LENNOX®
INSTALLATION INSTRUCTIONS

GAS UNITS
KITS AND ACCESSORIES

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90UGF/G26/G32 REPLACEMENT HEAT EXCHANGER

INSTALLATION INSTRUCTIONS FOR REPLACEMENT HEAT EXCHANGER (LB-91398A,B,C,D & E) FOR USE WITH 90UGF/G26/G32 SERIES UNITS

Shipping & Packing List

Package 1 of 1 contains the following:

1 - Heat exchanger assembly
1 - Burner box gasket
1 - Burner box
1 - Burner cluster
1 - Rollout switch assembly
4 - Combustion air blower screws
1 - Wiring diagram sticker
1 - Rollout switch wire (blue)
1 - Blower control wire (orange)
1 - Wire nut

Shipping Damage

Check equipment for shipping damage. If you find any damage, immediately contact the last carrier.

General

These instructions are intended as a general guide and do not supersede local codes in any way. Figure 8 illustrates the general part placement of the 90UGF/G26/G32 series furnace.

Application

See table 1 for unit model numbers and corresponding replacement kits.

TABLE 1

UNIT MODEL #	REPLACEMENT KIT #	REPLACEMENT KIT CATALOG #
90UGFA2-50 G26Q2-50 90UGFA3-50 G26Q3-50	LB-91398A	84K45
90UGFA3-75 G26Q3-75 G32-75	LB-91398B	84K46
G26Q4/5-75	LB-91398E	64L07
90UGFA3/4-100 G26Q3/4-100 G26Q4/5-100 G32-100	LB-91398C	84K47
90UGFA4/5-125 G26Q3/4-125 G26Q4/5-125 G32-125	LB-91398D	84K48

Note - Early model G26 units were manufactured with a hard plastic flue "Y" between the combustion air blower and the top of the unit. Later models were built using a soft rubber flue transition between the combustion air blower and the flue collar.

G26 and 90UGF units have also been manufactured using two types of ignition/blower control systems. Early models were equipped with an intermittent pilot ignition that had a separate ignition and blower control. The later models have hot surface ignition and an integrated ignition and blower control.

Installation

ELECTROSTATIC DISCHARGE (ESD)
Precautions and Procedures

⚠ CAUTION

Electrostatic discharge can affect electronic components. Take precautions during furnace installation and service to protect the furnace's electronic controls. Precautions will help to avoid control exposure to electrostatic discharge by putting the furnace, the control, and the technician at the same electrostatic potential. Neutralize electrostatic charge by touching your hand and all tools on an unpainted unit surface, such as the gas valve or blower deck, before performing any service procedure.

Refer to figure 8 when disassembling unit.

NOTE - Figure 8 illustrates units built with the SureLight hot surface ignition and a soft rubber flue transition.

Use papers or protective covering in front of furnace while removing heat exchanger assembly.

1 - Turn off electrical and gas power supplies to furnace.
2 - Remove upper and lower furnace access panels.
3 - Remove four screws around air intake fitting and lift intake pipe up and away.
4 - ***Units with soft rubber flue transition*** - Loosen the clamp between the flue transition and flue collar. Remove the flue collar mounting screw from the top cap and pull the flue collar / exhaust pipe up and away from the cabinet. Detach and remove the top cap from cabinet and supply air plenum.

Units with hard plastic flue Y - Loosen the lower clamp of no-hub connector at exhaust line and lift pipe up and away. Detach unit top cap from cabinet and supply air plenum and remove the top cap.

5 - If the electrical field make-up box is located inside the unit, you must remove it.

6 - Mark all gas valve wires and disconnect them from the valve.

7 - Disconnect gas supply from the gas valve.

8 - Disconnect and remove the condensate line from the condensate trap (which is on the bottom of the collector box). Turn the adapter fitting counterclockwise to remove it from the condensate trap. The fitting has standard right-hand threads.

9 - Carefully remove the spring clip and boot from the condensate trap. Drain the condensate trap, and catch the condensate into a shallow pan. Do not spill water in the control box.

10 - Remove the drain tube from the cold end collector box elbow.

11 - ***Units with hard plastic flue Y -*** Remove two screws from the flue Y trap at the cabinet door flange.

12 - Disconnect the 2-pin plug (3-pin plug on G32) from the combustion air blower. Remove the four screws from the combustion air blower, then remove the flue Y or the flue transition and the blower assembly from the unit. Do not misplace the combustion air blower orifice.

13 - ***Units with hard plastic flue Y -*** Invert the combustion air blower/flue assembly, and drain the flue Y into the floor drain.

