



# 8 Tray Forced-Air Bench Oven

IMS #114615 (120 volt)/114623 (240 volt)

## INSTRUCTION MANUAL



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## SAFETY SUMMARY

In this manual:

**DANGER** means you will be killed or injured if you don't take precautions. This is the highest level of warning.

**WARNING** means you could be killed or injured if you don't take precautions.

**CAUTION** means you could be slightly injured or equipment could be damaged if you don't take precautions.

The following general alerts apply to this oven:

### DANGER

LIVE ELECTRICAL CONTACTS could cause DEATH or SHOCK.

Lock out and tag out power before doing service.

Only qualified electricians are to do electrical work.

### WARNING

HOT PARTS could cause BURNS.

Avoid contact.

Let parts cool before touching.

### WARNING

PAINT OR SOLVENT COULD CAUSE EXPLOSION.

Do not use oven if material contains paint or solvent.

Do not use oven if there is paint or solvent in area.

### WARNING

COMBUSTIBLE MATERIAL in oven could cause FIRE.

Do not use oven for combustible materials.

### WARNING

OVEN COULD CAUSE FIRE OR DAMAGE.

Monitor oven when in use.

## SAFETY SUMMARY (continued)

**WARNING**

**SPILLED PLASTIC** could cause **FIRE**.

Clean up spilled plastic immediately.

Clean oven periodically.

**WARNING**

**CHANGES TO OVEN** could cause **DEATH, INJURY or DAMAGE**.

Modify this oven **ONLY** with engineering approval of **IMS Company**.

## SPECIFICATIONS

- Maximum Temperature ..... 350°F (177°C)
- Wattage ..... 2,000
- Amperage:
  - @ 120/60/1: ..... 19
  - @ 240/60/1: ..... 10
- Heating Element ..... tubular with incoloy-sheath
- Air Circulation ..... fan forced
- Controls ..... fully-adjustable temperature controller, manual-reset excess temperature controller, red pilot light to indicate heater operation
- Exterior:
  - Dimensions ..... 41" wide x 30" deep x 23" high
  - Finish ..... baked enamel
- Interior:
  - Dimensions ..... 28" wide X 24" deep X 18" high
  - Material ..... stainless steel
  - Shelves ..... 4 removable, plated, adjustable on 2" centers
  - Gasket ..... silicone-rubber door seal gasket
  - No. of Trays ..... 8
- 3-Wire power cord. Special 20-amp molded plug (5-20P) on 115-volt model only
- Shipping Weight ..... 250 lbs

## DESCRIPTION

The IMS Model NB-350 Benchtop Plastic-Drying Oven is a compact, lightweight, electric oven. It uses a sheathed heating element to heat the oven, a small fan for air circulation, a thermostat to control temperature and mineral-wool insulation to keep the heat in the oven.

Molders use the NB-350 to dry small batches of plastic pellets and for annealing molded plastic parts.

The maximum operating temperature is 350°F. For safety, there is an excess temperature controller to shut the heaters off if the oven gets too hot. It is preset at 375°F.

## INSTALLATION

### 1. Uncrating

- a. Inspect carton for signs of damage. Save carton until you are sure oven is not damaged.
- b. Inspect oven carefully; look for concealed damage.
- c. If there is no damage, go to *PLACEMENT* below.
- d. If there is damage, report it to carrier within 15 days. Save carton to show carrier.

### 2. Placement

Oven can be placed anywhere that meets the following specifications:

- No combustible vapors or materials in area. Nothing near oven that would be damaged by oven's heat.
- Sturdy, non-combustible surface that will not be damaged by heat.
- On oven stand to keep from overheating surface beneath oven. IMS Oven Stand DOXX-S335 is made for this purpose.
- Grounded, electrical source nearby -- avoid extension cords or long wiring runs.
- Personnel and material not likely to contact oven surface.
- Meets OSHA specifications. Does not block aisles.
- Low humidity area for faster drying.
- Good air circulation. Not against a wall.

## INSTALLATION (continued)

### 3. Exhaust Chamber Adapter (optional)

For exhausting oven to outside, install exhaust chamber adapter (Part No. DOXX-ECA-23) on oven. Attach 3"-diameter stovepipe stack to adapter outlet. Run stack as described on next page.

