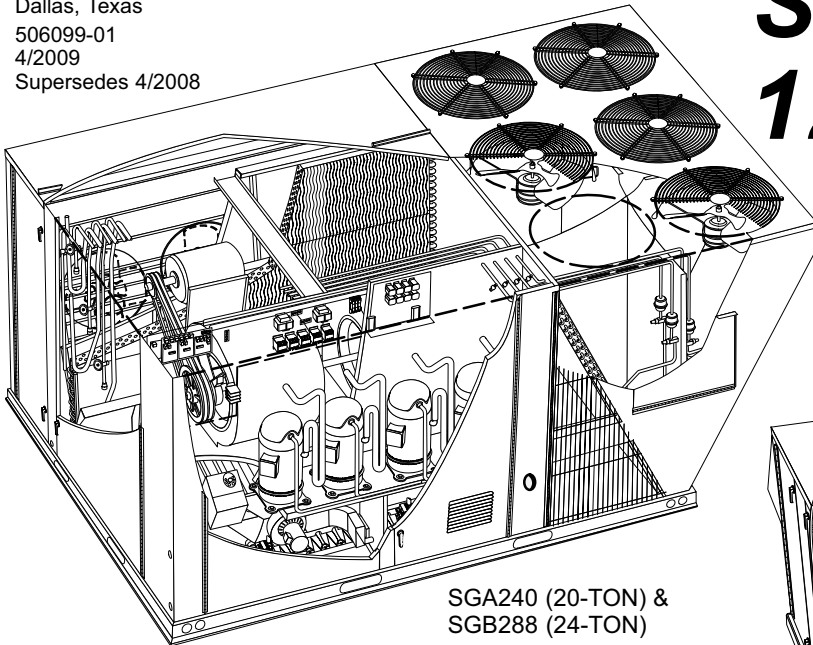




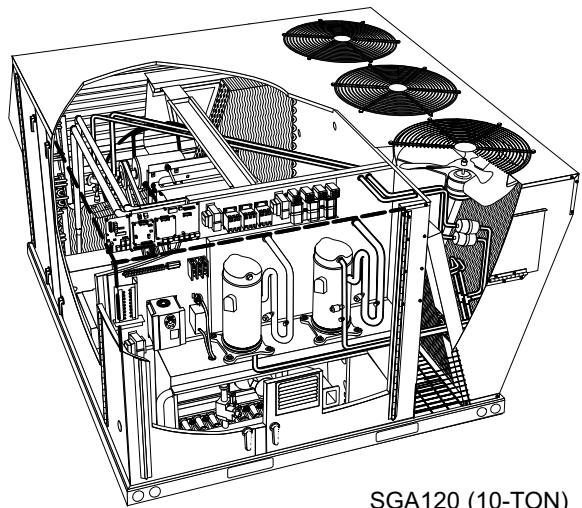
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 Dallas, Texas
 506099-01
 4/2009
 Supersedes 4/2008

USER'S INFORMATION MANUAL

SGA036, 060, 120, 240, AND SGB288 ROOFTOP UNITS



SGA240 (20-TON) &
 SGB288 (24-TON)



SGA120 (10-TON)

⚠ 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 qualified installer, service agency or the gas supplier

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

TP Technical
 Publications
 Litho U.S.A.



