

### 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.

B-2

B-4

B-6

B-8

B-9

B-10

B-12

B-12A

E-9

E-12

E-12A

# Fuel Conversion Kit Instructions

## ⚠ 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.



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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.

Due to the nature of gas conversions, it is important you use the correct conversion kit for the heater model and gas you are converting to. Use only genuine ROBERTS GORDON® conversion kits.

This heater is designed for heating nonresidential, indoor spaces, where exposed surfaces of heating equipment cannot exceed temperatures of 750 °F (399 °C) in facilities where compressed natural gas (CNG) or liquid natural gas (LNG) are present. Do not install in residential spaces.

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 or your ROBERTS GORDON® independent distributor to obtain replacement signs or labels.

### 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). 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.

## SECTION 2: INSTALLER RESPONSIBILITY

The installer is responsible for the following:

- To ensure the system is designed in accordance with the parameters of the CRV-Series Design Manual (P/N 127500NA).
- To install the heater, as well as the gas and electrical supplies, in accordance with applicable specifications and codes. Roberts-Gordon 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.
- To plan location of supports.
- To provide access to burners for servicing on all sides 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 a approved application.

### 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 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 (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. 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

 <b>CAUTION</b>

<p style="text-align: center;"><b>Product Damage Hazard</b></p> <p><b>Do not use heater in area containing corrosive chemicals.</b></p> <p><b>Refer to appropriate Material Safety Data Sheets (MSDS).</b></p> <p><b>Failure to follow these instructions can result in product damage.</b></p>


Roberts-Gordon 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: FOR NATURAL TO PROPANE CONVERSIONS ONLY****FIGURE 1: Conversion Kit Regulator Installation in Valve (Natural to Propane)**

<p>This appliance has been converted to _____ fuel.</p> <p>Orifice: _____</p> <p>Manifold Pressure: _____</p> <p>Input: _____</p> <hr/> <p>Cet appareil a été converti au: _____</p> <p>Injecteur: _____</p> <p>Pression à la tubulure d'alimentation: _____</p> <p>Débit calorifique: _____</p> <hr/> <p>Este artefacto se ha convertido para funcionar con combustible _____</p> <p>Orificio: _____</p> <p>Presión del colector: _____</p> <p>Entrada: _____</p> <p style="text-align: right; font-size: small;">P/N 91039400 Rev C</p>	<div style="background-color: black; color: white; text-align: center; padding: 5px; font-weight: bold; font-size: 1.2em;">             ! WARNING           </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;">  <div style="margin-left: 10px;"> <p><b>Check conversion kit part Number before proceeding.</b></p> <p><b>Kit part number must match the corresponding model number.</b></p> <p><b>Failure to follow these instructions can result in death, injury or property damage.</b></p> </div> </div>
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Gas Conversion Label (P/N 91039400)



Orifice (P/N See table below)

**3.1 Contents of Fuel Conversion Kits (Natural to Propane)**

All kits include this manual and the Installation, Operation and Service Manual.

Kit Number	Model	Orifice P/N	Shutter	Label
CRVB04NP	4	02791039	-	91039400
CRVB06NP	6	02791030	-	91039400
CRVB08NP	8	02791026	-	91039400
CRVB09NP	9	02791019	-	91039400
CRVB10NP	10	02791021	-	91039400
CRVB12NP	12	02791012	02753212	91039400

SECTION 4: FOR PROPANE TO NATURAL CONVERSIONS ONLY  
FIGURE 2: Conversion Kit Regulator Installation in Valve (Propane to Natural)

This appliance has been converted to \_\_\_\_\_ fuel.

Orifice: \_\_\_\_\_

Manifold Pressure: \_\_\_\_\_

Input: \_\_\_\_\_

Cet appareil a été converti au: \_\_\_\_\_

Injecteur: \_\_\_\_\_

Pression à la tubulure d'alimentation: \_\_\_\_\_

Débit calorifique: \_\_\_\_\_


Este artefacto se ha convertido para funcionar con combustible \_\_\_\_\_

Orificio: \_\_\_\_\_

Presión del colector: \_\_\_\_\_

Entrada: \_\_\_\_\_

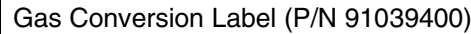
P/N 91039400 Rev C


**WARNING**

**Check conversion kit part Number before proceeding.**

**Kit part number must match the corresponding model number.**

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





Orifice: (P/N See table below)


4.1 Contents of Fuel Conversion Kits (Propane to Natural)

All kits include this manual and the Installation, Operation and Service Manual.

Kit Number	Model	Orifice P/N	Shutter	Label
CRVB04PN	4	02791030	-	91039400
CRVB06PN	6	02791026	-	91039400
CRVB08PN	8	02791016	-	91039400
CRVB09PN	9	02791006 & 02791004	-	91039400
CRVB10PN	10	02791007 & 02791003	-	91039400
CRVB12PN	12A	02791001	02753211	91039400



## SECTION 5: FUEL CONVERSION INSTRUCTIONS


<p><b>Severe Injury Hazard</b></p> <p><b>Secure burner to burner tube with nuts and lockwashers.</b></p> <p><b>Hang heater with materials with a minimum working load of 75 lbs (33 kg).</b></p> <p><b>Failure to follow these instructions can result in death, injury or property damage.</b></p>

6, for regulator location.

If R-400 regulator is installed use brown orifice (P/N 02791004) for CRV-B/E-9, dark green orifice (P/N 02791003) for CRV-B/E-10. If R-500 regulator is installed use silver orifice (P/N 02791006) for CRV-B/E-9, white orifice (P/N 02791007) for CRV-B/E-10.

