

HOT SURFACE IGNITER KIT INSTRUCTIONS

INSTALLATION INSTRUCTIONS


P/N# 43800013 (50/75/100 BTUH)

P/N# 2272133 (125/150/175/200 BTUH)


NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS

Installing and servicing heating equipment can be hazardous due to gas and electrical components. Only trained personnel should install or service hydronic heating equipment.

Untrained personnel can perform basic maintenance functions such as adjusting water levels, or bleeding and draining radiation components. All other operations should be performed by trained service personnel. When working on hydronic heating equipment, observe precautions in the literature, on tags, and on labels attached to the unit. Recognize safety information. This is the safety-alert symbol 

When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety-alert symbol. 


DANGER identifies the most serious hazards which will result in severe personal injury or death.

WARNING signifies a hazard which could result in personal injury or death.

CAUTION is used to identify unsafe practices which would result in minor personal injury or product and property damage.

NOTE is used to highlight suggestions which will result in enhanced installation, reliability, or operation.

Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

 **WARNING: FIRE, EXPLOSION, ELECTRICAL SHOCK AND CARBON MONOXIDE POISONING HAZARD.**

Failure to follow this warning could result in serious injury or property damage. Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, explosion, fire, electrical shock, or other conditions which could result in personal injury or death. Consult your distributor or branch for information or assistance. The qualified installer or agency must use only factory-authorized kits or accessories when servicing this product.

 **CAUTION: INSTALLER CUT HAZARD**

Failure to follow this warning could result in personal injury. Boiler casting may be hot to the touch or sheet metal parts may have sharp edges. Gloves should be worn when servicing this boiler.

INTRODUCTION

This instruction covers the installation of the hot surface igniter in 90% Condensing Boilers. The correct igniter must be used for the correct boiler model.

DESCRIPTION AND USAGE

The replacement igniter kit can be utilized to replace a defective hot surface igniter. This kit contains the following items:

Item	Quantity
Hot Surface Igniter	1
Hot Surface Igniter Gasket	1
Installation Instructions	1

There are 2 different igniters used in the 90% Condensing Boiler. The igniters look similar but have different insertion depths. Refer to *Figure 1* to determine the correct igniter.

Older igniters (50/75/100 BTUH only) had a spiral silicon carbide element. The replacement igniter has a flat element as shown in *Figure 1*. A previous version spiral igniter may be used as long as it is the correct insertion depth.

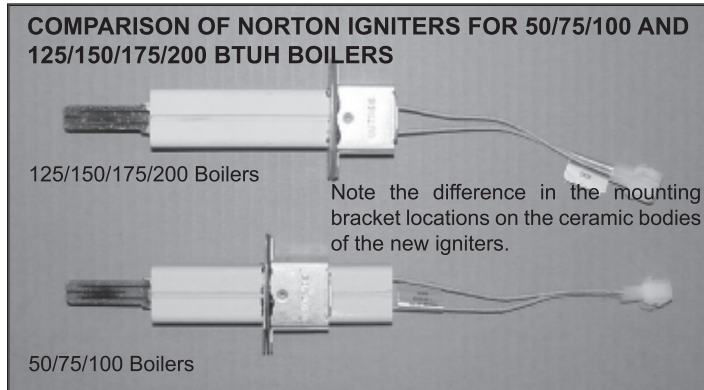


FIGURE 1

INSTALLATION

CAUTION: The hot surface igniter is **extremely** fragile. Failure to support the burner assembly could result in damage to the hot surface igniter.

I. REMOVING THE HOT SURFACE IGNITER

1. Turn off electric supplies to unit and set thermostat to lowest setting or "OFF". More than one disconnect may be required to disconnect power to unit.

2. Turn off gas at external supply shut-off and, on 50/75/100 BTUH models, turn electric switch on gas valve to "OFF."

NOTE: 125/150/175/200 BTUH models do not have a switch on the gas valve.

3. Remove outer door by lifting upward (on 50/75/100 BTUH models) and by pulling the door forward on larger models.

4. Disconnect boiler wiring harness from the Hot Surface Igniter.

5a. On 50/75/100 BTUH models (see *Figure 2*):

(1) Loosen the 5 nuts that attach the mixing assembly to the boiler casting. This will decompress the burner head gasket and allow for ease of igniter removal.

