

P.D.Q.

Automatic Burnout Furnace

OPERATOR'S MANUAL



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INTRODUCTION

Thank you for purchasing a **P.D.Q. Burnout Furnace**.

We have designed and manufactured this furnace using the latest in microcomputer technology to give you many years of dependable service. To ensure that your P.D.Q. Burnout Furnace gives you the highest level of service, review and follow the guidelines outlined in this Operator's Manual.

WARRANTY

This Jelrus equipment is warranted to be free from defects in material and workmanship from the date of installation for a period of twelve months (the muffle on our furnaces are warranted for 24 months).

Any item returned to our factory in Hicksville, New York, through an authorized dealer, will be repaired or replaced at our option at no charge provided that our inspection shall indicate it to have been defective. Dealer, labor, shipping and handling charges are not covered by this warranty.

This warranty does not apply to damage due to shipping, misuse, careless handling or repairs by other than authorized service personnel. Jelrus International is not liable for indirect or consequential damage or loss of any nature in connection with this equipment.

This warranty is in lieu of all other warranties expressed or implied. No representative or person is authorized to assume for us any liability in connection with the sale of our equipment.

SAFETY INSTRUCTIONS

WARNING: To prevent fire or electrical shock, do not expose this appliance to rain or moisture. Use of the P.D.Q. Furnace not in conformance with the instructions specified in this manual may result in permanent failure of the unit.



This symbol alerts the user that important Operating and Maintenance instructions have been included with the unit. Read carefully to avoid any problems.



This symbol warns the user that uninsulated voltage within the unit may be of sufficient magnitude to cause electric shock.

DO NOT ATTEMPT INTERNAL SERVICE

The interior of the Main Assembly is only accessible by removing hardware with tools and should only be opened and serviced by a Qualified Service Technician. Since the interior of the unit contains high voltage components and dangerous components, failure to heed this warning may result in equipment damage, personal injury and/or death.

Please call Jelrus between 9:00 AM and 5:00 PM (EST) for service information.

SPECIFICATIONS

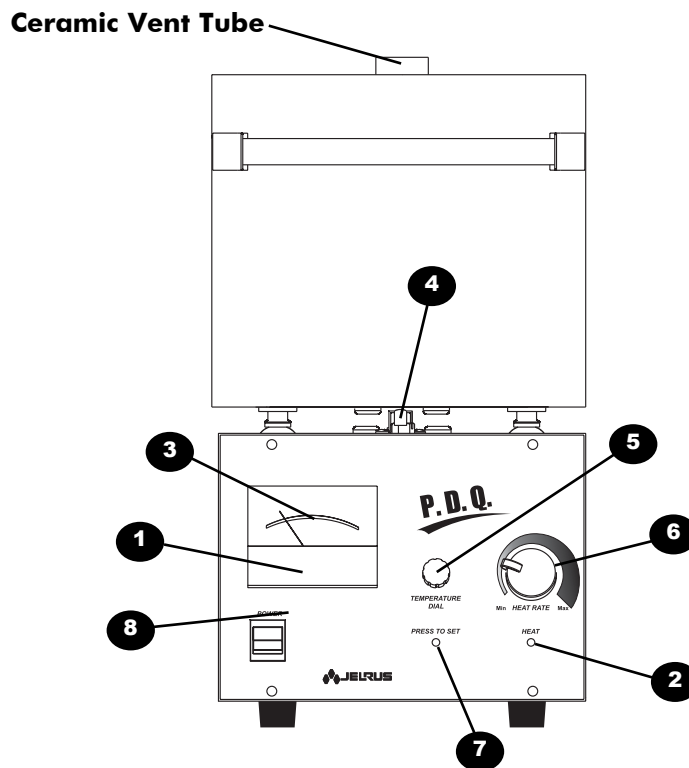
	MEDIUM	LARGE
Maximum Temperature	2000 Deg.F (1093° C)	2000 Deg.F (1093° C)
Electrical	100V, 50/60 Hz, 800 Watts 115V, 50/60 Hz, 1150 Watts 220V, 50/60 Hz, 1150 Watts 240V, 50/60 Hz, 1150 Watts	100V, 50/60 Hz, 1100 Watts 115V, 50/60 Hz, 1600 Watts 220V, 50/60 Hz, 1600 Watts 240V, 50/60 Hz, 1600 Watts
Capacity	16 Inlay rings; 4 medium or 1 large flask	28 Inlay rings; 6 medium or 3 large flask
Heat Rates	Settings vary power to heating plates to accommodate any workload	Settings vary power to heating plates to accommodate any workload
Dimensions: (Overall)	10-3/4"W.x13-7/8"D.x18-3/4"H. (27.3cm x 35.2cm x 47.6cm)	14-1/2"W.x14-3/8"D.x18-3/4"H. (36.8cm x 36.5cm x 47.6cm)
Dimensions: (Heating Chamber)	5-1/2"W.x5-1/4"D.x5-1/8"H. (14.0cm x 13.3cm x 13.0cm)	9-1/8"W.x5-1/4"D.x5-1/8"H. (23.2cm x 13.3cm x 13.0cm)

