

Caribe®

Gas-Fired, Low-Intensity Infrared Heaters for Residential Garages and Light Industrial/Commercial Applications

CGTH-30
CGTH-40
CGTH-50

Use and Care Manual

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. Leave the building.
6. Immediately call your local gas supplier after leaving the building. Follow the gas supplier's instructions.
7. If you cannot reach your gas supplier, call the Fire Department.

WARNING



Fire Hazard

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

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 serviceman with necessary information.



Quality in Any Language™

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SECTION 1: BEFORE YOU BEGIN

Thank you for purchasing a ROBERTS GORDON® heating product. We are pleased you have chosen the CGTH Series overhead tube heater. In addition to the quality you receive from our company, you also receive over 30 years of infrared heating experience.

For years of trouble-free operation from your heater, carefully read this Use & Care Manual. This Manual contains valuable information to help you use the heater safely and properly.

To obtain warranty service, please complete and mail the Owner Warranty Registration Card found on the last page of this manual. In addition to activating your warranty, registering your heater enables us to contact you with safety and product updates.

Keep this manual in a safe place in case you have any questions or require service in the future. Also, since proof of purchase is required to obtain warranty coverage, keep the original sales receipt in a safe place. Remember to record the model and serial numbers of your heater below. Model and serial numbers are found on the rating tag affixed to the heater. See *Page 10* for rating tag location.

Model Number:	Serial Number:	Fuel:	Installation Date:
Installed By: Company		Purchased From (if different from installer): Company	
Name		Name	
Address		Address	
Phone		Phone	
Fax		Fax	
E-mail		E-mail	

1.1 Read This Manual

Read this manual carefully before installing or servicing this equipment. Improper installation, servicing or maintenance can result in death, injury or property damage. Check the required safe distances from combustibles given on the outside of each burner to make sure that the product is suitable for your application. The required safe distances from combustibles are also found on *Pages 9 and 10* of this manual. Installer must be a contractor qualified in the installation and service of gas-fired heating equipment. After the installation is complete, check product operation as provided in these instructions.

1.2 Questions, Comments or Suggestions

Please direct any questions, comments or suggestions to:

Roberts-Gordon, LLC
 1250 William Street
 P.O. Box 44
 Buffalo, New York 14240-0044
 Telephone: 716.852.4400
 Fax: 716.852.0854
 Toll Free: 800.828.7450

SECTION 2: 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.

WARNING

Read this manual carefully before using the heater.

Plug the heater into a grounded three-prong ceiling outlet.

Do not install or service any part of the heater. Installation must be done by a contractor qualified in the installation and service of gas-fired heating equipment or your gas supplier.

Installer must exhaust heater outside.

Keep all persons, especially children, away from the heater.

Keep the heater out of the weather. The heater is for indoor areas such as residential garages, workshops, hobby greenhouses, small warehouses, service centers or lobbies. Do not use the heater in living or sleeping areas such as a bedroom or basement.

CAUTION

Do not use heater in an area containing corrosive chemicals.

Avoid the use of corrosive chemicals to ensure a longer life of the burner, tubing and other parts.

Failure to follow these instructions can result in property damage.

SECTION 3: INTRODUCTION

3.1 About Roberts-Gordon

Roberts-Gordon pioneered low-intensity infrared heating systems in 1962 with the introduction of its revolutionary custom-engineered CORAYVAC® system. After more than 40 years of infrared expertise in commercial and industrial applications, Roberts-Gordon now offers the CGTH-Series heater for use in residential garages and light industrial/commercial applications.

3.2 About the Heater

The CGTH-Series is a factory-assembled, gas-fired, low-intensity heating system that incorporates a balanced flue. The system has been designed for easy installation and will provide years of economical operation and trouble-free service. Not only is infrared heat efficient, it also provides the most comfortable conditions in open areas, such as garages.

Gas-Fired means it uses clean-burning natural or LP gas.

Low-Intensity means that the radiant surface of the tube does not glow red. Instead, it operates at a lower temperature (less than 1000°F) and radiates energy at a lower intensity per square foot of radiating surface. The lower temperature and intensity levels are within a range that is most effective in establishing and maintaining personal comfort levels. An aluminum reflector directs the radiant energy downward to the occupied area.

Balanced Flue means that the burner draws combustion air from outdoors and exhausts the products of combustion, also to the outdoors, through a shared opening. This is accomplished through two concentric tubes.

Radiant refers to the energy radiated by the CGTH-Series heater. Because the energy is in the form of infrared rays, it does not directly heat the air. Instead, the rays heat objects such as the floor, cars, machines and people. The warm objects, in turn, heat the air.

These combined features are the key to the exceptional comfort and fuel efficiency provided by the CGTH-Series heater.


3.3 Unpacking the Heater

3.3.1 Manpower Requirements

To prevent personal injury and damage to the heater, two persons will be required to remove the heater from the carton. Both ends of the heater should be

lifted from the carton at the same time. The burner should be lifted by gripping the bottom. The reflector of the heater should be lifted using the hanger.