14 - ***Units with SureLight hot surface ignition -*** Disconnect ignitor lead 2-pin plug located just outside of burner box. Mark and disconnect sensor wire from ignition control.
Units with intermittent pilot ignition - Mark and disconnect ignitor lead and sensor wire from ignition control.

15 - Mark and disconnect pressure switch tubing from both sides of the pressure switch.

16 - ***Units with SureLight hot surface ignition -*** Remove the limit switch, pressure switch, and the attached wiring harness from the vestibule panel.
Units with intermittent pilot ignition - Remove the limit switch, pressure switch, ignition control with its bracket and the attached wiring harness from the vestibule panel.

17 - Loosen the two screws that hold the gas manifold support at the vestibule panel.

18 - Remove the four burner box screws at the vestibule panel and remove burner box and gas valve/ manifold assembly with bracket.

19 - Disconnect the 9-pin plug from the blower compartment at the blower deck.

20 - Remove the 9-pin plug above the blower deck.

21 - Remove the two screws from the front cabinet flange at the blower deck. Remove the front screws from the cabinet at the blower deck on left and right sides. Cabinet sides must be slightly spread to clear heat exchanger passage.

22 - Remove screws along vestibule sides and bottom which secure vestibule panel and heat exchanger assembly to cabinet. Remove heat exchanger.

23 - Remove existing insulation from the mounting angles located on the cabinet sides.

24 - Install the replacement heat exchanger into the cabinet, and make sure that the clamshells of the heat exchanger assembly are resting in the notches of the support which is located at the rear of the cabinet. To view the clamshell, remove the indoor blower and examine it through the blower opening.

25 - Resecure the heat exchanger supporting screws along the vestibule sides and bottom.

26 - Resecure cabinet screws on sides and front flange at blower deck.

27 - ***Units with SureLight hot surface ignition -*** Reinstall limit switch and pressure switch, with attached wiring harness, on the vestibule panel.
Units with intermittent pilot ignition - Reinstall the limit switch, pressure switch and ignition control with its bracket and the attached wiring harness on the vestibule panel.

28 - Reinstall the 9-pin plug to blower deck and reconnect it to the the 9-pin plug from below the blower deck.

29 - From the original burner box, unscrew and remove the burner box cover, and the gas manifold.

30 - Unscrew and remove the fresh air intake fitting from top of old burner box. Unscrew patch plates from left and right sides of burner box.

31 - Unscrew and remove the gas manifold and old burner cluster from the old burner box. On intermittent pilot G26 units, handle the gas valve and burner cluster together; this will prevent the pilot tube from being damaged.

32 - **Furnaces with intermittent pilot ignition -** Unscrew and remove original pilot assembly from the old burner cluster along with "D" wire grommet. Reattach the pilot assembly to new cluster in the same location. When you install the burner cluster, the raised_toggle locks must be pointing up. Install the pilot assembly on the underside of the burner cluster, between the two rightmost burners. See figure 1.

All other units - Remove SureLight ignitor bracket and sensor bracket from the old burner cluster along with "D" wire grommet. Reattach ignitor and sensor to the new burner cluster. The raised toggle locks in the burner cluster should be pointing up when installed in the unit. Install the SureLight ignitor on the bottom of the burner cluster, and install the sensor to the topside of the burner cluster. See Figure 2.

