618 136619 136620	387 387 387 387 387 387 387 387 387 387 387 387 387 387	137027 137033 137034 137035 137036 137037 137038 137039 137061 137083 137084 137086 137087 137107	567 395 395 395 395 395 395 394 548 137 147 747 747 542 323 323

137000 continued	137245		137605	
	137246	799	137612	448
37118529	137247	799	137623	536
37121 652	137248	799	137631	564
37122652	137250	799	137634	207
37123 731	137251	799	137636	
37138549	137252		137675	
37142	137253		137676	
37143799	137254		137679	
37144528	137255		137680	
37145 31	137258	498	137686	537
3714631	137259	569	137692	51
3714731	137260	569	137693	51
37148420	137266		137694	
3714931	137267		137695	
3715031	137268			
			137697	
37174798	137269		137726	
37175798	137280		137727	210
37176798	137305	421	137734	57
37177 798	137307	421	137747	642
37179539	137309	421	137757	
37191798	137311	······································	137758	
37192798	137313		137779	
37193				
	137315		137794	
37195798	137318		137804	
37196798	137321	567	137805	
37197798	137336	644	137806	526
37203 798	137337	644	137819	537
37204798	137338	644	137820	565
37205798	137339		137822	
37206798	137340		137835	
37207 798	137341		137842	
37208798	137354		137853	549
37209 798	137355	176	137883	
37210 798	137360	176	137884	60
37211 798	137370	526	137886	564
37212798	137400		137893	
37213 798	137401		137895	
	137412			
37214798			137915	
37215 798	137413		137928	
37216798	137428		137951	602
37217 798	137432	463	137953	799
37218798	137448	312	137966	391
37219798	137449		137974	
37220 798	137460	······	137984	
37221 798	137462		137989	
37222 798	137468		137990	376
37223 798	137495		120000	
37224 798	137496		138000	
37225 798	137506	176	1005:1	
37226 798	137507	175	138011	
37227 798	137537		138045	381
	137544		138051	50
37228799			138054	
37229 799	137553		138058	
37230 799	137555	565	138064	
37231 799	137559	163		
37232 799	137561	569	138068	
37234 799	137567	321	138069	27
37235 799	137568		138076	390
			138077	390
37236799	137569		138078	
37237 799	137576			
37238 798	137579	321	138079	
37239 799	137580	321	138080	
37240799	137590		138088	664
37241 799	137591		138089	664
			138096	
37242799	137592			
37243 799	137600		138098 138104	
	137603			

138000 continued	138527	548	138690	177
TOOCCO CONTINUCCO	138528		138691	177
138111 178	138529	415	138692	177
138120 621	138530	361	138693	177
138123 545	138534		138694	
138125 538	138535		138695	
138127547	138591		138696	
138151369	138593		138697	
138152367	138598		138698	
138153	138599		138699	
138155370				
	138600		138700	
138156370	138601		138701	
138157370	138602		138702	
138158370	138603		138703	
138159367	138605		138704	
138160 370	138606		138705	
138161 370	138607	391	138706	178
138162370	138608	391	138707	179
138163 370	138609	391	138708	179
138164370	138610	391	138709	179
138165370	138611	391	138710	179
138166370	138612	391	138711	179
138167370	138613	390	138712	
138168370	138614		138713	
138169369	138615		138714	
138179163	138616		138715	
138202 567	138617		138716	
138205	138618			
138209			138717	
	138619		138718	
138214391	138620		138754	
138215621	138621		138756	
138216733	138622		138770	
138217541	138623		138813	
138218 566	138624		138814	
138237 621	138625		138815	
138245 391	138626	390	138816	393
138246392	100607	000	138817	303
130240392	130027	390	100017	
138259	138628		138818	
		390		393
138259549	138628	390 390	138818	393 393
138259 549 138279 372	138628 138629 138653	390 390 162	138818 138819 138820	
138259 549 138279 372 138280 372 138281 372	138628 138629 138653 138658	390 390 162 165	138818 138819 138820 138821	
138259 549 138279 372 138280 372 138281 372 138282 372	138628 138629 138653 138658		138818 138819 138820 138821 138822	
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372	138628		138818	
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372	138628		138818	393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372	138628		138818	393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387	138628		138818 138819 138820 138821 138822 138823 138824 138825 138826	393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668		138818 138819 138820 138821 138822 138823 138824 138825 138826 138827	393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669		138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138329 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670		138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671		138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138329 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670		138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671	390 390 162 165 174 174 174 175 175 175 175 175 175	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138671	390 390 162 165 174 174 174 175 175 175 175 175 175 175 175	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138332 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138671 138672 138673	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 175	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138332 403 138340 403	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138671 138672 138673 138673	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 175	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138332 403 138340 403 138341 454	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138672 138673 138675 138676 138676	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 175	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138332 403 138340 403 138341 454 138342 454	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138672 138673 138675 138676 138677 138677	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 175	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138672 138673 138675 138676 138676 138677 138678	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 175	138818	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138366 721	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138669 138670 138671 138672 138673 138675 138676 138677 138678 138678	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 175	138818	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138366 721 138472 428	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138677 138678 138678 138679 138680 138681	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 176 176	138818	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138676 138677 138678 138679 138680 138681	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 176 176 176	138818	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430 138476 437	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138677 138678 138679 138680 138681 138682 138683	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 175 176 176 176 176	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139900 139904 139904 139923 139939	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430 138477 495	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138677 138678 138679 138680 138681 138682 138683 138684	390 390 390 162 165 174 174 174 175 175 175 175 175 175 175 175 176 176 176 176 176	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139900 139904 139904 139923 139939 139946	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430 138477 495 138501 79	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138677 138678 138679 138680 138681 138682 138683 138684 138685	390 390 390 162 165 174 174 174 175 175 175 175 175 175 176 176 176 176 176 176	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139900 139904 139904 139923 139939 139946 139947	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430 138476 437 138503 568	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138677 138678 138679 138680 138681 138682 138683 138684 138685 138686	390 390 390 162 165 174 174 174 175 175 175 175 175 175 176 176 176 176 176 176 176 176 176 176	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139000 139904 139923 139939 139946 139947 139948	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430 138476 437 138503 568 138516 339	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138676 138677 138678 138679 138680 138681 138682 138683 138686 138687	390 390 390 162 165 174 174 174 175 175 175 175 175 175 176 176 176 176 176 176 176 176 176 176	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139000 139000 139904 139923 139939 139946 139947 139948 139949	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138342 454 138365 721 138472 428 138473 430 138476 437 138503 568 138516 339 138520 377	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138675 138676 138677 138678 138679 138680 138681 138682 138683 138684 138685 138686 138687 138686	390 390 390 162 165 174 174 174 175 175 175 175 175 175 176 176 176 176 176 176 176 176 176 177	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139904 139904 139923 139939 139946 139947 139948 139949 139950	393 393 393 393 393 393 393 393 393 393
138259 549 138279 372 138280 372 138281 372 138282 372 138283 372 138284 372 138285 372 138287 387 138290 568 138328 403 138330 403 138331 403 138340 403 138341 454 138364 721 138365 721 138472 428 138473 430 138476 437 138503 568 138516 339	138628 138629 138653 138658 138663 138664 138665 138666 138667 138668 138670 138671 138672 138673 138676 138677 138678 138679 138680 138681 138682 138683 138686 138687	390 390 390 162 165 174 174 174 175 175 175 175 175 175 176 176 176 176 176 176 176 176 176 177	138818 138819 138820 138821 138822 138823 138824 138825 138826 138827 138829 138875 138876 138877 138880 138881 138889 139904 139904 139923 139939 139946 139947 139948 139949 139950 139951	393 393 393 393 393 393 393 393 393 393

139000 continued		17		9 540	
	140019	17		1 14	
139954 17	74 140020		78 140176	6 16 ₁	4
139955 17	74 140021	17	78 140192	2 180	0
139956 17	74 140022		78 140195	5 18	4
139957 17	74 140023		78 140198	3 17 ₁	4
139958 17			79 140201	1 370	6
139959 17		17		3 16	5
139960		17	4 40000	D 116	4
139961		17	4 4000	5 554	4
139962		17	4 4000	7 54	1
139963	• =		4.40000	5 59	0
139964			140056	6 59	0
139965			140000	D538	8
			14000	7 549	9
139966			14000	3 18	
1399671			140000	918	
139968			140200	D	-
139969 17			/9	1 170	
139970 17			14000	217	
139971 17			14000	3 170	
13997217			/9 1/0303	3 53	
139973 17		17	140330) 50	
139975 17		17	140339	3 72 [.]	
139976 17	76 140041			2	
139977 17		17	/u	5	
139978 17	76 140043		/ u	1	
139979 17	76 140044	17	70	3 53	
139980 17	76 140045			o	
139981 17	76 140046		70		
1399821			70	1 10	
139983 17		18	140392	2 10	
139984		18	140393	310	
139985		18	140394	410	
139986		18	140000	5 10	
139987		18	140030	5 10	
139988		18	140091	7 10	
139989			140030	3 10	
			170000	910	
139990 1		18	110100	0 10	
139991		18		1 10	
1399921				2 10	
139993 17		18	110100	3 10	
13999417		18		4 10	
139995 17		18		5 10	
139996 17		18		3 10-	-
139997 17		18		7 10	
139998 17		18		3 10	-
139999 17	77 140065	18		910	
140000	140066	18	~~	D 10-	
140000	140067	18		1 10	
1 10000	140068	17	. •	2 10-	
140000	140009	17	79 140413	3 10-	4
140001 17	⁷⁷ 140070	17	76 140414	4 10	
140002 17	77 140071	17	4 40 4 4 5	5 10 ₀	4
140003 17	77 140072			6 10 ₀	4
140004 17	⁷⁷ 140073		14041	7 10-	4
140005 17	77		140410	3 10-	4
140006 17	70		1 40 440	910	
140007 17	79	20	140400	D 10-	
140008 17	70		JO 40404	1 10	
1400091	140003		140400	210	
140010 17	70		14040	3 10 ²	
14001117	140095	22	44040	4 10	
140012	140090	22	< I	5 10	
	70	22	140406	6 10	
14001:3	140106	22	<u> </u>	7 10	
140014 1	70		14047		
140014 17	78 140111	25	14042		
140014 1 140015 1	78 140111 78 140112	25	52 140428	3 10	5
140014 17	78 140111 78 140112 78 140113		52 52 52 140429		5

140000 continued		140618 140619		141835 141837	
10430	105	140619		141839	
10430 10431		140030	21	141841	
10432		141000		141842	
10433		141000		141844	
10434		141652	50	141845	
10435		141653		141846	
10436		141654			
10437		141655		141848	
10438		141674		141849	
10439		141685		141851	
10440				141853	
10441		141690		141854	
10442		141714		141855	
10443		141721		141856	
10444		141722		141857	
10445		141731		141858	
		141736		141859	17
10446		141737		141860	13
10447		141738		141861	17
.0448		141739	377	141863	
0449		141740	377	141865	
0450		141741		141866	
0451		141742		141867	
0452		141743		141868	
0453		141744		141870	
0454		141745			
0455		141746		141872	
0456		141748		141873	
0457	105			141874	
0458	105	141749		141875	
0459	105	141751		141876	
0460	105	141763		141877	1
0462		141764		141880	
0463		141777		141882	
0464		141778	100	141884	1
0465		141779	99	141886	
0466		141788	461	141887	
0467		141799	170	141888	
0468		141800	170	141889	
0469		141801		141890	
0470		141802		141891	
0471		141803		141892	
		141804			
0472				141893	
0474		141805		141894	
0489		141806		141896	
0520		141807		141898	
0526		141808		141899	1
0530		141810		141900	1
0531		141811	171	141901	
0532	176	141812	171	141902	1
0540		141813	171	141903	
)544	544	141814	171	141905	1
0550	162	141815	171	141906	
0551	162	141816	171	141907	
)584	376	141817		141909	
)585	376	141818		141911	
)586	376	141819		141912	
)587	376	141820			
0588		141821		141913	
)589				141914	
0590		141822		141915	
0592		141823		141916	
0593		141825		141917	1
		141826		141918	
0595		141827	171	141920	1
0595 0604	176	141827 141828		141920 141921	
0595 0604 0605	176 176		171		1
0595	176 176 327	141828	171 171	141921	1 1

41000 continued		142211		142355	
	_	142212		142356	5
1927	668	142213	26	142358	5
1928		142214		142359	5
		142215		142392	
1930					
1931	171	142216		142411	
1932	171	142217	27	142709	
1933		142218	27	142715	4
1934		142219	27	142732	
		142220		142788	
1935				142789	
1936	171	142221			
1938	171	142222	27	142790	
1940		142223	27	142793	4
		142224	27	142803	3
1944		142225		142807	
1946	171				
1948	171	142226		142808	
1949		142227	27	142809	6
		142228	568	142810	6
1951		142231		142811	
1952	171			142818	
1953		142232			
1955		142233	390	142819	
		142234	390	142820	9
1957		142235		142832	6
1959	171			142833	
1960	171	142236		142835	
		142237			
1961		142242	546	142836	
1964		142243	543	142837	6
1965	172	142249		142842	6
1966				142843	
973		142250		142850	
		142251			
974		142252	392	142852	
1976	172	142253		142859	
978				142860	1
983		142254		142862	
		142255			
1985	172	142256	392	142877	
1989	172	142257		142932	
1990		142258		142939	1
1994					
1334	172	142259		1/2000	
			202	143000	
	172	142260			
1997	172	142260 142261			_
1997	172	142261	392	143012	5
1997	172	142261 142262	392 392	143012 143016	
42000		142261 142262 142263	392 392 392	143016	
42000 2002	172	142261	392 392 392 392	143016 143018	5
42000 2002	172	142261 142262 142263	392 392 392 392	143016 143018 143019	5
42000 2002	172	142261 142262 142263 142264 142265		143016	
42000 200220062008	172 172 173	142261 142262 142263 142264 142265 142266		143016 143018 143019	
997 	172 172 173 173	142261 142262 142263 142264 142265 142266 142267		143016	
42000 2002		142261 142262 142263 142264 142265 142266 142267		143016	
42000 2002		142261 142262 142263 142264 142265 142266 142267		143016	
997 42000 2002 2006 2008 2009 2010 2013		142261 142262 142263 142264 142265 142266 142267		143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270		143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142274	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142271 142272 142274 142275 142276 142282 142284 142284	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142276 142276 142276 142276 142282 142282 142284 142285 142306	392 392 392 392 392 392 392 392 392 392	143016	
997		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142276 142282 142284 142284 142285 142306 142322	392 392 392 392 392 392 392 392 392 392	143016	
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2053 2056 2078 2083		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142276 142276 142276 142282 142282 142284 142285 142306 142322 142323	392 392 392 392 392 392 392 392 392 392	143016	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
42000 2002 2006 2008 2009 2010 2015 2016 2023 2025 2027 2029 2056 2078 2084 2137		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142276 142282 142284 142284 142285 142306 142322	392 392 392 392 392 392 392 392 392 392	143016	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2053 2056 2078 2083 2084 2137		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142276 142282 14284 14285 142306 142322 142323 142324	392 392 392 392 392 392 392 392 392 392	143016	5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2053 2056 2078 2083 2084 2137 2138		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142323	392 392 392 392 392 392 392 392 392 392	143016	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2053 2056 2078 2083 2084 2137 2138		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 14262	392 392 392 392 392 392 392 392 392 392	143016	
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2056 2078 2084 2137 2138 2141 2145		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 142327 142338	392 392 392 392 392 392 392 392 392 392	143016	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2029 2053 2056 2078 2084 2137 2138 22141 2145		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 14262	392 392 392 392 392 392 392 392 392 392	143016	
42000 2002 2006 2008 2009 2010 2013 2015 2016 2023 2025 2027 2029 2025 2027 2029 2056 2078 2083 2084 2137 2138 2141 2145		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 142327 142338 142346	392 392 392 392 392 392 392 392 392 392	143016	55 55 55 55 56 66 66 67 77 77
42000 2002 2006 2008 2009 2010 2015 2016 2023 2025 2027 2029 2056 2078 2084 2137 2138 2141 2145 22153 22176 22190		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 142327 142338 142346 142351	392 392 392 392 392 392 392 392 392 392	143016	55 55 55 55 56 66 66 67 77 77
42000 2002 2006 2008 2009 2010 2015 2016 2023 2025 2027 2029 2053 2056 2078 2084 2137 2138 2141 2145 2153 2176 2190		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 142327 142338 142346 142351 142352	392 392 392 392 392 392 392 392 392 392	143016	55 55 55 55 55 55 56 66 66 67 77 77 77
		142261 142262 142263 142264 142265 142266 142267 142268 142269 142270 142271 142272 142274 142275 142276 142282 142284 142285 142306 142322 142323 142324 142325 142327 142338 142346 142351	392 392 392 392 392 392 392 392 392 392	143016	55 55 55 55 55 55 55 56 66 66 57 77 77 77 66 66

143000 continued			356		35
			356		35
143354			63		35
143355	678	143508	63	143593	35
143356	678	143509	63	143594	35
143357	678	143510	63	143595	35
143377		143511	63	143596	35
143385			63		35
			63		35
143393					
143396	655		63		35
143403	691		350		35
143404	691	143521	74	143603	71
143405		143522	66	143604	71
143406		143523	66	143605	71
			66		71
43407			66		71
43408					
43423	677		66		71
43424	677		66		71
43426	537	143528	66	143610	71
43446		143529	66	143611	71
43447		143530	66	143612	71
			63		54
43448			63		54 54
43449					
43450	341		63		63
43451			63		63
43452		143535	63	143628	63
43453		143536	63	143631	36
		143537	67	143632	36
43454			66		10
43455			350		65
43456	341				
43457	341		350		19
43458		143548	351		36
43459		143553	341	143640	36
43461		143554	341	143641	39
			341		6
43463			341		39
43465			341		69
43467	342				
43469	342		341		32
43473	342		341		19
43475	356		341		37
43476		143561	341	143675	37
43477		143562	341	143676	37
		143563	341	143677	
43478			341	143678	
43479					
43480			341		37
43481	356		341		37
43482		143567	341		37
43483		143568	342	143682	37
43484		143569	342	143683	37
			342		36
43485			342		36
43486					
43487	356		342		36
43488			333		36
43489		143574	333	143688	36
43490		143575	333	143689	36
			333		36
43491			350		36
43492					
43493	356		356		36
43494	356		356		36
43495		143580	356		36
43496		143581	356	143695	36
43497		143582	356		36
			356		36
43498					
43499			356		36
43500	356		356		10
43501		143586	356		10
43502		143587	356	143709	10
			356		10
10500					
143503	330		356	143713	

143000 continued		493	143906	
		493	143907	
143714 107		493	143908	
143715107		493	143909	
143716107		493	143910	
143717107		493	143911	
143726544		493	143912	
143733490		493	143913	
143734490		493	143934	
143735490		493	143935	
143736490		493	143936	
143737490		493	143937	
143738490		493	143938	
143739490		493	143939	
143740 490		799	143940	
143741 493		453	143941	
143742 493		194	143942	
143744 491		194	143943	
143745 491		194	143944	
143746491		624	143945	
143747 491		625	143946	
143748491		624	143947	
143750491		625	143948	
143751 491		624	143949	
143752 491		624	143950	
143753 491		624	143951	
143754491		624	143952	
143755491		624	143961	
143758 491		624	143962	
143759 491		624	143963	
143760 491		624	143964	
143761 491		624	143965	
143762 491		624	143966	
143764 491		624	143967	
143765491		624	143968	
143766491		624	143969	
143767491		624	143970	
143768		625	143971	
143774		625	143972	
143775493		625	143973	
143777		625	143974	
143778492		625	143975	
143779		625	143980	
143780		625	143981	
143781		627	143982	
143783		627	143983	
143785		627	143984	
143786		627	143985	
143787492		627	143986	
143788		627	143987	
143791		627	143988	
143792		627	143989	
143793492		677	143990	341
143794492		627	144000	
143795492		627	144000	
143796		627	144001	626
143797492		627	144002	
143799		627	144003	
143800		356	144004	
143801		356	144005	
143802		356	144006	
143803		356	144007	
143804		356	144008	
143805		356	144009	
143806		356	144010	
143807		356	144010	
143808		356		
143809		357	144012 144013	
143810 493	143905	357	144013	020

144000 continued	144121		144246	
144014	144122		144247	
144014			144248 144249	
144016			144250	
144017			144254	
144018			144255	
144019			144256	
144020			144257	
144021			144258	
144022			144259	
144023			144260	
144024			144261	
144025			144262	
144026			144265	
144027			144266	
144028			144267	
144029			144268	
144047			144269	
144048			144270	
144049			144271	
144050			144272	
144051				
			144273 144274	
14405237			144274	
144053				
			144279	
144055377			144280	
14405637			144281	
144057377			144282	
144058377			144283	
14405937			144284	
14406164			144285	
14406264			144286	
144063			144290	
14406464			144291	
14406564			144292	
144066			144293	
14406764			144294	
14406864			144295	
14406964			144300	
144076			144301	
144077693			144308	
144078			144310	
144079693			144311	
144080 693			144312	
144081693			144313	
144082693			144314	
144083			144315	
144084			144316	
144085693			144317	
144086693			144318	
144087699			144319	
144088			144320	
144090			144321	
144091699			144335	
14409856			144336	
14409956			144337	
144100			144338	
14410153			144339	
144104549			144340	
144105569			144341	
14410954!			144342	
144113 538			144343	
14411454			144344	
144116542			144345	
144118490			144346	
144119496			144347	
144120 496	3 144245	101	144348	443

