



# GAS-FIRED VENTED ROOM HEATER



## Installation and Operating Instructions



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# GAS-FIRED VENTED ROOM HEATER



## Installation and Operating Instructions



Natural Gas - VC201C, VC351C, VC501C

This appliance is equipped with a safety control system designed to protect against improper venting of combustion products.

**THIS UNIT IS NOT TO BE INSTALLED IN MOBILE HOMES.**

**WARNING - If the information in these instructions are not followed exactly, a fire or explosion may result causing property damage, personal injury or death.**

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

### WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance.
  - Do not touch any electrical switch; Do not use any phone in your building.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
- INSTALLATION AND SERVICE MUST BE PERFORMED BY A QUALIFIED INSTALLER, SERVICE AGENCY OR THE GAS SUPPLIER.



### INSTALLER:

Leave this manual with the appliance.

### CONSUMER:

Retain this manual for future reference.

The coating selected to provide longer life to the heat exchanger may smoke slightly upon initial firing. Provide adequate ventilation if this occurs.

**WARNING - Operation of this heater when not connected to a properly installed and maintained venting system or tampering with the vent safety shut-off system can result in Carbon Monoxide (CO) poisoning and possible death.**

**This unit is for residential use only and is not approved for installation in mobile homes, greenhouses, or environments involving dusty, wet, corrosive, or explosive conditions. Such conditions will invalidate the warranty and may create unsafe conditions.**

Installation, maintenance, service, troubleshooting and repairs must be performed by a qualified service agency. MR./MRS. HOMEOWNER, **DO NOT** attempt any of these procedures yourself as this could expose you to property damage, personal injury, or loss of life and will invalidate all warranties.

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**The State of Massachusetts requires that installation and service of a gas appliance be performed by a plumber or gas fitter licensed in the Commonwealth of Massachusetts.**

**READ CAREFULLY BEFORE INSTALLING UNIT**

These installation instructions are a general guide and do not supersede applicable local codes and ordinances. Before planning or making the installation be sure it complies with all phases of the local heating code. (Or, in the absence of local codes, with the latest edition of National Fuel Gas Code, ANSI.Z223.1, or CAN1-B149).

The appliance, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the latest edition of National Electrical Code ANSI / NFPA 70, or Canadian Electrical Code CSA-C22.1.

All of the ANSI and NFPA standards referred to in these installation instructions are the ones that were applicable at the time the design of this appliance was certified.

ANSI Standards:

**AMERICAN GAS ASSOCIATION**

400 North Capitol St., NW  
Suite 450  
Washington, DC 20001

NFPA Standards:

**NATIONAL FIRE PROTECTION ASSOCIATION**

1 Batterymarch Park  
Quincy, Massachusetts  
USA 02169-7471

Canadian Standards:

**INTERNATIONAL APPROVAL SERVICES**

178 Rexdale Boulevard,  
Toronto, Ontario  
Canada M9W 1R3

The design of this appliance was certified to comply with the latest edition of ANSI Z21.86 and CSA 2.32.

*Installer must leave these instructions with the consumer, have them complete, and return the warranty card.*

**ROOM HEATER SPECIFICATIONS**

Your room heater comes packed in a single carton. Before installation, check the rating plate to verify that the Model Number is correct and that the room heater is equipped for the type gas you intend to use.

**SPECIFICATIONS:**

TYPE	CONTROL	GAS	MODEL NUMBERS		
			VC201C	VC351C	VC501C
Closed Front	Thermostat Bulb	Natural	VC201C	VC351C	VC501C
Height			20"	26"	26"
Width			24"	30"	30"
Depth			15-1/4"	15-1/4"	19-1/4"
Input (BTU / HR)			20,000	35,000	50,000
Gas Inlet / Outlet Size			1/2 x 3/8"	1/2 x 3/8"	1/2 x 3/8"
Vent Size			3"	4"	4"
Center of Vent Floor			16-1/2"	21-1/2"	21-1/2"
Approximate Shipping Weight			59 lbs	85 lbs	102 lbs
Optional Blower Model			N / A	CHB-3	CHB-3

## INTRODUCTION

THIS IS A GAS-FIRED, GRAVITY VENTED ROOM HEATER THAT WILL OPERATE SAFELY AND PROVIDE AN EFFICIENT SOURCE OF HEAT WHEN INSTALLED, OPERATED AND MAINTAINED AS RECOMMENDED IN THESE INSTALLATION AND OPERATING INSTRUCTIONS. READ THESE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING, SERVICING, OR USING THIS APPLIANCE. IF YOU DO NOT UNDERSTAND ANY PART OF THESE INSTRUCTIONS, CONSULT LOCAL AUTHORITIES, OTHER QUALIFIED INSTALLERS, SERVICE TECHNICIAN, THE GAS SUPPLIER, OR THE MANUFACTURER.

## VENTING

This heater must be connected to a properly installed and maintained venting system. This heater is equipped with a manual reset vent safety shut-off device. Pilot burner outage will occur if the heater is not connected to a vent system. Pilot burner outage may occur due to restriction or blockage in the vent or if connected to a masonry chimney having an area greater than the vent size shown on **Page 2**. This appliance should be vented through a properly sized listed type B vent that has been constructed in accordance with the National Building Code. If a horizontal section of vent is used, it must slope upwards a minimum of ¼ inch per foot of length.

This heater must not be connected to a vent system being used for wood or coal burning appliances. The use of more than one appliance per vent system will most likely cause the vent safety shut-off device to shut off the heater due to the cooling of vent temperatures through the draft diverter of the second appliance. In some situations, the vent safety shut-off may shut down the heater if a large, unlined, masonry chimney is used. Due to low vent temperatures associated with more efficient heaters it may take too long to get the vent action going in a chimney before the shut-off device will shut down the heater. If this is the case, we recommend lining the chimney with the proper size type B vent pipe or type B chimney liner.

**WARNING: Do NOT bypass the vent safety shutoff switch. To do so could expose the consumer to property damage, personal injury or possible death.**

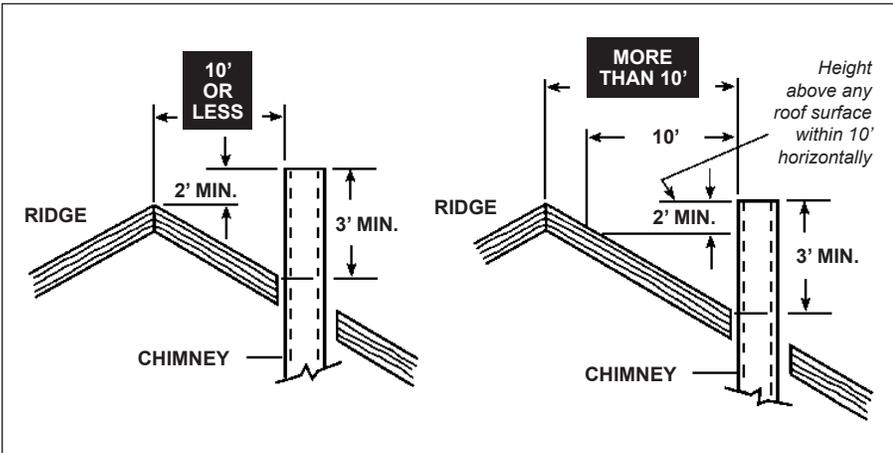
The switch, when activated, will extinguish the burner flame. If the homeowner experiences this problem, the vent system must be checked and corrected.

*NOTE: An existing vent that has worked for years may not be adequate for today's design because of higher efficiency requirements resulting in lower stack temperatures. The following is a list of possible causes and corrective actions.*

