



**BULLETIN
PH-770**

Pit Furnaces

Grieve standard 2000°F Pit Furnaces are used for a variety of heat treating applications including those requiring inert atmospheres where overhead handling equipment is used. Full opening door exposes entire work space for easy loading. Precision microprocessor based temperature controls and energy-saving insulation maximize the cost efficiency and performance of these rugged units. Nine standard models from 3 to 45 cubic feet built for long, hard, continuous use. Ideal for severe service applications - load capacities to 1200 lbs.



**2000°F
HEAVY DUTY
ELECTRIC AND GAS
HEAT TREATING
PIT FURNACES**

STANDARD FEATURES

- **UL LISTED CONTROL PANEL**
- **Standard Pit Furnaces from Grieve meet the requirements of National Fire Protection Association Standard 86, Industrial Risk Insurers, Factory Mutual and OSHA standards. For some applications, such as those involving special atmospheres or hazardous locations, the above organizations require additional safety devices.**
- **Controls**
 - Digital, microprocessor based, thermocouple actuated, indicating temperature controller
 - Modulating burner on gas furnaces
 - Motor control push buttons and on-off heat switch
 - LED pilot light
- **Safety Equipment—Electric Furnace**
 - Adjustable, thermocouple actuated, manual reset excess temperature controller
 - Separate heating element control contactors
 - Door interlock switch turns off power to heating elements when door is opened; restores power when door is closed
- **Safety Equipment—Gas Furnace**
 - Adjustable, thermocouple actuated, manual reset excess temperature controller
 - Electronic flame safeguard protection
 - Combustion air blower with air flow safety switch
 - Purge timer
 - High and low gas pressure switches
 - Two pilot safety shutoff valves with leak test stations
 - Two main safety shutoff valves with leak test stations*
 - Valve position indicator on main safety shutoff valves
 - Over 400,000 BTU/HR safety shutoff valve interlocked with purge timer
- **Construction**
 - ³/₁₆" steel plate reinforced furnace shell
 - ¹/₂" thick steel top plate
 - Brushed stainless steel control panel face
 - Powered rear hinged door
 - Energy-saving lightweight ceramic fiber insulation reduces operating costs
 - Insulating refractory floor to support heavy loads
 - Excellent temperature uniformity throughout work space
 - Fast heat-up and cool-down
 - 1 year limited warranty
- **Every furnace fully assembled and individually factory tested**

*Industrial Risks Insurers vent valve only provided at specific request
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MODEL PT-363636 ELECTRIC

SPECIFICATIONS

NOT FOR USE WITH FLAMMABLE SOLVENTS, VAPORS OR GASES.

Model	Work Space		Outside Dimensions* (WxDxH)	Height Door Open	Door Type	Hearth Rating Lbs‡	Heat Input		Operating Characteristics†				Approx Shipping Weight
	Dimensions (WxDxH)	Volume Cu Ft					KW	BTU/HR	Control Accuracy	Furnace Uniformity	Rise Time		
											Electric	Gas	
PT-181818	18" x 18" x 18"	3.4	55" x 50" x 54"	69"	Electric	250	15	165,000	±0.3%	±25°F	75 min	65 min	1550 lbs
PT-181824	18" x 18" x 24"	4.5	55" x 50" x 60"	75"	Electric	300	18	200,000	±0.3%	±25°F	75 min	55 min	1650 lbs
PT-242424	24" x 24" x 24"	8.0	61" x 56" x 60"	81"	Electric	430	26	285,000	±0.3%	±25°F	60 min	45 min	2050 lbs
PT-242430	24" x 24" x 30"	10	61" x 56" x 66"	87"	Electric	500	30	330,000	±0.3%	±25°F	60 min	45 min	2200 lbs
PT-303030	30" x 30" x 30"	16	67" x 62" x 67"	93"	Electric	600	36	400,000	±0.3%	±25°F	60 min	45 min	2700 lbs
PT-303036	30" x 30" x 36"	19	67" x 62" x 73"	99"	Electric	700	39	425,000	±0.3%	±25°F	65 min	45 min	2900 lbs
PT-363636	36" x 36" x 36"	27	73" x 68" x 74"	106"	Air	900	52	575,000	±0.3%	±30°F	50 min	40 min	3500 lbs
PT-363648	36" x 36" x 48"	36	73" x 68" x 86"	118"	Air	1050	62	675,000	±0.3%	±30°F	50 min	40 min	3950 lbs
PT-363660	36" x 36" x 60"	45	73" x 68" x 98"	130"	Air	1200	72	800,000	±0.3%	±30°F	50 min	40 min	4400 lbs

*All Models—Control panel overhang 9" right side.
Gas Models—Outside depth increases by 10".
Combustion blower overhang 36" rear.

