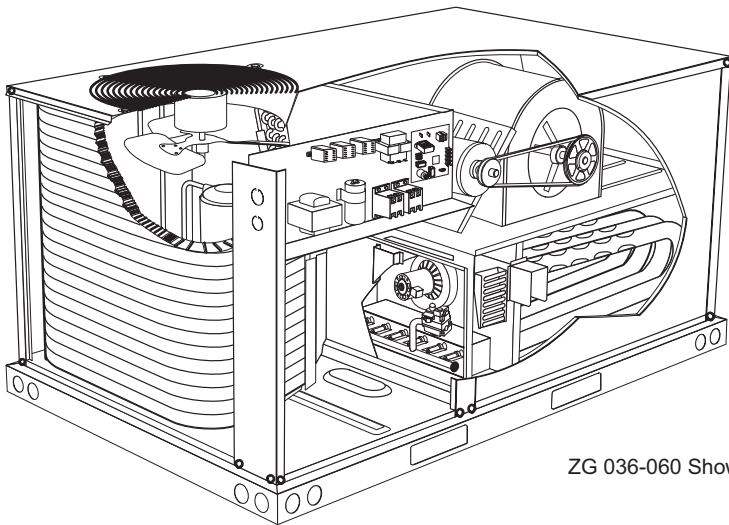


# USER'S INFORMATION MANUAL

**ZG 036, 048, 060, 074**  
(3, 4, 5 and 6 Tons)

**ZG 092, 102, 120, 150**  
(7-1/2, 8-1/2, 10 and 12 Tons)

**ROOFTOP  
UNITS**



ZG 036-060 Shown

**READ ALL INSTRUCTIONS IN THIS MANUAL  
AND RETAIN FOR FUTURE REFERENCE**

FBR113270

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036-074



## WARNING

**FIRE OR EXPLOSION HAZARD.**

**Failure to follow safety warnings  
exactly could result in serious  
injury, death, or property damage.**



036-074

**Do not store or use gasoline or other  
flammable vapors and liquids in the  
vicinity of this or any other appliance.**

**Installation and service must be per-  
formed by a qualified installer, ser-  
vice agency or the gas supplier.**

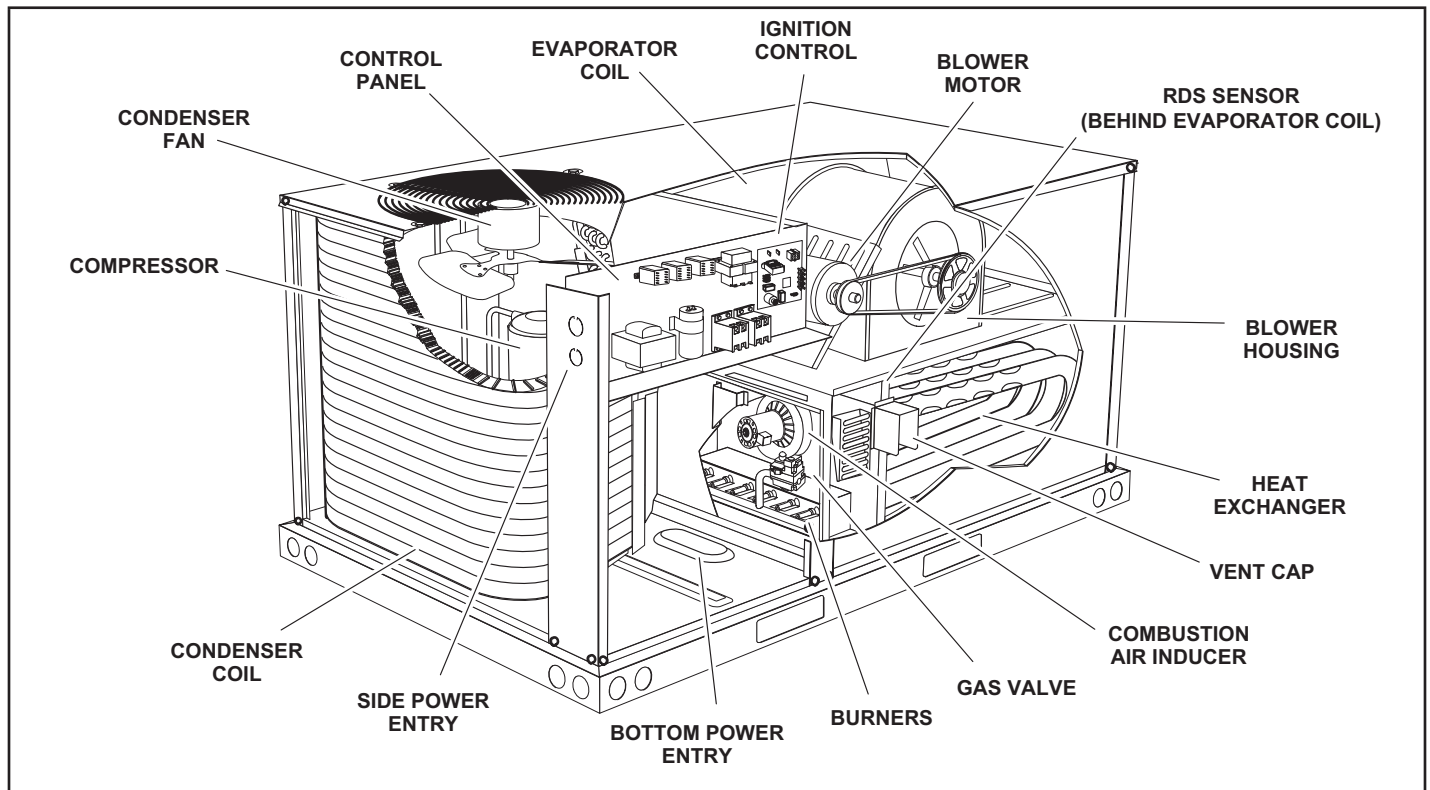
## WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Leave the building immediately
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