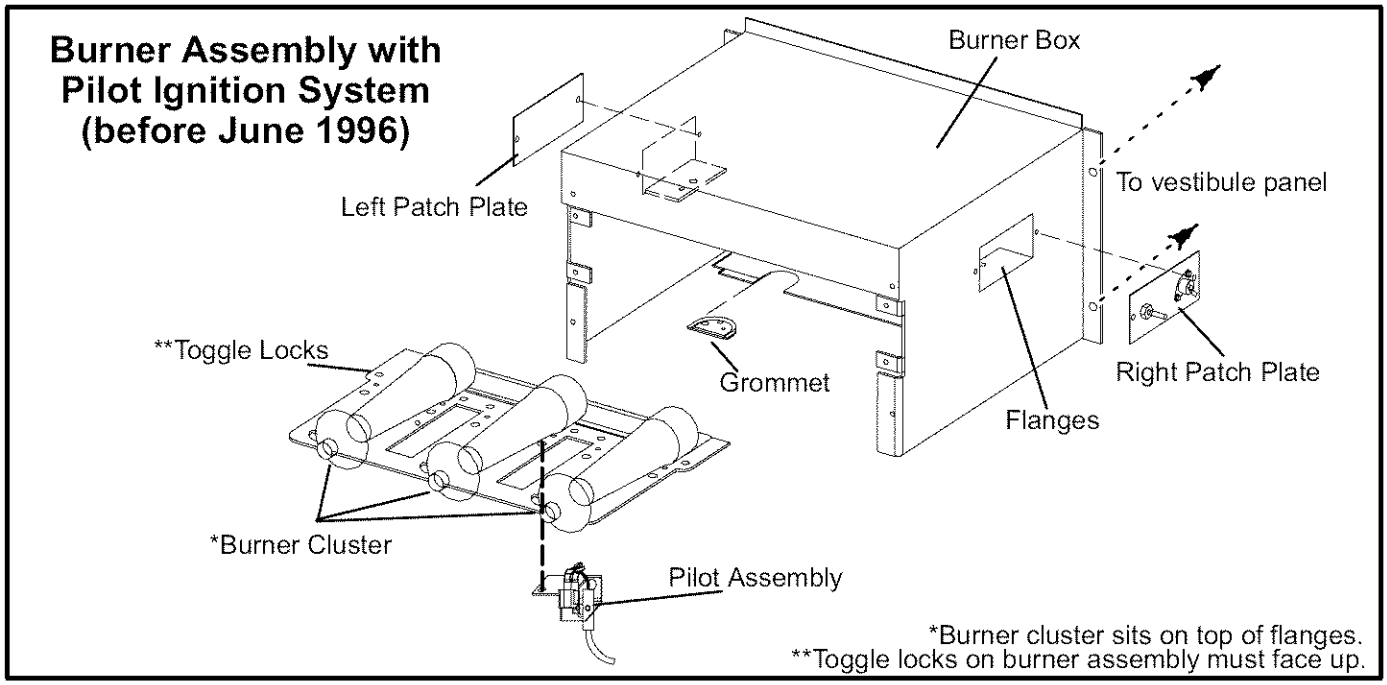


FIGURE 1

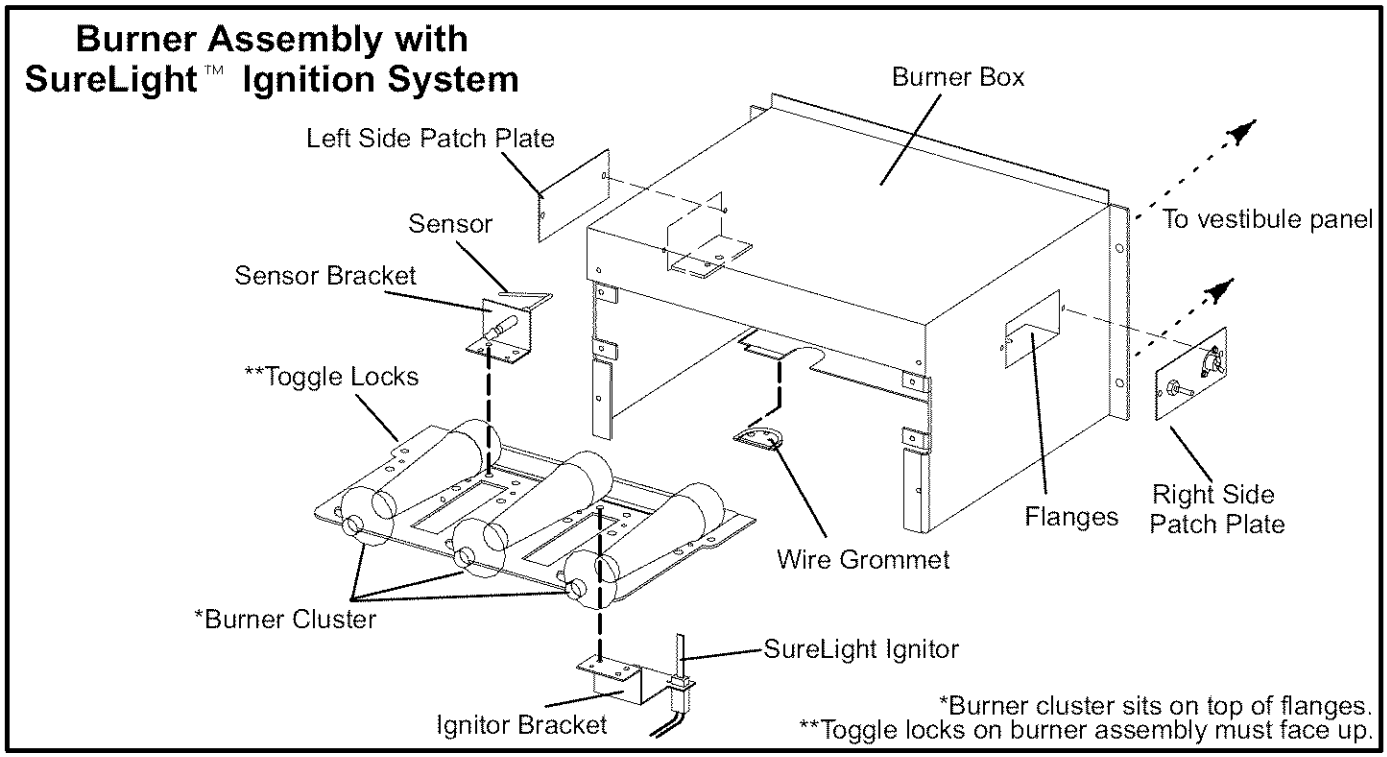


FIGURE 2

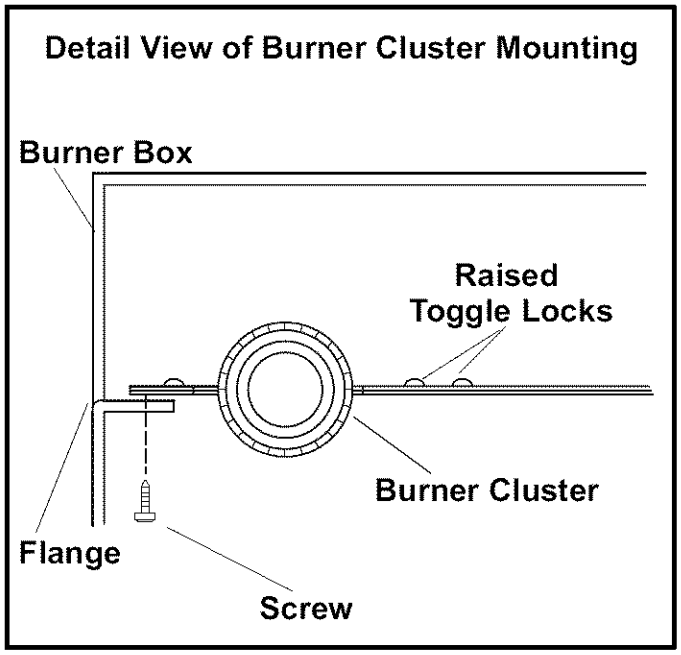


FIGURE 3

33 - Reattach the new burner cluster into the kit provided burner box. The burner toggle locks should be facing up, and the burner should rest on top of the flanges in the burner box.

34 - Reattach gas manifold and burner box cover onto new burner box. Make sure that sensor/ignitor wire from the burner cluster is fed through "D" grommet on the bottom lip of the burner box, and that the grommet makes a good seal with the burner box and cover.

35 - **For G26 furnaces built before June 1996 (Serial Number beginning 5896F or older) -** These units were built without a flame rollout switch installed on the burner box' right patch plate.

NOTE - Most G26 furnaces will already have been upgraded with the new rollout switch. If your furnace has a rollout switch, skip down to the "All Other Units" paragraph.

A new patch plate assembly is provided with this kit, complete with rollout switch and pressure barb. Attach the new right side patch plate into the new burner box, using the original screws. Locate the plate so that the rollout switch faces the vest panel (see figure 1). Attach the left side patch plate into the new burner box using the original screws.

All other units - Attach the original left and right patch plates onto the new burner box. Make sure that the right side patch plate has the rollout switch oriented towards the vest panel. See figure 2.

36 - Reattach fresh air intake fitting on top of new burner box

37 - Attach new burner box assembly onto vest panel, using glass fiber gasket provided. Ensure that the gasket is visible around all edges of the burner box for a good fit.

NOTE - For the pressure switch to operate properly, the burner box must be tightly sealed. Verify that the patch plates, intake air fitting, and burner box cover are securely fastened and properly located. Ensure that there is a seal of foam tape around the gas manifold piping, and that the "D" grommet on the bottom of the box is flush against the burner box. The burner box glass fiber gasket must cover all four edges of the box, and the burner box must be secured tightly to the vest panel.

⚠ CAUTION

Do not damage gasket. A continuous seal is required between the burner box and the vestibule panel.

38 - ***Units with soft rubber flue transition -*** reattach the flue transition to the combustion air blower outlet.

