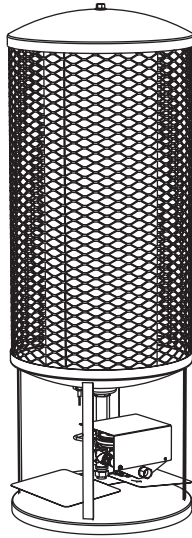


INSTALLATION AND OPERATION INSTRUCTIONS

FLOOR MODELS

RFPA25-N6A, RFPA25-L6A



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.
- * Immediately call your gas supplier from a neighbors phone. Follow the gas supplier's instructions.
- * If you cannot reach your gas supplier, call the fire department.

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

SAVE FOR FUTURE REFERENCE

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1. GENERAL INFORMATION

INSTALLER: This manual is the property of the owner. Please present this manual to the owner when you leave the jobsite.

This heater is a self-contained infrared radiant floor model heater for use in locations where flammable gases or vapors are not generally present and is intended for the heating of non-residential spaces.

INSTALLATION REQUIREMENTS

Installation of this heater must be in accordance with all applicable codes shown in the instructions and/or the local codes and authorities having jurisdiction. Heaters shall be installed by a licensed contractor or licensed installer. Clearances to combustibles as outlined in this manual should always be observed.

Every heater shall be located with respect to building construction and other equipment so as to permit access to the heater. Each installer shall use good installation practices when locating the heater and must give consideration to service accessibility.

This heater is for **INDOOR INSTALLATION ONLY**. While the products of combustion are expelled into the building, national codes require ventilation in the building to dilute these products of combustion. This ventilation may be provided by gravity or mechanical means. Refer to Section 9 of this manual for minimum requirements for ventilation and combustion air.

Copies of the National Fuel Gas Code (ANSI Z223.1 - latest edition) are available from the American Gas Association Laboratories, 8501 E. Pleasant Valley Road, Cleveland, OH 44131. All NFPA codes are available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

WARNING: DO NOT move, handle or service a hot or operating heater.

WARNING: Heaters must only be used on stable and level surfaces for safe operation.

2. SPECIFICATIONS

MODEL NO.	GAS TYPE	INPUT BTU/HR	ORIFICE SIZE
RFP25-N6A	NATURAL	250,000	#33 (.1130)
RFP25-L6A	PROPANE	250,000	#42 (.0935)

Gas Pipe connection: 1/2" NPT Female

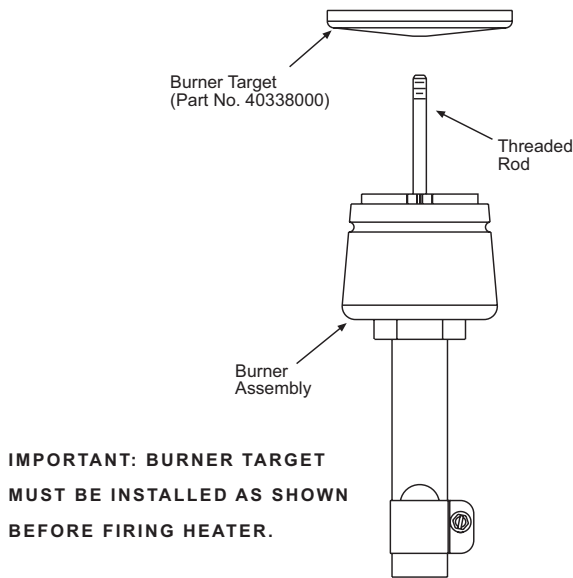
MODEL SUFFIXES:

- N - Natural Gas
- L - Propane Gas
- 6A - Standing Pilot Ignition
100% Safety Shutoff, Manual Ball Valve

DIMENSIONS	RFP25
HEATER	18" Dia. x 48-9/16"
PACKAGED	18-1/2" x 18-1/2" x 51-1/2"
SHIPPING WEIGHT	62 LBS.