⚠ WARNING

FIRE OR EXPLOSION HAZARD

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



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

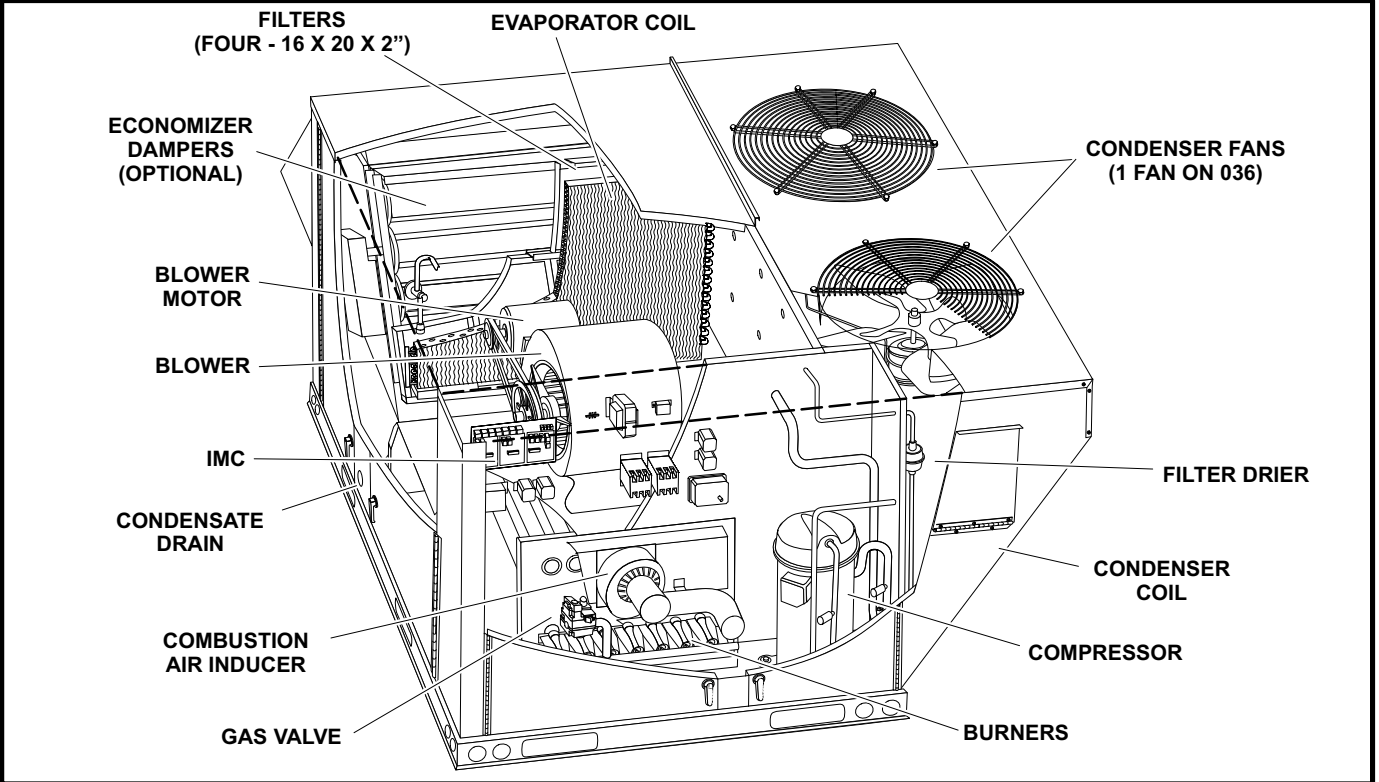
Installation and service must be performed by a qualified installer, service agency or the gas supplier.

WHAT TO DO IF YOU SMELL GAS:

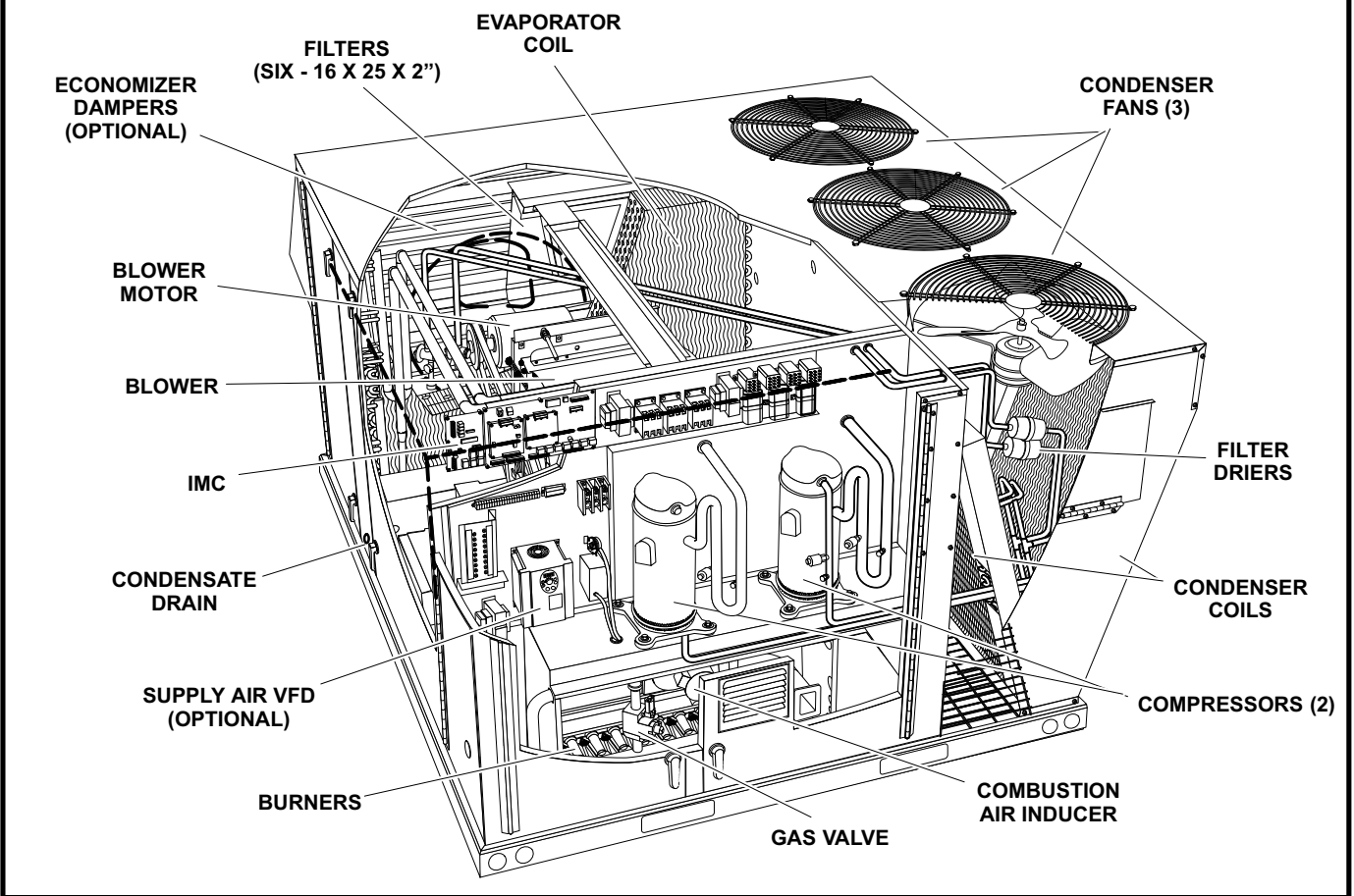
- Do not try to light any appliance.
- Extinguish any open flames.
- Do not touch any electrical switch; do not use any phone in your building.
- Leave the building immediately.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach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