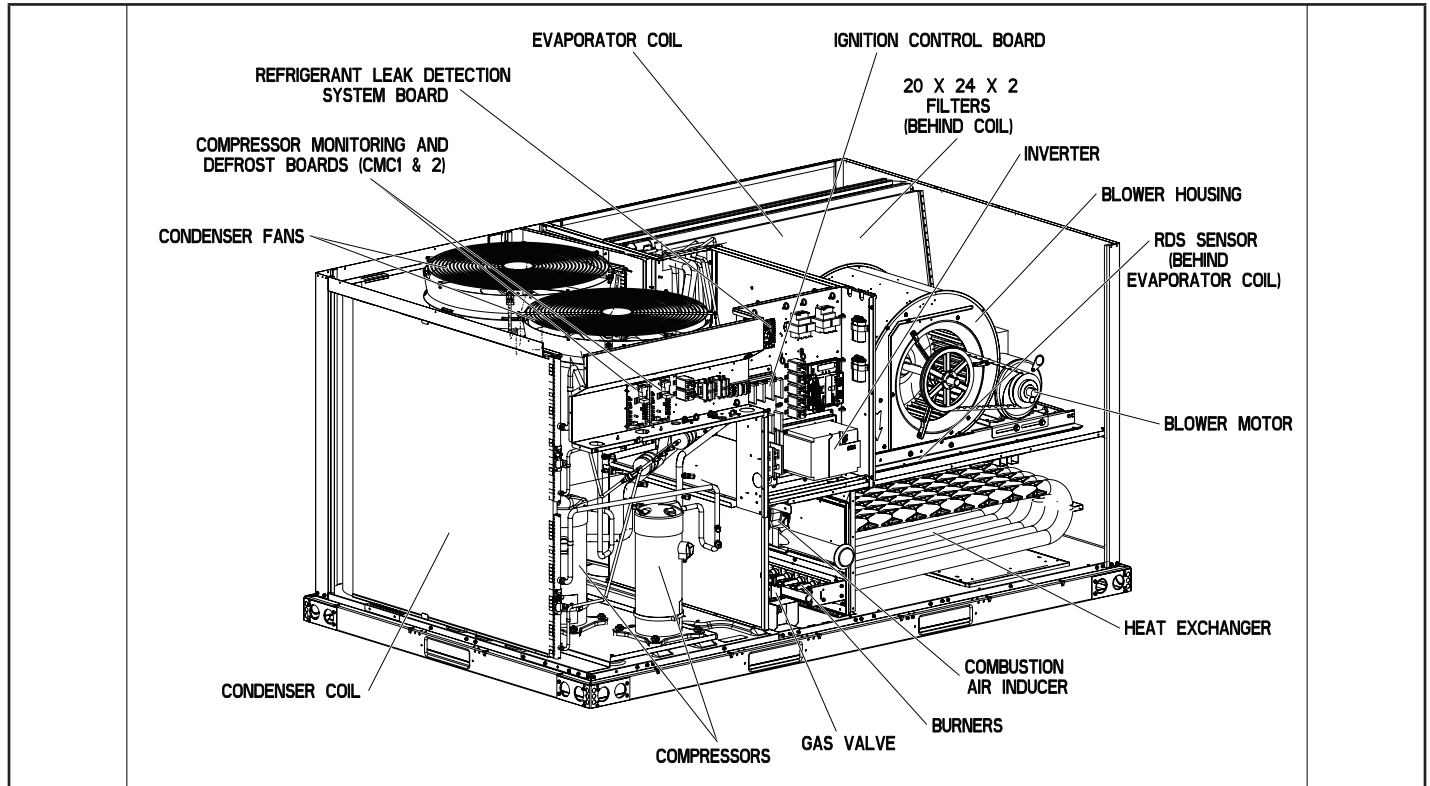


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## ZGD 036, 048, 060, 074 Parts Arrangement



## ZGD 092, 102, 120, 150 Parts Arrangement



## Safety

- 1 - Keep unit area clear and free of combustible materials, gasoline and other flammable vapors and liquids.
- 2 - Do not obstruct air flow to unit. Unit must receive an unobstructed flow of combustion and ventilating air.

## WARNING



Danger of explosion and fire. Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

## WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer (or equivalent), service agency or the gas supplier.

## WARNING



Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

## CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

## WARNING

Do not use this furnace if any part has been under water. A flood-damaged furnace is extremely dangerous.

Attempts to use the furnace can result in fire or explosion. A qualified service agency should be contacted to inspect the furnace and to replace all gas controls, control system parts, electrical parts that have been wet, or the furnace if deemed necessary.

## CAUTION

The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction

## CAUTION

Children should be supervised not to play with the appliance.

## WARNING



Danger of electrical shock, explosion, and fire. Improper servicing could result in dangerous operation, serious injury, death or property damage.

## WARNING



Danger of explosion. Can cause injury or product or property damage. Should the gas supply fail to shut off or if overheating occurs, shut off the gas valve to the furnace before shutting off the electrical supply.

