



HOME OWNER / INSTALLER  
FOR YOUR SAFETY  
THIS MANUAL MUST BE READ IN ITS  
ENTIRETY BEFORE OPERATING HEATER

## AZURE

BLUE FLAME - VENT FREE GAS HEATER

REH-10 BFT

REH-20 BFT

Owners Operation and Installation Manual

THIS IS AN UNVENTED GAS-FIRED HEATER. IT USES AIR(OXYGEN) FROM THE ROOM IN WHICH IT IS INSTALLED. PROVISIONS FOR ADEQUATE COMBUSTION AND VENTILATION AIR MUST BE PROVIDED. REFER TO PAGE 3 SECTION 1.

WARNING : IF THE INFORMATION IN THIS MANUAL IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

### 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 NEIGHBOR'S PHONE. FOLLOW THE GAS SUPPLIER'S INSTRUCTIONS.
- IF YOU CANNOT REACH YOUR GAS SUPPLIER, CALL THE FIRE DEPARTMENT.

INSTALLATION AND SERVICE MUST BE PERFORMED BY A QUALIFIED INSTALLER, SERVICE AGENCY OR THE GAS SUPPLIER.

INSTALLER: MUST LEAVE THIS MANUAL WITH UNIT AFTER INSTALLATION.

OWNER: RETAIN THIS MANUAL SAFELY FOR FUTURE REFERENCE.

**Rinnai**<sup>®</sup>

### WARNING

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE, REFER TO THE OWNER'S INFORMATION MANUAL PROVIDED WITH THIS APPLIANCE. INSTALLATION AND SERVICE MUST BE PERFORMED BY A QUALIFIED INSTALLER, SERVICE AGENCY OR THE GAS SUPPLIER. FOR ASSISTANCE OR ADDITIONAL INFORMATION CONSULT A QUALIFIED INSTALLER, SERVICE AGENCY OR THE GAS SUPPLIER.



### GENERAL INFORMATION

THIS SERIES IS DESIGN CERTIFIED BY THE AMERICAN GAS ASSOCIATION LABORATORIES AS A VENT FREE CIRCULATOR AND MUST BE INSTALLED ACCORDING TO THESE INSTRUCTIONS. ANY ALTERATION OF THE ORIGINAL DESIGN INSTALLED OTHER THAN AS SHOWN IN THESE INSTRUCTIONS OR USED WITH A TYPE OF GAS NOT SHOWN ON THE RATING PLATE, IS THE RESPONSIBILITY OF THE PERSON AND COMPANY MAKING THE CHANGE.

## TABLE OF CONTENTS

|                                                 | Page |
|-------------------------------------------------|------|
| <b>USAGE AND INSTALLATION MUST</b> .....        | 1    |
| <b>INSTALLATION INSTRUCTIONS</b>                |      |
| 1. NOTICE BEFORE INSTALLATION .....             | 3    |
| 2. LOCATION AND CLEARANCES .....                | 4    |
| 3. INSTALLING THE HEATER TO WALL .....          | 5    |
| 4. GAS CONNECTION .....                         | 5    |
| <b>OPERATING INSTRUCTIONS</b> .....             | 6    |
| <b>MAINTENANCE / SERVICE</b>                    |      |
| 1. MAINTENANCE SUGGESTIONS .....                | 7    |
| 2. TROUBLE SHOOTING .....                       | 8    |
| 3. SCHEMATIC DISASSEMBLY .....                  | 11   |
| 4. PARTS LIST .....                             | 12   |
| 5. WIRING DIAGRAM (OPTIONAL FAN ASSEMBLY) ..... | 14   |

# USAGE AND INSTALLATION MUSTS

## SPECIFICATIONS

| Model                      | Input/Rating<br>BTU/Hr | Weight<br>in pounds | Dimensions<br>in inches                                                                                                         |
|----------------------------|------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------|
| REH-10BFT-N<br>REH-10BFT-P | 10,000                 | 21.5                | Height: 23 5/8"<br>Height: 26 3/4"(With optional base)<br>Width: 17 11/16"<br>Depth: 5 7/8"<br>depth: 6 7/8"(With optional fan) |
| REH-20BFT-N<br>REH-20BFT-P | 20,000                 | 21.5                | Height: 23 5/8"<br>Height: 26 3/4"(With optional base)<br>Width: 17 11/16"<br>Depth: 5 7/8"<br>depth: 6 7/8"(With optional fan) |

"-N" Models are for Natural gas. (Inlet Pressure within 5.3" - 10.5" WC)

"-N" Models manifold pressure: 4.7" WC

"-P" Models are for L.P. Gas. (Inlet Pressure within 9.5" - 13" WC)

"-P" Models manifold pressure: 9.0" WC / REH-20BFT-P; 8.3"WC / REH-10BFT-P  
Gas connection pipe size 3/8" N.P.T. all models.

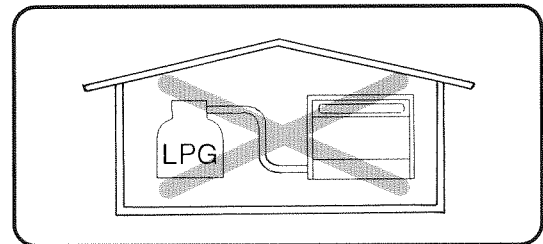
## USAGE AND INSTALLATION MUSTS

1. Read these rules and the instructions carefully. Check all local codes. Failure to follow these could cause a malfunction of the heater resulting in death, serious bodily injury and/or property damage.
2. This heater is designed for use only with one type of gas, either L.P.G. or natural. Make sure that the type of gas to be supplied to this unit matches that shown on the rating plate on the heater.
3. **WARNING:** Any change to this heater or its controls can be dangerous.
4. If a gas leak is suspected, turn heater off, turn gas supply valve off at regulator or appliance connector valve. Open windows to ventilate area immediately and contact your dealer or gas company.
5. Installation and repair should be done by a qualified service person. 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 carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.
6. Heaters with BTU inputs of more than 6,000BTU may not be installed in bathrooms. Heaters of more than 10,000 BTU input may not be installed in sleeping quarters/bedrooms. *Follow state and Local codes for installation.*
7. Keep area near the heater clear and free from combustible materials, gasoline and other flammable vapors and liquids.

