

ASSEMBLY and INSTALLATION INSTRUCTIONS



Gas Conversion Kit Sentinel Tube Heaters

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Kit Contents:

DESCRIPTION	QTY.
Instructions	1
Burner inlet plate	1
Air inlet plate	1
Conversion documentation label	1
Full gas train w/ bracket assembly	1
Pipe thread compound	1
Burner vane	1
Copper tube	1

DESCRIPTION	QTY.
1/4" Clamp	1
Gasket	1
Pressure switch orifice	1
Adapter, pressure switch line	1
Ring, retaining, flat	1
Grommet	1
Screw, socket head	2
Spacer	2

Tools required:

Adjustable wrench
1/4" nut driver or socket
3/8" socket
9/16" socket
Pipe wrench

Materials required:

General Purpose silicone sealant

Requirements:

- You must read and understand these instructions before beginning the conversion.
- You must be properly trained and have sufficient experience to install the gas conversion kit and test the heater for proper operation.
- Ensure the installation's gas type and pressure conform to the gas type and pressure requirements given in the table below.
- Ensure piping is of appropriate size for gas flow capacity.

	Max. Inlet Pressure	Min. Inlet Pressure
LP Gas	13.5" w.c.	11.0" w.c.
Natural Gas	13.5" w.c.	7.0" w.c.

Discussion:

The following instructions are common for use when converting fuel gas for single stage tube heaters. This conversion kit and instructions pertain to only the "C" or newer design of the Sentinel single stage tube heaters. If unsure, call L.B. White Company. Some components might not be used in conversion.

General Instructions:

- Close the main gas supply valve to the heater, and disconnect the heater's electrical supply.
- For reassembly, reverse the respective service procedure.
- Use pipe thread compound at all threaded connections.
- Ensure all threaded connections are tightened securely.

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Preparation

1. Check the dataplate on the heater to confirm your tube heater can be converted. See Sentinel 125 dataplate below.



Model/Modele/
Modelo **AT125E5ND12161S**

Serial No./No. de série **L00-SAMPLE**

Fuel / Carburant / Combustible NG

Elevation / Élévation (ft/m) 0 - 2,000 / 0 - 610

Input / D'Entrée / Entrada (kBtu/kW)

Manifold pressure / Pression du brûleur / Quemador de presión (InWC/kPa)

Inlet pressure / Pression d'entrée / Presión de entrada (InWC/kPa)

Electrical / Électrique / Eléctrico (V/A/Hz/Ø)

Min. operating temp./Min. température de fonctionnement / Min. temperatura de funcionamiento (°F/°C)

L.B. White Co., LLC 411 Mason Street Onalaska, WI 54650 USA 1-608-783-5691

	Maximum Maximo Maximale	Minimum Minimo Minimale
125 / 36.6		N/A
4.0 / 1.0		N/A
13.5 / 3.4		7.0 / 1.7
115 / 1.0 / 60 / 1		
-20 / -28		

2. Disconnect the gas hose from the heater's sediment trap.
3. For "C-D" design, remove the sediment trap 1/2 in. nipple from the inlet of the heater's gas control valve and slide the nipple toward the rear until the nipple is flush with the inside panel.
4. Disconnect the gas control wires.

Removing the Burning Casting

1. Remove the igniter mounting screws and the igniter from the heater. **DO NOT FORCE OR BEND THE IGNITER DURING REMOVAL PROCESS.** See Fig.1 & Fig. 2.

FIG. 1

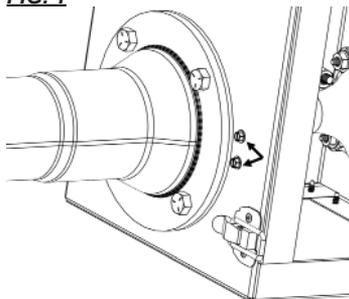
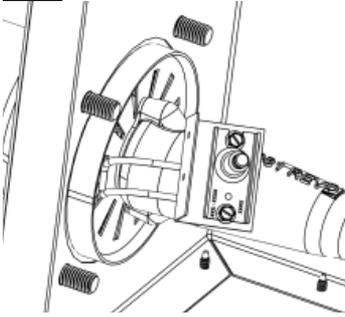
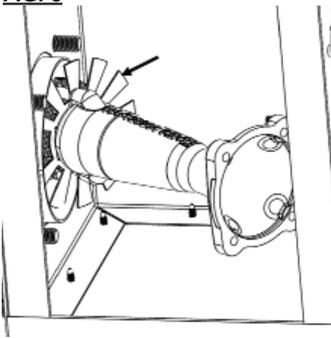


FIG. 2

2. If your burner casting has a copper tube, disconnect the pressure switch tube from the copper tube.
3. Remove the four nuts securing the burning casting and remove the burner casting from the heater. Save the nuts to be use later. See Fig. 3. **Do not force or bend vanes on burner vane plate during removal process.**

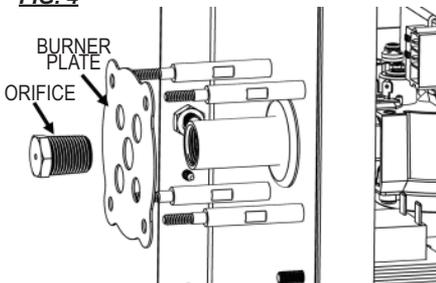
FIG. 3

For C-D design

- Remove and discard the orifice and burner inlet plate. See Fig. 4.