It may be easier to remove the burner to a workbench; however, it can be converted in place. If you are converting the burner in place, skip to *Step 5.3*. If the orifice falls off of the hex key into the mixing chamber, it will be necessary to remove the unit to get the orifice out. It is best to use a sharp (new) hex key which will fit tightly into the orifice.

### 5.1 Introduction

The CORAYVAC® burners operate with a "zero" regulator for both propane and natural gas; they are factory set on a special flow bench. Since each unit uses the same regulator, no spring changes or adjustments are necessary when converting a CORAYVAC® burner. **Do not Adjust The Zero Regulator.**

Three separate conditions exist for converting between gases:

1. The CRV-B/E series, with the exception of the CRV-B/E-12 and CRV-B/E-12A, are converted by changing the orifice only.
2. The CRV-B/E-12 and the CRV-B/E-12A require a change of the primary air shutter in addition to the orifice.
3. The CRV-B-2 is not convertible.

**NOTE:** There have been two different zero regulators used in the CRV-B/E-9 and CRV-B-10 burners. The type of zero regulator used will determine the orifice needed. If you are converting a CRV-B/E-9 or CRV-B-10 from propane to natural gas, determine which regulator is being used in your burner (see below)

The Smaller Maxitrol R-400 regulator was in use beginning in 1991 and ending in March 1996 and was replaced exclusively by the R-500 at this time. The R-400 measures approximately 2" x 2" x 3"; the R-500 measures 3" x 3" x 4" 1/2". Each is clearly marked with the model number. See *Page 9, Figure*

**Step 5.2 Burner Removal**

1. Turn off gas supply valve, disconnect gas from burners.
2. Turn off power supply and disconnect wires from burners and pump.
3. Unplug thermostat wires from burner.
4. If outside air is installed, disconnect.
5. Remove the bolts which hold the burner on the transition tube using a 1/2" wrench.

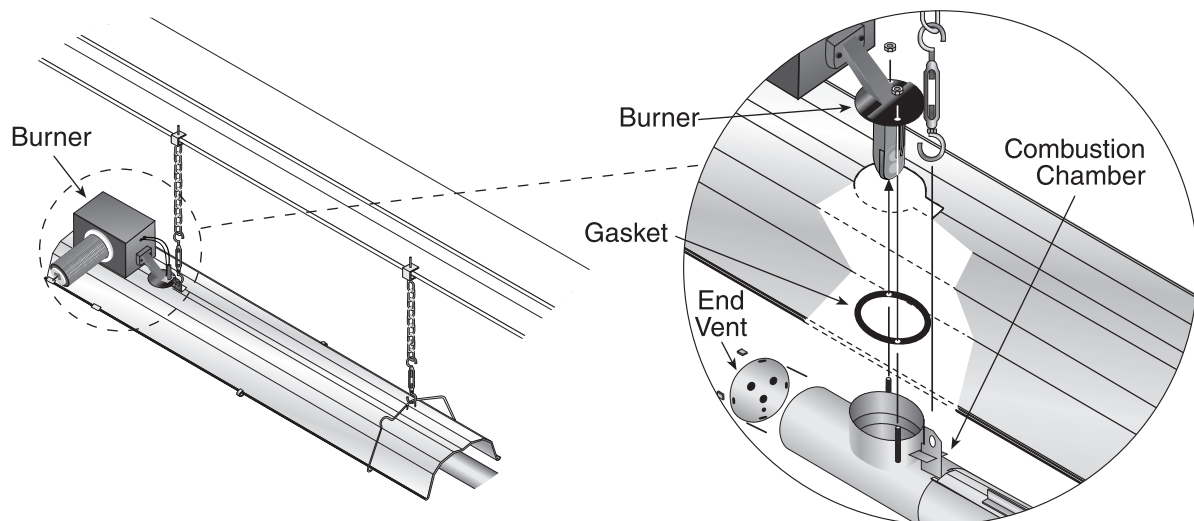
6. Remove the burner. See *Figure 3*.