## WARNING

### SMOKE POTENTIAL

The heat exchanger in this unit could be a source of smoke on initial firing. Take precautions with respect to building occupants and property. Vent initial supply air outside when possible.

## Unit Operation

**FOR YOUR SAFETY READ BEFORE LIGHTING**  
**BEFORE LIGHTING** smell all around the furnace area for gas. Be sure to smell next to the roof because some gas is heavier than air and will settle on the roof.

The gas valve may be equipped with either a gas control lever or gas control knob. Use only your hand to push the lever or turn the gas control knob. Never use tools. If the the lever will not move or the knob will not push in or turn by hand, do not try to repair it. Call a qualified service technician. Force or attempted repair may result in a fire or explosion.

The unit is equipped with an automatic spark ignition system. There is no pilot. In case of a safety shutdown, move thermostat switch to **OFF** and return the thermostat switch to **HEAT**. For logic units and units with electronic temperature controls, shut off the main disconnect and then turn it on to reset the ignition control.

## Placing Unit Into Operation

## WARNING



Danger of explosion and fire. Can cause injury or product or property damage. You must follow these instructions exactly.

## Gas Valve Operation (FIGURE 1 , FIGURE 2, and FIGURE 3)

- 1 - Set thermostat to lowest setting.
- 2 - Turn off all electrical power to appliance.
- 3 - This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
- 4 - Open or remove the heat section access panel.
- 5 - Turn gas valve switch to **OFF**. See FIGURE 1, FIGURE 2, or FIGURE 3. Do not force.
- 6 - Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you do not smell gas, go to the next step.