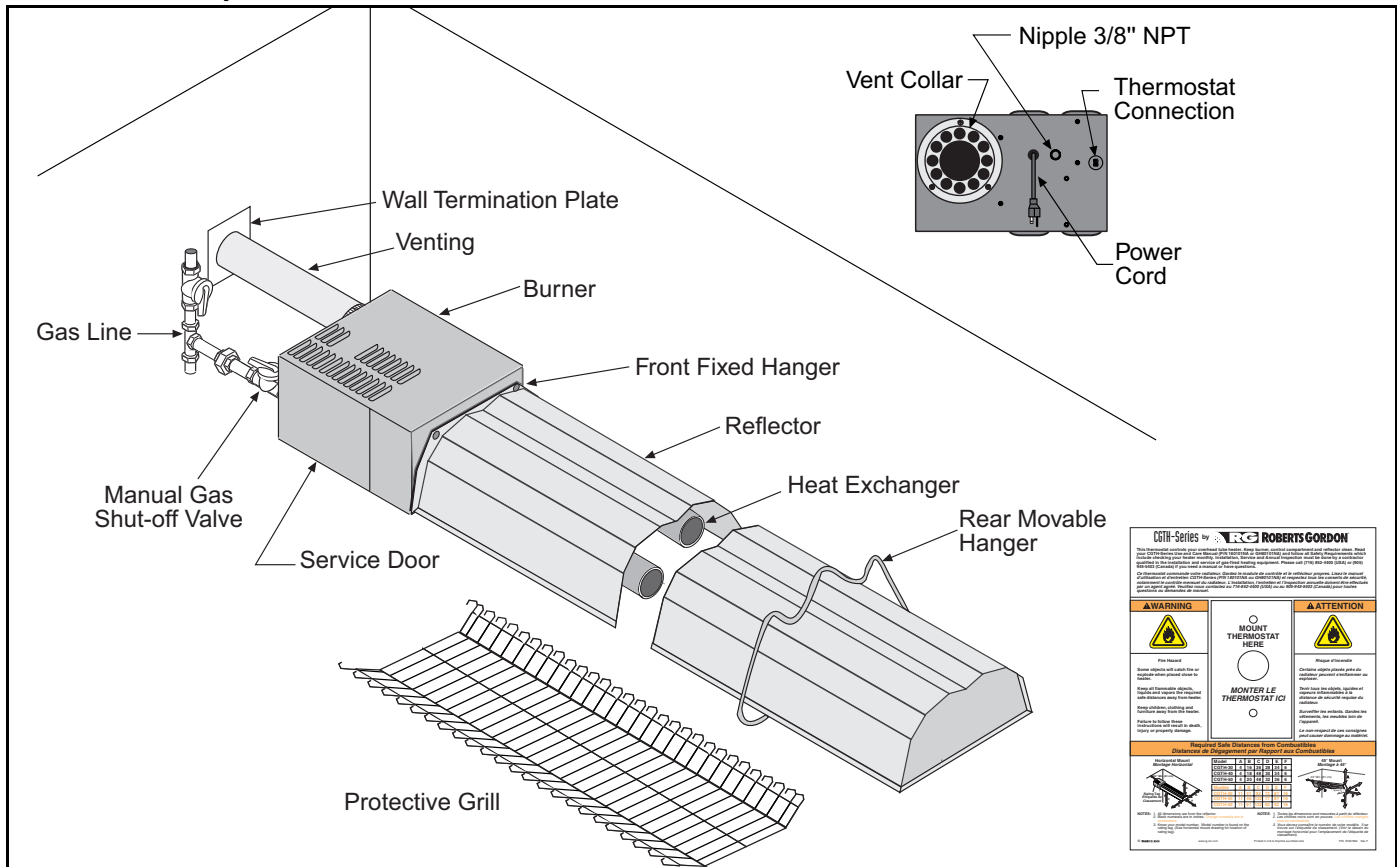
3.3.2 Safety


<p>WARNING</p> <p>Cut Hazard</p> <p>Wear protective gloves when handling aluminum reflectors.</p> <p>Edges are sharp.</p> <p>Failure to follow these instructions can result in injury.</p>

Thin sheet metal parts, such as the reflector portion of the heater and the various venting components, 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.

3.4 Components Identification

FIGURE 1: Components Identification



Burner - Contains the electrical components (i.e. blower motor, power transformer, etc.) and gas distribution components (i.e. gas valve, etc.) that make the heater work. There are no owner serviceable items contained in this box.

Front Fixed Hanger - Provides rigid support and mounting surface for the reflector. Holes are provided in the upper corners of the bulkhead to accommodate suspension hardware required for installation of the heater.

Reflector - The reflector is made from formed aluminum and reflects the radiant energy downward, bathing people and objects below.

Heat Exchanger - A U-shaped tube through which the heated products of combustion pass.

Rear Movable Hanger - Provides support for the tube and reflector at the end that is furthest from the burner. The support may be moved (within limits) to accommodate hanging of the unit.

Service Door - To be removed only by a contractor qualified in the installation and service of gas-fired heating equipment or your gas supplier. Removal of this service door provides access to the electrical

and gas distribution components.

Gas Line - Must only be installed and serviced by a licensed contractor or gas fitter.

Wall Termination Plate - Placed on the outside wall over the venting.

Venting - Installer must properly exhaust the heater outside. The 5" outer duct carries fresh air to the burner. The 3" inner duct carries the products of combustion to the outside.

Thermostat - 24 Volt Thermostat mounted with Safety Tag.

Protective Grille - Included with select models. See *Page 13, Section 5.2* for details.

Vent Collar - Accommodates a 5" (125 mm) diameter combustion air inlet duct that delivers fresh air to the burner. The fresh air enters the burner through the twelve equally spaced holes shown above. The 3" (80 mm) diameter hole in the center of the flue collar accommodates the venting duct that carries the products of combustion to be vented outdoors.

Nipple-3/8" (10 mm) NPT - Point at which the gas supply is connected to the heater.

Thermostat Connection - Two terminals to which the thermostat wires will be connected.

Power Cord - Includes a three-prong plug that must be connected to a dedicated and properly grounded three-prong ceiling outlet.

3.5 Where Can the Heater Be Installed?

The CGTH-Series heater is intended for installation in the following areas:

- Residential applications, such as:
 - garages
 - hobby greenhouses
 - workshops
- Light industrial/commercial applications, such as:
 - entranceways
 - lobby areas
 - lunch rooms
 - aircraft hangars (*See Page 7, Section 4.5.1 for restrictions*)
 - public garages (*See Page 7, Section 4.5.2 for restrictions*)

3.6 Where Can't the Heater Be Installed?

The CGTH-Series heater **is not intended** for installation in the following areas:

- Residential living or sleeping areas
- Basements

Due to high temperatures, ensure that the heater area is kept clear of furniture, draperies, clothing or other combustible materials. Children and adults should be alerted to the hazard of high surface temperatures and should stay away to avoid burns and clothing ignition. Young children should be carefully supervised when they are in the same room as the heater.

3.7 Installer's Responsibility

The CGTH-Series heater, the gas and electrical supplies, as well as the venting, must be installed in accordance with applicable specifications and codes. Only firms (or individuals) well qualified in this type of work should install the system. Consult local Building Inspectors, Fire Marshals or your local ROBERTS GORDON® independent distributor for guidance.

Use the information given in this manual together with the cited codes and regulations to perform the installation. The heater must be installed in accordance with the Minimum Required Safe Distance from Combustibles and must be vented outside. If any

aspects of the installation are unclear, consult your ROBERTS GORDON® independent distributor for clarification. The installer must furnish all needed materials that are not furnished as standard equipment. It is also the installer's responsibility to see that the materials and installation methods used result in a job that is workmanlike in appearance and is in compliance with the requirements of this manual. The installer must give this manual and the Installation, Operation and Service Manual to the owner.

SECTION 4: BEFORE USING THE HEATER

The following information is included in the Installation Manual and applies to the installer at the time of installation. The warnings are included on the product. Because your safety is important to us, we include these warnings for your information. If you find your heater is not installed according to these warnings and codes, immediately contact the installer.

4.1 System Requirements

This section provides the following information:

- Defines the gas, electric and venting requirements for the CGTH-Series heater.
- Specifies the national standards and applicable codes that apply to the gas, electric and venting requirements.
- Specifies the national standards and applicable codes that apply to non-residential installations.

4.2 Gas Service Requirements:

Inlet Connection: 3/8" Male NPT

Inlet Pressure

Natural Gas: Minimum 5.0" wc
Maximum 14.0" wc

LP Gas (Propane): Minimum 11.0" wc
Maximum 14.0" wc

Manifold Pressure

Natural Gas: 3.5" wc
LP Gas (Propane): 10.5" wc

4.2.1 Gas Type

The type of gas appearing on the nameplate must be the type of gas used. Installation must comply with local codes and recommendations of the local gas company. United States: Refer to National Fuel Gas Code, ANSI Z223.1 - latest revision (same as NFPA 54). Canada: Refer to CSA B149.1 Natural Gas and Propane Installation Code.

4.2.2 Gas Supply Lines

The size of the gas supply lines must comply with local codes and recommendations of the local gas company. United States: Refer to National Fuel Gas Code, ANSI Z223.1 - latest revision (same as NFPA 54). Canada: Refer to CSA B149.1 Natural Gas and Propane Installation Code.