144245 494

144120......496

144489	144000 continued		144463	770	144591	. 107
144565	TTTCCC Continued	_	144464	770	144592	107
14455	144349	443	144465	770	144593	107
144351 111 144468 770 144599 299 144353 111 144468 770 144618 695 143553 111 144469 770 144618 695 143555 175 144477 770 144619 695 143555 175 144477 770 144619 695 143556 175 144477 770 144619 695 143556 175 144477 770 144625 694 14359 341 144477 770 144625 694 14359 341 144477 770 144628 694 14359 111 144478 770 144628 694 14358 111 144488 770 144628 694 14358 111 144488 770 144628 694 14358 111 144488 770 144628 694 14356 111 144488 770 144629 694 14356 111 144488 770 144629 694 14357 111 14448 770 14463 694 14357 111 14448 770 14463 694 14359 111 14448 770 14463 694 14359 111 14449 770 14463 694 14350 111 14449 770 14463 694 14350 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14463 694 14357 111 14449 770 14466 111 14357 111 14449 770 14466 111 14357 111 14449 770 14466 111 14357 111 14449 770 14466 111 14357 111 14449 770 14466 111 14357 111 14449 770 14466 111 14357 111 14449 770 14466 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 1468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14357 111 14499 770 14468 111 14358 111 14469 770 14468 111 14358 111 14469 770 14468 111 14358 111 14469 770 14468 111 14359 770 14468 111 14359 770 770 770 770 770 770 770 770 770 77	144350	443	144466	770	144597	299
144582			144467	770	144598	299
144553					144599	299
144954 111 144476 770 144618 095 144957 175 144477 770 144625 0964 144958 175 144477 770 144625 0964 144959 341 144478 770 144626 094 144961 111 144479 770 144628 094 144961 111 144480 770 144629 094 144962 1111 144480 770 144629 094 144963 111 144481 770 144629 094 144963 111 144481 770 144629 094 144965 111 144481 770 144629 094 144966 111 144481 770 144622 094 144966 111 144481 770 144622 094 144966 111 144481 770 144623 094 144967 111 144481 770 144623 094 144969 111 144488 770 144633 094 144969 111 144488 770 144633 094 14497 144631 111 144488 770 144633 094 14497 144631 111 144489 770 144633 094 14497 144631 111 14449 770 144633 094 14497 14491 111 14449 770 144637 094 14497 111 14449 770 144637 094 14497 111 14449 770 14463 064 14497 111 14449 770 14463 064 14497 111 14449 770 14463 064 14497 111 14449 770 14463 064 14497 111 14449 770 14468 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14449 352 14466 111 14497 111 14499 352 14466 111 14497 111 14499 352 14468 341 14498 341 14498 352 14466 341 14498 341 14498 352 14466 341 14498 341 14498 352 14466 341 14498 341 14498 352 14466 341 14498 341 14498 352 14466 341 14498 341 14498 352 14466 341 14498 341 14498 352 14466 341 14498 341 14499 352 14466 341 14498 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 341 14499 352 14466 341 14499 341 14499 352 14466 341 14499 341 14499 341 14499 352 14466 341 14499 341 1						
144365			144475	770		
144357 175 144477 770 144626 694 144361 111 144479 770 144626 694 144363 111 144480 770 144628 694 144363 111 144480 770 144628 694 144363 111 144481 770 144629 694 144365 111 144481 770 144629 694 144365 111 144481 770 144620 694 144366 111 144481 770 144630 694 144366 111 144481 770 144631 694 144366 111 144481 770 144631 694 144366 111 144481 770 144631 694 144366 111 144481 770 144631 694 144366 111 144481 770 144631 694 144369 111 144481 770 144631 694 144369 111 144481 770 144631 694 144371 111 144490 770 144631 694 144372 111 144490 770 144631 694 144373 111 144491 770 144631 694 144373 111 144491 770 144631 694 144374 111 144490 770 144631 694 144375 111 144491 770 144631 694 144375 111 144491 770 144631 694 144376 111 144491 770 144680 111 144377 111 144491 352 14662 111 144378 111 144491 352 14662 111 144379 111 144491 352 14662 111 144370 111 144491 352 14662 111 144370 111 144491 352 14662 111 144373 111 144490 352 144662 111 144375 111 144490 352 144662 111 144376 111 144490 352 144662 111 144377 111 144490 352 144662 111 144378 111 144490 352 144662 111 144379 111 144490 352 144662 111 144379 111 144490 352 144662 111 144379 111 144490 352 144662 111 144379 111 144490 352 144662 111 144379 111 144490 352 144662 111 144379 111 144490 352 144662 376 144380 111 144500 344 144680 344 144381 111 144500 344 144680 344 144382 111 144500 344 144680 344 144383 111 144500 344 144680 344 144388 547 14503 344 144690 344 144388 547 14503 344 144690 344 144388 547 14503 344 144690 344 144388 547 14503 344 144690 344 144388 547 14503 349 144690 391 144441 75 14459 391 14470 392 144441 75 14459 391 14470 392 144441 77 391 14459 391 14470 392 144441 77 391 14459 391 14470 392 144441 77 391 14459 391 14470 392 144441 77 391 14459 391 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 144441 77 391 14459 392 14470 392 1444						
14458						
144361 111 144479 770 144628 694 144382 111 144481 770 144628 694 144383 111 144481 770 144628 694 144385 111 144482 770 144631 694 144386 111 144482 770 144631 694 144386 111 144481 770 144631 694 144386 111 144481 770 144632 694 144386 111 144486 770 144633 694 144386 111 144486 770 144634 694 144389 111 144486 770 144635 694 144389 111 144481 770 144635 694 144387 14438 770 144636 694 144371 111 144480 770 144636 694 144372 111 144490 770 144636 694 144373 111 144490 770 144638 694 144373 111 144491 770 144638 694 144373 111 144491 770 144630 111 14375 111 144490 770 144660 111 14377 14463 382 144662 111 14377 111 144490 382 14663 111 14377 111 144490 382 144663 111 14378 392 144663 111 14379 111 144490 392 144664 111 14379 111 144490 392 144663 311 14379 111 144490 392 144664 311 14381 111 14450 344 144680 344 14383 111 14450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 14450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 1450 344 144680 344 14388 311 3450 344 34680 344 14388 311 3450 344 34680 344 14388 311 3450 344 34680 344 14388 311 3450 346 347 347 348 349 349 144388 311 3450 346 347 347 348 349 349 144388 311 3450 346 347 347 348 349 349 144388 311 3450 346 347 347 347 348 349 144388 311 3450 347 347 347 348 349 349 144389 341 34469 341 3469 341 14388 311 3450 349 349 349 349 349 349 349 349 349 349						
144362 1111 144481 770 144629 694 144364 1111 144481 770 144620 664 144365 1111 144481 770 144631 664 144366 1111 144481 770 144631 664 144366 1111 144481 770 144631 664 144366 1111 144481 770 144632 664 144368 1111 144486 770 144631 664 144368 1111 144486 770 144631 664 144369 1111 144481 770 144631 664 144370 430 144488 770 144635 664 144370 430 144488 770 144635 664 144371 111 144490 770 144631 664 144372 111 144491 770 144631 664 144373 1111 144491 770 144631 664 144373 1111 144491 770 144631 664 144374 1111 144491 770 144680 111 144375 1111 144491 770 144680 111 144376 1111 144491 382 144680 111 144377 1111 144491 382 14662 111 144378 1111 144491 382 14662 111 144379 1111 144491 382 14662 111 144379 1111 144491 382 14662 111 144379 1111 144491 382 14668 111 144378 1111 144491 382 14668 111 144378 1111 144491 382 14668 111 144378 1111 144491 382 14668 111 144379 1111 144491 382 14668 111 144379 1111 144491 382 14668 111 144378 1111 144491 382 14668 111 144381 111 14450 344 14687 344 144382 111 14450 344 14687 344 144388 1111 14450 344 14687 344 144388 1111 14450 344 14687 344 144388 1111 14450 344 14687 344 144388 1111 14450 344 14687 344 144388 1111 14450 344 14689 344 144388 1111 14450 344 14689 344 144388 1111 14450 344 14689 344 144388 1111 14450 344 14689 344 144388 341 14460 344 144388 341 14460 344 144388 341 14460 344 144388 341 14460 344 144388 341 14460 344 144389 376 14470 369 144438 376 14470 369 144439 376 14470 369 144439 376 14470 369 144439 376 14470 369 144439 376 14470 369 144439 376 14470 369 144439 376 14470 369 144439 376 14470 369 144449 370 370 370 370 370 370 370 370 370 370					= =	
14483						
144984						
144365						
144986						
144987						
144368						
144368	144367	111				
144370	144368	111				
14437	144369	111				
144371 111 144489 770 14633 694 144372 111 144491 770 14666 111 144373 111 144491 770 14666 111 144374 111 144495 352 14662 111 144375 111 144496 352 14663 111 144376 111 144497 352 14668 111 144377 111 144499 352 14668 111 144378 111 144499 352 14668 111 144379 111 144490 352 14672 376 144380 111 144500 344 14688 944 144381 111 144500 344 14688 944 144382 111 14500 344 14689 944 144383 111 14500 344 14689 944 144385 719	144370	430				
144372			144489	770	144637	. 694
144373 111 144491 770 144660 1111 144374 111 144495 352 14462 111 144375 111 144496 352 14462 111 144376 111 144497 352 144684 111 144377 111 144498 352 144665 111 144378 111 144499 352 14665 111 144379 111 144499 352 14667 376 144380 111 144503 344 14688 344 144381 111 144503 344 14688 344 144382 111 144505 344 14689 344 144383 111 144507 344 14689 344 144388 111 144507 344 14689 344 144386 179 144509 344 144893 344 144396 719 </td <td></td> <td></td> <td>144490</td> <td> 770</td> <td>144638</td> <td>. 694</td>			144490	770	144638	. 694
144374 1111 144492 770 144662 1111 144375 352 144662 1111 144376 1111 144496 352 144662 1111 144376 1111 144496 352 144664 1111 144377 1111 144499 352 144664 1111 144377 1111 144499 352 144664 1111 144377 1111 144499 352 144665 1111 144379 1111 144499 352 144667 376 144380 1111 144503 344 144687 376 144380 1111 144503 344 144687 344 144689 344 144381 1111 144505 344 144689 344 144689 344 144382 1111 144505 344 144689 344 144689 344 144383 1111 144506 344 144691 344 144691 344 144388 1111 14500 344 144691 344 144388 547 144500 344 144691 344 144691 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 344 144696 354 14452 348 344 14469 354 34			144491	770	144660	111
144375. 111 144496 352 144663 1111 144377. 111 144497 352 144663 1111 144377. 111 144497 352 144664 1111 144378. 1111 144499 352 144665 1111 144378. 1111 144499 352 144665 1111 144378. 1111 144499 352 144665 1111 144390 352 144667 346 144390 1111 144503 344 144687 346 144380 1111 144504 344 144688 344 144381 111 144505 344 144689 344 144382 1111 144505 344 144690 344 144382 1111 144506 344 144690 344 144386 719 144507 344 144690 344 144386 719 144507 344 144690 344 144386 719 144507 344 144692 344 144386 719 144507 344 144692 344 144388 349 349 349 349 349 349 349 349 349 349			144492	770		
144376			144495	352		
144370						
144378						
144379						
144380						
144380 111 144504 344 144688 344 144381 111 144505 344 144689 344 144382 111 144506 344 144690 344 144386 719 144508 344 144691 344 144387 719 144508 344 144693 344 144388 547 719 144509 344 144693 344 144388 547 144523 483 144699 370 144397 541 144523 483 144699 370 144398 547 144523 483 144699 370 144412 75 144526 376 144701 564 144412 75 144527 376 144702 567 144413 75 144528 376 144706 695 144414 75 144529 36 144707 696 14441						
144381 111 144505 344 144689 344 144382 111 144506 344 144680 344 144383 111 144507 344 144691 344 144386 719 144508 344 144692 344 144387 719 144509 344 144692 344 144388 547 144523 483 144699 370 144397 541 144523 483 144699 370 144439 541 144523 483 144699 370 144406 793 144526 376 144701 544 144412 75 144527 376 144703 557 144412 75 144528 376 144703 557 144414 75 144529 376 144707 695 144414 75 144529 376 144708 695 144417 7	144380	111				
144362	144381	111				
144388 111 144507 344 144691 344 144386 719 144508 344 144692 344 144388 547 144509 344 144693 344 144397 541 14523 483 144699 370 144396 75 144525 376 144701 544 144406 793 144526 376 144702 567 144412 75 144528 376 144703 537 144411 75 144528 376 144703 537 144414 75 144528 376 144706 695 144415 75 144529 376 144707 695 144416 73 144531 376 144708 695 144417 73 144531 376 144709 695 144417 73 144531 695 144710 695 144429 766 <td>144382</td> <td> 111</td> <td></td> <td></td> <td></td> <td></td>	144382	111				
144386 719 144508 344 144691 344 144387 719 144508 344 144693 344 144388 547 144523 483 144693 374 144397 541 144525 376 144701 554 144406 793 144526 376 144702 567 144412 75 144527 376 144702 567 144413 75 144528 376 144706 695 144414 75 144529 376 144707 695 144416 73 144530 376 144707 695 144416 73 144531 376 144709 695 144416 73 144531 376 144709 695 144416 73 144531 376 144709 695 144428 178 144541 689 144711 695 144429 766<						
144387 719 144508 344 144683 344 144388 547 144509 344 144699 370 144397 541 144525 376 144701 544 144406 793 144526 376 144702 567 144412 75 144527 376 144703 537 144413 75 144528 376 144703 537 144414 75 144528 376 144707 695 144415 75 144529 376 144707 695 144415 75 144529 376 144707 695 144416 73 144531 376 144709 695 144417 73 144532 376 144709 695 144428 178 144532 376 144710 695 144428 178 144532 376 144710 695 144429 766<						
144388 547 144509 344 144699 370 144397 541 144525 376 144701 544 144406 793 144526 376 144702 567 144412 75 144527 376 144703 537 144413 75 144528 376 144706 695 144414 75 144529 376 144706 695 144415 75 144530 376 144706 695 144416 73 144531 376 144708 695 144416 73 144531 376 144709 695 144428 178 144532 376 144709 695 144428 178 144541 699 144711 695 144429 766 144565 296 144711 695 144431 766 144566 298 144714 529 144431 766						
144397 541 144525 376 144701 544 144406 793 144526 376 144702 567 144412 75 144527 376 144703 537 144413 75 144528 376 144706 695 144414 75 144529 376 144707 695 144416 73 144530 376 144708 695 144416 73 144531 376 144708 695 144417 73 144532 376 144709 695 144417 73 144532 376 144709 695 144417 73 144532 376 144710 695 144429 766 144561 689 144711 695 144430 766 144566 298 144712 695 144431 766 144566 298 144714 529 144432 766 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
144406 793 144525 376 144701 544 144412 75 144527 376 144703 537 144413 75 144528 376 144706 695 144414 75 144528 376 144706 695 144415 75 144530 376 144708 695 144416 73 144531 376 144709 695 144417 73 144531 376 144709 695 144417 73 144531 376 144709 695 144428 178 144541 689 144711 695 144429 766 144565 296 144712 695 144431 766 144567 327 144714 529 144431 766 144568 327 144714 529 144432 766 144568 327 144715 319 144433 766<					144699	. 370
144412 75 144527 376 144702 567 144413 75 144528 376 144706 695 144414 75 144528 376 144707 695 144415 75 144529 376 144707 695 144416 73 144531 376 144709 695 144417 73 144532 376 144710 695 144428 178 144531 376 144710 695 144429 766 144565 296 144711 695 144430 766 144566 298 144713 695 144431 766 144566 298 144714 529 144432 766 144568 327 144714 529 144433 766 144569 327 144716 319 144433 766 144570 328 144719 318 144436 766			144525	376	144701	. 544
144413 75 144527 376 144706 695 144414 75 144529 376 144707 695 144415 75 144520 376 144708 695 144416 73 144530 376 144708 695 144417 73 144532 376 14470 695 144428 178 144532 376 144710 695 144429 766 144565 296 144711 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144431 766 144567 327 144715 399 144432 766 144569 327 144715 319 144433 766 144569 327 144715 318 144434 766 144570 328 144719 318 144436 766			144526	376	144702	. 567
144414 75 144528 376 144706 695 144415 75 144530 376 144708 695 144416 73 144531 376 144709 695 144417 73 144531 376 144709 695 144428 178 144532 376 144710 695 144429 766 144565 296 144711 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144568 327 144716 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144719 318 144436 7			144527	376	144703	537
144414 /5 144529 376 144707 695 144416 73 144530 376 144708 695 144417 73 144531 376 144709 695 144428 178 144522 376 144710 695 144429 766 144565 296 144711 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144567 327 144714 529 144431 766 144568 327 144714 529 144432 766 144568 327 144714 529 144432 766 144568 327 144714 529 144432 766 144570 328 144719 318 144435 766 144571 328 144719 318 144436			144528	376	144706	695
144415 /5 144530 376 144708 695 144416 .73 144531 .376 144709 695 144417 .73 144532 .376 144710 695 144428 .178 144521 .689 144711 695 144429 .766 144565 .296 .144712 .695 144430 .766 144566 .298 .144713 .695 144431 .766 .144568 .227 .144714 .529 144432 .766 .144568 .327 .144715 .319 144433 .766 .144568 .327 .144716 .319 144434 .766 .144569 .327 .144716 .319 144434 .766 .144570 .328 .144719 .318 144435 .766 .144572 .328 .144731 .107 144436 .766 .144572 .328 .144731 .107 </td <td></td> <td></td> <td>144529</td> <td> 376</td> <td></td> <td></td>			144529	376		
144416 /3 144531 376 144709 695 144417 73 144532 376 144710 695 144428 178 144541 689 144711 695 144429 766 144565 296 144712 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144435 766 144571 328 144731 107 144436 766 144572 328 144731 107 144437 766 144573 328 144731 107 144450 <td< td=""><td></td><td></td><td>144530</td><td> 376</td><td>144708</td><td>. 695</td></td<>			144530	376	144708	. 695
144417 73 144532 376 144710 695 144428 178 144541 689 144711 695 144429 766 144565 298 144712 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144731 107 144437 766 144573 328 144732 329 144457 770 144574 328 144733 329 144451 <t< td=""><td></td><td></td><td>144531</td><td> 376</td><td></td><td></td></t<>			144531	376		
144428 178 144541 689 144711 695 144429 766 144565 296 144712 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144579 328 144733 329 144452 770 144580 328 144734 329 144454 770 </td <td>144417</td> <td> 73</td> <td></td> <td></td> <td></td> <td></td>	144417	73				
144429 766 144565 296 144712 695 144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144572 328 144731 107 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144736 329 144453 770 144580 328 144736 329 144454 770 144581 328 144736 329 144455 770 </td <td>144428</td> <td> 178</td> <td></td> <td></td> <td></td> <td></td>	144428	178				
144430 766 144566 298 144713 695 144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144734 329 144453 770 144580 328 144735 329 144452 770 144581 328 144736 329 144453 770 144583 107 144738 329 144454 770 </td <td>144429</td> <td> 766</td> <td></td> <td></td> <td></td> <td></td>	144429	766				
144431 766 144567 327 144714 529 144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144734 329 144453 770 144580 328 144735 329 144454 770 144581 328 144736 329 14454 770 144583 107 144738 329 14455 770 144584 107 144739 329 144456 770 <td>144430</td> <td> 766</td> <td></td> <td></td> <td></td> <td></td>	144430	766				
144432 766 144568 327 144715 319 144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144454 770 144583 107 144738 329 144456 770 144583 107 144739 329 144456 770 144585 107 144740 329 144459 770 </td <td>144431</td> <td> 766</td> <td></td> <td></td> <td></td> <td></td>	144431	766				
144433 766 144569 327 144716 319 144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144734 329 144451 770 144575 328 144734 329 144452 770 144579 328 144736 329 144454 770 144580 328 144736 329 144454 770 144581 328 144737 329 144454 770 144583 107 144738 329 144455 770 144583 107 144738 329 144456 770 144586 107 144739 329 144457 770 144586 107 144740 329 144458 770 </td <td>144432</td> <td> 766</td> <td></td> <td></td> <td></td> <td></td>	144432	766				
144434 766 144570 328 144719 318 144435 766 144571 328 144720 318 144436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144738 329 144457 770 144585 107 144740 329 144456 770 144585 107 144740 329 144459 770 144586 107 144741 329 144459 770 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
144435 766 144571 328 144720 318 14436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144584 107 144740 329 144458 770 144586 107 144740 329 144459 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
144436 766 144572 328 144731 107 144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144584 107 144739 329 144458 770 144586 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 <						
144437 766 144573 328 144732 329 144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144743 329						
144450 770 144574 328 144733 329 144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144460 770 144588 107 144743 329 144460 770 144588 107 144743 329 144461 <						
144451 770 144575 328 144734 329 144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329					144732	. 329
144452 770 144579 328 144735 329 144453 770 144580 328 144736 329 14454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329						
144453 770 144580 328 144736 329 144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329 144460 770 144589 107 144750 329					144734	. 329
144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329	· · · · · · · · · · · · · · · · · · · · · · ·				144735	. 329
144454 770 144581 328 144737 329 144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329			144580	328	144736	. 329
144455 770 144583 107 144738 329 144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329			144581	328		
144456 770 144584 107 144739 329 144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329 144461 770 144589 107 144750 329			144583	107		
144457 770 144585 107 144740 329 144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329 14460 770 144589 107 144750 329	144456	770	144584	107		
144458 770 144586 107 144741 329 144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329 144460 770 144589 107 144750 329	144457	770				
144459 770 144587 107 144742 329 144460 770 144588 107 144743 329 144461 770 144589 107 144750 329 14460 770 144589 107 144750 329	144458	770				
144460 770 144588 107 144743 329 144461 770 144589 107 144750 329 14460 770 144589 107 144750 329	144459	770				
144461						
144460 770						
329						
			144000	107	144751	. 329

144000 continued	144936		145338	495
T T T C C C CONTAINED C	144937	344	145339	495
144752329	144938	344	145340	495
144753 536	144939	344	145341	495
144762307	144940	344		495
144771 341	144941	344		495
144772341	144942	344		495
144773 341	144943			495
144774 341	144944	344		495
144775341	144945			495
144776341	144946			495
144777341	144947			495
144778341	144948			495
144779341	144949			
144780341	144950			495
144781341	144951			495
144782	144952			495
144783341	144953			495
144784341	144954			495
144785341	144955			495
144786341	144956			494
	144957		145371	494
144787341	144957	344	145372	494
144788 341	145000		145373	494
144789341	143000		145374	494
144790	144958	344	145375	494
144791 341	144959		145376	494
144792 341	144960			494
144793341	144961			494
144794341	144965			494
144795 341	144970			494
144796341				494
144797 341	145043			
144798341	145045			494
144799 341	145054			494
144800 341	145065			494
144801341	145116			494
144802341	145211			494
144803 341	145220			494
144804 342	145221	145	145394	494
144805342	145258	544	145395	494
144806342	145293	494	145396	494
144807342	145294	494	145397	494
144808342	145295		145398	494
144809342	145296	493	145399	494
144810342	145300		145400	494
144811342	145301			494
144812342	145302			494
144813342	145303			542
144814342	145304			542
144815342	145305			547
144816342	145306			542
144817342	145312			539
144818342	145313			539
144819342	145314			549
144820 342	145315			554
144821 342	145316	495	145458	539
144822 342	145317	495	145459	539
144823 342	145318	495	145463	564
144824342	145322		145464	567
144840312	145324		145465	567
144843762	145325		145466	568
144850 545	145326			568
144855 64	145327			568
14485664	145328			568
144859536	145329			568
144863 178				568
144864164	145330			568
144865176	145336			568
144867549	145337	495		
			1454/4	568

145000 continued	145558		145665	
45.475	145559		145670	
15475 56			145671	
5477 56			145672	
547856			145682	
547956			145684	
5480 56			145685	53
5481 56	3 145565	491	145686	54
5482 56	3 145566	491	145689	54
5483 56		491	145690	54
548456		491	145691	
548556			145692	
5486 56			145693	
5487 56				
			145694	
5488 56			145695	
5489 56			145701	
5490 56			145852	7
5491 56	9 145575	491		
5492 56	9 145576	491	146000	
5501 56	9 145577	491		
50356			146497	
5504			146498	
505			146506	2
5506			146507	2
			146508	
550756			146509	
5509 56			146510	
551056			146511	
5511 56	9 145590	547		
512 56	9 145591	545	146512	
5513 56	9 145593	539	146513	
551456		535	146514	
51556			146515	2
5516			146516	2
5517 56			146517	2
			146518	2
551856			146519	
551956			146520	
5520 51		547	146525	
5521 51	3 145607	547		
5522 51	3 145612	537	146569	
5523 51	3 145617	566	146570	
524 51	3 145618	566	146571	
552551			146572	1
5526 51			146573	1
			146574	1
5527 51:			146575	
5528 51			146576	
5529 51			146577	
5530 51	3 145633	547		
5531 51	3 145634	547	146578	
532 51		547	146579	
533 51:	3 145641	538	146580	
53451			146581	1
535			146582	1
			146583	
536 51:			146584	
53751			146585	
5538 51			146586	
539 51	3 145648	568		
540 51	3 145649	568	146587	
541 51:		568	146588	
544			146589	1
54554			146590	1
			146591	1
55478			146592	
5549 53			146593	
5552 53			146594	
5553 53				
5554 49	l 145657	568	146621	
555549			146622	
555649			146625	
	1 7000 1		146627	

1466281		146716		146796	
1466432	216 1	146717	370	146797	370
146644	216 1	146718	370	146799	370
146645 2	216 1	146720	370	146800	370
146646 2	216 1	146722	370	146801	370
1466472	216 1	146723	370	146802	370
1466482	216 1	146724	370	146803	370
1466492		146725	370	146804	370
146650	216 1	146726	370	146805	370
1466512		46727		146806	
146652		46728		146807	
146653		146729		146808	
146654		146732		146809	
146659		146733		146810	
146660		146734		146811	
146661		146735		146812	
146662		146736		146813	
146663		146737		146814	
146664		146738		146815	
146665		146739		146816	
146666		146740		146817	
146667		146741		146818	
146668		146742		146825	
146669		146743		146826	
146670		146751		146827	
146671 3		146752		146828	
146673		146753		146829	
146674		146754		146830	370
146675		146755		146831	
146676	368 1	146756	369	146832	370
146677	368 1	146757	369	146833	370
1466783	368 1	146758	369	146834	370
146679	368 1	146759	369	146835	370
146680	368 1	146760	369	146836	370
1466813	368 1	146761	369	146837	370
1466823	368 1	146762	369	146838	370
146683		46763		146839	
146684		146764		146840	
146685		46765		146841	
146686		146766		146842	
146687		146767		146843	
146688		46768		146844	
146689		146769		146845	
146690		146770		146846	
146691		146771			370
146692					
		146772		146848	
146693		146773		146851	
146694		146774		146852	
146695		146775		146853	
146696		146776		146854	
146697		146777		146855	
146698		146778		146856	
146699		146779		146857	
146700	369 1	146780	370	146858	367
146701	369 1	146781	370	146859	367
1467023	369 1	146782	370	146860	367
146703	369 1	146783	370	146861	367
146704 3	369 1	146784	370	146862	367
146705	369 1	146785	370	146863	367
146706	368	146786	370	146864	367
1467073		146787	370	146865	367
146708		146788		146866	
146709		146789		146867	
146710		146790		146868	
146711		146791		146869	
146712		146792		146870	
146713		146793		146871	
146714		146794		146872	
146715		146795		146873	
1 10/ 10		. 10700	510	. 10070	501