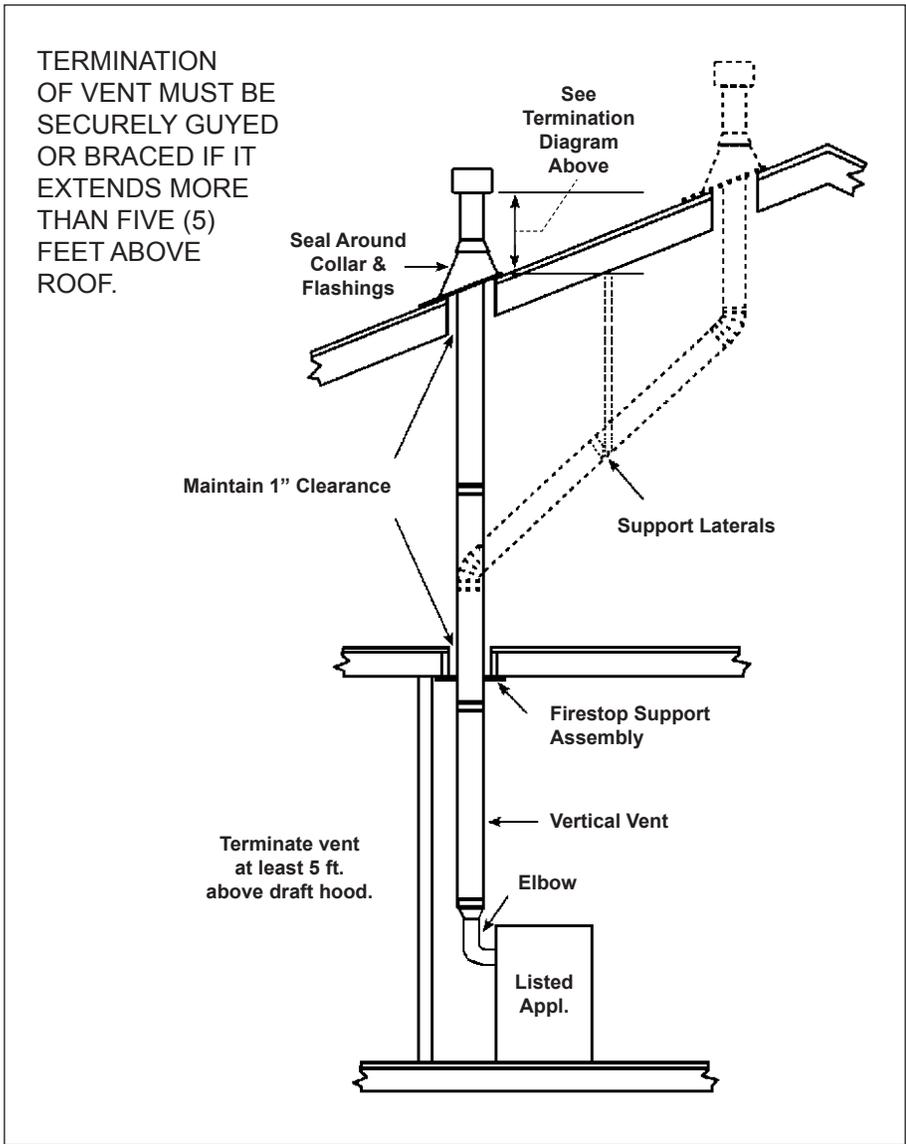
<u>POSSIBLE CAUSES</u>	<u>CORRECTIVE ACTION</u>
1. Blockage in Vent Pipe	1. A) Check vent pipe for blockage, such as bird nest, wasp nest, twigs, leaves, etc. B) Check that the vent cap is properly installed, not shoved too far down on the vent pipe.
2. Burner is Over Firing	2. A) Check the manifold pressure. B) Check the rate <i>NOTE: This appliance was orificed for elevations up to 2,000 feet. When installed at higher elevations refer to orifice chart (on page 9) in main burner orifice section of instructions for proper orifice size and re-orifice accordingly.</i>
3. Improper Vent System A. Vent Too Short  B. Restriction in Vent System Caused by Offsets  C. Incorrect Vent Pipe	3. Correct Vent System A) The vent should not terminate less than 5 feet above the draffhood connection. A gas vent extending through an exterior wall shall not terminate adjacent to the wall or below eaves or parapets. Also, the top of the vent must be at least 2 feet above all obstacles within a 10 feet radius, including the roof. <b>See Figure A (on page 4).</b> B) All type "B" vent shall extend in a generally vertical direction with offsets not exceeding 45 degrees, except that a vent system having not more than one 60 degree offset may be allowed. Any angle greater than 45 degrees from the vertical is considered horizontal. The total horizontal run of a vent plus the horizontal vent connector shall be not greater than 75 percent of the vertical height of the vent. Any offsets used should be as far above the draffhood as possible to allow the venting action to begin before any restriction is encountered. C) Use listed "B" type vent pipe. Do not use transite or any other type of ceramic pipe for venting. Do not use single wall pipe for vent or vent connector.
4. Loose Connections on the Vent Safety Wiring Harness	4. Check the connection on both the switch and the gas valve. Tighten if necessary.

**VENTING**

**Fig. A**

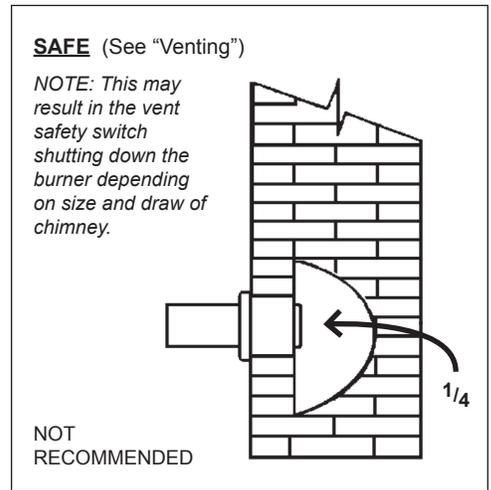


**Fig. B**

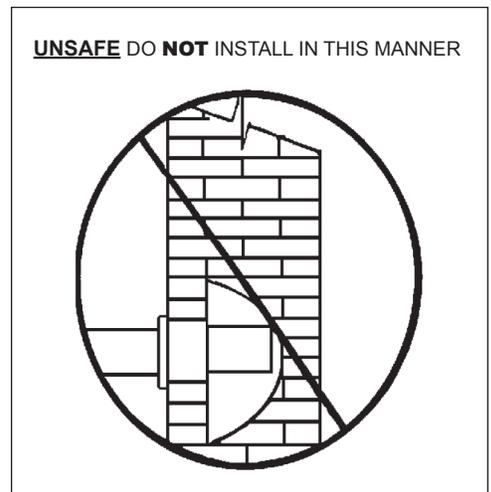


**CONNECTING THE VENT INTO AN EXISTING CHIMNEY**

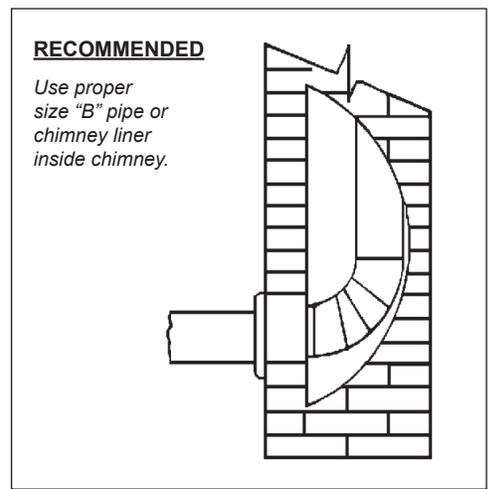
**Fig. C-1**



**Fig. C-2**



**Fig. C-3**



## GAS SUPPLY

This vented room heater must be connected to a gas supply capable of supplying the full rated capacity. Provide a 1/8 inch N.P.T. plugged tapping, accessible for test gauge connection, immediately upstream of the gas supply connection to the appliance.

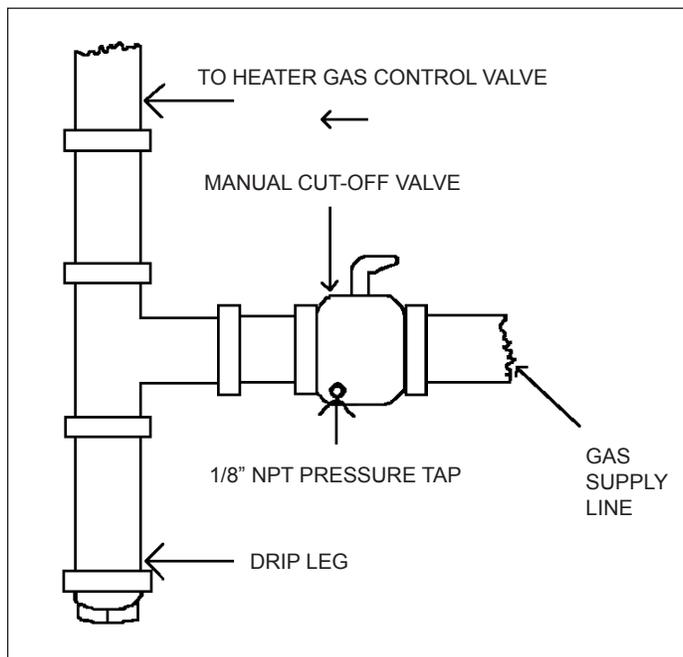
GAS SUPPLY PIPE	NATURAL GAS	PROPANE GAS
MINIMUM INLET PRESSURE <i>(For purpose of input adjustment):</i>	4.5" w.c.	11.0" w.c.
MAXIMUM INLET PRESSURE <i>(Must NEVER Exceed):</i>	14" w.c.	14" w.c.
NORMAL MANIFOLD PRESSURE:	3.5" w.c.	10.0" w.c.

*The gas supply piping should be sized in accordance with ANSI Z223.1 National Fuel Gas Code.*

If the outlet pressure of the gas valve must be adjusted, this must be done by a qualified service technician using proper tools and instruments.

Check all connections with soapy water for possible gas leaks. Never use a match, candle or other ignition source. It is recommended that pipe compound which is resistant to the action of liquefied petroleum gases be used. Do not use Teflon tape or Teflon impregnated compound.

**Fig. D:  
GAS SUPPLY**



The appliance and its individual shutoff valve must be disconnected from the gas supply piping during any pressure testing of that system at test pressure in excess of 1/2 psig.

The appliance must be isolated from the gas supply piping by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig.

## LOCATION AND SPECIAL PRECAUTIONS

Due to high temperatures the appliance should be located out of traffic and away from furniture and draperies.

Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or clothing ignition.

Young children should be carefully supervised when they are in the same room as the appliance.

Clothing or other flammable material should not be placed on or near the appliance.

Any safety screen, guard, or casing top removed for servicing a room heater must be replaced prior to operating the appliance.

Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of the control system and any gas control which has been under water.

For purpose of identifying the sides of the heater. When you are facing the front of the heater the right side has the access door and the left side is solid.

If heater is installed in a residential garage, the burner and pilot must be above 18". Locate or protect heater so it cannot be damaged by a moving vehicle.

**COMBUSTION AND VENTILATION AIR**

When installed, this gas appliance must be provided with fresh air for combustion, ventilation, and dilution of hot flue gases. The minimum required volume of the area where the appliance is installed must be 50 cubic feet per 1,000 btu/hr.