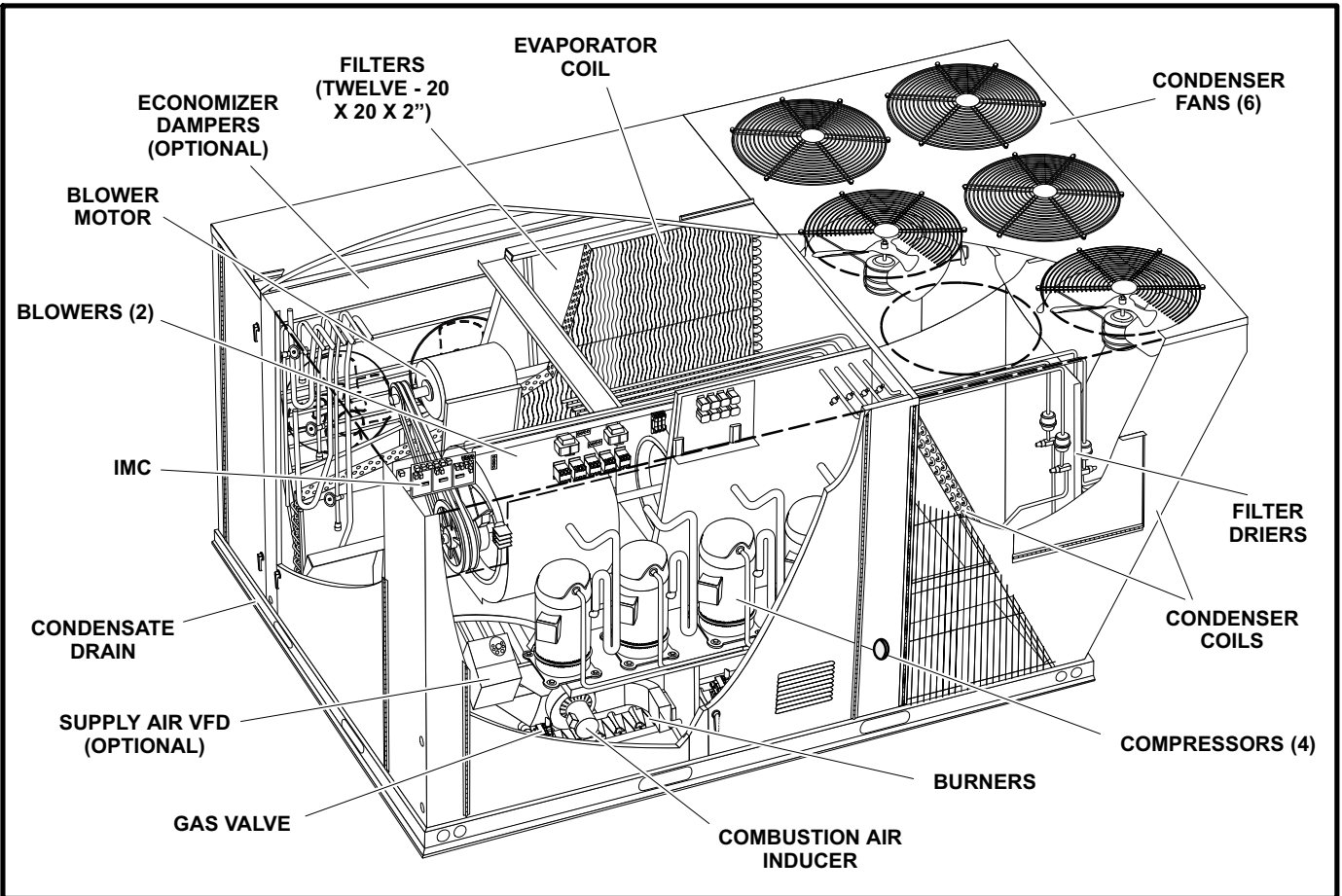
SG 036 & 060 Parts Arrangement



SG 120 Parts Arrangement



SG 240 & 288 Parts Arrangement



Safety

- 1- Keep gas heat section 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 qualified installer, service agency or the gas supplier

⚠ WARNING

Product contains fiberglass wool.

Disturbing the insulation in this product during installation, maintenance, or repair will expose you to fiberglass wool. Breathing this may cause lung cancer. (Fiberglass wool is known to the State of California to cause cancer.)

Fiberglass wool may also cause respiratory, skin, and eye irritation.

To reduce exposure to this substance or for further information, consult material safety data sheets available from address shown below, or contact your supervisor.

P.O. Box 799900
Dallas, TX 75379-9900

⚠ CAUTION

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

⚠️ 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.

⚠️ WARNING



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

⚠️ 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.

⚠️ 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 floor because some gas is heavier than air and will settle on the floor.