146000 continued	t e	146941		147021	
		146942		147022	
6874		146943		147023	
6875		146944		147025	
6876	368	146945		147029	
6877	368	146946	369	147030	2
6878	368	146947	369	147031	2
6879	368	146948	369	147032	2
6880		146949	370	147033	2
6881		146950		147034	
6882		146951		147035	
6883		146952		147040	
6884		146953		147041	
6885		146954		147043	
6886		146955		147044	
3887	368	146956	370	147045	2
6888	368	146957	370	147046	2
6889	368	146958	370	147048	2
6890		146959		147049	2
6891		146960		147050	
6892		146962		147129	
		146963		147130	
6893					
6894		146964		147131	
6895		146965		147132	
8896		146966	370	147133	
897		146967	370	147134	5
8898	368	146968	370	147136	5
6899		146969	370	147137	5
6900		146970		147140	5
6901		146971		147141	
5902		146972		147142	
				147143	
6903		146973			
6904		146974		147145	
6905	369	146975	370	147146	
6906	369	146976	370	147150	
6907	369	146977	370	147151	5
6908	369	146978	370	147152	5
6909		146979		147153	5
6910		146980		147154	
6911		146981		147155	
				147156	
912		146982			
6913		146983		147164	
6914		146985		147174	
8915	369	146986	370	147175	
6916	369	146987	370	147176	
8917	369	146988	370	147177	5
6918		146989		147179	
6919		146990		147180	
				147187	
920		146991		147189	
6921		146992			
6922		146993		147190	
923	368	146994	367	147192	
6924	368	146995	367	147193	
925	368			147195	
926		147000		147200	5
6927				147209	
6928		147004	368	147229	
929 929		147009	220	147230	
		147010		147233	
930		147011			
3931				147234	
6932		147012		147288	
6933	369	147013		147289	3
6934		147014		147290	3
6935		147015	217	147291	
6936		147016	217	147292	
		147017		147293	
6937		147018		147294	
6938		147019			
6939		147020		147295 147296	
6040	260				3

147020217

147296......396

147297		147367	368	147436	368
147298		147368	368	147437	368
147299		147369		147438	
147300		147370		147439	
147301		147371		147440	
147302		147372		147441	
147303		147373		147442	
147304		147374		147443	
147305		147375		147444	
147306	396	147376	368	147445	368
147307		147377		147446	
147308		147378	368	147447	
147309		147379	368	147448	368
147310		147380		147449	
147311		147381		147450	369
147312		147382		147451	368
147313		147383		147452	368
147314	396	147384	369	147453	
147315		147385		147454	
147316		147386		147455	
147317	396	147387	368	147456	389
147318		147388		147457	
147319		147389		147458	
147320	396	147390	368	147459	
147321		147391		147460	
147322		147392		147461	
147323		147393		147462	
147324	396	147394		147463	
147325	368	147395	367	147464	389
147326		147396		147465	
147327		147397		147466	
147328	368	147398	367	147467	389
147329	368	147399	367	147468	389
147330		147400		147469	
147331	368	147401		147470	389
147333	368	147402		147471	
147334	368	147403		147472	
147335		147404		147473	389
147336		147405		147474	
147337	368	147406	368	147475	389
147338	368	147407	368	147476	389
147339		147408		147477	389
147340		147409		147478	
147341		147410		147479	389
147342		147411		147480	
147343	368	147412	368	147481	
147344		147413	368	147482	389
147345	368	147414	368	147483	389
147346		147415		147484	
147347	368	147416		147485	389
147348		147417		147486	
147349		147418		147487	
147350		147419		147488	
147351		147420	368	147489	
147352	368	147421		147490	389
147353	368	147422	368	147491	
147354	368	147423	368	147492	389
147355		147424		147493	
147356	368	147425		147494	
147357		147426		147495	
147358		147427		147496	
147359		147428		147497	
147360		147429		147498	
147361		147430		147499	
147362		147431		147500	
147363		147432		147501	
147364		147433		147502	
147365		147434		147503	
147366	368	147435	368	147504	389

147000 continued		147862		148519	
		147863		148520	
47505	389	147865	502	148522	540
47506	389	147867	535	148526	536
47507	389	147868	544	148527	536
47508		147869		148538	
47517		147870			
				148539	
47518		147871		148540	
47523		147872		148542	540
47524	64	147875	502	148543	540
47525	64	147878	107	148551	547
47526	66	147879	107	148552	
47527		147880		148554	
47528		147883			
47529		147887		148555	
				148558	107
47530		147894		148559	49
17531		147899	549	148560	540
47532	66	147967	621	148562	
17533	66	147976	97		
17534				148563	
47535		148000		148565	
		148000		148568	543
17536		1 10001	000	148572	538
17537		148081		148575	
17538	63	148092	107	148576	
17539	63	148093	107		
7540	63	148094	107	148586	
17541		148117		148590	536
				148591	536
17542		148119		148592	542
17544		148121		148594	
17545	369	148123	347		
17546	369	148125	347	148598	
7551	395	148127		148599	
17552		148129		148600	543
				148601	543
17555		148131		148603	
17559	443	148146	503	148604	
17567	111	148163	107		
17568	111	148164	107	148605	
17578	621	148165		148606	536
17579		148166		148608	5
17599				148609	540
		148167		148611	
17619		148168	107		
47620	395	148169	107	148613	
17621	395	148170	107	148614	
17622	395	148171		148634	545
17688		148172	107	148635	545
17689		110172		148639	
		148173		148649	
17756		148174	107		
7785	539	148186	204	148650	
7786	539	148221		148651	10
7787	539	148223		148652	10
7789				148653	10
		148224		148654	
. 7 791		148235	763		
7792		148243	629	148657	
7809	517	148321		148678	54
7810	517	148322		148711	22
7811				148712	
7819		148323			
		148324	372	148728	
7820		148325	372	148749	
7821		148326		148757	78
7831	545	148395		148769	
17838	668				
7839		148450		148795	
17840		148484	107	148801	65
		148485	107	148812	730
17841		148486		148823	
17843	548				
17844	548	148487		148827	
17853		148502	632	148854	123
47858		148514	547	148855	123
47860	5//	148516	544	148861	65

148518 495

148861 657

148000 continued	149891		150452	
4.40000	149892		150453	
148876356	149893		150454	
148877 356	149896	495	150455	
148975329	450000		150456	107
440000	150000		150457	107
149000	150100	755	150458	107
	150186		150459	107
149006204	150232		150460	107
149026652	150265		150461	107
149037 543	150278		150463	
149045 140	150284	545	150464	
149055 420	150313	539	150490	
149112652	150314	536		
149113549	150315		150491	
149115545	150316		150512	
14912057			150532	
	150317		150549	207
149127243	150318		150554	621
149423748	150331		150555	621
149442 535	150332		150559	395
149469 67	150335	540	150560	
149533 652	150337	543	150585	
149534 652	150338	543		
149536359	150340		150602	
149537 359	150341		150640	
149538	150342		150641	
			150642	107
149539	150343		150643	107
149540 359	150344	536	150659	786
149541 359	150345	542	150669	
149542 359	150346	545	150676	
149543 359	150347	545	150687	
149544359	150348	535	150692	
149562786	150349			
149569787	150350		150693	
149570			150975	
	150351		150977	543
149571 787	150358		4=4000	
149572 787	150359		151000	
149573 787	150366	547		
149574 787	150367	547	151011	
149579 788	150368	547	151057	535
149582788	150369	547	151066	535
149583788	150370		151090	535
149590	150371		151091	535
149593	150372		152000	
149594	150373			
149595	150374		152728	596
149596 748	150375		152730	596
149597 748	150377		152731	596
149598748	150378	549	152732	596
149599 748	150379	549	152733	
149600 748	150380	549	152734	
149603	150387		152735	
149604	150388			
			152736	
149607	150431		152737	
149608 758	150432		152738	
149617743	150433		152739	596
149618743	150441	107	152740	596
149620 755	150442	107	152741	596
49621755	150443		152742	
49622	150444		152743	
149852 501	150445		152744	
			152745	
149886	150446			
149887 636	150447		152746	
149888 636	150448	107	152747	
149000 030			1 = 0 = : :	
149889	150449	107	152748 152749	

150750	FOR	150017	EOG	150004	FOR
152750		152817		152884	
152751		152818		152885	
152752	596	152819	596	152889	
152753	596	152820	596	152890	596
152754	596	152821	596	152891	596
152755	596	152822	596	152892	. 597
152756		152823		152893	
152757		152824		152894	
152758		152825		152896	
152759		152826		152897	
152760	596	152827	596	152898	597
152761	596	152828	596	152899	597
152762	596	152829	596	152900	597
152763		152830	596	152901	
152764		152831		152902	
		152832			
152765				152903	
152766		152833		152904	
152767	596	152834	596	152905	597
152768	596	152835	596	152906	597
152769	596	152836	596	152907	597
152770		152837		152908	
152771		152838		152909	
152772		152839		152910	
152773	596	152840	596	152911	
152774	596	152841	596	152912	597
152775	596	152842	596	152913	597
152776		152843	596	152914	
152777		152844		152915	
152778		152845		152916	
152779		152846		152917	
152780	596	152847	596	152918	597
152781	596	152848	596	152919	597
152782	596	152849	596	152920	597
152783		152850		152921	
152784		152851		152922	
152785	596	152852	596	152923	597
152786	596	152853		152924	. 597
152786 152787			596		
152787	596	152853 152854	596 596	152924 152925	597
152787 152788	596 596	152854	596 596 596	152924	597
152787	596 596 596	152853	596 596 596 596	152924 152925 152926	597
152787	596 596 596 596	152853	596 596 596 596 596	152924 152925	597
152787 152788 152789 152790 152791	596 596 596 596	152853 152854 152855 152856 152857 152858	596 596 596 596 596	152924 152925 152926 153000	597 597
152787 152788 152789 152790 152791	596 596 596 596 596	152853	596 596 596 596 596	152924 152925 152926 153000 153182	597 597 602
152787 152788 152789 152790 152791	596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859	596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183	597 597 602 602
152787 152788 152789 152790 152791 152792 152793	596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859	596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184	597 597 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794	596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859	596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185	597 597 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795	596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861	596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184	597 597 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796	596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862	596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185	597 597 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797	596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864	596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187	597 597 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798	596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865	596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188	597 597 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799	596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866	596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153188	597 597 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798	596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152866	596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153188 153189 153190	597 597 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799	596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866	596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153188 153189 153190 153191	597 597 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800	596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152866	596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191	597 597 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 15288	596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868	596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153188 153189 153190 153191	597 597 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803	596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152868 152869 152870	596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191	597 597 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152868 152869 152870	596 596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194	597 597 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152871	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195	597 597 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152888	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152871 152872	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196	597 597 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152871	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197	597 597 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152888	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152871 152872	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198	597 597 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152806 152807 152808	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152872 152873 152874	596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197	597 597 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152806 152807 152808	596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152871 152872 152873 152874 152875 152876	596 596	152924 152925 152926 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198	597 597 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152806 152807 152808 152809 152809	596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152869 152870 152871 152872 152873 152874 152875 152876 152876	596 596	152924 152925 152926 153100 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152806 152807 152808 152807 152808 152809 152809	596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152871 152872 152873 152874 152875 152876 152876 152877 152878	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152806 152807 152808 152809 152810 152811	596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152871 152872 152873 152874 152875 152876 152876 152877 152878 152878	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152804 152805 152806 152807 152808 152809 152810 152811	596 596	152853 152854 152855 152856 152857 152858 152859 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152871 152872 152873 152874 152875 152876 152876 152877 152878	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201 153202	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152806 152807 152808 152809 152810 152811	596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152871 152872 152873 152874 152874 152876 152877 152878 152877 152878 152879 152879 152879 152879 152879	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201 153202 153203 153204	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152804 152805 152806 152807 152808 152809 152810 152811	596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152871 152872 152873 152874 152874 152876 152877 152878 152877 152878 152879 152879 152879 152879 152879	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201 153202 153203 153204 153205	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152805 152804 152805 152806 152807 152808 152809 152810 152811 152812 152813 152814	596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152870 152871 152872 152873 152874 152875 152876 152876 152877 152878 152879 152879 152879 152880 152880 152880 152880	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201 153202 153203 153204	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602
152787 152788 152789 152790 152791 152792 152793 152794 152795 152796 152797 152798 152799 152800 152801 152802 152803 152804 152804 152805 152806 152807 152808 152808 152809 152810 152811 152812 152813	596 596	152853 152854 152855 152856 152857 152858 152860 152861 152862 152863 152864 152865 152866 152867 152868 152870 152871 152872 152873 152874 152874 152876 152877 152878 152877 152878 152879 152879 152879 152879 152879	596 596	152924 152925 152926 153000 153182 153183 153184 153185 153186 153187 153188 153189 153190 153191 153192 153193 153194 153195 153196 153197 153198 153199 153200 153201 153202 153203 153204 153205	597 597 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602 602

153000 continued		60		598
·		60		598
15320860		60		598
15320960		60	153344	598
153210 60	02 153277	60	153345	598
153211 60	02 153278	60	2 153346	598
15321260	02 153279	60	153347	598
15321360		60		598
153214		60		598
153215		60		598
153216		60		598
15321760		60		598
15321860		60		598
15321960	02 153286	60	153354	598
153220 60	02 153287	60	2 153355	598
153221 60	02 153288	60	2 153356	598
153222	02 153289	60		598
15322360		60		598
153224		60		598
153225	•=	60		
153226		60		598
153227 60	- -	60		598
153228 60		60		598
15322960	02 153296	60		598
153230 60	02 153297	60	153365	598
153231 60	02 153298	60		598
153232		60		598
153233		60		598
153234	0	60		
153235		60		598
153236 60	- -	60		598
15323760		60	153372	598
153238 60	02 153305	60		598
153239 60	02 153306	60	3 153374	598
153240 60	02 153307	60	3 153375	598
15324160	02 153308	60	3 153376	598
153242		60		598
153243		60		598
153244		60		
153245		60		598
153246		60		598
153247 60		60		598
15324860		60	153383	598
15324960	02 153316	60	3 153384	598
153250 60	02 153317	60	153385	598
153251 60	02 153318	60	3 153386	598
15325260	02 153319	60	3 153387	598
153253		60		598
153254		60		598
153255		60		
153256		60		598
15325760		60		598
153258 60		60		598
15325960	02 153326	60	153394	598
153260 60	02 153327	60	153395	598
153261 60	02 153328	59	8 153396	598
153262 60	02 153329	59	8 153397	598
153263		59		598
153264		59		
153265		59		598
153266		59		598
153267 60		59		598
153268 60	02 153335	59	153403	598
153269 60	02 153336	59	153404	598
153270 60	02 153337	59	153405	598
153271 60		59		598
153272		59		598
	100040	59	100400	

153000 continued	153475		153550	
	153476		153552	
53409 598	153477		153553	
53410 598	153478	598	153556	599
53411 598	153479	598	153557	599
53412 598	153480	598	153558	599
53413 598	153481	598	153559	
53414598	153482		153560	
53415 598	153483		153561	
53416598	153484		153562	
53417598	153485	598	153563	
53418 598	153486	598	153564	599
53419 598	153487	598	153565	599
53420 598	153488	598	153568	
53421 598	153489		153569	
53422	153490		153570	
53423 598	153491		153571	
53424 598	153492	598	153572	599
53425 598	153493	598	153573	599
53426 598	153494	598	153574	599
53427598	153495		153575	
53428	153496		153576	
53429	153497		153577	
53430 598	153498		153578	599
53431 598	153499	598	153579	599
53432 598	153500		153580	
53433 598	153501		153581	
53434	153501		153582	
53435 598	153503	598	153583	
53436 598	153504	598	153586	599
53437 598	153505	599	153587	599
53438 598	153506	599	153588	
53439	153507		153589	
53440 598	153508		153590	
53441 598	153509	599	153591	599
53442 598	153510	599	153592	599
53443 598	153514	599	153593	599
53444598	153515	599	153594	
53445 598	153516		153595	
53446 598				
	153517		153597	
53447 598	153518	599	153598	599
53448 598	153519	599	153599	599
53449 598	153520	599	153600	599
53450 598	153521	599	153601	
	153522			
53451 598			153602	
53452 598	153523		153603	
53453 598	153524	599	153604	599
53454 598	153525	599	153605	599
53455 598	153526	599	153606	599
53456	153527		153609	
53457	153530			
			153610	
53458 598	153531		153611	
53459 598	153532	599	153612	599
53460 598	153533	599	153613	599
53461 598	153534		153614	
53462	153535		153615	
53463 598	153536		153616	
53464 598	153537	599	153619	599
53465 598	153538	599	153620	599
53466 598	153539	599	153621	599
53467 598	153540		153622	
53468	153541		153623	
53469 598	153544		153624	
53470 598	153545	599	153625	599
53471 598	153546	599	153626	
53472 508	153547	500	153627	500
53472	153547 153548		153627 153628	

153000 continued		153712		153791	
		153713	599	153792	599
53631	599	153718	599	153793	599
53632	599	153719	599	153794	599
53633		153720		153795	
53634		153721		153796	
53635		153722		153797	
53636	599	153723	599	153798	599
53637	599	153724	599	153799	599
3638	599	153725	599	153800	599
3639		153726		153801	
3643		153727		153802	
3644		153728		153803	
3645	599	153731	599	153806	59
3646	599	153732	599	153807	599
3647		153733		153808	
3648		153734		153809	
3649		153735	599	153810	599
3650	599	153736	599	153811	599
3655	599	153737	599	153812	599
3656		153738		153813	
3657		153739		153814	
3658		153740		153815	
3659	599	153741	599	153816	599
3660	599	153742	599	153817	
3661		153743		153818	
		153744			
3662				153819	
3663		153745		153820	
3664	599	153746	599	153821	599
3665	599	153747	599	153822	590
3667		153748		153823	
3668		153751		153824	
3669	599	153752	599	153825	599
3670	599	153753	599	153826	599
3671	599	153754	599	153827	599
3672		153755		153828	
3673		153756		153829	
3674	599	153757		153830	599
3675	599	153758	599	153831	599
3676	599	153759	599	153832	599
3677		153760		153833	
3678		153761		153834	
3679		153765		153835	
3680	599	153766	599	153836	599
3681		153767		153837	
3682		153768		153841	
3683		153769		153842	
3684	599	153770	599	153843	599
3688	599	153771	599	153844	59
3689		153772		153845	
3690		153773		153846	
691	599	153774	599	153847	59
692	599	153775	599	153848	59
693	599	153776	599	153849	59
694		153777			
				153850	
695		153778		153851	
3696	599	153779	599	153856	59
697	599	153780	599	153857	59
698		153781		153858	
3703		153782		153859	
3704		153783		153860	
3705	599	153784	599	153861	59
3706	599	153785	599	153862	59
3707		153786			
				153863	
3708		153787		153864	
3709	599	153788	599	153865	599
3710	599	153789	599	153866	599

153000 continued	154519		154590	
50000	154520		154591	
53868599	154521		154592	
53869 599	154522		154593	
53870 599	154523		154594	
53871 599	154524	600	154595	600
53872 599	154525	600	154596	600
53873 599	154526	600	154597	600
53875 599	154527	600	154598	600
53876599	154528		154599	
53877 599	154529		154600	
53878	154530		154601	
53879599	154531		154602	
53880 599	154532		154606	
53881 599	154533	600	154607	600
53882 599	154534	600	154608	600
53883 599	154535	600	154609	600
53884599	154536	600	154610	600
53885 599	154537		154611	
53886 599	154538		154612	
53887 599	154539		154613	
53888 599	154540		154614	
53889 599	154541		154615	
53890 599	154542	600	154616	600
53891 599	154543	600	154618	600
	154544	600	154619	600
154000	154545	600	154620	600
104000	154546		154621	
54475600	154547		154622	
54476				
	154548		154623	
54477600	154549		154624	
54478600	154550	600	154625	600
54479 600	154551	600	154626	600
54480 600	154552	600	154627	600
54481 600	154553	600	154628	600
54482 600	154557	600	154629	600
54483 600	154558		154630	
54484 600	154559		154631	
54485600			154632	
	154560			
54486	154561		154633	
54487600	154562		154634	
54488 600	154563	600	154635	600
54489600	154564	600	154636	600
54490 600	154565	600	154637	600
54492600	154566	600	154638	600
54493 600	154567		154639	
54494 600	154568		154640	
54495	154569			
54496			154641	
	154570		154642	
54497600	154571		154643	
54498600	154572		154644	601
54499 600	154573	600	154645	601
54500 600	154574	600	154646	
54501 600	154575		154647	
54502	154576		154648	
54503600				
	154577		154649	
54504	154578		154650	
54505600	154579		154651	
54506 600	154580		154652	
54510 600	154581	600	154653	601
54511 600	154582		154657	
54512600	154583		154658	
54513 600	154584		154659	
54514600				
	154585		154660	
54515	154586		154661	
54516600	154587	600	154662	
54517 600	154588	600	154663	601

154000 continued	154734		154806	
	154735		154807	
154665 601	154736		154808	
154666 601	154737	601	154809	601
154667 601	154738	601	154810	601
154668 601	154739	601	154811	601
154669601	154740	601	154812	601
154670 601	154741	601	154813	601
154671 601	154742	601	154814	
154672601	154743		154815	
154673 601	154744		154816	
154674 601	154745		154817	
	154746			
154675601			154818	
154676601	154747		154819	
154677 601	154748		154820	
154678 601	154749		154821	601
154679 601	154750	601	154822	601
154680 601	154751	601	154823	601
154681 601	154752	601	154824	601
154682601	154753	601	154825	
154683 601	154754		154826	
154684	154755		154827	
154685 601	154756		154828	
154686 601	154757		154829	
154687 601	154758		154830	
154688 601	154759	601	154831	601
154689601	154760	601	154833	601
154690 601	154761	601	154834	601
154691 601	154762	601	154835	601
154692601	154763		154836	
154693	154764		154837	
154694	154767		154838	
154695 601	154768		154839	
154696 601	154769		154840	
154697 601	154770		154841	
154698 601	154771	601	154842	
154699 601	154772	601	154843	601
154700 601	154773	601	154844	601
154701601	154774	601	154845	601
154702601	154775	601	154846	601
154706601	154777		154847	
154707 601	154778		154848	
154708	154779			
	. = =		154849	
154709 601	154780		154850	
154710 601	154781	601	154851	
154711 601	154782	601	154852	601
154712601	154783	601	154853	601
154713 601	154784	601	154854	601
154714601	154785	601	154855	601
154715601	154786	601	154856	601
154716601	154787		154857	601
154717601	154788		154858	
154718601	154789		154859	
154719601	154790		154860	
154720 601	154791	601	154861	601
154721 601	154792		154862	601
154722 601	154793	601	154863	601
154723 601	154794	601	154864	601
154724 601	154795		154865	
154725601	154796		154866	
154726	154797		154867	
154727 601	154798		154868	
154728601	154799		154869	
154729 601	154801		154870	
154730 601	154802		154871	601
154731 601	154803	601	154872	601
154732601	154804	601	154873	601