All units - Use the four long screws (provided) to attach the combustion air blower to the cold header box (see figure 8). The plastic orifice ***must*** be present in the blower inlet. See table 2 for the color of the blower orifice.

TABLE 2
COMBUSTION AIR BLOWER ORIFICE COLORS

Color	Model
Grey	G26-50, 90UGF-50
Brown .	G26-75, 90UGF-75
Blue	G26-100, 90UGF-100, G32-100
White	G26-125, 90UGF-125 G32-125
Red	G32-75

Units with hard plastic flue Y - Slip flue Y onto the combustion air blower outlet, then use the two original screws to attach flue Y to the cabinet.

39 - ***Units with soft rubber flue transition -*** Resecure top cap to cabinet; then, reattach and reseal the supply air plenum to cabinet. Slide flue collar/exhaust pipe through top cap opening and resecure flue collar mounting screw. Tighten clamp to secure flue transition to flue collar.

Units with hard plastic flue Y - Resecure top cap to cabinet, then reattach and reseal the supply air plenum to cabinet. Reconnect exhaust pipe to flue Y with no-hub connector. Tighten no-hub connector clamp.

40 - Reconnect the combustion air blower 2-pin plug (3-pin on G32).

41 - Reinstall the condensate line with adapter fitting to trap on bottom of collector box. Use new Teflon tape to ensure a leak-free joint. Reconnect to the condensate line outside of the unit.

42 - Reconnect the drain line from the flue Y or the flue transition to the collector box trap elbow.

43 - Reattach the hose tubing to the pressure switch(es). Refer to figures 4 (single pressure switch) and 5 (dual pressure switch) for the correct routing of the tubing.

Figure 6 shows the different styles of pressure switches that have been used on the G26/90UGF/G32 furnaces. Ensure that the tubing from the burner box and gas valve is connected to the "+" (positive) side, and that the tubing from the combustion air blower is connected to the "-" (negative) side.