INSTALLATION INSTRUCTIONS

1. Remove all packing material from the furnace and furnace chamber
2. Place the furnace in position allowing a minimum of two inches of air space on all sides.
3. Open the furnace door by grasping the handle and pulling forward.
4. Install the ceramic tray(s) into the furnace chamber. The tray(s) serves to collect wax residue and foreign material, and prevents them from soaking into the floor of the furnace.
5. Close the furnace door.
6. Plug the power cord into a wall receptacle. A separate circuit is recommended. The voltage rating of your furnace is shown on the serial number plate.
7. Place the ceramic vent tube into the opening on the top of the furnace chamber. (See Fig.1)
8. The furnace is now ready for operation.

FRONT PANEL

- | | |
|--------------------------|---|
| 1. CAL. Adjust Control | Used during calibration procedure to accurately set pyrometer. |
| 2. HEAT ON Light | Lights when power is applied to the heating elements in the furnace. |
| 3. Pyrometer | Normally displays furnace temperature. When PRESS TO SET button is pressed, displays set temperature. |
| 4. Door Interlock Switch | Removes electrical power from heating elements when the furnace door is opened. |
| 5. TEMP SET Control | Used to select the desired furnace temperature. |
| 6. HEAT RATE Control | Used to select the desired rate of temperature rise. |
| 7. PRESS TO SET Button | Press to display set furnace temperature on the pyrometer. |
| 8. POWER Switch | Main ON/OFF Switch lights when on. |



Circuit breaker is located on the lower back of the furnace.

Figure 1

OPERATION

1. Press the POWER switch on. The light in the POWER switch will illuminate.
The pyrometer will indicate the actual furnace temperature.
2. Press the PRESS TO SET button. The pyrometer will now indicate the set temperature.
3. To change the set temperature:
 - a) Press and hold PRESS TO SET button.
 - b) Adjust the TEMP SET control until the desired set temperature is displayed on the pyrometer. Always allow a few seconds for the pyrometer readout to stabilize.

If the furnace temperature is lower than the set temperature, the HEAT ON light will illuminate.

4. Set the HEAT RATE control to the desired rate of temperature rise, typically with the pointer straight up.
5. Please note: The first 4 heat rate settings are designed only for the 1st stage (600°F) of a two stage burnout technique.

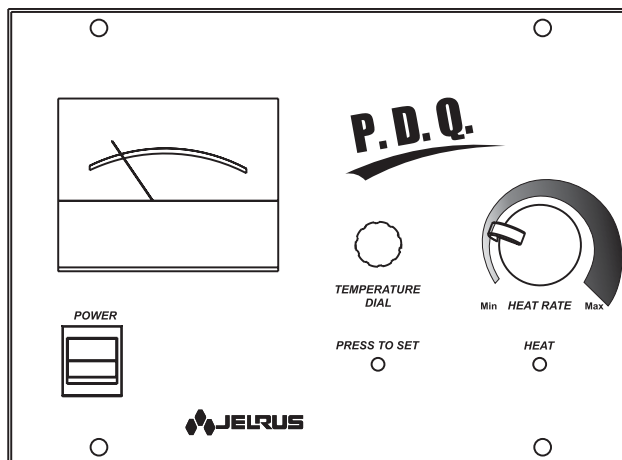


Figure 2

CAUTION:

WHEN LOADING CASTING RINGS, POSITION THEM SO THEY DO NOT TOUCH OR LEAN DIRECTLY AGAINST THE HEATING PLATES.

