FOR YOUR SAFETY
If you smell gas:
1. Open windows.
2. DO NOT try to light any appliance.
3. DO NOT use electrical switches.
4. DO NOT use any telephone in your building.
5. Extinguish any open flame.
6. Leave the building.
7. Immediately call your local gas supplier after leaving the building. Follow the gas supplier’s instructions.
8. If you cannot reach your gas supplier, call the Fire Department.

WARNING

Fire Hazard

Keep all flammable objects, liquids and vapors the minimum required clearances to combustibles away from heater.

Some objects will catch fire or explode when placed close to heater.

Failure to follow these instructions can result in death, injury or property damage.

WARNING

Improper installation, adjustment, alteration, service or maintenance can result in death, injury or property damage. Read the Installation, Operation and Service Manual thoroughly before installing or servicing this equipment.

Installation must be done by a contractor qualified in the installation and service of gas-fired heating equipment or your gas supplier.

Installer
Please take the time to read and understand these instructions prior to any installation.
Installer must give a copy of this manual to the owner.

Owner
Keep this manual in a safe place in order to provide your service technician with necessary information.

Roberts-Gordon LLC
1250 William Street
P.O. Box 44
Buffalo, New York 14240-0044
Telephone: +1.716.852.4400
Fax: +1.716.852.0854
Toll Free: 800.828.7450

www.robertsgordon.com
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SECTION 1: HEATER SAFETY

Your Safety is Important to Us!
This symbol is used throughout the manual to notify you of possible fire, electrical or burn hazards. Please pay special attention when reading and following the warnings in these sections.

Installation, service and annual inspection of heater must be done by a contractor qualified in the installation and service of gas-fired heating equipment.

Read this manual carefully before installation, operation or service of this equipment.

This heater is designed for heating nonresidential indoor or outdoor spaces. Do not install in residential spaces. This heater is not certified to meet the requirements of NFPA30A-2012 Section 7.6.6. (maximum tube temperature of 750 °F (399 °C)). Do not install this heater in facilities where compressed natural gas (CNG) or liquid natural gas (LNG) are present. These instructions, the layout drawing, local codes and ordinances, and applicable standards that apply to gas piping, electrical wiring, venting, etc. must be thoroughly understood before proceeding with the installation.

Protective gear is to be worn during installation, operation and service in accordance to the Occupational Safety and Hazard Administration (OSHA). Gear must be in accordance to NFPA 70E, latest revision when working with electrical components. Thin sheet metal parts have sharp edges. To prevent injury, the use of work gloves is recommended. The use of gloves will also prevent the transfer of body oils from the hands to the surface of the reflector.

Before installation, check that the local distribution conditions, nature of gas and pressure, and adjustment of the appliance are compatible.

This heater must be applied and operated under the general concepts of reasonable use and installed using best building practices.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do no play with the appliance.

For additional copies of the Installation, Operation and Service Manual, please contact Roberts-Gordon LLC.

1.1 Manpower Requirements
To prevent personal injury and damage to the heater, two persons will be required for installation.

1.2 Safety Labels and Their Placement
Product safety signs or labels should be replaced by the product user when they are no longer legible. Please contact Roberts-Gordon LLC or your ROBERTS GORDON® independent distributor to obtain replacement signs or labels. See Page 2, Figure 1 through Page 3, Figure 2.

1.3 California Proposition 65
In accordance with California Proposition 65 requirements, a warning label must be placed in a highly visible location on the outside of the equipment (i.e., near equipment's serial plate). See label placement drawing on Page 2, Figure 1 through Page 3, Figure 2 for label location. Avoid placing label on areas with extreme heat, cold, corrosive chemicals or other elements. To order additional labels, please contact Roberts-Gordon LLC or your ROBERTS GORDON® independent distributor.
FIGURE 1: Top and Bottom Panel Label Placement

<table>
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<tr>
<th>Description</th>
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<tr>
<td>Logo Label</td>
<td>91013201</td>
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<tr>
<td>Rating Plate Label</td>
<td>91010401</td>
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<tr>
<td>Gas Connection Label</td>
<td>91018122</td>
</tr>
<tr>
<td>Proposition 65 Label</td>
<td>91070016</td>
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</table>

Description Part Number
Logo Label 91013201
Rating Plate Label 91010401
Gas Connection Label 91018122
Proposition 65 Label 91070016
FIGURE 2: Side and Back Panel Label Placement

**Description** | **Part Number**
---|---
Clearances to Combustibles Label | 91013415
Wiring Label | 91013300
Vent Length Label | 91039500
Lighting Instruction Plate Label | 91029602
SECTION 2: INSTALLER RESPONSIBILITY

The installer is responsible for the following:

- To install the heater, as well as the gas and electrical supplies, in accordance with applicable specifications and codes. Roberts-Gordon LLC recommends the installer contact a Local Building inspector or Fire Marshal for guidance.
- To use the information given in a layout drawing and in the manual together with the cited codes and regulations to perform the installation.
- To install the heater in accordance with the clearances to combustibles.
- To furnish all needed materials not furnished as standard equipment.
- Plan location of supports. Locate a support near all elbows.
- To provide access to burners for servicing on all sides and for burner removal.
- To provide the owner with a copy of this installation, operation and service manual.
- To never use heater as support for a ladder or other access equipment and never hang or suspend anything from heater.
- To ensure there is adequate air circulation around the heater and to supply air for combustion, ventilation and distribution in accordance with local codes.
- To safely and adequately install heater using materials with a minimal working load of 75 lbs (33 kg).
- To ensure the heater is placed in an approved application.
- Be sure the heater has a downward pitch of 1/2" per 20' (1 cm per 6 m) away from the burner.
- A minimum of 10' (3 m) of tubing on HE-60/80 and a minimum of 15' (4.6 m) of tubing on HE-100/125/150/175 are required between the burner and the first elbow.
- Indoor hanging: Provide a suspension with vertical length of chain or swinging rod which has at least 2" (5 cm) of horizontal travel for each burner in a straight run. Be sure the suspension system is sufficiently flexible to accommodate thermal expansion, which occurs as the system heats up, See Page 16, Figure 14.
- Outdoor hanging: Chain should not be used when installing the unit outdoors. Use a suspension system which minimizes the lateral movement or swing which might damage reflectors. See Page 17, Figure 15.
- Washbays/car washes: The heater must not be exposed to the direct spray from a pressure washer. To reduce the possibility of spray entering the burner, utilize an outside combustion air supply. See Page 41, Section 8.13.

The heater has been extensively tested under extreme conditions and is highly resistant to the outdoor elements. Care must be taken to design the proper hanging brackets and suspension (See Page 17, Figure 15) for the heater in high wind areas.

2.1 Wall Tag

A laminated wall tag is available for the heater as a permanent reminder of the safety instructions and the importance of the required clearances to combustibles. Please contact Roberts-Gordon LLC or your ROBERTS GORDON® independent distributor to obtain the wall tag. Affix the tag by peeling off the backing of the adhesive strips on the rear surface and position the tag on a wall near the heater's controls (e.g. thermostat or ROBERTS GORDON® Controller).

A copy of the wall tag (P/N 91037912) is illustrated on the back cover. For an immediate solution, you may affix this copy on the wall near the heater.

Know your model number and installed configuration. Model number and installed configuration are found on the burner and in the Installation, Operation and Service Manual. See Page 7, Figure 3 through Page 10, Figure 12. Write the proper clearance dimensions in permanent ink according to your model number and configuration in the open spaces on the tag.
2.2 Corrosive Chemicals

**CAUTION**

Product Damage Hazard
Do not use heater in area containing corrosive chemicals.

Refer to appropriate Material Safety Data Sheets (MSDS).

Failure to follow these instructions can result in product damage.

Roberts-Gordon LLC cannot be responsible for ensuring that all appropriate safety measures are undertaken prior to installation; this is entirely the responsibility of the installer. It is essential that the contractor, the sub-contractor, or the owner identifies the presence of combustible materials, corrosive chemicals or halogenated hydrocarbons* anywhere in the premises.

* **Halogenated Hydrocarbons** are a family of chemical compounds characterized by the presence of halogen elements (fluorine, chlorine, bromine, etc.). These compounds are frequently used in refrigerants, cleaning agents, solvents, etc. If these compounds enter the air supply of the burner, the life span of the heater components will be greatly reduced. An outside air supply must be provided to the burners whenever the presence of these compounds is suspected. Warranty will be invalid if the heater is exposed to halogenated hydrocarbons.

2.3 National Standards and Applicable Codes

All appliances must be installed in accordance with the latest revision of the applicable standards and national codes. This refers also to the electric, gas and venting installation. Note: Additional standards for installations in Public Garages, Aircraft Hangars, etc. may be applicable.
SECTION 3: CLEARANCES TO COMBUSTIBLES

3.1 Required Clearances to Combustibles

WARNING

Fire Hazard

Keep all flammable objects, liquids and vapors the minimum required clearances to combustibles away from heater.

Some objects will catch fire or explode when placed close to heater.

Failure to follow these instructions can result in death, injury or property damage.