# USAGE AND INSTALLATION MUSTS

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8. Due to its high temperature, the heater should be located out of traffic and away from furniture and draperies.
9. Do not place clothing or flammable material on or near the heater.
10. Any safety screen or guard removed for servicing must be replaced prior to operating the heater.
11. An unvented gas heater will increase the amount of humidity in the room.
12. This heater is intended for space heating purposes only. Do not use for other purposes such as drying clothes or baking paints.
13. Do not touch the dress guard or flue outlet area while the heater is in use. To avoid burns, do not move the heater during use and avoid touching the heater just after turning off.
14. Children and adults should be alerted to the hazard of high surface temperatures and should stay away to avoid burns or clothing ignition.
15. Young children should be carefully supervised when they are in the same room with the heater.
16. LPG containers must not be installed indoors.
17. Do not install in a windy area. Such as facing a window or a door leading to the outside.
18. Do not use this room heater if any part has been under water. Immediately call a qualified service technician to inspect the room heater and to replace any part of the control system and any gas control which has been under water
19. **WARNING: Electrical Grounding Instructions** - Optional Fan(REH18-60) if it is provided is equipped with a three prong(grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle.(Optional Fan Models)
20. **WARNING: Electrical Grounding Instructions** - Optional Fan(REH10-50) if it is provided is equipped with a polarized plug for your protection against shock hazard. It should be plugged directly into a properly grounded polarized receptacle. (Optional Fan Models)
21. Carpet lint, cooking vapors, and cigarette smoke may pass through the heater and be deposited into the room



# INSTALLATION INSTRUCTIONS

## 1. NOTICE BEFORE INSTALLATION

The heater must be installed by a qualified service person according to this installation instruction.

Check your local building codes for the proper method of installation. In the absence of local codes, this heater installation must conform with American National Standard(National Fuel Gas Code) known as NFPA 54 and ANSI Z.223.1.

Available from the American National Standards Institute, Inc., 1430 Broadway,  
New York, NY 10018, or from the National Fire Protection Association, Batterymarch  
Park, Quincy, MA 02269

All correspondence should refer to Model No., Serial No., and type of gas.

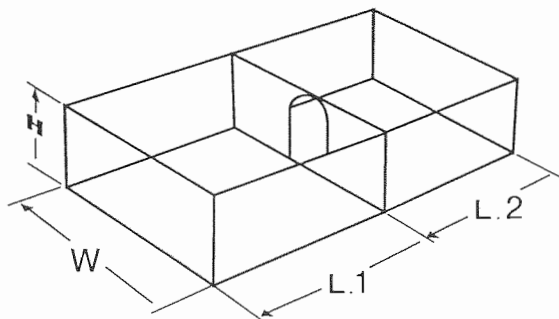
### WARNING: Electrical Grounding Instructions

This appliance is equipped with a three-prong(grounding) plug for your protection against shock hazard and should be plugged directly into a property grounded three-prong receptacle.

This appliance may be installed in an aftermarket\* manufactured(mobile) home where not prohibited by state or local codes. \*Aftermarket = completion of sale, not for purpose of resale from manufacturer. This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases.

This heater shall not be installed in a confined space or unusually tight construction unless provisions are provided for adequate combustion and ventilation air.

The National Fuel Gas Code defines a confined space as a space whose volume is less than 50 cubic feet per 1,000 Btu per hour(4.8m<sup>3</sup>per kw) of the aggregate input rating of all appliance installed in that space and an unconfined space as a space whose volume is not less than 50 cubic feet per 1,000 Btu per hour(4.8m<sup>3</sup> per kw) of the aggregate input rating of all appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the unconfined space.



The following formula can be used to determine the maximum heater rating per the definition of unconfined space:

$$\text{BTU/HR} = \frac{(\text{L.1} + \text{L.2}) \text{Ft} \times (\text{W}) \text{Ft} \times (\text{H}) \text{Ft} \times 1000}{50}$$

Consider two connecting rooms with an open area between, with the following dimensions:

$$\begin{aligned} \text{BTU/HR} &= \frac{(15 \frac{1}{2} + 12) \times (12) \times (8) \times 1000}{50} \\ &= 52800 \text{ BTU/HR} \end{aligned}$$

If there is a door between the two rooms that can be closed the calculation must be based only on the room with the heater.

$$\begin{aligned} \text{BTU/HR} &= \frac{(15 \frac{1}{2}) \times (12) \times (8) \times 1000}{50} \\ &= 29780 \text{ BTU/HR} \end{aligned}$$

# INSTALLATION INSTRUCTIONS

**WARNING:** If the area in which the heater may be operated is smaller than that defined as an unconfined space or if the building is of unusually tight construction, provide adequate combustion and ventilation air by one of the methods described in the National Fuel Gas Code, ANSI Z223.1, Section 5.3 or applicable local codes.

Unusually tight construction is defined as construction where:

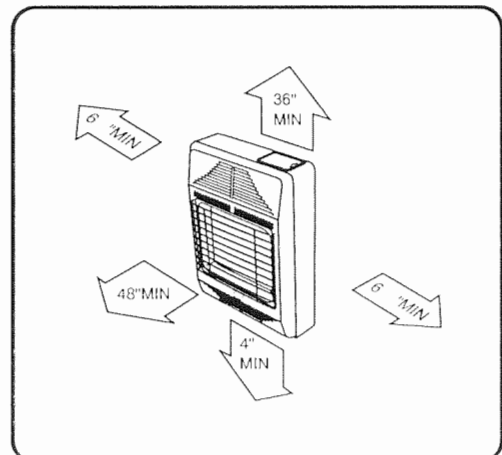
- a) Walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of 1 perm ( $6 \times 10^{-11}$  kg per pa-sec- $m^2$ ) or less with openings gasketed or sealed, and
- b) Weather stripping has been added on openable windows and doors, and
- c) Caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical, and gas lines, and at other openings.

## 2. LOCATION AND CLEARANCES

- 1) The following safety precautions should be kept in mind when determining the location of the heater.
  - a) Heater units with 6,000 Btu input or less may be installed wall mounted into bathrooms where state or local codes allow. Heater unit with 10,000 Btu or less may be installed and wall mounted into sleeping quarters/bedrooms where state or local codes allow.
  - b) Do not install in areas where curtains, drapes, clothing are within 6 inches of the sides or 36 inches of top of heater.
  - c) Provide adequate clearances accessibility, purposes of servicing and proper operation.
  - d) Maintain adequate clearances around air openings.
  - e) Provide adequate combustion and ventilation air.
  - f) When facing the unit the right side is the control side.
- 2) The heater is designed for wall mounting. The minimum clearances from the combustible materials are as follows.