3. BURNER TARGET INSTALLATION

The burner target must be assembled on the burner before operating the heater. Unscrew the burner and install the burner target as shown on the drawing below. The target is packaged separately to prevent damage to the burner during shipment.

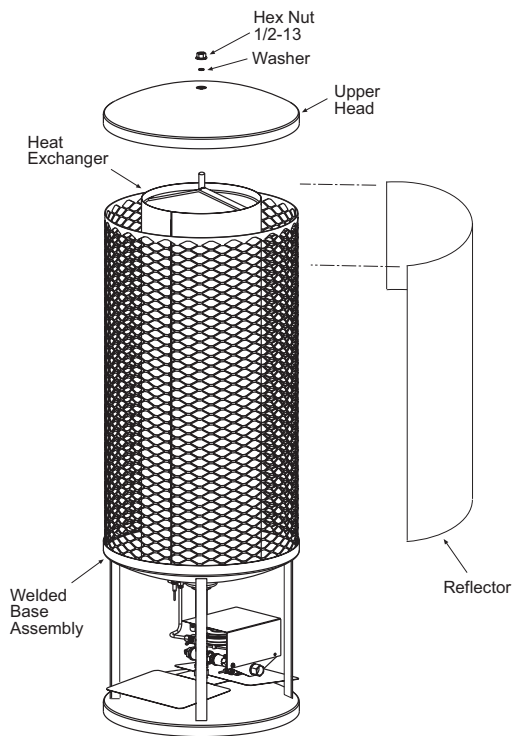


4. ADDING OPTIONAL REFLECTOR

A 180° reflector can be used where it is desirable to direct the heat into a specific work area. This is ordered as an accessory item, Part No. 04310010.

INSTALLATION INSTRUCTIONS

1. Loosen and remove the 1/2-13 hex nut and washer from the heater assembly.
2. Lift the head from the heater.
3. Place reflector on outside of expanded metal guard with bottom edge inside lip of the base head assembly.
4. Replace upper head with lip over the expanded guard and reflector.
5. Resecure with the nut and washer.



5. MINIMUM CLEARANCES TO COMBUSTIBLES

The heater shall be operated only on a **NON-COMBUSTIBLE**, level floor. Minimum clearances to combustible walls and ceilings are listed below:

MODEL RFPA25	FRONT	SIDES	REAR	TOP	CLEARANCE FROM PROPANE CYLINDER
WITH REFLECTOR	288"	144"	96"	168"	20 FEET
WITHOUT REFLECTOR	----	144"	----	168"	20 FEET

REFER TO BULLETIN NFPA 58 AND LOCAL CODES

WARNING:KEEP PERSONNEL AND COMBUSTIBLE MATERIAL AT LEAST 12 FT. FROM HEATER MODEL RFPA25 WHEN IN OPERATION.

6. GAS CONNECTIONS AND REGULATION

1. Connect to the supply tank or manifold in accordance with the latest edition of National Fuel Gas Code (ANSI Z223.1) and local building codes. Authorities having jurisdiction should be consulted before the installation is made.
2. Pipe joint compounds must be resistant to the action of liquefied petroleum gases.
3. Where local codes do not prohibit, an A.G.A. or U.L. approved flexible connection is recommended between the rigid piping and the heater. A union and an approved shut-off valve should be installed before the control valve inlet. The shut-off valve should be installed within 6 feet of the union.
4. This appliance is equipped with a manual gas valve and a pilot regulator. The maximum supply pressure to the appliance is 5 PSIG. If the line pressure is more than the maximum supply pressure, then use a line regulator which corresponds to the supply pressure.
5. The pilot burner is regulated separately to operate at 11.0" W.C. The pilot flame can be reduced by turning the pilot valve handle counterclockwise ⤴ should this be desired.
6. After gas connections have been made, make sure the heater and all gas outlets are turned off before the main gas supply is turned on. Turn the gas pressure on and check for leaks. To check for leaks, apply a solution of soap suds to all connections and joints or check by one of the methods listed in Appendix D of ANSI Z223.1 (latest edition) Natural Fuel Gas Code. DO NOT USE AN OPEN FLAME OF ANY KIND TO TEST FOR LEAKS.