Clearances are the required distances that combustible objects must be away from the heater to prevent serious fire hazards. Combustibles are materials that may catch on fire and include common items such as wood, paper, rubber, fabric, etc. Maintain clearances to combustibles at all times for safety.

Clearances for all heater models are located on the burner of the heater and on Page 7, Figure 3 through Page 10, Figure 12 in this manual. Check the clearances on each burner for the model heater being installed to make sure the product is suitable for your application and the clearances are maintained. Read and follow the safety guidelines below:

- Keep gasoline or other combustible materials including flammable objects, liquids, dust or vapors away from this heater or any other appliance.
- The stated clearances to combustibles represents a surface temperature of 90° F (50°C) above room temperature. Building materials with a low heat tolerance (such as plastics, vinyl siding, canvas, triply, etc) may be subject to degradation at lower temperatures. It is the installer’s responsibility to assure that adjacent materials are protected from degradation.
- Maintain clearances from heat sensitive equipment and workstations.
- Maintain clearances from vehicles parked below the heater.
- Maintain clearances from swinging and overhead doors, overhead cranes, vehicle lifts, partitions, storage racks, hoists, building construction, etc.
- In locations used for the storage of combustible materials, signs must be posted to specify the maximum permissible stacking height to maintain required clearances from the heater to the combustibles. Signs must be posted adjacent to the heater thermostat. In the absence of a thermostat, signs must be posted in a conspicuous location.
- Consult local Fire Marshal, Fire Insurance Carrier or other authorities for approval of proposed installation when there is a possibility of exposure to combustible airborne materials or vapors.
- Hang heater in accordance to the minimum suspension requirements on Page 16, Figure 14.
- If the radiant tubes must pass through the building structure, be sure that adequate sleeving and fire stop is installed to prevent scorching and/or fire hazard.
NOTE: 1. All dimensions are from the surfaces of all tubes, couplings and elbows.
2. Clearances B, C and D can be reduced by 50% after 25' (7.5 m) of tubing downstream from where the burner and burner tube connect.

### FIGURE 3: STANDARD REFLECTOR

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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### FIGURE 4: ONE SIDE REFLECTOR

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### FIGURE 5: TWO SIDE REFLECTORS

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NOTE: 1. All dimensions are from the surfaces of all tubes, couplings and elbows.
2. Clearances B, C and D can be reduced by 50% after 25' (7.5 m) of tubing downstream from where the burner and burner tube connect.

**FIGURE 6: 45° TILT REFLECTOR**

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**FIGURE 7: U-TUBE, STANDARD REFLECTOR**

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**FIGURE 8: U-TUBE, 45°**

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<th>(centimeters)</th>
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NOTE: 1. All dimensions are from the surfaces of all tubes, couplings and elbows. 2. Clearances B, C and D can be reduced by 50% after 25’ (7.5 m) of tubing downstream from where the burner and burner tube connect.

**FIGURE 9: U-TUBE, OPPOSITE 45° REFLECTOR**

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**FIGURE 10: 2-FOOT DECO GRILLE AND PROTECTIVE GRILLE**

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**FIGURE 11: LOWER CLEARANCE SHIELD***

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*When installed in the first 10’ (3 m).
**NOTE:** 1. All dimensions are from the surfaces of all tubes, couplings and elbows.
2. Clearances B, C and D can be reduced by 50% after 25' (7.5 m) of tubing downstream from where the burner and burner tube connect.

### FIGURE 12: VENTING

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</tbody>
</table>
## SECTION 4: NATIONAL STANDARDS AND APPLICABLE CODES

### 4.1 Gas Codes

The type of gas appearing on the nameplate must be the type of gas used. Installation must comply with national and local codes and requirements of the local gas company.


**Canada**: Refer to Natural Gas and Propane Installation Code CSA B149.1 - latest revision.

### 4.2 Aircraft Hangars

Installation in aircraft hangars must be in accordance with the following codes:

**United States**: Refer to Standard for Aircraft Hangars, NFPA 409 - latest revision.

**Canada**: Refer to Natural Gas and Propane Installation Code CSA B149.1 - latest revision.

In aircraft storage and servicing areas, heaters shall be installed at least 10’ (3 m) above the upper surface of wings or of engine enclosures of the highest aircraft which may be housed in the hangar. The measurement shall be made from the wing or engine enclosure (whichever is higher from the floor) to the bottom of the heater.

- In shops, offices and other sections of aircraft hangars communicating with aircraft storage or servicing areas, heaters shall be installed not less than 8’ (2.4 m) above the floor.
- Suspended or elevated heaters shall be so located in all spaces of aircraft hangars that they shall not be subject to injury by aircraft, cranes, movable scaffolding or other objects. Provisions shall be made to assure accessibility to suspended heaters for recurrent maintenance purposes.

### 4.3 Public Garages

Installation in garages must be in accordance with the following codes:


**Canada**: Refer to Natural Gas and Propane Installation Code CSA B149.1 - latest revision.

- Heaters must not be installed less than 8’ (2.4 m) above the floor. Minimum clearances to combustibles must be maintained from vehicles parked below the heater.
- When installed over hoists, minimum clearances to combustibles must be maintained from the upper most point of objects on the hoist.

### 4.4 Electrical

The heater must be electrically grounded in accordance with the following codes:

**United States**: Refer to National Electrical Code®, NFPA 70 - latest revision. Wiring must conform to the most current National Electrical Code®, local ordinances and any special diagrams furnished.

**Canada**: Refer to Canadian Electrical Code, CSA C22.1 Part 1 - latest revision.

### 4.5 Venting

The venting must be installed in accordance with the requirements within this manual and the following codes:


**Canada**: Refer to Natural Gas and Propane Installation Code CSA B149.1 - latest revision.

### 4.6 High Altitude

These heaters are approved for installations up to 2000’ (610 m)(US), 4500’ (1370 m)(Canada) without modification. Consult factory if US installation is above 2000’ (610 m) or Canadian installation is above 4500’ (1370 m).
SECTION 5: MAJOR COMPONENTS

FIGURE 13: Major Component Descriptions

**Burner with Tube Gasket**
Must be installed with the flame observation window facing down.

**Reflector (Stainless Steel or Aluminum)**
Alternate overlap as shown on overview and on Page 19, Figure 17. Minimum overlap is 6" (16 cm).

**Burner Tube**
Supplied in 10' (3 m) lengths. Burner tube is always the first tube after the burner.

**Vent Cap**
Attach at flue end and air inlet with vent adapter, where required.

**Tube**
Heat Treated Aluminized tube supplied in 10' (3 m) lengths.

**Tube and Reflector Hanger with Clamp Package**
Position this hanger no more than 4" (10 cm) away from the burner.

**Reflectors Support Strap & Wire Form**

**Vent Adapter**

**Turbulator**
Install turbulator as specified in the turbulator installation chart. See Page 22, Section 6.5. Turbulator is not required on the HE-125/150/175.

**Coupling Assembly with Lock**

**Reflector End Cap**
Punch out center section to accommodate tube.

**Vinyl Coated Flex Gas Line with Shut Off Cock**
### 5.1 Standard Parts List

#### Table 1: Contents of Heater Burner Carton

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<th>Part No.</th>
<th>Description</th>
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<th>HE-60</th>
<th>HE-80</th>
<th>HE-100</th>
<th>HE-125</th>
<th>HE-150</th>
<th>HE-175</th>
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*Canadian Models: Rubber (Type 1) Gas Hoses available as an accessory. See Page 43, Section 9.

#### Table 2: Contents of Core and Extension Packages

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<td>U-Clip Package</td>
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<td>1</td>
</tr>
<tr>
<td>90502700</td>
<td>Vent Adapter</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>01318901</td>
<td>Tube Clamp Package</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CP10ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP20ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP30ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP40ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP10ALUMSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP20ALUMSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP30ALUMSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CP40ALUMSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXP10ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXP20ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXP30ALUM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXP40ALUM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Optional with the aluminized core package.
Table 3: Component Package Guide

<table>
<thead>
<tr>
<th>Model</th>
<th>Tubing Length</th>
<th>Core and Extension Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Aluminized</td>
</tr>
<tr>
<td>HE-40</td>
<td>10’ (3 m)</td>
<td>CP10ALUM</td>
</tr>
<tr>
<td>HE-60</td>
<td>20’ (6 m)</td>
<td>CP20ALUM</td>
</tr>
<tr>
<td>HE-80</td>
<td>20’ (6 m)</td>
<td>CP20ALUM</td>
</tr>
<tr>
<td>HE-100</td>
<td>30’ (9 m)</td>
<td>CP30ALUM</td>
</tr>
<tr>
<td>HE-125</td>
<td>40’ (12 m)</td>
<td>CP40ALUM</td>
</tr>
<tr>
<td>HE-150</td>
<td>50’ (15 m)</td>
<td>CP30ALUM + EXP20ALUM</td>
</tr>
<tr>
<td>HE-175</td>
<td>60’ (18 m)</td>
<td>CP30ALUM + EXP30ALUM</td>
</tr>
</tbody>
</table>

Table 4: Accessories Package (03200001)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>90502300</td>
<td>4” Metalbestos Vent Cap</td>
<td>2</td>
</tr>
<tr>
<td>90502700</td>
<td>Vent Adapter</td>
<td>1</td>
</tr>
</tbody>
</table>

Additional tubing length may be added to heater. Tubing must be heat-treated, aluminized or porcelain coated. Any additional tubing lengths are considered as vent length for length determination. Maximum venting length for minimum heater length is 45’ (13.7 m) total.
SECTION 6: HEATER INSTALLATION

**WARNING**

Severe Injury Hazard

Secure burner to burner tube with bolts and lockwashers.