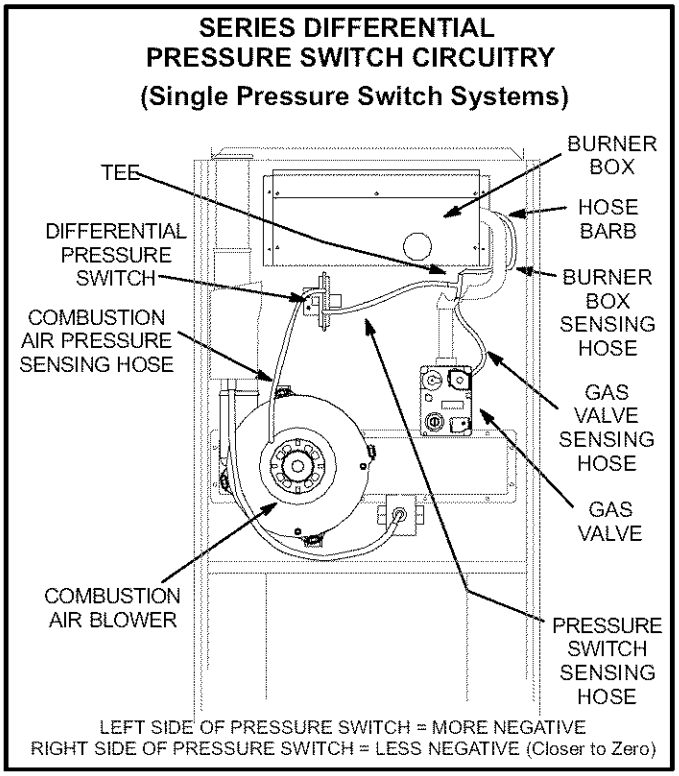


FIGURE 4

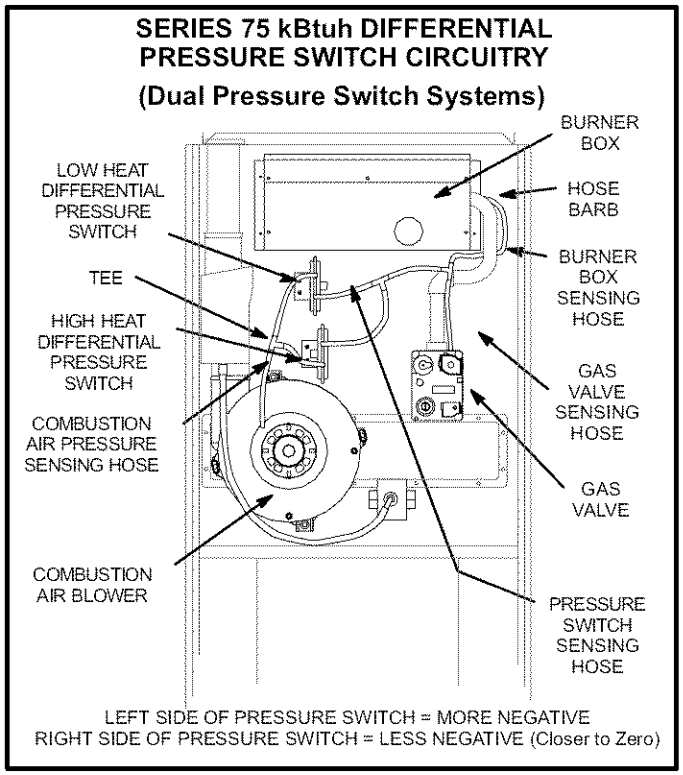


FIGURE 5

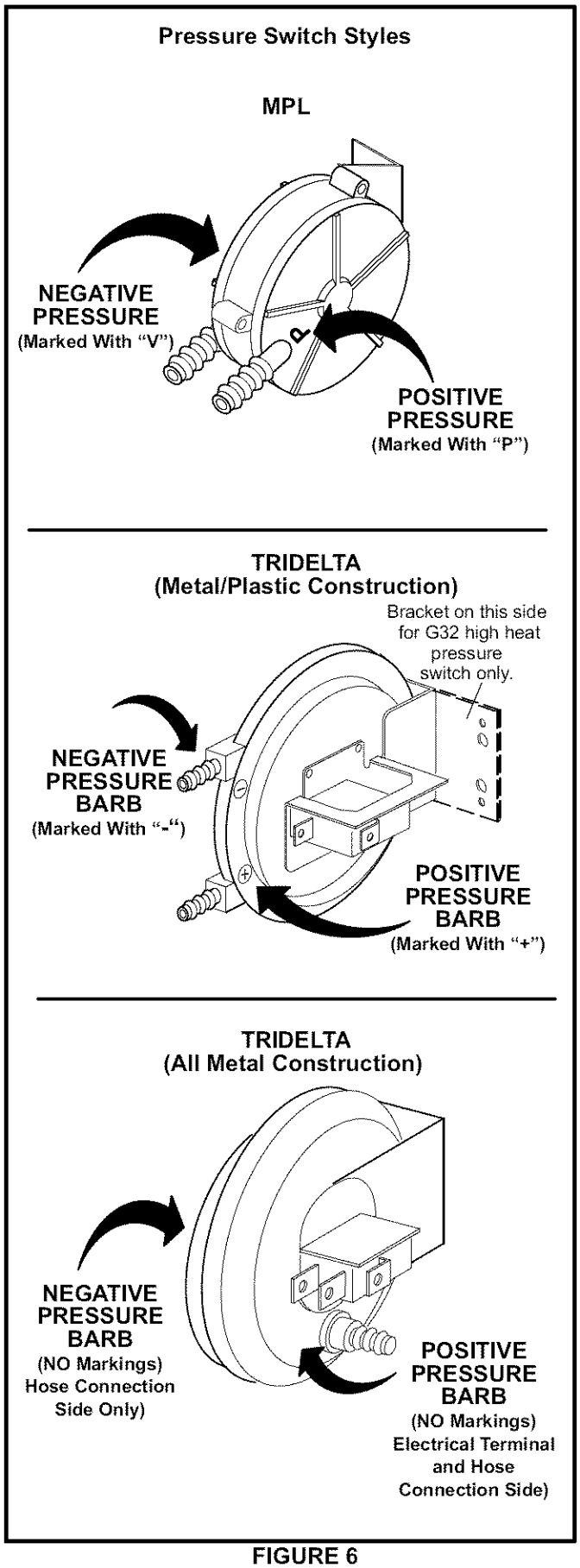


FIGURE 6

44 - ***Units with SureLight hot surface ignition -*** Reconnect ignitor lead 2-pin plug located just outside of burner box. Reconnect sensor wire to ignition control.

Units with intermittent pilot ignition - Reconnect ignitor lead and sensor wire to ignition control.

45 - **G26 furnaces built before May 1996** (Serial Number beginning 5896E or older) - The following steps correct a possible service problem with erratic blower operation.

Remove orange wire from position #4 in the 9-pin connector (above the blower deck) and from the PV terminal on the gas valve. Remove orange wire from position #4 in the 9-pin connector (below the blower deck) and the VALVE terminal on the blower control.