7. INSTRUCTIONS FOR PRESSURE TEST GAUGE CONNECTION

Supply Pressure: Installer to provide a 1/4" N.P.T. plugged tapping, accessible for test gauge connection immediately upstream of the gas supply connection to the heater.

Manifold Pressure: Turn gas valve to "OFF" position. Remove 1/4" plug from manifold downstream from the manual ball valve and connect 1/4" nipple to the tapped hole. Connect gauge to nipple. Turn on the gas supply.

With the main burner operating, check burner manifold pressure using a pressure gauge suitable for the operating pressure of the heater. If adjustment is required, remove cover screw of the appliance regulator. Using a small screwdriver, turn adjustment screw clockwise \curvearrowright to increase or counter-clockwise \curvearrowleft to decrease gas pressure to burner. Replace cover screw.

GAS TYPE	MANIFOLD PRESSURE	SUPPLY PRESSURE
Natural	5 PSIG	5 PSIG
Propane	5 PSIG	5 PSIG

8. INFORMATION FOR LP GAS FLOOR MODEL HEATERS ONLY

Heaters used with LP gas must be installed in accordance with the latest edition of the National Fuel Gas Code - NFPA54, Standard for the Storage and Handling of LP Gas - NFPA 58, all state and local codes or the authority having jurisdiction.

This heater is intended for industrial or construction heating and it must never be used for residential/domestic heating.

WARNING:A single stage regulator must be installed on the tank or cylinder to reduce the tank or cylinder pressure to the heater. Operation of this heater without this regulator can cause damage to the heater and personal injury.

The heater must be connected to the tank or cylinder by a UL Listed hose assembly or hard piping. A 25 foot assembly of UL Listed hose is available from Space-Ray under Part No. 42035020. A single stage LP gas regulator (operation range: 250 PSIG maximum inlet and 5 PSIG outlet) is available as Part No. 03483140.

The volume of a given quantity of liquid LP gas in a container is directly related to its temperature. As a result, the vaporization rate of a tank or cylinder will decrease as the temperature drops and as the percentage of liquid in the container becomes smaller.

WARNING: Due to the continuous length of time the heater might be in operation, Space-Ray DOES NOT recommend the use of a 100 lb. cylinder with the RFP25 heater because of the large BTU input. Manifolding several cylinders together is a practical way of increasing the time of operation of these heaters. Operation of the heater with insufficient sized cylinders or when the liquid level becomes too low will result in poor heater performance and can cause sooting. Consult your LP gas dealer for proper sizing of container.

Always turn the gas off at the tank or cylinder when the heater is not in use. When in operation, keep the heater a safe distance from the LP gas container and combustible materials as indicated on the heater and in the instructions. Fasten LP cylinders securely so they cannot be knocked over.

9. VENTILATION AND COMBUSTION AIR

This heater requires ventilation in the building to dilute the products of combustion and provide fresh air for efficient combustion. The minimum recommended vent flow required is as follows:

RFP25: 1000 cfm

The combustion air enters through the heater base and must not be restricted. **DO NOT** block or enclose any ~~part~~ **the heater base**. All ventilation in the building must be at a level above the height of the heater.