Hang heater with materials with a minimum working load of 75 lbs (33 kg).

Failure to follow these instructions can result in death, injury or property damage.

**WARNING**

Cut/Pinch Hazard

Wear protective gear during installation, operation and service.

Edges are sharp.

Failure to follow these instructions can result in injury.

Expansion and contraction of the tube dictates that the minimum suspension lengths in the table on Page 16, Figure 14 be maintained.

To ensure your safety, and comply with the terms of the warranty, all units must be installed in accordance with these instructions.

The gas or the electrical supply lines must not be used to support the heater.

Do not locate the gas or electric supply lines directly over the path of the flue products from the heater.

The heater must be installed in a location that is readily accessible for servicing.

The heaters must be installed in accordance with clearances to combustibles as indicated on the rating plate and in this instruction manual.

The minimum and maximum gas inlet pressures must be maintained as indicated on the rating plate.

Typical installation configurations are shown in Figure 14.
**FIGURE 14: Critical Hanger Placement (Indoor Installation)**

**Typical Suspension Details**
- Beam Clamp
- Anchor Screw Hook
- Concrete Beam Wood Beam
- Locknut
- Washers
- Chain Size 3/16” Minimum
- Rod 3/8”
- Turnbuckle Not Included

*Allows for thermal expansion of system

<table>
<thead>
<tr>
<th>Run Length</th>
<th>Typical Expansion</th>
<th>Minimum “X” Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>10’ - 50’ (3 m - 15 m)</td>
<td>±2” (5 cm)</td>
<td>12” (30 cm)</td>
</tr>
<tr>
<td>51’ - 60’ (15.5 m - 18 m)</td>
<td>±2” (5 cm)</td>
<td>18” (46 cm)</td>
</tr>
<tr>
<td>61’ - 70’ (18.5 m - 21 m)</td>
<td>±3” (8 cm)</td>
<td>24” (61 cm)</td>
</tr>
</tbody>
</table>

**Description** | **Part Number**
---|---
S-Hook | 91907302
Tube/Reflector Hanger | 03090100
6.1 Outdoor Mounting

The heater is meant for stationary mounting in all situations and should not be suspended from any structure which may become mobile or from any organic structures such as trees. Clearances to combustibles must be maintained in all cases; do not install heaters in a location such as a parking area, where a vehicle with a painted or non-metallic upper surface, may be parked within the clearances to combustibles. See Page 17, Figure 15.

The bottom of the combustion air inlet shall not be less than 12" (30 cm) above a surface which could support snow, ice, or debris.

FIGURE 15: Critical Hanger Placement (Outdoor Installation)
FIGURE 16: Linear Heater Assembly Overview

*Assembly shown with additional reflector supports as provided with stainless steel reflector packages.*
FIGURE 17: Linear Heater Layout Overview

LEGEND

- **Burner**
- **Reflector**
- **Tube**
- **Tube/Reflector Hanger**
- **Coupling Assembly**
- **Vent Adapter**

- **a** = 14" (36 cm) reflector width (not shown)
- **b** = 2" (5 cm) end cap to burner
- **c** = 2" (5 cm) end cap to hanger
- **d** = 7/6" (2.3 m) distance from first hanger to second hanger
- **e** = 10' (3 m) distance between hangers
- **f** = 9.5" (24 cm) burner height
- **g** = 17.5" (44 cm) burner length
Step 6.2 Burner Tube Installation

Hanging hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.

**NOTE:**
Tubing requires a downward slope of 1/2" (1.3 cm) per 20' (6 m) away from burner.

![Diagram ofBurner Tube Installation](image)

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burner Tube</td>
<td>03051XXX</td>
</tr>
<tr>
<td>S-Hook</td>
<td>91907302</td>
</tr>
<tr>
<td>Tube/Reflector Hanger</td>
<td>03090100</td>
</tr>
</tbody>
</table>

Step 6.3 Tube Clamp Package Installation

Hanging hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.

![Diagram of Tube Clamp Package Installation](image)

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube Clamp Package</td>
<td>01318901</td>
</tr>
<tr>
<td>Tube Clamp</td>
<td>01396801</td>
</tr>
<tr>
<td>Bolt</td>
<td>97113940</td>
</tr>
<tr>
<td>Flat Washer</td>
<td>95211600</td>
</tr>
<tr>
<td>Nut</td>
<td>92113900</td>
</tr>
</tbody>
</table>
### Step 6.4 Coupling and Tube Assembly

**A** Close coupling with tab

![Open Coupling](image)

![Closed Coupling](image)

**B** Start Slide bar/Coupling Lock onto coupling

![Slide Bar/Coupling Lock](image)

- 3" (8 cm) to 4" (10 cm)

**C** Insert tubes into coupling

![Internal Pins](image)

Align coupling so that slide bar/coupling lock is rotated to the 2:00 or 10:00 o'clock position.

**D** Tighten coupling to join tubes

![Tighten slide bar as shown below](image)

- Be sure not to over tighten slide bar/coupling lock. Slide bar/coupling lock should be within tolerance listed below.

![Correct slide bar dimensions](image)

± 2" (5 cm)

![Incorrect slide bar position](image)

- Repeat Step 6.4 A - D until all tubes are assembled. See Page 22, Section 6.4.2.

---

**Step 6.4.1 Coupling and Tube Assembly (Continued)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coupling</td>
<td>01329600</td>
</tr>
<tr>
<td>Slide bar/Coupling Lock</td>
<td>01329700</td>
</tr>
<tr>
<td>Tube</td>
<td>91409XXX</td>
</tr>
</tbody>
</table>

---
Step 6.4.2 Coupling and Tube Assembly (Continued)

![Diagram showing coupling and tube assembly](image)

**Total Overall Tube Length**

- Hanging hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.

Step 6.5 Turbulator Installation

![Diagram showing turbulator installation](image)

**Turbulator Installation**

- Install turbulator as specified in the turbulator installation chart below. Turbulator is not required on the HE-125/150/175.

<table>
<thead>
<tr>
<th>Model</th>
<th>Tube Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE-40</td>
<td>10' (3 m)</td>
</tr>
<tr>
<td>HE-60</td>
<td>20' (6 m)</td>
</tr>
<tr>
<td>HE-80</td>
<td>20' (6 m)</td>
</tr>
<tr>
<td>HE-100</td>
<td>30' (9 m)</td>
</tr>
<tr>
<td>HE-125</td>
<td>40' (12 m)</td>
</tr>
<tr>
<td>HE-150</td>
<td>50' (15 m)</td>
</tr>
<tr>
<td>HE-175</td>
<td>60' (18 m)</td>
</tr>
</tbody>
</table>

**Description**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbulator Adapter</td>
<td>03051503</td>
</tr>
<tr>
<td>Turbulator Section</td>
<td>03051504</td>
</tr>
<tr>
<td>Turbulator Section (Stainless)</td>
<td>03051505</td>
</tr>
<tr>
<td>Tube</td>
<td>91409XXX</td>
</tr>
</tbody>
</table>

Fold tab around outside of tube nearest to the vent to hold turbulator in place.
Step 6.6 Reflector Installation

**WARNING**

Fire Hazard

Support reflector with reflector hanger and support strap.

Reflector must not touch tube.

Failure to follow these instructions can result in death, injury or property damage.

**NOTE:** All tube surfaces must be covered by a reflector, except for a U-Tube. Hanging hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube/Reflector Hanger</td>
<td>03090100</td>
</tr>
<tr>
<td>Burner Tube</td>
<td>03051XXX</td>
</tr>
<tr>
<td>Reflector 96” (244 cm)</td>
<td>02750303</td>
</tr>
</tbody>
</table>
Step 6.6.1 Reflector, U-Clip and Reflector Support Installation

The pictorial drawings of the heater construction in Section 6 are schematic only and provide a general guideline of where hangers, reflector supports and U-clips are to be installed.

To ensure proper expansion and contraction movement of the reflectors, a combination of U-clips and reflector supports are used. The positioning of reflector supports and U-clips depends on the individual installation. Use either pop rivets or sheet metal screws instead of U-clips when installing end caps and joint pieces in areas where impact and high wind may be a factor. The following rules must be observed.

Hanging hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.

1. The first reflector after the burner must be affixed in the middle of the reflector with a reflector support and tight screws.

2. The overlap at the first and second reflector is a slip overlap. Thereafter, every third reflector joint is a slip overlap. A slip overlap is achieved by either:
   a.) both reflectors lay inside a hanger.
   (No reflector support needed.)
   b.) using a reflector support with loose screws at the reflector overlap.