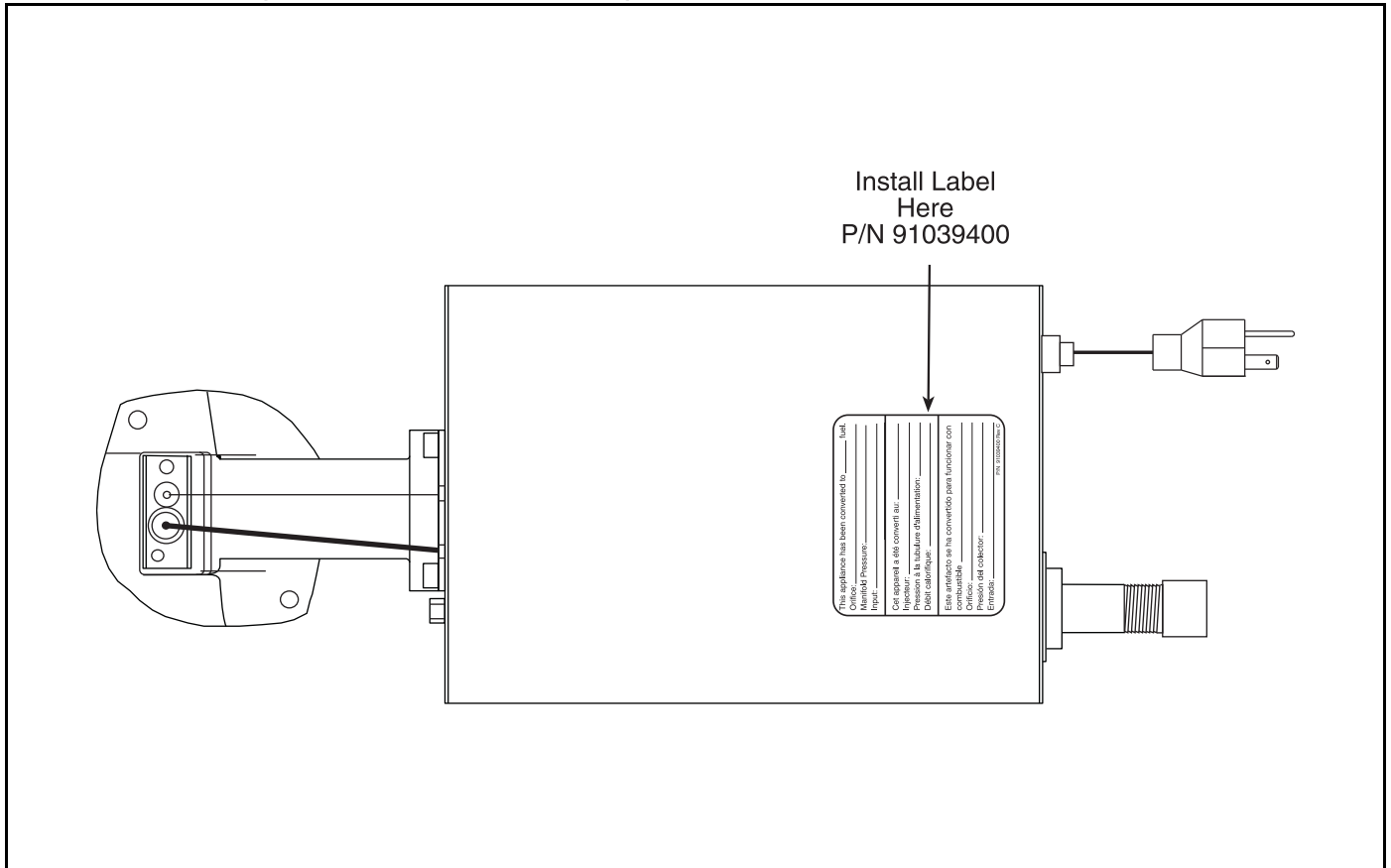
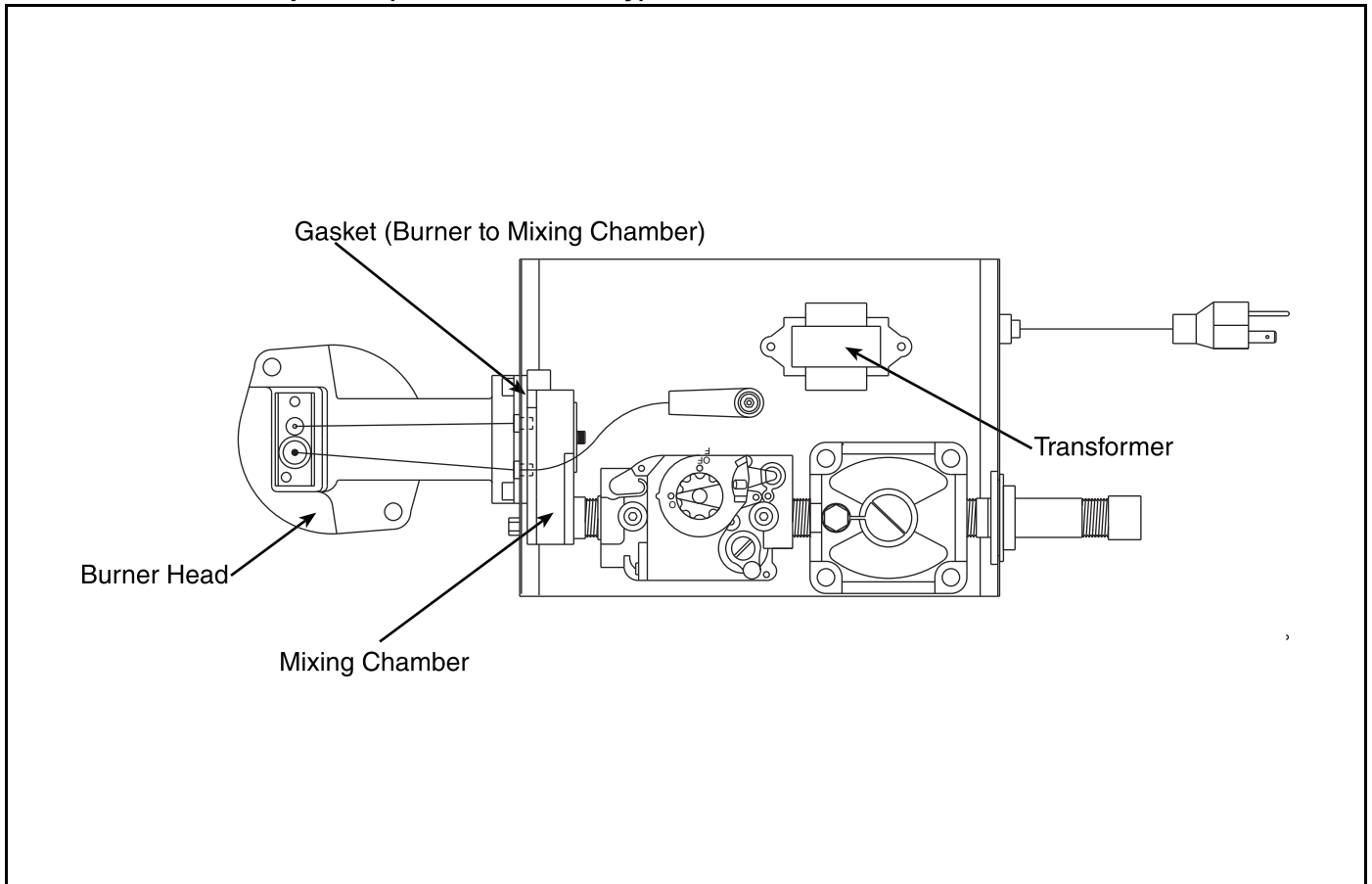
7. Save the gasket (P/N 02568200) or re-install a new one after conversion.