36 inches from top 6 inches from side 48 inches from front 0 inch from back 4 inches from bottom to the top surface of any floor coverings. (0 inch from optional Base bottom if it is provided)

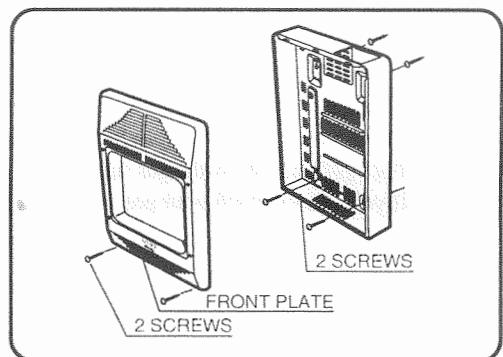
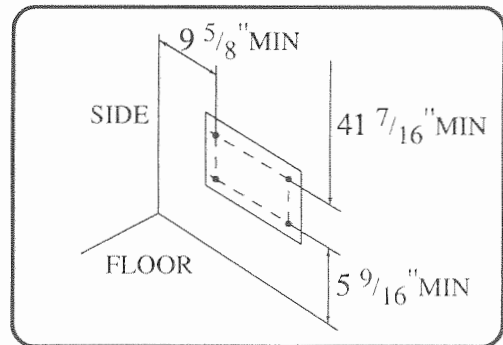
- 3) The heater may be installed on combustible flooring if optional Base is attached to the bottom of the heater. When the heater with optional Base fixed is installed directly on carpeting, tile or other combustible material other than wood flooring, the heater shall be installed on a metal or wood panel extending the full width and depth of the heater and the Base.



# INSTALLATION INSTRUCTIONS

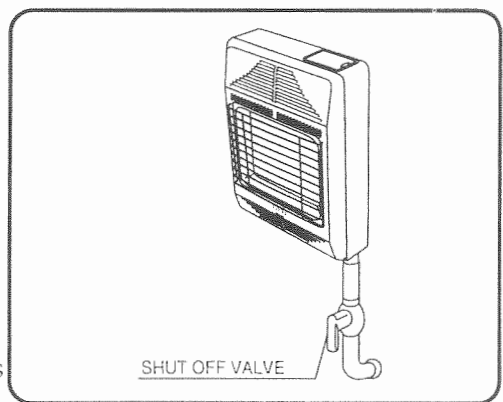
## 3. INSTALLING THE HEATER TO WALL

- 1) Apply the heater installation template on the wall surface where the heater will be. After checking the location, leveling, and running piping for the heater, mark the holes for drilling. (Template is included with this heater.) Before drilling holes, check for clearances.
- 2) Remove the template. Drill at the marked locations with 1/4" drill bit. Insert supplied anchors in holes and tap flush to wall. Tighten screws supplied in upper 2 screw holes to the end, then unfasten one half turn to allow hanging heater with its upper key holes at the back.
- 3) Hang the heater on the screws in the wall by using its upper 2 key holes.
- 4) Remove the front Plate of the heater by removing two screws at the bottom and pulling the bottom of panel forward.
- 5) Secure the heater by installing 2 screws supplied through the recessed holes located at the bottom back of heater.
- 6) Replace the front Plate with Two screws.



## 4. GAS CONNECTION

- 1) The gas supply line shall be gas-tight, sized and so installed as to provide a supply of gas sufficient to meet the maximum demand of the heater without loss of pressure.
- 2) A shut off valve (or appliance connector valve) should be installed in the upstream of the gas line to permit servicing.
- 3) Flexible pipe and any appliance connector valve used for gas piping shall be types approved by nationally recognized agencies.
- 4) Any compound used on the threaded joint of the gas piping shall be a type which resists the action of liquefied petroleum gas.
- 5) Supplied gas pressure must be within the limits shown in the specifications.
- 6) After completion of gas pipe connections, all joints including the heater must be checked for gas-tightness by means of leak detector solution, soap and water, or an equivalent nonflammable solution, as applicable.



**CAUTION:** Since some leak test solutions, including soap and water, may cause corrosion or stress cracking, the piping shall be rinsed with water after testing, unless it has been determined that the leak test solution is noncorrosive.

- 7) The appliance and its appliance main gas valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5kPa). The appliance must be isolated from the gas supply piping system by closing its equipment shut-off valve during any pressure testing of the gas supply piping system at test pressure equal to or less than 1/2 psi (3.5kPa).

# OPERATING INSTRUCTIONS

## FOR YOUR SAFETY READ BEFORE LIGHTING

**WARNING:** If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

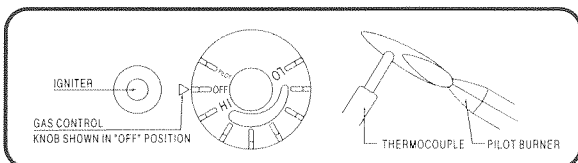
- A. This appliance has a pilot which must be lighted by hand. When lighting the pilot, follow these instructions exactly.
- B. **BEFORE LIGHTING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

### WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
  - Do not touch any electric switch; do not use any phone in your building.
  - 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.
- C. 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, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
  - D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

## LIGHTING INSTRUCTIONS

- **STOP!** Read the safety information above
  - Turn Gas Control Knob clockwise ↷ to the "OFF" position.
  - Wait 5 minutes to clear out any gas. Then smell for gas, including near the floor. If you then smell gas, **STOP!** Follow "B" in the safety information above on this label. If you don't smell gas, go to next step.
1. To ignite ODS pilot burner.



Observe pilot. The pilot is attached to the bottom main burner.

Turn knob on gas control counterclockwise ↶ to "PILOT". Push gas control knob all the way down and hold. Repeatedly push RED igniter button until pilot lights (or use a match to light pilot).

Continue to hold the control knob in for about one (1) minute after the pilot is lit. Release knob and it will pop back up. Pilot should remain lit.

2. Turn gas control knob counterclockwise ↶. Set thermostat (gas control knob) to desired setting from "HI" to "LO".

If it goes out, repeat the lighting procedure.

- If knob does not pop up when released, **STOP** and immediately call your service technician or gas supplier.
- If the pilot will not stay lit after several tries, turn the gas control knob to "OFF" and call your service technician or gas supplier.

**ATTENTION!** Gas control has an INTERLOCK latching device. When the pilot is initially lit and the safety magnet is energized (pilot stays "ON") the INTERLOCK latching device becomes operative. If the gas control is turned to the "OFF" position or gas flow to the appliance is shut off, the pilot cannot be relighted until the safety magnet is de-energized (approximately 60 seconds). There will be an audible "click" when the safety magnet in the gas control is de-energized. Pilot can now be relighted. If it does not remain lit, then repeat the lighting procedure.