3. The remaining reflector overlaps require a non-slip overlap connection. To affix the reflectors together in a non-slip overlap either:
   a.) use reflector support and tight screws.
   b.) if both reflectors lay inside a hanger, U-clips or sheet metal screws may be used.

This section of three reflectors joined together must be affixed to the tube with at least one reflector support with tight screws.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflector Support Package</td>
<td>03050010</td>
</tr>
<tr>
<td>Wire Form</td>
<td>91908004</td>
</tr>
<tr>
<td>Reflector Support Strap</td>
<td>03050000</td>
</tr>
<tr>
<td>Screw #8 x 3/4</td>
<td>94320812</td>
</tr>
<tr>
<td>U-Clip Package</td>
<td>91107720</td>
</tr>
<tr>
<td>Reflector End Cap</td>
<td>027508XX</td>
</tr>
</tbody>
</table>
Step 6.7 Burner Installation

Hanging hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolt</td>
<td>94273914</td>
</tr>
<tr>
<td>Burner</td>
<td>032XXXXX</td>
</tr>
<tr>
<td>Lock Washer</td>
<td>96411600</td>
</tr>
<tr>
<td>Gasket</td>
<td>02568200</td>
</tr>
</tbody>
</table>

NOTE: To ensure proper orientation, attach burner tube with tube weld facing downward.
SECTION 7: OPTIONAL HEATER ACCESSORIES

7.1 U-Tube Configuration

Heaters (except HE-40) are approved for optional U-Tube configurations.

The U-Tube may be installed in either a standard horizontal position, a 45° position or in an opposite 45° position as shown on Page 8, Figure 7 through Figure 9. When using a U-Tube configuration, the following additional rules must be adhered to:

- A minimum of 10’ (3 m) on HE-60/80 and a minimum of 15’ (4.5 m) on HE-100/125/150/175 is required between the burner and the U-Tube.
- The correct turbulator (See Page 22, Figure 6.5) must be installed in the last standard section of tube.
- The burner must never be operated in a tilted position.
- The heater must be properly supported at all locations. See Page 28, Figure 19.

WARNING

Cut/Pinch Hazard

Wear protective gear during installation, operation and service.

Edges are sharp.

Failure to follow these instructions can result in injury.
FIGURE 18: U-Tube Heater Assembly Overview

U-tube Support Bracket

Reflector Support

Turbulator (With Select Models)

Burner Tube

Couplings

U-tube, Standard

1

2

U-tube, Full 45°

1

2

U-tube, Opposite 45°

1

2

1 Tight U-bolt 4" (10 cm) U-bolt, secured to burner tube with 1/4" (6 mm) lockwashers and 1/4"-20 hex nuts

2 Loose U-bolt 4" (10 cm) U-bolt, secured to bracket with 1/4" (6 mm) lockwashers and 1/4"-20 hex nuts on top and bottom to allow for tube expansion and contraction

*Additional tube clamp package comes with stainless steel tube packages and stainless steel u-tube packages.

Mounting hardware shown is for indoor installation only. See Page 17, Figure 15 for outdoor suspension details.
FIGURE 19: U-Tube heater Layout Overview

LEGEND

- Burner
- Reflector
- Tube 10' (3 m)
- Tube 5' (1.5 m)**
- Tube/Reflector Hanger
- Coupling Assembly
- U-tube

a = 14" (36 cm) reflector width (not shown)
b = 2" (5 cm) end cap to burner
c = 2" (5 cm) end cap to hanger
d = 7'6" (2.3 m) distance first hanger
e = 10' (3 m) distance between hangers
f = 5' (1.5 m) distance between last full tube hanger and half tube hanger
g = 17'5" (44 cm) burner height
h = 9'5" (24 cm) burner height

*Requires the last reflector before the u-tube to be cut in half for use on both sides.

**Requires the last tube before the u-tube to be cut in half for use on both sides.
7.2 Elbow Package Configuration

Step 7.2.1 Elbow Installation

- **Description** | **Part Number**
- Elbow Package | 02718702
- 90° Elbow | 01335801
- Coupling | 01312700
- Reflector End Cap | 02750800
- Reflector Joint Piece | 02750900
- U-Clip Package | 91107720

Minimum Distance Required Between Burner and Elbow

<table>
<thead>
<tr>
<th>Model</th>
<th>Minimum Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE-40</td>
<td>10’ (3 m)</td>
</tr>
<tr>
<td>HE-60</td>
<td>10’ (3 m)</td>
</tr>
<tr>
<td>HE-80</td>
<td>10’ (3 m)</td>
</tr>
<tr>
<td>HE-100</td>
<td>15’ (4.5 m)</td>
</tr>
<tr>
<td>HE-125</td>
<td>15’ (4.5 m)</td>
</tr>
<tr>
<td>HE-150</td>
<td>15’ (4.5 m)</td>
</tr>
<tr>
<td>HE-175</td>
<td>15’ (4.5 m)</td>
</tr>
</tbody>
</table>

Step 7.2.2 Elbow Installation

Step 7.2.3 Reflector Joint Installation
Step 7.2.4 Reflector Joint Installation

Step 7.2.5 Reflector Joint Detail

FIGURE 20: Reflector Joint Detail
7.3 Reflector Side Extension (Not For Outdoor Use)

Step 7.3.1 Bracket Installation

*Reflector Side Extension Package*

- Reflector Side Extension 96" (244 cm) 01368000
- Retainer Clips 02751200
- Sheet Metal Screws 94118106

Order Separately
- Reflector Side Extension Bracket 01329910

**Use additional supports in high air movement applications.**

---

Step 7.3.2 Side Reflector Installation

- #8 x 3/8 (3.9 x 9.5 mm) Sheet Metal Screw
- Cut relief notches for supports and hangers.
7.4 Lower Clearance Shield Installation (Not For Outdoor Use)
Step 7.4.1 Shield Support Strap Assembly

![Diagram of shield support strap assembly]

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Clearance Shield Package</td>
<td>01397501</td>
</tr>
<tr>
<td>Shield Support Strap</td>
<td>01397500</td>
</tr>
<tr>
<td>Lower Clearance Shield 8' (2.4 m)</td>
<td>02793000</td>
</tr>
<tr>
<td>Locknut #8</td>
<td>92311400</td>
</tr>
<tr>
<td>Flat Washer #8</td>
<td>95310800</td>
</tr>
<tr>
<td>Screw #8 x 3/8&quot;</td>
<td>93511406</td>
</tr>
</tbody>
</table>

7.5 Two-Foot Decorative Grille Installation (Not For Outdoor Use)
Step 7.5.1 Grille Installation

![Diagram of grille installation]

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium Grille 2' x 4' (.6m x 1.2m)</td>
<td>91407000</td>
</tr>
</tbody>
</table>
Step 7.5.2 Frame Shield Installation

Step 7.5.3 Reflector Side Extension Installation for Decorative Grilles

**NOTE:** If the decorative grille system is to be installed in an area with considerable air movement, it is recommended that one #8 x 3/8" sheet metal screw be installed per reflector extension to prevent it from blowing over.

<table>
<thead>
<tr>
<th>Distance &quot;A&quot;</th>
<th>Extension</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Part No.</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; (4 cm)</td>
<td>6&quot; (15 cm)</td>
<td>01370408</td>
<td>8&quot; (20 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; (15 cm)</td>
<td>10&quot; (26 cm)</td>
<td>01370412</td>
<td>12&quot; (30 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10&quot; (26 cm)</td>
<td>14&quot; (37 cm)</td>
<td>01370416</td>
<td>16&quot; (40 cm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflector Side Extension 48&quot; (122 cm)</td>
<td>01370412</td>
</tr>
</tbody>
</table>
7.6 Protective Grille Installation (Not For Outdoor Use)

Step 7.6.1 Silicone Cap Installation

![Diagram showing Silicone Cap Installation]

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grille Section</td>
<td>08050001</td>
</tr>
<tr>
<td>Grille End Cap</td>
<td>08050002</td>
</tr>
<tr>
<td>Silicone Cap</td>
<td>91915951-6P</td>
</tr>
</tbody>
</table>

Step 7.6.2 Grille End Cap Installation

![Diagram showing Grille End Cap Installation]

A. Grille Section

B. Grille End Cap

C. Pull outward.

D. Bend up 90°.

Step 7.6.3 Grille Installation

![Diagram showing Grille Installation]

- Reflector
- Final Grille Section
- Grille End Cap
- Grille
- 40” (101 cm)
SECTION 8: VENTING

⚠️ WARNING

Carbon Monoxide Hazard
Heaters installed unvented must be interlocked with sufficient building exhaust.
Heaters must be installed according to the installation manual.
Failure to follow these instructions can result in death or injury.

⚠️ WARNING

Cut/Pinch Hazard
Wear protective gear during installation, operation and service.
Edges are sharp.
Failure to follow these instructions can result in injury.

