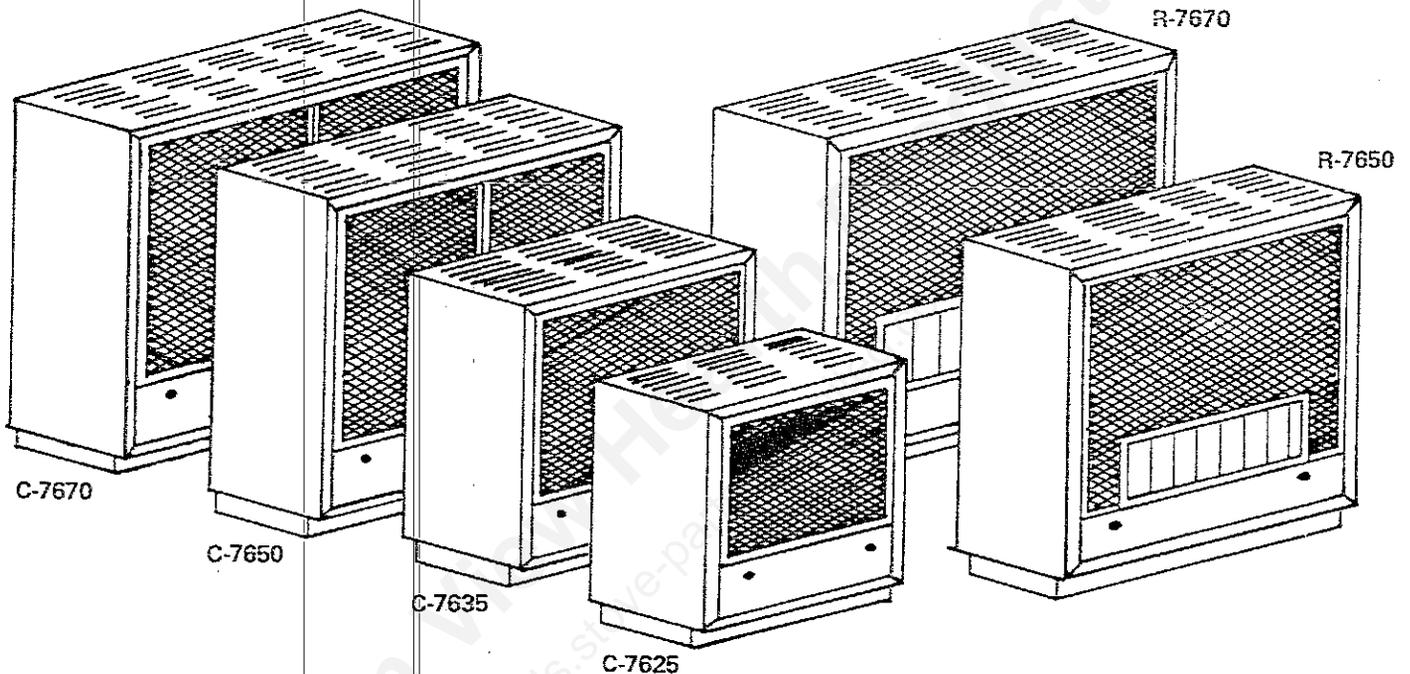


Lawson VENTED GAS HEATERS

owner's manual

INSTRUCTIONS FOR INSTALLING AND OPERATING — WITH REPAIR PARTS LIST



FOR USE WITH NATURAL AND PROPANE GASES

THIS MANUAL WILL HELP YOU TO OBTAIN EFFICIENT, DEPENDABLE SERVICE FROM THE HEATER, AND ENABLE YOU TO ORDER REPAIR PARTS CORRECTLY. KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.

CAUTION:

READ RULES CAREFULLY FOR SAFE OPERATION AND INSTRUCTION

FOR YOUR SAFETY

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

FOR YOUR SAFETY

If you smell gas:

1. Open windows
2. Don't touch electrical switches
3. Extinguish any open flame
4. Immediately call your gas supplier.

Lawson Division

UNITED STATES STOVE COMPANY, SOUTH PITTSBURG, TENNESSEE

85151 6/78

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IMPORTANT
THE FOLLOWING INFORMATION IS FOR YOUR
PROTECTION AND SAFE OPERATION OF THIS HEATER:

1. Due to high temperatures, the heater should be located out of traffic and away from furniture and draperies.
2. Children and adults should be alerted to the hazard of high surface temperatures and should be kept away to avoid burns or clothing ignition.
3. Young children should be carefully supervised when they are in the same room with the heater.
4. Do not place clothing or other flammable material on or near heater.
5. Installation and repair should be done by a qualified service person. The heater should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from some carpeting, bedding material, etc. It is imperative that control compartments, burners, and circulating air passageways of the heater be kept clean.
6. Any safety screen or guard removed for servicing the heater must be replaced prior to operating the heater.

This heater should be electrically grounded when equipped with the optional fan assembly, in accordance with the National Electrical Code, ANSI C-1, 1975 edition.

The installation must conform to local codes, or in the absence of local codes, the installation must conform with the following applicable American National Standards:

(a) National Fuel Gas Code, Z223.1 - 1974

IMPORTANT

GAS PRESSURES: ALL VALUES ARE INCHES W.C.

	Min. Inlet	Max. Inlet	Burner Pressure
NATURAL	4½	7	3½
PROPANE	12	13	11

NOTE: Pressure Regulators and Gas Inlet Pressure must be adjusted by the installer to give the pressure at the burner orifice shown above.

YOUR NEW GAS HOME HEATER

GENERAL INFORMATION

Your attractive new home heater incorporates many important new features to give you an economical and highly efficient heating unit.

The design of this heater has been certified by the American Gas Association as a vented heater and must be connected to a chimney flue outlet. The American Gas Association certification is your assurance that the design of your heater has complied with basic standards for safe operation, durable construction, and acceptable performance of gas-fired room heater.

Safe and satisfactory operation of a gas-fired room heater depends to a great extent upon its proper installation. We recommend that when using natural gas your local gas company make the installation and that when using L.P. (propane) gas your L.P. dealer make the installation to assure compliance with local municipal building codes.