If installed in an area of the home that is considered an unconfined space, the natural infiltration of air around windows and doors will be adequate. If the area is considered a confined space (less than 50 cubic feet per thousand btu), fresh air can be supplied by providing two permanent openings into adjoining rooms. Each opening shall have a minimum free area of one square inch per 1,000 btu per hour of the total input rating of all gas appliances in the confined space, but not less than 100 square inches. One of the openings shall be within 12 inches of the ceiling and one within 12 inches of the floor. **See Figure E-1 (to the right).**

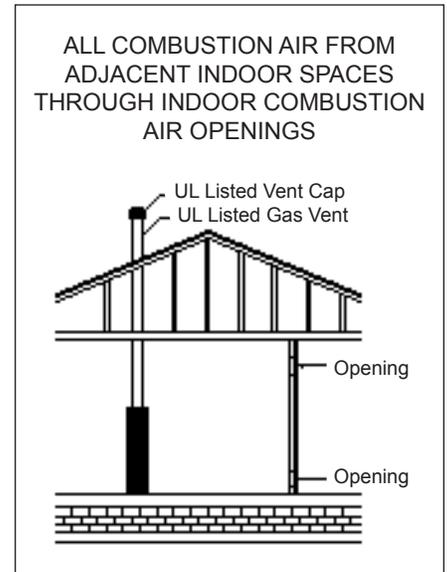
If the home is of unusually tight construction (new and remodeled homes), free air must be supplied through opening(s) to the outdoors. This can be accomplished by providing 2 permanent openings, one commencing within 12 inches of the ceiling and one within 12 inches of the floor. These openings shall communicate directly with the outdoors, or spaces that communicate freely with the outdoors, such as a ventilated attic and crawl space through galvanized or equivalent corrosion-resistant ducts. Exception: Unobstructed stud and joist spaces are acceptable ducts provided that not more than one fire block is removed. Special provisions must be taken to insure that these stud and joist spaces cannot be blocked with insulation or other objects. Each of these openings using vertical ducts shall have a minimum free area of one square inch per 4,000 btu/hr of total input rating of all gas appliances. **See Figures E-2 (to the right) and E-3 (below).** If horizontal ducts are used, the minimum free area shall be one square inch per 2,000 btu/hr of total input rating of all gas appliances.

Fresh make-up air can also be provided through a duct to one permanent opening commencing within 12 inches of the ceiling. The minimum free area of this opening shall be one square inch per 3,000 btu/hr of the total input rating of all gas appliances but not less than the sum of the areas of all vent connectors in the space. **See Figure E-4 (below).**

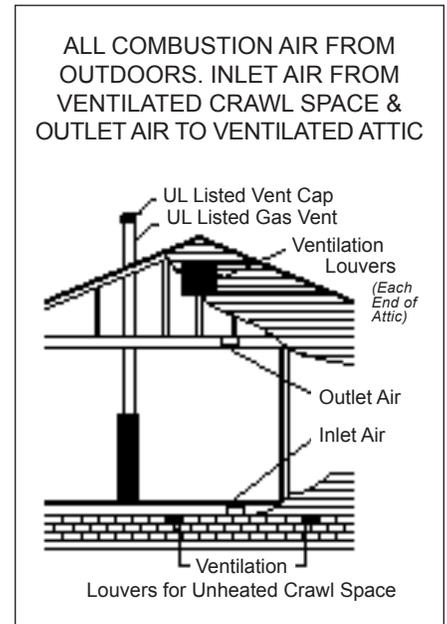
When calculating the amount of fresh air needed you must include make-up air requirements for the operation of exhaust fans, kitchen ventilation systems, clothes dryers, and fireplaces.

Additional information can be found in the latest edition of ANSI Z223.1 (National Fuel Gas Code).

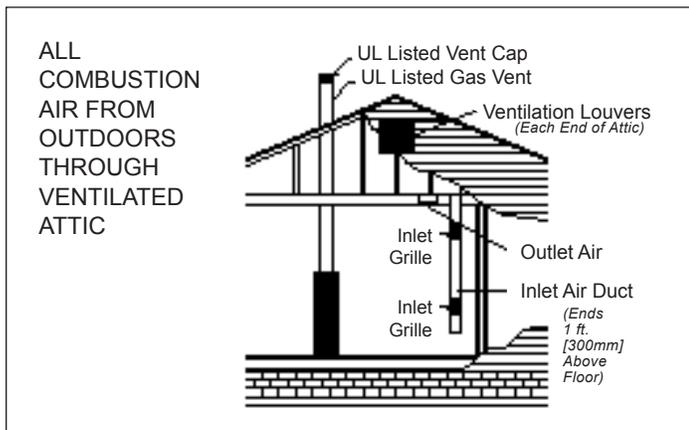
**Fig. E-1**



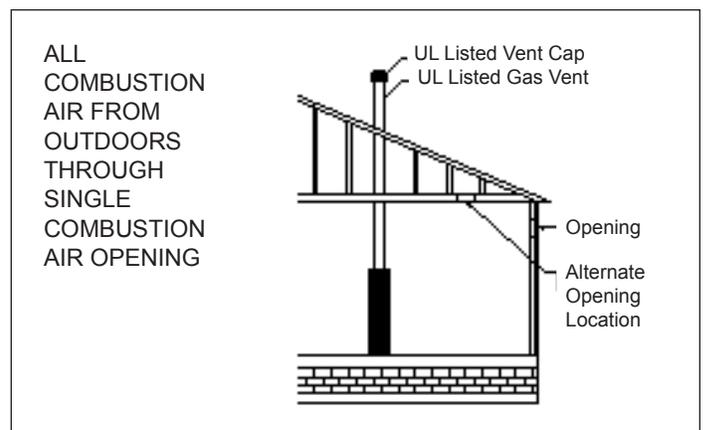
**Fig. E-2**



**Fig. E-3**



**Fig. E-4**



## DRAFT DIVERTER

The draft diverter must be installed in the same atmospheric pressure zone as the combustion air supply for the main burner.

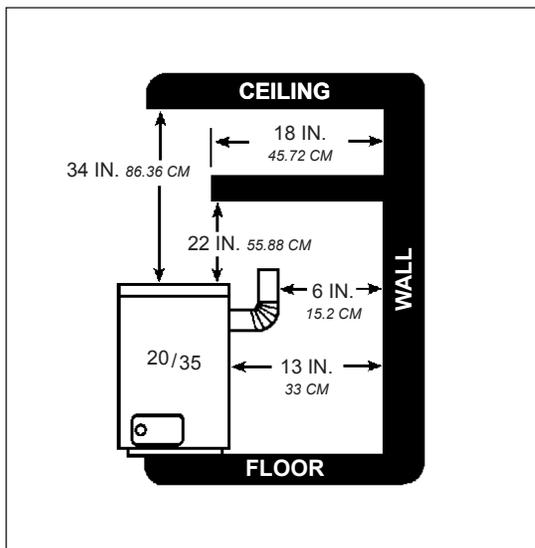
## CLEARANCES

If the area where the appliance is to be installed contains carpeting, tile, or combustible materials, other than wood flooring, the appliance shall be installed on a metal plate (stoveboard), a wood panel, or other non-combustible materials. The use of ceramic or quarry tile is acceptable and provides an appealing surface that is easily cleaned. This material is to extend 2 inches from each side and 12 inches from the front. It is advisable to extend this to the wall behind the appliance.

### **Clearances to Combustibles are as Follows:**

- From jacket to adjacent side walls, 2" on the 20/35, and 6" on the 50. Maintain adequate clearance on right side for accessibility.
- From rear surface vertical vent pipe to rear walls – 6".
- From rear of unit to rear wall, 13" on 20/35, and 14" on the 50.
- From top of heater to ceiling, 34" on the 20/35, and 31" on the 50.
- From top of heater to any overhanging projections such as a mantle or window sill is 22" on the 20/35, and 19 inches on the 50 model, with a maximum horizontal extension of 18 inches.

**Fig. F-1: CLEARANCES - VC20, VC35**

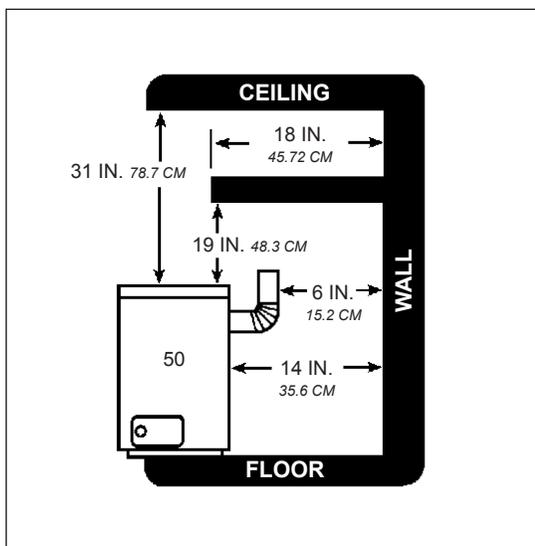


The clearances around the air opening into the combustion chamber must be maintained, and the burner must be kept clean.