Use only your hand to push in or turn the gas control knob. Never use tools. If 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**. Electromechanical thermostat is shown in figure 1. For units with electronic temperature controls, shut off the main disconnect and then turn it on to reset the ignition control.

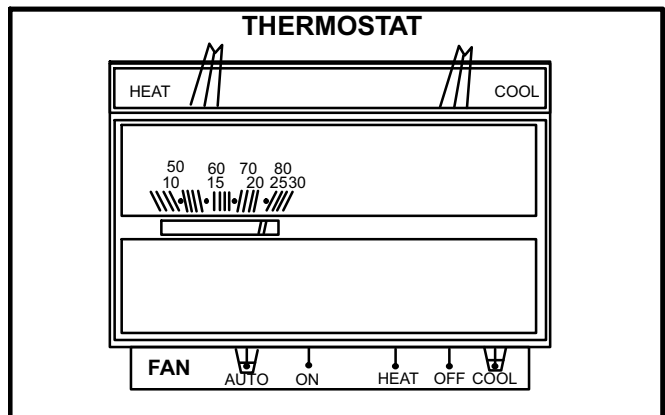


FIGURE 1

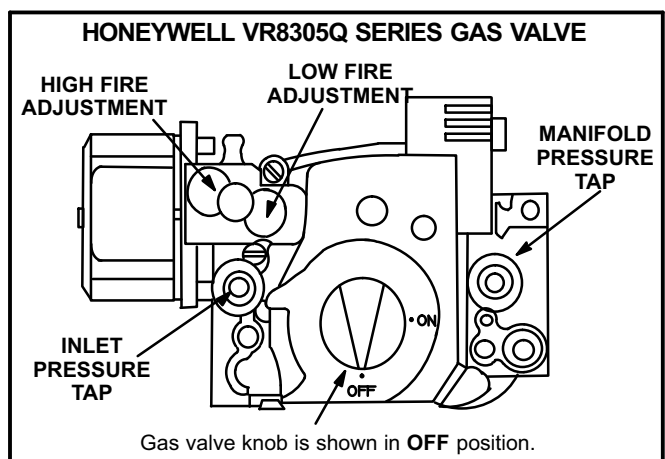
A-Placing Unit In Operation

⚠️ WARNING





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

Gas Valve Operation for Honeywell VR8305Q (figure 2)




Gas valve knob is shown in OFF position.

FIGURE 2

- 1- Set thermostat to lowest setting.
- 2- Turn off all electrical power to furnace.
- 3- This furnace 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 the knob on the gas valve clockwise  to "OFF". 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.
- 7- Turn the knob on the gas valve counterclockwise  to "ON". Do not force.
- 8- Close or replace the heat section access panel.
- 9- Turn on all electrical power to furnace.
- 10- Set thermostat to desired setting.
- 11- The ignition sequence will start.
- 12- If the furnace 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 furnace will not operate, follow the instructions "Turning Off Gas to Furnace" and call your service technician or gas supplier.

Turning Off Gas to Furnace

- 1- If using an electromechanical thermostat, set to the lowest setting.
- 2- Before performing any service, turn off all electrical power to the furnace.
- 3- Open or remove the heat section access panel.
- 4- Turn the knob on the gas valve clockwise  to "OFF". Do not force.
- 5- Replace 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 burner flame periodically during heating season using inspection port provided on the burner access panel.

Flue Passage And Vent Inspection

Annually, before heating season, inspect combustion air louvers, vent cap, heat exchanger, burners and combustion air blower for corrosion, deterioration or deposits of debris. Remove any obstructions or blockage. See figures 3 and 4.

