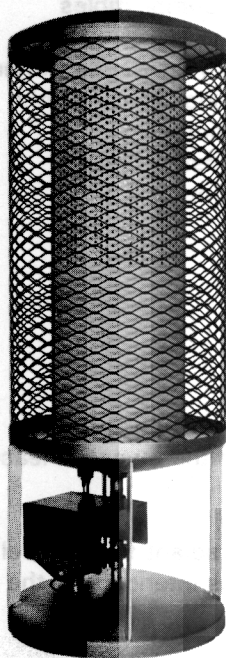


INSTALLATION AND OPERATING INSTRUCTIONS

FLOOR MODELS RFPA25



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 8 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
RFA25	NATURAL	250,000	#33 (.1130)
RFA25	PROPANE	250,000	#42 (.0935)

Gas Pipe connection: ½" NPT Female

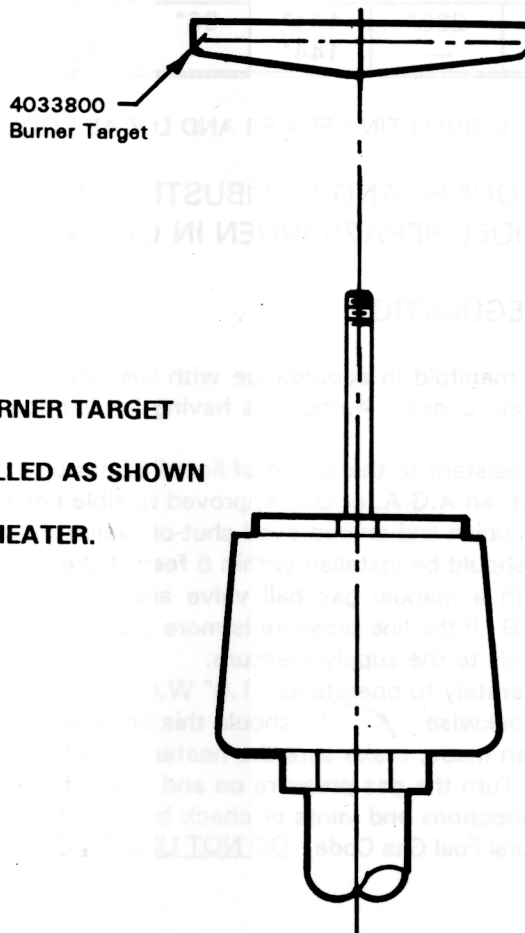
MODEL SUFFIXES:

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

DIMENSIONS	RFA25
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.



IMPORTANT: BURNER TARGET

MUST BE INSTALLED AS SHOWN

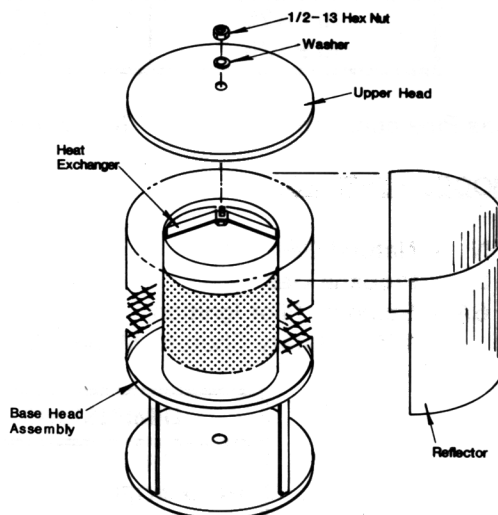
BEFORE FIRING HEATER.

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. 0431001.

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 RFP25	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 RFP25 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 ball 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 line regulator (if equipped). Using a small screwdriver, turn adjustment screw clockwise  to increase or counterclockwise  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. 4203502. A single stage LP gas regulator (operation range: 250 PSIG maximum inlet and 5 PSIG outlet) is available as Part No. 0348314.