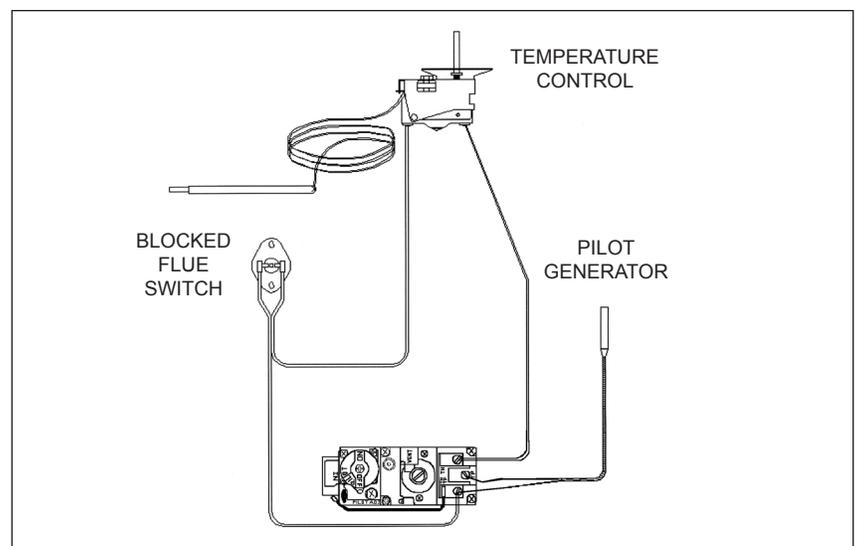
Do not permit dust or dirt to accumulate here. The other clearances previously mentioned must be maintained.

There must be adequate room provided and maintained around the heater for accessibility and for the flow of combustion and ventilation air.

**Fig. F-2: CLEARANCES - VC50**



**Fig. G: WIRING DIAGRAM**



## PILOT ADJUSTMENT

The pilot flame can be observed by opening the pilot lighting hole cover. The pilot flame should surround the top 3/8 to 1/2 inch of the pilot generator (See Figure H-2).

If the flame needs adjusting, first locate the pilot adjustment screw cap and remove. Adjustment screw is underneath (See Figure H-1).

- To increase the flame, turn the pilot adjustment screw counterclockwise. ↺
- To decrease the flame, turn screw clockwise. ↻

*NOTE: The pilot is unregulated. If incoming line pressure is more than 7" w.c. Natural Gas or 11" w.c. for L.P. Gas, the pilot flame size should be decreased.*

Fig. H-1

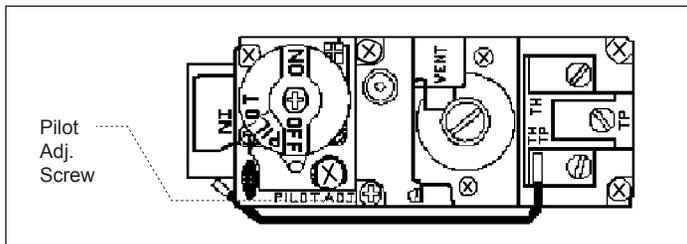
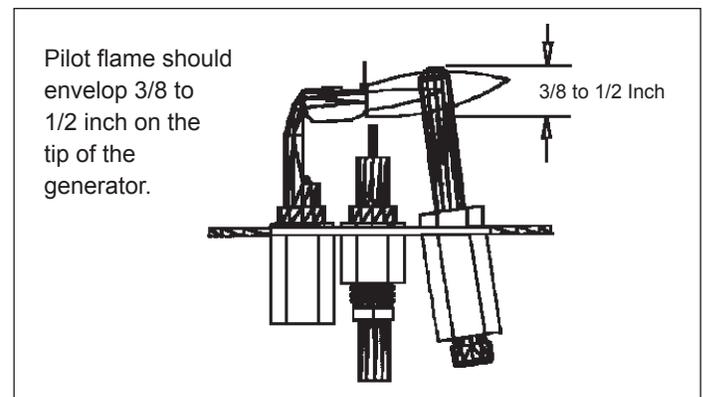


Fig. H-2: Pilot Flame Adjustment



## MAIN BURNER ORIFICE

**CAUTION:** THERE MAY BE MOMENTARY AND SPASMODIC ORANGE FLASHES IN THE FLAME. This is caused by the burning of air borne dust particles and is not to be confused with the yellow tipping which is a stable or permanent situation when there is insufficient primary air.

This appliance was shipped from the factory with an orifice sized to give the correct gas input using the gas for which the heater was equipped. There may be local conditions, such as variation in gas supply pressure or BTU content of the gas, which may be cause for a change in the orifice. The gas company supplying the fuel or the installing contractor should check the gas input rate.

If the rate exceeds the "BTUH INPUT" on the rating plate by 5%, the orifice must be replaced with a smaller orifice by a qualified service technician to reduce the input to the rating plate value.

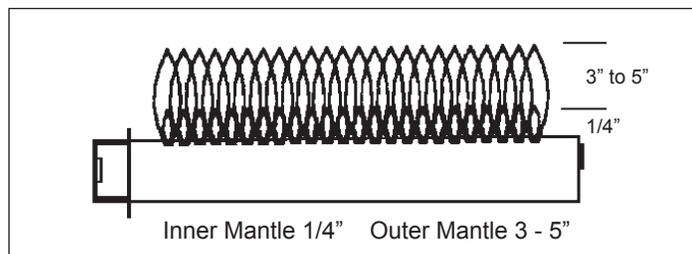
The input rate will need to be adjusted for elevation above 2,000 Feet. See the Specific Elevations chart (to the right) to determine the correct orifice size for your Model Number and elevation. These orifice sizes are based on a heating value of 1020 for Natural Gas and 2500 for L.P. Gas.

**CAUTION:** As elevation increases, derating is necessary for the safe and proper operation of this heater. Do not increase the Btu input rate by increasing the orifice size or gas pressure. Allow for elevation derating when sizing gas heating equipment.

### Specific Elevations

Model No.	0 to 2,000'	2,000' - 4,000'	4,000' - 6,000'	6,000' - 8,000'	8,000' - 10,000'
<b>NATURAL GAS</b>					
VC201	45	47	48	49	50
VC351	35	37	38	40	42
VC501	30	31	31	32	35
<b>L.P. GAS</b>					
VC202	1.3mm	55	56	56	57
VC352	1.65mm	53	53	54	54
VC502	47	49	49	50	51
<b>ORDER KIT #49820 45-1 High Altitude Kit</b>					

Fig. I: Proper Burner Flame



## MAINTENANCE

**THIS IS A GAS-FIRED APPLIANCE, KEEP THE AREA CLEAR OF GASOLINE AND OTHER FLAMMABLE VAPORS & LIQUIDS. ALL COMBUSTIBLE MATERIAL MUST BE KEPT CLEAR OF THIS AREA.**

*Have a qualified service technician check the burner periodically. Remove and clean if necessary.*

**CLEANING** - To clean the front casing of your heater, it is only necessary to use a soft cloth. Light dust can be removed in this way. To obtain a polish or gloss, use a little light machine oil on the cloth. Do not use metal polish or cleaning solution. The burner ports should be kept free from lint and dust.

### **CLEANING OF COMBUSTION CHAMBER**

The combustion chamber of your console heater should never need to be cleaned if proper burner adjustment and gas pressures are maintained. However, if an unusual circumstance should occur, the following procedure should be followed in cleaning your combustion chamber.

1. Turn off gas supply to heater at manual valve in supply line to heater.
2. Disconnect heater at ground joint union ahead of main gas valve.
3. Remove main control and orifice assembly.
4. Remove burner.
5. Remove combustion chamber.
6. Using a scraper, scrape inside of a primary combustion chamber. This should be area of heaviest accumulation of carbon.
7. Remove plug bottom located in bottom rear of second combustion chamber. Using a bottlebrush, clean inside of this chamber. Shake residue out the clean-out hole.
8. Clean the rear chamber by using bottlebrush through the vent tube openings.
9. Replace combustion chamber, burner and control. Check all gas piping for leaks before lighting heater.

Repair service must be performed by a qualified service technician. The heater should be inspected before initial use. An annual cleaning of control compartment and safety performance check must be made by a qualified service technician. More frequent cleaning may be required when exposed to the excessive lint conditions due to carpeting and bedding material, etc. It is imperative that the control compartment, burners, and circulating air passageways of the heater be kept clean. Any safety screen, casing top, or guard removed for servicing the heater must be replaced prior to operating heater.

If the venting system is not maintained in proper operating condition, the vent safety shutoff will not allow heater to operate. Periodic examination of the entire venting system as a routine part of the safety performance check must be performed on an annual basis.

It is advised that the pilot and main burner flames be checked at least twice during the heating season for any changes in flame characteristics. **See Figures H-2 & Figure I (on pages 8 & 9).**

### **SERVICE RECORDS**

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## LIGHTING INSTRUCTIONS

MODELS: VC201C / VC351C / VC501C

### FOR YOUR SAFETY READ BEFORE LIGHTING

#### WARNING:

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

A. This appliance has a pilot which must be lighted by hand. When lighting the pilot, follow these instructions exactly.

B. **BEFORE LIGHTING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

#### WHAT TO DO IF YOU SMELL GAS:

- **DO NOT** try to light any appliance.
- **DO NOT** touch any electric switch; **DO NOT** use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.

• If you cannot reach your gas supplier, call the fire department.

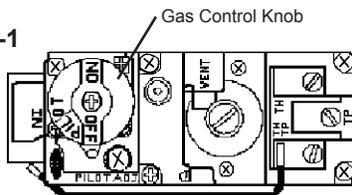
C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

## LIGHTING INSTRUCTIONS

1. **STOP!** Read the information on the safety label.
2. Turn temperature control knob to "OFF" or to its lowest position.
3. Depress and turn gas control knob clockwise  to "OFF" position.

Fig. J-1



**NOTE:**  
Knob can not be turned from "PILOT" to "OFF" unless knob is pushed in slightly.  
Do not force.

4. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. **If you smell gas, STOP!** Follow "B" in the information on the safety label. If you don't smell gas, go to the next step.
5. Open casing door and pilot lighting hole cover.
6. Find pilot. (Follow metal pilot tube from gas control).
7. Locate red piezo ignitor button on top of heater.
8. Turn gas control knob counterclockwise  to "PILOT".