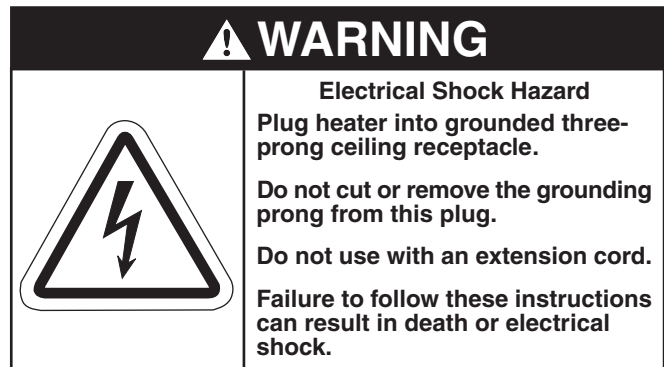
A 1/8" NPT plugged tap must be installed in the gas line connection immediately upstream of the burner that is farthest from the gas supply meter. The tap is required

for checking system gas pressure.

4.2.3 Meter and Service

Meter and service must be large enough to handle all the heaters 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.

4.3 Electrical Service Requirements



The CGTH-Series heater requires a grounded three-prong electrical outlet to be installed within 18" of the rear surface of the heater's burner box. It is recommended that the outlet for the heater be ceiling-mounted and should be on a dedicated circuit. **DO NOT** use an electrical extension cord to operate the heater.

Heater Rating: 120 VAC, 60 Hz, 1 Ø, 1 A

4.3.1 Grounding

The heater must be electrically grounded in accordance with the following codes: United States: Refer to National Electrical Code, ANSI/NFPA-70 - latest revision. Wiring must conform to the most current National Electrical Code and local ordinances. Canada: Refer to Canadian Electrical Code, CSA C22.1 Part 1 - latest revision.

4.3.2 Thermostat

It is important to note that the CGTH-Series heater is controlled by a low voltage (24V AC) thermostat supplied with the heater. The control transformer located inside the burner supplies the necessary electrical power to operate the thermostat. No other electrical power to the thermostat is required.

4.4 Venting Requirements

The CGTH-Series heater must be installed with the venting system supplied or with the optional venting kit available from Roberts-Gordon. **DO NOT** connect this heater to a separate chimney, and do not common vent with any other fuel burning appliance.


The CGTH-Series heater employs a balanced flue/air venting duct system and must conform to the following length requirements:

Maximum Length: 10' (3 m)

Minimum Length: 2' - 6" (.76 m)

Maximum Elbows: Two with natural gas units,
one with propane gas units

4.4.1 Venting Codes

⚠ WARNING	
	<p style="text-align: center;">Carbon Monoxide Hazard</p> <p>Heater must be exhausted outside.</p> <p>Use materials supplied.</p> <p>This heater needs fresh air for safe operation and must be installed so there are provisions for adequate combustion and ventilation air.</p> <p>Failure to follow these instructions can result in death or injury.</p>

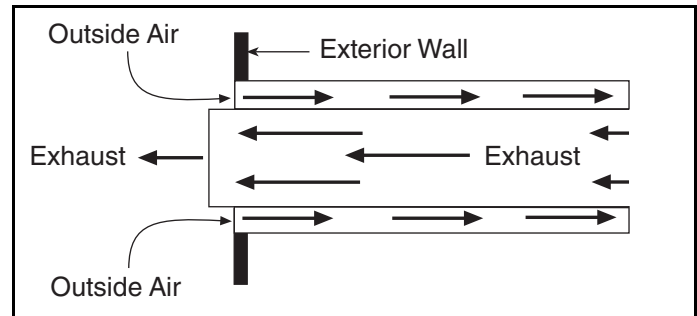
The location, size, installation and termination of vents, as well as the required safe distances from combustibles when penetrating combustible walls, must comply with local codes and recommendations of the local gas company. United States: Refer to National Fuel Gas Code, ANSI Z223.1 - latest revision (same as NFPA 54). Canada: Refer to CSA B149.1 Natural Gas and Propane Installation Code.

4.4.2 Balanced Flue Construction

The balanced flue consists of a 3" (8 cm) diameter flue which is concentrically positioned inside a 5" (12.5 cm) diameter vent pipe (See Figure 2). The 5" (12.5 cm) diameter vent supplies outside air for combustion while the 3" (8 cm) diameter flue carries the products of combustion from the heater.

The balanced flue is applicable for both horizontal and vertical venting arrangements. Vertical venting will require the optional roof venting kit available from Roberts-Gordon.

FIGURE 2: Balanced Flue



4.5 Non-Residential Installations

4.5.1 Aircraft Hangars

The CGTH-Series heater may be used in certain areas of aircraft hangars. Installation in aircraft hangars must be in accordance with the following codes: United States: Refer to Standard for Aircraft Hangars, ANSI/NFPA-409 - latest revision. Canada: Refer to Standard CSA B149.1 Natural Gas and Propane Installation Code.

- Heaters in aircraft storage or service areas must be installed a minimum of 10' (3 m) above the upper surface of wings or engine enclosures of the highest aircraft which may be housed in the hangar. (This should be measured from the bottom of the heater to the top of the wing, or engine enclosure, whichever is highest from the floor).
- In other sections of aircraft hangars, such as shops or offices, heaters must be installed a minimum of 8' (2.4 m) above the floor.
- Heaters installed in aircraft hangars shall be located so as not to be subject to damage by aircraft, cranes, movable scaffolding or other objects.
- When installed over hoists, the required safe distances from combustibles must be maintained from the uppermost point of the combustible materials placed on the hoist.

4.5.2 Public Garages

The CGTH-Series heater may be used in public garages. Installation in public garages must be in accordance with the following codes: United States: Standard for Parking Structures NFPA-88A - latest revision or the Code for Motor Fuel Dispensing Facilities and Repair Garages, NFPA-30A - latest revision. Canada: Refer to CSA B149.1 Natural Gas and Propane Installation Code.

- Heaters must be installed a minimum of 8' (2.4 m) above the floor. Required safe distances to combustibles must be maintained.

tibles must be maintained from vehicles parked below the heater.

- When installed over hoists, the required safe distances from combustibles must be maintained from the uppermost point of the combustible materials placed on the hoist.

4.5.3 Hazardous Locations

Where there is the possibility of exposure to combustible airborne material or vapor, consult the local Fire Marshal, the Fire Insurance Carrier or other authorities for approval of the proposed installation.

4.6 Heater Location

It is the Installer's Responsibility to choose a suitable mounting location for the heater. The Installer must follow the guidelines below as stated in the Installation Manual. Before using your heater, check the location. If the location does not follow these guidelines, do not use the heater. Immediately contact your installer.

- The heater must meet the minimum mounting height requirement of 7' (2.1 m) above the floor. For aircraft hangars and public garages, the heater must meet the minimum mounting height requirement of 8' (2.4 m) above the floor.
- The proposed mounting location allows for the required safe distances from combustibles such as vehicles, wood, gasoline and flammable objects, liquids and vapors.
- The proposed location of the heater will not restrict motion of passageway doors or windows.
- The proposed location will not interfere with operation of the overhead garage door, or allow the door to enter the required safe distances from combustibles.
- The proposed location will provide the best coverage of the total area to be heated.
- Consideration be given to the types of vehicles that will be parked in the garage (cars, vans, boats, RV's, etc.).
- The proposed location will allow for the required safe distances from combustibles with respect to the vehicles parked in the garage.
- The proposed location will allow the required utilities (i.e.: gas and electric) and venting to be installed (maximum vent length is 10' [3 m]).

- Sufficient clearances will exist to allow for easy access to the service door.
- Overhead structural members (rafters, beams, etc.) are accessible for attaching the heater.