(2) Remove the two 5/16" hex head screws that attach the igniter to the mixer assembly.

(3) Slowly pull the igniter straight backward until the ceramic is clear of the mixer assembly.

(4) Continue to pull the igniter backward until the igniter element clears the mixer assembly.

(5) Remove the old Hot Surface Igniter Gasket.

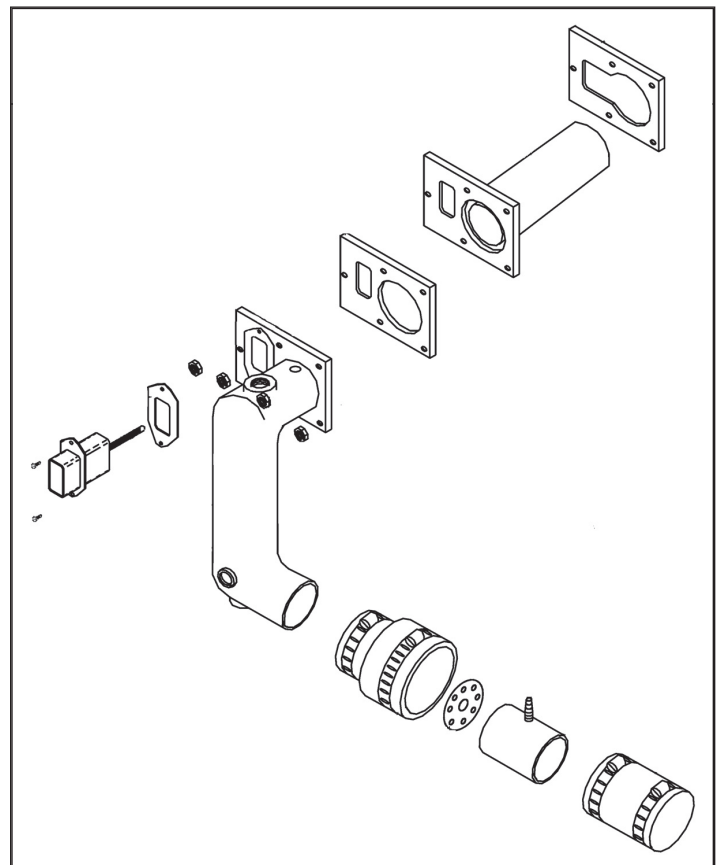


FIGURE 2

5b. On 125/150/175/200 BTUH models (see Figure 3):

(1) Loosen the 5 nuts that attach the flue adapter and inducer assembly to the boiler casting. This will decompress the burner head gasket and allow for ease of igniter removal .

(2) Remove the two 5/16" hex head screws that attach the igniter to the mixer assembly

(3) Slowly pull the igniter straight backward until the ceramic is clear of the mixer assembly.

(4) Continue to pull the igniter backward until the igniter element clears the mixer assembly.

(5) Remove the old Hot Surface Igniter Gasket.

