



# SPECIAL FURNACE CO INC

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## DV/DR SERIES

### APPLICATIONS

The DV/DR SERIES Floor Standing Recirculating Cabinet Ovens feature high volume air recirculation for high temperature uniformity, gas or electric operation, a stainless steel interior and a precision PID digital control system. They are designed for heavy duty production heat treating applications such as tempering, annealing and solution heat treating, although they find many other uses. They are rated to 1300°F (700°C) operation. Horizontal (DV) or vertical (DR) doors are available.

**Model  
DRG 3648  
with  
pneumatic  
vertical  
door, roller  
hearth tray  
system and  
gas fired  
operation.**



**HEAVY DUTY FLOOR STANDING GAS  
OR ELECTRIC RECIRCULATING 1300° F  
(700°C) TEMPERING OVENS**

### FEATURES

#### RECIRCULATION FOR UNIFORMITY OF +/-10°F

A heavy duty high volume, high velocity air cooled alloy fan is mounted in the top with full recirculation ducting. The ducting features adjustable vents to control the recirculation pattern of the air. A minimum of 40 volume changes per minute of the entire interior is achieved. The fan is dynamically balanced and engineered for long life at high temperatures. The fan is manufactured by Industrial Gas Engineering and is very reliable.

#### HEAVY GAUGE STAINLESS STEEL INTERIOR

The entire interior is made of stainless steel for heat and corrosion resistance. The bottom is 10 gauge while the liners and baffles are 18 gauge. They are designed to expand and contract with the heat.

#### HEAVY DUTY UNITIZED CASE CONSTRUCTION

The oven case is constructed of reinforced 10 gauge steel with an integrated floor stand with leveling bolts and mounting holes. The case is primed with 800°F silicone paint and finished in machine enamel.

#### SEVEN INCHES OF INSULATION

1" of 2300°F ceramic fiber insulation is backed up with 6" of mineral wool sandwiched between the interior and exterior of the oven. The bottom insulation is non-compressible 2300°F firebrick and calcium silicate. No asbestos is used.

#### HORIZONTAL OR VERTICAL DOORS

The DV Model door is a deep plug horizontal door. The models that are 36" wide (or wider for special models) feature two doors that meet in the middle. The horizontal doors feature ceramic fiber tadpole seals. Pneumatic and electric vertical doors are also available (DR Models). These feature a front vestibule of castable refractory and ceramic fiber lined doors which seal against this non-expanding vestibule. The DR Models can be supplied with traveling rollers on the vertical doors to match roller hearths inside the oven. Special hydraulic forklift loaders are also available for loading heavy loads.

#### INCOLOY ELEMENTS FOR ELECTRIC

Electric ovens feature elements located in the recirculating plenum chamber away from the working zone. These are incoloy sheathed elements which are rated for 1600°F. They are replaced easily from the back.

#### HIGH TURN DOWN RATIO GAS BURNER FOR GAS

The gas fired ovens feature an Eclipse gas burner with a high turn down ratio. The gas system includes a proportional motor control which adjusts both gas and air to maintain stoichiometric firing, a gas regulator, lubricated gas cock, combustion air pressure switch, high/low gas pressure switch, pilot system with pilot solenoid and pilot regulator, two shut off solenoids, UV flame safety, air purge system (4 volume changes) and integrated combustion blower. The

system meets NFPA and FM standards. The gas burner fires into the plenum chamber avoiding flame impingement on work. May be specified for natural gas or propane.

**DIGITAL PID CONTROL AND HIGH LIMIT SYSTEM**

The standard control is a Honeywell UDC 2300 digital PID 3 mode tuning control. All fuses, transformers, contactors, and controls are located in a NEMA 1 panel. Quiet, long life mercury power contactors are standard on electric ovens (SCRs are optional). The thermocouples are sheathed Type K. The control voltage is transformed to 120 volts. A Honeywell UDC 2300 digital high limit back up control with manual reset, back up contactors and separate thermocouple is included. Single point power connection.