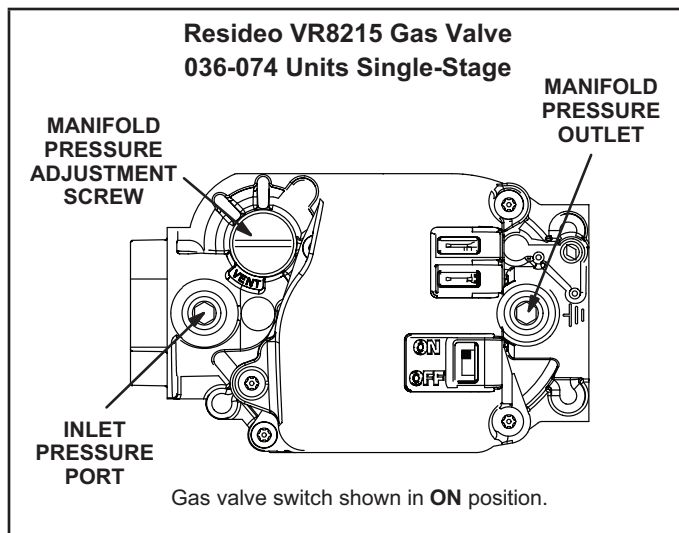


FIGURE 1

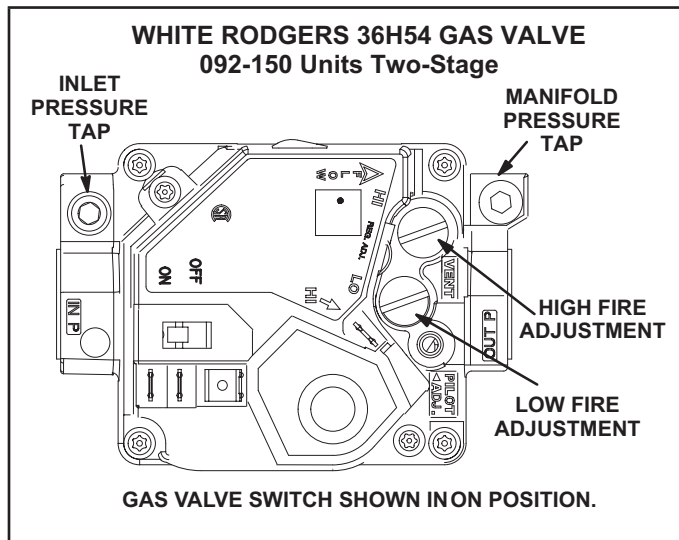


FIGURE 2

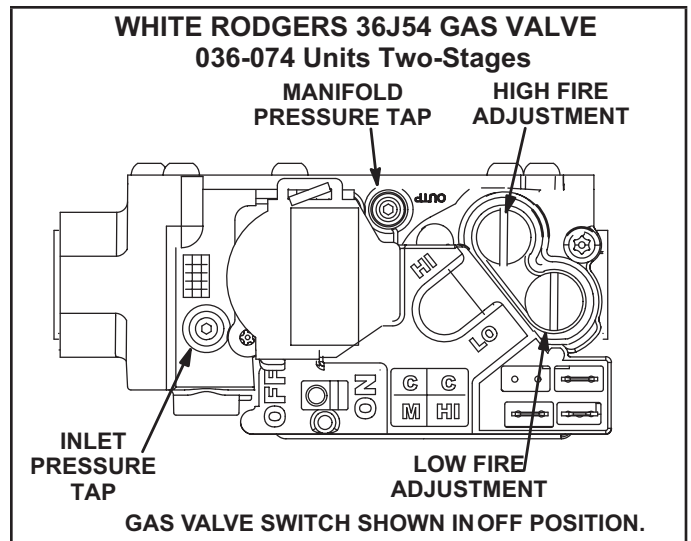


FIGURE 3

- 7 - Turn gas valve switch to ON. See FIGURE 1, FIGURE 2, or FIGURE 3. Do not force.
  - 8 - Close or replace the heat section access panel.
  - 9 - Turn on all electrical power to appliance.
  - 10 - Set thermostat to desired setting.
- NOTE** - When unit is initially started, steps 1 through 9 may need to be repeated to purge air from gas line.
- 11 - The ignition sequence will start.
  - 12 - If the appliance does not light the first time (gas line not fully purged), it will attempt up to two more ignitions before locking out.
  - 13 - If lockout occurs, repeat steps 1 through 10.
  - 14 - If the appliance will not operate, follow the instructions "Turning Off Gas to Appliance" and call your service technician or gas supplier.

## Turning Off Gas to Unit

- 1 - If using an electromechanical thermostat, set to the lowest setting.
- 2 - Before performing any service, turn off all electrical power to the appliance.
- 3 - Open or remove the heat section access panel.
- 4 - Turn gas valve switch to **OFF**. Do not force.
- 5 - Close or replace the heat section access panel.