**Step 5.3 Door Assembly Removal**

Remove the wing screws for each door and set the control side doors aside. See *Page 7, Figure 4*.

**FIGURE 3: Burner Assembly Overview**



**FIGURE 4: Burner (External View From Below)****FIGURE 5: Burner, Top View (Internal Assembly)**

### Step 5.4 Changing the Orifice

1. Remove the plug in the mixing chamber with a 7/16" open end wrench and set aside for replacement.
2. Remove and discard the gas orifice using a 1/4" hex key.
3. Apply a small amount of pipe sealant to the threads of the replacement orifice included with this kit (See Page 8, Table 1 to verify orifice color). Be aware that over application of sealant may cause blockage of the orifice. Insert and tighten the replacement orifice.

**CAUTION:** Do not over-tighten the orifice. The torque value for the orifice is 15 in/lbs; contact your factory representative for more details.

**NOTE:** Insure that the gas orifice color matches the color chart below for the model and gas of the unit you are converting.

**Table 1: Orifice Identification**

CRV-B/E Model	Natural	Propane
2	Brass	Not available
4	Yellow	Red
6	Pink	Yellow
8	Blue	Pink
9	w/R400 Brown	Red
9	w/R500 Silver	Red
10	w/R400 Dark Green	Green
10	w/R500 White	Green
12A (See Note)	Gray (also need #11 shutter)	-
12 (See Note)	-	Black (also need #12 shutter)

4. When converting the CRV-B/E-12 or CRV-B/E-12A, the air shutter must be changed: Using a 9/64" hex key, remove the screw and shutter and replace with the new one supplied with the kit.
5. Replace the plug in the mixing chamber.
6. If the burner is removed, re-install the gasket and the burner on the combustion chamber. Reconnect outside air, gas and electrical supplies. For proper installation procedures, see venting, gas piping and electrical sections of the Installation, Operation and Service Manual included in this Conversion Kit.

### Step 5.5 Check Operation of the Unit

1. Turn on gas and electrical power to system and unit.
2. Cycle thermostat.

3. When unit cycles, the spark ignitor should ignite the main flame immediately.

**NOTE:** When converting from natural to propane gas, there may be a delay until the gas is purged from the system.

4. Observe the flame quality: look for a steady even flame with no pull-off from the burner face (indicating a lean condition) or a bushy green flame (indicating rich mixture).
5. Replace doors and wing screws.
6. **Do Not Adjust The Zero Regulator.**

**NOTE:** The manifold pressure, as listed on the serial plate and on the gas conversion plate (See Page 11, Figure 8), for CORAYVAC® is always -0.7" w.c. This is a nominal figure derived using a CRV-B-10 Natural Gas unit under laboratory conditions. The actual manifold pressure will vary from 0" w.c. to -1.5" w.c. or more depending on the system configuration, system vacuum and burner rate and location. Manifold pressure, or vacuum at the orifice, is normally less negative than the system or "end vent vacuum" while the unit is operating. If any step is unclear, please contact your Roberts-Gordon or ROBERTS GORDON® independent distributor.