SECTION 5: USING THE HEATER

5.1 Required Safe Distances from Combustibles

Once your heater is installed by a licensed contractor, you must remember to maintain the required safe distances from combustibles at all times. Combustibles are materials which may catch fire and include many common items such as your vehicle, wood and wood shavings, paper, rubber, fabrics, etc. Don't forget these materials could be in the form of liquids and vapors or may be airborne.

Combustible materials such as those noted, and any other combustible materials, must not be placed closer to any base or side of the CGTH-Series heater than the distances noted in the diagrams on the following page. If you have any questions about the required safe distances from combustibles, or the associated diagrams, please contact your installer, ROBERTS GORDON® independent distributor, or Roberts-Gordon at 716.852.4400 or 1.800.828.7450 during normal business hours which are Monday through Friday, 8:15 a.m. to 4:45 p.m., Eastern Time.





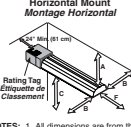
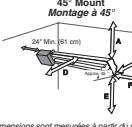
For owner safety, a thermostat tag is supplied with the CGTH-Series as a permanent reminder of the importance of maintaining the required safe distances from combustibles. Instructions for installing the tag are located in the Installation, Operation and Service manual. Immediately contact your ROBERTS GORDON® independent distributor or Roberts-Gordon if the tag is missing.

It is important to keep the required safe distances from combustibles at all times. Clearances from vehicles parked beneath heaters must be maintained. The thermostat tag (included with the heater) must be posted to identify any possible violation of the clearance distances from the heater in vehicle areas. Maximum allowable stacking height in storage areas should be identified with signs or appropriate markings. See Page 10, Figure 4 and Figure 5 for the required safe distances from combustibles.

⚠ WARNING	
	
Fire Hazard	Burn Hazard
<p>Some objects will catch fire or explode when placed close to heater.</p> <p>Keep all flammable objects, liquids and vapors the required safe distances to combustibles away from heater.</p> <p>Failure to follow these instructions can result in death, injury or property damage.</p>	<p>Keep all persons, especially children, away from heater.</p> <p>Do not touch any part of the heater.</p> <p>Heater is very hot.</p> <p>Failure to follow these instructions can result in death, injury or property damage.</p>

The warnings on this page appear on the heater and are also on the thermostat tag to serve as a constant reminder to maintain the required safe distances from combustibles at all times. If you do not have either the label on your heater or the thermostat tag, immediately call your installer or Roberts-Gordon for replacement.

FIGURE 3: Thermostat Tag

CGTH-Series by  ROBERTS GORDON																																																									
<p>This thermostat controls your overhead tube heater. Keep burner, control compartment and reflector clean. Read your CGTH-Series Use and Care Manual (PN 180101NA or GH80101NA) and follow all Safety Requirements which include checking your heater monthly. Installation, Service and Annual Inspection must be done by a contractor qualified in the installation and service of gas-fired heating equipment. Please call (716) 852-4400 (USA) or (905) 945-5403 (Canada) if you need a manual or have questions.</p> <p><i>Ce thermostat commande votre radiateur. Gardez le module de contrôle et le réflecteur propres. Lisez le manuel d'utilisation et d'entretien CGTH-Series (PN 180101NA ou GH80101NA) et respectez tous les conseils de sécurité, notamment le contrôle mensuel du radiateur. L'installation, l'entretien et l'inspection annuelle doivent être effectués par un agent agréé. Veuillez nous contacter au 716-852-4400 (USA) ou au 905-945-5403 (Canada) pour toutes questions ou demandes de manuel.</i></p>																																																									
⚠ WARNING	⚠ ATTENTION																																																								
																																																									
<p>Fire Hazard</p> <p>Some objects will catch fire or explode when placed close to heater.</p> <p>Keep all flammable objects, liquids and vapors the required safe distances away from heater.</p> <p>Keep children, clothing and furniture away from the heater.</p> <p>Failure to follow these instructions will result in death, injury or property damage.</p>	<p>Risque d'incendie</p> <p>Certains objets placés près du radiateur peuvent s'enflammer ou exploser.</p> <p>Tenir tous les objets, liquides et vapeurs inflammables à la distance de sécurité requise du radiateur.</p> <p>Surveiller les enfants. Gardez les vêtements, les meubles loin de l'appareil.</p> <p>Le non-respect de ces consignes peut causer dommage au matériel.</p>																																																								
<p>MOUNT THERMOSTAT HERE</p>  <p>MONTER LE THERMOSTAT ICI</p>																																																									
<p>Required Safe Distances from Combustibles <i>Distances de Dégagement par Rapport aux Combustibles</i></p>																																																									
<p>Horizontal Mount <i>Montage Horizontal</i></p> 	<p>45° Mount <i>Montage à 45°</i></p> 																																																								
<table border="1"> <thead> <tr> <th>Model</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td>CGTH-30</td> <td>4</td> <td>16</td> <td>36</td> <td>28</td> <td>34</td> <td>6</td> </tr> <tr> <td>CGTH-40</td> <td>4</td> <td>18</td> <td>48</td> <td>30</td> <td>34</td> <td>6</td> </tr> <tr> <td>CGTH-50</td> <td>4</td> <td>20</td> <td>48</td> <td>32</td> <td>36</td> <td>6</td> </tr> </tbody> </table> <p><i>Modelle</i></p> <table border="1"> <thead> <tr> <th>Modèle</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td>CGTH-30</td> <td>11</td> <td>41</td> <td>92</td> <td>72</td> <td>87</td> <td>16</td> </tr> <tr> <td>CGTH-40</td> <td>11</td> <td>46</td> <td>122</td> <td>77</td> <td>87</td> <td>19</td> </tr> <tr> <td>CGTH-50</td> <td>11</td> <td>51</td> <td>122</td> <td>82</td> <td>92</td> <td>16</td> </tr> </tbody> </table>	Model	A	B	C	D	E	F	CGTH-30	4	16	36	28	34	6	CGTH-40	4	18	48	30	34	6	CGTH-50	4	20	48	32	36	6	Modèle	A	B	C	D	E	F	CGTH-30	11	41	92	72	87	16	CGTH-40	11	46	122	77	87	19	CGTH-50	11	51	122	82	92	16	<p>NOTES:</p> <ol style="list-style-type: none"> All dimensions are from the reflector. Black numerals are in inches. <i>Orange numerals are in centimeters.</i> Know your model number. Model number is found on the rating tag. (See horizontal mount drawing for location of rating tag).
Model	A	B	C	D	E	F																																																			
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Your heater may be installed in one of three ways: horizontal, 45° tilt left or 45° tilt right. Since the distances for the tilt installation are the same, the chart only shows one (the 45° tilt left). To determine the minimum required safe distances for your heater, you must know the mounting type and model number of your heater.

