

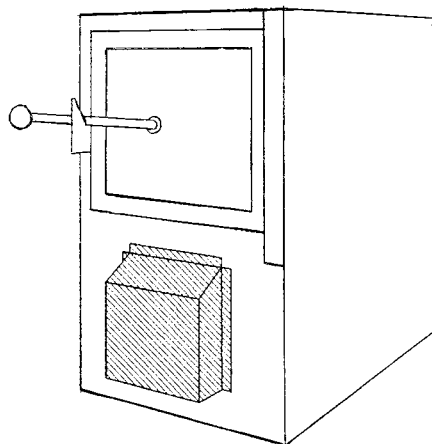


# Owners Manual

## MODEL VC120 SOLID FUEL FURNACE

For use as an add-on to electric, gas, or oil furnaces or an independent wood furnace when equipped with a blower.

### SAVE THESE INSTRUCTIONS



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## **SPECIFICATIONS**

<b>Model</b>	<b>VC120</b>
<b>Rating</b>	<b>120,000 btu. nominal</b>
<b>Height</b>	<b>50 1/2"</b>
<b>Width</b>	<b>29 1/2"</b>
<b>Length</b>	<b>36"</b>
<b>Flue collar</b>	<b>7" I.D.</b>
<b>Flue pipe center to rear</b>	<b>5 1/2"</b>
<b>Recommended flue pressure</b>	<b>.04" water column (draft)</b>
<b>Hot air plenum opening</b>	<b>22" L x 26" W</b>
<b>Fire door opening</b>	<b>15" x 13"</b>
<b>Firebox length</b>	<b>27"</b>
<b>Width</b>	<b>17"</b>
<b>Height</b>	<b>32"</b>
<b>Capacity</b>	<b>8.5 cu. ft.</b>
<b>Fuel length</b>	<b>26"</b>
<b>Firebox design features</b>	<b>1) distributed draft system with preheated primary air 2) Post burn preheated secondary air 3) Brick baffle system to retain high combustion temperatures</b>
<b>Construction</b>	<b>10 ga. firebox brick lined 10 ga. heat exchanger 24 ga. cabinet brick baffles</b>
<b>Weight</b>	<b>660 lbs.</b>

## **SAFETY PRECAUTIONS**

- ✓ **Comply with all local codes and regulations.**
- ✓ **Never operate a furnace that has been improperly installed.**
- ✓ **DO NOT USE CHEMICALS OR FLUIDS TO START OR FRESHEN A FIRE. Keep all flammable fluids well away from the furnace.**
- ✓ **DO NOT BURN GARBAGE, GASOLINE, NAPHTHA, ENGINE OIL, OR RAGS SOAKED IN THESE FLUIDS.**
- ✓ **Combustible materials, including fire wood, must be stored well away from the furnace meeting the distances specified on the label.**
- ✓ **Never operate the furnace unless you are sure the smoke pipe and chimney are in safe condition. Flue gasses may contain carbon monoxide which is poisonous.**
- ✓ **Keep smoke pipe and chimney clean to prevent a chimney fire. In the event of a chimney fire turn down all thermostats and close off combustion air. Call a fire department if necessary. Have a clearly understood plan to handle a chimney fire.**

Congratulations on your choice of a wood furnace from Valley Comfort. We thank you for the confidence you have placed in us.

A word about Valley Comfort -- In 1953 when most folks were excited about getting rid of their wood burning appliances, a determined entrepreneur, Pete Stoopnikoff, was convinced that he could make a better wood heater. After many years of packing "too much wood", he was determined to produce a more efficient Canadian heater. He succeeded! That's over 40 years ago and since then Valley Comfort has researched, designed, produced and marketed an expanding line of fine products. In the late 1970's safety standards were introduced to the industry and our products were some of the first to be approved. Today, all of our heaters and furnaces are tested and approved to the national standards. We have built our reputation on quality and are committed to that end when making all of our products.

This instruction booklet provides you with important instructions assuring maximum usage and service life of your furnace. Please read this booklet thoroughly and save it for future reference. Carefully follow instructions for installation.