For newer design

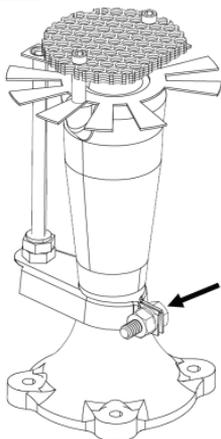
- Remove and discard only the burner inlet plate.

FIG. 4

Changing the burner vains

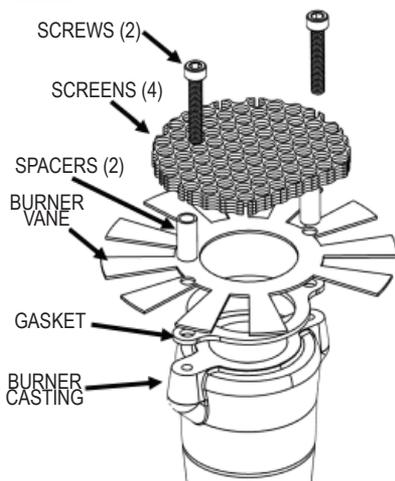
1. If a bracket bolt was used on your burner assembly, remove it. See Fig. 5.

FIG. 5



2. Remove the 9/64 allen head screws, the burner screens, the spacers, and the burner vane from the burner casting. See Fig. 6. Discard the allen head screws, the burner screens, spacers, and the burner vane.

FIG. 6

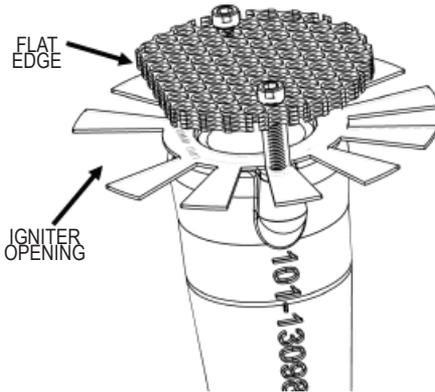


3. Remove burner gasket or caulk sealant:

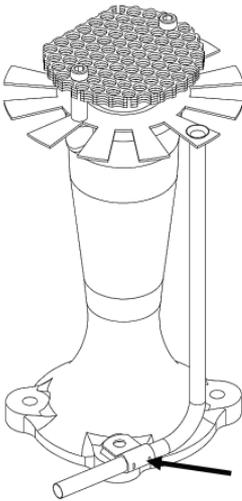
- If the burner casting has a gasket, remove and discard it.
- If the burner casting have a caulk sealant, remove and clean the surface.

4. Place the gasket, provided in kit, on the burner casting head.

5. Install the new burner vane, spacers, burner screens, and burner screws from conversion kit. See Fig. 6.
6. Securely tighten the burner screws. Ensure the flat edges of the burner screens and the burner vane igniter opening align with each other. See Fig. 7.

FIG. 7

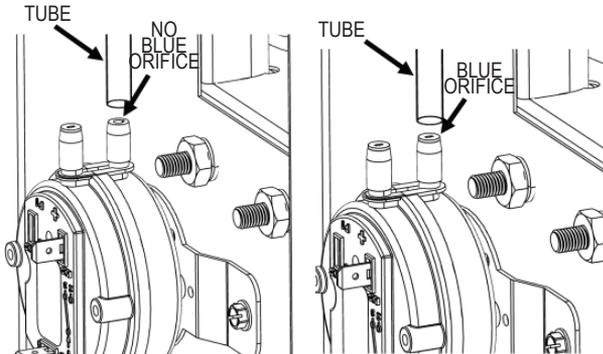
7. Installing the copper tube:
 - If your burner casting assembly did not have a copper tube, set your burner casting aside and skip to Section D.
 - If your burner casting assembly had a copper tube, insert the copper tube from the conversion kit through the burner vane and install the 1/4" clamp onto the copper tube. See Fig. 8.

FIG. 8

Pressure switch orifice

- Remove the clear tube from the pressure switch and inspect the pressure port for a blue plastic orifice. See Fig. 9.
 - If the pressure switch does not have the blue orifice, fully insert the blue orifice from the conversion kit into the port.
 - If the pressure switch does have a blue orifice installed, leave as is and reconnect the clear tube to the port.

