

THE ORIGINAL GRATE HEATER

Installation and Operating Instructions

The Grate Heater can be used in a wood-burning masonry fireplace with overlapping glass doors and features a concealed blower that retains the natural beauty of your fireplace. With proper care and maintenance, the Grate Heater is a safe and efficient insert for you fireplace.

This unit is recommended for use with a glass door enclosure. Using the Grate Heater in conjunction with glass doors produces maximum performance from the fireplace and presents a lower operating fuel cost.

Model	Width	Depth	Weight
2220	22 in.	20 in.	52 lbs.
2422	24 in.	22 in.	56 lbs.

INSTALLATION INSTRUCTIONS:

All units come with a front grill 51 inches wide (including cuttable extender bars) by 1-3/8 inch high. This unit will force more heated air into the room and allow a more comfortable temperature during the brisk winter months by having one (1) venting outlet.

After installing, avoid building a raging fire in the fireplace. The fan will distribute more heat directly to the room if the burn cycle is even. Overfiring can cause discoloration to any glass door unit and may damage the heat exchanger.

Step 1. Verify that the Grate Heater is the proper size for the fireplace.

Step 2. For fireplaces with existing glass doors, make sure they can be elevated 1-3/8 inch. Remove the glass doors. Insert the Grate Heater and reposition the glass door on top of the riser bar. This will elevate the glass door frame 1-3/8 inch.

Step 3.

Slide the knob provided in the parts bag on to the rheostat stem. Mount extender bars on the front riser bar with the metal screws provided (see Figure 1).

Step 4.

Place the glass door enclosure on top of the front riser bar, making sure the glass door and heat exchanger are centered in the fireplace.

Step 5.

Remove the extender bars and cut them so the total riser bar width is the same as the glass enclosure. Cut the cord shield to the desire length and slide it on the extender bar where cord is introduced (this protects the cord from the heat). Insert the end caps (see Figure 1).

Step 6.

Reposition and secure the glass door according to the glass door instruction manual.

Step 7.

For a dropped hearth installation, the back legs come standard with 1/2 inch nuts and it is recommended that 1/2 inch x 2-1/2 inch machine bolts be used. (Not included)

Step 8.

Plug cord into the nearest outlet. Exchanger will start when temperature reaches 110 degrees F and turn off at 90 degrees F.

NOTE: Grate Heater fan must be plugged in and energized at all times when the unit is in use, otherwise unwarranted damage to the motor and wiring will occur.