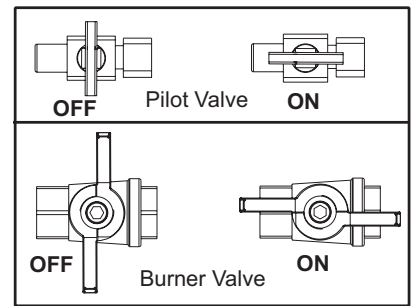
10. LIGHTING AND SHUTDOWN INSTRUCTIONS

MODELS WITH IGNITION SUFFIX "-6A"

1. Turn manual burner valve handle to "OFF" position. Push in silver button on safety valve and light pilot. Hold button in firmly for approximately 30 seconds or until pilot remains lighted without holding button in. If air is in line, it will take a few minutes for gas to reach pilot.

2. Turn manual burner valve handle to full "ON" position. **Sooting will occur if this heater is operated with the valve handle in any position except full "ON".**

3. If heater does not light, shut off gas completely for five minutes before attempting to relight.



4. To turn off main burner and pilot gas, turn manual burner and pilot valves to "OFF" position.

CAUTION: DO NOT OPERATE MAIN BURNER AT ANY SETTING LESS THAN FULL "ON" POSITION. SOOTING WILL OCCUR!

11. CLEANING AND ANNUAL MAINTENANCE

This heater must be cleaned and serviced at least once before the start of each heating season or at any time the infrared emitter show signs of collecting any foreign material on its surface. Maximum heating efficiency and clean combustion will be maintained by keeping the emitter and burner clean. To clean the heater follow these instructions:

1. Turn off the gas supply to the heater.
2. Remove and clean the burner, burner tube and orifice. Clean these components as required to provide a free passage of air and gas.
3. If the emitter shows any accumulation of material in the ports, remove the heater top and the expanded metal guard to expose the emitter and use a high pressure air hose to blow the ports clean. If this does not clean the holes, remove the four (4) screws holding the emitter to its mounting ring and remove the emitter so that it can be cleaned both inside and out with a wire brush and then blown out with a high pressure air hose.
4. Inspect the pilot burner and remove any foreign material with a brush or an air hose.
5. Reassemble the heater, test all connections for leaks and test the heater to be sure it is now operating properly.

12. REPLACING PARTS

At all times when parts are being replaced, ensure that both gas and electrical supplies are disconnected.

Various parts are available from the factory for replacement by a licensed service person. Refer to exploded parts guide in Section 13 for all replacement parts.

Date of Installation _____

Heater Model Number RFPA25 - _____

N6A = Natural Gas

Heater Serial Number _____

L6A = Propane Gas

13. REPLACEMENT PARTS LIST – RFP25 – (N,L) 6A

ITEM NO.	PART NO.	DESCRIPTION
1	04114000	Upper Head
2	04593030	Expanded Metal Guard
3	04485000	Heat Exchanger Assembly
4	41258000	Main Burner Assembly (complete)
5	42011000	Burner Top & Target Support Assembly
6	07022000	Burner Tube
7	02125130	Round Head Machine Screw #10-24 x 1/2" (2 each)
8	02126050	Nut- Square #10-24 (2 each)
9	04304000	Air Shutter
10	40338000	Burner Target
11	04783010	Base Assembly
12	41806020	Label Plate Holder
13	41795020	Pilot Shield - Outer
14	41795010	Pilot Shield - Inner
15	03399020	Pilot Burner & Orifice Fitting - Nat. #J129DDA3223
16	03399030	Pilot Burner & Orifice Fitting - LP #J129DDA4212
17	03345010	Pilot Orifice - Nat (.023") #Y90AA - 3223
18	03345020	Pilot Orifice - LP (.012") #Y90AA - 4212
19	03437000	Pilot Burner less Orifice #J129DDA
20	03401030	Thermocouple 18"
21	41684010	Pilot Tubing
22	03527000	Break Away Fitting – (included with pilot orifice)
23	03601010	Nut, Compression 1/4" (included with pilot valve)
24	03600010	Sleeve, Compression 1/4" (included with pilot valve)
25	03258330	Main Burner Orifice (Nat.) #33
26	03258420	Main Burner Orifice (LP) #42
27	03384020	Pilot Valve, 1/8 MPT x 1/4" OD Tube
28	30524030	Pilot Regulator 1/4 x 3/8
29	30285010	Manual Ball Valve 3/8"
30	02004030	Round Head Machine Screw #10-32 x 1-1/8" (2 each)
31	02126060	Nut – Square #10-32 (2 each)
32	02152010	Thread Cut Screw #10-32 x 3/8" (2 each)
33	04508020	Radiation Shield (nameplate holder)
34	04088000	Bracket, Radiation Shield
35	41358010	Instruction Manual (not shown)
36	43630170	Nameplate Label (not shown) State Gas Type