Pilot is located on end of combustion chamber above burner.

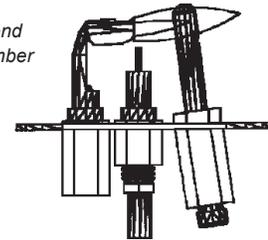


Fig. J-2

9. Push in gas control knob and hold in. Immediately begin a series of pushing and releasing the red piezo ignitor button, while observing the pilot. Continue to spark until pilot is lit. Continue to hold the gas control knob in for about one (1) minute after the pilot is lit. Release the gas control knob and it will pop back up. Pilot should remain lit. If pilot goes out, repeat steps 3 thru 9.
  - If knob does not pop up when released, **STOP** and immediately call your service technician or gas supplier.
  - If the pilot will not stay lit after several tries, turn the gas control knob to "OFF" and call your service technician or gas supplier.
10. Close pilot lighting hole cover and casing door.
11. Turn gas control knob counterclockwise  to "ON".
12. Turn temperature control knob to desired setting.

## TURNING OFF GAS TO APPLIANCE

1. Turn the temperature control knob to its lowest setting.
2. Push in gas control knob slightly and turn clockwise  to "OFF". Do not force.

## TROUBLESHOOTING CHART ( FOR QUALIFIED SERVICE TECHNICIAN ) - MAIN BURNER

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
<b>Flame Too Large</b>	<ol style="list-style-type: none"> <li>1. Defective operator section of gas valve.</li> <li>2. Burner orifice too large.</li> <li>3. Pressure regulator malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace complete valve.</li> <li>2. See orifice chart to determine the correct size for your Model Number &amp; elevation.</li> <li>3. Regulator must be adjusted by a qualified serviceman using proper tools and instruments.</li> </ol>
<b>Noisy Flame</b>	<ol style="list-style-type: none"> <li>1. Noisy pilot.</li> <li>2. Burr in orifice <i>(if it whistles or resonates).</i></li> <li>3. Excessive gas input.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce pilot gas with adjusting screw on combination gas. <b>(See Fig. H-1).</b></li> <li>2. Remove burr or replace orifice <i>(Do not enlarge orifice).</i></li> <li>3. See "Flame Too Large", above.</li> </ol>
<b>Yellow Tip Flames</b> <i>(Some yellow tipping on LP Gas is permissible)</i>	<ol style="list-style-type: none"> <li>1. Clogged main burner ports.</li> <li>2. Clogged draft hood.</li> <li>3. Linted up air shutter.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean main burner ports <i>(Do not enlarge ports).</i></li> <li>2. Clean draft hood.</li> <li>3. Check for dust or lint at air mixer opening and around the shutter.</li> </ol>
<b>Floating Flame</b>	<ol style="list-style-type: none"> <li>1. Blocked venting.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean flue passageways to relieve blockage.</li> </ol>
<b>Gas Odor</b>	<ol style="list-style-type: none"> <li>1. Chimney or flue obstruction.</li> <li>2. Drafts around heater.</li> <li>3. Gas leak.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean flue.</li> <li>2. Eliminate drafts.</li> <li>3. Shut off gas service immediately. Check piping. Call gas company. See "For Your Safety" <b>(See Page 1)</b>, and "Gas Supply" <b>(See Page 5)</b>.</li> </ol>
<b>Delayed Ignition</b>	<ol style="list-style-type: none"> <li>1. Pilot flame too small.</li> <li>2. Burner ports clogged near pilot.</li> <li>3. Low gas pressure.</li> <li>4. Pilot decreases in size when main burners come on.</li> <li>5. Drafts around unit.</li> <li>6. Pilot lighter door open causing disturbance of pilot flame.</li> <li>7. Improper venting.</li> <li>8. Pressure regulator malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check pilot orifice, clean, increase pilot gas flow if necessary by adjusting at combination control valve <b>(See Fig. H-1 on page 8)</b>.</li> <li>2. Clean burner ports <i>(do not enlarge ports)</i>.</li> <li>3. Check gas supply pressure. See "Gas Supply".</li> <li>4. Supply piping is inadequately sized. Consult local gas utility or competent installer.</li> <li>5. Eliminate drafts.</li> <li>6. Close pilot lighter door.</li> <li>7. See "Venting" <b>(Page 3)</b>.</li> <li>8. Regulator must be adjusted by a qualified serviceman using proper tools and instruments.</li> </ol>
<b>Failure to Ignite</b>	<ol style="list-style-type: none"> <li>1. Main gas off.</li> <li>2. Defective gas valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Open all manual gas valves.</li> <li>2. Replace gas valve.</li> </ol>
<b>Condensation of Water Vapor</b>	<ol style="list-style-type: none"> <li>1. Improper venting.</li> </ol>	<ol style="list-style-type: none"> <li>1. See the "Venting" section <b>(Pages 3-4)</b>.</li> </ol>
<b>Burner Won't Turn Off</b>	<ol style="list-style-type: none"> <li>1. Defective or sticking automatic valve.</li> <li>2. Excessive gas pressure <i>(The supply gas pressure must not exceed 1/2 psi or 14" water column).</i></li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace valve.</li> <li>2. To correct this situation contact the utility supplying the gas. See the "Gas Supply" section <b>(Page 5)</b>.</li> </ol>

### TROUBLESHOOTING CHART - POOR HEATING RESULTS

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
<b>Incorrect Gas Input</b>	<ol style="list-style-type: none"> <li>1. Gas input not checked.</li> <li>2. Clogged orifice.</li> <li>3. Pressure regulator.</li> <li>4. Thermostat capillary tube damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-check gas input. See "Gas Supply".</li> <li>2. Check orifices for clogging. If clogged, clean out the hole carefully with a smooth wood toothpick. (<i>Do not in any way enlarge or distort it</i>).</li> <li>3. Regulator must be adjusted by a qualified serviceman using proper tools and instruments.</li> <li>4. Replace bulb control switch.</li> </ol>
<b>Not Enough Heat</b>	<ol style="list-style-type: none"> <li>1. Heater undersized.</li> <li>2. Temperature dial set too low.</li> <li>3. Incorrect gas supply pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. This is especially true when a dwelling or room is enlarged. Have the heat loss calculated and compare to the heater output (70% of input). Your gas company or installer can supply you with this information. If heater is undersized, replace with correct size unit.</li> <li>2. Raise setting of temperature dial. See "Lighting &amp; Shutting Down Instructions." (<b>See Page 11</b>).</li> <li>3. Check gas supply pressure and regulator pressure as outlined above.</li> </ol>
<b>Too Much Heat</b>	<ol style="list-style-type: none"> <li>1. Temperature dial set too high.</li> <li>2. Combination control valve sticks open.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lower setting of temperature dial. <b>See "Lighting &amp; Shutting Down Instructions" on page 11.</b></li> <li>2. Replace combination control valve.</li> </ol>

### TROUBLESHOOTING CHART - AUTOMATIC PILOT & VALVE

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
<b>Burner Won't Light</b>	<ol style="list-style-type: none"> <li>1. Pilot flame too large or too small.</li> <li>2. Defective combination control valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-adjust pilot flame using adjustment on combination control valves (<b>See Fig. H-1 &amp; H-2 on page 8</b>).</li> <li>2. Replace valve.</li> </ol>
<b>Pilot Outage</b>	<ol style="list-style-type: none"> <li>1. Dirt in pilot orifice.</li> <li>2. Pilot lighter door open.</li> <li>3. Defective automatic pilot section in combination control valve.</li> <li>4. Defective pilot generator.</li> <li>5. Vent safety shut off system.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean pilot orifice with air or solvent, do not ream.</li> <li>2. Close pilot lighter door.</li> <li>3. Replace combination control valve.</li> <li>4. Replace pilot generator.</li> <li>5. See the "Venting" section (<b>Pages 3-4</b>).</li> </ol>
<b>Pilot Will Not Stay Lit When Control Knob is Released</b>	<ol style="list-style-type: none"> <li>1. Pilot flame too large or too small.</li> <li>2. Defective pilot generator.</li> <li>3. Defective gas valve.</li> <li>4. Loose connections at spill switch or ECO on gas valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-adjust pilot flame using adjustment on combination control valves (<b>See Fig. H-1 &amp; H-2 on page 8</b>).</li> <li>2. Replace pilot generator.</li> <li>3. Replace gas valve.</li> <li>4. Tighten connections.</li> </ol>

### CHB-3 BLOWER INSTALLATION - ( OPTIONAL )

*This kit must be installed by a qualified installer or service technician.*

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

- STEP 1.** Run black wire & white wire that comes from bottom of junction box down through the heat shield. **See Figure K-1.**
- STEP 2.** Insert junction box into opening in back of heater. Attach using four #8x1/2" black screws provided. **See Figure K-1.**
- STEP 3.** Attach fan switch to fan switch bracket using two #8x1/2" plated, Phillip head screws provided. The 2" flange on the bottom of bracket and terminals on the fan switch should be toward the back of the heater when properly installed.
- STEP 4.** Locate the two engagement holes in base of heater. On a 35,000 Btu heater these holes are approximately 6-1/2" from the back edge and right and left holes are 5-1/4" and 7-1/4" respectfully from the right side (as viewed from back of heater). On a 50,000 Btu heater the holes are approximately 10-3/4" from the back edge and right and left holes are 5-3/8" and 7-3/8" respectfully from the right side. Attach fan switch bracket to base using two #8x1/2" hex head screws provided. This will require a 1/4" socket and ratchet. **See Figure K-1.**
- STEP 5.** Locate the blower opening and mounting tab on the base of the heater. Insert the front flange of the blower housing under the mounting tab, lower the back of the blower down onto the base aligning the clearance holes in the blower base with the engagement holes in the heater base. Secure the blower to the base with two #8 screws provided. **See figure K-1.**
- STEP 6.** Connect black wire from junction box to right fan switch terminal. **See Figure K-2.**
- STEP 7.** Connect white wire from junction box to white fan motor wire. **See Figure K-2.**
- STEP 8.** Connect black wire from fan motor to left fan switch terminal. **See Figure K-2.**
- STEP 9.** Turn variable speed control switch clockwise (as viewed from front of unit) to "OFF".
- STEP 10.** Plug power cord into 115 V. grounded receptacle.
- STEP 11.** Turn variable speed control switch counterclockwise (as viewed from front of unit) from "OFF" to "HIGH". Blower will now cycle on automatically when the switch temperature is met after the main burner comes on. The blower will continue to run for a short period after the main burner goes off. Blower speed can be adjusted by setting the variable speed control switch between high and low.