## TO TURN OFF GAS TO APPLIANCE

Turn Gas Control Knob clockwise ↷ to "OFF" position, then main and pilot burner will shut off.

Due to high surface temperature, keep children, clothing and furniture away. Keep burner and control compartment clean. See installation and operating instructions accompanying heater.

**WARNING :** Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Refer to the owner's information manual provided with this appliance. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

### CIRCULATING FAN

(Option: Kit No.REH18-60)

To operate air circulation fan, if it is provided, push Fan Switch to its "ON" position. The switch is located on top of fan unit, on rear of heater.

(Option: Kit No.REH10-50)

Switch is located on power cord. Follow instructions packed with optional fan units.

**WHEN SERVICING UNIT, TURN OFF ELECTRICAL POWER IF AN OPTIONAL BLOWER IS USED.**



# MAINTENANCE / SERVICE

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## 1. MAINTENANCE SUGGESTIONS

This heater has been designed and constructed for a long performance life when installed and operated properly under normal conditions. Regular inspections, as outlined in this section, are strongly recommended as means of keeping your heater operating efficiently and safely throughout the season. Access to internal parts is from the front of the heater.

### 1) Cleaning

Heater must be cleaned annually. Keep heater clear of dust and debris especially in and around the ODS pilot.

Cleaning procedures of heater are as follows;

- 1) Turn heater off. Allow to cool for **one** hour.
- 2) Remove the Front Plate of the heater by removing two screws at the bottom and pulling the bottom of panel forward.
- 3) Use pressurized air to remove dust from around ODS pilot and main burner.
- 4) Use soft dry cloth to wipe cabinet.

**DO NOT DAMAGE OR DISTORT ANY PARTS OF HEATER.**

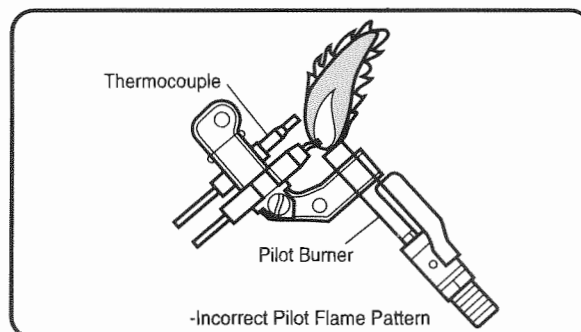
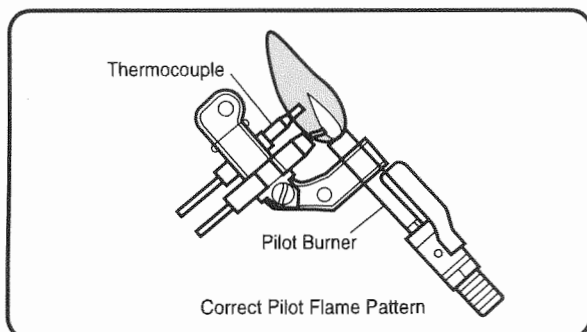
**DO NOT USE WET CLOTH OR SPRAY CLEANERS ON BURNER OR ODS PILOT.**

**IT IS RECOMMENDED THAT YOU USE WORKING GLOVES DURING CLEANING TO AVOID INJURY BY SHARP METAL EDGES.**

### 2) Check pilot flame pattern and burner flame pattern often.

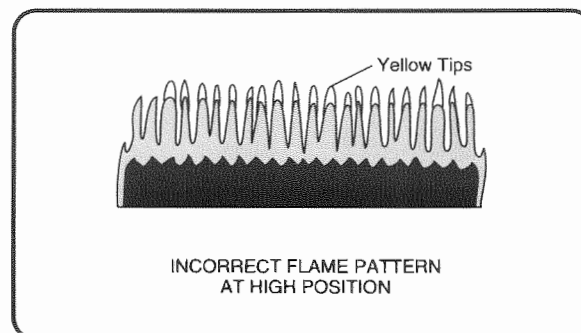
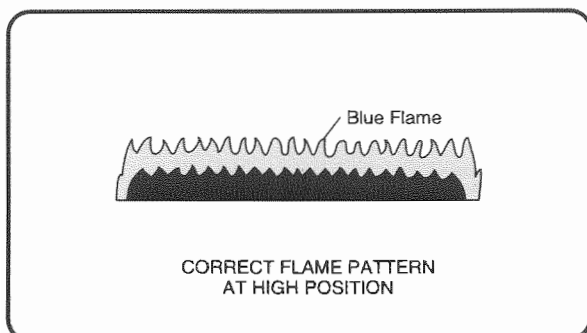
#### ◦ PILOT FLAME PATTERN

The incorrect pilot flame is not touching the thermocouple. This will cause the thermocouple to cool. When the thermocouple cools, the heater will shut down.



#### ◦ BURNER FLAME PATTERN

The incorrect burner flame pattern shows yellow tipping of the flame.



- 3) The Oxygen Depletion Sensor should be cleaned annually, or more often if located in a dusty location or carpeted area.

# MAINTENANCE / SERVICE

## 2. TROUBLE SHOOTING

### STEP 1.

- 1) Be sure the heater is properly installed. See Section 2. INSTALLATION.
- 2) Make sure gas valve on L.P. Gas bottle or gas supply line is ON and gas pressure is available.
- 3) Verify the electrical circuit servicing the optional fan, if it is provided, is ON.
- 4) Be sure ODS and Burner are free of dust and dirt.

### STEP 2.

If the trouble remains after verifying step 1, please check the cause of trouble in the following trouble shooting chart and correct it by following the procedures indicated, or contact a reliable service company.

**▲ WARNING ▲**

If you smell gas:

- Shut off gas supply.
- 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 neighbor's phone. Follow the gas suppliers' instructions.
- If you cannot reach your gas supplier, call the fire department.