## ⚠ WARNING

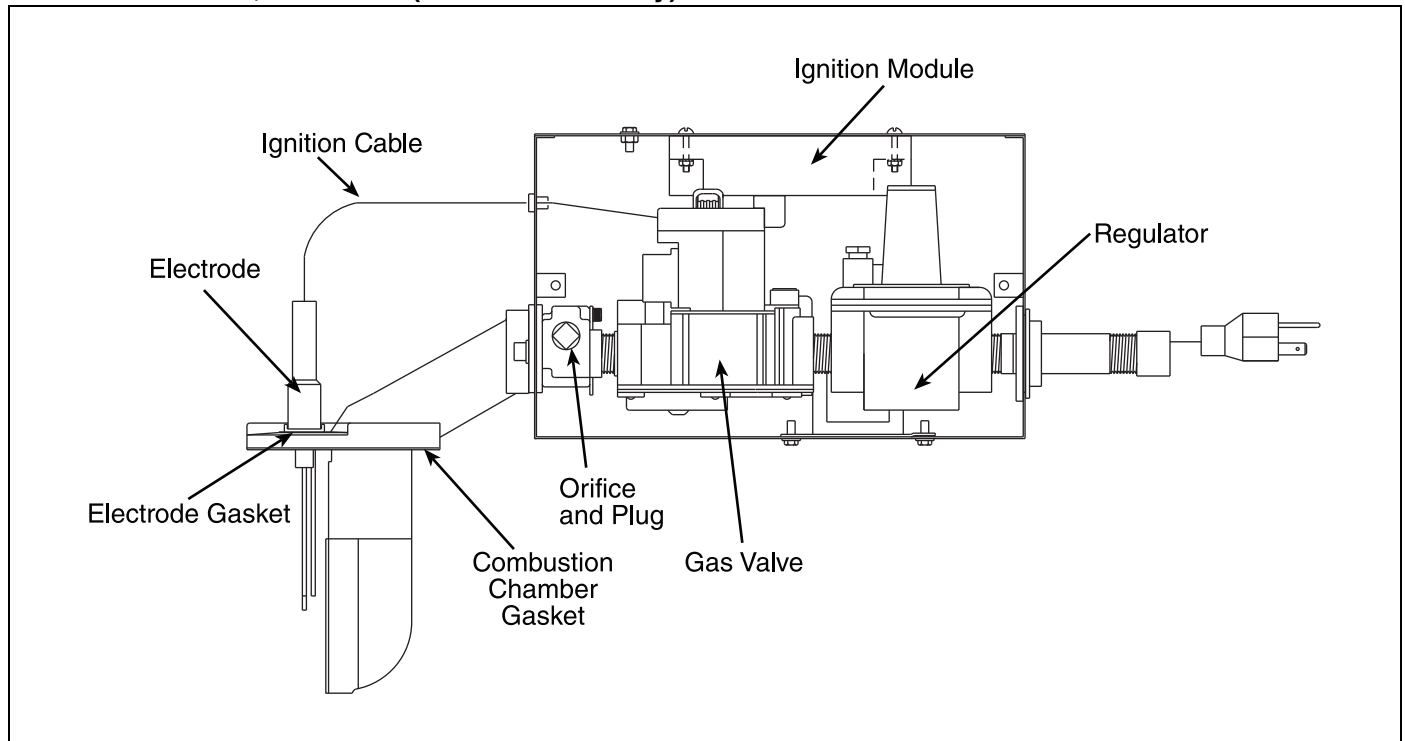


### Severe Injury Hazard

**Secure burner to burner tube with nuts 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.**

**FIGURE 6: Burner, Side View (Internal Assembly)****Step 5.6 Setting the Vacuum**

1. Turn on gas and electrical power to system and unit.
2. Set thermostats above room temperature. See that all burners are operating properly.
3. Allow at least one-half hour operation for temperature to normalize, then check system vacuum balance. Vacuum can be measured by connecting a manometer to the end vent as shown on *Page 11, figure 10*.
4. Normal end vent vacuum should be set at approximately 2.5" w.c. (hot).
5. Vacuum adjustments are made by means of the damper in the pump inlet and the adjustable damper coupling(s) in the system. Check the vacuum at all end vents and then adjust the damper coupling to obtain equal vacuum readings of 3.5" w.c. or slightly above, then adjust the pump inlet damper until vacuum readings are a minimum 2.5"-3.0" w.c.
6. With systems designed to operate at maximum vacuum, it may not be possible to obtain vacuum differential readings at slightly above 3.5" w.c. If so, adjust damper coupling to maximum but equal vacuum readings. Be sure to lock all dampers securely after adjustment.
7. Reset thermostats to desired room temperature.
8. If heat is not required, turn off main switch and close main gas valve.

**FIGURE 7: Manometer Reading**

**⚠ DANGER**

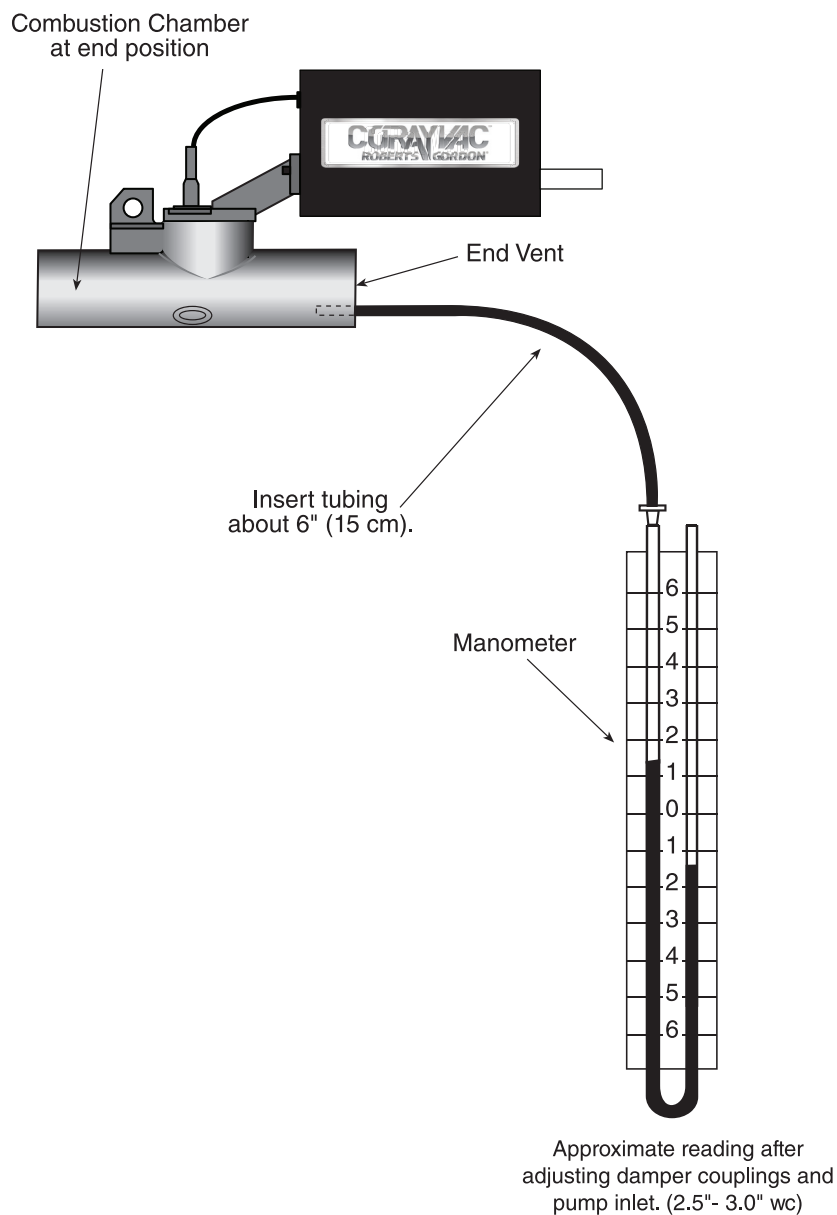


**Electrical Shock Hazard**

**Disconnect electric before service.**

**Appliance must be properly grounded.**

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



**FIGURE 8: Label P/N 91039400**

Enter Data for Natural to Propane Conversions		Enter Data for Propane to Natural Conversions	
Model	Propane Orifice Size	Model	Natural Orifice Size
4	#39	4	#30
6	#30	6	#26
8	#26	8	#16
9	#19	9	#6(w/R500) or #4(w/R400)
10	#21	10	#7(w/R500) or #3(w/R400)
12a	#12	12	#1