### 4. Electrical Connections

- a. All wiring must meet national and local wiring codes.
- b. Lock out and tag out power before making connections.
- c. Connect oven to voltage indicated on serial number tag on front of oven. Both will work with 50 or 60 Hz.
- d. 115V models have a 5-20P molded plug on end of power cord. Plug into 5-20R 3-prong, grounded outlet only. Do not operate oven ungrounded.
- e. 230V models have an unfinished end on power cord. Install a plug that matches your power receptacle. Plug and receptacle **MUST** be grounded.

## DANGER

LIVE ELECTRICAL CONTACTS could cause DEATH shock.

Lock out and tag out power before doing service.

Only qualified electricians are to do electrical work.

All wiring must be to code.

## RECOMMENDED STACK CONSTRUCTION

NOTE: Requires Exhaust Chamber Adapter

Follow local building codes.

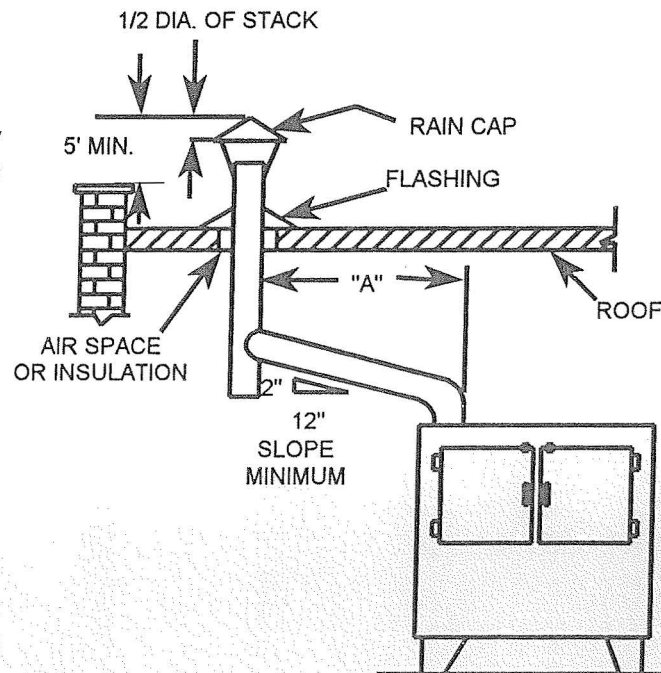
1. Keep stack as far as possible from combustible building materials. Insulate stacks passing through combustible walls or allow enough clearance to keep surfaces below 160°F.
2. Make stacks out of sheet steel, stove pipe, or other approved stacking material.
3. Support stack, using approved bracing.
4. Use shortest and most direct path for all stacks.
5. Run all stack piping with male end pointing away from oven. Make joints tight; secure with sheet metal screws.
6. Avoid running stack through fire walls.
7. Don't install dampers or restrictions that can slow down exhaust flow.
8. Insulate and guard all stacks within 7' of factory floor to protect personnel.

If "A" is 5' or less, use same pipe size as oven connection. If "A" is over 5' use next-larger standard stove pipe.

Top of stack must be 5' above any projection (walls, roof, peaks, etc.) within 50' measured horizontally from stack, to prevent down-drafts.

Cabinet model illustrated. Use same stack construction for all ovens -- with or without powered, forced exhaust blower.

Consult local fire safety codes in your location.



## OPERATION

### WARNING

SOLVENTS OR PAINT could cause EXPLOSION.

Do not use oven if material contains solvent or paint.

Do not use oven if there are solvents in area.

### WARNING

HOT PARTS could cause BURNS.

Avoid contact.

Let parts cool before touching.

1. Oven must have been installed in accordance with INSTALLATION instructions in this manual.
2. Fill material drawers or trays. Try to keep material toward center of oven.

If using trays:

- Stagger load, with 1 to 1-1/2" around trays.
  - Avoid putting anything directly under or above heating elements.
  - Don't let material touch or insulate temperature sensor inside oven.
3. Adjust damper on back of oven. To allow more moist air out, open damper more (slide it up). To keep heat higher, open damper less.
  4. Turn ON/OFF switch OFF when you are done with oven. Do not use thermostat alone to turn off power to heater.