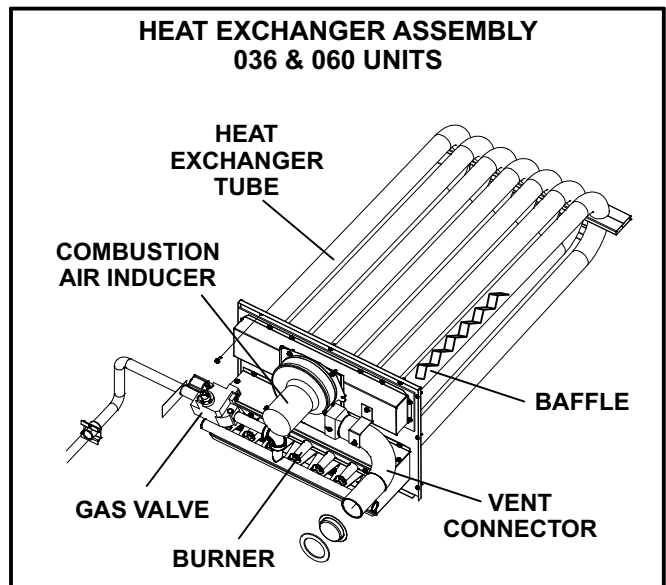


FIGURE 3

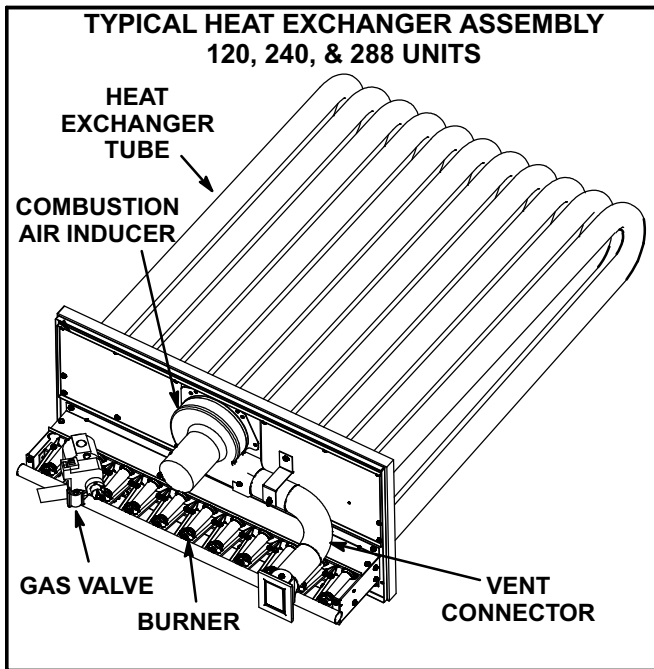


FIGURE 4

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.

Servicing Filter

Units are equipped with the number of filters shown in table 1. Filters should be checked monthly and replaced when necessary with filters of like kind and size. Take note of air flow direction marking on filter frame when reinstalling filters. See figure 5.

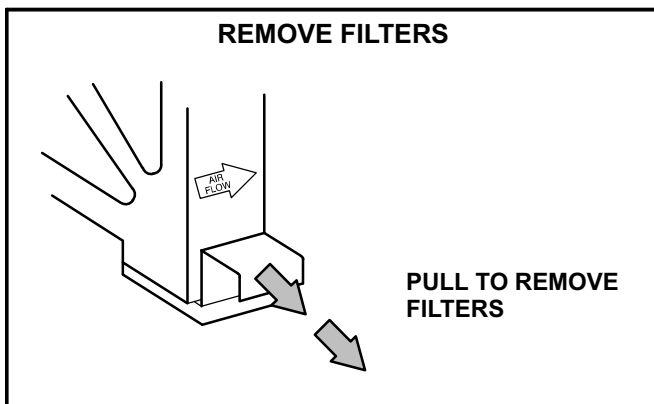


FIGURE 5

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

**TABLE 1
NUMBER AND SIZE OF FILTER BY UNIT**

SG Unit	Qty	Filter Size - inches (mm)
036, 060	4	16 X 20 X 2 (406 X 508 X 51)
120	6	16 X 25 X 2 (457 X 635 X 51)
240, 288	12	20 X 20 X 2 (508 X 508 X 51)

Lubrication

All motor bearings are prelubricated. No further lubrication is required.