Propane → This appliance has been converted to \_\_\_\_\_ fuel. ← Natural

10.5" wc → Orifice: \_\_\_\_\_ ← 3.5" wc

From Serial → Manifold Pressure: \_\_\_\_\_ ← From Serial

Plate Input: \_\_\_\_\_ Plate

---

Cet appareil a été converti au: \_\_\_\_\_

Injecteur: \_\_\_\_\_

Pression à la tubulure d'alimentation: \_\_\_\_\_

Débit calorifique: \_\_\_\_\_

---

Este artefacto se ha convertido para funcionar con combustible \_\_\_\_\_

Orificio: \_\_\_\_\_

Presión del colector: \_\_\_\_\_

Entrada: \_\_\_\_\_

P/N 91039400 Rev C

**Step 5.7 Burner Conversion Label Information**

Print the requested information in the fields of the burner conversion label as shown in *See Page 11, Figure 8.*

**Step 5.8 Attach Burner Conversion Label**

1. Attach the small yellow gas label (included in conversion kit) to the gas valve. Attach the conversion label (P/N 91039400) to the side of the burner housing top. *See Page 7, Figure 4.*
2. Replace the burner housing door.

## SECTION 6: CLEARANCES TO COMBUSTIBLES

### 6.1 Required Clearances to Combustibles

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 13, Figure 9 through Page 15, Figure 17* 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.

## 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.**

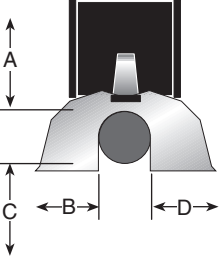
**Failure to follow these instructions can result in death, injury or property damage.**

- 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.

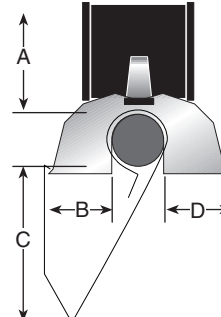


- NOTE:**
1. All dimensions are from the surfaces of all tubes, couplings, elbows, tees and crosses.
  2. Clearances B, C and D can be reduced by 50% after 25' (7.5 m) of tubing downstream from where the combustion chamber and the tube connect.

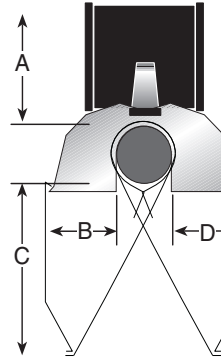
**FIGURE 9: LEVEL REFLECTOR**

	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	20	48	20	11	51	122	51
	CRV-B-4	4	20	48	20	11	51	122	51
	CRV-B-6	4	20	48	20	11	51	122	51
	CRV-B-8	4	20	48	20	11	51	122	51
	CRV-B-9	4	36	60	36	11	92	153	92
	CRV-B-10	4	36	60	36	11	92	153	92
	CRV-B-12	4	36	60	36	11	92	153	92
	CRV-B-12A	4	36	60	36	11	92	153	92

**FIGURE 10: ONE SIDE REFLECTOR**

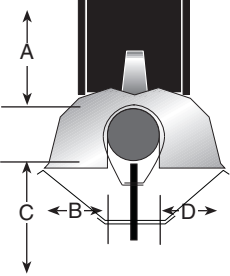
	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	12	56	20	11	31	143	51
	CRV-B-4	4	12	56	20	11	31	143	51
	CRV-B-6	4	12	56	20	11	31	143	51
	CRV-B-8	4	12	56	20	11	31	143	51
	CRV-B-9	4	12	60	42	11	31	153	107
	CRV-B-10	4	12	60	42	11	31	153	107
	CRV-B-12	4	12	60	42	11	31	153	107
	CRV-B-12A	4	12	60	42	11	31	153	107

**FIGURE 11: TWO SIDE REFLECTORS**

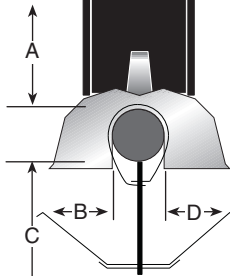
	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	12	56	12	11	31	143	31
	CRV-B-4	4	12	56	12	11	31	143	31
	CRV-B-6	4	12	56	12	11	31	143	31
	CRV-B-8	4	12	56	12	11	31	143	31
	CRV-B-9	4	12	60	12	11	31	153	31
	CRV-B-10	4	12	60	12	11	31	153	31
	CRV-B-12	4	12	60	12	11	31	153	31
	CRV-B-12A	4	12	60	12	11	31	153	31

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

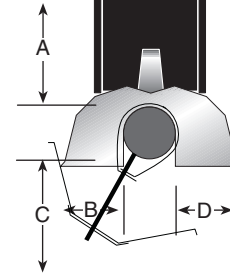
**FIGURE 12: UNIVERSAL SHIELD, POSITION 1**

	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	12	12	12	11	31	31	31
	CRV-B-4	4	12	12	12	11	31	31	31
	CRV-B-6	4	12	12	12	11	31	31	31
	CRV-B-8	4	12	12	12	11	31	31	31
	CRV-B-9	8	18	24	18	21	46	61	46
	CRV-B-10	8	18	24	18	21	46	61	46
	CRV-B-12	8	18	24	18	21	46	61	46
	CRV-B-12A	8	18	24	18	21	46	61	46