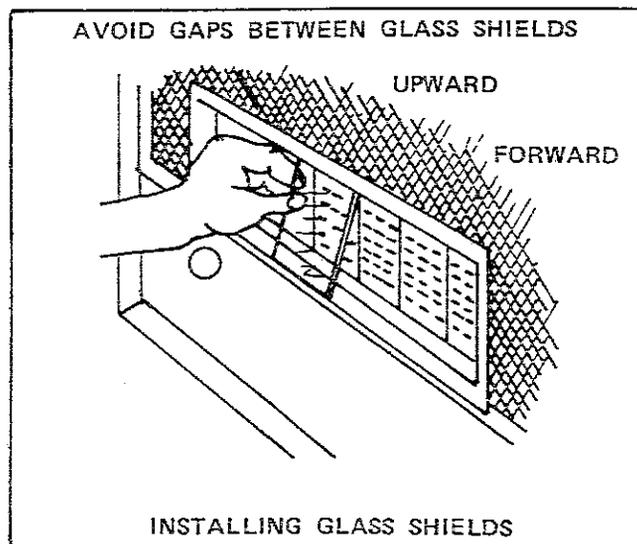
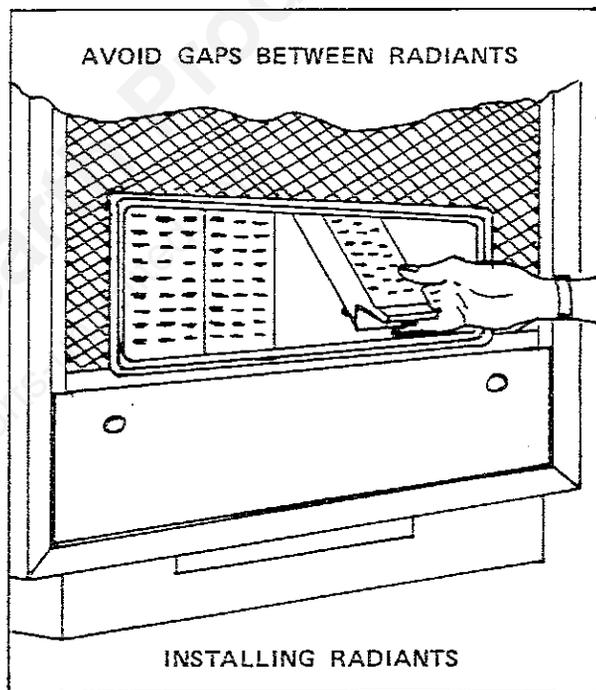
UNPACKING HEATER

Your heater was packed in a scientifically designed carton to protect it from damage in transit. If any damage is noticed after opening the carton, report it to the transportation company at once.

ASSEMBLING HEATER

If heater is a radiant circulator model the following must be assembled.

1. Install clay radiants. Avoid any gaps between radiants. Be careful when installing clay radiants—they are fragile and will break if not handled carefully.
2. Insert glass shields upward into retaining channel. Swing bottom edge forward to engage lower channel. Release glass, and it will drop into place. Avoid any gaps between glass shields. These glass shields are heat treated for high temperature use. They should be wiped clean when first installed.



INSTALLATION . . .

ADEQUATE VENTILATION—Provide adequate clearance around air openings into the combustion chamber for servicing the heater and to allow cool room air to flow through the heater to be heated.

It is necessary to have sufficient outside air in the room in which the heater is located.

In homes which are loosely constructed, sufficient air will come through the leaky door and window frames.

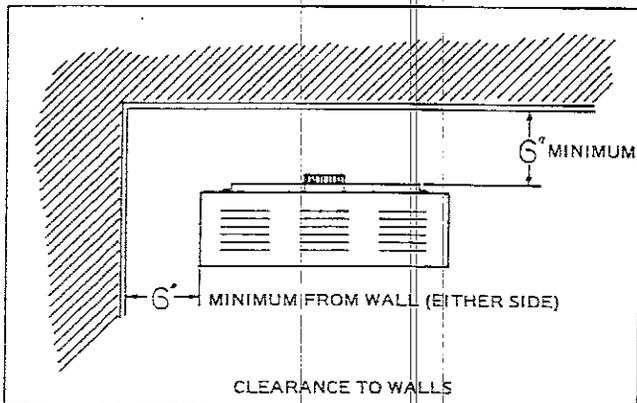
In homes which are tightly constructed with storm sash and doors, or if there are exhaust fans, the outside air must be supplied directly into the room.

A fresh air opening, for combustion must be provided into the room. That opening must have one square inch of free opening per 1,000 B.T.U. input per hour.

All heating appliances which operate with an open flame consume part of the oxygen in the air. If the room is not adequately ventilated while heater is in use, there will not be enough oxygen in the air for heater to operate efficiently. An odor of gas and insufficient heat will result. Therefore, if this heater is operated for long periods of time, the room must be ventilated by partially opening windows or outside doors to admit fresh air. The doors to connecting rooms should also be opened.

That opening can be from a ventilated attic; in the floor and foundation wall or through an outside wall. If in the floor, the same size opening is required in the foundation wall.

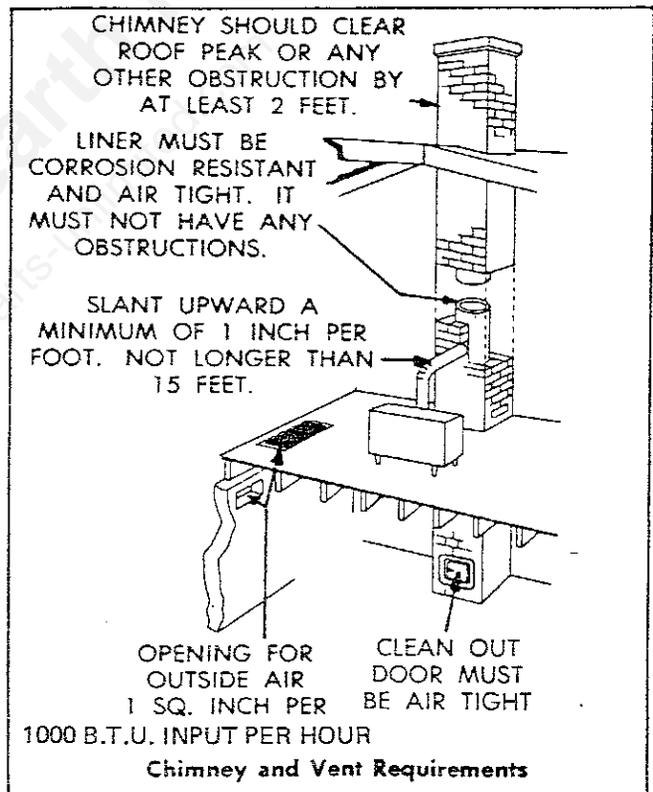
LOCATION—Place heater as nearly as possible in the center of the space to be heated. If heater is to serve two or more rooms, the doors between the rooms should remain open. The installation of grilles or wall registers above doorways between rooms is highly recommended to provide even distribution of heat. This is especially important if the ceiling is high and the doorways low. Place the heater fairly close to the chimney flue opening to avoid long horizontal runs of vent pipe and the use of more than two pipe elbows.