Install the provided orange wire, attach the double terminal end onto the PV terminal on the gas valve, and the two single ends onto the PV terminal on the ignition control. Attach the VALVE terminal on the blower control (see figure 7).

NOTE - *If the unit is equipped with a Johnson Controls ignition control (41K8701), you must cut 6" off of the existing wire from the PV terminal, then splice it to a stripped end of the orange wire which is provided with this kit.*

46 - *NOTE - If your G26 furnace already has a rollout switch, skip this step.*

G26 furnaces built before June 1996 (Serial Number beginning 5896F or older) - These steps demonstrate how to wire the new flame rollout switch into the unit using the provided blue wire.

Locate the blue wire in the #6 position of the 9-pin connector above the blower deck. Follow this wire to the primary limit. Remove this wire from the primary limit, and attach it to one terminal of the rollout switch. Using the provided wire, connect one end to the rollout switch, and connect the other end to the primary limit (see figure7). Place the provided wiring diagram sticker on top of the original sticker, which is located on the blower access door.

47 - Reconnect main gas line to gas valve.

48 - Reinstall field make-up box, if you removed it.

49 - Resecure intake pipe fitting/pipe to burner box with existing screws.

50 - Replace both the upper and lower access panels.

51 - Refer to the unit installation instructions for verifying gas and electrical connections when re-establishing supply. Use a leak detecting solution or other preferred means.

⚠ CAUTION

Some soaps used for leak detection are corrosive to certain metals. Rinse piping thoroughly after leak test has been completed. Do not use matches, candles, flame, or other sources of ignition to check for gas leaks.

52 - Light and run the unit for 5 minutes to ensure that the heat exchanger is clean, dry, and operating safely. Following the lighting instructions on the unit sticker or in the unit installation instruction manual.