**WARNING:** This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazard and must be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug.

Fig. K-1

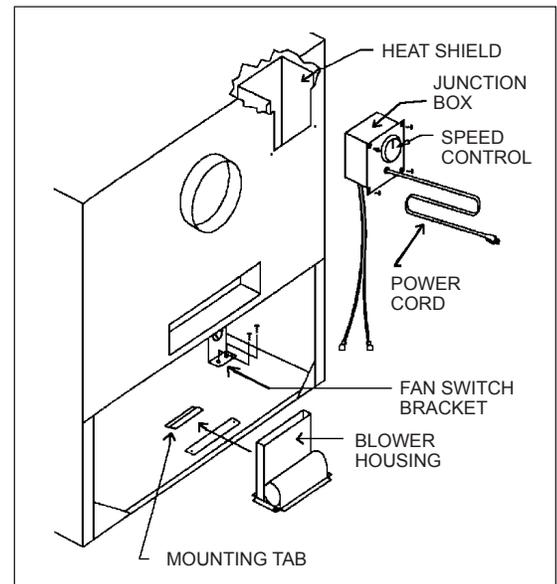
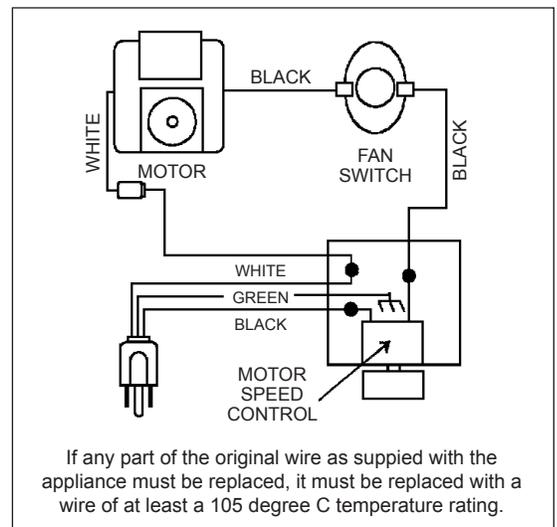


Fig. K-2



### **TSK WALL STAT KIT - ( OPTIONAL )**

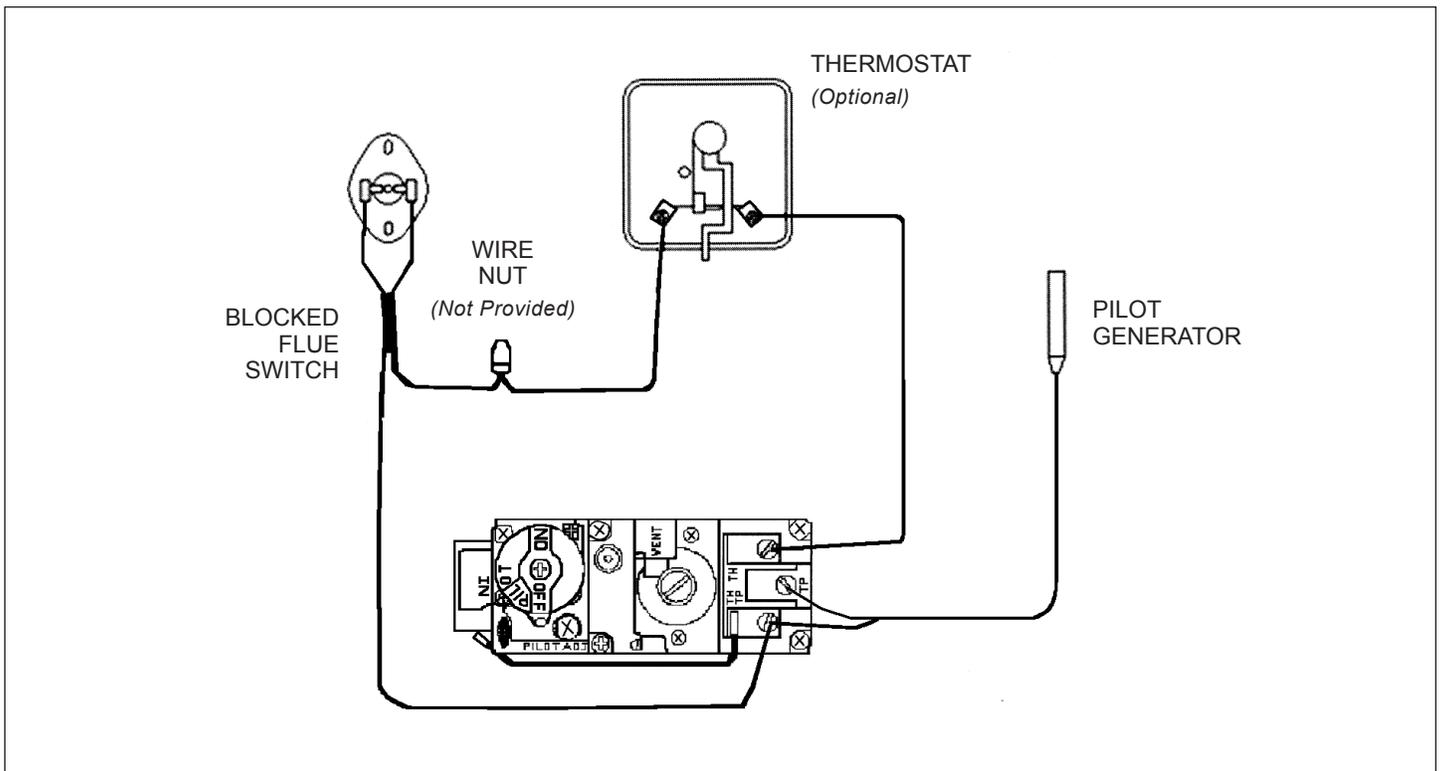
#### **( VC-C Dexen Valve Series ) | WALL THERMOSTAT INSTALLATION INSTRUCTIONS**

This kit must be installed by a qualified installer or service technician.

Your heater can be re-wired to operate with a millivolt wall thermostat by your qualified installer/service person. See wiring diagram below for correct wiring. *NOTE: Do not disconnect the wire from the blocked flue switch to the "TH" terminal on the gas valve.*

- STEP 1.** Turn temperature control knob to "OFF" or lowest setting.
- STEP 2.** Turn gas valve control knob to "OFF".
- STEP 3.** Disconnect wire leading from **Part #80180** (Bulb Control Switch) from valve.
- STEP 4.** Cut the remaining wire leading from **Part #80180** (Bulb Control Switch) to the blocked flue switch, leaving its end connected to the blocked flue switch and leaving enough length to reach the gas valve. Strip 1/2" of the insulation from the cut end of the wire.
- STEP 5.** Connect one leg of thermostat wire to the "TH/PP" terminal on the gas valve.
- STEP 6.** Connect second leg from the thermostat to the stripped wire coming from the blocked flue switch. Secure this connection inside the heater cabinet.
- STEP 7.** Secure both red wires from blocked flue switch inside heater cabinet. Make sure none of the wires have enough slack to lay against the heat exchanger or draft hood.
- STEP 8.** Remove lighting instructions **P/N 91245, 91246, 91247** from back of heater and replace with **P/N 91242, 91243, 91244** lighting instructions supplied in TSK Kit.
- STEP 9.** Follow lighting instructions to place heater in operation.