8.1 General Venting Requirements
This heater must be vented in accordance with the rules contained in this manual and with the following national codes and any state, provincial or local codes which may apply:


Canada: Refer to Natural Gas and Propane Installation Code CSA B149.1 - latest revision.

Exhaust end of heater will accept a 4" (10 cm) vent pipe using the vent adapter (P/N 90502700). To prevent leakage of condensation, install the vent adapter with the seam on top and seal the joint using a high temperature silicone sealant.

All vent joints should be sealed using suitable product such as General Electric RTV106 or Permatex Form-a-Gasket red high temperature silicone adhesive sealant.

For outdoor installations, vent caps must be installed at inlet and flue end. (See Page 37, Section 8.8).

Any portion of vent pipe passing through a combustible wall must have an approved thimble to conform with the above listed codes.

Vent pipe must be sloped downward away from the burner 1/2" (1 cm) for every 20' (6 m).

The heater may be individually vented or common vented. When venting horizontally, a maximum of two heaters can be commonly vented. See Page 39, Section 8.11. When venting vertically, a maximum of four heaters can be commonly vented. See Page 40, Section 8.12.

The heater may also be installed unvented in certain circumstances according to building ventilation codes. Refer to the above codes and Page 36, Section 8.2 for further information. Unvented operation also requires compliance with the clearances to combustibles given on Page 10, Figure 12.

The bottom of the vent or air intake terminal shall not be located less than 1' (.3 m) above grade level.

The vent shall not terminate less than 7' (2.1 m) above grade where located adjacent to public walkways.

Vent terminal must be installed at a height sufficient to prevent blockage by snow, and building materials protected from degradation by flue gases.

Secure all joints with #8 x 3/8 sheet metal screws.
Seal all joints with high temperature silicone sealant.
Vent terminal must be beyond any combustible overhang.
8.1.1 United States Requirements
Vent must terminate at least 3' (.9 m) above any forced air inlet located within 10' (3.1 m).

Vent must terminate at least 4' (1.2 m) below, 4' (1.2 m) horizontally from, or 1' (.3 m) above any door, operable window, or gravity air inlet into any building.

8.1.2 Canadian Requirements
The vent shall not terminate within 6' (1.8 m) of a mechanical air supply inlet to any building.

The vent shall not terminate within 3' (.9 m) of a window or door that can be opened in any building, any non-mechanical air supply inlet to any building, or of the combustion air inlet of any other appliance.

8.2 Unvented Operation
Sufficient ventilation must be provided in the amount of 4 cfm per 1000 Btu/h firing rate (United States); 3 cfm per 1000 Btu/h firing rate (Canada).

Use of optional outside combustion air is not recommended with unvented heaters.

If exhaust fans are used to supply ventilation air, an interlock switch must be used to prevent the heater from coming on when the fans are off. This may be done using a pressure switch.

8.3 Horizontal Venting
In noncombustible walls only, vent terminal (P/N 02537801-1P) may be used.

For 4" (10 cm) vents in either combustible or noncombustible walls, use Tjernlund VH1-4 (P/N 90502100) or equivalent, insulated vent terminal. Follow the manufacturer's instructions for proper installation.

For 6" (15 cm) common vents in either combustible or noncombustible walls, use Tjernlund VH1-6 (P/N 90502101) or equivalent, insulated vent terminal. Follow the manufacturer's instructions for proper installation.

8.4 Vertical Venting
For 4" (10 cm), an approved vent cap (P/N 90502300) must be used. For 6" (15 cm) common vent, an approved vent cap (P/N 90502302) must be used. For common vertical venting of more than two heaters, See Page 40, Section 8.12. A vent shall not extend less than 2' (.6m) above the highest point where it passes through a flat roof of a building.

8.5 Unvented Operation Tube Termination
Turn down type vent terminal with a screen must be installed at the exhaust end of the tube. Vent terminal design shall not incorporate backdraft flap.

8.6 Length Requirements
The maximum vent length allowed is 45' (13.7 m). The maximum outside air supply duct length allowed is 45' (13.7 m).

The total vent length, plus outside air duct length, plus any extensions to minimum heat exchanger lengths, cannot exceed 65' (19.8 m).

Vent length should be limited to less than 20' (6 m). If using vent lengths greater than 20' (6 m), condensation will form in the vent pipe. Insulation and additional sealing measures (high temperature silicone at all seams) are required. Optional heat exchanger beyond minimum lengths is considered as vent length for length determination.

Subtract 15' (4.6 m) of maximum allowed vent or duct length per vent elbow if more than two are used.

8.7 Vent Material Recommendations
Vent recommendations:

1. Porcelain coated tubing 4" (10 cm) O.D. (P/N 9141030D)
2. Heat treated aluminized tubing 4" (10 cm) O.D. (P/N 91409408)
   Heat treated aluminized tubing 6" (15 cm) O.D. (P/N E0009105)

Single wall flue pipe - minimum 26 ga. (Supplied by others)

NOTE: 4" (10 cm) O.D. Porcelain coated tubing (P/N 914030D), 4" (10 cm) O.D. Heat treated aluminized tubing (P/N 91409408), and 6" (15 cm) O.D. Heat treated aluminized tubing (P/N E0009105) are equivalent to single wall flue pipe.
8.8 Venting Options

**Indoor Harsh/Corrosive Environments**
- Fresh Air In
- Vent Cap
- 4" (10 cm) Single Wall Pipe
- Burner Tube
- Vent Adapter
- Vent Terminal
- Vent Out

**Indoor Vented and Unvented**
- Vent Cap
- Burner Tube
- Vent Adapter
- Vent Terminal
- Vent Out

**Outdoor**
- Vent Cap
- Burner Tube
- Vent Adapter (seam down)
- Vent Cap
8.9 Horizontal Ventilation 4" (10 cm) Pipe

**Non-Combustible Wall Only**

- Vent Adapter
- 4" (10 cm) Single Wall Pipe
- Vent Terminal
- 18" (46 cm) Min.

**Combustible or Non-Combustible Wall**

- Vent Adapter
- 4" (10 cm) Single Wall Pipe
- Vent Terminal

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vent Terminal (Comb. Wall)</td>
<td>90502100</td>
</tr>
<tr>
<td>Vent Terminal</td>
<td>02537801-XX</td>
</tr>
<tr>
<td>Vent Cap 4&quot; (10 cm)</td>
<td>90502300</td>
</tr>
</tbody>
</table>

8.10 Vertical Ventilation 4" (10 cm) Pipe

**SIDE VIEW**

- 4" (10 cm) Type "B" vent cap
- 4" (10 cm) Type "B" vent pipe
- Roof
- Flashing
- Approved Thimble (If Applicable)
- The last section of vent pipe passing through the roof or wall may be Type "B" vent pipe. All other vent materials in the building must be single wall vent pipe.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vent Cap 4&quot; (10 cm)</td>
<td>90502300</td>
</tr>
</tbody>
</table>
8.11 Common Sidewall Venting

Requirements:

- Maximum of two heaters can be commonly vented through a side wall.
- Heaters must be of the same BTU output.
- Heaters must be controlled by a common thermostat.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vent Terminal 6&quot; (15 cm)</td>
<td>90502101</td>
</tr>
</tbody>
</table>
8.12 Common Vertical Venting

Requirements:
- Maximum of four heaters can be commonly vented through the roof.
- Heaters must be of the same BTU output.
- Heaters must be controlled by a common thermostat.
- Connections to a common stack must be positioned to avoid direct opposition between streams of combustion gases.
### 8.13 Outside Combustion Air Supply

**IMPORTANT:** If the building has a slight negative pressure or corrosive contaminants, such as halogenated hydrocarbons, are present in the air, an outside combustion air supply to the heater is required. Seal all combustion air pipe joints.

Use of optional outside combustion air is not recommended with unvented heaters.

The air supply duct may have to be insulated to prevent condensation on the outer surface. The outside air terminal must not be more than 1' (31 cm) above the vent termination while maintaining a minimum distance of 3' (93 cm) for both vertical and horizontal venting.

#### 8.13.1 Length Requirements

Follow the constraints listed on Page 36, Section 8.6.

#### 8.13.2 Vertical Outside Air Supply for Single Heater Installation

![Diagram of vertical outside air supply](image)

**Description** | **Part Number**  
--- | ---  
Vent Cap 4" (10 cm) | 90502300

#### 8.13.3 Horizontal Outside Air Supply for Single Heater Installation

![Diagram of horizontal outside air supply](image)

**Description** | **Part Number**  
--- | ---  
Vent Cap 4" (10 cm) | 90502300
8.13.4 Vertical Outside Air Supply for Double Heater Installation

Requirements:
- Heaters must be controlled by a common thermostat.

8.13.5 Horizontal Outside Air Supply for Double Heater Installation

Requirements:
- Heaters must be controlled by a common thermostat.
Install the gas hose as shown in Figure 23. The gas hose accommodates expansion of the heating system and allows for easy installation and service of the burner. Before connecting the burners to the supply system, verify that all high pressure testing of the gas piping has been completed.