FIGURE 4: Horizontal Installation

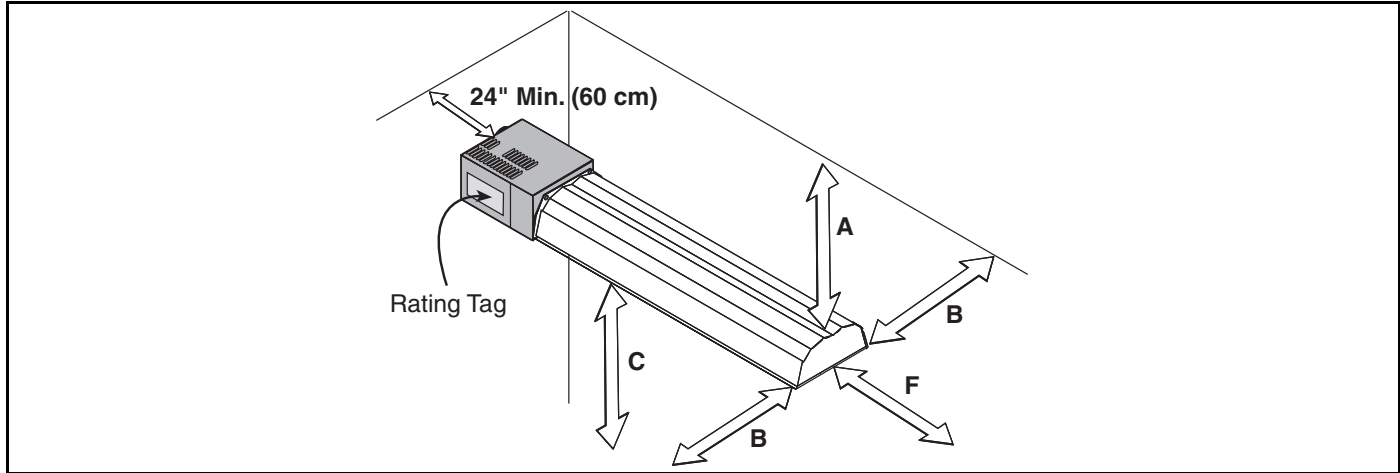
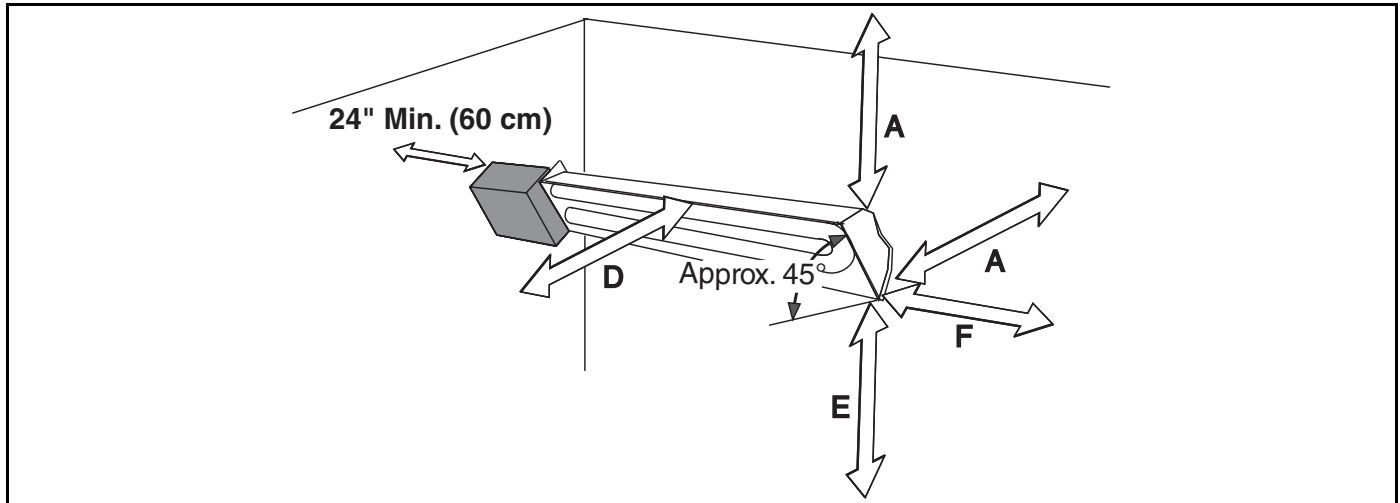


FIGURE 5: 45° Tilted Installation



Required Safe Distances from Combustibles*												
Model	Inches						Metric (cm)					
	A	B	C	D	E	F	A	B	C	D	E	F
CGTH-30	4	16	36	28	34	6	11	41	92	72	87	16
CGTH-40	4	18	48	30	34	6	11	46	122	77	87	16
CGTH-50	4	20	48	32	36	6	11	51	122	82	92	16

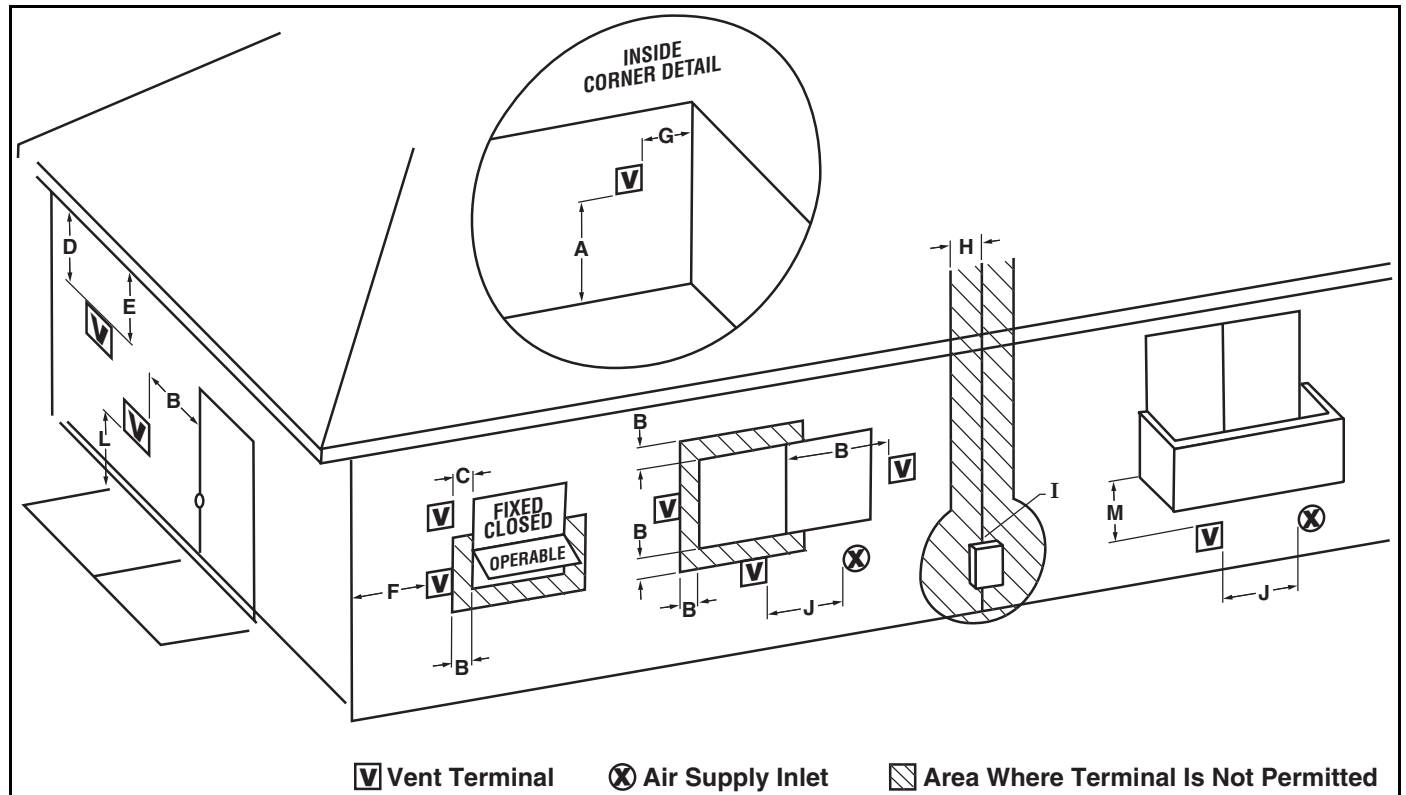
*All dimensions are from the reflector.