### **WARNING**



**Danger of explosion. Can cause injury or death. Do not attempt to light manually. Unit has a direct spark ignition system.**

## Burner Flame

### **WARNING**



**Danger of explosion and fire. Can cause injury or product or property damage. Periodically inspect burner flame to ensure proper unit operation.**

The primary air is permanently set for normal operation. The flame will be basically blue with some clear yellow streaking in the end of the flame. Inspect the burner flame periodically during the heating season using the inspection port provided on the burner access panel.

## Flue Passage and Vent Inspection

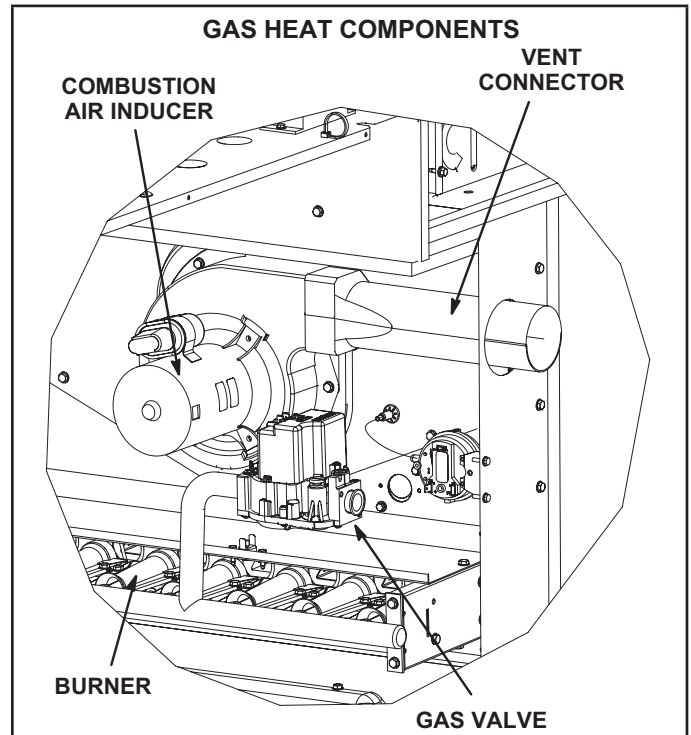
Annually, before heating season, inspect the combustion air louvers, vent cap, heat exchanger, burners and combustion air inducer for corrosion, deterioration or deposits of debris. Remove any obstructions or blockage. See FIGURE 4.

## Service

To maintain efficiency and longevity, your equipment must be serviced yearly by a qualified service technician. Failure to provide proof of service can void warranty.

### **CAUTION**

**Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.**



**FIGURE 4**



## Servicing Filter

Units are equipped with temporary filters which must be replaced prior to building occupation. See TABLE 1 for correct filter size. Refer to local codes or appropriate jurisdiction for approved filters.

**TABLE 1**  
**UNIT FILTERS**

Unit	Filter Size - inches (mm)
ZGD036, 048	4 - 14 x 20 x 2 (352 x 508 x 51)
ZGD060-074	2 - 16 X 20 X 2 (406 X 508 X 51)
ZGD060-074	2 - 20 X 20 X 2 (508 X 508 X 51)
ZGD092-150	4 - 20 X 24 X 2 (508 X 635 X 51)

**NOTE-**Filters must be U.L.C. certified or equivalent for use in Canada.

To change filters, open filter access panel on back side of unit. See FIGURE 5. Lift filter stop to remove filters. See FIGURE 6.

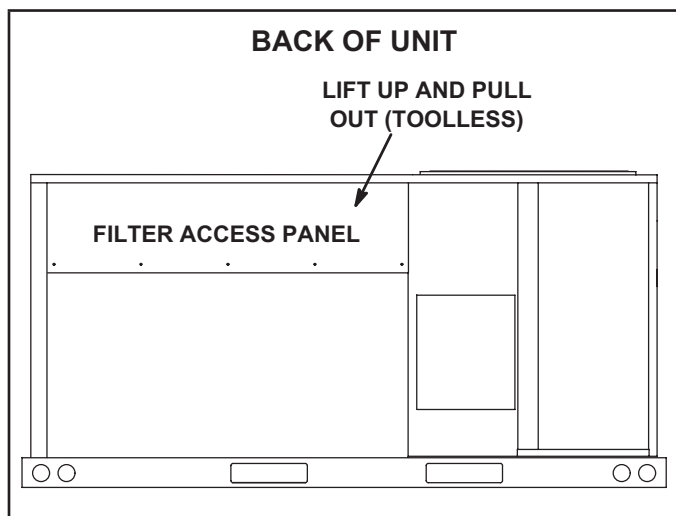
## WARNING

Units are shipped from the factory with temporary filters. Replace filters before building is occupied. Damage to unit could result if filters are not replaced with approved filters. Refer to appropriate codes.