CAUTION: Place the heater so that sides and back are at least 6 inches from the wall.

Do not install it in an alcove or locations where curtains or drapes can come in contact with it. Do not locate behind doors or where it can be knocked over.

INSPECT CHIMNEY—It is very important that flue or chimney to which heater is vented should be in good condition and free from obstructions, and have an adequate up-draft to carry off by-products of combustion. Loose brick, broken mortar or accumulation of soot should be removed from chimney before heater is installed. Tie a brick or other heavy object wrapped in a burlap sack to the end of a rope, raise and lower in the chimney to loosen obstructions; then remove debris through clean out door.



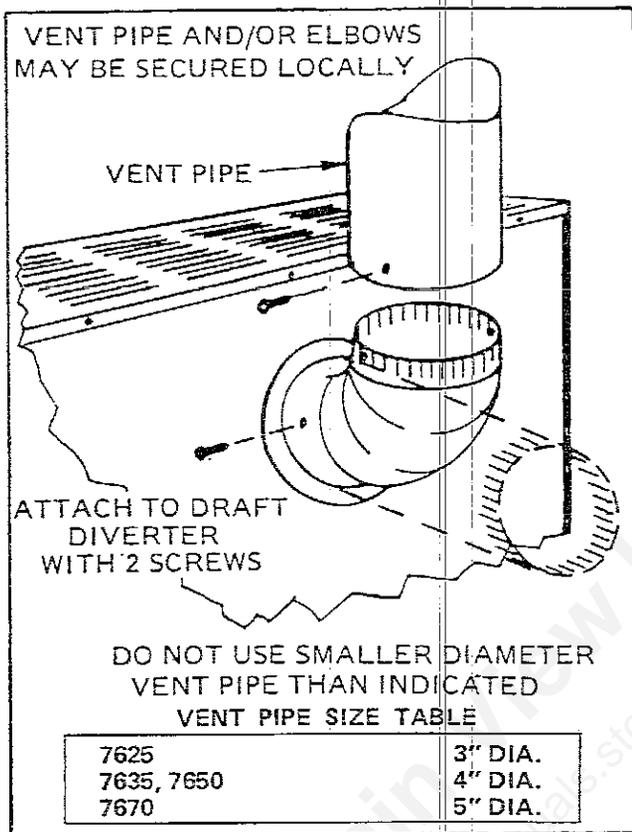
If the home does not have a chimney, a Metalbestos or any other approved type 'B' chimney package can be used.

If a metal vent pipe passes through a combustible partition, it must pass through a double metal thimble 2" larger than the vent pipe.

INSTALLATION . . .

CONNECT FLUE PIPE—The draft diverter for your heater is built in at the factory. No extra assembly or installation is required. The flue pipe must be connected to the draft diverter. **NEVER LIGHT OR USE THE HEATER UNLESS IT IS CONNECTED TO FLUE OUTLET.**

Connect pipe to draft diverter collar, drill holes and attach securely with sheet metal screw and extend to chimney or flue. Horizontal runs of flue pipe must be pitched upwards from heater at least 1/2 inch per foot of flue pipe.



GAS SUPPLY — IMPORTANT: Check the identification plate on the back of the heater to make sure your heater is equipped properly for the type of gas you will be using.

GAS CONNECTION — Connect heater to gas line in accordance with local codes. Your heater is equipped with either an automatic control or manual shut-off valve having a 1/2 inch inlet. Gas supply piping to this point should be 3/4 inch black iron pipe or equivalent which should be reduced down to 1/2 inch at the control. If your heater is equipped with a control it contains a main shut-off valve as an integral part of the control. However, some local codes require an additional main shut-off valve which shuts off the gas before it reaches the heater control. We recommend the use of this additional valve for convenience in disconnecting the heater for cleaning or other reasons.

THE GAS PIPING

Use new black iron or steel pipe only. Galvanized pipe or tubing may not meet local code requirements.

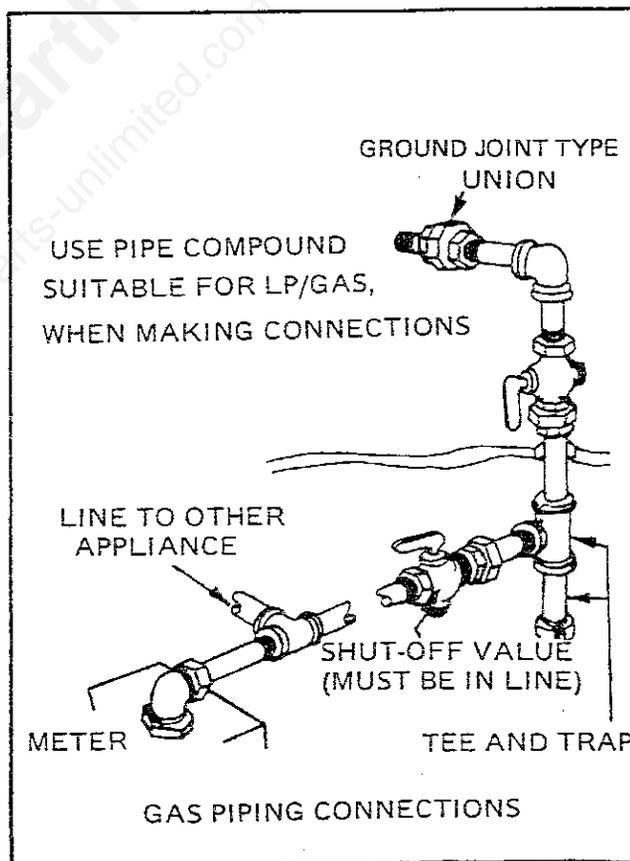
It is important that the heater is connected to the correct size pipe. Use 1/2" pipe size from meter to heater. If heater is more than 20 feet from meter, use 3/4" pipe with reducer. Piping that is too small will reduce the gas pressure and limit the B.T.U. input per hour of the heater.