37	02127150	Nut - Hex 1/2-13
38	02129160	Washer - Flat 1/2
39	41847000	Washer - Burner Fitting
40	02247010	Hex Head Machine Screw 1/2-13 x 1
41	41254040	Control Arm Complete - Nat. (less pilot shields/burner)
42	41254050	Control Arm Complete - LP (less pilot shields/burner)
43	03166000	Pilot Safety Gas Valve #H19LA-1
44	03330040	Nipple, 3/8 NPT x 1-1/2" Long
45	03338100	Reducing Bushing, 1/2 x 1/4 NPT
46	03338110	Reducing Bushing, 3/8 x 1/8 NPT
47	03339040	Plug, 1/4 NPT (pressure tap)
48	03340080	Cross, 1/2 NPT
49	30643010	Street Ell, 1/4
50	30527000	Nipple, Hex Reducing 1/4 MPT x 1/8 MPT
51	30527010	Nipple, Hex Reducing 1/2 MPT x 3/8 MPT
52	30528000	Adapter, Reducing 1/2 FPT x 3/8 MPT
53	41849000	Manifold Holder Stud
54	04088990	Spacer Washer (2 each)
55	42889000	Orifice Holder Fitting
56	02104060	Speed Nut #10 (4 each)
57	02129050	Washer - Flat #10 (4 each)
58	02240010	Hex Head Sheet Metal Screw #12 x 3/4" (4 each)

MODEL NUMBER SUFFIXES

N - Natural Gas

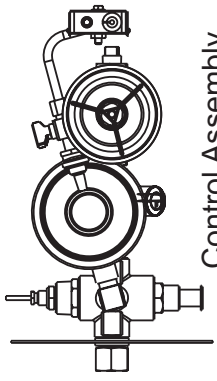
L - LP Gas

6A - 100% Gas Shutoff Control - Manually Operated

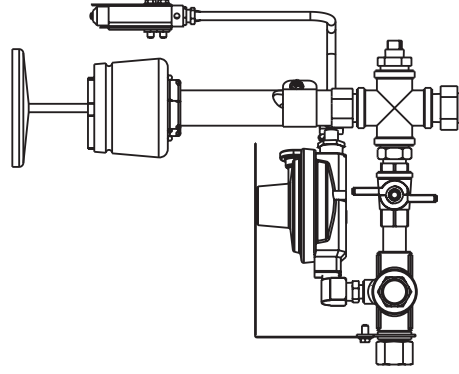
IMPORTANT

PLEASE ORDER BY PART NUMBER - NOT BY ITEM NUMBER.

ALSO REFER TO COMPLETE MODEL NUMBER WHEN ORDERING.