**IMPORTANT :** Operating heater where impurities in air exist may create odors. Cleaning supplies, paint, paint remover, cigarette smoke, cements and glues, new carpet or textiles, etc., create fumes. These fumes may mix with combustion air and create odors.

| TROUBLE                                                                     | CAUSE                                                | REMEDY                                                                             |
|-----------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------|
| When ignitor button is pressed, there is no spark at ODS/pilot              | Ignitor electrode positioned wrong                   | Replace ignitor                                                                    |
|                                                                             | Ignitor electrode broken                             | Replace ignitor                                                                    |
|                                                                             | Ignitor electrode not connected to ignitor cable     | Reconnect ignitor cable                                                            |
|                                                                             | Ignitor cable pinched or wet                         | Free ignitor cable if pinched by any metal or tubing.<br>Keep ignitor cable dry    |
|                                                                             | Broken ignitor cable<br>Bad piezo ignitor            | Replace ignitor cable<br>Replace piezo ignitor                                     |
| When ignitor button is pressed, there is spark at ODS/pilot but no ignition | Gas supply turned off or manual shutoff valve closed | Turn on gas supply or open manual shutoff valve                                    |
|                                                                             | Control knob not in PILOT position                   | Turn control knob to PILOT position                                                |
|                                                                             | Control knob not pressed in while in PILOT position  | Press in control knob while in PILOT position                                      |
|                                                                             | Air in gas lines when installed                      | Continue holding down control knob. Repeat igniting operation until air is removed |
|                                                                             | ODS/pilot is clogged                                 | Clean ODS/pilot or replace ODS/pilot assembly                                      |
|                                                                             | Gas regulator setting is not correct                 | Replace gas regulator                                                              |

Continued

# MAINTENANCE / SERVICE

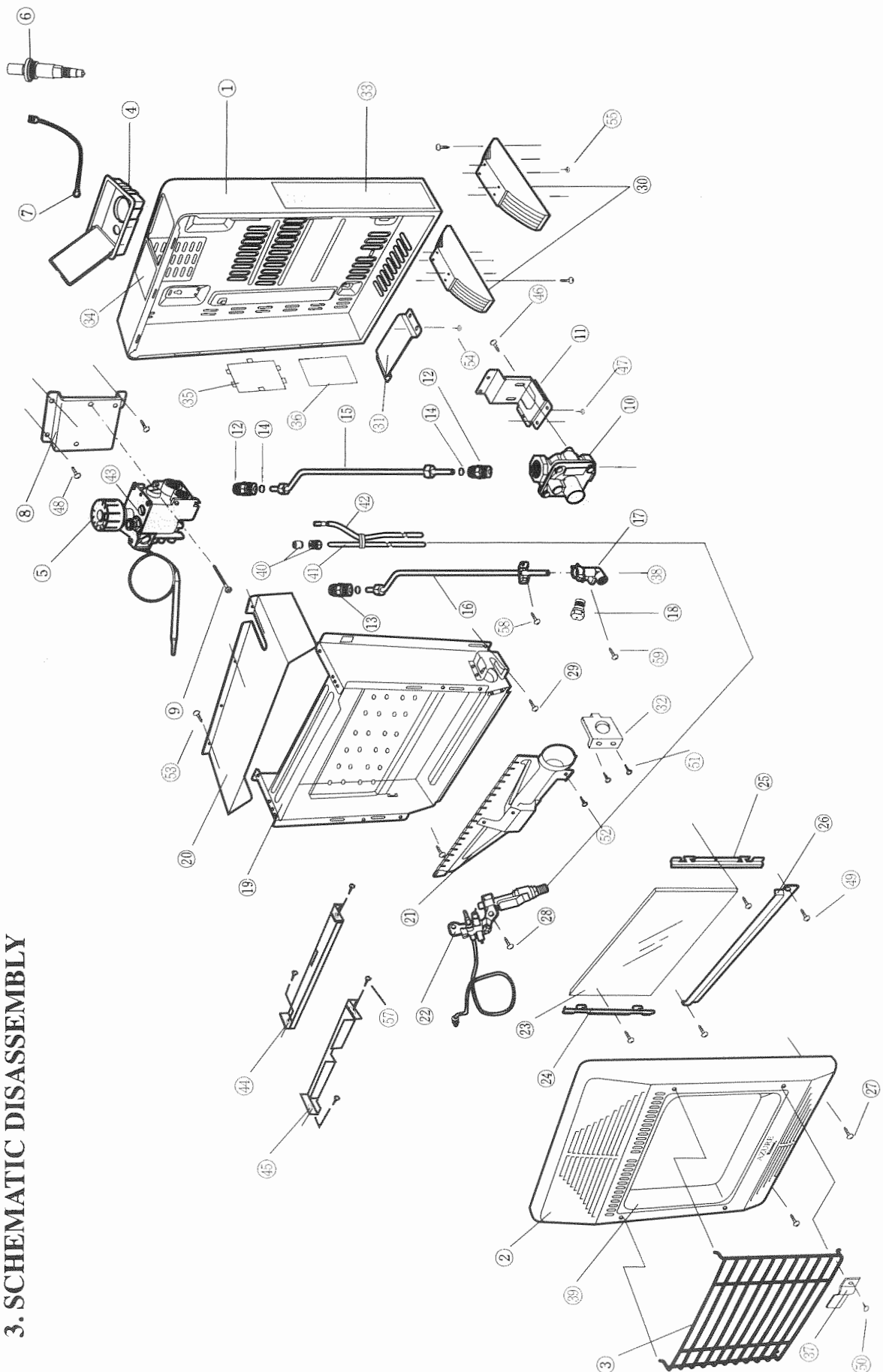
| TROUBLE                                                           | CAUSE                                                                                                                                                                                                                                    | REMEDY                                                                                                    |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| ODS/pilot lights but flame goes out when control knob is released | Control knob not fully pressed in                                                                                                                                                                                                        | Press in control knob fully                                                                               |
|                                                                   | Control knob not pressed in long enough                                                                                                                                                                                                  | After ODS/pilot lights, keep control knob pressed in 30 seconds                                           |
|                                                                   | safety interlock system has been triggered                                                                                                                                                                                               | Put knob to OFF position. Wait one minute for safety interlock system to reset. Repeat ignition operation |
|                                                                   | Manual shutoff valve not fully open                                                                                                                                                                                                      | Fully open manual shut-off valve                                                                          |
|                                                                   | Thermocouple connection loose at control valve                                                                                                                                                                                           | Hand tighten until snug, then tighten 1/4 turn more                                                       |
|                                                                   | Pilot flame not touching thermocouple, which allows thermocouple to cool, causing pilot flame to go out. This problem could be caused by one or both of the following:<br>A) Low gas pressure<br>B) Dirty or partially clogged ODS/pilot | A) Contact local natural gas company<br><br>B) Clean ODS/pilot or replace ODS/pilot assembly              |
|                                                                   | Thermocouple damaged                                                                                                                                                                                                                     | Replace thermocouple                                                                                      |
|                                                                   | Control valve damaged                                                                                                                                                                                                                    | Replace control valve                                                                                     |
| Burner does not light after ODS/pilot is lit                      | Burner orifice is clogged                                                                                                                                                                                                                | Clean burner orifice and burner                                                                           |
|                                                                   | Burner orifice diameter is incorrect                                                                                                                                                                                                     | Check Proper size and Replace burner orifice                                                              |
|                                                                   | Inlet gas pressure is too low                                                                                                                                                                                                            | Contact local gas company                                                                                 |
| Delayed ignition of burner                                        | Manifold pressure is too low                                                                                                                                                                                                             | Contact local gas company                                                                                 |
|                                                                   | Burner orifice is clogged                                                                                                                                                                                                                | Clean burner orifice or replace burner orifice                                                            |
| Burner backfiring during combustion                               | Burner orifice is clogged or damaged                                                                                                                                                                                                     | Clean burner orifice or replace burner orifice                                                            |
|                                                                   | Burner damaged                                                                                                                                                                                                                           | Replace burner                                                                                            |
|                                                                   | Gas regulator defective                                                                                                                                                                                                                  | Replace gas regulator                                                                                     |
| Yellow flame during burner combustion                             | Not enough air                                                                                                                                                                                                                           | Check burner of dirt and debris. If found, clean burner                                                   |
|                                                                   | Gas regulator defective                                                                                                                                                                                                                  | Replace gas regulator                                                                                     |