**Fig. L**



## VENTED CONSOLE - ( PARTS LIST )

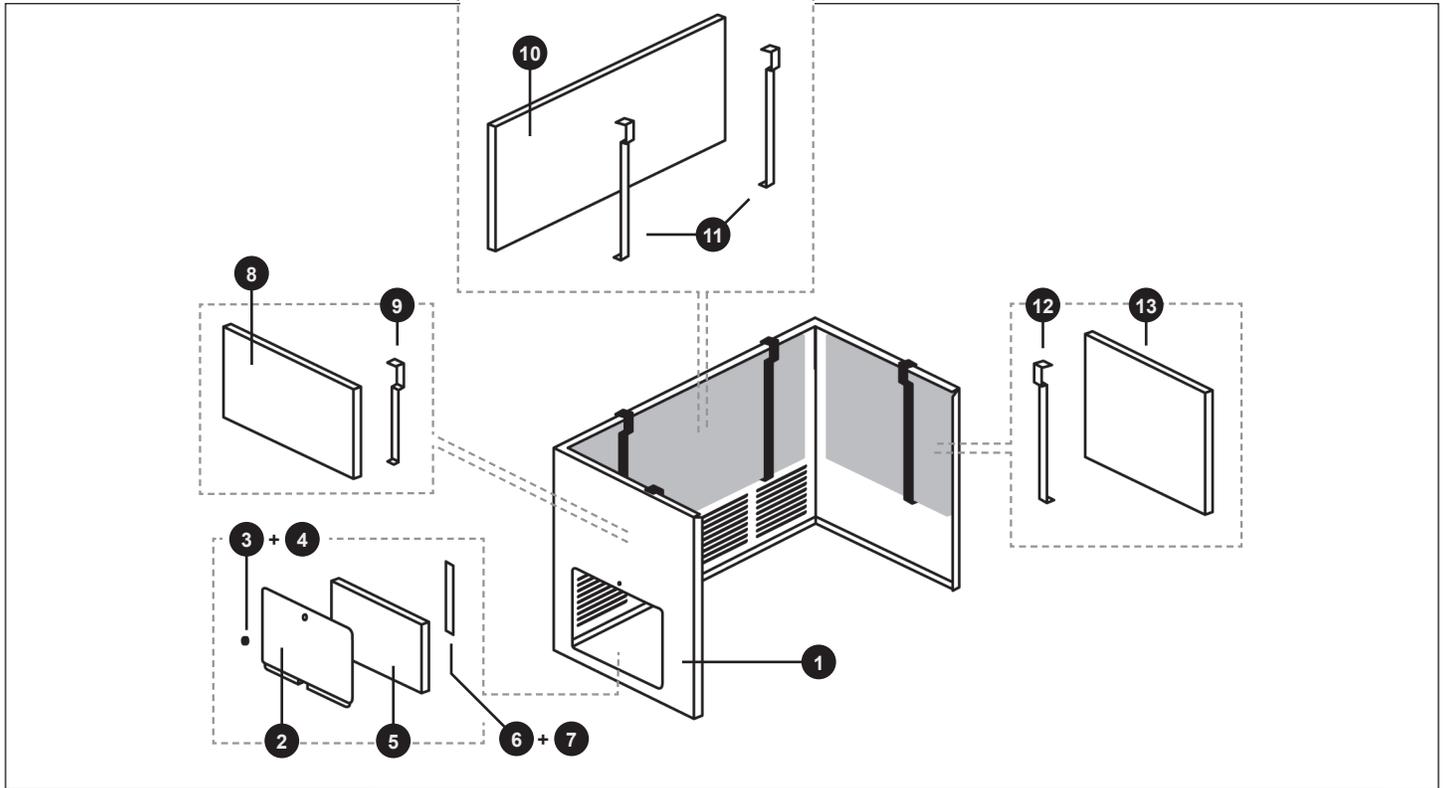
VC-C Closed Front Circulators & CHB3 Blower | *Specifications are subject to change without notice.*

**ATTN: Contractors and Qualified Service Technicians**

We only sell parts through our wholesalers. For prompt parts service, contact the wholesaler from which you purchased your Cozy heater.

*NOTICE: When ordering any component in the control train assembly, specify either Dexen, Honeywell, or Robertshaw components.*

**Fig. M-1**



FOR NAT. MODELS:

**VC201C**

**VC351C**

**VC501C**

**HOW TO PROPERLY ORDER PARTS:**

In addition to the part description and numbers, please be prepared to provide:

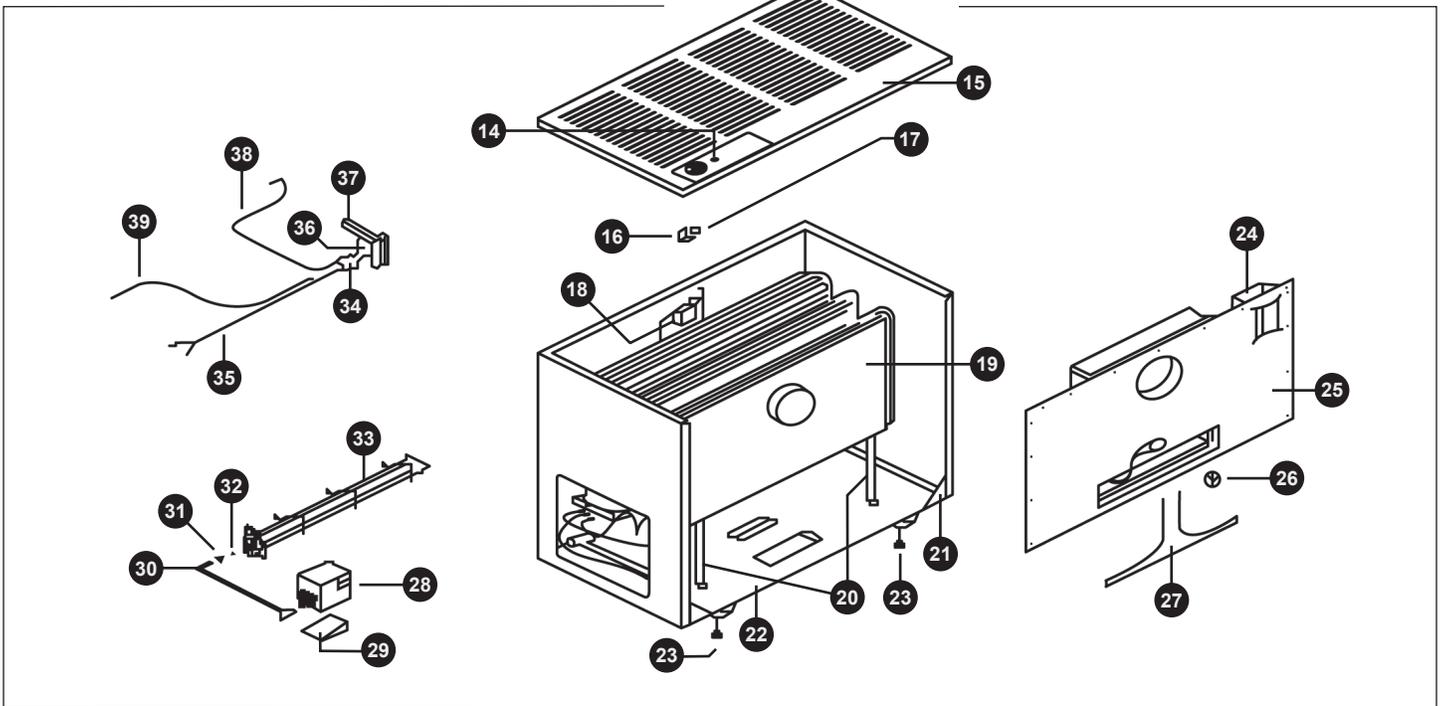
- Model Number
- Serial Number
- Type of Gas Used

*This information can be found on the rating plate that is attached to the heater.*

REF. #	PART DESCRIPTION	PART NO.	PART NO.	PART NO.
1	<b>HOUSING</b> , VC Service	1017474	1017475	1017476
2	<b>DOOR</b> , Small Service	1017477	1017477	1017478
3	<b>KNOB</b> , Phenolic Fluted-Rim	1017451	1017451	1017451
4	<b>U-NUT</b> , Clip-on No-Slip Pk25	1017452	1017452	1017452
5	<b>INSULATION</b> , Foil Faced, 8.5 x 6.5	1017286	1017286	1017287
6	<b>BRACKET</b> , Door	1017285	1017285	1017285
7	<b>SCREW</b> , 8 x 1/2 Pan, Teks Pt. (Qty: 2)	50605	50605	50605
8	<b>INSULATION</b> , Foil Faced	80281	80286	80289
9	<b>BRACKET</b>	1017227ASM	1017282ASM	1017282ASM
10	<b>INSULATION</b> , Foil Faced	80280	80297	80297
11	<b>BRACKET</b> (Qty: 2)	1017281ASM	1017283ASM	1017283ASM
12	<b>BRACKET</b>	1017227ASM	1017284ASM	1017284ASM
13	<b>INSULATION</b> , Foil Faced	80281	80285	80288

NOTE: Parts & schematic drawings on current models are shown at: [cozyheaters.com](http://cozyheaters.com)  
*Specifications subject to change without notice.*

Fig. M-2



FOR NAT. MODELS:

REF. #	PART DESCRIPTION	VC201C PART NO.	VC351C PART NO.	VC501C PART NO.
14	PIEZO IGNITOR	80016	80016	80016
15	CASING, Top Assembly	45052-10	45552-10	46402-10
16	GROMMET, Control Rod	80010	80010	80010
17	REMOTE MOUNTING BRACKET	45062	45062	45062
18	BULB CONTROL SWITCH (Cotherm)	80180	80180	80180
19	HEAT EXCHANGER, Closed Front	45200	45675	46500
20	REAR LEG, Heat Exchanger	N/A	45760	45760
21	GUSSET	*45195	*45195	*45195
22	CASING BASE, Assembly	45175	45640	46460
23	LEG LEVELLERS, 4 per heater	80009	80009	80009
24	DRAFT DIVERTER, Assembly	45300	45783	46558
25	CASING, Back Assembly	45150	45612	45612
26	SWITCH, Vent Safety Spill / VC	80102	80106	84166
27	WIRING HARNESS	80212	80213	80213
28	VALVE, 6003 Natural Gas Valve, Dexen	84085	84085	84085
29	VALVE, Support Bracket	45336	45336	45336
30	MANIFOLD	80133	80133	80135
31	ORIFICE NUT	80024	80024	80024
32	BURNER ORIFICE, Natural Gas	80025	80058	80119
33	BURNER, Steel	80123	80124	80125
34	PILOT ASSY. 0.140.514 Nat. w/ Electrode	80062	80062	80062
35	PILOT GENERATOR 23"	70098	70098	70098
36	LIGHTING HOLE COVER, Pilot	45332	45332	45332
37	BURNER MOUNTING PLATE, Assembly	45817	45817	45817
38	PILOT TUBING Assy. w/Fittings 24"	70012	70012	70012
39	PIEZO WIRE	80128	80128	80128

ADDITIONAL PARTS:

PART DESCRIPTION	PART NO.
COZY LOGO Emblem	80006
CLIPS, for Cozy Emblem	80007
LIGHTING INSTRUCTIONS	47740
<b>HEAT EXCHANGER SPACER:</b>	
VC201C, Spacer	N/A
VC351C, Spacer	45845
VC501C, Spacer	45845

\*Two (2) are Required

Specifications subject to change without notice.