†Accuracy as percent of controller span. Uniformity at 100°F below maximum temperature. Rise Time in minutes to 100°F below maximum temperature. Tests run with empty furnace. Performance will vary with load and application. See Bulletin TC-920 for additional details.

‡Uniformly distributed.

STANDARD EQUIPMENT

● All Models

- 208 volts, 3-phase, 60 Hz
- 230 volts, 3-phase, 60 Hz
- 460 volts, 3-phase, 60 Hz
- Other electrical characteristics available

Wall insulation, 7" thick, consisting of:

- 5" of 2300°F, 8 lbs/cf ceramic fiber blanket
- 2" of 1700°F, 4 lbs/cf ceramic fiber blanket

Floor insulation, 6½" thick, consisting of:

- 4" of 2300°F insulating castable
- 2" of 1900°F, 18½ lbs/cf block insulation

Furnace shell is made of 3/16" thick steel plate reinforced with structural steel. Powered door supported at rear by heavy duty shaft and pillow block bearings. Open door exposes entire work space for easy loading. Floating door construction provides excellent heat seal by pressing soft insulation against ½" thick steel top plate. Exterior painted with Trilite Green enamel.

Each features completely wired, side access Ⓢ, UL listed control panel assembled on the furnace enclosing terminals for incoming power, temperature controllers, push buttons and pilot lights.

● Electric Models

Safety devices as listed on the front of this bulletin. Heating element contactors electrically interlocked with door to shut off power to heaters as door opens and restore power when closed. High temperature alloy wire heating elements supported in vacuum cast ceramic fiber. Heating elements located at four side walls.

● Gas Models

- 1,000 BTU natural gas at 2 psig pressure; 1" NPT inlet up to 800,000 BTU/HR
- 1¼" NPT 850,000 to 1,000,000 BTU/HR
- Other gas characteristics available

Safety devices as listed on the front of this bulletin. Automatic pre-ignition purge period and push button electric ignition contributes to ease of operation. Modulating gas burners fire from opposing sides to circulate heated air through the work space. Gas burners protected with electronic flame safety relay. Door interlock switch drives main burners to low fire when door is opened and restores control when door is closed.

ELECTRIC DOOR

Door pivots upward above furnace, clearing top opening for easy loading. In the closed position, full door weight seats door firmly against furnace top plate. Structural steel pivot arms supported on furnace top plate by rugged pillow blocks are connected to a heavy duty electromechanical actuator. The door is controlled by a switch at the furnace control panel.

AIR DOOR

Door pivots upward above furnace, clearing top opening for easy loading. In the closed position, full door weight seats door firmly against furnace top plate. Structural steel pivot arms supported on furnace top plate by rugged pillow blocks are connected to a large diameter air cylinder. The door is controlled by a manual air valve with supply filter, lubricator and regulator. Requires 60 psig compressed air.

ADDITIONAL EQUIPMENT AVAILABLE*

● **Programmable Temperature Controller**, microprocessor based, digital indicating, thermocouple actuated, in lieu of standard controller **PTC3**

● **Recording Thermometer**, thermocouple actuated, 24-hour, 10" diameter circular chart used in conjunction with standard controller **RT**

● **Programmable Recording Temperature Controller**, microprocessor based, thermocouple actuated, digital display, 24-hour, 10" diameter circular chart, in lieu of standard controller **PRTC3**

● **Digital Timing Temperature Controller**, microprocessor based, digital indicating, incorporates 99 hour 59 minute timer, starts timing when temperature reaches set point and shuts down oven at end of set time . . . **DTS3**

● **Shut Down Timer**, with continuous "hold" feature; 1, 5, 10 or 30 hour range **SDT**

● **Batch Timer**, for uniformly timing batch operations. Continuous alarm with door interlock; alarms at end of preset time period until door is opened or timer reset; 1, 5, 10 or 30 hour range **BT**

● **Inert Atmosphere Construction**, available on electric furnaces only, includes continuously welded furnace shell, inert atmosphere gas inlet and outlet, sealed terminal boxes, high temperature door gasket **IAC**

● **Inert Atmosphere Inlet Piping**, with indicating flow control/meter and gas valve. Specify atmosphere **IAIP**

● **High Temperature Construction**, 2200°F maximum operation temperature, 9" thick insulation **HTC**



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*See Bulletin TC-960 for modifications and other optional equipment.