

FURNACE COMPONENTS

Furnace components and their locations are shown in Figures 1 and 2. All switches, relays and the gas valve are conventional types, commonly found on this type of equipment. Operation of the electrical components is described under the "Sequence of Operation" section.

A. BLOWER ASSEMBLY- The blower assembly is powered by a 12 Volt D.C. motor. Two impellers are used, one for circulating warm air, and the other for providing combustion air. Note that the combustion air impeller is installed with the closed end out. If the combustion impeller is installed with the open end out, very little combustion air will reach burner, causing improper combustion. (See Figure 1). **WARNING: IF THE COMBUSTION AIR IMPELLER IS INSTALLED WITH THE OPEN END OUT, VERY LITTLE COMBUSTION AIR WILL REACH THE BURNER CREATING CARBON MONOXIDE CAUSED BY IMPROPER COMBUSTION. THIS WILL CAUSE THE FURNACE TO NOT HEAT PROPERLY AND IF LEAKAGE SHOULD OCCUR IN THE HEAT EXCHANGER OR GASKET JOINTS, CARBON MONOXIDE COULD BE DRAWN THROUGH THE CIRCULATING AIR BLOWER AND DISTRIBUTED INTO THE HOME OR RECREATIONAL VEHICLE AND THE POSSIBILITY OF ASPHYXIATION.**

B. PIEZO IGNITER- Most models are equipped with a Piezo Igniter. When the Piezo plunger is depressed, a spark is created by an electrode located at the pilot. This spark then ignites the pilot flame if the gas valve knob is depressed in the pilot position. The piezo igniter is "self-generating" and requires no outside power supply in order to operate.

NOTE

The electrode must be positioned so that there is 1/8 of an inch (plus or minus 1/32") gap between the electrode and the pilot burner deflector. (See Figure 4).

C. BURNER ASSEMBLY- The burner is constructed of sheet metal and differs between models. For proper burner for a particular model furnace, refer to the separate repair parts list available upon request. To remove the burner, first remove the observation door mounting plate and gasket. Reach through the opening to bend up the tabs securing the front of the burner to the heat exchanger. **NOTE:** On later models, tabs will not be bent since a retaining bracket on the observation door mounting plate holds the burner down.

Lift the front of the burner up and pull burner out through observation door opening.

CAUTION

WHEN REINSTALLING BURNER, MAKE SURE THE ORIFICE SLIPS INTO THE OPENING IN THE BURNER RING. (See

Figure 5).

D. Air Seal Gaskets- In order to prevent leakage of combustion air from the sealed system built into the furnace, the gaskets listed below must be undamaged and firmly in place. **WARNING: FAILURE OF THE GASKETS TO BE UNDAMAGED AND FIRMLY IN PLACE COULD RESULT IN LEAKAGE OF PRODUCTS OF COMBUSTION WHICH COULD BE DRAWN THROUGH THE CIRCULATING AIR BLOWER AND DISTRIBUTED INTO THE HOME OR RECREATIONAL VEHICLE AND THE POSSIBILITY OF ASPHYXIATION.** (See Figures 2 and 3 for location of gaskets):

1. Scroll Gasket
2. Burner Observation Door Gasket
3. Air Tube Gasket
4. Motor Gasket
5. Flange Gasket
6. Pilot Burner Gasket

E. CONVERTER (A.C./D.C. MODELS

ONLY)- The converter is located at the right rear of the furnace, and protrudes through the casing side. (See Figures 1 and 6). It consists of a transformer, rectifier assembly, and relay. When 115 volt electrical supply is used, the relay automatically switches the converter into the 115 volt circuit, supplying 12 volts to the furnace. When no 115 volt is present, the relay closes and switches the furnace to 12 VDC battery operation.

The rectifier bridge is not sold by itself as a repair item. The complete transformer assembly, which includes the rectifier bridge, must be ordered.

The operation of the converter is explained in detail in the "Sequence of Operation" Section.

The converter can be removed for service by following the procedure outlined in Paragraph F, "Heat Exchanger Assembly".

F. HEAT EXCHANGER ASSEMBLY

The heat exchanger assembly can be removed in order to service components which are not accessible for service from the front of the furnace. (See Figure 1).

To remove the heat exchanger assembly:

1. Turn off the gas to the furnace at the L.P. tank.
2. Disconnect the fuel line at the gas valve.

WARNING

FIRE OR EXPLOSION MAY RESULT WHEN GAS LINE IS DISCONNECTED AT FURNACE AND GAS BLEEDS OUT. CHECK ALL APPLIANCES WHICH HAVE PILOTS STILL BURNING AND EXTINGUISH THEM AND ANY OTHER FLAME SOURCE IN THE VICINITY.

3. Unplug the plastic disconnect plug located just above the furnace "Off-On" switch.
4. Remove the 3 screws holding heat exchanger assembly in the furnace casing. Two screws are located at the top right and bottom right front corners of the furnace control compartment. The third screw is located in the lower left corner of the furnace casing and about a third of the way back. (See Figure 1).
5. Slide the heat exchanger assembly out of the casing. The system switch box will remain attached to the casing side, where it will be available for service.
6. To remove converter on A.C./D.C. Models, disconnect the 110 Volt power supply to the furnace at the service panel.

Reach into the casing and take out the four screws holding the converter to the mounting brackets.

Pull the converter in through the opening in the casing side as far as the slack in the 115 Volt power supply will allow. Disconnect the 115 Volt power supply at the junction box in the bottom of the converter assembly and withdraw the converter to the front of the casing.

Remove Hayco fitting at the system switch box where wires from converter enter. Disconnect blue wire at wire nut where it is connected to blue wire from negative side of battery and to blue wire from white plastic disconnect plug. (This connection may be outside furnace casing.)

Disconnect brown wire from the overload switch. Disconnect red wire nut connecting to red + VDC side of battery. Withdraw wires from junction box and remove converter.

CAUTION
WHEN REINSTALLING HEAT EXCHANGER ASSEMBLY, BE SURE VENT IS PROPERLY ASSEMBLED. IMPROPER ASSEMBLY OF THE VENT WILL CAUSE EQUIPMENT MALFUNCTION AND CAN CREATE A FIRE, EXPLOSION OR ASPHYXIATION HAZARD.