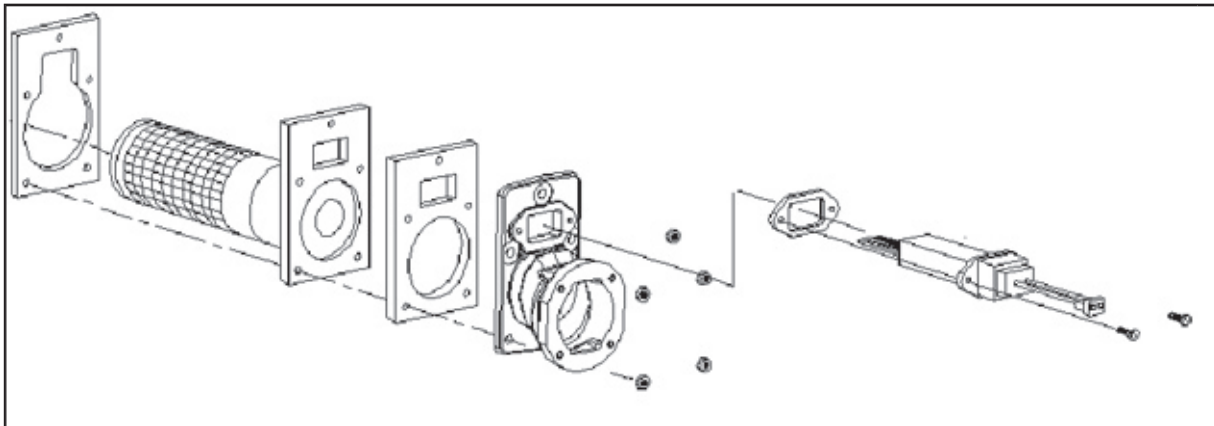


FIGURE 3

II. INSTALLING THE NEW IGNITER

NOTE: Failure to properly ground boiler will result in loss of flame sensing signal.



CAUTION: BOILER RELIABILITY HAZARD

Improper installation of the Hot Surface Igniter could cause premature Hot Surface Igniter failure. Special attention must be paid to the correct orientation of the Hot Surface Igniter.

1. Install the new Hot Surface Igniter Gasket (included with kit) on the Hot Surface Igniter.

2. Orient the igniter to the correct position

3a. On 50/75/100 BTUH models:

(1) Note the bent up tab and the word "outside" stamped on the metal base of the igniter.

(2) Orient the igniter so the tab points to the left side of the boiler as you are facing the boiler.

3b. On 125/150/175/200 BTUH models:

(1) Note the bent up tab and the word "outside" stamped on the metal base of the igniter.

(2) Orient the igniter so the tab points up as you are facing the boiler.

4. Insert the Hot Surface Igniter in the opening on the mixer assembly.

5. Slowly slide Hot Surface Igniter straight forward until the metal mounting bracket seats against the mixer assembly.



CAUTION: You should be able to read the word "outside" on the Hot Surface Igniter mounting bracket after the Hot Surface Igniter is fully seated. If you cannot read the word "outside," the igniter is not oriented correctly. Remove and reinstall the igniter in the correct orientation.

6. Install the two 5/16" hex head screws that attach the Hot Surface Igniter to the Mixer Assembly.

7. Tighten the 5 nuts that attach the mixer assembly (on 50/75/100 BTUH models) or flue adapter (on 125/150/175/200 BTUH models) to the boiler casting.

8. Connect the Hot Surface Igniter to the boiler wiring harness.


9. Turn on line voltage electrical supply.

10. Turn on gas at external supply shut-off and, on 50/75/100 BTUH models, turn electric switch on gas valve to "ON."

NOTE: 125/150/175/200 BTUH models do not have a switch on the gas valve.

II. SYSTEM CHECK-OUT

1. Set thermostat to “Call for heat.”
2. Observe ignition sequence through boiler sight glass located on boiler casting.
3. Verify that the burner lights smoothly and the burner has a clear blue flame.
4. Check for air leakage around Hot Surface Igniter and either the Mixer Assembly or Flue Adapter. It may be necessary to remove and re-install these items to correct an air leak.
5. Check for air leakage around the boiler clean-out panel on older (50/75/100 BTUH) models. A whistling noise may indicate an air leak around the clean out panel .

 **CAUTION:** If there is a severe air leak in the clean-out panel, the pressure switch may not close or will re-open, resulting in no ignition or erratic burner operation.

NOTE: Hot Surface Igniter failure may be caused by one or more of the following conditions. As part of the system check-out, verify that the following conditions are not affecting the operation of the boiler:

- **Short Cycling Defective Thermostat:** Incorrect thermostat anticipator setting, low water flow or over-sized furnace.
- **Under Firing/Low BTUH Input:** Set manifold pressure and verify firing rate as shown on rating plate by clocking the gas meter
- **High Return Water Temperature:** Verify that water flow through the radiation system is correct for the type of radiation components installed.
- **Incorrect Venting:** Verify proper venting per the installation instructions. Verify that the intake and exhaust terminations are installed properly and are not reversed.

For additional information, and a complete sequence of boiler operation, refer to the Installation Manual and Operating Instructions.

6. After System Check-out is complete, set thermostat below room temperature.
7. Verify that burner shuts down.
8. Verify boiler operates properly and set thermostat to desired room temperature.
9. Reinstall outer door.