154000 continued		155071 155072		155205	
F 40.75	001			155206	
54875		155073		155207	
54876		155074		155208	
54877	601	155075	594	155209	
54878	601	155076	594	155210	595
54879	601	155077	594	155211	595
54880		155078	594	155212	595
54881		155079		155213	
				155214	
54882		155080			
54883		155081		155215	
54884		155082	594	155216	595
54885	601	155083	594	155217	595
54886		155084	594	155218	595
54887		155085		155219	
54888		155086		155220	
34000	601				
155000		155087		155221	
155000		155088	594	155222	595
	==-	155089	594	155223	595
55022		155090		155224	595
55023	594	155091		155225	
55024	594	155092			
55025				155226	
55026		155093		155227	
		155094		155228	595
55027		155095	594	155229	595
55028		155096		155230	
55029	594	155097		155231	
55030	594				
55031	594	155098		155232	
55032		155099		155233	595
		155100	594	155234	595
55033		155101	594	155235	595
55034	594	155102	594	155236	595
55035	594	155103		155237	
55036	594				
55037		155104		155238	
		155105	594	155239	595
55038		155106	594	155240	595
55039		155107	594	155241	595
55040	594	155108		155242	
55041	594	155109		155243	
55042					
55043		155110		155244	
		155111	594	155245	595
55044		155112	594	155246	595
55045		155113	594	155247	595
55046	594	155114	504	155248	
55047	594				
55048	594	155115		155249	
55049		155116		155250	
		155117	594	155251	595
55050		155118	594	155252	595
55051		155119	594	155253	595
55052	594	155120		155254	
55053	594				
55054		155121		155255	
		155122		155256	
55055		155123	594	155257	595
55056		155124	594	155258	595
55057	594	155125		155259	
55058	594	155126		155260	
55059					
55060		155127		155261	
		155128		155262	595
55061		155129	594	155320	761
55062		155196		155749	
55063	594	155197		155759	
55064	594			133738	
55065		155198		157000	
		155199		157000	
55066		155200	595	157000	
55067		155201		157609	
55068	594	155202		157610	595
33000					
55069	594	155203		157611	595

57613 595	159865	217	159977	5
57614 595	159868	217	159978	5
57615595	159869		159979	
57616 595	159871		159980	
57617 595	159873		159981	5
57618 595	159874	217	159982	10
57619 595	159875	217	159983	10
57620595	159876		159984	
57633 596	159877		159985	10
57634 596	159879	217	159986	10
57635 596	159880	217	159991	54
57636 596	159881		159992	
			109992	
57637 596	159882		160000	
57638 596	159883		160000	
57639 596	159884	218		
57648595	159885		160002	53
	159886		160003	53
772629			160004	53
7730 25	159887	218		
	159888	218	160005	
158000	159889		160006	53
	159891		160007	53
58234 539			160008	
	159895	219		
8257 549	159913	107	160009	
8272 535	159915		160010	53
8275 253			160011	54
8282 545	159916		160012	
	159934	107		
8286 543	159935	107	160013	
58322 228	159936	107	160017	54
8351 172			160018	53
8358 625	159937		160020	
	159938	107		
8380 627	159939	107	160021	
8382 625	159940		160022	49
58406 403			160023	49
88414786	159941		160024	40
	159942	107		
58415 657	159943	107	160025	
58416 657	159944		160026	49
58417 667			160027	49
8418748	159945		160028	
	159946	107	160029	
8419748	159947	107		
8420 748	159948		160030	49
8424748			160031	54
	159949		160032	54
E0000	159950	107	160036	
59000	159951	107		
	159952		160037	
9655 652			160038	56 [°]
966429	159953		160040	54
	159954	107	160044	
966729	159955	107		
9668 29	159956		160045	
9699 447			160047	54
9726 357	159957		160049	54
	159958	107	160050	
9727 357	159959	107		
			160052	
9734 652		107	160055	53
	159960	107		
9747789	159961		160056	53
9747 789 9748 789				
9747	159961 159962	107	160057	53
9747	159961 159962 159963	107 107	160057 160058	53 53
9747 789 99748 789 99749 789 99755 501	159961	107 107 107	160057	53 53
9747 789 9748 789 9749 789 9755 501 9850 216	159961	107 107 107 107	160057 160058	53 53 54
9747 789 9748 789 9749 789 9755 501 9850 216 9852 216	159961	107 107 107 107	160057 160058 160059 160060	53 53 54
9747 789 9748 789 9749 789 9755 501 9850 216 9852 216 9853 216	159961 159962 159963 159964 159965 159966	107 107 107 107	160057	
19747 789 19748 789 19749 789 19755 501 19850 216 19852 216 19853 216	159961 159962 159963 159964 159965 159966	107 107 107 107 107	160057	53 54 54 54 54 54 54 54 54 55 55 55 55 55
19747 789 19748 789 19749 789 19755 501 19850 216 19852 216 19853 216 19854 216	159961 159962 159963 159964 159965 159966 159967		160057	53 54 54 54 54 54 54 54 54 55 55 55 55 55
19747 789 19748 789 19749 789 19755 501 19850 216 19852 216 19853 216 19854 216 19855 216	159961 159962 159963 159964 159965 159966 159967 159968		160057	53 53 54 54 54 54 54
9747 789 9748 789 9749 789 9755 501 9850 216 9852 216 9853 216 9854 216 9855 216 9858 217	159961 159962 159963 159964 159965 159966 159967		160057	53 53 54 54 54 54 54 54
19747 789 19748 789 19749 789 19755 501 19850 216 19852 216 19853 216 19854 216 19855 216 19858 217	159961 159962 159963 159964 159965 159966 159967 159968 159969		160057 160058 160059 160060 160061 160065 160067 160068 160069	53 54 54 54 54 54 54 54
39747 789 39748 789 39749 789 39755 501 39850 216 39852 216 39853 216 39854 216 39855 216 39858 217 39859 217	159961 159962 159963 159964 159965 159966 159967 159968 159969 159970 159971		160057 160058 160059 160060 160061 160065 160067 160068 160069	53 53 54 54 54 54 54 54 54
59747 789 59748 789 59749 789 59755 501 59850 216 59852 216 59853 216 59854 216 59855 216 59858 217 59859 217 59860 217	159961 159962 159963 159964 159965 159966 159967 159968 159969 159970 159971		160057 160058 160059 160060 160061 160065 160067 160068 160069	53 53 54 54 54 54 54 54 54
59747 789 59748 789 59749 789 59755 501 59850 216 59852 216 59853 216 59854 216 59855 216 59858 217 59859 217 59860 217 59861 217	159961 159962 159963 159964 159965 159966 159967 159968 159969 159970 159971		160057 160058 160059 160060 160061 160065 160067 160068 160069 160070	53 53 54 54 54 54 54 54 54 54 54
59747 789 59748 789 59749 789 59755 501 59850 216 59852 216 59853 216 59854 216 59855 216 59858 217 59859 217 59860 217 59861 217 59862 217	159961 159962 159963 159964 159965 159966 159967 159968 159969 159970 159971 159972 159973		160057 160058 160059 160060 160061 160065 160067 160068 160069 160070 160072	53 53 54 54 54 54 54 54 54 54 53
59747 789 59748 789 59749 789 59755 501 59850 216 59852 216 59853 216 59854 216 59855 216 59858 217 59860 217 59861 217 59862 217	159961 159962 159963 159964 159965 159966 159967 159968 159969 159970 159971 159972 159973 159974		160057 160058 160059 160060 160061 160065 160067 160068 160069 160070 160072 160073	53 53 54 54 54 54 54 54 54 54 53 53
59734 652 59747 789 59748 789 59749 789 59755 501 59850 216 59852 216 59853 216 59854 216 59855 216 59858 217 59859 217 59860 217 59862 217 59863 217 59864 217 59863 217 59864 217	159961 159962 159963 159964 159965 159966 159967 159968 159969 159970 159971 159972 159973		160057 160058 160059 160060 160061 160065 160067 160068 160069 160070 160072	53 53 54 54 54 54 54 54 54 53 53

160000 continued			495	160977	
		160859		160978	
60077	545	160860		160979	
60078	545	160861	495	160980	50
60079	535	160862	495	160981	50
60080	535	160866	495	160982	50
60081	535	160867		160983	50
60082		160868		160984	
60084		160869		160985	
60095		160870		160986	
60096		160871		160987	
60097		160872	495	160988	
60098	548	160876	495	160989	50
60099	548	160877	495	160990	50
60100	548	160878	495	160991	50
60101		160879			
60102		160880		161000	
60103		160881		10.000	
				161045	537
60104		160882		161046	
60105	548	160886			
60106	548	160887	544	161076	
60107	548	160890	546	161077	
60108	548	160891		161383	
60113		160892		161393	
60114		160894		161394	462
				161395	
60115		160895		161396	
60116		160899		161397	
60122		160900	541		
60123	549	160902	543	161398	
60124	548	160903	543	161400	
60125	548	160906	57	161401	63
60139		160908		161402	63
60189		160909		161403	63
				161404	66
60208		160910		161405	
60209		160911		161406	
60210		160912	535	161409	
60211	748	160913	535		
60213	788	160914	535	161410	
60214	788	160915	535	161411	
60215		160921		161472	705
60216		160922		161485	640
60221		160923		161525	542
				161546	541
60222		160925		161551	
60223		160926		161638	
60224		160927	543		
60229	463	160928	509	161692	
60305	735	160929	509	161693	
60429	255	160930	509	161695	657
60451		160931		161696	657
60562		160932		161697	657
				161700	
60598		160933		161702	
60614	540	160935	509		
60661	655	160936	509	161703	
60662	655	160937	509	161704	
60704	228	160938	509	161705	
60747	29	160939		161706	
60795		160940		161707	657
				161708	657
60815		160941		161709	
60848		160942		161748	
60849		160943			
60850	540	160944	509	161774	
60851	549	160945	509	161775	
60852		160947		161776	
60853		160948		161777	724
				161778	724
60854		160949		161779	
60855	54/	100950	509		
60856		160951		161780	72/

61782	162103 606	162171	
61783 726	162104606	162172	
6178629	162105 606	162173	
61834 610	162106 606	162174	
61851 733	162107 606	162175	607
61887 353	162108606	162176	607
61888353	162109606	162177	608
61918778	162110	162178	
61919778	162111	162179	
61920 778	162112606	162180	
61921 778	162113 606	162181	
61922 778	162114 606	162182	608
61923 778	162115 606	162183	608
61925 231	162116 606	162184	608
61926231	162117606	162185	
61930 95	162118606	162186	
61931 95	162119		
61937		162187	
	162120 606	162188	
61938231	162121 606	162189	608
61940 95	162122 606	162190	608
61951 587	162123606	162191	
6196750	162124	162192	
61981 611	162125		
61982612		162193	
	162126 606	162194	
61984733	162127 607	162195	
100000	162128 607	162196	608
162000	162129607	162197	608
	162130	162198	
6200924	162131		
62010 24		162199	
6201124	162132 607	162200	
62012 24	162133 607	162201	608
62013	162134 607	162202	608
	162135 607	162203	
6201424	162136	162204	
62015 24	162137 607	162205	
62016 24			
62017 24	162138 607	162206	
6201824	162139 607	162207	
6201924	162140 607	162208	608
62020	162141 607	162209	608
	162142607	162210	608
62021 24	162143 607	162211	
62022 24			
62023 24	162144607	162212	
6202424	162145 607	162213	
62025 24	162146 607	162214	608
62026	162147 607	162215	608
	162148607	162216	608
62027 24	162149607	162217	
62028 24	162150	162218	
62029 24			
62030 24	162151 607	162219	
6203124	162152 607	162220	
62032	162153 607	162221	608
	162154607	162222	608
62033	162155607	162223	
62034 24	162156	162224	
62035 24			
62036 24	162157607	162225	
62037 24	162158 607	162226	
62038	162159 607	162227	609
	162160 607	162228	609
62039	162161 607	162229	
62060 543	162162 607	162230	
62080 611			
62081 613	162163607	162231	
62096 606	162164 607	162232	609
62097	162165 607	162233	609
02097 000	162166 607	162234	
20000		162235	
		10//00	008
	162167 607		
62098 606 62099 606 62100 606	162168 607	162236	609
62099606			609 609

162000 continued	162305		162373	
	162306		162374	
62239 609	162307		162375	
62240 609	162308	610	162376	612
62241 609	162309	610	162377	612
62242 609	162310	610	162378	612
62243 609	162311	610	162379	
62244 609	162312		162380	
62245609	162313		162381	
62246 609	162314		162382	
62247 609	162315		162383	612
62248 609	162316	610	162384	612
62249 609	162317	610	162385	612
62250 609	162318	610	162386	
62251 609	162319		162387	
62252 609	162320		162388	
62253 609	162321		162389	
62254 609	162322	610	162390	612
609	162323	611	162391	612
62256609	162324		162392	
62257	162325		162393	
62258 609	162326		162394	
609	162327		162395	
62260 609	162328	611	162396	612
62261 609	162329	611	162397	612
62262	162330		162398	
62263 609	162331		162399	
62264609	162332		162400	
609	162333		162401	612
62266 609	162334	611	162402	612
609	162335		162403	612
62268609	162336		162404	
62269 609	162337		162405	
609	162338		162406	
62271 609	162339	611	162407	612
609	162340	611	162408	612
609	162341	611	162409	612
609	162342	611	162410	
62275610	162343		162411	
62276 610	162344		162412	
610	162345	611	162413	
610	162346	611	162414	612
52279 610	162347	611	162415	612
62280 610	162348	611	162416	612
610	100010	611		612
02201 010	102010111111111111111		102-117	
52282 610	162350		162418	
610	162351		162419	
610	162352	611	162420	613
610	162353	611	162421	613
610	162354		162422	
62287610	162355		162423	
52288 610	162356		162424	
32289 610	162357		162425	613
610	162358	611	162426	613
2291610	162359		162427	
S2292610	162360		162428	
52293610	162361		162429	
610	162362		162430	
610	162363	611	162431	613
610	162364	611	162432	613
62297610	162365		162433	
52298 610	162366		162434	
610	162367		162435	
62300 610	162368	611	162436	613
62301 610	162369	611	162437	613
		612	162438	
S2302 610 610 610 610 610 610 610 610 610 610				
62302 610 62303 610	162371		162439	

162000 continued		162528			504
		162529			504
162441		162530			504
162442		162609			504
162443		162632			504
162444		162667			504
62445	613	162676	733	162858	504
62446	613	162684	208	162859	504
62447	613	162685	208	162860	504
62448	613	162686	208	162861	504
62449		162705	726	162862	504
62450		162706			541
162451		162707			541
62452		162708			54
62453		162709			502
62454		162710			502
62455		162711			516
62456	613	162713	737	162883	516
62457	613	162714	737	162890	540
62458	613	162756	544	162904	54 ¹
62459		162758			545
62460		162759			537
62461		162760			537
		162761			
62462					541
62463		162763			541
62464		162773			542
62465		162774	536	162939	542
62466	614	162775	536	162940	541
62467	614	162790	541	162941	542
62468	614	162791	541	162970	54 ¹
62469		162794		162974	535
62470		162795			535
62471		162796		102313	
		162797		163000	
62472				100000	
62473		162798		163053	357
62474		162800			357
62476		162801			666
62477		162802			
62478	614	162804	547		395
62479	614	162806	543		395
62480	614	162808	543		546
62481		162809		163187	356
62482		162810		163188	356
62483		162811		163201	548
		162812	536	163214	29
02 10 1		102012			208
62485		162814			395
62486		162822			395
62487		162823	501		
62488	614	162824	501		395
62489	614	162830	548		395
62490	614	162831	548		395
62491		162832		163292	395
62492		162833		163293	395
				163294	395
62493		162834			395
62494		162838			395
62495		162839			39
62496	614	162840	504		
62497	614	162841	504		395
	779	162842	504		395
62505			504	163300	395
	779			163301	395
62506			504	100001	
62506 62507	779	162844			395
62506	779 779	162844 162845	504	163302	
62506	779 779 779	162844 162845 162846	504 504	163302 163303	395
62506	779 779 779 779	162844 162845 162846 162847	504 504 504	163302 163303 163304	
62506	779 779 779 779	162844		163302 163303 163304 163305	395 395 395
62506	779 779 779 779 520	162844 162845 162846 162847		163302	
62505		162844		163302	395 395 395

163000 continued

103000 continued
163309395
163310395
163311395
163323
163324
163325
163326
163327
163328
163329395
163330
163331395
163332395
163333395
163334395
16337560
163468
163525733
163544780
163545780
163546780
163616707
163617707
163625666
16363036
163675789
163676789
163689657
163691 668
163724792
163725648
163729 285
163763 190
163764190
163765190
163766
163767
163768
163769
163770
163771
163772
163775
163796780
163797780
163798780
163800
163862
163863190
163883707
163884707
163890
163897
163898
163899
163900
163901
163902
163904
163905
163906
163907190
163908
163909
163910
163911 190

163912	190
163913	
163914	
163915	. 190
163917	. 196
163922	29
163948	
163959	. 542
101000	
164000	
164031	. 423
164036	. 733
164040	
164569	
164593	
164594	. 542
164595	. 542
164596	542
164605	
164606	
164609	. 565
164622	. 541
164623	537
164625	
164626	
164628	. 545
164629	. 545
164639	. 548
164640	
164641	
164642	
164643	. 543
164647	. 544
164655	542
164665	
164666	
164668	
164669	. 535
164670	. 535
164671	548
164672	
164679	
164682	
164687	. 548
164689	. 548
164695	
164696	
164700	
164701	. 538
164702	. 538
164703	
164707	
104707	
101700	
164709	. 547
164712	. 547 . 545
	. 547 . 545
164712 164713	. 547 . 545 . 545
164712	. 547 . 545 . 545 . 556
164712	. 547 . 545 . 545 . 556 . 426
164712	. 547 . 545 . 545 . 556 . 426 . 447
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777 . 777
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777 . 777 . 786 . 200
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777 . 777 . 786 . 200 . 200
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777 . 777 . 786 . 200 . 200
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777 . 777 . 786 . 200 . 200 . 200
164712	. 547 . 545 . 545 . 556 . 426 . 447 . 733 . 777 . 777 . 786 . 200 . 200 . 200

164931	 200
164932	 200
164933	 200
164934	 200
164936	 200
164952	 201
164953	 201
164954	 201
164970	 201
164972	 201
164973	 201
164974	 201
164975	 201
164976	 201
164994	 201
101001	 201

164996.....201

64997	201	165686	89	167514	29
64998	201	165687	89	167515	2 [.]
64999		165728		167518	
0 1000		165729		167535	
165000		165731		167538	
100000					
65000	201	165788		167539	
65001		165789		167540	
		165790	89	167541	
65002		165818	301	167563	
65003	201	165820	317	167566	
65004	201	165841		167567	
65012	446				
65023		165842		167568	
		165843	322	167569	
65027		165844	322	167582	29
35041		165845	322	167583	2!
65042	778	165846		167585	
35043	778				
65044	778	165847		167586	
35045		165862		167587	
		165864	400	167588	5 ₄
35046		165865	400	167589	5 ₁
35047	779	165866		167590	
5048	779			167591	
5049		165874	33		
55050		100000		167592	
		166000		167593	55
35051				167594	5
35052		166054		167595	
5078	780	166174	81	167596	
65092	547	166175	322		
35153		166176		167597	
				167598	5
5183		166177		167599	54
5184		166178		167603	5.
5185	393	166196	239	167606	
5257	253	166197	239		
5278		166198		167607	
				167608	5
5295		166199		167609	55
35322		166276		167610	5
5324	668	166286	657	167613	
5325	668	166287	657	167614	
5326		166288	657		
55327		166333		167621	
				167622	5
35328		166334		167623	5
5347	502	166342	588	167624	5
35348	502	166343	588	167625	
5371	517	166945	239		
5372		166950		167626	
		100930		167627	5
5373		167000		167628	5
5407		167000		167629	
5408	94	1070:5	0.55	167630	
5409		167015			
5410		167016	380	167631	
		167047	540	167632	
5411		167048		167633	5
5412				167634	5
5420	94	167050		167635	
5421	94	167122	587		
5456		167261	437	167636	
		167283	373	167637	5
5495		167311		167638	5
5504	387			167639	
5514	316	167326		167641	
5551	57	167360			
5591		167418	35	167642	
		167481	640	167643	5
5653		167506		167644	5
5656	707			167645	
5680	89	167507		167646	
5681		167508			
		167509	290	167647	
5682		167510		167649	5
5683		167511		167651	5
	00	10/311			
35684	89	167512	000	167652	E

167000 continued		167726		168065	
		167727		168098	
67654	541	167729	542	168111	
67655	541	167730	542	168112	35
67656	541	167731	542	168113	35
67657	541	167732	542	168174	536
67658		167733		168205	
67659		167734		168231	
67660		167736		168232	
67662	540	167737	542	168234	657
67663	540	167738	540	168247	542
67664	540	167739	540	168248	541
67665		167740		168249	
67666		167741		168250	
67667		167742		168251	
67671	544	167743	548	168308	
67672	548	167747	539	168309	547
67673	548	167748	539	168310	543
67674		167749		168317	536
67675		167750		168328	
67676		167751		168329	
37677	539	167752	549	168330	547
37679	543	167753	549	168331	547
67680		167754		168343	
37681		167755		168344	
67682		167756		168352	
37683	539	167757	549	168353	541
67684	539	167758	549	168354	541
37685	539	167759	537	168355	541
67686		167760		168358	
67687		167761		168359	
37688		167762	541	168360	
67689	539	167763	541	168362	542
37690	539	167764	542	168363	542
67692		167766		168389	
				168390	
67693		167770			
67694		167771		168391	
67695	539	167772	540	168392	536
67696	539	167773	540	168437	539
37697	539	167774	535	168438	539
67698		167775		168439	
67699		167776		168440	
67700	540	167777	535	168441	537
67701	540	167779	535	168453	755
37702	540	167780	535	168454	755
37703		167781		168455	
37704		167782		168456	
37705		167783		168457	
7706	540	167808	549	168458	75
37707	540	167809	549	168459	75
37708		167853		168460	
67709		167910		168461	
57710	540	167911		168462	
7711	540	167935	707	168463	75
7712	540	167962	352	168464	75
57713		167971		168465	
		167972			
7714				168466	
37715	540	167990	757	168467	75
7716	540	40000		168468	75
37717	540	168000		168469	75!
37718		168019	741	168470	
67719		168020		168492	
37720	540			168493	35
67721		168021		168494	35
57722		168023	741	168495	
		168024	741		
67723		168025		168501	
57724	540			168502	389
67724		168064		168502	

167725......540

168000 continued		169837		170247	
		169838		170248	
68503		169858		170249	
68507	374	169859	419	170250	29
68508	374	169872	705	170251	29
68509	375	169998	380	170252	29
68511		169999		170253	
68512		100000	000	170254	
68513		170000		170255	
		170000	_		
68514		170000	380	170256	
68515	/ 4 1			170257	29
68521	/ 4	170001		170258	29
68522	/ 00	170002		170259	29
68566	655	170003	380	170260	
68567		170010	380	170261	
68584		170011	380	170262	
		170012	380		
68585	075	170013		170263	
68586	070			170264	
68587	070	170049		170265	29
8588	673	170050	229	170266	
68589		170051	441	170267	
68590		170092	689		
	070	170093		170268	
88591	070			170269	
68592	0, 0	170094		170270	29
68593	070	170095		170271	29
68594		170096	689	170272	
68595		170097	689	170272	
68596		170098	689		
	070	170099		170274	
68597	07 0			170275	29
68598		170100		170276	29
68599	0, 0	170105		170277	29
68600	673	170106	705	170278	
68634	437	170147	705		
88635		170190		170279	
		170191		170280	
68637	=			170281	29
68638	—	170196		170282	29
68663	586	170203	542	170283	29
68676	257	170204	542	170284	
68708	707	170207	545	170285	
68710	707	170209	541		
68734		170210		170286	
		170219		170287	
68896				170288	29
68973		170220		170289	29
		170221		170290	
169000		170222	29	170291	
		170223			
69054	511	170224		170292	
69057	00			170293	
69143	E00	170225		170294	
69244	790	170226		170295	29
	700	170227		170296	
69245		170228	29	170297	
69289		170229			
69309	E13	170230		170298	
69332	EOO			170299	
69349	707	170231		170300	29
69501	500	170232		170301	
		170233	29	170302	
69514		170234	29	170303	
39515	272	170235			
69516	272	170236		170304	
69517	070			170305	
69518	070	170237		170306	29
	272	170238		170308	
69519		170239	29	170309	
69520		170240	29		
69540		170241		170311	
69558	വവ			170312	
69583	250	170242		170313	. 546
	410	170243		170314	. 546
	419	170244	20		
		170244	29	170315	546
69590 69752 69836	707	170245		170315 170316	