NOTE: All dimensions indicate the required safe distances from combustibles, dimension "C" and "E" DO NOT indicate the required mounting height. The minimum mounting height is 7' (2.1 m), except for aircraft hangars and public garages. (See Page 7, Sections 4.5.1 and 4.5.2.)

Flue clearances from combustibles are zero. It is not necessary to provide additional clearance on penetrations through the wall or roof.

Know your model number. Model number is found on the rating tag.

FIGURE 6: Vent Terminal Clearances



		Canadian Installations ¹	US Installations ²
A	Clearance above grade, veranda, porch, deck, or balcony	12" (30 cm)	12" (30 cm)
B	Clearance to window or door that may be open	12"	9"
C	Clearance to permanently closed window	12"	12"
D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2' (61 cm) from the center line of the terminal.	12"	12"
E	Clearance to Unventilated soffit	12"	12"
F	Clearance to Outside Corner	*	*
G	Clearance to inside corner	18"	18"

H	Clearance to each side of center line extended above meter/regulator assembly	3' (91 cm) within a height 15' (4.5 m) above the meter/regulator assembly	*
I	Clearance to service regulator vent outlet	3' (91 cm)	*
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance	12" (30 cm)	9" (23 cm)
K	Clearance to mechanical air supply inlet	6' (1.83 m)	3' (91 cm) above if within 10' (3 m) horizontally
L	Clearance above paved sidewalks or paved driveway located on private property	7' (2.13 m)*	7' (2.13 m)*
M	Clearance under veranda, porch, deck, or balcony	12' (30 cm)**	12" (30 cm)**

¹ In accordance with the current CSA B149.1, Natural Gas and Propane Installation Code

² In accordance with the current ANSI Z223.1/NFPA 54, National Fuel Gas Code

* A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.

** Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.

* For clearances not specified in ANSI Z223.1/NFPA 54 or CSA B149.1, one of the following shall be indicated:

- A minimum clearance value determined by testing in accordance with section 4.7.3, 6.5.5, 8.5.5; or;
- A reference to the following footnote:

"Clearance in accordance with local installation codes and the requirements of the gas supplier."

5.2 Protective Grille

⚠ WARNING	
	
Fire Hazard	Burn Hazard
<p>Some objects will catch fire or explode when placed close to heater.</p> <p>Keep all flammable objects, liquids and vapors the minimum required clearances to combustibles away from heater.</p> <p>Failure to follow these instructions can result in death, injury or property damage.</p>	<p>Keep all persons, especially children, away from heater.</p> <p>Do not touch any part of the heater.</p> <p>Heater is very hot.</p> <p>Failure to follow these instructions can result in severe injury.</p>

- Do not touch the heater
- Keep all persons, especially children, away from the heater.
- Use of protective grille (included with select models) is recommended.

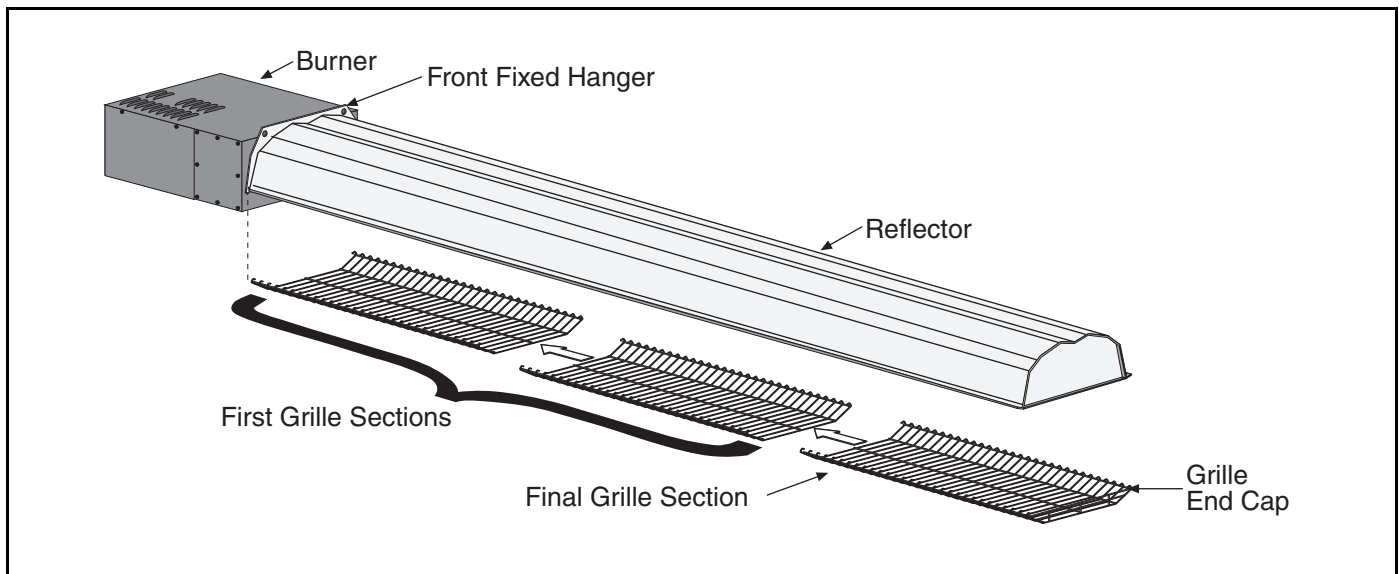
A protective grille is included with select models of the CGTH-Series heater. This grille is supplied in sections and must be installed on the underside of the reflector prior to operation.

The Model CGTH-30 heater is 8' (2.5 m) long and requires installation of two protective grille sections and one grille endcap, while the Models CGTH-40 and CGTH-50 are 11' 6" (3.5 m) long and require three protective grille sections and one grille endcap.

One grille has a formed end panel and is installed at the end of the reflector that is furthest from the burner box. The other grille has an open-end and is installed closest to the burner box.

To purchase the protective grille for your heater, please contact your installer.