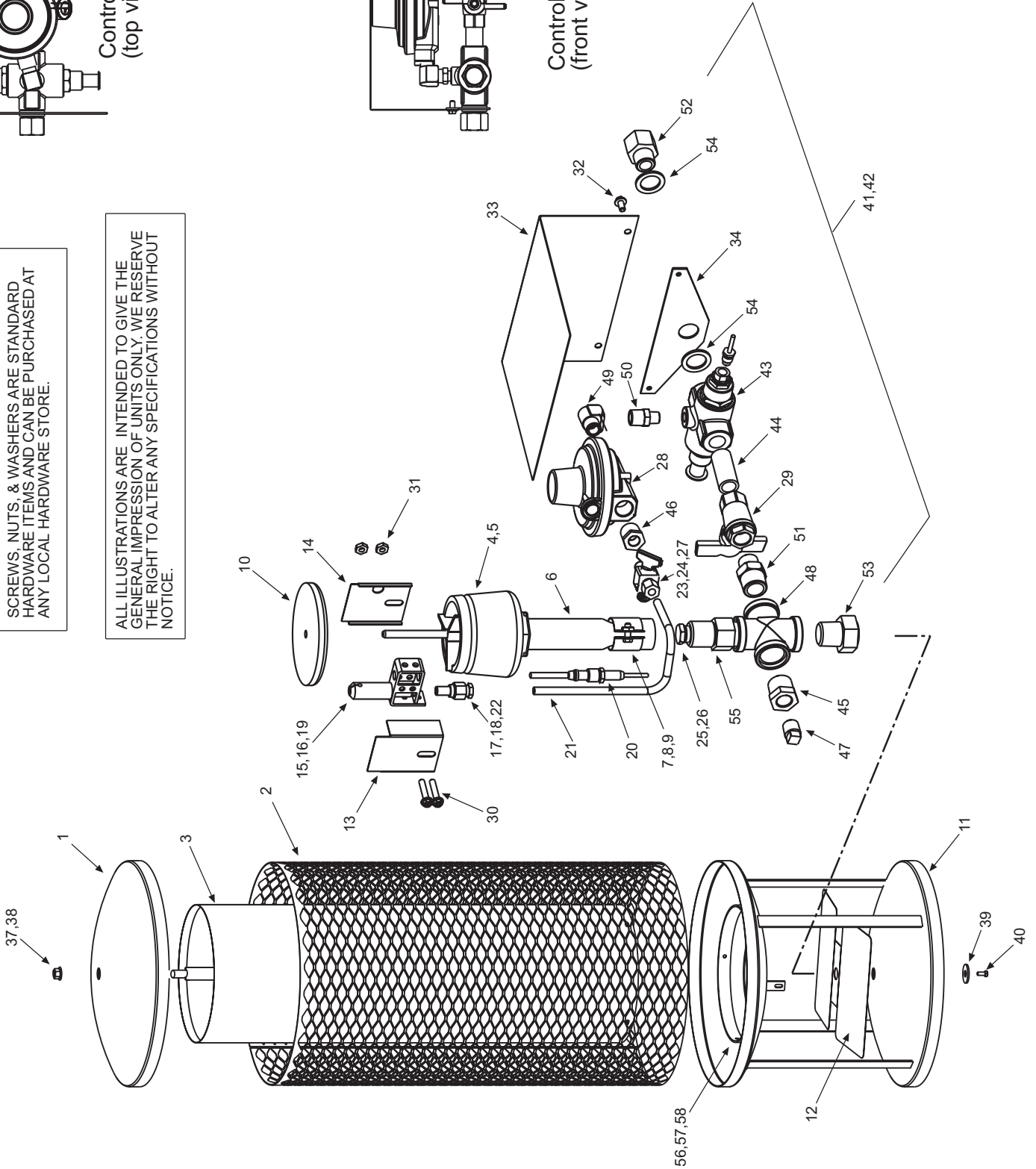
Control Assembly
(top view)



Control Assembly
(front view)

SCREWS, NUTS, & WASHERS ARE STANDARD
HARDWARE ITEMS AND CAN BE PURCHASED AT
ANY LOCAL HARDWARE STORE.

ALL ILLUSTRATIONS ARE INTENDED TO GIVE THE
GENERAL IMPRESSION OF UNITS ONLY. WE RESERVE
THE RIGHT TO ALTER ANY SPECIFICATIONS WITHOUT
NOTICE.



ALL REPLACEMENT PART PRICES AVAILABLE WHEN ORDERING.