170000 continued	170563	439	170764	546
TT CCC Continuou	170564	439	170765	546
170317 546	170565	439	170766	546
170318546	170566	439		546
170339549	170567			546
170340 554	170568			546
170341 554	170569			546
170342	170570			546
170343 538	170571			546
170345 538	170572			546
170350 547	170573			546
170351 547	170574			546
170352 547	170575		170776	546
170353 547	170576	439		546
170360 535	170577	439	170778	537
170361 541	170578	439	170779	537
170362 541	170579	439	170780	537
170363 546	170580	439		537
170364 546	170581			537
170365	170582			536
170366546	170624			536
170367547	170658			536
170368547	170663			536
170369 547	170686			536
170371 548	170717			30
170372 549	170718	30	170816	30
170373 549	170720	30	170817	539
170374549	170721	30	170818	539
170375549	170722	30	170819	707
170376549	170723			707
170377	170724			707
170378	170725			707
170379 549				
	170728			707
170380 546	170729			707
170381 546	170730			707
170382546	170731			707
170383 546	170732			707
170384 546	170733	542		705
170385 546	170734	542	170829	705
170386 546	170735	541	170830	705
170387 545	170736	541	170831	705
170388 543	170737	541	170832	705
170389545	170738	541	170833	705
170390 545	170739			705
170391	170740		170835	
17039230	170741			705
17039330	170742			705
17039430	170743			705
17039530	170744			705
17039630	170745			705
17039730	170746			705
17039830	170747			705
17039930	170748	540	170843	705
170400 30	170749	538	170849	705
170428545	170750	538	170850	705
170444 129	170751	535	170851	705
170506 124	170752	535	170852	640
170507117	170753			484
170553	170754			482
170554	170755			757
170555	170756			757
170556	170757			757
170557	170758			757
170558	170759			757
170559439	170760		170861	
170560 439	170761	EAG	170060	691
170300 439	170761			
170561	170762		170863	

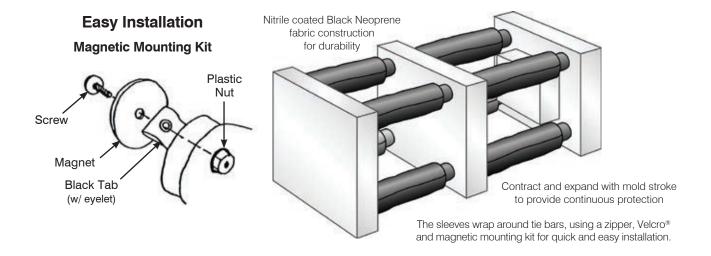
NEW Numbers 173629 758 170000 continued 173630 758 170865 691 167017 618 173631 758 170866 691 171157 669 173632 758 170867......693 171418 222 173666 408 170868......693 171697 223 173667 408 170869 693 171712 223 173668 408 170870 693 171713 223 173669 408 170871 693 171758 424 173670 408 170872.....693 171760 699 173671 408 170873 693 171962 671 173672 408 170874 693 172019 699 173673 408 170875 693 172020 699 173674 408 170876 693 173675 408 170877 693 173676 408 170882 535 172055 699 173677 408 170883 546 172215 414 173678 408 170893 539 172216 414 173679 408 170894 539 173680 408 170895 522 173681 408 172221 414 170896 522 172222 413 173682 408 170897 522 172223 414 173683 408 170898 522 172224 413 173684 408 172225 414 173685 408 172226 413 173686 408 171000 172227 413 173687 408 172231 413 173688 408 171114 641 172233 413 173689 408 171122757 172230 414 173690 408 171132 223 172232 414 173691 408 171133 223 173190 424 173692 408 171134 223 173204 706 173693 408 171135 223 173205 706 173694 409 171136......222 173695 409 173206 706 171137 222 173207 706 173696 409 171138 222 173697 409 173208 706 171139223 173209 706 173698 409 171140 223 173210 706 173699 409 171141 222 173211 706 173700 409 171142 222 173212 706 173701 409 171195 707 173213 706 173702 409 171218 756 173214 706 173703 409 171219 756 173215 706 173704 409 171220 756 173216 706 173705 409 171221 756 173217 706 171222 756 173706 412 173218 706 173707 412 171223 756 173219 706 173709 412 171224 756 173710 412 173220 706 171225 756 173221 706 173712 412 171249 696 173222 706 173713 412 171250 696 173223 706 173788 669 171251 696 173224 706 173790 622 171252 696 173225 706 173864 669 171253 696 173226 706 173865 669 171254 696 173227 706 173866 669 171255 696 173228 706 173867 669 171256 696 173229 706 173871 785 171257......696 173234 455 173872 785 171258 696 173243 153 173873 785 171259 696 173295 785 173874 670 171260 696 173333 452 173875 670 171391 757 173338 452 173877 670 171574 535 173403 671 173878 670 171590 546 173404 671 173881 670 171707 522 173882 670 173443 671 173605 232 173884 670 173883 670 173627 758 173628 758 173885 670

173886	670
173887	670
170000 continu	ued
173888	
173890	
173891	67 ⁻
173892	
173893	
173894	67 ⁻
173896	669
173903	
173904	449
173905	

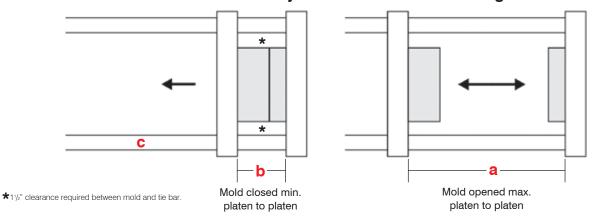
TIE BAR SLEEVES



Keep tie bar grease in / Keep abrasive airborne particles out



Custom Made To Any Tie Bar Diameter And Length



Specify:

opecity.					
a. Mold Open:					_
b. Mold Closed					- OV described
c. Tie Bar Diam					max open length – ox closed length
d. Quantity:					-
Date:	Quantity:	Phone:()		Fax: ()
Name:				Title:	
Company Name:					



Address:

www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone (

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

State:

Custom UniVest® Barrel Insulation Form

Measuring Procedure (in inches):

Use form below

- The hopper is at the rear of the machine.
- Measure parts of the barrel from the operator's side, starting from the rear.
- Measure from face of the hopper flange to first thermocouple – round to closest whole inch and write it down on the form.
- Continue to measure from thermocouple to thermocouple, moving from rear to front.

- The front blanket width will end with the large diameter barrel (the start of the nozzle adapter).
- Measure the circumference of the barrel for each of the widths identified below. Include all obstructions and projections, such as a junction box. Write this in the Circumference box below.
- Divide the circumference by 3.141 to get the barrel outside diameter. This is the I.D. (inside diameter) of the UNIVEST® Barrel Insulation.
- Write the I.D. in the diameter box below.

UNIVEST® is a registered trademark of UniTherm Insulation Systems

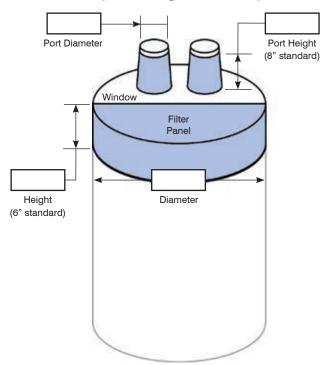
Round to the h	earest Inch:	1/0	1/0	1/6	/C I	/6	
FRONT			11 #44		#2A	440	
	#nA width	!! #5A	#4A width	#3A width	#ZA	#1A width	REAR Hopper Flange
	†	†	†	†	†		
	#nB	#5B	#4B	#3B	#2B	#1B	
	Ш	П	П	П	Ш	II	
	circumference	ce circumferenc	ce circumference	e circumference	circumference	circumference	
	" diameter	diameter	diameter	diameter	diameter	diameter	
	В	rand		oz./ton		Press#	
Injection							
Extrusion							
Blow Mold							
Other							
Date:	Quantity	/: Phor	ne:()		Fax: ()	
Name:				Title:			
Company Nam	e:			Email:			
Address:							



Custom Drum Cover Form

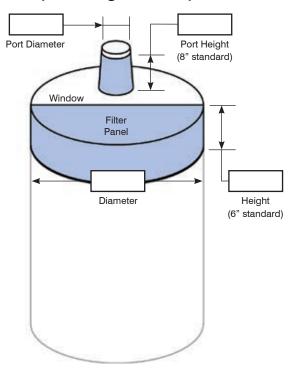
Fill in the appropriate dimension blanks

DP Style (Featuring Two Ports)



DP Style Quantity:

DN Style (Featuring One Port)



DN Style Quantity:

Specify:

1.Color □ Blue or □ Brown

Lead Time required — Call for details

Please enclose a drawing if more custom items are needed.

If you would like your logo silk screened in lieu of the IMS Logo please provide art file (JPEG, EPS or TIFF) — Minimum Order Quantity: 25

Price: \$150 for 1 color / Additional \$25 for PMS color matching / Additional \$6 per location for 2 color print

Contact the IMS Supplies Team at sales@imscompany.com for details.

Date: _____ Quantity: ____ Phone:(____) ____ Fax: (____) ____ Name:_______ Title:______ Company Name: _____ Email: _____

City: _____ State: ____ Zip:____



www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 | 001.888.304.1307 |

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

Custom Gaylord Cover Form

Fill in the appropriate dimension blanks

Negative Pressure - GN Positive Pressure - GP (Used for Withdrawal) (Used for Filling) Port Height Port Height (8" standard) (8" standard) Window Port Diameter Depth (2" standard) Port Diameter (2" standard) Window Filter 10" Height 10" Height GN Style Quantity: GP Style Quantity: ___ Specify: If Filling: 1. How many ports? 1. Blower Size: 2. Location of Ports: 2. Blower Air Output: 3. Other Filling Type: 3. Are you Filling or ■ Withdrawing Material? Please enclose a drawing if more custom items are needed. If you would like your logo silk screened in lieu of the IMS Logo please provide art file (JPEG, EPS or TIFF) — Minimum Order Quantity: 25 Price: \$150 for 1 color / Additional \$25 for PMS color matching / Additional \$6 per location for 2 color print Lead Time required — Call for details Contact the IMS Supplies Team at sales@imscompany.com for details. Date: _____ Quantity: ____ Phone: (____) ____ Fax: (____) ____ Title: Name: Company Name: _____ Email: _____



www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

phone order toll-free (Mexico)

City: _____ State: ____ Zip:_____

tech support toll-free (USA & Canada)

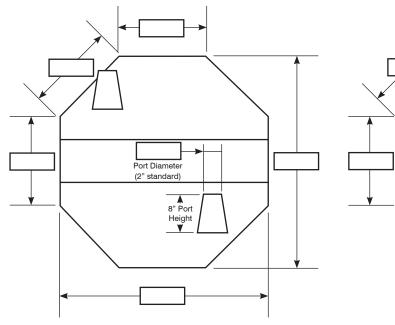
Custom Octagon Gaylord Cover Form

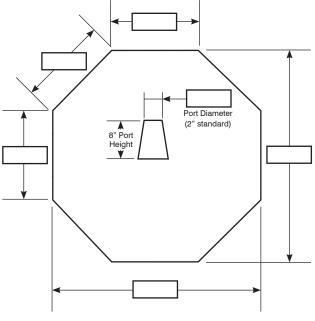
Fill in the appropriate dimension blanks

Negative Pressure

(Used for Withdrawal)

Positive Pressure (Used for Filling)





Quantity:

Quantity:

Features: Two access ports 2" in diameter and 8" tall (standard height). Breathable filter panel and two vinyl windows for quick visual level checks. The skirt is 10" long and has an elastic band and belt with buckle to hold the cover securely in place.

Features: One center port 8" tall (standard height).

Breathable filter panel and two vinyl windows for quick visual level checks. The skirt is 10" long and has an elastic band and belt with buckle to hold the cover securely in place.

Ports can be located elsewhere if needed — please mark the appropriate drawing above if you prefer this option

Date:	Quantity:	Phone: ()		Fax: (_)	
Name:				Title:			
Company Name: _				Email:			
Address:							
City:			State:			Zip:	



phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

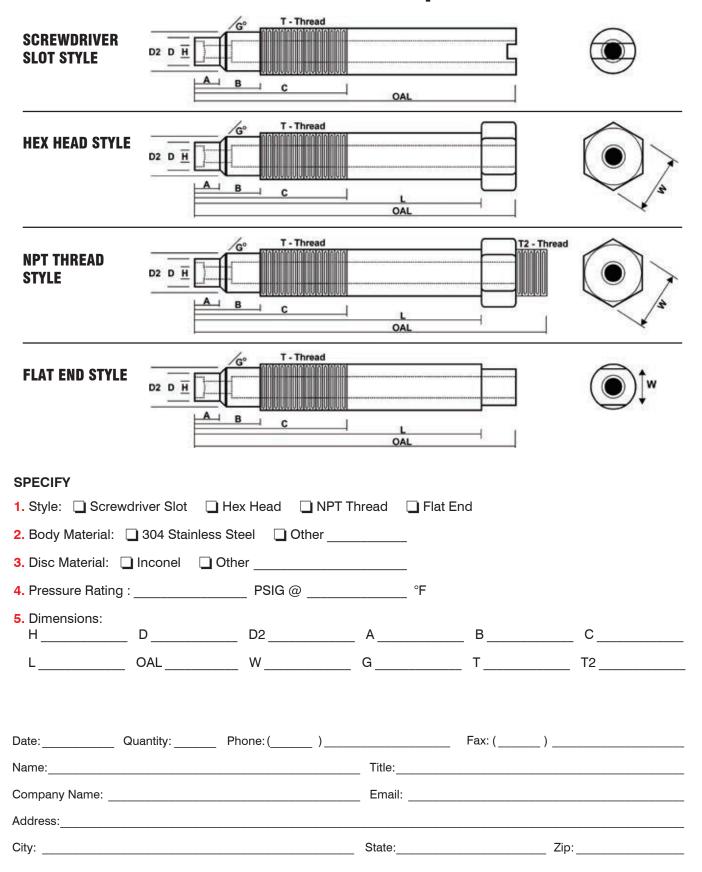
phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)

1.866.467.9001

sales@imscompany.com

Custom Melt Pressure Extruder Rupture Disk Quote Form



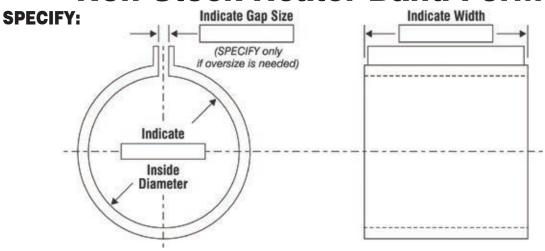


www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Non-Stock Heater Band Form



A good rule of thumb for figuring the maximum available heater band wattage: 3.14 x band I.D. x band width x 35

Quantity:	Electrical Connections/Te	erminations
Mfg. (if known):	Select One Only	
Mfg. Part No. (if known):	NOTE	P
Wattage:	Illustrate location of connection on d	lagrams above.
Voltage:	Flex Leads:	long
Type: Nozzle Band O Plastic Proof O	Flex Leads with Armor Sleeving:	long
Key Lock O High Watt Density O	Flex Leads with Braided Wire Sleeving:	long
Adjustable I.D. O Construction	OR Post Terminals:	
One-Piece o Two-Piece o	Post Terminals with Terminal Box:	
Other (describe):	Post Terminals with Voltraps:	
Insulation	Post Terminals with Terminal Caps:	
Mica Compacted Mineral Ceramic	•••	
Lock-up	Plug Connector (Blade):	
Flange * Strap * Key (Wedge) * Barrel Nut *	Plug Connector (European):	
* Standard Screws Spring Bolts	Expedited 24-48 Hour Service:	
Other (describe):	Special	
	For holes, cut-outs and no indicate size and location on draw	
Date: Quantity: Phone:()_	Fax: ()	
Name:	Title:	
Company Name:	Email:	
Address:		
	State: 7in:	

Custom Strip Heater Form

SPECIFY:	O MICA		OR	O CERAMIC
MICA DIMENSION	S	ļ .		CERAMIC DIMENSIONS
Length (A):	2-½" MIN	11.		Length (A):
Length (B):				Length (B):
Length (C):				Length (C):
Width: ☐ ¾" ☐ 1	" 1-1/2" 2	ı	Width: ☐ 1" ☐ 1	-1/2"
Thickness: 🔲 1/4"	☐ ⁵ / ₁₆ "		Thickness: 🔲 1/4"	□ ⁵ / ₁₆ " □ ³ / ₈ "
Mounting Slot/Hole	e: 🔲 ¼" x ¾" (Sta	andard)	Mounting Slot/Hole	e: 🔲 5/16" x 1/2" (Standard)
	Custo	om		Custom
	Specify	/:		Specify:
Mounting Tabs:		Voltage:	V	Vattage:
☐ Yes ☐ No		_		1
Post Terminals	Styles:	OR	Lead Locat	
- 6	* 1		-	5
(Mica: 3/4" MIN Width) (Ceran	nic: 1" MIN Width)			" MIN Width) 1" MIN Width)
-	2 🗀 2		-	
(Mica: 1-1/2" MIN Width) (Ceram	ic: 1-1/2" MIN Width)		(Mica: 1" MIN Width) (0	Ceramic: 1-1/2" MIN Width)
6	3			ard • Other / Specify:
(Mica: 1" MIN Width) (Ceram	ic. 1" MINI Width)	OPTIONS:		☐ Dual voltage
(wica: 1 Willy Width) (Octain	ic. I will width	Stainless steel		Specify:
	2 □ 4	☐ Flexible armor☐ Strain relief bra		☐ Grounding stud
		_	te location on drawing)	Other
(Mica: 2" MIN Width) (Ceramic	: 1-1/2" MIN Width)	Appliance pins		Specify:
Date: G)antituu D	honor()	E.	ax: ()
Address:				
City:			State:	Zip:



phone order toll-free (USA & Canada) 1.800.537.5375

order toll-free (USA & Canada) phone order toll-free (Mexico)

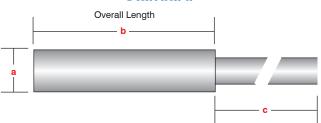
888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

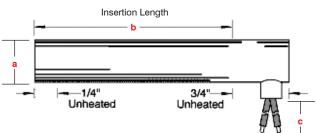
Non-Stock Cartridge Heaters

SPECIFY:

Standard Overall Length







a) Outside Diameter:
h) Overall or Insertion Length:
b) Overall or Insertion Length:
c) Lead Length:
Lead Type:
(Standard, stainless steel braided and armored available)

Voltage:

Wattage:
Built-in Type J Thermocouple?
Is Heater for an Internally Heated Nozzle?
Maximum Use Temperature: ° F
24 49 Hour Evandita Carvina? DI Van DI No

If the heater you need isn't in stock, We'll have it made And then get it to you in just

expedite charges apply

NOTE: In the manufacture of non-stock products, it is necessary to allow for losses in production. We reserve the right to ship the following variations in quantities.

Quantity Ordered	Shipping Variations
1-5	No variation
6-10	+/- 1 unit
11-25	+/- 2 units
26-50	+/- 3 units
51-75	+/- 4 units
76-99	+/- 5 units
100 +	+/- 5 Percent

Date:	Quantity:	Phone:()			Fax: (_)
Name:				Title:		
Company Name:				Email:		
Address:						
City:			State:			Zip:



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

Non-Stock Spring Adjustable Immersion Thermocouples

SPECIFY:	R		2" S	Split with Spa	
A	name of the same o	- manuall	C	(shown	
	THE SHAPE WITH	to amount	×××5 5×5	×<	
	D				TIC
'			— Е ———		
Thermocoup	le Tyne: 🗀 .l	<u></u>	(□∩+	hor	
Junction:		Grounded			
Conductor W			Stranded	ч	
	ng O.D. (NOTE:)	
Tip O.D.	Spring O	•	nodic opinig 0.b	•)	
.125"	.203"				
☐ .128°	.263"				
☐ .250"	.324"				
_	.5⊒ . Style: □ ½ ₁₆ "	I.D. Single Slot	(standard)	□ 15 mn	n I.D. Dual Slot
_, , ,		nm I.D. Slot	(0.01.10.01.0.)		e Seat Indicating
	_	nm O.D. Pin			, c
C) Lead Type:	_		☐ Stainless Ste	eel Braid	☐ Stainless Steel Armor
D) Spring Leng					_
	th with Lead Wir				
				ale Plug	☐ Mini Male Plug
	☐ 2" Split, 1/4" S	Stripped	Standard Fe	male Jack	☐ Mini Female Jack
	2" Split with	Spade Lugs	2" Split with	1/4" Female [Disconnects
Options:	☐ Mating Conne	ctor 🔲	Cable Clamp		Box Connector
lf you h	nave any questio	ns, contact the	IMS Supplies T	eam at sale	es@imscompany.com
		- . (_	
					x: ()
Company Name:			Email:	·	
Address:					
City:			State:		Zip:



Non-Stock Threaded Nozzle Thermocouples

SPECIFY:				2" Split	with Spade Lugs F (shown)
B	Spring	h	E KIOOOOOO		
⊢ C −			_ D		
Thermocouple Ty	/pe: ☐J	□K	☐ Other		
Junction:		_	 ☐ Ungrounded		
Conductor Wire:	☐ Solid	☐ Stra	-		
A) Thread Size	B) Tip O.D.	C) Thread Leng	gth (NOTE: Thread	d Size will i	ndicate Tip O.D. and Thread Length)
☐ ½"-28	³⁄16"	³ /8"			
□ ³ ⁄8"-24	1/4"	1/2"			
☐ 6mm X 1mm	³⁄16"	10mm			
☐ 8mm X 1.25mm	1/4"	10mm			
D) Overall Length w	ith Lead Wire Terr	mination:			
E) Lead Type:	Fiberglass Insulat	tion	☐ Stainless Steel	Braid	☐ Stainless Steel Armor
F) Terminations:	Leads Not Stripp	ed	☐ Standard Male	Plug	☐ Mini Male Plug
C	2" Split, ¼" Strip	ped	Standard Female	ale Jack	☐ Mini Female Jack
C	2" Split with Spa	de Lugs	2" Split with 1/4	" Female D	Disconnects
Options:	ating Connector	🔲 Cable	e Clamp	Box	Connector
If you	have any questio	ns, contact the	e IMS Supplies Te	am at sale	s@imscompany.com
Name:			Title:_		Fax: ()
Address:					
City:			State:		7in:



Non-Stock Cartridge Type Thermocouple

C	D	E	C	ΙF	V.
J	Г	6	v	ш	Ti

		_ (stri	ads standard pped 1/4")
	A —	c	
Thermocouple	Туре: 🔲 Ј 🔲 К 🔲 С	Other	
Junction:	Grounded 🔲 Ungrounded	d	
A) Sheath Len	gth:		
B) Sheath Diar	neter:		
C) Lead Lengt	h:		
D) Lead Type:	☐ Stainless Steel Braid ☐	Stainless Steel Armor	☐ Other
E) Termination	s: Leads Not Stripped		-
	□ 2" Split, ¼" Stripped□ 2" Split with Spade Lugs		ack
Options:	☐ Mating Connector	☐ Cable Clamp	■ Box Connector
lf you h	ave any questions, contact	the IMS Supplies Tea	m at sales@imscompany.com
Date:	Quantity: Phone:()	Fax: ()
Name:		Title:	
Company Name: _		Email:	
Address:			
City:		State:	Zip:

Custom Mold and Cable Checkers Form SPECIFY:

- 1. ☐ MoldXChecker™ ☐ CableXChecker™ 2. Single Latch Double Latch (Connector Hood)
- 3. Common Connector Styles:



