FIG. 9



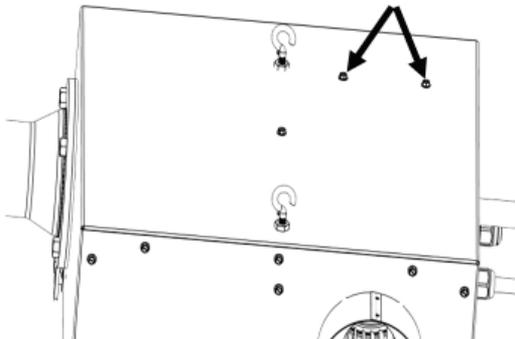
Removal of the Gas Control Assembly

Instructions 1-6 are for "C-D" design tube heater. For newer tube heater design, skip to step 7.

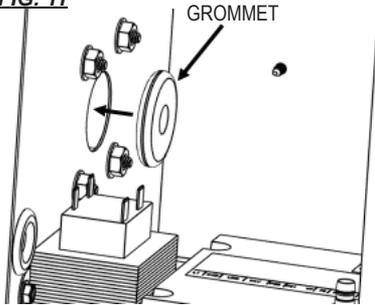
C-D design tube heater

1. Remove the two screws securing the gas valve assembly bracket to the heater. See Fig. 10.

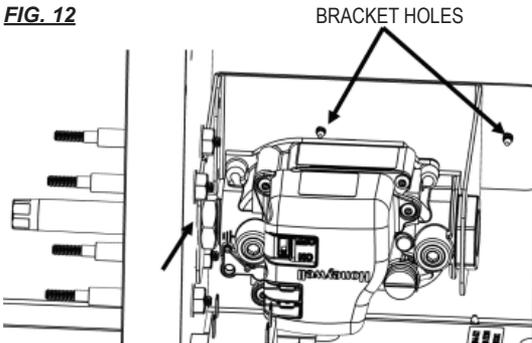
FIG. 10



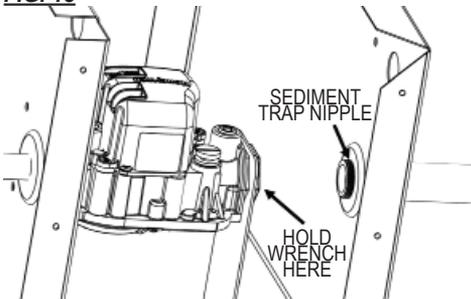
- Remove the rubber grommet and gas valve assembly from the heater.
- Install the rubber grommet from the kit to center partition hole. See Fig. 11

FIG. 11

- Install the gas train assembly from the kit to the heater by inserting the brass orifice into the center partition grommet and maneuver the gas train assembly into position. The bracket holes should align with the case top holes.
- Secure the bracket with provided sheet metal screws. Ensure the grommet does not get pushed through the center partition. See Fig. 12.

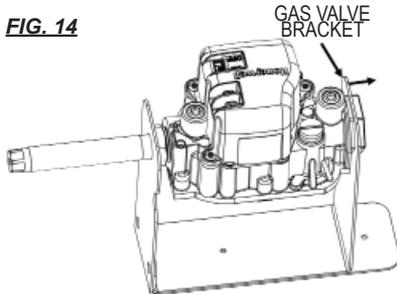
FIG. 12

- Install the sediment trap nipple, removed earlier, to the inlet of the gas control valve. See Fig. 13. Use a wrench to hold the gas control valve as you tighten the nipple.

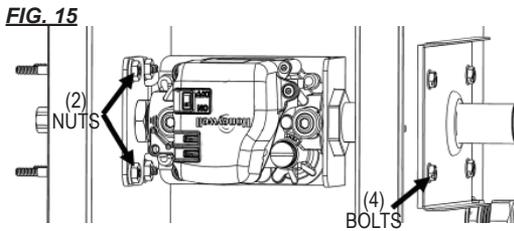
FIG. 13

Newer tube heater design

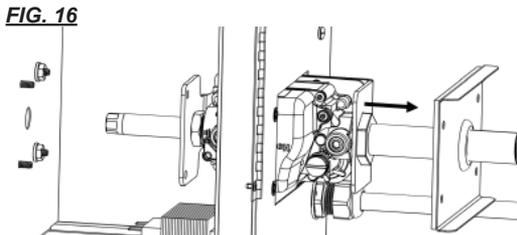
7. Remove the bracket from the gas conversion gas train. See Fig. 14. To release the gas train, bend the bracket with the hex opening outward and slide the valve assembly out. The bracket may be discarded.