Attach gas line to control valve. It is recommended that pipe union be placed in line at this point for convenience of servicing or removing heater.

The installation of the piping must be done by a qualified and experienced gas mechanic. We recommend that the gas company install the piping and test the entire system after the installation.

Gas piping should be supported by hangers or suitable clamps.

When using a compound in making connections, apply it lightly to the male threads only. Any excess could be forced into the pipe and result in clogged valves. The compound must be of the type that will not deteriorate with LP gas.



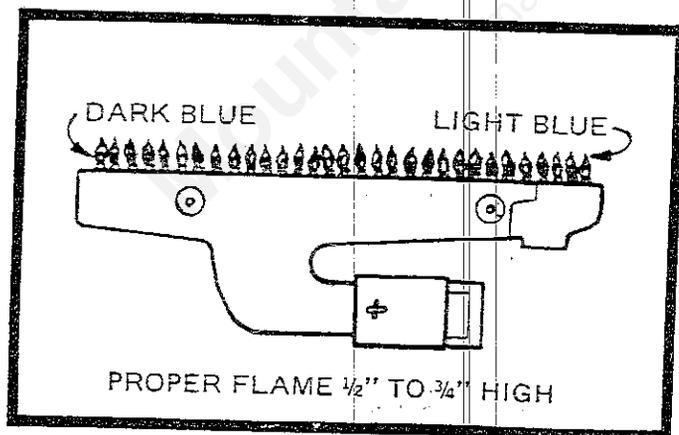
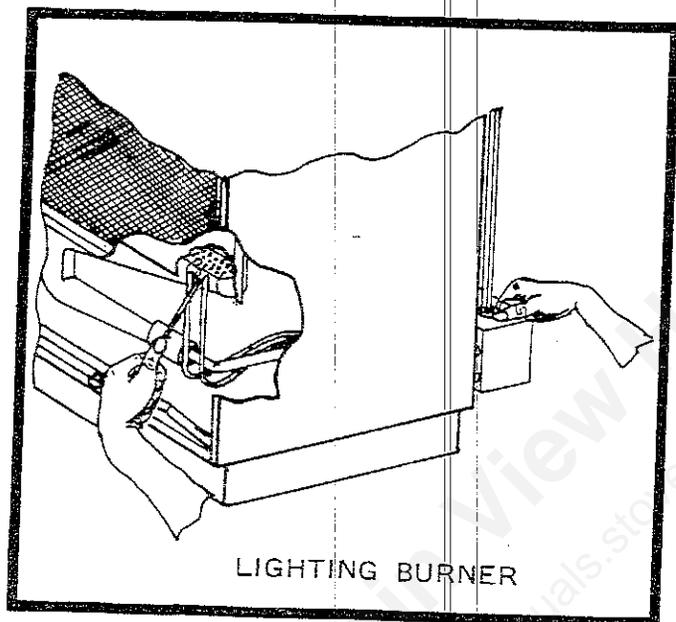
All connections to the LP bulk storage tank should be made only by your licensed LP dealer. Your licensed LP dealer should check the complete unit and all connections from the bulk storage tank to the heater at the time he makes the gas hookup.

ADJUSTMENTS AND OPERATION . . .

Odor When First Lighted

You may notice a slight odor on first light. This will soon disappear as it is only the oil used on the parts during manufacturing. After first light, it will not reoccur.

Whenever working on heater, gas must be turned off at shut-off valve.



ADJUSTMENTS AND OPERATION

Test for Leaks

All gas piping and connections must be tested for leaks after the installation is completed.

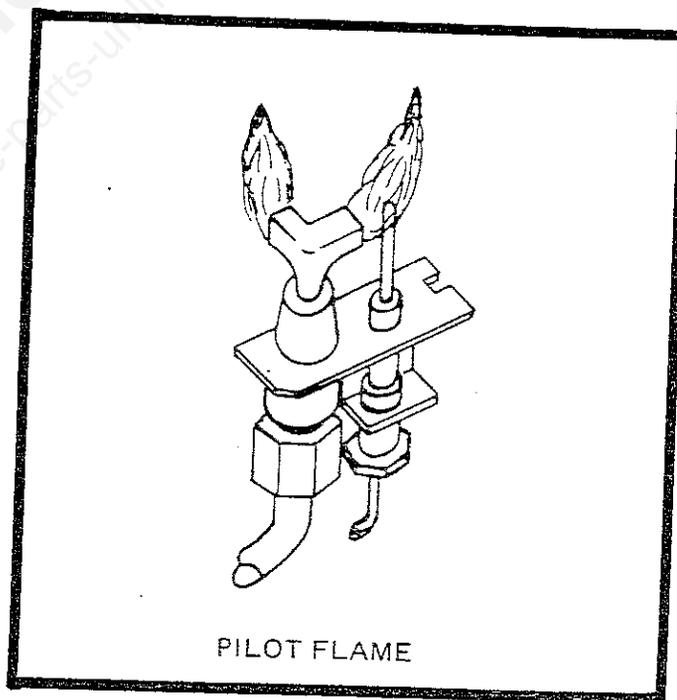
Be sure the heater is turned off.

Apply soap sud solution to all connections and joints and if bubbles appear, leaks can be detected and corrected.

Do not use a match or open flame of any kind to test for leaks.

Never operate the heater with leaky connections.

CAUTION: Always wait 5 minutes for unburned gases to escape before relighting.