6 HBS - Female

6 HBS - Male







Round Military Style - Female



Round Military Style - Male



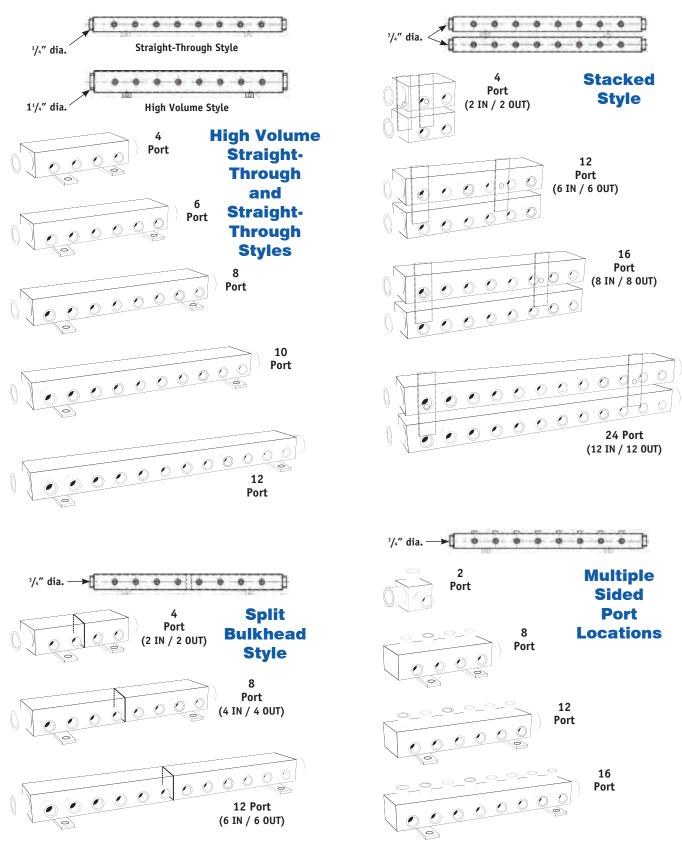
Round Military Style - Female

64 HD - Male 64 HD - Female

Date:	Quantity:	Phone:()		Fax: ()
Name:			Title:	
Company Name: _			Email:	
Address:				
City:			State:	Zip:



Manifold Styles



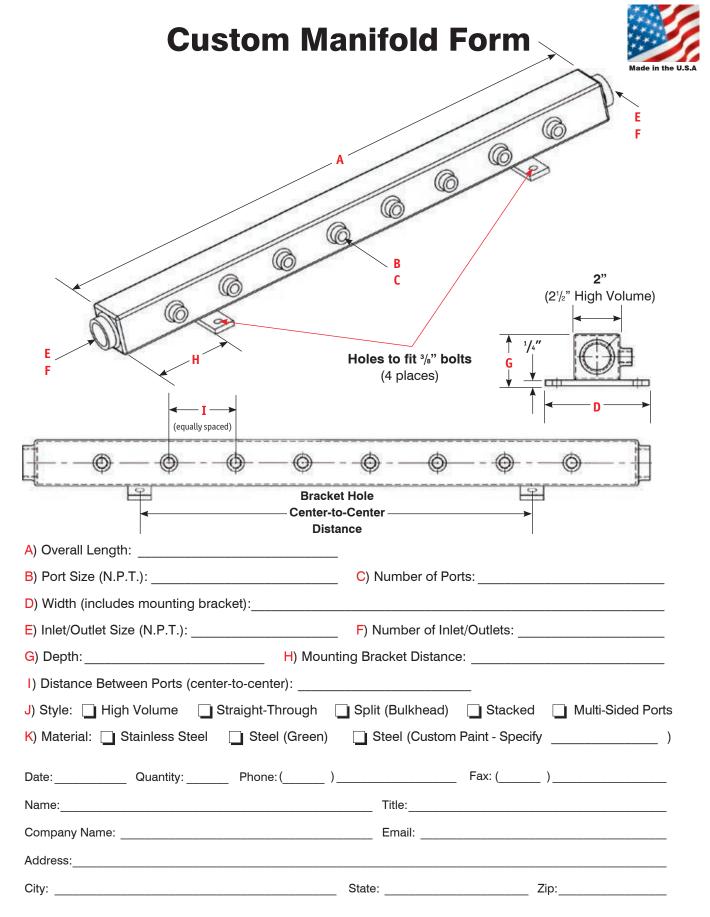


phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com





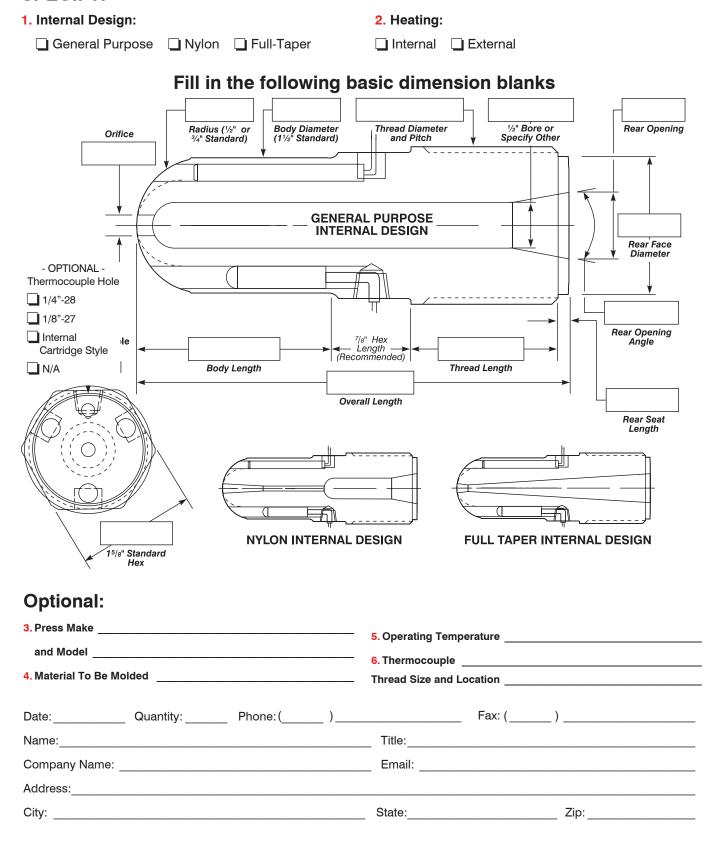
www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 | 001.888.304.1307 |

tech support toll-free (USA & Canada) 1.866.467.9001

Custom One-Piece Nozzle Form

SPECIFY:



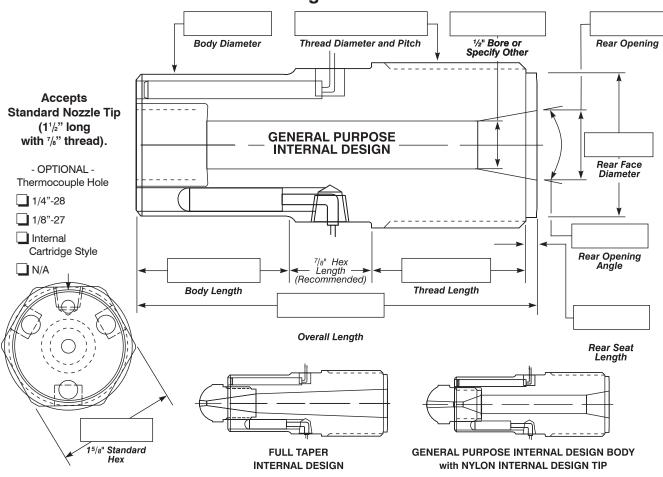


Custom Removable Tip Nozzle Form

SPECIFY:

1. Internal Design:			2. Heating:		
General Purpose	☐ Nylon	☐ Full-Taper	🔲 Internal	External	

Fill in the following basic dimension blanks



Optional:

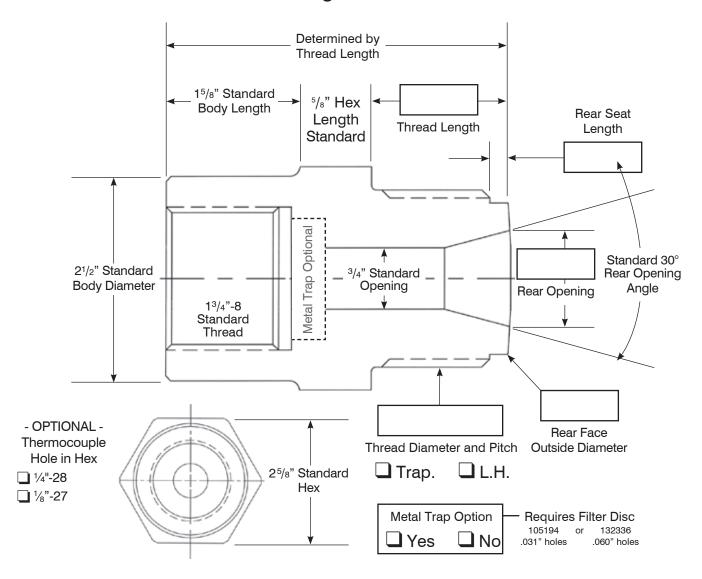
3. Press Make				5 Onerating Temperature			
and Model			o. operating remperature				
				_ Thread Size and Location			
Date:	Quantity:	Phone: ()		Fax: ()	
Name:				Title:			
Company Name	:						
Address:							
						Zip:	



Custom Nozzle Thread Adapter Form

Converts any thread to industry standard 13/4"-8

Fill in the following basic dimension blanks



Required:

1. Press Make				and Model		
Date:	Quantity:	Phone: ()		Fax: ()	
Name:				Title:		
Company Name: _				Email:		
Address:						
City:				State:		Zip:



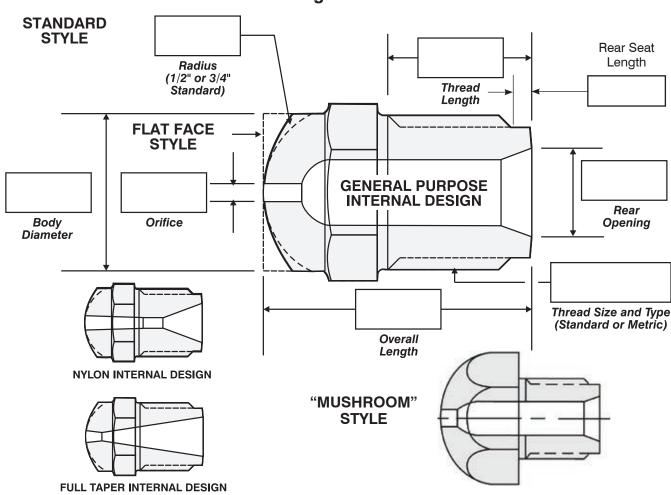
Custom Nozzle Tip Form



SPECIFY:

1. External Style of Nozzle Tip:	2. Internal Design of Nozzle Tip:
☐ Standard ☐ "Mushroom" ☐ Flat Face*	🔲 General Purpose 🔲 Nylon 🔲 Full-Taper
*Diameter (if other than standard)	

Fill in the following basic dimension blanks



Optional:

3. Material To Be Molded			4. Operating Temp	4. Operating Temperature			
Date:	Quantity:	Phone: ()		Fax: ()		
Name:			Title:				
Company Name:			Email:				
Address:							
City:			State:		Zip:		



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)

1.866.467.9001

sales@imscompany.com

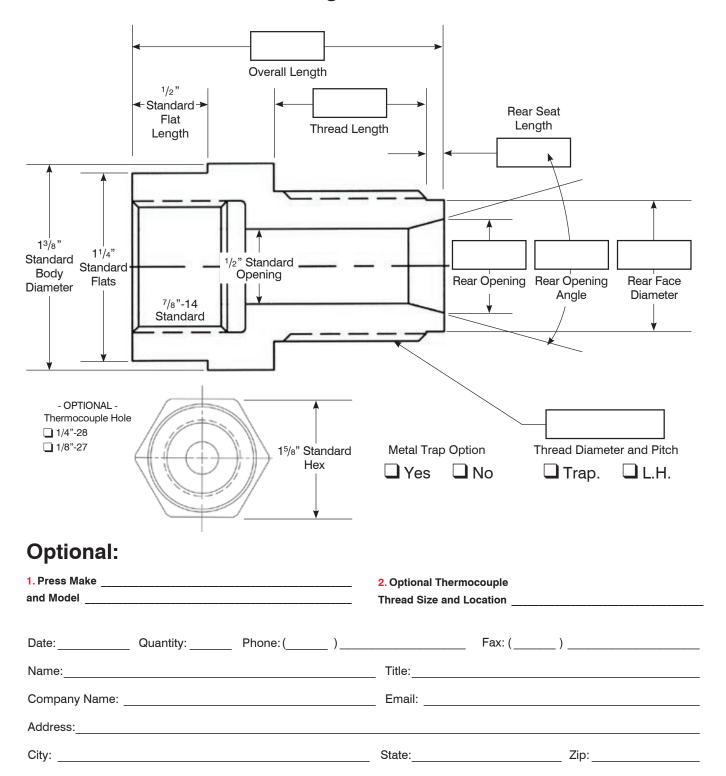
897



Custom Nozzle Tip Thread Adapter Form

Converts any thread to industry standard 1/8"-14

Fill in the following basic dimension blanks





www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900

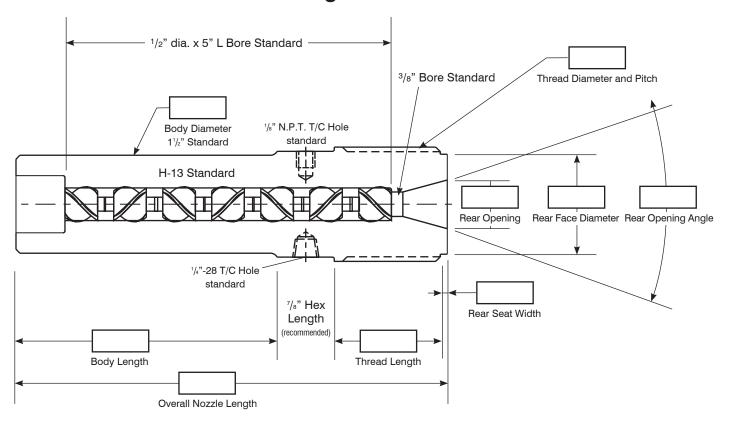
001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

Non-Stock In-Line Color Mixing Nozzle Body Form

Fill in the following basic dimension blanks



Specify:

NOTE: External heating standard

- 1. Press Make and Model ___
- 2. Thermocouple Thread Size and Location _____

Date: Quantity: Phone:()______ Fax: (_____) _____ _____ Title:_____ Name: Company Name: _____ Email: _____

Address:

City: _____ State: ____ Zip: ____



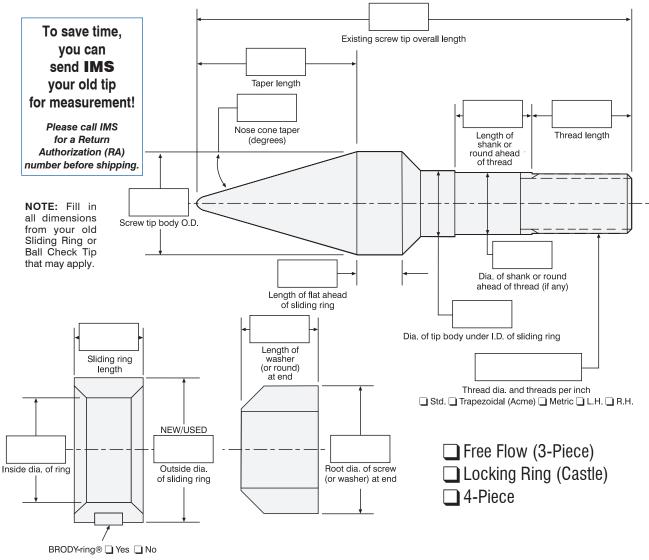
www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

sales@imscompany.com

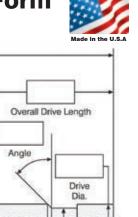
Made-to-order Screw Tip Form

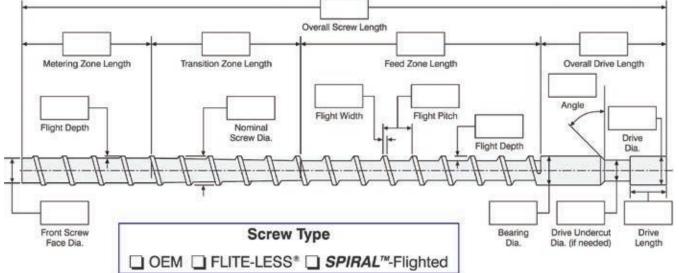


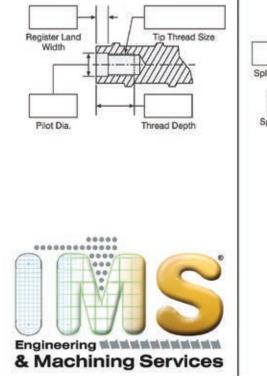
(Please give diameters and lengths of sliding ring valves in decimals only)

Specify:			3. Operating Temperature				
1. Press Make		4. Inside Diameter of Barrel in Ring Travel Zone:					
				NEW			
				USED			
and Year							
2. Material to be	Molded						
Date:	Quantity:	Phone: ()		Fax: ())	
Name:				Title:			
Company Name: _				Email:			
Address:							
City:				State:		Zip:	

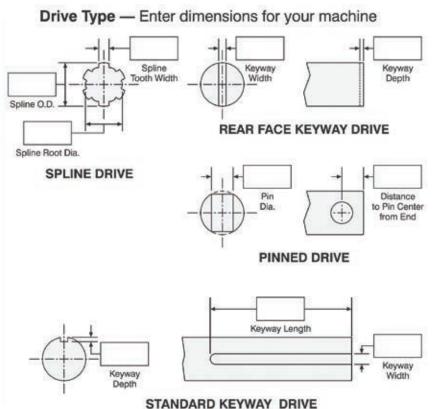
Non-Stock or Custom Reciprocating Screw Form







Screw Face Detail



— Page 1 of 2 —

See next page to complete Injection Screw Form. See page 903 to complete Extrusion Screw Form.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Injection Screw Design Form



SPECIFY:	Made in the U.S.A
Intent: Improve Process In New Project Intent:	crew Repair
1. Machine Information:	5. Existing Equipment Information:
OEM: Type:	Mixing Device: ☐ Yes ☐ No ☐ (Located) Transition ☐ Metering
Machine Age:	Describe Mixing Device:
Nominal Screw Size: in / mm	6. Process Information:
MAX. Screw Stroke: in / mm Drive: Electric Hydraulic	Shot Size: oz. / grams Existing Recovery Time: SEC
MAX. Screw RPM / KPM: in / mm MAX Torque: FT. LB. NM	Existing RPM: Backpressure: PSI
2. Resin Information:	Screw Stroke: in / mm Recovery Time Target: SEC
Type: Material No: MFG:	Nozzle Shut Off Available:
MFI:	What Products are Molded:
3. Existing Problems: Recovery Quality Corrosion Temperature Wear Of Screw Flights Screw Root Screw Tip Please be specific: 4. Expectation: Recovery: OZs per SEC / Grams per SEC Dispersion: (Mixing Device is Mandatory)	Recognize and Understand the Situation:
Change of MAX. Shot Size Required:	
Date: Quantity: Phone: ()	Fax: ()
Name:	_ Title:
Company Name:	_ Email:
Address:	
	e: Zip:



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

ax order toll-free (USA & Canada) p

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Extrusion Screw Design Form



1. Machine Information:	5. Existing Equipment Information:
Machine Information:	Mixing Device: Yes No (Located) Transition Metering Type Mixing Devices: Maddock Short Barrier Helical Pins X201 Slotted Rings Blister Ring Long Barrier Straight Pins Other Compression Ratio: :1 Screw Meter Depth: No. of Stages: Vented Barrel: Yes No What Gasses: Vent Vacuum: Yes No Injection Ports Used: Yes No What is Injected: Grooved Feed Machine: Yes No Number of Grooves: 6. Process Information: Existing Rate: LBS/HR @ RPM Existing Melt Temp: Temp Measured by: No. of Barrel Zones: Machine Temp Settings from Feed: Products Extruded: 7. State Any Other Information That May Help to Recognize and Understand the Situation:
4. Expectation: Rate: LBS/HR Melt Temp: °F or ° C Color Mix: Please Explain:	
Date: Quantity: Phone: ()	Fax: ()
Name:	Title:
Company Name:	Email:
Address:	
City: St	ate: Zip:



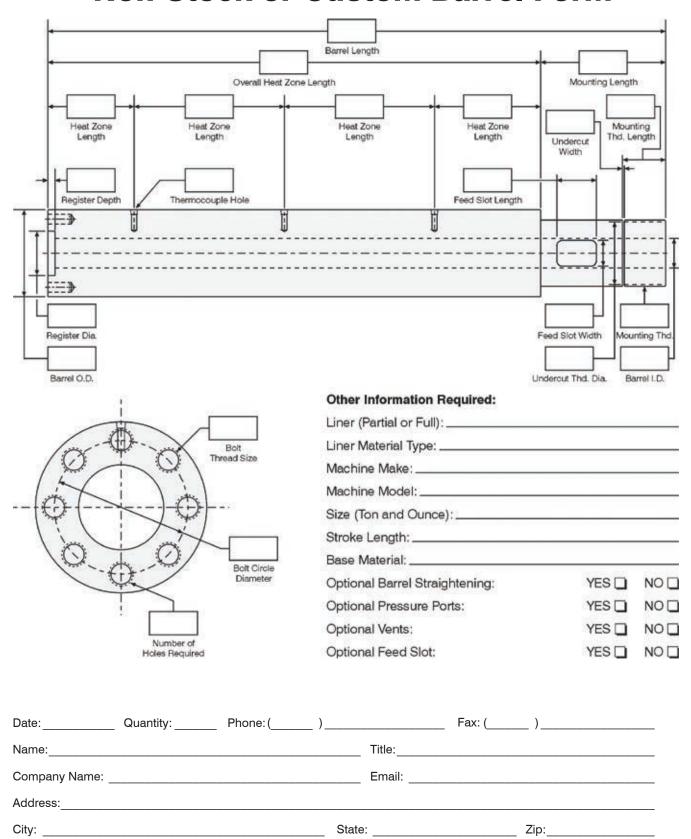
phone order toll-free (USA & Canada) 1.800.537.5375

order toll-free (USA & Canada) phone order toll-free (Mexico)

.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Non-Stock or Custom Barrel Form