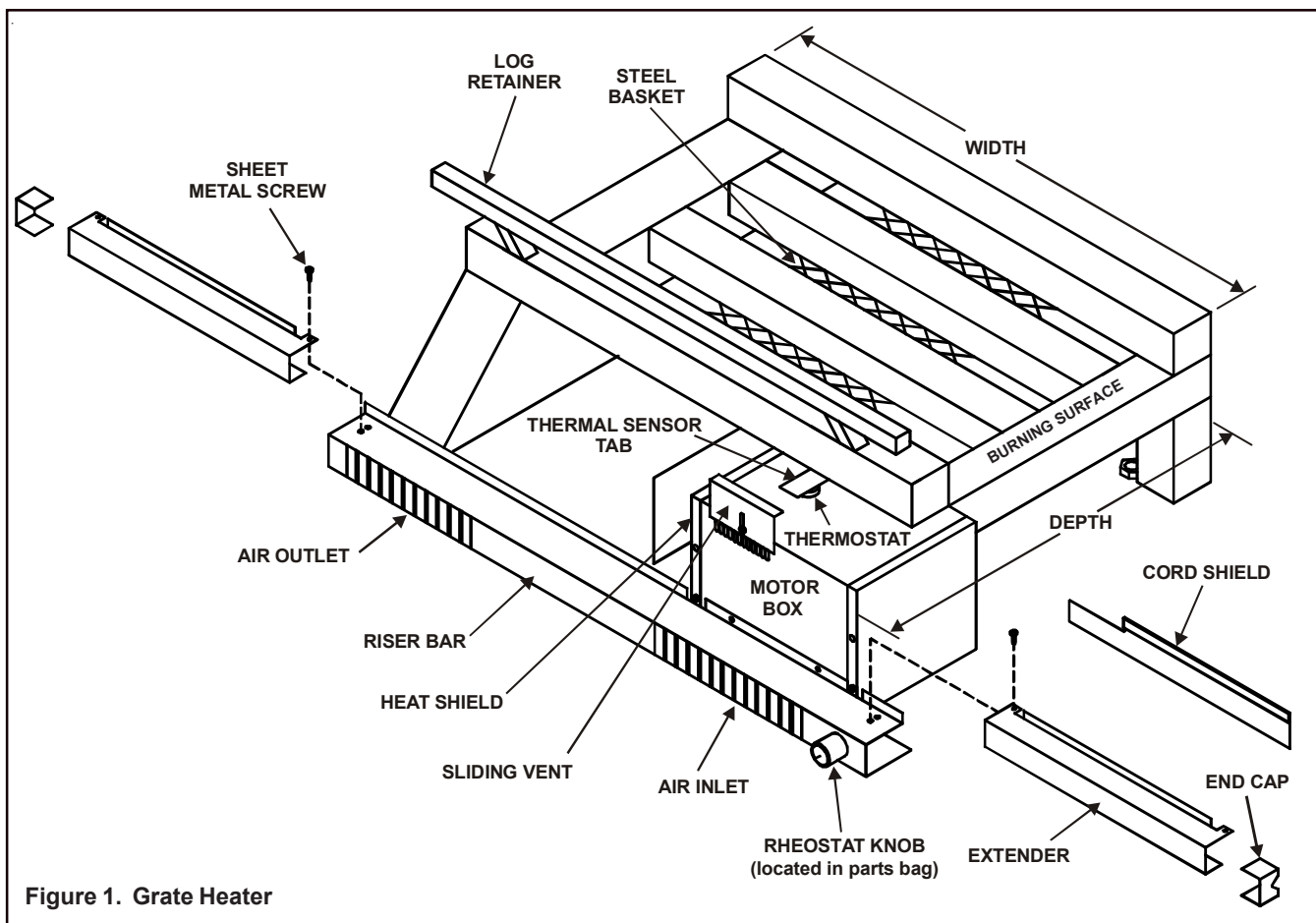


Figure 1. Grate Heater

OPERATING INSTRUCTIONS

1. On initial start-up of the Grate Heater, there will be some smoke produced. This is a burn-off of oil used in manufacturing of this unit. The smoke will subside after the first firing. The fan should be left on low speed, with the fireplace doors open. The smoke can be minimized by placing a damp cloth over the heat outlet.
2. The blower sliding vent should only be open when glass doors are **NOT** used or in the event of a power failure or blackout. Under these conditions the vent is used to cool the blower.
3. This unit is equipped with a three (3) wire ground cord for protection. **Never** remove the ground lead. Be sure the electrical plug provided is plugged into a proper three (3) prong outlet. If an extension cord is used, be sure it has the proper ground and is of the same or greater value than the cord provided on the Grate Heater. If the extension cord is too light the fan may fluctuate its speed and operate improperly.
4. Periodic removal and cleaning of ashes on the square tubing is required and will increase heat output and maximize efficiency.
5. Under normal use the blower on the Grate Heater should be oiled every 4,000 hours of operation. There are 2 oil port channels on the top of the motor housing where 2 drops of a "3-in-one" type general purpose lubricating oil can be applied (see Figure 2).

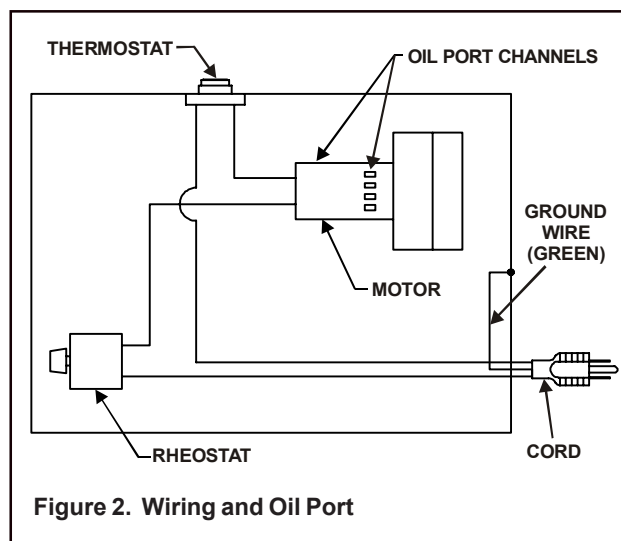


Figure 2. Wiring and Oil Port

TROUBLESHOOTING

1. Blower will not turn on.

If a fire has not been started on the heat exchanger, the fan will not come on. Because the Grate Heater is thermostatically controlled, it will not turn on until the thermostat, located on the top of the motor box, reaches 110 degrees F. After you start the fire it will normally take 15 to 30 minutes before the fan will turn on. The blower will automatically turn off at a temperature of 90 degrees F. See Step #2