8. Remove the bolts and nuts securing the gas control assembly to heater. See Fig. 15.

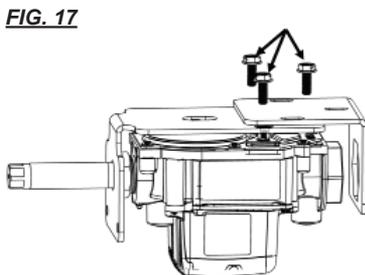


9. Pull the gas control assembly from the heater. See Fig. 16.



10. Remove the nipple and bracket from the old gas valve assembly. Save these to be use later.

11. Remove the three bolts holding the two brackets together and separate the brackets from the gas valve assembly. See Fig. 17.

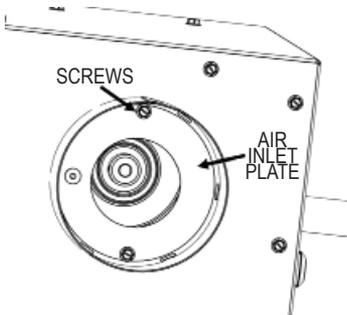


12. Reverse the process to install the brackets onto the conversion kit gas train. Tighten the bolts securely.
13. Install the nipple and bracket removed earlier to the inlet of the gas train. Use a wrench to hold the gas control valve as you tighten the nipple.
14. Install the gas train assembly to the heater by inserting the brass orifice into the center partition.
15. Push the gas train assembly bracket onto the burner casting mounting bolts.
16. Secure the gas train bracket and nipple bracket with bolts/nuts removed earlier. See Fig. 15.

Change the Air Inlet Plate

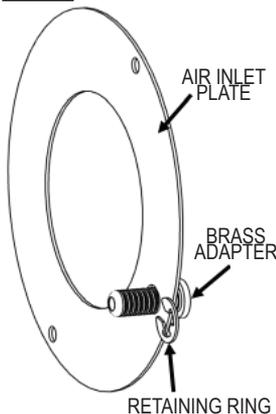
1. Remove the supply air flex tube from the heater air inlet.
2. Remove the two screws securing the air inlet plate and remove the air inlet plate from the heater case. See Fig. 18.

FIG. 18



- If the original air inlet plate does not have an adapter, install the air plate from the conversion kit to the air inlet of the heater.
- If the original air inlet plate has a clear tube connected to a brass adapter, remove the bolt and nut from the new air inlet plate and install the provided adapter and retaining ring. See Fig. 19.

FIG. 19

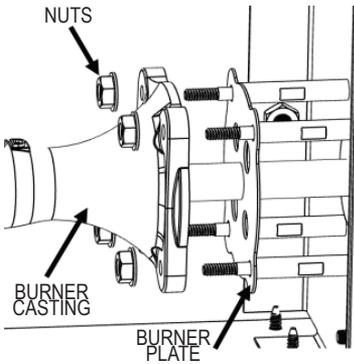


3. Install the air inlet plate to the heater using the two B-point sheet metal screws provided.
4. Reseal around the outside of the air inlet plate with silicone (not supplied).
5. Attach the clear tube to the brass adapter.

Installing the burner assembly

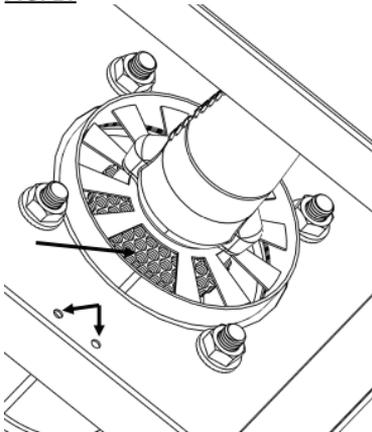
1. Install the new burner plate and the previously assembled burner casting to the 4 mounting studs. See Fig. 20.
20. Secure the casting using the nuts removed earlier.

FIG. 20



- Ensure the ignitor opening of the burner vane is directed down toward the ignitor mounting screw holes. See Fig. 21.

FIG. 21



2. If applicable, install the rubber hose from the pressure switch to the copper tube.
3. Install the ignitor. Pivot ignitor as necessary to ensure ignitor is properly positioned. Secure with screws removed earlier. **Do not force or bend the ignitor during installation process.**

Completion

1. Apply the conversion documentation label from the kit near the dataplate label.
2. Enter the information as required on the conversion documentation label.
3. Close and latch the burner box panel.
4. Attach the supply air flex tube onto the heater.
5. Open the heater main gas supply valve.
6. Start the heater and check for proper operation.

Service

Contact your local L.B. White dealer for replacement parts and service. You may also call the L.B. White Co., LLC at 1-800-345-7200, for assistance, or email us at customerservice@lbwhite.com.

Be sure that you have your heater model number and configuration number when calling.



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