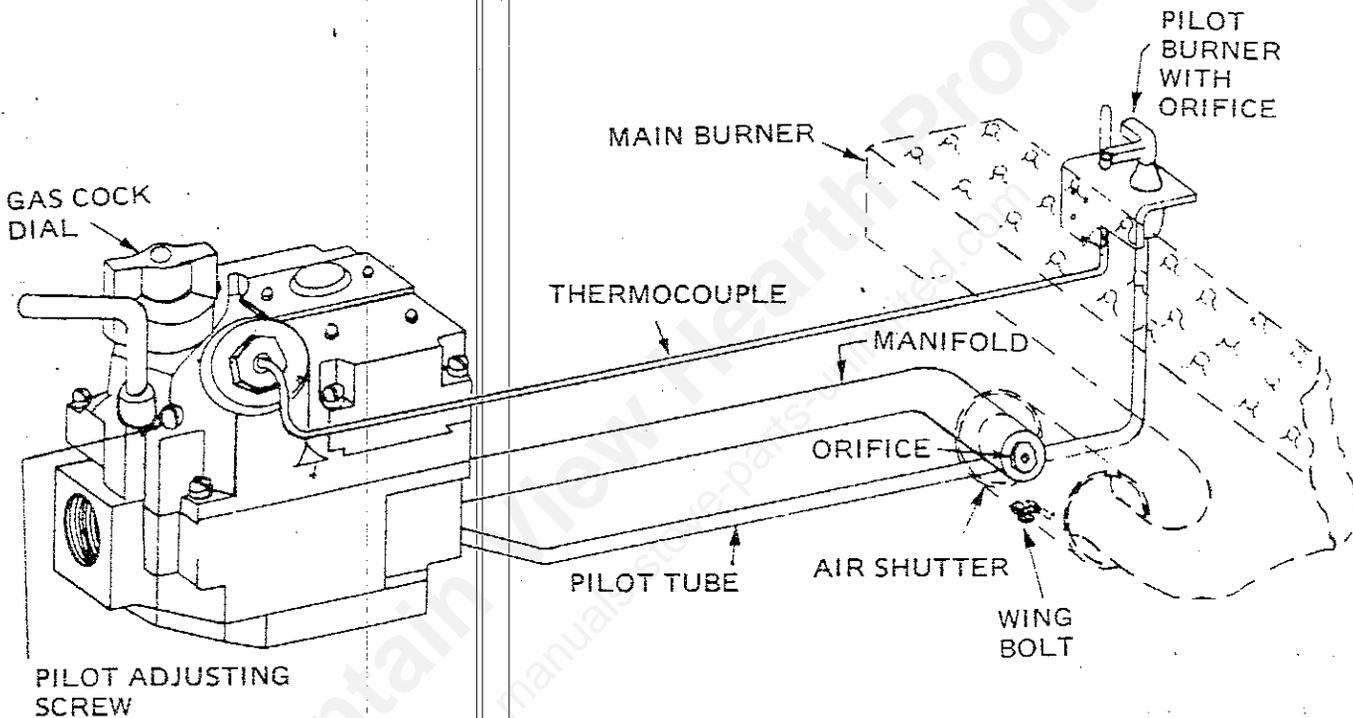


ADJUSTMENTS AND OPERATION . . .

— MODEL WITH SAFETY VALVE —
MODEL NO. SUFFIX "B"

MINIMUM \$2.00 ORDER

COMPONENT	PART NO.	
Gas Valve NAT	81050	\$27.78
Gas Valve LP	81051	27.78
Manifold Assy.	67324	2.90
Pilot NAT	81042	2.45
Pilot LP	81047	2.45
Pilot Tube	81043	.30
Thermocouple	81078	3.72



After connecting gas supply, **CHECK FOR LEAKS.**

NOTE: If control kit has a separate manual cut-off valve in manifold, turn cut-off valve to "ON", handle should point in direction of gas flow.

To operate Safety Valve, turn gas cock to "pilot" position. Press down on gas cock dial, holding lighted match to pilot burner. When pilot burner lights, continue to hold down for 1 minute, then release. Pilot should continue to burn. If not, repeat above procedure. Pilot flame should be about 1 inch long, and should be blue in the center. A weaker flame means too little gas, and a noisy long flame indicates too much. Proper pilot flame may be secured by turning pilot adjustment screw, which is located under cap as indicated above. Always replace cap after adjustment.

Turn gas cock dial to "ON" position. Main burner will ignite.

Loosen air shutter adjustment screw so that air shutter may be moved back and forth to adjust flame height. Allow heater to burn a few minutes to clear air from gas line. Burner should be warm when adjusted. Gas flame should be adjusted by moving air shutter so that a **BLUE CONE** 1/2" to 3/4" high appears over each hole in top of burner. A high, yellow flame will cause carbon deposits, or a flame which "lifts" or blows away from top of burner will cause noisy operation.

Heater is now ready for use, and gas cock dial may be used to vary amount of gas used to obtain desired comfort level. If main supply fails or for some reason is interrupted, your heater will not operate until you repeat step 1 above. This is the protection you have with a 100% Safety Valve.

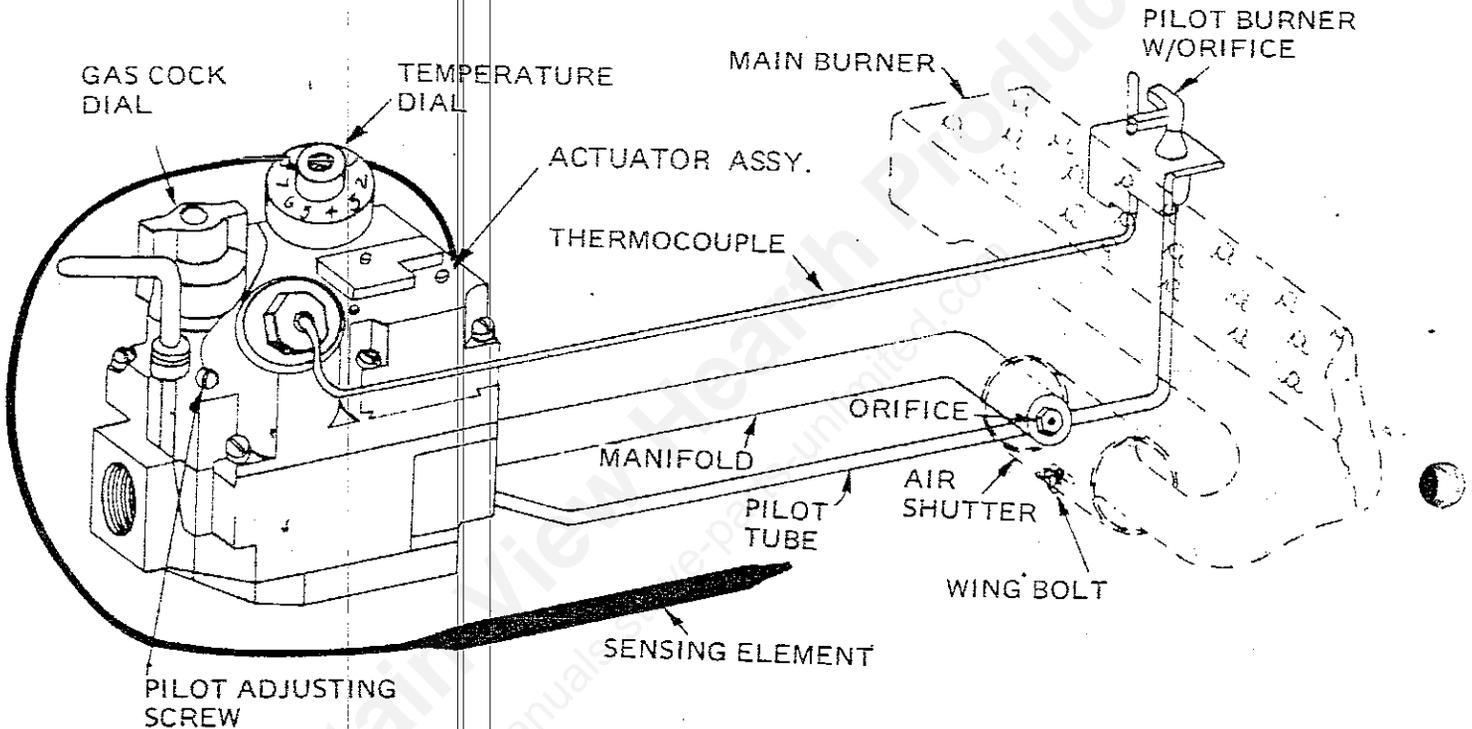
ADJUSTMENTS AND OPERATION . . .