There is an expansion of the tube with each firing cycle, this will cause the burner to move with respect to the gas line. This can cause a gas leak resulting in an unsafe condition if the gas connection is not made strictly in accordance with Figure 23.

Meter and service must be large enough to handle all the burners being installed plus any other connected load. The gas line which feeds the system must be large enough to supply the required gas with a maximum pressure drop of 1/2" wc. When gas piping is not included in the layout drawing, the local gas supplier will usually help in planning the gas piping.

Gas lines must meet applicable codes:

**United States:** The Flexible Stainless Steel Gas Hose (US models) supplied with the heater is certified per the Standard for Connectors for Gas Appliances, ANSI Z21.24/CSA 6.10 - latest revision.

**Canada:** The Rubber Type 1 Gas Hose (Canadian models) optional with the heater is certified as being in compliance with the Standard for Elastomeric Composite Hose and Hose Couplings for Conducting Propane and Natural Gas, CAN/CGA 8.1 - Latest revision.

- Check the pipe and tubing ends for leaks before placing heating equipment into service. When checking for gas leaks, use a soap and water solution; never use an open flame.
FIGURE 23: Gas Connection with Flexible Gas Hose

CORRECT POSITIONS

Shut-Off Valve (included with gas hose) must be parallel to burner gas inlet. The 3” (8 cm) displacement shown is for the cold condition. This displacement may reduce when the system is fired.

High Gas Pressure Regulator to be installed upstream of flexible gas hose if inlet pressure exceeds maximum allowance. See Page 60, Section 14.

CAUTION

Product Damage Hazard

Hold gas nipple securely with pipe wrench when attaching gas hose.

Failure to follow these instructions can result in product damage.

Flexible Gas Hose 36” (91 cm) length

Heater Movement

3” (8 cm) max. displacement

12” (30 cm)

Side View

End View

45°

Alternate positions okay

Heater Movement

INCORRECT POSITIONS (WRONG INSTALLATION)

Heater Movement

Heater Movement

Heater Movement

Heater Movement

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4” Flexible Stainless Steel Gas Hose (US Models)</td>
<td>91412204</td>
</tr>
<tr>
<td>3/4” Rubber Type 1 Gas Hose (Canadian Models)</td>
<td>91412207</td>
</tr>
</tbody>
</table>
Heaters can be controlled using several methods. Normally thermostats are used to control the heaters but they can also be controlled by an Energy Management System. Section 10.1 below illustrates the connection for heaters controlled by a line voltage thermostat. NOTE: In order to use line voltage thermostats, the low voltage terminal located at the back of each burner must be connected as shown in the detail. For a single heater on a low voltage thermostat, See Section 10.2 below. To control multiple heaters on one low voltage thermostat, See Page 46, Section 10.3. NOTE: In order to control multiple heaters on one low voltage thermostat, the low voltage terminals on each heater must be connected as shown in detail. Heaters must be grounded in accordance with applicable codes: United States: refer to National Electrical Code® ANSI/NFPA 70 - latest revision Canada: refer to Canadian Electrical Code CSA C22.1 Part I - latest revision.

If any of the original internal wiring must be replaced, it must be replaced with wiring materials having a temperature rating of at least 105° C and 600 V.

### 10.1 Line Voltage Thermostat Wiring

```
120 V-60 Hz Supply Circuit

L1
L2
Gnd.

Line Voltage Thermostat

Burner 1
H
N
Gnd.

Burner 2
H
N
Gnd.

Additional Burners
```

### 10.2 Low Voltage Thermostat with One Burner

```
120 V-60 Hz Supply Circuit

L1
L2
Gnd.

Low Voltage Thermostat

Thermostat Wires
(Black)
Blue
Purple

Low voltage terminal detail
```
10.3 Low Voltage Thermostat Wiring with Multiple Burners

When using 1-2 burners, use SPST Transformer Relay. When using 3-4 burners, use SPDT Transformer Relay.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermostat Relay-SPST</td>
<td>90417600K</td>
</tr>
<tr>
<td>Transformer Relay-SPDT</td>
<td>90436300</td>
</tr>
</tbody>
</table>

10.4 Electrical Connection to the Burner Box using Line Voltage Thermostat on Control

Connect wires together with suitable approved wire connections.
10.5 For External Thermostat Connection

Run two wires from low voltage thermostat through conduit as shown. The purple wire from the valve and the blue wire from the transformer have 1/4" (6 mm) blade female electrical terminals, which are connected by a black jumper wire. Cut the female connections off the ends of the blue and purple wires and strip the ends approximately 1/2" (1.3 cm). Connect these 2 wires to the thermostat wires using suitable wire connectors.

10.6 Electrical Connection to Burner Box with Optional External Low Voltage Thermostat

10.7 Internal Wiring
10.8 Ladder Diagram
The heater is equipped with a hot-surface ignition system.

11.1 Sequence of Operation

3. Turn the thermostat up. When the thermostat calls for heat, the SmartValve® II will energize. After a short period, power is supplied to the blower motor.

4. When the motor approaches nominal running RPM, the pressure switch closes and signals the ignition module/SmartValve® II.

5. The ignition module/SmartValve® II then energizes the hot-surface igniter for a timed warm-up period (approximately 45 to 60 seconds). After the warm-up period, the gas valve is energized.

6. If a flame is detected, the gas valve remains open and the igniter is de-energized. When the call for heat is satisfied, and the system control mechanism de-energizes the burner line voltage supply, the gas is turned off.

7. If no flame is detected by the flame sensing rod, the igniter is de-energized and the module/SmartValve® II will close and a purge period begins. After the purge, the module/SmartValve® II acts to power the igniter for a second warm-up period and a second trial for ignition period. If flame is still not established, a third purge, warm-up, and trial cycle begins. After four trials, the module/SmartValve® II will lockout for one hour or until reset.

8. If the flame extinguishes during operation, the igniter module will provide multiple trial sequences described in step 5. If ignition is not re-established, the module/SmartValve® II will lockout for one hour or until reset.

9. After lockout, reset by turning down thermostat for five seconds, and then raising it again to desired temperature, or by disconnecting power and then reconnecting.

11.2 To Shut Off Heater

Set thermostat to lowest setting.
Turn OFF electric power to heater.
Turn OFF manual gas valve in the heater supply line.

11.3 To Start Heater

Turn gas valve and electric power OFF and wait five minutes for unburned gases to vent from heater.
Turn ON main gas valve.
Turn ON electric power.
Set thermostat to desired temperature. Burner should light automatically.

11.4 Pre-Season Maintenance and Annual Inspection

To ensure your safety and years of trouble-free oper-
Installation of the heating system, service and annual inspections must be done by a contractor qualified in the installation and service of gas-fired heating equipment.

Turn off gas and electric supplies before performing service or maintenance. Allow heater to cool before servicing.

Before every heating season, a contractor qualified in the installation and service of gas-fired heating equipment must perform a thorough safety inspection of the heater.

For best performance, the gas, electrical, thermostat connections, tubing, venting, suspensions and overall heater condition should be thoroughly inspected.

**NOTE:** Gas flow and burner ignition are among the first things that should be inspected.

Please see Page 50, Section 11.5 for suggested items to inspect.

### 11.5 Maintenance Checklist

<table>
<thead>
<tr>
<th><strong>The Vicinity of the Heater</strong></th>
<th>Do not store or use flammable objects, liquids or vapors near the heater. Immediately remove these items if they are present. See Page 6, Section 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicles and Other Objects</strong></td>
<td>Maintain the clearances to combustibles. Do not hang anything from, or place anything on, the heater. Make sure nothing is lodged underneath the reflector, in between the tubes or in the decorative or protective grilles (included with select models). Immediately remove objects in violation of the clearances to combustibles. See Page 6, Section 3.</td>
</tr>
<tr>
<td><strong>Reflector</strong></td>
<td>Support reflector with reflector hanger and support strap. Reflector must not touch tube. Make sure there is no dirt, sagging, cracking or distortion. Do not operate if there is sagging, cracking or distortion. Make sure reflectors are correctly overlapped. See Page 24, Section 6.6.1. Clean any debris from top and surface of reflectors with a damp cloth. Check for evidence of animals such as squirrels or birds and remove any nests prior to firing.</td>
</tr>
<tr>
<td><strong>Vent Pipe</strong></td>
<td>Venting must be intact. Using a flashlight, look for obstructions, cracks on the pipe, gaps in the sealed areas or corrosion. The area must be free of dirt and dust. Remove any carbon deposits or scale using a wire brush. Check for evidence of animals such as squirrels or birds and remove any nests prior to firing. See Page 35, Section 8.</td>
</tr>
<tr>
<td><strong>Outside Air Inlet</strong></td>
<td>Inlet must be intact. Look for obstructions, cracks on the pipe, gaps in the sealed areas or corrosion. The area must be free of dirt and dust. Clean and reinstall as required.</td>
</tr>
</tbody>
</table>

**Installation Code and Annual Inspections:**

All installation and service of ROBERTS GORDON® equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Roberts-Gordon LLC and conform to all requirements set forth in the ROBERTS GORDON® manuals and all applicable governmental authorities pertaining to the installation, service, operation and labeling of the equipment.