Continued

# MAINTENANCE / SERVICE

| TROUBLE                                                                       | CAUSE                                                      | CAUSE                                                                                        |
|-------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Slight smoke or odor during initial operation                                 | Residues from manufacturing processes                      | Problem will stop after a few hours of operation                                             |
| Heater produces a whistling noise when burner is lit                          | Turning control knob to HI Position when burner is cold    | Turn control knob to LO position and let warm up for a minute                                |
|                                                                               | Air in gas line                                            | Operate burner until air is removed from line.<br>Have gas line checked by local gas company |
|                                                                               | Dirty or partially clogged burner orifice                  | Clean burner or replace burner orifice                                                       |
| Heater produces a clicking/ticking noise just after burner is lit or shut off | Metal expanding while heating or contracting while cooling | This is common with most heaters. If noise is excessive, contact qualified service person    |
| Heater produces unwanted odors                                                | Heater burning vapors from paint, hair spray, glues, etc.  | Ventilate room. Stop using odor causing products while heater is running                     |
|                                                                               | Gas leak. <b>See Warning statement on Front Cover</b>      | Locate and correct all leaks                                                                 |
| Heater shuts off in use (ODS operates)                                        | Not enough fresh air is available                          | Supply Adequate ventilation                                                                  |
|                                                                               | Low line pressure                                          | Contact local gas company                                                                    |
|                                                                               | ODS/pilot is partially clogged.                            | Clean ODS/pilot                                                                              |
| Gas odor even when control knob is in OFF position                            | Gas leak. <b>See Warning statement on Front Cover</b>      | Locate and correct all leaks                                                                 |
|                                                                               | Control valve defective                                    | Replace control valve                                                                        |
| Gas odor during combustion                                                    | Foreign matter between control valve and burner            | Take apart gas tubing and remove foreign matter                                              |
|                                                                               | Gas leak. <b>See Warning statement on Front Cover</b>      | Locate and correct all leaks                                                                 |

### 3. SCHEMATIC DISASSEMBLY



# MAINTENANCE/SERVICE

## 4. PARTS LIST

REH-10BFT & REH-20BFT

| NO. | REH-10BFT<br>PART NUMBER         | REH-20BFT<br>PART NUMBER         | PART NAME                 | QTY. | NOTE                   |
|-----|----------------------------------|----------------------------------|---------------------------|------|------------------------|
| 1   | SO-001-0011                      | SO-001-0011                      | CASING ASSEMBLY           | 1    |                        |
| 2   | SO-001-0041                      | SO-001-0041                      | FRONT PLATE               | 1    |                        |
| 3   | SO-001-0452                      | SO-001-0452                      | FRONT GUARD               | 1    |                        |
| 4   | SO-001-0062                      | SO-001-0062                      | CONTROL BOX ASSEMBLY      | 1    |                        |
| 5   | SO-001-0643A-P<br>SO-001-0643B-N | SO-001-0643C-P<br>SO-001-0643D-N | 630 EUROSIT CONTROL ASS'Y |      |                        |
| 6   | SO-001-0133                      | SO-001-0133                      | IGNITOR                   | 1    |                        |
| 7   | SO-001-9014                      | SO-001-9014                      | GROUND WIRE ASSEMBLY      | 1    |                        |
| 8   | SO-001-0123                      | SO-001-0123                      | CONTROL MOUNTING BRACKET  | 1    |                        |
| 9   | ZAA0555SZ                        | ZAA0555SZ                        | SCREW                     | 2    |                        |
| 10A | SO-001-0093P                     | SO-001-0093P                     | LPG REGULATOR             | 1    | FOR LPG OR             |
| 10B | SO-001-0093N                     | SO-001-0093N                     | NG REGULATOR              |      | NAT. GAS               |
| 11  | SO-001-0103                      | SO-001-0103                      | REGULATOR FIXED PLATE     | 1    |                        |
| 12  | SO-001-0193A                     | SO-001-0193A                     | NIPPLE 'A'                | 2    |                        |
| 13  | SO-001-0193B                     | SO-001-0193B                     | NIPPLE 'B'                | 1    |                        |
| 14  | ZZOP0087N                        | ZZOP0087N                        | O-RING                    | 4    |                        |
| 15  | SO-001-0173                      | SO-001-0173                      | INLET PIPE ASSEMBLY       | 1    |                        |
| 16  | SO-001-0203                      | SO-001-0203                      | OUTLET PIPE ASSEMBLY      | 1    |                        |
| 17  | SO-001-0292                      | SO-001-0292                      | NOZZLE HOLDER             | 1    |                        |
| 18A | SO-001-0624A-P                   | SO-001-0624C-P                   | LPG MAIN NOZZLE           | 1    |                        |
| 18B | SO-001-0624B-N                   | SO-001-0624D-N                   | NG MAIN NOZZLE            |      |                        |
| 19  | SO-001-0242                      | SO-001-0242                      | COMBUSTION BOX ASS'Y      | 1    |                        |
| 20  | SO-001-0442                      | SO-001-0442                      | SHIELD PLATE              | 1    |                        |
| 21  | SO-001-0342N<br>SO-001-0342N     | SO-001-0392<br>SO-001-0342P      | BURNER ASSEMBLY           | 1    | FOR LPG<br>FOR NAT GAS |
| 22A | SO-001-0384P                     | SO-001-0384P                     | LPG ODS PILOT ASS'Y       | 1    |                        |
| 22B | SO-001-0384N                     | SO-001-0384N                     | NG ODS PILOT ASS'Y        |      |                        |
| 23  | SO-001-0313                      | SO-001-0313                      | GUARD GLASS               | 1    |                        |
| 24  | SO-001-0323L                     | SO-001-0323L                     | GLASS FIXER 'L'           | 1    |                        |
| 25  | SO-001-0323R                     | SO-001-0323R                     | GLASS FIXER 'R'           | 1    |                        |
| 26  | SO-001-0333                      | SO-001-0333                      | GLASS FIXER LOWER         | 1    |                        |
| 27  | ZEDB0408SB                       | ZECB0408SB                       | SCREW                     | 2    |                        |
| 28  | ZBA0506SZ                        | ZBA0506SZ                        | SCREW                     | 2    |                        |
| 29  | ZEDB0406SZ                       | ZEDB0406SZ                       | SCREW                     | 2    |                        |
| 30  | SO-001-0461                      | SO-001-0461                      | LEG                       | 2    |                        |