MODEL WITH COMBINATION THERMOSTAT-SAFETY VALVE -- MODEL SUFFIX "G"

MINIMUM \$2.00 ORDER

COMPONENT	PART NO.
Gas Valve NAT	81046
Gas Valve LP	81049
Manifold Assy.	67324
Pilot NAT	81042
Pilot LP	81047
Thermocouple	81078
Control Knob	89129
Control Rod Brkt.	15330
Control Rod C-7625	21386
Control Rod C-7635	21387
Control Rod C&R 7650	21388
Control Rod C&R 7670	21388
Actuator Assy.	81902

*Parts Are
No longer
Available*



After connecting gas supply, **CHECK FOR LEAKS.**

LIGHTING INSTRUCTIONS— Gas control knob cannot be turned to "off" position without first depressing at "pilot" position, then turned to "off".

TO LIGHT PILOT— Depress slightly and turn gas control knob to "pilot" position, fully depress knob and hold. Light pilot after 30 seconds release knob, pilot should remain lighted. If pilot fails to remain lighted, repeat operation. Pilot flame should be about 1 inch long, and should be blue in the center. A weaker flame means too little gas, and a noisy long flame indicates too much. Proper pilot flame may be secured by turning pilot adjustment screw, which is located under cap as indicated above. Always replace cap after adjustment. If pilot light goes out during normal operation, wait 5 minutes before relighting.

TO LIGHT MAIN BURNER— If control is equipped with temperature control knob, turn to desired setting. Turn gas control knob to "on" position — main burner will ignite immediately. Loosen air shutter adjustment screw so that air shutter may be moved back and forth to adjust flame height. Allow heater to burn a few minutes to clear air from gas line. Burner should be warm when adjusted. Gas flame should be adjusted by moving air shutter so that a **BLUE CONE** 1/2" to 3/4" high appears over each hole in top of burner. A high, yellow flame will cause carbon deposits, or a flame which "lifts" or blows away from top of burner will cause noisy operation.

TO TURN GAS OFF AT MAIN BURNER— Turn gas control knob to "pilot" position. Pilot will remain lighted.

TO SHUT DOWN, TURN ALL GAS OFF— Turn gas control knob to "off" position. Gas control knob cannot be turned to off position without first depressing at pilot position, then turned to "off". Both main burner and pilot will go out. Heater is now ready for use, and thermostat may be used to vary amount of gas used to obtain desired comfort level. If main gas supply fails or for some reason is interrupted, your heater will not operate until you repeat step 1 above. This is the protection you have with a 100% Safety Valve. To realize maximum comfort, set thermostat at medium, which is approximately 74 degrees. Allow heater to operate for an hour or so, then turn to either a lower or higher setting as you prefer. Heater will automatically maintain temperature desired. Do not attempt to repair or alter control. Call a qualified service man.

SERVICE HINTS AND MAINTENANCE

NORMAL HOURLY BTU INPUT RATING

MODEL	ORIFICE DRILL SIZE	NATURAL GAS	ORIFICE DRILL SIZE	PROPANE GAS
C-7625	42	25,000	54	25,000
C-7635	35	35,000	52	35,000
C-7650	29	50,000	47	50,000
C-7670	25	65,000	44	60,000
R-7650	29	50,000	47	50,000
R-7670	25	65,000	44	60,000

CLEANING INSTRUCTIONS

Below are shown various materials used in your heater and methods of cleaning each. Follow these suggestions, because it is possible to do serious damage by cleaning certain parts too vigorously.

CAST IRON— May be soaked in any household detergent or solvent, or cleaned with wire brush. Holes in burner should be cleaned with wooden match or wire. Desirable to rub with oil rag after cleaning and drying.

SHEET STEEL—PLATED, PAINTED, OR ENAMELED—DO NOT SOAK, SCRATCH, SOAP, OR SAND. This substance may be cleaned by wiping with slightly moistened cloth. Dry cloth will do in most cases.

GLASS— Clean as in washing windows or dishes.

CLAY RADIANTS—VERY FRAGILE, DO NOT WASH OR SOAK. Brush lightly or wipe gently.

VALVES, FITTINGS, THERMOSTATS: Do not attempt to repair or alter. Call a qualified service man. Brush gently or wipe lightly only to remove surface deposits.

PROCEDURE TO CLEAN: (Refer to exploded view of parts in Parts List)

1. Disconnect heater from gas supply, **MAKE SURE GAS IS TURNED OFF AT SOURCE.**
2. Open front access door.
3. Remove glass panels and/or clay radiants. Some models do not have these parts. If not, ignore this step.
4. Remove burner and controls.
5. Remove cast iron burner from other parts and clean as outlined in general instructions above.
6. Check pilot burner, if any, for lint, which may be removed easily with pin, wire, or other thin object. Then blow clear.
7. Gently scrape or sandpaper thermocouple at point where pilot flame touches it. **DO THIS ONLY IF THERMOCOUPLE SEEMS TO BE COVERED WITH A BLACK DEPOSIT.**
8. Clean Combustion Unit and interior of heater with vacuum cleaner, or if not accessible, use brush or rag to remove any deposit.
9. Clean all other parts as outlined in general instructions above.
10. Reassemble heater, connect, light, and readjust. Heater should continue satisfactory operation.