### WARNING

COMBUSTIBLE MATERIAL IN OVEN COULD CAUSE FIRE.

Do not use oven for combustible materials.



## RESETTING HIGH-HEAT LIMIT SWITCH

Limit switch is preset at 375°F. To reset after a shutdown:

### DANGER

LIVE ELECTRICAL CONTACTS  
could cause DEATH or SHOCK.

Lock out and tag out power before  
doing service.

Only qualified electricians are to do  
electrical work.

### WARNING

HOT PARTS could cause BURNS.

Avoid contact.

Let parts cool before touching.

1. Let oven cool below 375°F.
2. Press red button on control panel.
3. If limit switch trips again, find cause of tripping.

## CALIBRATING THERMOSTAT

1. Use a good thermometer to find actual temperature of oven.
2. Set thermostat to temperature on thermometer.
3. Pull thermostat knob off.
4. There is a small screw in thermostat's hollow shaft. Use small screwdriver to turn screw back and forth to find points where relay clicks on and off.  
  
Turn screw to midpoint between on and off points.
5. Observe operation for a while. Recalibrate if needed.

## TROUBLESHOOTING

### 1. Slow heat-up, or failure to reach temperature:

- a. Burned-out fuse?
  - In your fused-disconnect switch
  - In control panel -- (see electrical schematic on page 8). Sometimes a fuse can open without affecting pilot lights or other visible signs and still affect heat circuit.

- b. Dampers open too far?

There may be too much hot air getting out of oven. To correct, close exhaust damper a little at a time until temperature starts rising.

- c. Low line voltage?

Could be too many devices connected to same circuit or undersized wiring between oven and power source.

- d. Thermostat defective or out of calibration?

See thermostat manual.

- e. High-heat limit switch defective or calibrated too low?

See switch manual for proper operation and adjustment.

- f. High-heat limit switch tripped?

Tripping can be caused by too-high oven temperature, too-low ambient temperature or sensing failure.

Before returning to operation, correct problem that caused safety device to trip.

### DANGER

LIVE ELECTRICAL CONTACTS could cause DEATH or SHOCK.

Lock out and tag out power before doing service.

Only qualified electricians are to do electrical work.

### 2. Uneven Temperatures

- Oven may be overloaded. Reduce load.
- Loading pattern may be preventing circulation. Rearrange load.

## REPLACEMENT PARTS

|                                   |  |
|-----------------------------------|--|
| Fan Blade . . . . .               | DOZZ-FMB-23  |
| Fan Motor, 115V . . . . .         | DOZZ-FM1-23  |
| Fan Motor, 230V . . . . .         | DOZZ-FM2-23  |
| Thermostat, 115V . . . . .        | DOZZ-THC1-234  |
| Thermostat, 230V . . . . .        | DOZZ-THC2-234  |
| Heating Element . . . . .         | DOZZ-IHE1-2400-23  |
| (2 required)                      | NOTE: 115V and 230V ovens use the same heating elements. In the 115V they are wired in parallel; in the 230V they are wired in series. |
| High-Heat Limit Switch . . . . .  | DOZZ-ETC12-23  |
| Pilot Light Lens . . . . .        | DOZZ-PLRL-234  |
| 230V Pilot Light Socket . . . . . | DOZZ-PLLS-234  |
| 115V Pilot Light Bulb . . . . .   | inquire  |
| 230V Pilot Light Bulb . . . . .   | DOZZ-PLLB-234  |
| Exhaust Chamber Adaptor . . . . . | DOXX-ECA-23  |
| (optional)                        |  |
| Filter for adaptor . . . . .      | DOXX-ECAF-23   |



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# SERVICE RECORD AND NOTES

## Bulletin for Oven Modified for Use with Closed-Loop Dryer

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This oven includes an intake nipple and an Exhaust Chamber Adapter with an exhaust nipple for simple connection to a closed-loop dryer.

Instead of connecting the Exhaust Chamber Adapter to a stack, as described in the manual, connect the exhaust nipple to your dryer's intake hose. The exhaust nipple is the port on top of the oven.

The oven intake nipple is on the back of the oven. Connect it to your dryer's output hose.