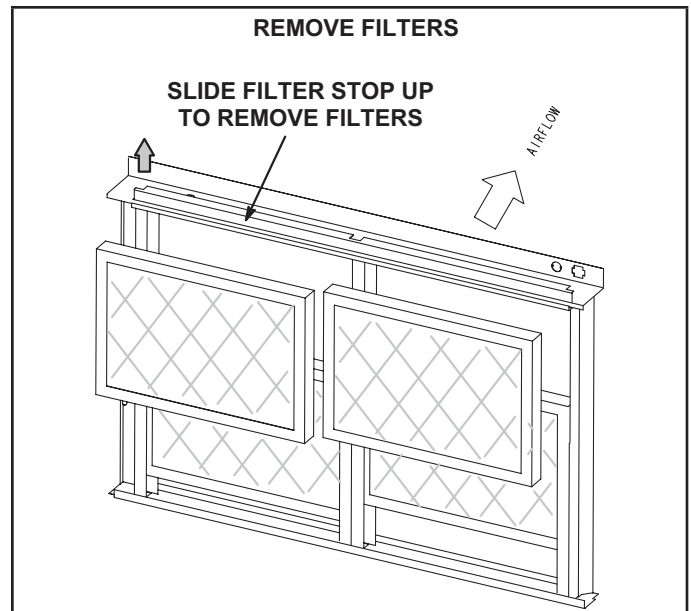
Approved filters should be checked monthly and replaced when necessary. Take note of air flow direction marking on filter frame when reinstalling filters. See FIGURE 6.

## Lubrication

All motors are lubricated at the factory. No further lubrication is required.



**FIGURE 5**



**FIGURE 6**

## Manifold Pressures

The manifold pressures are listed on the gas valve and shown in TABLE 2.

**TABLE 2**  
**GAS MANIFOLD PRESSURES**

Gas	Stage	036-074	092-150
Natural	Low Fire	2.0" w.c.	1.6" w.c.
	High Fire	3.5" w. c.	3.7" w.c.
LP Propane	Low Fire	5.9" w.c.	5.5" w.c.
	High Fire	10.5" w.c	10.5" w.c.

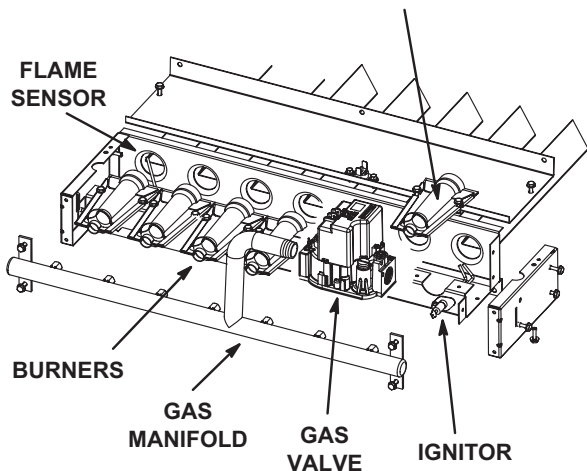
## Burners

Clean the burners as follows:

- 1 - Turn off the electrical power and the gas supply to the unit.
- 2 - Remove the burner compartment access panel.
- 3 - Remove top burner box panel. See FIGURE 7 or FIGURE 8.
- 4 - Remove screws securing burners to burner support and lift the individual burners or the entire burner assembly from the orifices. Clean as necessary. Spark gap on ignition electrode must be properly set. Refer to the Heating Adjustment section in the installation instructions.
- 5 - Replace burners and screws securing burner. Replace the top burner box panel and burner compartment access panel.
- 6 - Turn on the electrical power and the gas supply to the unit. Follow the operating instructions attached to the unit and use the inspection port in the access panel to check the flame.