*Parts Are
no longer
Available*

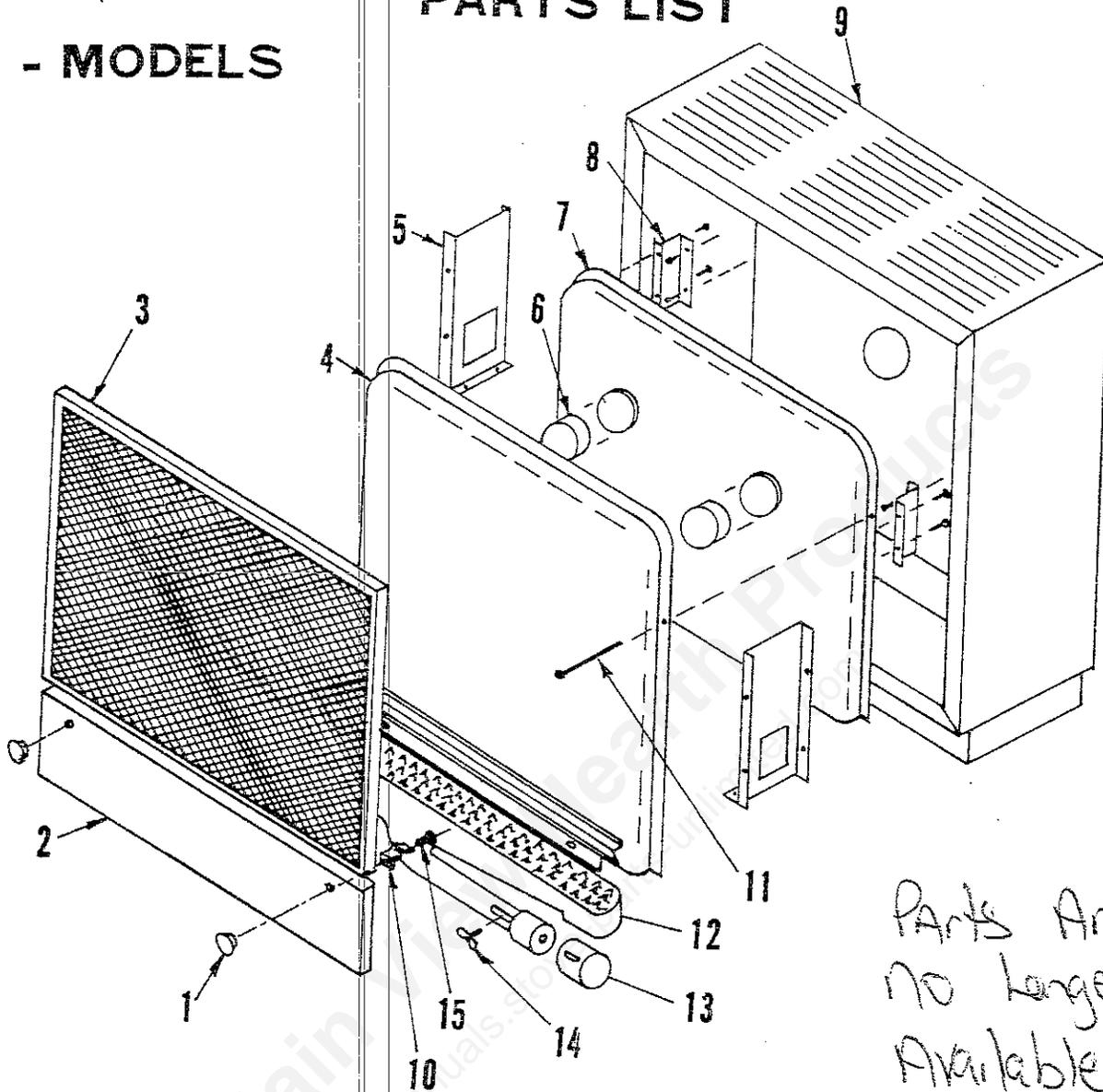
TROUBLE CHART

SYMPTOMS	CAUSES	CORRECTIONS
Burner Flame Lifts	Air Shutter Incorrectly Adjusted	Re-Adjust Air Shutter
Burner Flame Goes Out	Gas Pressure Too High. Too Much Air Valves Clogged Gas Supply low or Off Motors Not Running Defective Limit or Fan Switch	Call Gas Co. to Re-adjust Re-adjust Air Shutter for Proper Flame Clean Valves Check Valves in Line See Fan Trouble Below
Burner Does Not Light	Gas Valves Closed Air In Line Pilot flame not heating the thermocouple Dirty thermocouple electrical connections Defective Thermocouple or Valve Temperature sensing bulb not in position	Replace Defective Part Open Them Continue to Relight Until All Air is Exp. See Pilot Flame Troubles Clean all connections Replace Defective Part Re-position
Burner Makes Noise or Flame Flashes Back Into Burner	Air Shutter Incorrectly Adjusted Damaged Burner or Orifice Wrong Size Orifice	Re-adjust Air Shutter Replace
Reddish Color Flame	Gas Pressure Wrong Dust in Air Wrong Size Orifice	Replace With Correct Size Call Gas Co. to re-adjust This Will Clean itself Up Replace with Correct Size
Flame Too High	Air Shutter incorrectly Adjusted Gas Pressure Too High Wrong Size Orifice	Re-adjust Air Shutter Call Gas Co. to Re-adjust Replace With Correct Size
Flame Too Low or Yellow and Smokey	Air Shutter Incorrectly Adjusted Valves Clogged Wrong Size Orifice Gas Pressure Too Low	Re-adjust Air Shutter Clean Valves Replace With Correct Size Call Gas Co. to Re-adjust
PILOT FLAME TROUBLE		
Lazy, Yellow Flame	Dirty Pilot Burner	Clean Pilot
Small Flame	Low Gas Pressure	Clean Orifice-Replace Pilot Gas Filter
Pilot Flame Not Heating Thermocouple	Pilot Gas Adjustment closed too far Wrong Pilot Orifice Lighting Door Open	Turn Pilot Flow Adj. Counter Clockwise Replace with Correct Size Close Door

If the functioning of the heater is not satisfactory after performing the described operations and adjustments, call your Dealer.