# MAINTENANCE/SERVICE

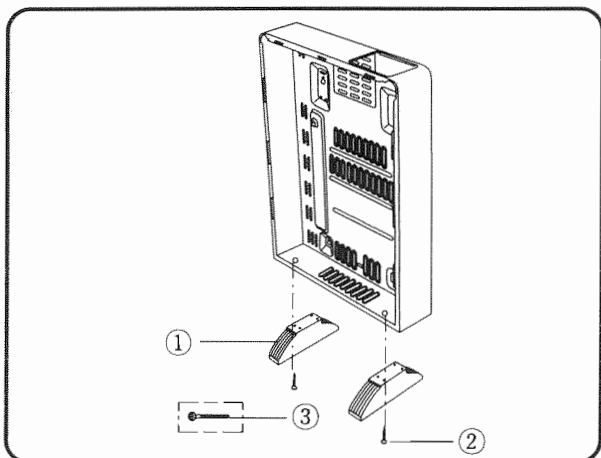
## 4. PARTS LIST

REH-10BFT & REH-20BFT

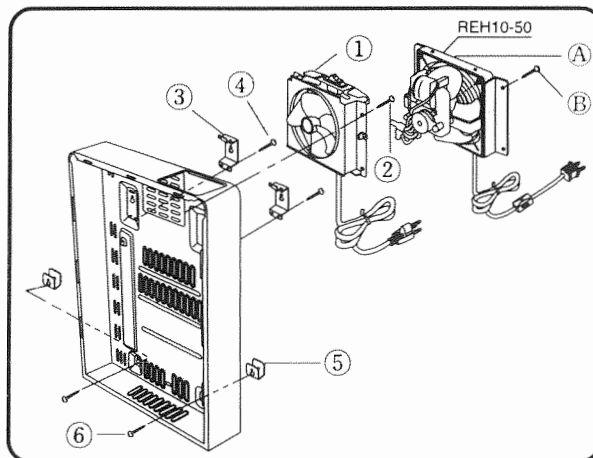
| NO  | REH-10BFT<br>PART NUMBER         | REH-20BFT<br>PART NUMBER         | PART NAME                | QTY. | NOTE                   |
|-----|----------------------------------|----------------------------------|--------------------------|------|------------------------|
| 31  | SO-001-0583                      | SO-001-0583                      | LOWER GUARD PLATE        | 1    |                        |
| 32A | SO-001-0473A-N                   | SO-001-0473C-N                   | DAMPER                   | 1    | FOR LPG OR<br>NAT. GAS |
| 32B | SO-001-0473B-P                   | SO-001-0473D-P                   |                          |      |                        |
| 33  | SO-001-0523                      | SO-001-0523                      | OPERATION LABEL          | 1    |                        |
| 34  | SO-001-0544A                     | SO-001-0544B                     | CAUTION MARK             | 1    |                        |
| 35  | SO-001-0513                      | SO-001-0513                      | WARNING PLATE            | 1    |                        |
| 36A | SO-001-0533A                     | SO-001-0533C                     | NAME PLATE               | 1    | FOR LPG OR<br>NAT. GAS |
| 36B | SO-001-0533B                     | SO-001-0533D                     |                          |      |                        |
| 37  | SO-001-0154                      | SO-001-0154                      | FRONT GUARD FIXER        | 1    |                        |
| 38  | SO-001-0304                      | SO-001-0304                      | BLIND SCREW              | 1    |                        |
| 39  | SO-001-0051                      | SO-001-0051                      | REFLECTOR                | 1    |                        |
| 40  | SO-001-0234                      | SO-001-0234                      | PILOT TUBE CONNECTOR     | 1    |                        |
| 41  | SO-001-0213                      | SO-001-0213                      | O.D.S PILOT TUBE         | 1    | WITH NUT               |
| 42  | SO-001-9004                      | SO-001-9004                      | HIGH VOLTAGE CORD        | 1    |                        |
| 43  | SO-001-0163A-P<br>SO-001-0163B-N | SO-001-0163C-P<br>SO-001-0163D-N | MINIMUM ADJUSTMENT SCREW | 1    |                        |
| 44  |                                  | SO-001-0662                      | FLAME GUARD PLATE 'B'    | 1    |                        |
| 45  | SO-001-0673                      |                                  | FLAME GUARD PLATE 'C'    | 1    |                        |
| 46  | ZEEB3506SC                       | ZEEB3506SC                       | SCREW                    | 2    | Cr PLATING             |
| 47  | ZEAB0408SZ                       | ZEAB0408SZ                       | SCREW                    | 4    | Zn PLATING             |
| 48  | ZBA0406SZ                        | ZBA0406SZ                        | SCREW                    | 3    | Zn PLATING             |
| 49  | ZEDB0406SC                       | ZEDB0406SC                       | SCREW                    | 4    | Cr PLATING             |
| 50  | ZEAB0406SC                       | ZEAB0406SC                       | SCREW                    | 1    | Cr PLATING             |
| 51  | ZEAB0406SC                       | ZEAB0406SC                       | SCREW                    | 2    | Cr PLATING             |
| 52  | ZEAB0406SC                       | ZEAB0406SC                       | SCREW                    | 1    | Cr PLATING             |
| 53  | ZEAB0406SZ                       | ZEAB0406SC                       | SCREW                    | 2    | Zn PLATING             |
| 54  | ZEAB0406SZ                       | ZEAB0406SC                       | SCREW                    | 2    | Zn PLATING             |
| 55  | ZEAB0408SZ                       | ZEAB0408SC                       | SCREW                    | 8    | Zn PLATING             |
| 56  | ZEAB3532SZ                       | ZEAB3532SZ                       | SCREW                    | 2    | Zn PLATING             |
| 57  | ZEAB0406SC                       | ZEAB0406SC                       | SCREW                    | 2    | Cr PLATING             |
| 58  | ZAA0406SZ                        | ZAA0406SZ                        | SCREW                    | 1    | Zn PLATING             |
| 59  | ZBA0410SZ                        | ZBA0410SZ                        | SCREW                    | 2    | Zn PLATING             |