**FIGURE 13: UNIVERSAL SHIELD, POSITION 2**

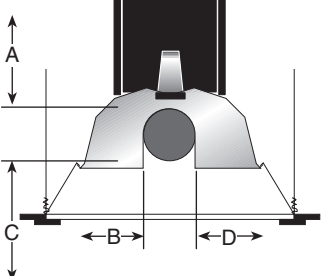
	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	24	48	24	11	61	122	61
	CRV-B-4	4	24	48	24	11	61	122	61
	CRV-B-6	4	24	48	24	11	61	122	61
	CRV-B-8	4	24	48	24	11	61	122	61
	CRV-B-9	4	36	48	36	11	92	122	92
	CRV-B-10	4	36	48	36	11	92	122	92
	CRV-B-12	4	36	48	36	11	92	122	92
	CRV-B-12A	4	36	48	36	11	92	122	92

**FIGURE 14: UNIVERSAL SHIELD, POSITION 3**

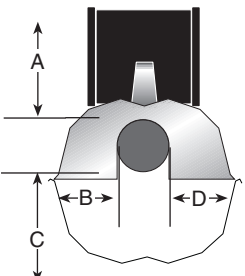
	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	12	56	30	11	31	143	77
	CRV-B-4	4	12	56	30	11	31	143	77
	CRV-B-6	4	12	56	30	11	31	143	77
	CRV-B-8	4	12	56	30	11	31	143	77
	CRV-B-9	8	12	60	42	21	31	153	107
	CRV-B-10	8	12	60	42	21	31	153	107
	CRV-B-12	8	12	60	42	21	31	153	107
	CRV-B-12A	8	12	60	42	21	31	153	107

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

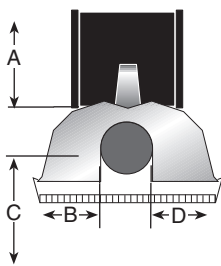
**FIGURE 15: 2-FOOT DECO GRILLE**

	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	12	48	12	11	31	122	31
	CRV-B-4	4	12	48	12	11	31	122	31
	CRV-B-6	4	12	48	12	11	31	122	31
	CRV-B-8	4	12	48	12	11	31	122	31
	CRV-B-9	4	18	56	18	11	46	143	46
	CRV-B-10	4	18	56	18	11	46	143	46
	CRV-B-12	4	18	56	18	11	46	143	46
	CRV-B-12A	4	18	56	18	11	46	143	46





**FIGURE 16: BARRIER SHIELD**

	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	12	12	12	11	31	31	31
	CRV-B-4	4	12	12	12	11	31	31	31
	CRV-B-6	4	12	12	12	11	31	31	31
	CRV-B-8	4	12	12	12	11	31	31	31
	CRV-B-9	- UNAPPROVED -				- UNAPPROVED -			
	CRV-B-10	- UNAPPROVED -				- UNAPPROVED -			
	CRV-B-12	- UNAPPROVED -				- UNAPPROVED -			
	CRV-B-12A	- UNAPPROVED -				- UNAPPROVED -			

**FIGURE 17: PROTECTIVE GRILLE**

	Model	(inches)				(centimeters)			
		A	B	C	D	A	B	C	D
	CRV-B-2	4	20	48	20	11	51	122	51
	CRV-B-4	4	20	48	20	11	51	122	51
	CRV-B-6	4	20	48	20	11	51	122	51
	CRV-B-8	4	20	48	20	11	51	122	51
	CRV-B-9	4	36	60	36	11	92	153	92
	CRV-B-10	4	36	60	36	11	92	153	92
	CRV-B-12	4	36	60	36	11	92	153	92
	CRV-B-12A	4	36	60	36	11	92	153	92

SECTION 7: OPERATION AND MAINTENANCE

⚠ DANGER		⚠ WARNING	
			
<b>Electrical Shock Hazard</b> Disconnect electric before service.  Heater must be connected to a properly grounded electrical source.	<b>Explosion Hazard</b> Turn off gas supply to heater before service.	<b>Burn Hazard</b> Allow heater to cool before service.  Tubing may still be hot after operation.	<b>Cut/Pinch Hazard</b> Wear protective gear during installation, operation and service.  Edges are sharp.
Failure to follow these instructions can result in death, electric shock, injury or property damage.			

The heater is equipped with a direct-spark ignition system.

Turn OFF manual gas valve in the heater supply line.

7.1 Sequence of Operation

1. Turn the thermostat up. When the thermostat calls for heat, the pump will start immediately. After a short period, the burners will begin their ignition sequence. Sparking will begin at the electrodes and the gas valve will be energized 45 seconds later.
2. The flame will be sensed by the flame sensing rod and the electrode is de-energized.
3. If a flame is detected, the gas valve remains open. When the call for heat is satisfied, the burner shuts off. On CRV-Series systems equipped with the optional ROBERTS GORDON® CORAYVAC® Heating Control, or CORAYVAC® Modulating Heating Control, the pump will continue operation for a post-purge period of two minutes.
4. If no flame is detected, the module will close and a purge period begins. If a flame is not established, a second purge and warm-up will take place and then a third trial cycle will begin. After three trials, the module will lockout for one hour or until reset.
5. A reset is accomplished by removing power from the module for at least 5 seconds (thermostat cycle is required) or automatically after 1 hour.

7.2 To Shut Off Heater

Set thermostat to lowest setting.  
Turn OFF electric power to heater.

7.3 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.

7.4 Pre-Season Maintenance and Annual Inspection

To ensure your safety and years of trouble-free operation 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 17, Section 7.5* for suggested items to inspect.