FIGURE 7: Reflector and Grille

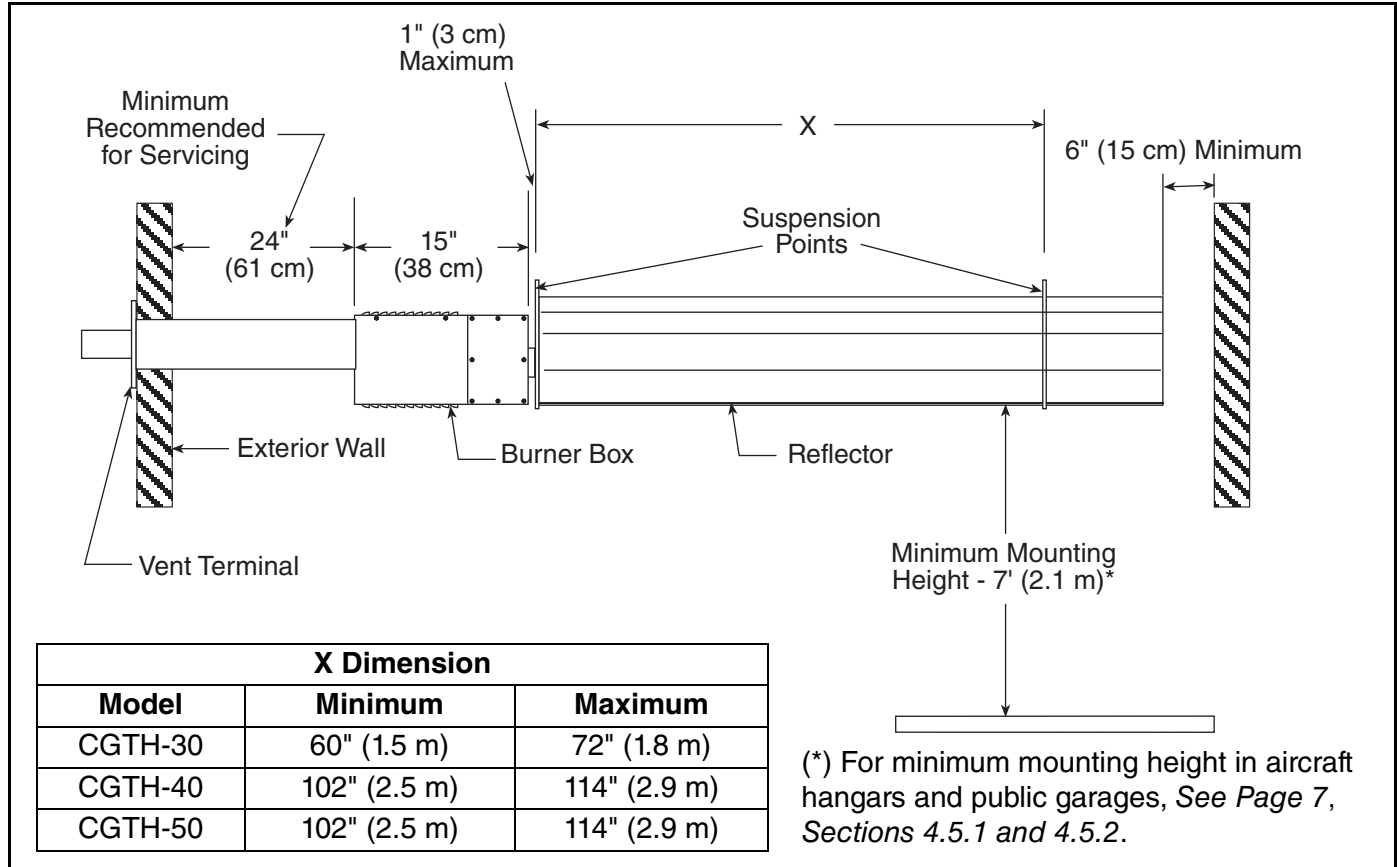


5.3 Rear Movable Hanger Limits

Figure 8 shows a typical installation of the CGTH-Series heater. The drawing specifies the allowable range of distance between the front fixed hanger and the rear movable hanger.

The rear hanger should only be moved if the distance between both hangers is not within the allowable range.

FIGURE 8: Typical Installation



FOR YOUR SAFETY READ BEFORE OPERATING 5.4 Operating Instructions.**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. Leave the building.
6. Immediately call your local gas supplier after leaving the building. Follow the gas supplier's instructions.
7. If you cannot reach your gas supplier, call the Fire Department.

⚠ WARNING**Fire Hazard**

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

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.

1. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. **DO NOT** try to light the burner by hand.
2. **BEFORE OPERATING** 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.
3. 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.
4. **DO NOT** use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and replace any part of the control system and any gas control which has been under water.

⚠ WARNING**Electrical Shock Hazard**

Plug heater into grounded three-prong ceiling receptacle.

Do not cut or remove the grounding prong from this plug.

Do not use with an extension cord.

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

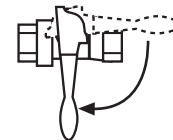
⚠ WARNING**Electrical Shock Hazard**


Disconnect electrical power before service or maintenance.

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

STOP! Read the safety information above.

1. Set the thermostat to the lowest setting.
2. Turn off all electric power to the heater.
3. Do not try to light the burner by hand.
4. Turn off the manual gas valve in the heater supply line.

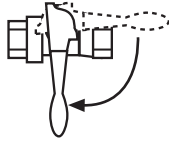


5. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** If you do not smell gas, go to the next step.
 6. Open the manual gas valve in the heater supply line.
- 
7. Turn on electric power to the heater.
 8. Set the thermostat to the desired setting.
 9. If the heater will not operate, *See Section 5.5* and call your service technician or gas supplier.

5.5 To Turn Off Gas To Heater

1. Set the thermostat to the lowest setting.

- Turn off all electric power to the heater if service is to be performed.
- Turn off the manual gas valve in the heater supply line.



- Reset is accomplished by removing power from the heater for at least five seconds.
- With a three-try module, when the flame is established and then lost on the first or second trial, the gas valve will automatically turn off. A purge and trial for ignition will then occur.

5.6 Sequence of Operation

- When the thermostat calls for heat, the blower motor will energize.
- When the motor approaches nominal running speed, the pressure switch closes and activates the ignition module which in turn initiates the purge.
- The ignition module then energizes the spark igniter.
- When sparking begins, the gas valve is energized.
- If a flame is detected, the gas valve remains open. When the call for heat is satisfied, the system control mechanism de-energizes and the gas valve is turned off.
- If no flame is detected, the gas valve is closed, and a purge period begins. After the purge period, the ignition module energizes the spark igniter and the gas valve. If a flame is still not established, a third and final purge/ignition sequence is begun. After three failed attempts, the system control mechanism will lock out for a period of one hour or until the unit is reset.

5.7 Venting

As mentioned on Page 5, Section 3.7, it is the Installer's Responsibility to properly vent (exhaust) the heater outside. Please make sure your heater is vented. If it is not vented, do not use the heater. Immediately call your installer.

Your heater may be vented in one of three ways: horizontal through the wall, horizontal with an elbow through the wall or vertical through the roof. You should know the way your heater is vented. Refer to the following drawings to determine the type of venting you have. If you are not sure, please contact your installer.

⚠ WARNING	
	Carbon Monoxide Hazard
	Heater must be exhausted outside.
	Use materials supplied.
This heater needs fresh air for safe operation and must be installed so there are provisions for adequate combustion and ventilation air.	
Failure to follow these instructions can result in death or injury.	