# MAINTENANCE / SERVICE

BASE KIT



FAN KIT REH 18-60 & REH 10-50



BASE KIT

| ASSY. NO. | KEY NO | PART NAME | PART NO.    | QTY. |
|-----------|--------|-----------|-------------|------|
|           |        | BASE KIT  |             |      |
|           | 1      | BASE      | SO-001-0461 | 2    |
|           | 2      | SCREW     | ZEAB0408SZ  | 8    |
|           | 3      | SCREW     | ZEAB3532SZ  | 2    |

FAN KIT REH18-60 (OPTION)

| ASSY. NO. | KEY NO | PART NAME                   | PART NO.   | QTY. |
|-----------|--------|-----------------------------|------------|------|
|           |        | FAN KIT                     | REH18-60   | 1    |
|           | 1      | FAN UNIT                    | REH18-69   | 1    |
|           | 2      | SCREW                       | ZEAC0408SC | 4    |
|           | 3      | WALL MOUNTING BRACKET UPPER | REH18-66   | 2    |
|           | 4      | SCREW                       | ZEAC0408SC | 4    |
|           | 5      | WALL MOUNTING BRACKET LOWER | REH18-67   | 2    |
|           | 6      | SCREW                       | ZEAC0408SC | 2    |

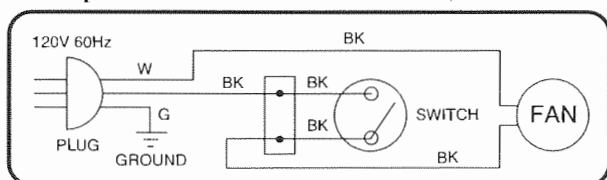
FAN KIT REH10-50 (OPTION)

| ASSY. NO. | KEY NO | PART NAME | PART NO.   | QTY. |
|-----------|--------|-----------|------------|------|
|           | A      | FAN KIT   | REH10-50   | 1    |
|           | B      | SCREW     | ZEAC0408SC | 4    |

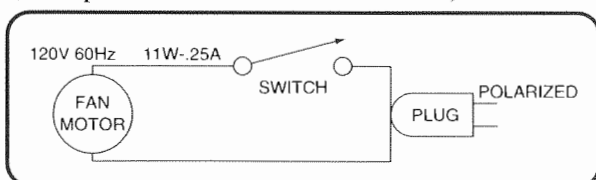
## 5. WIRING DIAGRAM

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

(for Optional Fan Kit No. REH18-60)



(for Optional Fan Kit No. REH10-50)



If any of the original wire as supplied with the appliance must be replaced, it must be replaced with a wire of at least a 194°F temperature rating and number 18AWG or its equivalent.



# MEMO

# MEMO

**LIMITED WARRANTY  
RINNAI BLUE FLAME HEATERS**

Rinnai America Corporation warrants the products described in this warranty including any parts and components there of, to be free from any defects in materials and workmanship for the period specified below, subject to the terms specified in this warranty. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty extends to the original purchaser.

| MODEL     | PERIOD OF COVERAGE | TIME OF FAILURE COVERED               |
|-----------|--------------------|---------------------------------------|
| REH-10BFT | 3 YEARS            | MANUFACTURING DEFECTIVE MATERIAL WORK |
| REH-20BFT | 3 YEARS            | MANUFACTURING DEFECTIVE MATERIAL WORK |

In the event of a malfunction, operational difficulty or failure of the product, or any parts or components, during the warranty term, resulting from defects in materials or workmanship. Rinnai will remedy the malfunction, operational difficulty, or failure without charge to the owner. The remedy will consist of repair or replacement of the product(including payment of reasonable shipping costs) at the option of Rinnai. You may obtain the benefits of warranty coverage by returning the product to a qualified Rinnai servicing agent which has been qualified by Rinnai or its authorized distributor. Any such warranty replacement or repair shall be subject to the terms and conditions of this warranty for the remainder of the original period of coverage. In order to obtain the name and location of the qualified Rinnai servicing agent closest to you, please write Rinnai at the address shown on the back side of the warranty card, or call Rinnai at 1-800-621-9419.

This warranty does not cover any failures, operational difficulty, or malfunction due to accident, abuse, misuse, alteration, Acts of God, misapplication, improper installation or improper maintenance or service, or from any other cause other than defects in materials and workmanship.

Any implied warranties of merchantability and fitness applicable to the equipment are limited in duration to the period of coverage of this express written warranty. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you. Rinnai is not liable for any special, indirect or consequential damages; some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.

Rinnai does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, application, engineering, installation, use, removal, return or replacement of its products, and no such representatives are binding on Rinnai. The Warranty Registration Card provided below should be returned within two weeks of purchase to help Rinnai better serve you. However, the return of the Registration Card is not necessary in order to validate this warranty.

NOTE: GEORGIA RESIDENTS PLEASE INCLUDE 6% STATE SALES TAX

**RINNAI BLUE FLAME HEATER  
WARRANTY REGISTRATION CARD**

Owner's Name: \_\_\_\_\_  
 Installation Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Dealer's Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, State, Zip: \_\_\_\_\_  
 Type of Dealer: \_\_\_\_\_  
 Model: \_\_\_\_\_ Type of Gas: \_\_\_\_\_  
 Serial No: \_\_\_\_\_  
 Date Purchased: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**Rinnai**  
 America Corporation  
 1662 Lukken Ind. Dr. West  
 LaGrange, GA 30240  
 Telephone: 1/800/621-9419

PLEASE RETURN THIS CARD TO RINNAI WITHIN TWO WEEKS OF PURCHASE

NAME TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

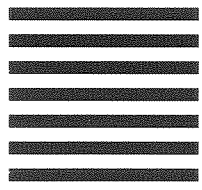
CITY STATE ZIP \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_

PB 1/95



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**  
FIRST CLASS PERMIT NO. 271 LAGRANGE, GA

POSTAGE WILL BE PAID BY ADDRESSEE

**Rinnai America Corp.  
1662 Lukken Industrial Drive West  
LaGrange GA 30240-9867**