To help facilitate optimum performance and safety, Roberts-Gordon LLC recommends that a qualified contractor conduct, at a minimum, annual inspections of your ROBERTS GORDON® equipment and perform service where necessary, using only replacement parts sold and supplied by Roberts-Gordon LLC.
**Reflector Support Straps**  
Verify that the reflector support straps are securely clamped to tube and reflector. See Page 24, Step 6.6.1. Verify tight and loose screws at reflector overlaps.

**Tubes**  
Make sure there are no cracks. Make sure tubes are connected and suspended securely. See Page 15, Section 6. Make sure there is no sagging, bending or distortion. Clean any debris from top of tubes or replace as required. Check the inside of the firing tube with a flashlight. If carbon or scale are present remove the turbulator(s). Scrape out the deposits with a wire brush or rod, or metal plate attached to a wooden pole and replace turbulator(s) in tube. Check for evidence of animals such as squirrels or birds and remove any nests prior to firing.

**Gas Line**  
Check for gas leaks. See Page 43, Section 9.

**Burner Observation Window**  
Make sure it is clean and free of cracks or holes. Clean and replace as required.

**Drain Hole**  
Be sure that the drain hole in the bottom of the burner compartment is not blocked or clogged.

**Blower Scroll, Wheel and Motor**  
Compressed air or a vacuum cleaner may be used to clean dust and dirt.

**Burner Cup and Orifice**  
Clear of obstructions (even spider webs will cause problems). Carefully remove any dust and debris from the burner.

**Hot-Surface Igniter**  
Replace if cracked or broken.

**Thermostat**  
There should be no exposed wire or damage to the thermostat. See Page 45, Section 10.

**Suspension Points**  
Make sure the heater is hanging securely. Look for signs of wear on the chain or ceiling. See Page 16, Figure 14.

**Decorative and Protective Grille (optional)**  
The grille must be securely attached. Check that the side reflector extensions are installed correctly and secured in place if necessary (Decorative grille only). See Page 32, Section 7.5 and Page 34, Section 7.6 Make sure shield is installed correctly and secured in place if necessary. (Decorative grille only.) See Page 33, Section 75.2.

**Lower Clearance Shield (optional)**  
The lower shield must be securely attached. Inspect shield support straps and lower clearance shield anchor points. See Page 32, Section 74. Make sure shield is installed correctly and secured in place if necessary. See Page 32, Section 74.

**Wall Tag**  
If wall tag is present, make sure it is legible and accurate. Please contact Roberts-Gordon LLC or your ROBERTS GORDON® independent distributor, if you need a wall tag. See Page 4, Section 2.1.

**Safety Labels**  
Product safety signs or labels should be replaced by the product user when they are no longer legible. Please contact Roberts-Gordon LLC or your ROBERTS GORDON® independent distributor to obtain replacement signs or labels. See Page 1, Figure through Page 3, Figure 2.
### SECTION 12: TROUBLESHOOTING

<table>
<thead>
<tr>
<th><strong>DANGER</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Electrical Shock Hazard" /></td>
</tr>
<tr>
<td>Electrical Shock Hazard</td>
</tr>
<tr>
<td>Disconnect electric before service.</td>
</tr>
<tr>
<td>Heater must be properly grounded.</td>
</tr>
<tr>
<td>Failure to follow these instructions can result in death or electrical shock.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Fire Hazard" /></td>
</tr>
<tr>
<td><strong>Fire Hazard</strong></td>
</tr>
<tr>
<td>Keep all flammable objects, liquids and vapors the minimum required clearances to combustibles away from heater.</td>
</tr>
<tr>
<td>Some objects will catch fire or explode when placed close to heater.</td>
</tr>
<tr>
<td><strong>Explosion Hazard</strong></td>
</tr>
<tr>
<td>Turn off gas supply to heater before service.</td>
</tr>
<tr>
<td><strong>Burn Hazard</strong></td>
</tr>
<tr>
<td>Allow heater to cool before service.</td>
</tr>
<tr>
<td>Tubing may still be hot after operation.</td>
</tr>
<tr>
<td><strong>Cut/Pinch Hazard</strong></td>
</tr>
<tr>
<td>Wear protective gear during installation, operation and service.</td>
</tr>
<tr>
<td>Edges are sharp.</td>
</tr>
</tbody>
</table>

Failure to follow these instructions can result in death, injury or property damage.
12.1 Honeywell SmartValve® II Troubleshooting

This heater is supplied with the Honeywell SmartValve® II control system. This system is equipped with a diagnostic function that will assist in performing troubleshooting. The LED (Light Emitting Diode) indicator at the top of the SmartValve® II control will flash in various patterns to indicate status. The LED status indication chart provided below gives a summary of possible faults.

<table>
<thead>
<tr>
<th>LED Status</th>
<th>Indicates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No power to the control</td>
</tr>
<tr>
<td>Bright-Dim</td>
<td>Normal Operation. This indication shows whenever the system is powered, unless some abnormal event has occurred.</td>
</tr>
<tr>
<td>2 Flashes</td>
<td>Pressure switch remains closed longer than 30 seconds after a call for heat begins (pressure switch stuck closed). The SmartValve® II checks the status of the pressure switch contacts and must see a change in the contact with every firing cycle. Placing a jumper at the switch out of sequence will result in a fault, with the LED indicator flashing 2 times.</td>
</tr>
<tr>
<td>3 Flashes</td>
<td>Pressure switch remains open longer than 30 seconds after combustion air blower is energized. Check for correct blower operation, blower intake obstructions, pressure switch tubing and wiring.</td>
</tr>
<tr>
<td>4 Flashes</td>
<td>Limit string open, 2&quot; white jumper wire on valve is loose.</td>
</tr>
<tr>
<td>5 Flashes</td>
<td>Flame signal sensed out of proper sequence.</td>
</tr>
<tr>
<td>6 Flashes</td>
<td>System Lockout. Flame sensing circuit is not functioning properly. Perform the checks following the &quot;Does the burner stay lit?&quot; bubble in the troubleshooting flow chart on Page 54, Section 12.2.</td>
</tr>
</tbody>
</table>

**WARNING**

Electrical Shock Hazard

Do not disconnect ground leads inside heater.

Do not interchange grounded and ungrounded leads on transformer or ignition module.

Failure to follow these instructions can result in death or electrical shock.

Page 56, Section 12.3 will provide the information needed to test the manifold gas pressure setting. Page 54, Section 12.2 will guide you through several troubleshooting steps to determine possible problems with the systems.
12.3 Manifold Gas Pressure Setting
SECTION 13: REPLACEMENT PARTS

See warnings and important information before removing or replacing parts. After any maintenance or repair work, always test fire the heater in accordance with the start-up instructions on Page 49, Section 11 to help ensure all safety systems are in working order before leaving the heater to operate. Minor faults may be traced by using the troubleshooting charts on Page 52, Section 12 through Page 54, Figure 12.2.
<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Valve (Natural)</td>
<td>90068300</td>
</tr>
<tr>
<td>Gas Valve (LP)</td>
<td>90068302</td>
</tr>
<tr>
<td>Tube Gasket</td>
<td>02568200</td>
</tr>
<tr>
<td>Blower Inlet Gasket</td>
<td>03050900</td>
</tr>
<tr>
<td>Motor and Blower Assembly</td>
<td>90708600-P</td>
</tr>
<tr>
<td>Air Adapter Collar</td>
<td>91911700</td>
</tr>
<tr>
<td>Door Switch</td>
<td>90436800</td>
</tr>
<tr>
<td>Burner Cup Assembly</td>
<td>03020100</td>
</tr>
<tr>
<td>Hot Surface Igniter</td>
<td>90436603K</td>
</tr>
<tr>
<td>Mica Window Assembly</td>
<td>02553203</td>
</tr>
<tr>
<td>Flame Sensor</td>
<td>90439300</td>
</tr>
<tr>
<td>Transformer</td>
<td>90436900K</td>
</tr>
<tr>
<td>Gasket - Valve</td>
<td>03200100</td>
</tr>
<tr>
<td>Pressure Switch:</td>
<td></td>
</tr>
<tr>
<td>(175)</td>
<td>90439802K</td>
</tr>
<tr>
<td>(100)</td>
<td>90439803K</td>
</tr>
<tr>
<td>(80,150)</td>
<td>90439810K</td>
</tr>
<tr>
<td>(40, 60, 125)</td>
<td>90439805K</td>
</tr>
</tbody>
</table>
SECTION 14: GENERAL SPECIFICATIONS

14.1 Material Specifications
14.1.1 Reflectors
.024 Aluminum or .024 Stainless Steel Type 304

14.2 Heater Specifications
14.2.1 Ignition
Honeywell® SmartValve® II combines gas valve and hot surface electronic ignition control. Fully automatic, four-try, 100% shut-off, prepurge, auto reset, LED indicator status.

14.3 Suspension Specifications
Hang heater with materials with a minimum working load of 75 lbs (33 kg). See Page 16, Figure 14.