## 7.5 Maintenance Checklist

### 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.

<b>The Vicinity of the Heater</b>	<p>Do not store or use flammable objects, liquids or vapors near the heating system. Immediately remove these items if they are present.</p> <p><i>See Page 12, Section 6.</i></p>
<b>Vehicles and Other Objects</b>	<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> <p><i>See Page 12, Section 6</i></p>
<b>Reflector</b>	<p>Support reflector with reflector hanger and support strap.</p> <p>Reflector must not touch tube.</p> <p>Make sure there is no dirt, sagging, cracking or distortion.</p> <p>Do not operate if there is sagging, cracking or distortion.</p> <p>Make sure reflectors are correctly overlapped.</p> <p>Clean outside surface with a damp cloth.</p>
<b>Vent Pipe</b>	<p>Venting must be intact. Using a flashlight, look for obstructions, cracks on the pipe or 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>
<b>Outside Air Inlet</b>	<p>Inlet must be intact. Look for obstructions, cracks on the pipe or gaps in the sealed areas or corrosion.</p> <p>The area must be free of dirt and dust. Clean and reinstall as required.</p>
<b>Tubes</b>	<p>Make sure there are no cracks.</p> <p>Make sure tubes are connected and suspended securely.</p> <p>Make sure there is no dirt, sagging, bending or distortion.</p> <p>Clean or replace as required.</p>
<b>Gas Line</b>	<p>Check for gas leaks.</p>
<b>Combustion Chamber Window</b>	<p>Make sure it is clean and free of cracks or holes.</p> <p>Clean or replace as required.</p>
<b>Blower Scroll, Wheel and Motor</b>	<p>Compressed air or a vacuum cleaner may be used to clean dust and dirt.</p>
<b>Burner Head and Orifice</b>	<p>Clear of obstructions. (Even spider webs will cause problems).</p> <p>Carefully remove any dust and debris from the burner.</p>

<b>Electrode</b>	<p>Replace if there are cracked ceramics, excessive carbon residue, or erosion of the electrode.</p> <p>The electrode gap should be 1/8" (3 mm).</p>
<b>Thermostat or Sensor</b>	<p>There should be no exposed wire or damage to the thermostat or sensor.</p>
<b>Suspension Points</b>	<p>Make sure the heater is hanging securely. Look for signs of wear on the chain or ceiling.</p>
<b>Filter</b>	<p>Check for dirt or dust. Clean or replace as required.</p>
<b>Decorative and Protective Grille (optional)</b>	<p>The grille must be securely attached.</p> <p>Check that side reflector extensions are installed correctly and secured in place if necessary. (Decorative grille only.)</p> <p>Make sure shield is installed correctly and secured in place if necessary. (Decorative grille only.)</p>
<b>Pump</b>	<p>With pump operating, check for excessive vibration or noise. Vibration is usually a sign that the impeller is out of balance. Turn off the system, insure power is shut off and remove the inlet plate. Check the shaft seal and replace it if worn or missing.</p> <p><b>With the Power off:</b></p> <p>Check the inlet and outlet of the pump for blockage or excessive soot and clean as necessary.</p> <p>Check boots for cracking or deterioration and replace if necessary.</p> <p>If a condensate trap is installed, check the condition of the trap and the drain line attached. Note: the condensate trap should be filled with water at the beginning of each heating season.</p> <p>Check the condition of the motor mounts. Lift the motor from the rear; look for breaks in the rubber and replace if necessary.</p> <p>Check the condition and operation of the pressure switch.</p>
<b>Wall Tag</b>	<p>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.</p>
<b>Safety Labels</b>	<p>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.</p>

**SECTION 8: THE ROBERTS GORDON® CORAYVAC® 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® warrants the cast iron combustion chamber of the ROBERTS GORDON® CORAYVAC® Classic System will be free from defects in material and workmanship. This warranty is limited to twenty-five (25) years from the date of shipment by Roberts-Gordon LLC. All other components of the ROBERTS GORDON® CORAYVAC® Classic System adhere to the standard warranty listed in the paragraph above.

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® CORAYVAC® 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® CORAYVAC® in any way.
- Use of the ROBERTS GORDON® CORAYVAC® 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® CORAYVAC® as directed in the Installation, Operation and Service Manual.
- Relocation of the ROBERTS GORDON® CORAYVAC® after initial installation
- The use of the ROBERTS GORDON® CORAYVAC® in a corrosive atmosphere containing contaminants.
- The use of the ROBERTS GORDON® CORAYVAC® in the vicinity of a combustible or explosive material.
- Any defect in the ROBERTS GORDON® CORAYVAC® 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® CORAYVAC® 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® CORAYVAC® 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

[www.robertsgordon.com](http://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® CORAYVAC®.** 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.





**ROBERTS GORDON®**  
 INFRARED HEATING

## OWNER WARRANTY REGISTRATION CARD

Mail or Fax to:  
 Roberts Gordon LLC • 1250 William Street, P.O. Box 44 • Buffalo, NY 14240-0044 • Phone: 716-852-4400 • Fax: 716-852-0854  
 www.robertsgordon.com

**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):**

☐ Automotive      ☐ Manufacturing      ☐ Warehouse      ☐ Recreational      ☐ Aircraft  
☐ Public Building      ☐ Office      ☐ Retail      ☐ Agricultural      ☐ Other \_\_\_\_\_

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**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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 Printed in the U.S.A.





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

# ROBERTS GORDON®

## Infrared Heating

**Read the Installation, Operation, and Service Manual thoroughly before installation, operation, or service.**

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.

Write the largest clearance dimensions with permanent ink according to your model number and configuration in the open spaces below.

### 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.**

**Roberts-Gordon LLC**  
1250 William Street  
P.O. Box 44  
Buffalo, NY 14240-0044 USA  
Telephone: +1.716.852.4400  
Fax: +1.716.852.0854

#### Installation Code and Annual Inspections:

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**Further Information:** Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through ROBERTS GORDON® representatives. Please contact us for any further information you may require, including the Installation, Operation and Service Manual.

**This product is not for residential use.**

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www.robertsgordon.com

P/N 91037912 Rev. K