A Tempil Pellet (P/N 33902) that will fuse and begin to flow at 1300°F (704°C) is packed with the furnace and should be used for calibration. For accurate results, the following procedure is recommended.

1. Place the pellet on a small thin metal or ceramic tray on top of a metal ring in approximately the center of the furnace.
2. Close the door of the furnace and press the POWER switch ON.
3. Press and hold in the PRESS TO SET button.
4. Adjust the TEMP SET control to 1000°F (538°C).
5. Release the PRESS TO SET button.
6. Set the HEAT RATE control to an approximate midrange setting (pointer straight up).
7. Soak at 1000°F (538°C) for at least three minutes.
8. Press and hold in the PRESS TO SET button.
9. Adjust the TEMP SET control to 1500°F (816°C).
10. Release the PRESS TO SET button.
11. When the furnace temperature indicated on the pyrometer is 1200°F (649°C), begin to check for melting every 25°F. When checking, open the furnace door just enough to determine by a quick glance if the Tempil Pellet has begun to liquefy around the edges. Keep the furnace door closed as much as possible during this observation period to prevent heat loss.
12. When the 1300°F (704°C) Tempil Pellet BEGINS to melt or liquefy around the edges, immediately turn the calibration screw, located on the face of the pyrometer, until the pyrometer indicates 1300°F (704°C).

DOOR INTERLOCK SWITCH

Your furnace is equipped with a door interlock switch which removes electrical power from the heating elements when the furnace door is opened. This feature is built into the furnace to ensure the safety of the operator.

SERVICE

All service on this furnace should only be performed by qualified service technicians.

BE SURE TO UNPLUG THE POWER CORD AND WAIT FOR THE FURNACE TO COOL BEFORE PERFORMING ANY SERVICE OPERATION.

If you need help with operating or servicing your Jelrus equipment, please call Jelrus anytime between 9:00 a.m. and 5:00 p.m. Eastern time.

Toll Free: (800) JELRUS 1
in New York: (516) 942 0202
Fax: (516) 433 7684

REPLACEMENT OF HEATING PLATES

1. Remove the upper rear panel. Refer to figures 3, 4, and 5 on page 8 for the location for the heater connections and arrangement of hardware.
2. Remove the nuts which hold the heating plate wires in the power terminals and straighten the heating plate wires.
3. Open the furnace door and locate the two ceramic sections at the front of the furnace chamber. Remove the right-hand ceramic section by lifting it upward until the bottom section clears the sheet metal housing.
Pull the bottom of the ceramic section out toward you so that it is in front of the sheet metal; then pull it down so the upper half clears the sheet metal housing.
The furnace door should be held partially open while removing the ceramic sections, because they are not readily removed when the door is fully open.
Remove the left-hand ceramic plate after completing removal of the right-hand plate as previously described.
4. Carefully slide the two side heating plates out the front of the furnace.
The two rear heating plates may now be removed on the large model furnace.
5. Check condition of the filler strip insulation located in the space to the left and right of the ceramic front sections. Replace if required.
6. To install the new heating plates, reverse the above procedure. Push the ceramic insulating bushings back into place on the rear insulating panel.
When reconnecting the heating plate wires at the rear of the furnace, be sure to replace all hardware in its original position and make all connections tight.