14.4 Controls Specifications
Time switches, thermostats, etc. can be wired into the electrical supply. External controls supplied as an optional extra.

General Specifications for the heaters are as follows:

<table>
<thead>
<tr>
<th>Model</th>
<th>Heat Input Rate (Btu/h)</th>
<th>Length “A”</th>
<th>Recommended Minimum Mounting Height*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE-40</td>
<td>40</td>
<td>10’ (3 m)</td>
<td>8’-10’ (2.4 - 3 m)</td>
</tr>
<tr>
<td>HE-60</td>
<td>60</td>
<td>20’ (6 m)</td>
<td>10’-12’ (3 - 3.6 m)</td>
</tr>
<tr>
<td>HE-80</td>
<td>80</td>
<td>20’ (6 m)</td>
<td>12’-15’ (3.6 - 4.5 m)</td>
</tr>
<tr>
<td>HE-100</td>
<td>100</td>
<td>30’ (9 m)</td>
<td>12’-15’ (3.6 - 4.5 m)</td>
</tr>
<tr>
<td>HE-125</td>
<td>125</td>
<td>40’ (12 m)</td>
<td>15’-20’ (4.5 - 6 m)</td>
</tr>
<tr>
<td>HE-150</td>
<td>150</td>
<td>50’ (15 m)</td>
<td>20’-25’ (6 - 7.6 m)</td>
</tr>
<tr>
<td>HE-175</td>
<td>175</td>
<td>60’ (15 m)</td>
<td>25’ (7.6 m)</td>
</tr>
</tbody>
</table>

*See Page 6, Section 3 for clearances to combustibles. Recommended mounting height for outdoor use will generally be lower than recommended spot heating heights, (8’ (2.3 m) minimum).

GAS PRESSURE AT MANIFOLD:
Natural Gas: 3.5” wc
LP Gas: 10.5” wc

PIPE CONNECTION:
3/4” NPT

DIMENSIONS:
Vent Connection Size: 4” (10 cm)
Outside Air Connection Size: 4” (10 cm)
Refer to figure above for dimensional information.

GAS INLET PRESSURE:
Natural Gas:
for 40, 60, 80, 100, 125, 150 4.6” wc Minimum
for 175 5.0” wc Minimum
14.0” wc Maximum
LP Gas:
11.0” wc Minimum
14.0” wc Maximum

ELECTRICAL RATING (ALL MODELS):
120V - 60 Hz., 1.0 A (run) 5.0 A (Start)
SECTION 15: THE ROBERTS GORDON® VANTAGE® HE WARRANTY

ROBERTS-GORDON LLC WILL PAY FOR:
Within 36 months from date of purchase by buyer or 42 months from date of shipment by Roberts-Gordon LLC (whichever occurs first), replacement parts will be provided free of charge for any part of the product which fails due to a manufacturing or material defect. Roberts-Gordon LLC will require the part in question to be returned to the factory. Roberts-Gordon LLC will, at its sole discretion, repair or replace after determining the nature of the defect and disposition of part in question. ROBERTS GORDON® Replacement Parts are warranted for a period of 12 months from date of shipment from Roberts-Gordon LLC or the remaining ROBERTS GORDON® VANTAGE® HE warranty.

ROBERTS-GORDON LLC WILL NOT PAY FOR:
Service trips, service calls and labor charges. Shipment of replacement parts. Claims where the total price of the goods have not been paid. Damage due to:
- Improper installation, operation or maintenance.
- Misuse, abuse, neglect, or modification of the ROBERTS GORDON® VANTAGE® HE in any way.
- Use of the ROBERTS GORDON® VANTAGE® HE for other than its intended purpose.
- Incorrect gas or electrical supply, accident, fire, floods, acts of God, war, terrorism, or other casualty.
- Improper service, use of replacement parts or accessories not specified by Roberts-Gordon.
- Failure to install or maintain the ROBERTS GORDON® VANTAGE® HE as directed in the Installation, Operation and Service manual.
- Relocation of the ROBERTS GORDON® VANTAGE® HE after initial installation.
- The use of the ROBERTS GORDON® VANTAGE® HE in a corrosive atmosphere containing contaminants.
- The use of the ROBERTS GORDON® VANTAGE® HE in the vicinity of a combustible or explosive material.
- Any defect in the ROBERTS GORDON® VANTAGE® HE arising from a drawing, design, or specification supplied by or on behalf of the consumer.
- Damage incurred during shipment. Claim must be filed with carrier.

WARRANTY IS VOID IF:
The ROBERTS GORDON® VANTAGE® HE is not installed by a contractor qualified in the installation and service of gas fired heating equipment. You cannot prove original purchase date and required annual maintenance history. The data plate and/or serial number are removed, defaced, modified or altered in any way.

The ownership of the ROBERTS GORDON® VANTAGE® HE is moved or transferred. This warranty is nontransferable. Roberts-Gordon LLC is not permitted to inspect the damaged equipment and/or component parts.

READ YOUR INSTALLATION, OPERATION AND SERVICE MANUAL
If you have questions about your equipment, contact your installing professional. Should you need Replacement Parts or have additional questions, call or write:

Roberts-Gordon LLC
1250 William Street
P.O. Box 44
Buffalo, New York 14240-0044
Telephone: +1.716.852.4400
Fax: +1.716.852.0854
Toll Free: 800.828.7450
www.robertsgordon.com

Roberts-Gordon LLC’s liability, and your exclusive remedy, under this warranty or any implied warranty (including the implied warranties of merchantability and fitness for a particular purpose) is limited to providing replacement parts during the term of this warranty. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you. There are no rights, warranties or conditions, expressed or implied, statutory or otherwise, other than those contained in this warranty.

Roberts-Gordon LLC shall in no event be responsible for incidental or consequential damages or incur liability for damages in excess of the amount paid by you for the ROBERTS GORDON® VANTAGE® HE. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

Roberts-Gordon LLC shall not be responsible for failure to perform under the terms of this warranty if caused by circumstances out of its control, including but not limited to war, fire, flood, strike, government or court orders, acts of God, terrorism, unavailability of supplies, parts or power. No person is authorized to assume for Roberts-Gordon LLC any other warranty, obligation or liability.

LIMITATIONS ON AUTHORITY OF REPRESENTATIVES:
No representative of Roberts-Gordon LLC, other than an Executive Officer, has authority to change or extend these provisions. Changes or extensions shall be binding only if confirmed in writing by Roberts-Gordon LLC’s duly authorized Executive Officer.
OWNER WARRANTY REGISTRATION CARD

About the Owner:
Name: ________________________________
Address: ____________________________ City: __________________ State: ______ Zip Code: ______
Phone: __________________ Fax: ______________ E-mail: __________________

About the Installer:
Name: ________________________________
Address: ____________________________ City: __________________ State: ______ Zip Code: ______
Phone: __________________ Fax: ______________ E-mail: __________________

Purchased From (if different than installer):
Name: ________________________________
Address: ____________________________ City: __________________ State: ______ Zip Code: ______
Phone: __________________ Fax: ______________ E-mail: __________________

About your Heater:
Model#: __________________ Serial #: ____________ Fuel: ______ Installation Date: __________

Type of Installation (check one):
O Automotive      O Manufacturing      O Warehouse      O Recreational      O Aircraft
O Public Building  O Office           O Retail          O Agricultural      O Other________________

Installation Code and Annual Inspections: All installation and service of ROBERTS GORDON® equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Roberts-Gordon LLC and conform to all requirements set forth in the ROBERTS GORDON® manuals and all applicable governmental authorities pertaining to the installation, service, operation and labeling of the equipment.

To help facilitate optimum performance and safety, Roberts-Gordon LLC recommends that a qualified contractor conduct, at a minimum, annual inspections of your ROBERTS GORDON® equipment and perform service where necessary, using only replacement parts sold and supplied by Roberts-Gordon LLC.

These products are not for residential use.

This product is intended to assist licensed professionals in the exercise of their professional judgment.

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Attach this information to a wall near the ROBERTS GORDON® heater.

OPERATING INSTRUCTIONS

1. STOP! Read all safety instructions on this information sheet.
2. Open the manual gas valve in the heater supply line.
3. Turn on electric power to the heater.
4. Set the thermostat to desired setting.

TO TURN OFF THE HEATER

1. Set the thermostat to off or the lowest setting.

IF THE HEATER WILL NOT OPERATE, TO ENSURE YOUR SAFETY, FOLLOW THESE INSTRUCTIONS TO SHUT DOWN YOUR HEATER

1. Set the thermostat to off or the lowest setting,
2. Turn off electric power to the heater
3. Turn off the manual gas valve in the heater supply line
4. Call your registered installer/contractor qualified in the installation and service of gas-fired heating equipment.

WARNING

Fire Hazard

Keep all flammable objects, liquids and vapors the minimum required clearances to combustibles away from heater.

Some objects will catch fire or explode when placed close to heater.

Failure to follow these instructions can result in death, injury or property damage.

Maintain __________ clearance to the side and __________ clearance below the heater from vehicles and combustible materials.