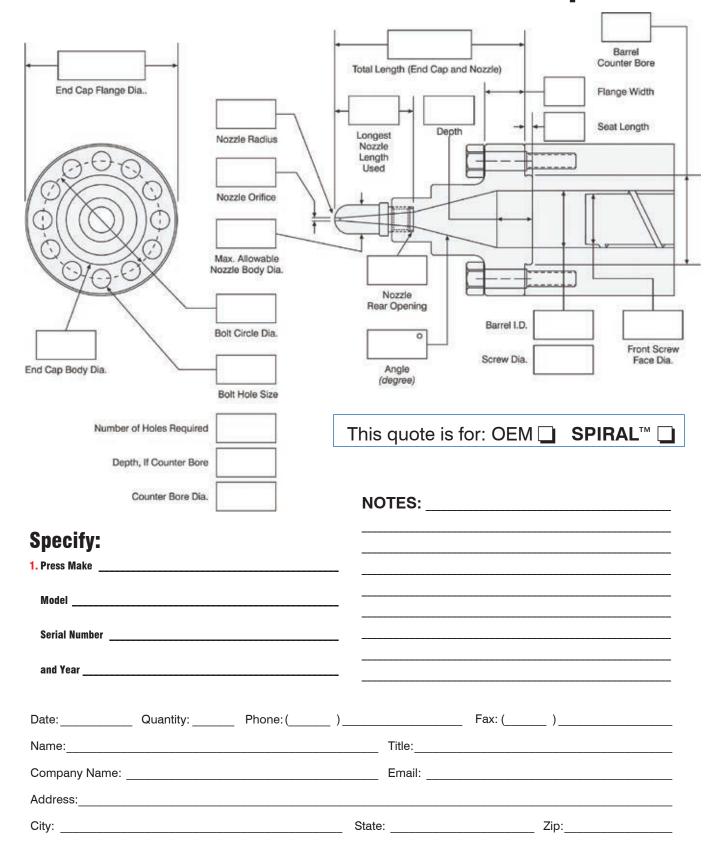


www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Non-Stock or Custom Front End Cap Form





www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

IMS Heavy Duty Mobile Storage Hoppers Quote Form

Specify: 1. Quantity: _								
2. Capacity:	☐ 70 ☐ 1,78	00 lbs / 20 50 lbs / 50	cu ft cu ft	<u> </u>	,050 lbs / ,100 lbs /	30 cu ft 60 cu ft	☐ 1,400 lbs	/ 40 cu ft
3. Slope Angle):	□ 45°	□ 60°					
4. Vacuum Por	ts (4)	☐ Yes	☐ No					
5. Covers (No Hopper Cove Hopper Cove	er – one er – one	piece piece with		е		Item # 143851 107918 107904	Unit Price \$193.00 \$320.00 \$199.00	
6. Slide Gates 6" 6" 8" 10" NOTE: Hoppers			,	n't hav	e vacuum p	143871 143872 143873 ports	Inquire Inquire Inquire	
7. Distribution	Box for	vacuum r	emoval:					
	1.5"	<u></u> 2"	<u></u> 2		□ 3"	4 "	\$260	Inc.
	1.5" 1.5"	☐ 2" ☐ 2"	□ 2 □ 2		☐ 3" ☐ 3"	□ 4"	\$317 \$356	
0110163	1.5						ψυσυ	
8. Distribution 1.5" \$110 NOTE: One prob 9. Caster Pack	2" e require	\$118	2.5 "	\$151	-	\$205	4" \$269 \$461.00	
	_						·	
10. Paints/Coa	-	r				143878	\$226.00	
☐ Epoxy coat in			ear)			143877	\$226.00	
Paint outside			,			143870	\$298.00	
11. Misc.								
4-way fork-lif	t pockets	s (2-way S	TANDARD)		142836	Inquire	
Pallet Jack C						143854	Inquire	
Push Bar (fo			installed)			143853	\$179.00	
52" high Disc	-	stand				107859	\$2,133.00	
Loading PlatGrate Magne						107889 143852	\$Inquire \$532.00	
☐ View Window						142837	\$Inquire	
☐ View Window		de				143876	\$355.00	
Removable B	•					143876	\$522.00	
Lexan Card I	-					158382	\$62.00	
Date:	Qu	antity:	Pho	ne:(_)_			Fax: ()
Name:						Title	e:	
Company Name	e:							
Address:								
City:						State	ə:	Zip:



www.imscompany.com

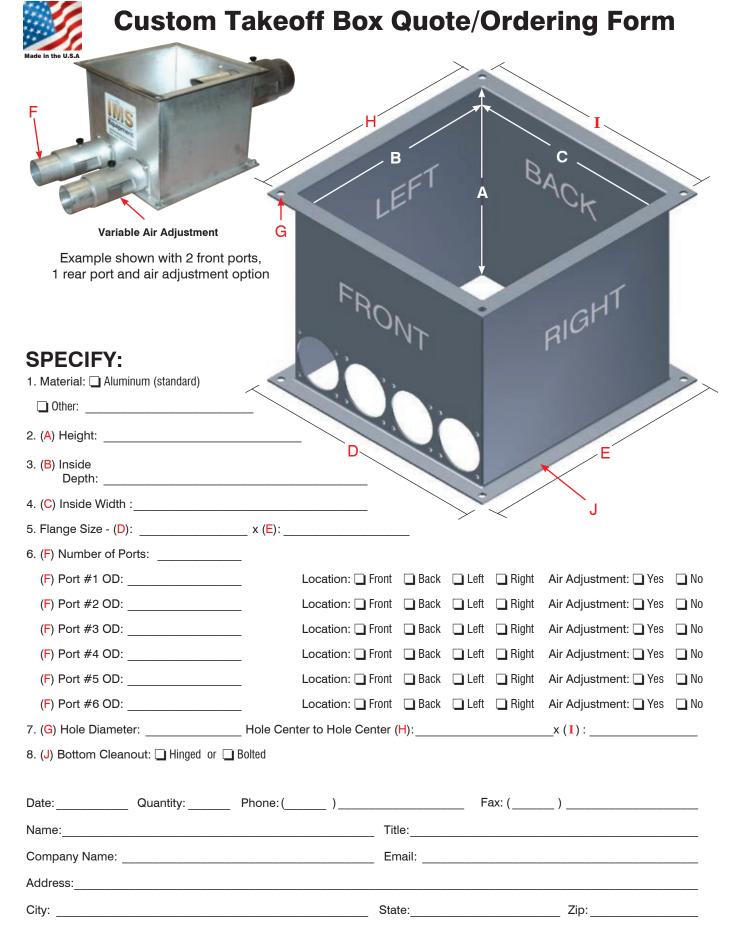
phone order toll-free (USA & Canada) 1.800.537.5375

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

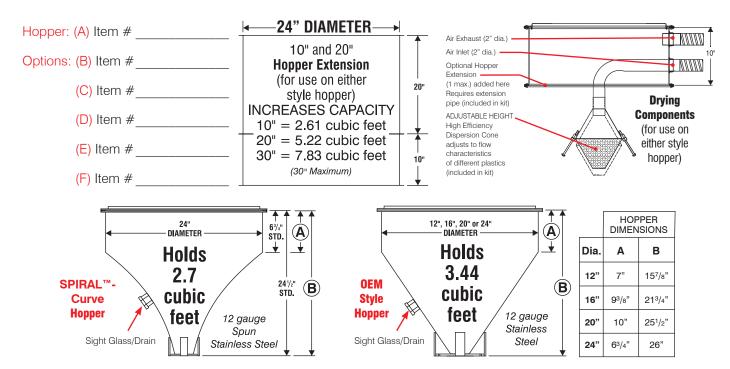
IMS Heavy Duty Surge Bins Quote/Ordering Form Specify:

1. Quantity:						
2. Capacity:	1,008 lbs / 29 cu	-			96 lbs / 206 d	_ `
	1,624 lbs / 46 cu	-			08 lbs / 229 d	_ `
	2,408 lbs / 69 cu				04 lbs / 274 d	
3. Slope Angle:	3,192 lbs /91 cu	ft	/ 182 cu ft	□ 11,	200 lbs / 320	Cu ft
		lid door STANDARD))- [oader Cut (Out for Cove	ar -
,	er (Split ½, ½ design)		')	143879	\$457.00	
Gate & Drain	on with wheel on (for 45° bins) on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 60° bins-butterfly on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins) on (for 45° bins-butterfly on (for 60° bins-butterf	y)		143880 143881 143882 143883 143884 143885	\$890.00 \$399.00 \$526.00 \$526.00 \$619.00 \$619.00 \$243 \$288 \$325 \$649 \$783	(A) Loader Cut Out Dia: (B) Mounting Hole Dia:
☐ 1.5" \$110 NOTE : One	2" \$118 D	distribution box hole	ox): \$205	4 " \$26 9	9	(C) Number of Mounting Holes: (D) Mounting Hole Pattern:
8. Indicator Pa	anel (Number of Bins	•	4 \$1,290			
9. Paints/Coati	_					
	coat inside of hoppe	, ,		143891	\$658.00	
		r (84" x 84" or more)		143892	\$885.00	
Paint outside	e (custom color)			143870	\$298.00	
10. Misc.						
_	o Floor Clearance (20	,		143888	\$585.00	
_	o Floor Clearance (20	,		143889	\$762.00	
_	le bin (replaces cove	r)		143893	\$837.00	
☐ Hatchway D				143886	\$108.00	
_	ew Windows (2 stand	,		142837	\$Inquire	
	dicator (paddle blade	• ,		147688	\$396.00	
_	ndicator (paddle blad	le style)		147689 158380	\$396.00	
Level indicat	or Flange (extra)			130300	Inquire	
		Phone: (()
Name:				Title:		
Company Name	e:			Email:		
Address:						
City:				State:		Zip:

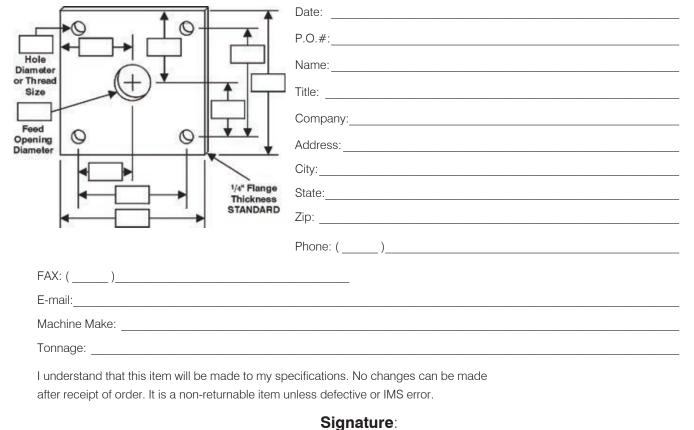


email: sales@imscompany.com fax: 1 888 288 6900

IMS Stainless Steel Hoppers and Accessories



Custom Mounting Flange Dimensions (Specify)



Note: Other flange configurations will be promptly quoted from your sketch or blueprint.



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone 1.888.288.6900 001.8

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Custom Volumetric Feeder Quote Form

PRESS INFORMATION

1. Press Number (optional):	
2. Press Manufacturer (optional):	3. Press Model (optional):
4. Press Tonnage:	
5. Press Shot Weight Range (min to max) :	including runner
6. Screw Recovery Times (min to max):	
7. Preferred Base Unit Size: 🔲 8" X 8" or 🔲 10" x 10"	
NOTE: Feeders are normally shipped with blank, aluminum ad Predrilling can be done at the plant for a reasonable fee	
	S: SINGLE OR DUAL FEED
Auger #1	Auger #2 (for dual-feed units)
1. Additive Type (regrind, color, etc.)	
2. Additive % Range (min to max)	
3. Preferred Auger Size (if known)	
NOTE: Auger size is selected to match feed rate. Each auger s For large changes in feed rate, a larger or smaller auger	
NOTE: Augers normally employ a square pitch (1/2" auger has 1 Custom pitches can be manufactured to accomodate the	
ТҮРІ	CAL OPTIONS
Control Panel Options (for dual-feed units): 🔲 dual-control pa	nel
☐ Low Speed Motor (18 RPM, for very low feed rates)	
☐ Intermixer (3, 5 or 10 pound available)	
☐ 1.25 cu ft Hopper (40 pound capacity @ 35 lbs/cu ft) NOTE	E: Standard hopper is 0.5 cu ft 17.5 lbs @ 35 lbs/cu ft
☐ Drying Hopper (specify size)	
☐ Offset Hopper Adapter (to provide additional clearance arou	nd machine's hopper.)
Date: Quantity: Phone:()	Fax: ()
Name:	Title:
Company Name:	Email:
Address:	
City:	State: Zip:



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

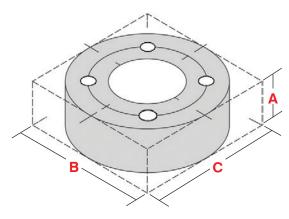
phone order toll-free (Mexico)
001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Combination Hopper Lid and Loader Stand Request for Quote Form

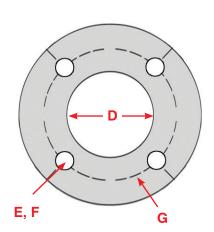
- Seals hopper from dirt
- Protects loader
- Keeps loaders upright for maintenance on bench or floor
- Custom made, quickly and affordably
- Square or round hoppers
- · Aluminum or stainless steel standard





Hopper Dimensions Needed

- A: Vertical space required below your loader flange when the dump flap is fully extended, PLUS 1" clearance.
- B: If your hopper is Round or Square, measure the OUTSIDE of your hopper at the widest point (width including the lip), PLUS 1" clearance.
- C: For Rectangular hoppers, also measure the outside of the hopper at the longest point (length including the lip), PLUS 1" clearance.



SPECIFY:

1. Materials T. Deinted Cteel / Colors	5. (D) Loader Cut Out Diameter:				
1. Material: Painted Steel / Color: Aluminum Stainless Steel	6. (E) Mounting Hole Diameter:				
2. (A) Height:	7. (F) Number of Mounting Holes:				
3. (B) Diameter/Width:	8. (G) Diameter of Lid at the				
4. (C) Length (Rectangular Only) :	Center of Mounting Holes:				
Date: Quantity: Phone:()	Fax: ()				
Name:	Title:				
Company Name:	Email:				
Address:					
City:	State: 7in:				



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

Custom Drying Oven Quote Form

			Cross Section:
Condition of Pieces: Wet	Ory 🔲 Oily 🔲 Other (explain under comments)
3. FLAMMABLE SOLVENTS OR VAP	ORS INVOLVED IN PR	OCESS	
Type:	Amount	:: gallons	per batch (or per hour of continuous processing)
4. INERT ATMOSPHERE (if required)	: 🔲 Nitrogen 🔲 Argo	n 🔲 Other (explain und	er comments)
6. TEMPERATURE			
Operating Temperature:		°F Maximum Temp	erature:°i
Required Dwell Time at Operating This information must be supplied			r parts to heat up; assume preheated equipment, veyor or rotary hearth.
Required Uniformity within Worksp	ace:		
6. MATERIAL HANDLING			
Batch: Shelf Tray Bas	ket □l Fivture □l Oth	ar (avalaia vadar aanama	
Daten. Gonen Gray Gods	Ket Trixture Total	er (expiain under comme	ints)
Quantity of Parts:	per Batch or F	Production Rate	nveyor 🔲 Other (explain under comments)
Quantity of Parts: Continuous: Belt Conveyor	per Batch or F	Production Rate ler Hearth 🔲 Chain Cor	,
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone:	per Batch or F Rotary Hearth □ Rol	Production Rate ler Hearth	nveyor 🔲 Other (explain under comments)
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone: Pass Line:	per Batch or F Rotary Hearth □ Rol	Production Rate Ier Hearth	nveyor Other (explain under comments) one:
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone: Pass Line:	per Batch or F Rotary Hearth □ Rol	Production Rate Ier Hearth	nveyor
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone: Pass Line: Length Cooling Zone:	per Batch or F Rotary Hearth Rol #4 brushed sta HEPA fresh air automation dep	Production Rate Iler Hearth	one: from Cooling Zone: door at both ends for pass through alarms for filters/temperature motorized intake and exhaust dampers
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone: Pass Line: Length Cooling Zone: T. CLEAN ROOM/PHARMACEUTICA backwelded seams door locks/interlock pressurizing blower one pass granulation drying	per Batch or F Rotary Hearth Rol #4 brushed sta HEPA fresh air automation dep	Production Rate Iler Hearth	one: from Cooling Zone: door at both ends for pass through alarms for filters/temperature motorized intake and exhaust dampers
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone: Pass Line: Length Cooling Zone: T. CLEAN ROOM/PHARMACEUTICA backwelded seams door locks/interlock pressurizing blower one pass granulation drying 8. DESIGN	per Batch or F Rotary Hearth Rol #4 brushed sta HEPA fresh air automation der	Production Rate ler Hearth	one: from Cooling Zone: door at both ends for pass through alarms for filters/temperature motorized intake and exhaust dampers
Quantity of Parts: Continuous: Belt Conveyor Length Load Zone: Pass Line: Length Cooling Zone: Length Cooling Zone: 7. CLEAN ROOM/PHARMACEUTICA backwelded seams door locks/interlock pressurizing blower one pass granulation drying 8. DESIGN Type of Equipment::	per Batch or F Rotary Hearth Rol #4 brushed sta HEPA fresh air automation dep front welded gr	Production Rate ler Hearth	one: Other (explain under comments) one: of from Cooling Zone: of of door at both ends for pass through alarms for filters/temperature motorized intake and exhaust dampers interior corners rd Model: Deep x High

Page 1 of 2



Custom Drying Oven Quote Form (continued)

9. SPECIFICATIONS APPLICABLE: Condition of Pieces: JIC FM IRI MIL	. Military Specification #	
10. SERVICES Electrical Service: Vo	lts 🔲 1 or 🔲 3 Phase 🔲 50 c	or 🔲 60 Hz
To Be Heated By: 🔲 Electric 🔲 Natural Gas 🔲 P	ropane 🔲 Steam 🔲 Other (explai	n under comments)
11. EQUIPMENT TO BE INCLUDED IN BASE PRICE:		
12. EQUIPMENT TO BE INCLUDED AS OPTIONS:		
13. BUILDING DATA Smallest Opening through which unit must pass: Don't forget doorways, elevators and existing machi	Wide :	K High
Floor space Limitations:	Wide x	Deep
Headroom Limitations:		
Floor or Elevator Load Limitations:		
14. ADDITIONAL COMMENTS OR EXPLANATIONS: _		
Date: Quantity: Phone:() F	ax: ()
Name:		
Company Name:		
Address:		
City:	State:	Zip:

Page 2 of 2



www.imscompany.com

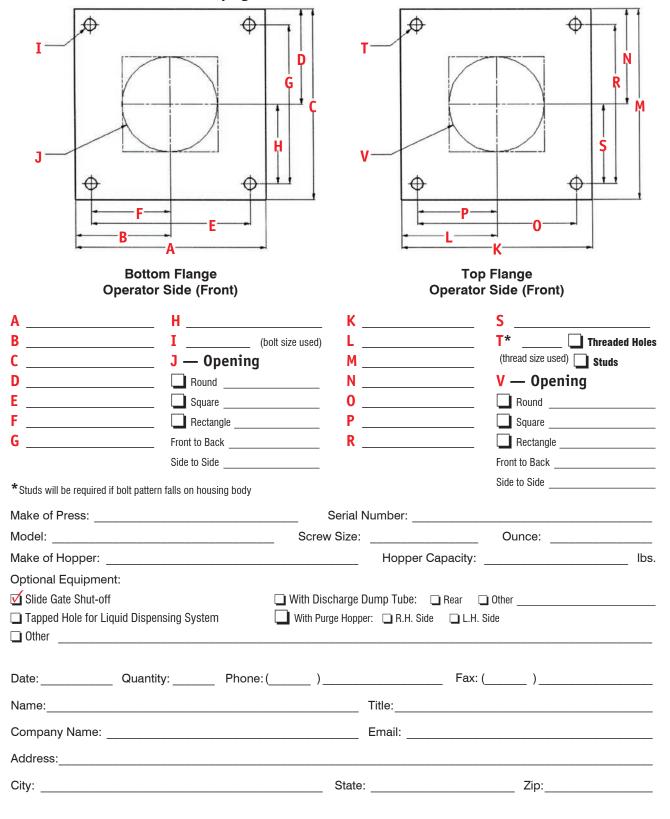
phone order toll-free (USA & Canada) 1.800.537.5375

order toll-free (USA & Canada) phone order toll-free (Mexico)
888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Drawer Magnet Housing Flange/Accessory Form SPECIFY:

See next page for Isometric/ 3 Dimensional View

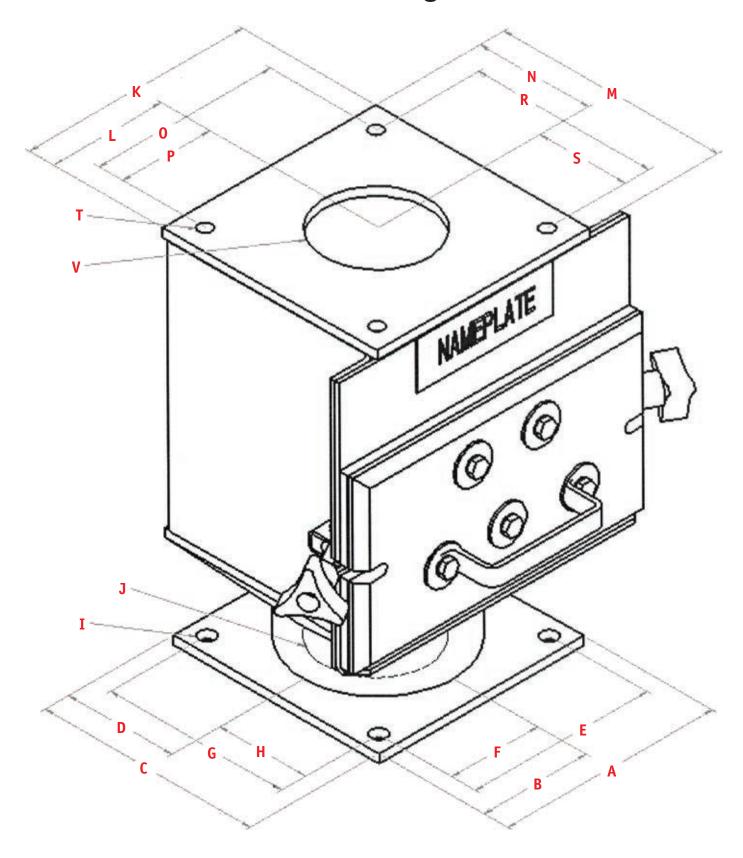




www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

1.888.288.6900 | 001.888.304.1307 | 1.866.467.9001 | sales@imscompany.com

Isometric View of Flange Dimensions





www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada) phone order toll-free (Mexico)
1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)
1.866.467.9001

Custom Inline All-Metal Detector Quote Form

Product Details						
1. Product (Description	on):					
	`	,, — , —		Static 🔲 Product can be w		
				ve 🔲 Larger particles can b		
2. Particle Size/Dimension: 3. Moisture Content:						
			5. Bulk Density:			
6. Product Temperati	ure:		_ °F	7. Material Feeding From: _ Note: Freefall height to inlet	of detector not to	 eyceed 18"
8. Material Feeding T	·o:			noto. I rootan noight to inio	or dottottor not to	0,0000 10
Detector Details						
1. Feed Hole OD:	, ,	, ,		2-3/4" (70mm)		, ,
		•		 5-7/8" (150mm)		,
					°F min /	°F max
	al detectors are NOT to be a st be calculated on a conti		ions			
4. Construction:	☐ Utility grade painted co☐ Painted coil with stainl☐ Stainless steel comple	ess frame and diverte	r (wipe	e down only)		
				n or corrosive environment		
7. Detector Options:	Test Ball Retrieval h	(it (Good Port)	☐ Te	est Ball Retrieval Kit (Reject P	ort)	
Inlet Hopper				rawer Magnet on infeed		
Outlet Transitio	n (Clean Product)	Outlet OD	_ 0	utlet Transition (Reject Produ	ct) C	Outlet OD
Floor Stand	Distance from flo	or to inlet	🔲 In	let Stub		
Europe classif		neets all of the requiren	•	rating? ATEX ratings are avai of the NEC North American Sta		•
Requested ATEX	Classification					
Date:	Quantity:	Phone: (.)		Fax: ()	
Name:				Title:		
Company Nan	ne:			Email:		
Address:						
City:				State:		Zip:

Custom Machine Mounted All-Metal Detector Quote Form

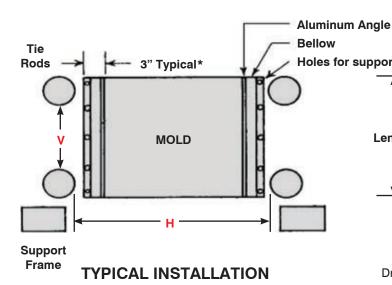
Application Details

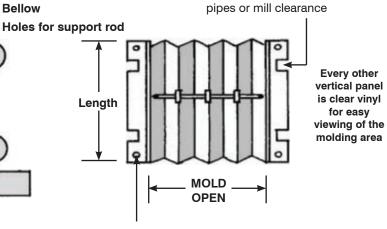
2. Regrind:	% Virgin:	% 3. Bulk Density: LBS/
4. Maximum Parti	cle Size:	5. Maximum Product Temperature:
6. Characteristics	of the Product (Check all that apply): \Box	High percentage of carbon in the product
		☐ Larger particles can be intermingled ☐ Dust particles are present
7. Details on Injec	tion or Blow Molding Operation:	
Shot Size:	(weight) Cycle Time	Seconds
8. Details on Extru	ision Operation:	
Flow Rate:	LBS/hr Bulk Densit	LBS/FT ³
9. Material Feedin	g From:	
	ader (intermittently)	Dryer - Maximum Temperature:
		ctor: LBS
_	Top Flange	Bottom Flange
1	F E B	T N R M
A	Н	K S
	I	
	J Opening:	
	Round	
	Square	
G	Rectangle	R Rectangle
ate:	Quantity: Phone:() Fax: ()
ame:		Title:
ompany Name:		
ddress:		
ity:		State: Zip:

Hydra Pressurized Circulator Quote Form

Motor Size (3/4 hp 1 hp 2 hp 3 hp 5 hp 7-1/2 hp 1 0 hp	40 50 75 85 100 125 140	PSI Required - Se 26 28 30 32 46 54 68	☐ 0 kW ☐ 9 kW ☐ 12 kW ☐ 18 kW ☐ 24 kW	Heater Options OPTIONAL - select one N/A Solid State relay heater contactor (9kW) Solid State relay heater contactor (12kW) Solid State relay heater contactor (18kW) Solid State relay heater contactor (24kW) Solid State relay heater contactor (36kW) Solid State relay heater contactor (48kW) **460 and 575 Volt Only
□ 208/3/60 - □ 230/3/60 □ 460/3/60 □ 575/3/60 (ICL-UL508, Electrical Op □ Rotary Not □ UL Branch □ C-UL508A Controls and □ PC (Premit □ PC w/ Renon the unit as □ PC w/4-20 □ PC w/ RS-(allows inte	Only in A options of Circuit Indus of Control on the Second Secon	ncludes 575V component on not included, must be not included, must be not included, must be not included, must be not included. The not included included in a remote encolsure with the not in a remote encolsure with the not included in the not included in a remote encolsure with the not included included included in a remote encolsure with the not included incl	onents, st select) ct all that apply t ired - select one anel (Provides local pc w/HMI vith 50-foot cable)	Mechanical Options 1/4" Solenoid Valve (Standard)0.72 3/8" Solenoid Valve 3.00 1/2" Solenoid Valve 4.00 3/4" Solenoid Valve 5.50 1" Solenoid Valve 11.50 1/2" Modulating Valve 4.70 1/2" Modulating Valve 10.00 3/4" Modulating Valve 24.00 1" Modulating Valve 30.00 *Cv (flow coefficient) is the flow of water through a valve at 60° F in US gallons/minute at a pressure drop of 1 PSI *Modulating valves are used in variable-flow systems in which flow must be adjusted to slow, moderate, or full stream Max Temp OPTIONAL 300° F Max Set-point Operation (Only available with 1/4" high-temp solenoid valve [Cv=0.24] requires a minimum if 75 psi coolingwater supply) Stainless/Non-Ferrous Options OPTIONAL - select one
Premium (Crash c	Contro ool - co	oller Options Opti uick circulator cool oling valve for 1 minute)	onal - select all that apply down (CC sequence disables	☐ Stainless/Non-Ferrous Option for 0 to 36kW, 3/4 to 3 hp ☐ Stainless/Non-Ferrous Option for 0 to 36kW, 5 to 10 hp ☐ Stainless/Non-Ferrous Option for 46kW, 3/4 to 3 hp ☐ Stainless/Non-Ferrous Option for 46kW, 5 to 10 hp
(Allows comp Mold wa (Select if o	oressed ater pu choosin	oller Mold Purge 0 air to purge circuit of wa irge non-ferrous g non-ferrous option in ri irge ferrous		Other OPTIONAL - select all that apply Special Color - requires Pantone Number Stacking Rack (stainless steel) for stacking two units vertically Add-on Heat Exchangers OPTIONAL
Remote Al Remote te	arm D mp se se with bbe ligl	nsor, local high tem unit, adds a local high te nt (red)	p safety	☐ Request Heat Exchanger Sizing If molding at high temperatures where the return fluid temperature is higher than the process/leaving fluid temperature, your circulator may require a heat exchanger to cool the return water to an acceptable temperature. Select this option to request more information.
Date:		_ Quantity:	Phone:()	Fax: ()
Name:				Title:
Company Na	ame:			Email:
City:				State: Zin:

Custom Mold Side Curtains Request Form





Drill clearance holes for water

*Note:

Side curtains require 3" gap between mold and tie bar. The curtain can only be as long as the tie bar spacing if adequate space does not exist.