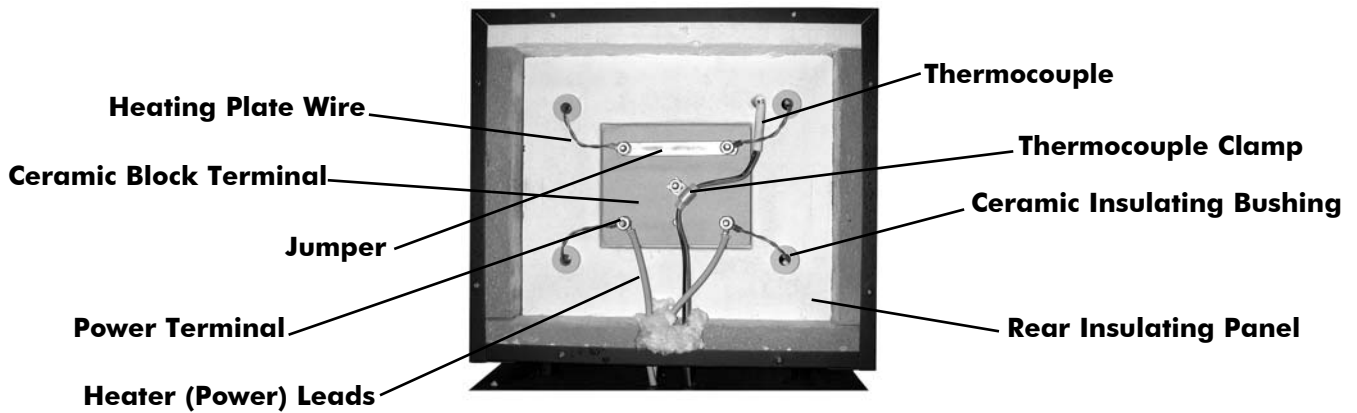


Figure 3
P.D.Q. (MEDIUM) 115V and 220V
(SHOWN WITH UPPER BACK PANEL REMOVED)

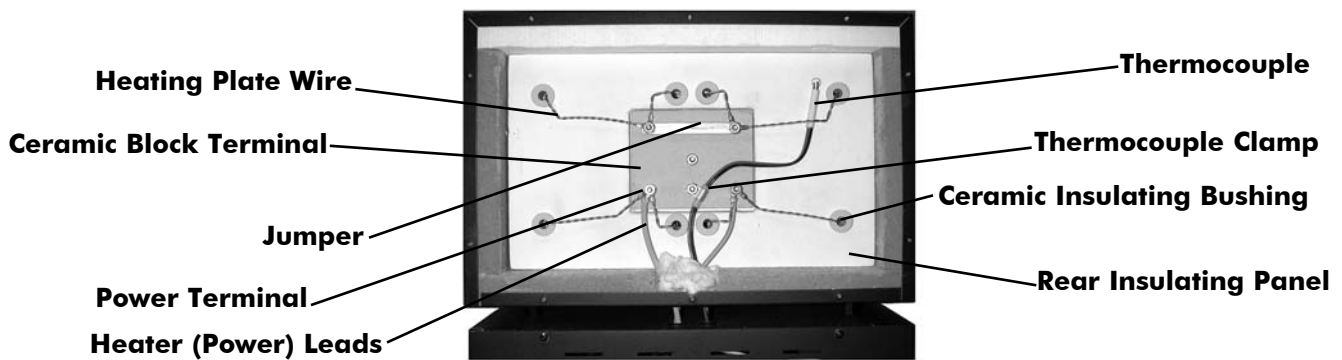


Figure 4
P.D.Q. (LARGE) 115V
(SHOWN WITH UPPER BACK PANEL REMOVED)