C - MODELS

PARTS LIST



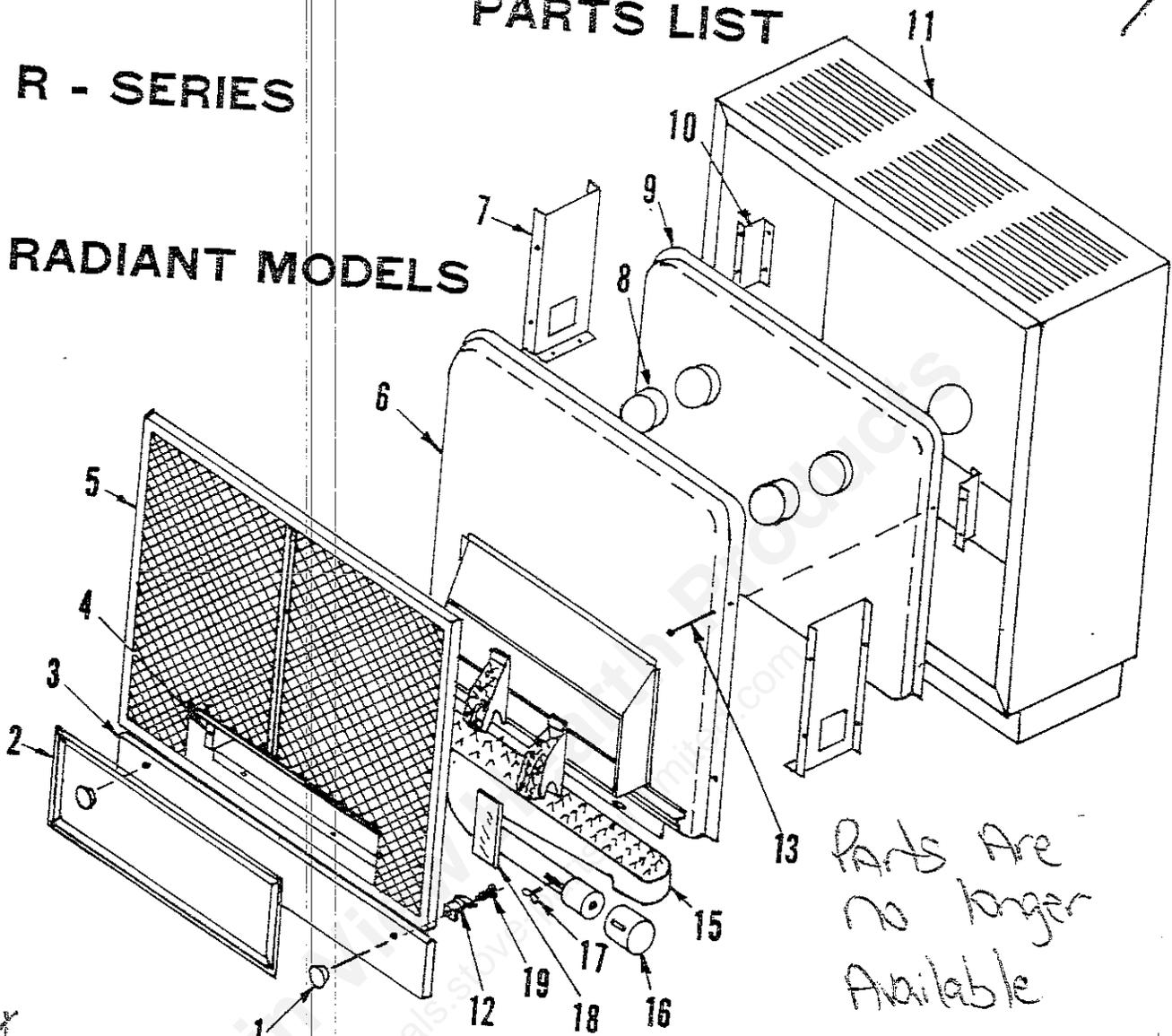
Parts Are
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Available

Key No.	Description	PART NUMBERS			
		C-7625	C-7635	C-7650	C-7670
1	Knob (2)	89062	89062	89062	89062
2	Door	21382	21383	21384	21385
3	Front Mesh	67300	67301	67302	67304
4	Combustion Chamber	67310	67311	67312	67314
5	Leg, Heat Exchanger	21376	21377	21377	21377
6	Collar, Heat Exchanger	21371	67316	21372	67317
7	Radiator	67306	67307	67308	67309
8	Bracket, Rear	21380	21380	21380	21380
9	Cabinet Body	67378	67341	67322	67343
10	Spring Clip (2) - Cabinet Door	89072	89072	89072	89072
11	Tie Bolt 1/2 - 30 x 6-1/2	83138	83138	83138	83138
12	Burner	40078	40066	40068	40077
13	Air Shutter	06590	06590	07020	07020
14	Wing Bolt	83046	83046	83046	83046
15	Machine Screw, No. 8 - 32 x 1/4" (2)	83033	83033	83033	83033
*	Blower Kit (Optional)	---	F-73	F-76	F-76
*	Owners Manual	85151	85151	85151	85151

PARTS LIST

R - SERIES

RADIANT MODELS



Parts Are
no longer
Available

Exhaust
Flame

Key No.	Description	PART NUMBERS	
		R-7650	R-7670
1	Knob (2)		
2	Radiant Frame	89062	89062
3	Door	40069	40071
4	Radiant Trim	67371	21385
5	Front Mesh	21389	21390
6	Combustion Chamber - <i>Flame</i>	67303	67305
7	Leg, Heat Exchanger	67313	67315
8	Collars, Heat Exchanger	21377	21377
9	Radiator - <i>Exhaust</i>	21372	67317
10	Bracket, Rear	67308	67309
11	Cabinet Body	21380	21380
12	Spring Clip (2)	67342	67343
13	Tie Bolt 1/4 - 20 x 6-1/2	89072	89072
14	Radiants	83138	83138
15	Burner	89907	89907
16	Air Shutter	40068	40077
17	Wing Bolt	07020	07020
18	Radiant Glass	83046	83046
19	Machine Screw No. 8 - 32 x 1/4" (2)	67365	67365
*	Blower Kit (optional)	83033	83033
*	Owners Manual	F-76	F-76
		85151	85151