**BURNER BOX ASSEMBLY  
036, 048, 060, 074 UNITS**

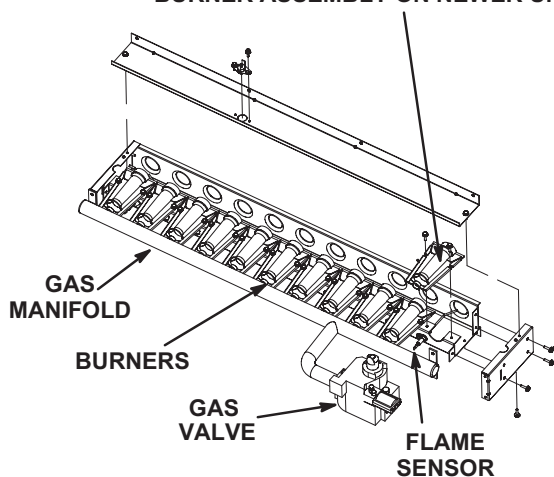
**REMOVE INDIVIDUAL BURNERS ON  
OLDER UNITS; REMOVE THE ENTIRE  
BURNER ASSEMBLY ON NEWER UNITS.**



**FIGURE 7**

**BURNER BOX ASSEMBLY  
092, 102, 120, 150**

**REMOVE INDIVIDUAL BURNERS ON  
OLDER UNITS; REMOVE THE ENTIRE  
BURNER ASSEMBLY ON NEWER UNITS.**



**FIGURE 8**

### **Combustion Air Inducer**

A combustion air inducer proving switch checks combustion air inducer operation before allowing power to the gas controller. The gas controller will not operate if the inducer is obstructed.

Under normal operating conditions, the combustion air inducer wheel should be checked and cleaned prior to the heating season. However, it should be examined periodically during the heating season to establish an ideal cleaning schedule.

Clean the combustion air inducer as follows:

- 1 - Turn off the electrical power and the gas supply to the unit.
- 2 - Remove the access panel located on the right side of the outdoor section under the control box.
- 3 - Remove and retain the screws securing the combustion air inducer to the flue box.
- 4 - Clean the inducer wheel blades with a small brush and wipe off any dust from the housing. Clean accumulated dust from the front of the flue box cover.
- 5 - Return the combustion air inducer motor and the vent connector to their original location. Secure with retained screws. It is recommended that the combustion air inducer gasket be replaced during reassembly.
- 6 - Replace the access panel.
- 7 - Use a small brush to clean the combustion air inlet louvers on the heat access panel.

### **Flue Passageway and Flue Box**

- 1 - Remove the combustion air inducer assembly as described in the Combustion Air Inducer subsection.
- 2 - Disconnect the air tubing from the port on flue box cover.
- 3 - Remove the flue box cover. Clean the flue box with a wire brush as required.
- 4 - Clean the tubes with a wire brush.
- 5 - Reassemble the unit. The flue box cover gasket and combustion air inducer gasket should also be replaced during reassembly.

### Service Reminder

Call a qualified service technician if the unit is inoperative. Before calling, always check the following to be sure service is required:

1 - Be sure electrical disconnect switches are **ON**.

2 - Check room thermostat for proper setting.

3 - Replace any blown fuses or reset circuit breakers.

4 - Gas valve should be **ON**.

5 - Air filters should not be plugged, limiting air flow.

6 - Make sure all access panels are in place.

### Repair Parts Listing

When ordering repair parts, include the complete model number and serial number listed on the CSA rating plate - e.g. ZGD060S5BH1Y.

#### Gas Heat Section Parts

Heat Exchanger  
Combustion Air Assembly  
Combustion Air Proving Switch  
Burner Assembly  
Burner Manifold Assembly  
Main Burner Orifices  
Flame Roll-out Switches  
Auxiliary Limit Controls  
Ignition Electrode Assembly  
Ignition Lead  
Ignition Sensor Assembly  
Combination Gas Valve  
Limit Controls

#### Cooling Parts

Compressors  
Condenser Fan Motors  
Condenser Fan Blades  
Condenser Fan Run Capacitors  
Fan Grille  
Indoor Blower Motors  
Blower Wheel  
Distributor / Restrictor  
Exhaust Fans (Opt.)

#### Electrical Control Parts

Compressor Contactors  
Circuit Breakers (Opt.)  
Transformer (Control)  
Blower Contactor  
Limit, Blower Relay  
Heat Relays  
Condenser Fan Relays  
Capacitor CAB  
Relay CAB  
Disconnect Switch (Opt.)  
Ignition Control