**TESTING AND INSTRUCTIONS**

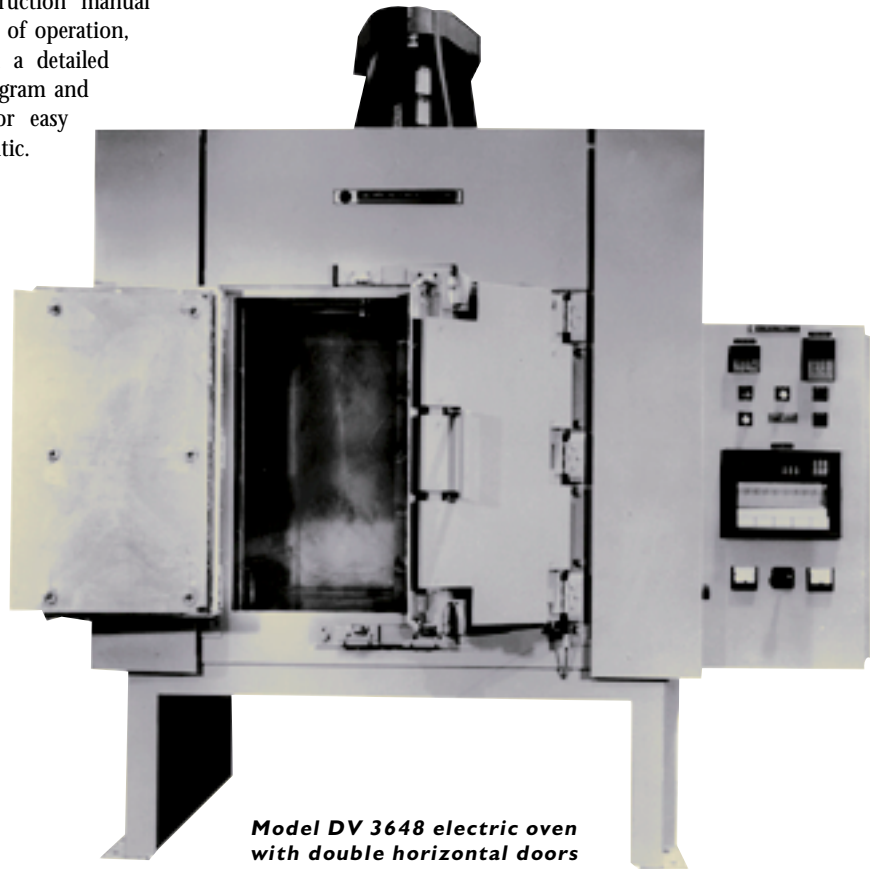
The electric ovens are power tested to insure proper watt ratings. Gas ovens are completely tested at operating gas pressures that are specified by customer. A complete instruction manual includes easy start up instructions, theory of operation, maintenance instructions, parts list, and a detailed trouble shooting guide. A ladder logic diagram and panel layout are prepared on CAD for easy readability. Gas ovens include a gas schematic.

**WARRANTY**

The oven is warranted for one year except for elements and thermocouples (warranted for 6 months.)

**OPTIONS**

- **1400°F (760°C) OPERATION:** Interior is 316 Stainless Steel.
- **JIC CONTROL OPTION:** This includes a NEMA 12 control cabinet & panel fused disconnect switch.
- **INERT ATMOSPHERE BLANKETING:** On electric units only
- **RAMP/SOAK PROGRAM CONTROLS**
- **TEMPERATURE RECORDERS:** Round and strip
- **SCR POWER CONTROL:** For electric units
- **MANUAL OR POWERED VENTURI VENT:** A manual or motor powered venturi can be provided for venting the oven. Optional safety package for solvent use.
- **SHELVES AND SPECIAL HEARTHES:** Perforated stainless steel shelves, roller hearths, piers, etc.
- **ON SITE START UP AND TRAINING**



*Model DV 3648 electric oven with double horizontal doors*

**SPECIFICATIONS**

MODEL NUMBER	WORKING DIMENSIONS			OUTSIDE DIMENSIONS			DOOR MODEL HEIGHT	STAND K.W.	MAX K.W.	FAN H.P.	MAX LOAD LBS	SHIP WGHT
	W	H	D	OW	OH	OD						
DV 244	24	24	24	70	91	50	148	21.6	48.0	3	400	1600
DV 246	24	24	36	70	91	62	148	24.0	48.0	3	600	1800
DV 248	24	24	48	70	91	74	148	32.4	72.0	3	800	2200
DV 272	24	24	72	70	91	98	172	43.2	96.0	5	1200	2600
DV 3636	36	36	36	84	103	62	172	43.2	96.0	7.5	900	2500
DV 3648	36	36	48	84	103	74	172	48.0	144.0	7.5	1200	2800
DV 3672	36	36	72	84	103	98	172	72.0	144.0	10	1800	3200

Dimensions are in inches. Weight is in pounds. Working dimensions have clearances of a minimum of 3" extra in each dimension. Add about 12" to the depth for gas fired ovens. Special sizes and load weights are available. 240 or 460 volts are normal. 208 volts decreases power by 25%. Other voltages are optional. 3 phase is normal although single phase is available. Gas ovens typically have one 500,000 BTU burner which will yield between 250,000 to 300,000 BTU/Hour net (higher BTU ratings are available.) Gas fired ovens should be flued to the outside. Specifications are subject to change without notice.