LIMITED WARRANTY: Gas-Fired Products, Inc., the manufacturer, warrants to the original owner of any Space-Ray infrared gas heater that said heater will be free from defects in material or workmanship under normal use and service. The heater(s) shall be installed, used and maintained strictly in accordance with the manufacturer's instructions. The manufacturer's sole obligation under this warranty shall be limited to furnishing replacement parts, F.O.B. Charlotte, NC, for 12 months from the date of installation, or 18 months from the date of shipment by the manufacturer, whichever period shall expire first. Labor charges for removal of defective parts and the installation of the replacement parts are not included. This warranty applies only within the USA and Canada.

WARNING: Manufacturer's warranty shall not apply: (a) to damage to the heater when used in an atmosphere containing halogenated hydrocarbons or other corrosive chemicals. Some compounds in the air can be ingested into the equipment and can cause an accelerated rate of corrosion of some of the parts of the heating components. The use of such chemical compounds in or near the operating environment of the heater should be avoided where a longer heater life is desirable; (b) to any heater or components which have been repaired or replaced with other than factory parts, modified in any way, misused or damaged, or which have been used contrary to the manufacturer's written instructions. Replacement parts are available through Space-Ray representatives or their distributors.

LIMITATION OF WARRANTY: THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. WITHOUT LIMITING THE FOREGOING, THE MANUFACTURER EXPRESSLY EXCLUDES ANY AND ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTY OF MERCHANTABILITY FOR ITS PRODUCTS.

If any provision of this warranty is found to be void, unenforceable or unconscionable, then the same is hereby severed and the remainder of this warranty is hereby saved and shall remain in force.

EXCLUSIVE REMEDY: The sole and exclusive remedy under this warranty is the replacement of the defective parts or heaters as hereinabove specified. THE MANUFACTURER DOES HEREBY EXPRESSLY EXCLUDE ANY AND ALL LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES UNDER THIS OR ANY OTHER WARRANTY. Without intending to limit the aforesaid exclusion, THE MANUFACTURER DOES HEREBY EXCLUDE ANY LIABILITY UNDER THIS OR ANY OTHER WARRANTY FOR INJURIES AND COMMERCIAL LOSSES TO PROPERTY THAT RESULT FROM THE OPERATION, PROPER OR IMPROPER, OF ITS PRODUCTS.

ADDITIONAL WARRANTY ON HEAT EMITTING SURFACE AND BURNER: Manufacturer warrants to the original owner of any CSA design certified heater that, if installed, used and maintained strictly in accordance with the printed instructions received with the heater, the manufacturer will at any time during the below listed time periods, furnish at no cost to the original owner, replacement emitters or burners which have become inoperative by reason of any defect in our workmanship, materials or construction. The manufacturer's obligation under this warranty shall be limited to furnishing replacements under the following time periods from the date of installation:

	<u>EMITTER</u>	<u>BURNER</u>
RFPA SERIES	1 Year	10 Years

The manufacturer will not be responsible for labor charges incurred for removal or installation of emitters. Any transportation charges involved in the return or repair are excluded.

ADDITIONAL TERMS: Manufacturer assumes no liability for delay in performing its obligations under the aforesaid warranty. Manufacturer assumes no liability for failure in performing its obligations thereunder if failure results directly or indirectly from any cause beyond its control, including but not limited to acts of God, acts of Government, floods, fires, shortages of materials, strikes and other labor difficulties or delays or failures of transportation facilities.

THIS IS A NON-RESIDENTIAL PRODUCT. Installation and service shall be by a Licensed Contractor and in accordance with National and Local Codes.

When presenting warranty claims, proof of date of purchase must be submitted.

No Representative is authorized to assume for the manufacturer any liability except as set forth above.

In case of claim under this warranty, contact:

Space-Ray
P.O. Box 36485
305 Doggett Street (28203)
Charlotte, NC 28236
(704) 372-6391