Ensure adequate clearance between waterline fittings on the parting line, to allow the curtain to collapse in between when the mold is closed.

Curtain open stroke and curtain length should not exceed 36".

Mounting Bracket is always 1" shorter than the curtain length.

Curtain length received will be 1/2" shorter than ordered for adjustment purposes.

Drill clearance holes in aluminum angle. Drill and tap mold base to accept mounting screws.

Mold Open	Approximate Mold Close
3" - 6"	½" bellows + ¼" for mounting bracket
7" - 9"	3/4" bellows + 1/4" for mounting bracket
10" - 12"	1" bellows + 1/4" for mounting bracket
13" - 15"	1-1/4" bellows + 1/4" for mounting bracket
16" - 18"	1-1/2" bellows + 1/4" for mounting bracket
19" - 21"	1-3/4" bellows + 1/4" for mounting bracket
22" - 24"	2" bellows + 1/4" for mounting bracket
25" - 27"	2-1/4" bellows + 1/4" for mounting bracket
28" - 30"	2-1/2" bellows + 1/4" for mounting bracket
31" - 32"	2-3/4" bellows + 1/4" for mounting bracket
33" - 36"	3" bellows + 1/4" for mounting bracket

1. (H) Distance between Tie Rods:	(V) Distance between Tie Rods:		
2. Mold Width:	Mold Height:		
3. Mold Open:			
4. Curtain Length:			
Date: Quantity: Phone:()	Fax: () _		
Name:	Title:		
Company Name:	Email:		
Address:			
City:	State:	ip:	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

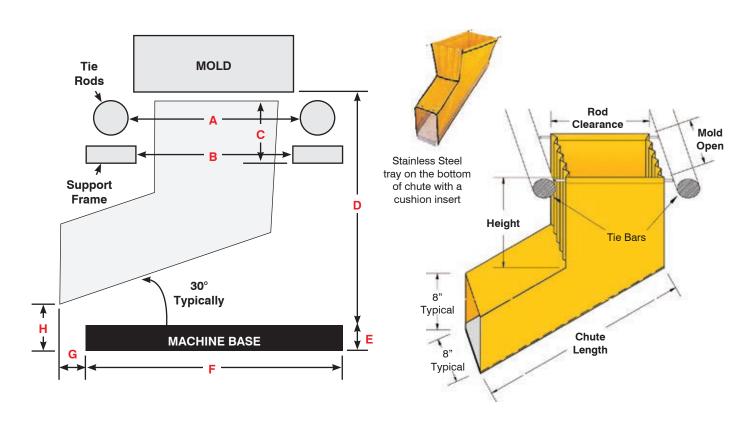
fax order toll-free (USA & Canada) phone order toll-free (Mexico)

1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada)

1.866.467.9001

Custom Detachable Guideskirts Request Form



1. Mold Open (daylight): (24" Max)	9. (H) Desired discharge height:
2. (A) Width between tie rods:	10. Size of parts: L x W x H
3. (B) Width between frame:	11. Runner system: ☐ No ☐ Yes
4. (C) Clearance Height (chute):	12. Size of runner: L x W x H
5. (D) Machine Clearance mold to base:	13. Do you require high temp material
6. (E) Base to floor:	(for parts over 180°): ☐ No ☐ Yes
7. (F) Width of base:	14. Style: Hard Bottom Soft Bottom
8 (G) Desired extension past base:	

All dimensions must be completed in order for a Quote to be given.

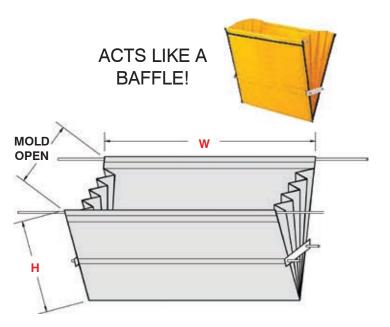
All guideskirts come with mounting hardware.

Date:	Quantity:	Phone: ()		Fax: ()
Name:			Title:	
Company Name: _			Email:	
Address:				
City:			State:	Zip:

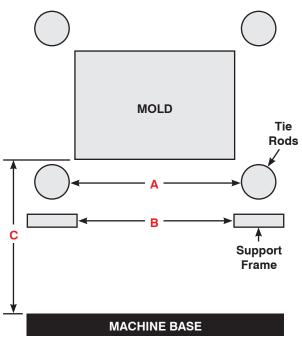


Custom Delay Drop Part Chute Guideskirts (Soft Drop) Form

Drop end CLOSES when mold opens - OPENS when mold closes



Delayed drops have metal side plates sewn into sides to keep sides rigid.



1. Mold Open (daylight):	8. Number of mold cavities:
2. (A) Width between tie rods:	9. Runner system: ☐ No ☐ Yes
3. (B) Width between frame:	10. Size of runner: L x W x H
4. (C) Machine clearance mold to base:	11. Do you require a divider:
5. (H) Desired height of guideskirt:	□ No □ One □ Two □ Three
6. (W) Desired width of guideskirt:	12. Do you require high temp material (for parts over 180°): ☐ No ☐ Yes
7. Size of parts: Lx Wx H	

All dimensions must be completed in order for a Quote to be given.

All guideskirts come with mounting hardware.

Date:	Quantity:	Phone:()		Fax: ()
Name:			Title:	
Company Name: _			Email:	
Address:				
Citv:			State:	Zip:



phone order toll-free (USA & Canada) 1.800.537.5375

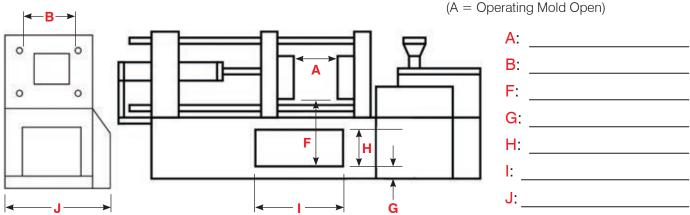
fax order toll-free (USA & Canada) phone order toll-free (Mexico) 1.888.288.6900 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Part Diverting Systems Request Form — Part 1 of 2

SPECIFY:

Please indicate dimensions in inches or feet



S1-Sorter

(shown with optional extensions and leg stand)



Will the S1-Sorter be discharging into a container?: ☐ Yes ☐ No

If Yes: Length:_____ Width:____ Depth:____

If No, than what?:

Are there any obstructions?: Yes No

If Yes: Length:_____ Width:____ Depth:____

Position:

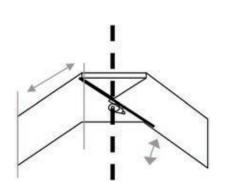
Optional Extensions

Desired extension length:

- □ 6"
- **12**"
- □ 18"
- Other

(Custom charges may apply for lengths over 18")

■ No extensions desired



Desired angle:

☐ 25°

30° (Standard)

Other___ °

(Custom charges may apply for angles over 30°)

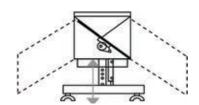
Leg Stand

Required height from the floor:

- □ 7"
- ☐ 7" 12"
- ☐ 12" 20" ☐ Other "

(Custom charges may apply for heights over 20")

☐ No leg stand desired



(Continued on next page)



www.imscompany.com phone order toll-free (USA & Canada) 1.800.537.5375

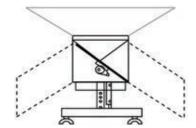
fax order toll-free (USA & Canada) 1.888.288.6900

phone order toll-free (Mexico) 001.888.304.1307

tech support toll-free (USA & Canada) 1.866.467.9001

Part Diverting Systems Request Form — Part 2 of 2

Optional Flared Top (Not available with Quick-Change Rail System — below)

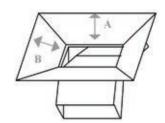


Desiled Hale lelidili	Desired	Flare	lenath:
-----------------------	---------	-------	---------

A: 4" 6" 8" Other: ______ B: 4" 6" 8" Other:

(A & B are normally the same length)
(custom charges may apply

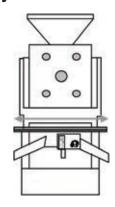
for lengths over 8")



Optional Quick-Change Rail System

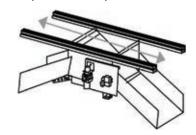
(This system mounts to the press with our "Sliding Track System")

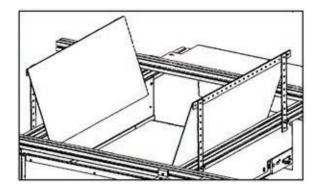




What is the depth of your press?:

- Up to 36" deep
- Up to 48" deep





Quick-Change Containment Package

These components are used to create custom part containment. This is designed for the end-user to cut to fit. Includes standard hardware.

- Yes, please include this package on my quotation.
- No, I am not interested in this optional package.

(Serves as a hopper for the QCRS System)

Date:	Quantity:	Phone: ()	 -	Fax: ()
Name:				Title:		
Company Name: _				Email:		
Address:						
City:			State	: 		Zip:



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

sales@imscompany.com

923

IMS Custom Conveyors

Select Type:		,
Horizontal	Horizontal to Incline	Incline
Style: Flat top	B	B
	TE A	
Belt width Part Discharge Height	Horizontal Length (A)	
	Incline Length (B)	Overall Length (A)
Overall Length (A)	Discharge Height (C)	Discharge Height (B)
Belt Width (B)	Infeed Height (D)	Infeed Height (C)
Height (C)	Belt Width (E)	Belt Width (D)
Belt - (Standard Lacing) Optional - Seamless Belt Select one: Color Green Black	Cleats - Yes No Std Cleat Height is 1.5": other Cleats spacing 18" Standard	Note: If overall width of conveyor is critical, please specify max width dimension:
White Other Other Other Color specify : Temperature / Type of Material Conveyed :	Other than standard - Cleat spacing required :	Injection Machine -
Std - 19 fpm □ Index Variable speed - 0-27.5 fpm □ Reve	ions - (check one or more) ting - Specify □ Part deflector at discharge end rsing □ Photoelectric eye □ y Duty Slider Bed □ (to withstand heavier part load	
Motor Position - 6 Mark the desired drive location	n. 8 1, 2, 3, 4 - Mounted	(A)
Belt Direction	underneath. (standard) 5, 6, 7, 8 - Mounted on side. (up-charge) 9, 10 - Mounted	(B)
5	3 on end. (up-charge	(C)
Date: Quantity:		Fax: ()
Name:	Title:	
Company Name:		
Address:		
Citv:	State:	Zip:

Replacement Conveyor Belts

Conveyor Model:		Serial No.:	
A) Belt Width :		(in.)	
B) Belt Overall Length:		(in./ft.)	
C) Overall Belting Thickness	:		
D) Number of Plies:	Carcass	Bottom Cover	Color
E) Cleat Information: Height	Width	Centers Type _	Indent
F) V-Guide Information: Loca	ation	Notched	
V-Guide Size (Base x Heig	ıht):	OO-section (5/16" x 3/16")	O-section (3/8" x 1/4")
	o A-section (½" x ½")	☐ B-section (5/8" x 3/8")	☐ C-section (⁷ / ₈ " x ⁷ / ₁₆ ")
G) Splice Type:	ed 🔲 Vulcanized	d 🔲 Endless	☐ Prepared Ends
H) Food Grade:	☐ No		
Other Information (If Applical	ole):		
I) Head Pulley Size :	(in.)	J) Tail Pulley Size :	(in.)
K) Temperature and type of	material being conveyed:		
L) Size and weight of produc	t being conveyed:		
M) Horizontal or Incline Conv	veyor:	N) Degrees	of Incline:
O) Chemicals or Petroleum p	products contacting belt:		
Other Specifications:			
Typical Specifications			
Plies: Lightweight belting applic	cations are generally 1, 2 or	3 plies.	
Carcass: Type of fabric that is u	used in plies: interwoven pol	lyester, spun polyester, monofila	ment.
Belt Covers: Top cover is usual	lly smooth, and the bottom	cover is a friction surface (FS).	
Overall Belt Gauge or Thickne correct fit under and over side ra		ly used as a possible check of th	e belt specification and to assure
Cleat Information: Standard ted distances. All cleat types can be		/2" to 3" in height and can be we or guides.	elded on most center-to-center
V-Guides: V-guides are available	e in O, A, B or C sizes; V-gu	uides are usually located on the b	pottom centerline of the belting.
Splice Type: Usually the splice install.	will be mechanically laced;	vulcanized splices are more exp	ensive and time consuming to
Date: Quantity: _	Phone:()_	Fax: ()
Name:		Title:	
Company Name:		Email:	
Address:			
City:		State:	Zip:

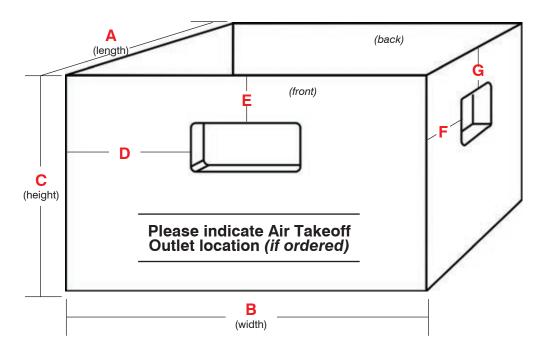


Granulator Quotation Request/Order

Application:	☐ Under-the-press ☐ Other
LARGEST PART	
Material:	Cold Hot° F Filled
(chemical description)	☐ Unfilled ☐ Other
	☐ Sprues/Runners ☐ Pipe/Profile ☐ Film
(dimensions)	Sheet Thermoformed Blow Molded Other
HEAVIEST OR TOUGHEST PART	
	Cold Hot° F Filled
(chemical description)	Unfilled Other
	☐ Sprues/Runners ☐ Pipe/Profile ☐ Film
(dimensions)	Sheet Thermoformed Blow Molded Other
Requested Particle Size:	Recommended Screen Size
·	□ ½" □ ¾" □ ½" □ ¾" □ Other
Industry: Injection Blow Molding	Extrusion 🔲 Recycling 🔲 Other
Mode of Feeding: ☐ Manual/Hand ☐ Robo	
Feed Roll (lir	
Desired Throughput Pounds/Hot	
Mode of Discharge: \square Bin with $1\frac{1}{8}$ " Takeoff	☐ Blower/Cyclone with Fine Separation System
Electrical V/3PH/60HZ	ner
Audial Requirement:	dard) 🔲 Non-Soundproofed
Existing Granulator for Similar Application:	Manufacturer Model Number
Т	hroat Size HP Rotor Design
0	ptions
Requested Delivery Date	
<u> </u>	
Date: Quantity: Phone	e:() Fax: ()
Name:	Title:
	Email:
City:	



Granulator Catchpan



Catchpan Dimensions: Outside A: (length) B: (width) C: (height)	2 or 4 Handle Locations: Front/Back Sides D: F: E: G: Standard recessed handles are 41/2" long x 13/4" high x 1" deep	Air Takeoff Outlet (If used) O.D.: Length: (from outside of pan) Location: Sketch on drawing (along with ACTUAL dimensions)
Granulator Make:	Model:	Serial #:
	Phone:() Title:	
Company Name:	Email:	
Address:		
City:	State:	Zip:
	— FOR IMS USE ONLY—	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)

1.888.288.6900
00

IMS Part No.:

phone order toll-free (Mexico) **001.888.304.1307**

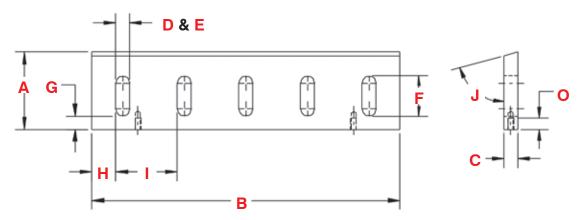
tech support toll-free (USA & Canada)
1.866.467.9001

Price Quoted: _____

sales@imscompany.com

Ship Date:

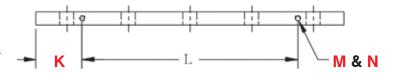
Granulator Bed Knife Form



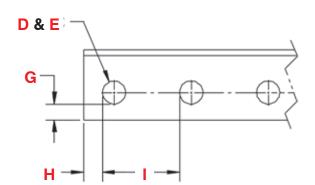
S	D	F		IE)	/ :
•			V.	1	Ι.

Press Make: ______
Press Model:

OEM# (if available):



- 1) Note any part numbers or markings on the knife:
- A. Height:
- B. Length: _____
- C. Thickness:



2) Hole/Slot information:

Type of holes: _____

- D. Quantity of holes:
- E. Slot width/Hole diameter:
- F. Slot length:
- G. Bottom edge to hole/slot edge: _____
- H. End to first hole/slot edge:
- I. Typical hole/slot spacing: _____
- J. Bevel angle: ____

- 3) Tapped hole information:
- K. End to tapped hole center:
- L. Tapped hole center to center:
- M. Quantity of tapped holes:
- N. Tapped hole size & pitch:
- O. Tapped hole depth:
- 4) Note any special features:

Date:	Quantity:	Phone: (_)		Fax: (_)	
Name:				Title:			
Company Name: _				Email:			
Address:							
Citv:			State	:		Zip:	



www.imscompany.com

phone order toll-free (USA & Canada) 1.800.537.5375

fax order toll-free (USA & Canada)
1.888.288.6900

phone order toll-free (Mexico) **001.888.304.1307**

tech support toll-free (USA & Canada)
1.866.467.9001

Granulator Fly Knife Form

SPECIFY:	_				
Press Make:	_ D				
Press Model:					
OEM# (if available):					
1) Note any part numbers or markings on the knife:	H-1-B-	K - J - C			
A. Height:	DEVEL OPTIONS -				
B. Length:		1			
C. Thickness:					
2) Hole/Slot information:	< □				
Type of holes:		L — M			
D. Quantity of holes:	Keen Edge	Reverse Bevel			
E. Hole diameter:	N	→ N →			
F. C'bore/C'sink diameter:		M			
G. Bottom edge to hole/slot edge:	`				
H. End to first hole/slot edge:	4				
I. Typical hole/slot spacing:	M_ []				
J. C'bore/C'sink depth:	High Shear	Hook Fly			
3) Taper angle (if applies):	HOLE OI	•			
K. Taper angle:	F A	E			
L. Bevel angle (1):		_ / 0 0/ 1			
M. Bevel angle (2):	_ 10 0 F				
N. Horizontal bevel point:	Counterbored Hole	Through Hole			
4) Note any special features:	E				
		14 / 1			
	F				
	Countersunk Hole	Slotted Hole			
Date: Quantity: Phone:()	Fax: ()			
Name:	Title:				
Company Name:					
Address:					

State: _____ Zip:__

Form Index

Barrel Form	904	Metal Detector (Inline) Form	916
Cartridge Heaters Form	887	Metal Detector (Machine Mounted) Form	917
Circulator/Mold Temperature Controller (Hydra) Form	918	Mold and Cable Checkers Form	891
Conveyor Belts Form	925	Mold Side Curtains Form	919
Conveyor Form	924	Nozzle (In-Line Color Mixing) Form	899
Drawer Magnet Housing Flange Form	914-915	Nozzle (One-Piece) Form	894
Drum Cover Form	881	Nozzle (Removable Tip) Form	895
Drying Oven Form	912-913	Nozzle Thread Adapter Form	896
End Cap (Front) Form	905	Nozzle Tip Form	897
Feeder (Volumetric) Form	910	Nozzle Tip Thread Adapter Form	898
Gaylord (Octagon) Cover Form	883	Part Diverting Systems Form	922-923
Gaylord Cover Form	882	Screw (Reciprocating) Form	901-903
Granulator Bed Knife Form	928	Screw Tip Form	900
Granulator Catchpan Form	927	Storage (Mobile Hopper) Form	906
Granulator Fly Knife Form	929	Storage (Surge Bin) Form	907
Granulator Form	926	Strip Heater Form	886
Guideskirt (Delay Drop Part Chute) Form	921	Take-Off Box Form	908
Guideskirt (Detachable) Form	920	Thermocouple (Cartridge Type) Form	890
Heater Band Form	885	Thermocouple (Spring Adjustable Immersion) Form	888
Hopper Lid/Vacuum Loader Stand Form	911	Thermocouple (Threaded Nozzle) Form	889
Hoppers (Stainless Steel) Form	909	Tie Bar Sleeve Form	879
Manifold Form	892-893	UNI-VEST™ Barrel Insulation Form	880
Melt Pressure Extruder Rupture Disk Form	884		



Online ordering is easy with IMS!

Experience the IMS difference on your desktop, notebook, tablet or mobile phone!

Designed for Speed, Security and User Friendliness

Our website uses the latest technologies that deliver the best user experience on all devices and browsers

Fast Product Searching

We help you find what you need quickly using keywords and/or IMS items numbers

Product Information & Current Pricing

View product descriptions, specifications, images, SDS instruction manuals and catalog pages

Simple & Secure Online Ordering

Our easy four step checkout process lets you select billing and shipping options that suit your needs.

And much, much more!

Visit www.imscompany.com Today!





Everything You Need for the Plastics Processing Industry

800.537.5375 imscompany.com