FIGURE 9: Horizontal Venting Through The Wall

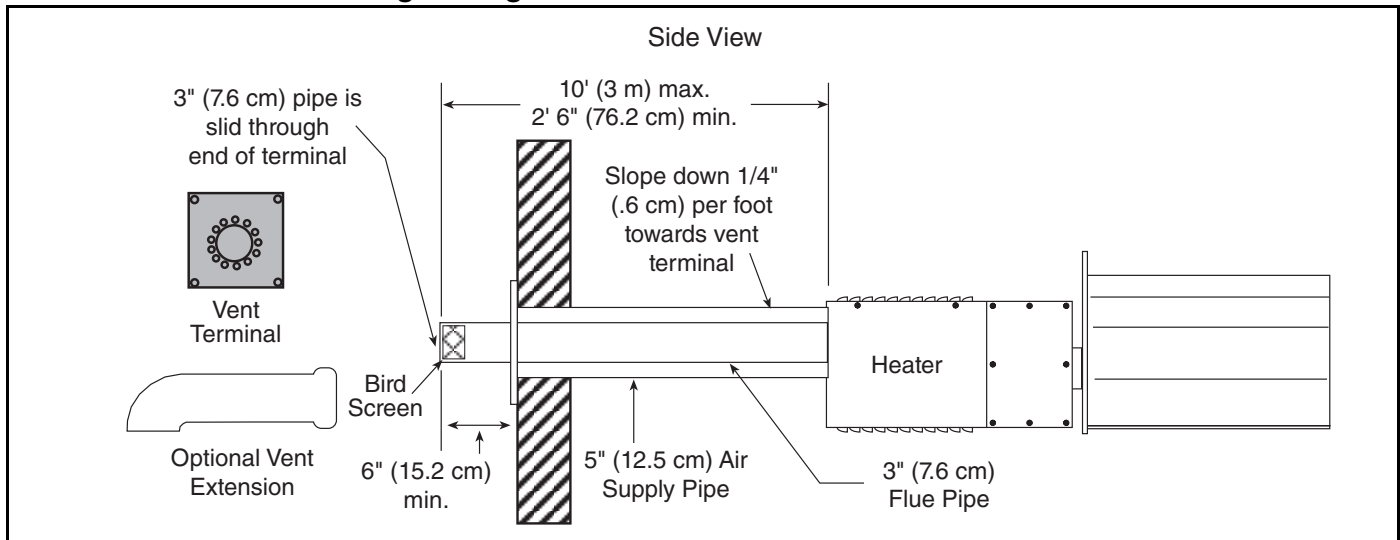


FIGURE 10: Horizontal Venting With An Elbow

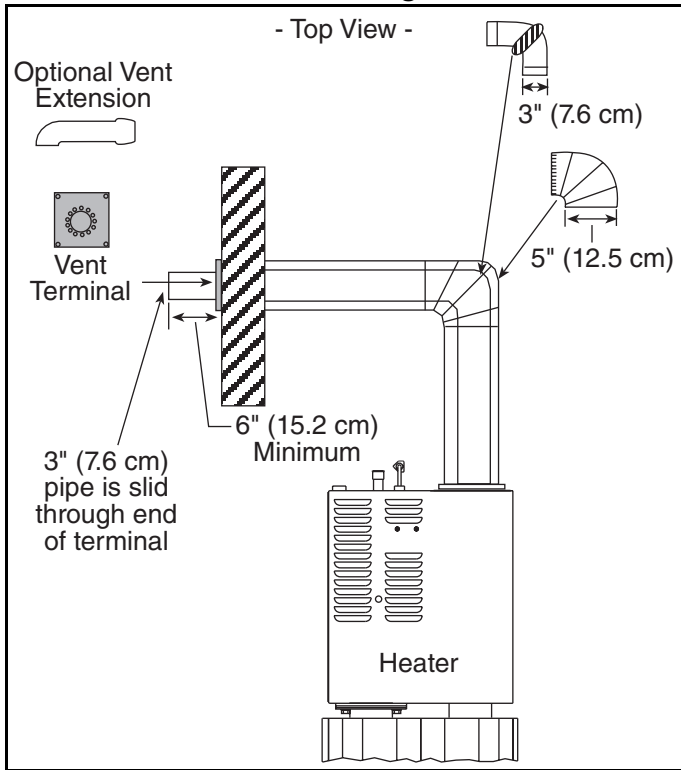
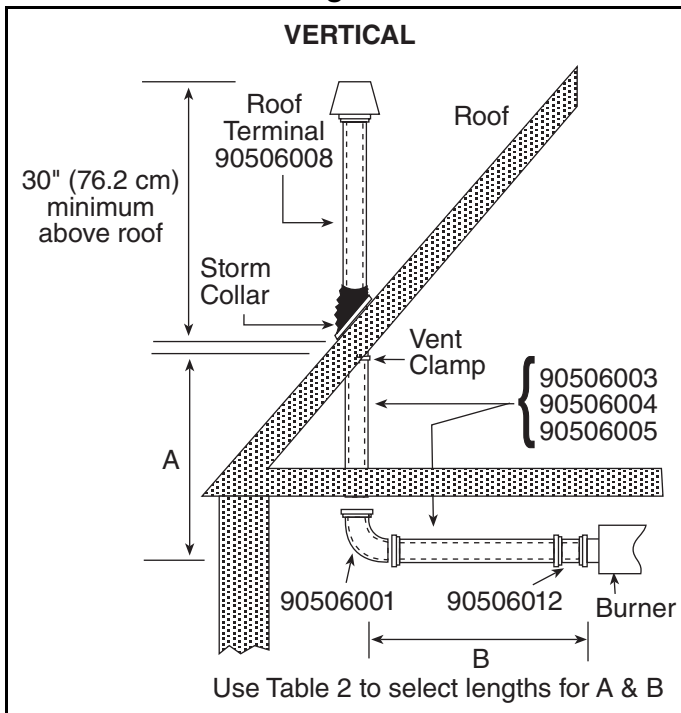


FIGURE 11: Roof Venting



SECTION 6: MCARING FOR THE HEATER

To ensure your safety and years of trouble-free operation of the heater, inspections by both the contractor and owner are essential.

6.1 Annual Inspection

Before every heating season, a licensed contractor must perform a thorough inspection of the heater. s, electrical and thermostat connections as well as the venting and suspensions are some of the areas requiring inspection.

6.2 Monthly Inspection

The owner must visually inspect the heater each month using the checklist on Page 18, Section 6.3. Check only the itemson this list and follow the instructions given.

6.3 Maintenance Checklist

⚠ WARNING

Turn off gas and electrical supplies before performing service or maintenance.

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

Installation Code and Annual Inspections:

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

To help facilitate optimum performance and safety, Roberts-Gordon recommends that a qualified contractor annually inspect your ROBERTS GORDON® products and perform service where necessary, using only replacement parts sold and supplied by Roberts-Gordon LLC.

The Vicinity of the Heater	<p>Do not store or use flammable objects, liquids or vapors near the heater. Immediately remove these items if they are present.</p> <p>Keep the heater clear of clothing, furniture, draperies or other combustible materials. Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns and clothing ignition. Young children should be carefully supervised when they are in the same room as the heater.</p>
Vehicles and Other Objects	<p>Maintain the clearances to combustibles.</p> <p>Do not hang anything from, or place anything on, the heater.</p> <p>Make sure nothing is lodged underneath the reflector, in between the tubes or in the decorative or protective grilles (included with select models).</p> <p>Immediately remove objects in violation of the clearances to combustibles.</p>
Power Cord	<p>There should be no exposed wire on the cord or damage on the plug.</p>
Inside Venting	<p>Venting must be intact. Using a flashlight, look for obstructions, cracks on the pipe, gaps in the sealed areas or corrosion.</p> <p>The area must be free of dirt and dust.</p> <p>Remove any carbon deposits or scale using a wire brush.</p>
Outside Air Inlet	<p>Inlet must be intact. Look for obstructions, cracks on the pipe, gaps in the sealed areas or corrosion.</p> <p>The area must be free of dirt and dust. Clean and reinstall as required.</p>
Tubes	<p>Make sure there are no cracks.</p> <p>Contact a licensed contractor for repair.</p>
Gas Line	<p>Contact a licensed contractor for repair.</p>