Blower shaft bearings are prelubricated. For extended bearing life, relubricate at least once every two years with a lithium base grease, such as Alvania 3 (Shell Oil), Chevron BRB2 (Standard Oil) or Regal AFB2 (Texas Oil). Use a hand grease gun for relubrication. Add only enough grease to purge through the bearings so that a bead of grease appears at the seal lip contacts.

Manifold Pressures

Manifold pressures are shown in table 2. Refer to figure 2 to locate pressure ports.

**TABLE 2
MANIFOLD INPUT PRESSURES in.wg. (kPa)**

SG Unit	Natural Gas		Propane (LP) Gas	
	1st Stage ± 0.2 (±.05)	2nd Stage ± 0.3 (±.08)	1st Stage ± 0.2 (±.05)	2nd Stage ± 0.3 (±.08)
036	NA	3.7 (0.92)	NA	10.5 (2.61)
060, 120, 240, 288	1.6 (0.40)	3.7 (0.92)	5.5 (1.37)	10.5 (2.61)

Burners

Clean burners as follows:

- 1- Turn off both electrical power and gas supply to unit.
- 2- Open or remove access panel to burner compartment.
- 3- On 036 and 060 units, remove and retain four screws securing burner support cap and lift burners from orifices. See figure 6. On 120, 240, and 288 units, remove and retain two screws securing burners to burner support. See figure 7.
- 4- Clean as necessary and replace burners. On 036 and 060 units, replace burner support cap and secure with retained screws. On 120, 240, and 288 units, secure burners with retained screws. Replace burner compartment access panel.

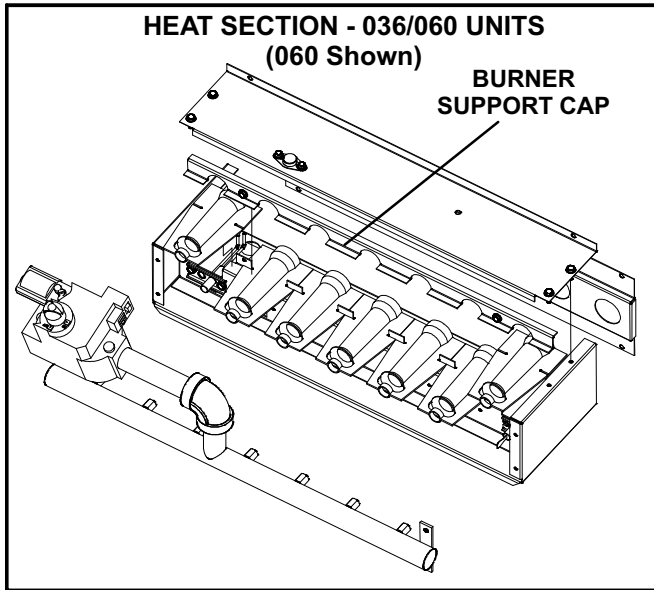


FIGURE 6

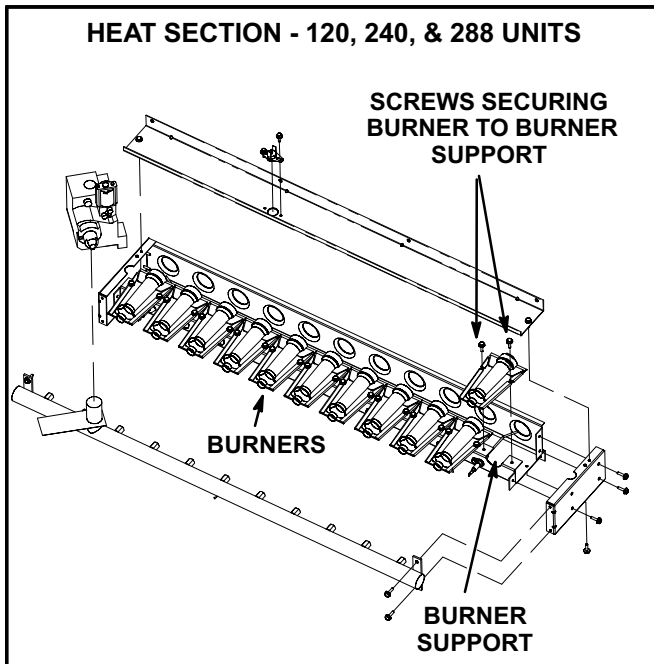


FIGURE 7

- 5- 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.