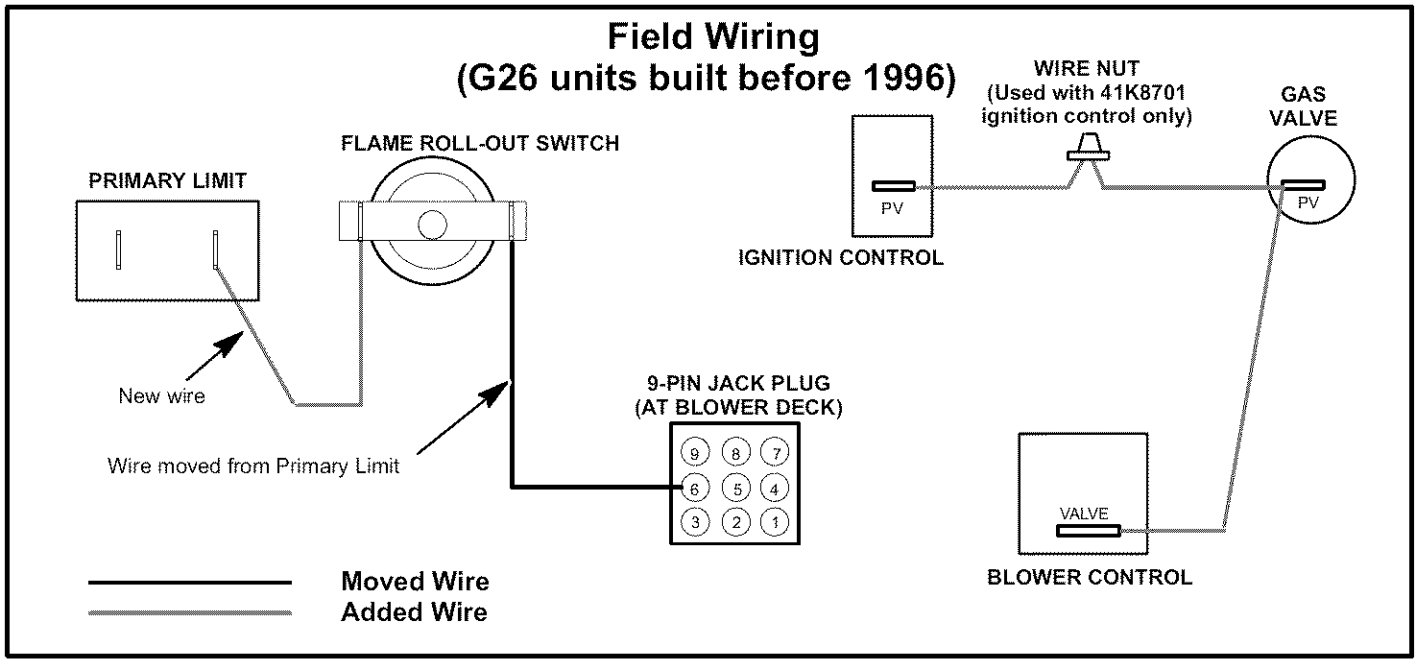
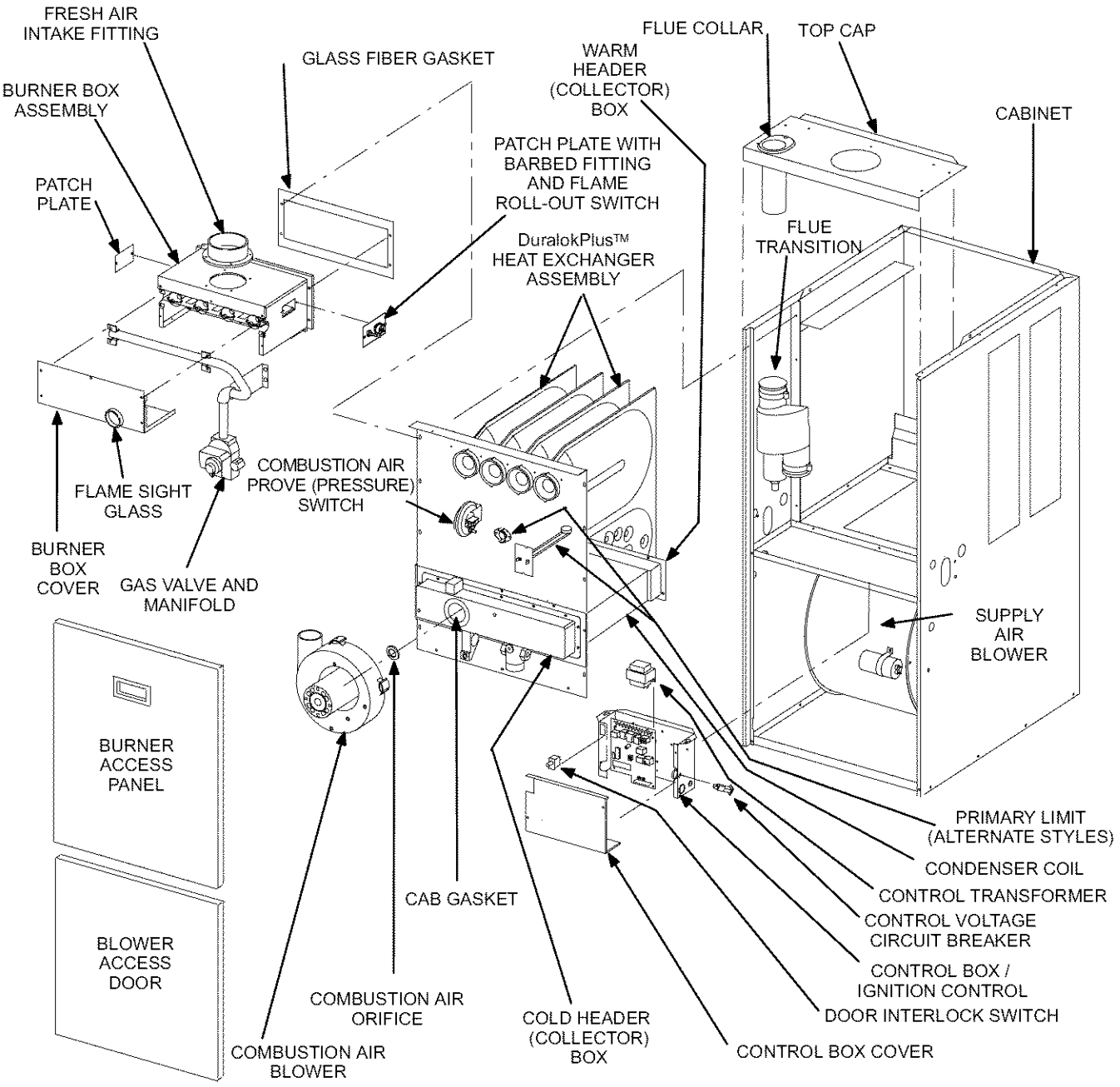


FIGURE 7

90UGF/G26/G32 GENERAL PARTS ARRANGEMENT



Note - Late model G26 unit with SureLight hot surface ignition control board and soft rubber flue transition shown.

FIGURE 8