2. Blower turns on and off while fire is burning.

Check the thermal sensor tab which is 1" wide x 4" long, located on the top of the motor box, extending over the thermostat (see Figure 1). It conducts the heat from the Grate Heater to the sensor, activating the motor. If the motor is starting and stopping or not starting at all, you may need to tighten this tab so it is touching the thermostat. This can be done with a standard screwdriver. Tighten the tab so it is only touching the thermostat. **DO NOT OVERTIGHTEN.**

3. Motor hums upon starting.

After you start the fire it will normally take 15 to 30 minutes before the fan will turn on. The blower will automatically turn off at a temperature of 90 degrees F.

Be Sure the Grate Heater is **unplugged** before checking for potential problems.

Remove the outside panel of the motor box (right side panel for a motor right unit or left side panel for a motor left unit) by taking out the screws on the front and back of this panel. Once the fan is exposed, try to spin the fan by inserting a small probe, such as a screwdriver, thru the openings in the fan housing, being careful not to bend the fan's fins. When this is done, re-secure the side panel. The fan can be tested by plugging the unit back in and manually heating the heat sensor with a gas match or a lite blow torch. The heat sensor will click when it is hot enough to engage and the fan should start spinning.

4. Blower will not turn on after the fire has been started.

If the motor does not turn on after starting a fire, and you have determined there is power to the actual power outlet the cord is plugged into, several items can be checked. Be sure the unit is **unplugged** before checking for potential problems.

Check the thermal sensor as indicated in Step #2.

Check that the fan spins, as indicated in Step #3.

Check that there is no damage to the power cord.

Heat up the thermostat, as outlined in step #3. If the thermostat clicks, it is functioning (if using a gas match, this could take 3 to 5 minutes of direct flame, or approximately 1 minute with a lite blowtorch flame). If it doesn't click, it should be replaced.

Check the spade connectors on the wire leads of the rheostat speed control. This control's knob is located on the front riser bar of the heater. The control and related wiring are located in the riser bar, directly behind the knob. There are 2 spade connectors, be sure both are tight.

If this control needs to be replaced, take the control's knob off by firmly grasping the knob and pulling straight forward. Next, loosen and remove the flat nut that holds the control to the riser bar. The control can now be removed from behind the riser bar, disconnected at the spade connectors and replaced.

NOTE: The cord shield (See Figure 1) protects this control, its wiring and the power cord, from the heat in the fireplace. It is imperative that this shield be properly installed during operation.

NOTES FOR PRODUCT LONGEVITY:

With proper care and maintenance, your Grate Heater should give you years of efficient heat circulation while maintaining the natural beauty of your fireplace. Below are suggestions, not necessarily all inclusive, to help with the life expectancy of your Grate Heater:

Never burn a fire on the product during a power outage; the unit is dependent upon airflow to cool the motor box and irreparable damage may occur. Operating in this manner will void the warranty.

If, for some reason, the unit doesn't turn on after 30 minutes, open the fireplace's doors (if applicable), open the motor box's sliding vent (See #2 under operating instructions and Figure 1), push the burning wood away, to the opposite back corner from the motor box, and let the fire die. After cooling, troubleshoot.

Do not allow ash to build up from the base of the fireplace and bury the heat exchanger. This will cause a constant overheating condition and eventually disintegrate the tubing. This is considered an abusive situation and may void the warranty.

Your chimney should have a proper cap to prevent rain water from coming down the chimney and corroding the heat exchanger.

Do not install the Grate Heater in a manner in which it cannot be removed for repair. Situations involving the mortaring in of the fireplace's doors or hiding the cord, in a permanent manner, are strongly discouraged.

WARRANTY

The Original Grate Heater has a three-year parts only warranty, from the date of purchase, on the square tubing welds and a one year on all electrical components. Units must be operated in accordance with operating instructions. Damage due to shipping, abuse or misuse is not covered. Cost of return shipping, installation or removal is not covered and it is the customer's responsibility to properly package the unit for return shipping that will not incur damage. We suggest that you keep the original packaging for this reason. Photographs of the installation may be requested and should be emailed to info@grateheater.net

SERVICE PARTS LIST

DESCRIPTION	SERVICE PART NO.
Blower Motor	GH-500
Rheostat	GH-510
High Limit Switch	GH-531
Replacement Cord	GH-550