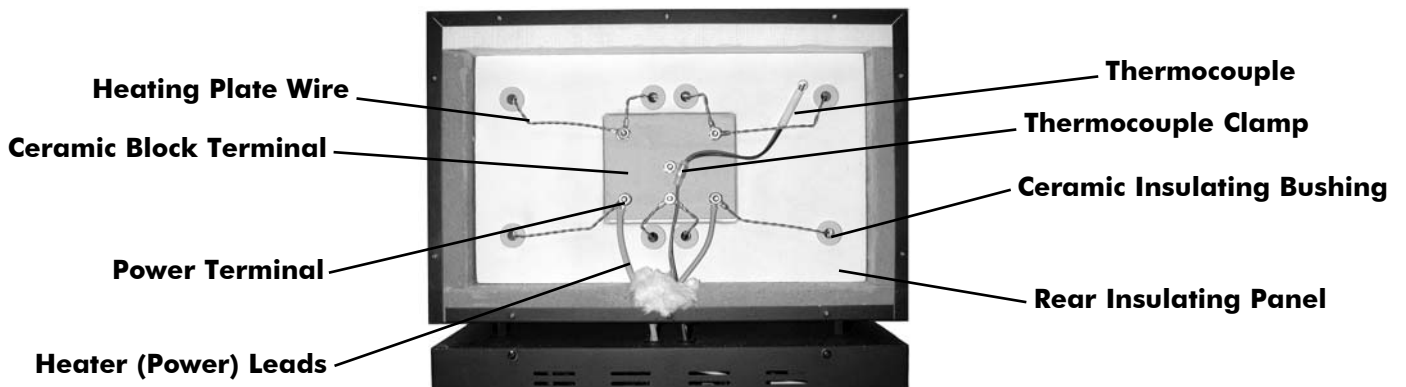


Figure 5
P.D.Q. (LARGE) 220V
(SHOWN WITH UPPER BACK PANEL REMOVED)

SERVICE

REPLACEMENT OF THE THERMOCOUPLE

1. Remove the front, upper rear, and lower rear panels.
2. Remove the thermocouple leads from the main control board.
3. Remove the clamp which secures the thermocouple to the ceramic terminal block located in the upper half of the furnace. Remove the heating plate wire which crosses over the thermocouple, and bend it out of the way to permit sliding the thermocouple out of the rear of the furnace. Remove the two loose thermocouple wires from the base of the unit.
4. Bend the new thermocouple wires at a 90 degree angle, approximately 3-3/8" from the exposed tip of the thermocouple. Be certain that there is a ceramic insulating bead covering the thermocouple wires where they cross the heating plate wire.
5. Feed the two thermocouple wires from the upper housing into the lower housing. Insert the new thermocouple into the hole at the rear of the heating chamber.
6. Reverse Step 3.
7. Attach the thermocouple wires to the connectors on the main control board.
8. Reconnect the heating plate wire which was removed in Step 3.