! WARNING

Electric shock hazard and danger of explosion. Can cause injury, death or product or property damage. Turn off gas and electrical power to unit before performing any maintenance or servicing operations on the unit. Follow lighting instructions attached to unit when putting unit back into operation and after service or maintenance.

Combustion Air Inducer

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

Under normal operating conditions, the combustion air blower 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. With power supply disconnected, the condition of the blower wheel can be determined by looking through the vent opening.

Cleaning Combustion Air Inducer

- 1- Shut off power supply and gas to unit.
- 2- Disconnect pressure switch air tubing from combustion air inducer port.
- 3- Remove and retain four screws securing combustion air inducer to flue box. Remove and retain two screws from bracket supporting vent connector. See figure 3 or 4.
- 4- Clean blower wheel blades with a small brush and wipe off any dust from housing. Clean accumulated dust from front of flue box cover.
- 5- Return combustion air blower motor and vent connector to original location and secure with retained screws. It is recommended that the combustion air inducer gasket be replaced during reassembly.
- 6- Clean combustion air inlet louvers on heat access panel using a small brush.

Flue Passageway and Flue Box

- 1- Remove the combustion air inducer assembly as described in the Combustion Air Inducer subsection.
- 2- Remove flue box cover. Clean with a wire brush as required.
- 3- Clean tubes with a wire brush. On 036 and 060 units, remove flue baffle retaining bracket and pull baffles from heat exchanger tubes. Clean tubes and baffles.
- 4- Reinsert baffles, when present, and secure baffle retaining bracket. Reassemble the unit. The flue box cover gasket and combustion air inducer gasket should also be replaced during reassembly.

Evaporator Coil

Inspect and clean coil at beginning of each cooling season. Clean using mild detergent or commercial coil cleanser. Flush coil and condensate drain with water taking care not to get insulation, filters and return air ducts wet.

Condenser Coil

Clean condenser coil annually with mild detergent or commercial coil cleaner and inspect monthly during the cooling season.

Supply Air Blower Wheel

Annually inspect supply air blower wheel for accumulated dirt or dust. Turn off power before removing access panel or cleaning blower wheel.

⚠ WARNING



Danger of explosion. Can cause injury or death. Do not overtighten main burner mounting screws. Snug tighten only.

Service Reminder

Call your Lennox dealer 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

The following repair parts are available through Lennox dealers. When ordering parts, include the complete model number and serial number listed on the ETL/CSA rating plate - e.g. SGA120H4BH1Y.

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
Sensor Lead
Combination Gas Valve
Limit Controls

Cooling Parts

Compressors
Low Pressure Switch
High Pressure Switch
Condenser Fan Motors
Condenser Fan Blades
Condenser Fan Run Capacitors
Freezestats
Low Ambient Pressure Switch
Low Ambient Thermostat
Condenser Fan Mounting Bracket
Fan Grille
Indoor Blower Motors
Blower Wheel
Expansion Valve
Distributor
Crankcase Heaters
Exhaust Fans (Opt.)

Electrical Control Parts

Main Control Panel
Economizer Control Panel (Opt.)
Control Panel
Compressor 3 and 4 Control Panel
Gas 2 Control Panel
Compressor Contactors
Circuit Breakers
Transformer (Control)
Transformer (Contactor)
Transformer (CAB)
Blower Contactor
Limit, Blower Relay
Heat Relays
Condenser Fan Relays
Capacitor CAB
Relay CAB
Low Ambient Relay
Low Amb. Low Pressure Switches