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 RFPA25 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:

RFA25: 1000 cfm

The combustion air enters through the heater base and must not be restricted. **DO NOT** block or enclose any part of 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 the manual ball valve handle to the OFF position (rotate the knob clockwise so that it is perpendicular to the gas train). Push down on the button on the safety valve and light the pilot with a match. Hold the button in firmly for approximately 30 seconds or until the pilot remains lighted without holding the button down. If air is in the line, it will take a few minutes for gas to reach the pilot.
2. Turn the manual ball valve handle to the ON position (rotate the knob counterclockwise so that it is in line with the gas train).
3. If the heater does not light, shut off the gas completely for five minutes before attempting to relight.
4. To turn OFF the main burner and pilot gas, turn the manual ball valve handle clockwise to the 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 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 RFA25 - _____

Heater Serial Number _____

N = Natural Gas

L = Propane Gas

13. REPLACEMENT PARTS LIST - RFPA25 - (N,L)6A

ITEM NO.	PART NO.	DESCRIPTION
1	0411400	Upper Head
2	0459303	Expanded Metal Guard
3	0448500	Heat Exchanger Assembly
4	4125800	Burner Assembly (Complete)
5	4201100	Burner Top & Target Support Assembly
6	0702200	Burner Tube
7	0430400	Air Shutter
8	4033800	Burner Target
9	0478301	Base Assembly
10	4180601	Warning Plate
11	0212715	Nut, Hex 1/2-13
12	0212916	Washer, Flat 1/2
13	4184700	Washer, Burner Fitting
14	0224701	Machine Screw 1/2-13 x 1
15	4179501	Pilot Shield - Inner
16	4179502	Pilot Shield - Outer
17	0339902	Pilot Burner & Orifice Fitting - Nat. #J129DDA3223
18	0339903	Pilot Burner & Orifice Fitting - LP #J129DDA4212
19	0334501	Pilot Orifice - Nat (.023") #Y90AA - 3223
20	0334502	Pilot Orifice - LP (.012") #Y90AA - 4212
21	0343700	Pilot Burner less Orifice #J129DDA
22	4168401	Pilot Tubing
23	0352700	Break Away Fitting - (Comes with Pilot Orifice)
24	0360101	Nut, Compression 1/4" (Comes with Pilot Valve)
25	0360001	Sleeve, Compression 1/4" (Comes with Pilot Valve)
26	0306800	Union, 1/2 NPT (Complete)
27	0306801	Union Half, 1/2 FPT
28	0306802	Union Half, 1/2 MPT
29	0306803	Union Nut, 1/2" FPT
30	0316600	Pilot Safety Gas Valve #H19LA-1
31	0325833	Main Burner Orifice (Nat.) #33
32	0325842	Main Burner Orifice (LP) #42
33	0333004	Nipple, 3/8 NPT x 1-1/2" Long
34	0333810	Reducing Bushing, 1/2 x 1/4 NPT
35	0333820	Reducing Bushing, 1/4 x 1/8 NPT
36	0333904	Plug, 1/4 NPT (Pressure Tap)
37	0334008	Cross, 1/2 NPT
38	0334706	Locknut, 3/8 Conduit
39	0338402	Pilot Valve, 1/8 MPT x 1/4" O.D. Tube
40	0340103	Thermocouple 18" Long #K16BA-18
41	0408800	Bracket, Radiation Shield
42	0409800	Burner/Orifice Fitting
43	3028501	Manual Ball Valve 3/8"
44	3052401	Pilot Regulator #140T
45	3052700	Nipple, Hex Reducing 1/4 MPT x 1/8 MPT
46	3052701	Nipple, Hex Reducing 1/2 MPT x 3/8 MPT
47	3052800	Adapter, Reducing 1/2 FPT x 3/8 MPT
48	4184900	Manifold Holder Stud
49	0450802	Nameplate/Shield Assembly (State Gas Type)
50	4135801	Instruction Manual (Not Shown)
51	4187727	Control Arm Kit - Natural Gas
52	4187728	Control Arm Kit - LP Gas