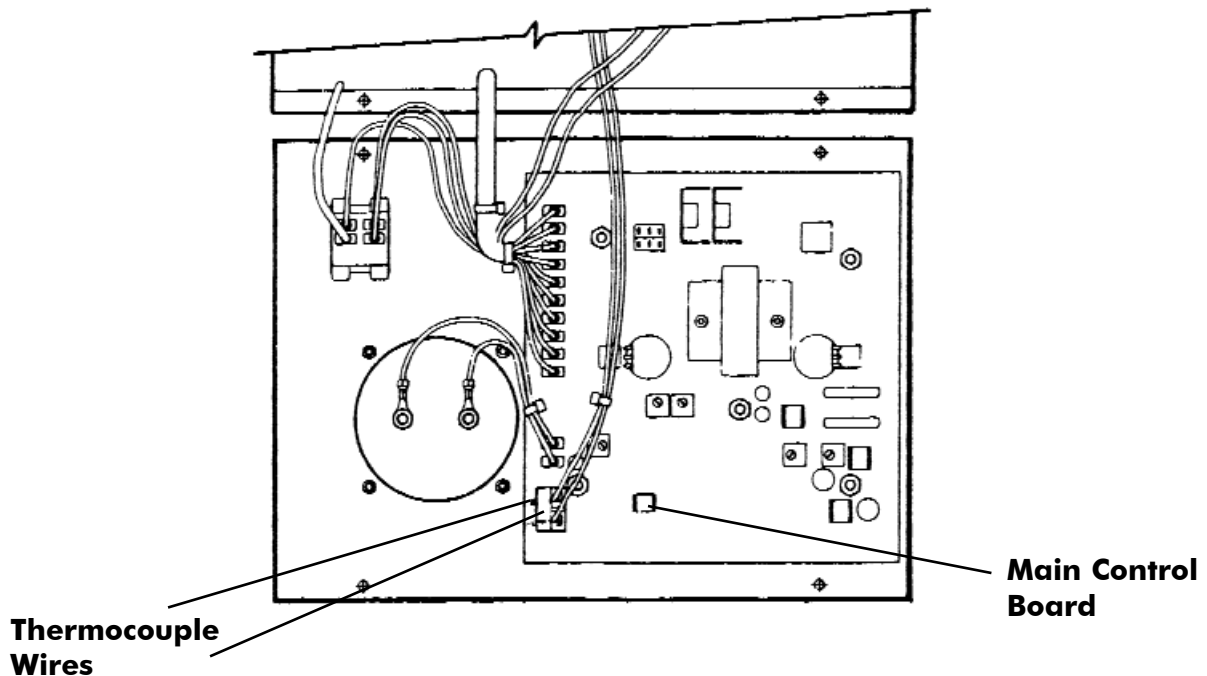


Figure 6

SPARE PARTS

P.D.Q. (MEDIUM) DESCRIPTION	100V	115V	220V	240V
Door Interlock Assembly	15275	15275	15275	15275
Ceramic Insulating Bushings (4)	33958	33958	33958	33958
Mounting Feet (4)	33967	33967	33967	33967
Circuit Breaker	117046	117046	117047	117047
Control Board	33630-1	33630-1	33630-2	33630-2
Thermocouple Assembly Kit	18913	18913	18913	18913
Jumper	33130	33130	33130	33130
Tray for Heating Chamber	33256	33256	33256	33256
Tempil Pellet Kit (1300 Deg. F) (Pkg. of 5)	33902	33902	33902	33902
Power Cord Kit - Japan & U.S.	15288	15288	N/A	N/A
Power Cord Kit - Australia	N/A	N/A	23206	23206
Power Cord Kit - England	N/A	N/A	23202	23202
Power Cord Kit - Europe	N/A	N/A	23203	23203
Power Cord Kit - Italy	N/A	N/A	23205	23205
Ceramic Front Section (Set of 2)	15292	15292	15292	15292
Door Assembly	15284	15284	15284	15284
Door Insulation	15722	15722	15722	15722
Rear Ceramic Terminal Block w/ Terminals	33935	33935	33935	33935
Heating Plate Assembly (Set of 2)	33915	33915	33916	33916
Heater (Power) Leads (Set of 2)	33975	33975	33975	33975
Door Spring Hook Assembly Kit	33997	33997	33997	33997
Heating Chamber Insulation Kit	33982	33982	33982	33982
On/Off Power Switch	33263	33263	33264	33264
Analog Pyrometer	33613	33613	33613	33613
Ceramic Vent Tube	33257	33257	33257	33257
Triac Replacement Kit	115578	115578	115578	115656

P.D.Q. (LARGE) DESCRIPTION	100V	115V	220V	240V
Door Interlock Assembly	15275	15275	15275	15275
Ceramic Insulating Bushings (4)	33958	33958	33958	33958
Mounting Feet (4)	33967	33967	33967	33967
Circuit Breaker	117046	117046	117047	117047
Control Board	33630-1	33630-1	33630-2	33630-2
Thermocouple Assembly Kit	18913	18913	18913	18913
Jumper	33130	33130	33130	33130
Tray for Heating Chamber	33256	33256	33256	33256
Tempil Pellet Kit (1300 Deg. F) (Pkg. of 5)	33902	33902	33902	33902
Power Cord Kit - Japan & U.S.	15289	15289	N/A	N/A
Power Cord Kit - Australia	N/A	N/A	23206	23206
Power Cord Kit - England	N/A	N/A	23202	23202
Power Cord Kit - Europe	N/A	N/A	23203	23203
Power Cord Kit - Italy	N/A	N/A	23205	23205
Ceramic Front Section (Set of 2)	15293	15293	15293	15293
Door Assembly	15286	15286	15286	15286
Door Insulation	15712	15712	15712	15712
Rear Ceramic Terminal Block w/ Terminals	33936	33936	33936	33936
Heating Plate Assembly, Rear (Set of 2)	33917	33917	27956	33917
Heating Plate Assembly, Side (Set of 2)	33918	33918	27957	33918
Heater (Power) Leads (Set of 2)	33975	33975	33975	33975
Door Spring Hook Assembly Kit	33997	33997	33997	33997
Heating Chamber Insulation Kit	33983	33983	33983	33983
On/Off Power Switch	33263	33263	33263	33263
Analog Pyrometer	33613	33613	33613	33613
Ceramic Vent Tube	33257	33257	33257	33257
Triac Replacement Kit	115578	115578	115578	115656



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