FOR MODELS THAT HAVE BEEN CONVERTED TO LP:

	VC202C	VC352C	VC502C
28	VALVE, 6003 L.P. Gas Valve, Dexen	84086	84086
34	PILOT ASSY. 0.140.504 L.P. w/ Electrode	80063	80063
32	BURNER ORIFICE, L.P. Gas	80027	80120

## VENTED CONSOLE - ( PARTS LIST )

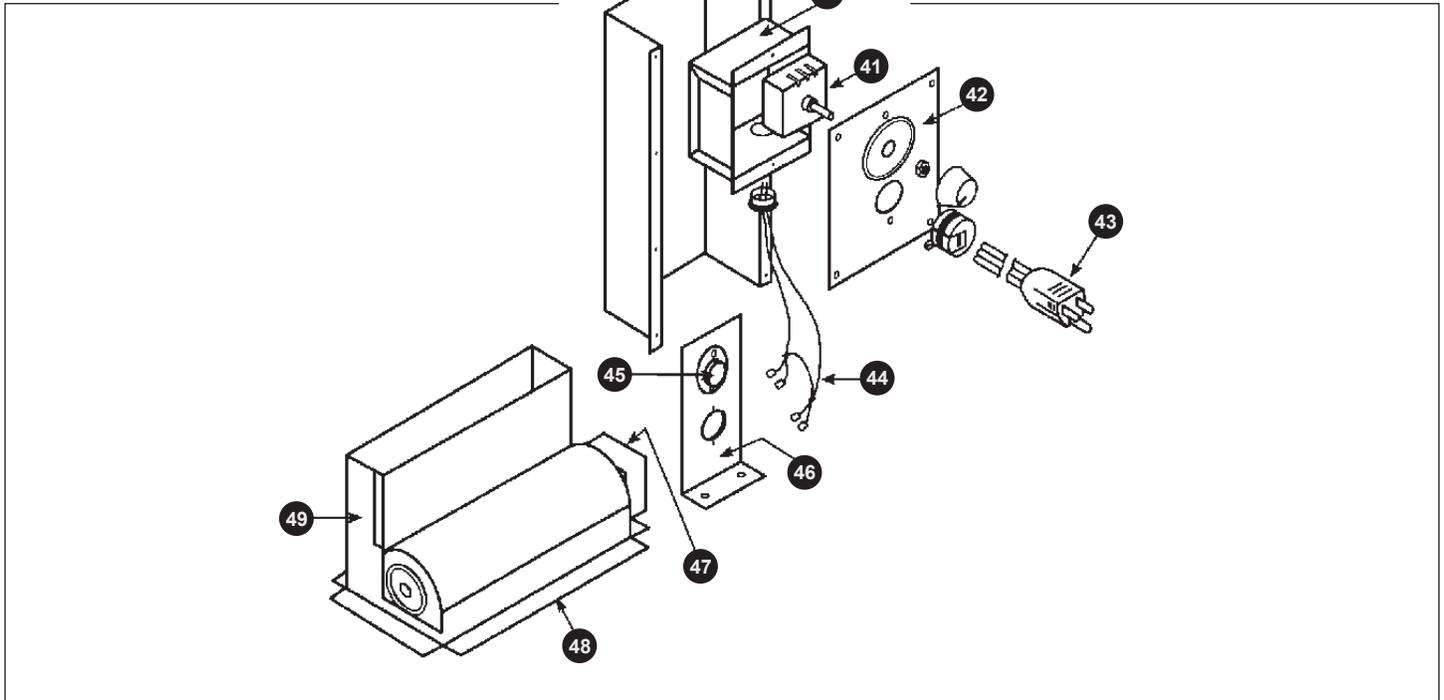
VC-C Closed Front Circulators & CHB3 Blower | *Specifications are subject to change without notice.*

**ATTN: Contractors and Qualified Service Technicians**

We only sell parts through our wholesalers. For prompt parts service, contact the wholesaler from which you purchased your Cozy heater.

*NOTICE: When ordering any component in the control train assembly, specify either Dexen, Honeywell, or Robertshaw components.*

**Fig. M-3**



BLOWER PARTS  
*Optional for VC351C & VC50C.*

**CHB-3  
BLOWER**

**HOW TO PROPERLY  
ORDER PARTS:**

In addition to the part description and numbers, please be prepared to provide:

- Model Number
- Serial Number
- Type of Gas Used

*This information can be found on the rating plate that is attached to the heater.*

REF. #	PART DESCRIPTION	PART NO.
40	JUNCTION BOX, Assembly	47850
41	SPEED CONTROL SWITCH, with Knob & Decal	70111
42	COVER, Junction Box	47870
43	POWER CORD	80202
44	WIRING HARNESS, Motor	80256
45	FAN SWITCH	80253
46	BRACKET, Fan Switch	47840
47	BLOWER / MOTOR, Assembly	80251
48	MOUNTING BRACKET	47835
49	BLOWER NOZZLE, Assembly	47820
N/A	BLOWER GASKET, 7 - 1/4"	*80257
N/A	BLOWER GASKET, 4 - 5/8"	*80258

*\* Two (2) are Required*

NOTE: Parts & schematic drawings on current models are shown at: [cozyheaters.com](http://cozyheaters.com)  
*Specifications subject to change without notice.*

# LIMITED WARRANTY

Cozy Heating Systems LLC warrants to the original user the accompanying product for the period specified herein, provided said product is installed, operated, maintained, serviced, and used according to the instructions and specifications accompanying the product. **AS OUTLINED IN OUR INSTRUCTIONS, ANY WARRANTY CONSIDERATIONS ARE CONTINGENT ON INSTALLATION BY A QUALIFIED INSTALLER (CONTRACTOR). SELF-INSTALLATION IS PROHIBITED AND WILL INVALIDATE YOUR WARRANTY.**

If within a period of one year from the date of installation of the product, any part supplied by the manufacturer proves to be defective due to workmanship or material, it will replace such part, provided parts have not been subjected to misuse, alteration, neglect, or accidents. The term of the warranty for the heat exchanger and burners is covered in Table A below. Any claim not made within ten (10) days after the expiration of the warranty period shall be deemed waived by the user.

The manufacturer shall have no liability or be required to perform any obligation under this warranty unless, when requested, the user returns, at the user's expense, the component or product claimed defective, to the manufacturer for inspection, to enable the manufacturer to determine if the claimed defect is covered by this warranty.

No charges for freight, labor or other expenses incurred in the repair, removal, or replacement of any product or component claimed to be defective, will be paid by the manufacturer to the user, and the manufacturer will not be liable for any expenses incurred, by the user, in remedying any defect in the product.

Service under this warranty is the responsibility of the installer. In the event service under this warranty is needed, the user of the product shall request such service directly from the installer. If the user is unable

to locate the installer, the user should write directly to the manufacturer, and the name of an alternative service source will be supplied.

The product safety registration card (packed inside the appliance) must be completed and returned to the factory.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED (WHETHER WRITTEN OR ORAL). ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY LIMITED TO THE DURATION OF THE MANUFACTURER'S EXPRESS, WRITTEN WARRANTY.

UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR EXPENSES ARISING DIRECTLY OR INDIRECTLY FROM ANY COMPONENT OR FROM THE USE THEREOF. THE REMEDIES SET FORTH HEREIN SHALL BE THE EXCLUSIVE REMEDIES AVAILABLE TO THE USER AND ARE IN LIEU OF ALL OTHER REMEDIES.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY, FROM STATE TO STATE.

**TABLE - A**

**WARRANTY PERIOD**

<b>PRODUCT</b>	<b>HEAT EXCHANGER / TUBES</b>	<b>BURNERS</b>
Cozy Gas Fired Floor Furnace	10 Years	10 Years
Cozy Gas Fired Wall Furnace	10 Years	10 Years
Cozy Gas Fired Vented Console Heater	10 Years	10 Years
Cozy Gas Fired Direct Vent Heater	10 Years	10 Years
Cozy Gas Fired Counterflow Furnace	10 Years	10 Years
Cozy Gas Fired Counterflow Direct Vent Furnace	10 Years	10 Years
Cozy Gas Fired Hi-Efficient Direct Vent Wall Furnace	10 Years	10 Years
Cozy Fan-Type, Direct Vent Through-The-Wall Gas Heater	10 Years	10 Years

**COZY HEATING SYSTEMS, LLC**  
 3230 INDUSTRIAL PARKWAY. – JEFFERSONVILLE, IN 47130

**INSTALLER:**

Leave this manual with the appliance.

**CONSUMER:**

Keep this manual for future reference.

Installation, maintenance, service, troubleshooting and repairs must be performed by a qualified service agency. MR./MRS. HOMEOWNER, **DO NOT** attempt any of these procedures yourself as this could expose you to property damage, personal injury, or loss of life and will invalidate all warranties.