## OPERATING INSTRUCTIONS

### LIGHTING THE FIRE

**NEVER START A FIRE UNLESS ALL BRICKS AND BAFFLES HAVE BEEN CORRECTLY INSTALLED IN THE FIREBOX. CHECK THE INSTALLATION INSTRUCTIONS CAREFULLY**

- Turn up the thermostat to open the draft
- NEVER USE FLAMMABLE FLUIDS TO START THE FIRE
- On top of crumpled paper place split dry kindling and then small wood. Once you have a fire going add larger pieces of wood.
- High temperature paints will give off an odor the first time you light your furnace. Open a window to ensure adequate ventilation.
- The damper will close when either the plenum temperature reaches the limit level or the room temperature reaches the thermostat setting.
- The circulation blower should cycle off and on automatically, according to plenum temperature.

## Operations Draft

- Draft is created by the heated air rising in the chimney system. This draft will pull fresh combustion air into the firebox. Recommended draft is .04 in. w.c. Too little draft results in a sluggish fire and smoking when the furnace door is opened. Too much draft (over .07 in. w.c.) is unsafe and wastes fuel. The damper opening has been set at the factory and should not be adjusted.
- Ashes should be cleaned out when they reach a depth of 4" in the firebox (half way up the lower bricks). Dispose of ashes in an airtight, metal container and store it outside away from combustibles.
- **OPEN THE FIRING DOOR ONLY TO RELOAD FUEL.**
- Your appliance must be vented by a chimney system suitable for solid fuel fired appliances and should be checked periodically to insure its safe condition.
- Use extreme caution not to over fire during a power failure . Do not fill wood above the top of the liner bricks. The furnace is designed as a forced air furnace and excess firing without the blower running will overheat the firebox and damage will result.
- If your furnace is operating as an add-on combination unit remember both units will not fire at the same time. If wood is to be your main source, set the wood thermostat at your desired room temperature and set the backup thermostat approximately 5 degrees lower.

## **OPERATION DURING POWER FAILURE CONDITIONS**

### **SAFETY FIRST**

Your system was designed as a forced air system; do not expect regular performance without the fan running. Do not over fire to compensate for the lack of a fan. Your system will perform at approximately 50% capacity in the gravity mode.

- During a power failure never fill the firebox above the top of the firebox liner bricks.
- Remove the cabinet door from the blower. Remove the air filters and open all registers to facilitate free air flow.
- Lift the left manual draft control lever until it "clicks". This will open the draft to a pre set level, see fig. 1A. (Page 16)
- When the power returns the damper motor will open and the manual control will return to normal position. Even without the manual control open the factory adjusted bleed air system will provide some combustion air. To close the power failure combustion air lift the right hand lever, see fig 1A. (Page 16)
- When power is restored replace the blower system, air filters, and door.

Without the blower running, high temperature in the system builds up quickly and over firing will result in permanent damage to the firebox. Maintain a small fire only. Over firing voids all product warranties.

## CREOSOTE

Creosote can be a problem in any wood-burning appliance. Creosote is a black, ill-smelling liquid that results from distillation of wood gases during the combustion process. It solidifies depending on temperature and in either state is highly combustible. The best way to prevent or minimize creosote build up is to follow proper firing methods. The amount of creosote depends on several factors that include:

- 1) Moisture content of the fuel
- 2) Stack or flue temperature
- 3) Amount of draft
- 4) Efficiency of the appliance
- 5) Turbulence of smoke

At stack temperature below 120°C (250°F), the creosote will condense out of the gases (smoke). Once a flue pipe becomes heavily coated with creosote, the only safe way to remove it is mechanically with a proper chimney cleaner or brush. A combination of wet fuel and poor operating procedure may necessitate weekly cleaning to remove creosote buildup.

Remember - the hotter the fire the less creosote, Therefore small intense fires create less creosote than large, smoldering fires. We recommend that each day a small intense fire be built, preferably in the morning. This daily practice should burn out the small deposits of creosote before they build to a dangerous level. The draft should be opened for at least 20 minutes by turning the thermostat up in the morning and evening. NEVER "burn out" large deposits of more than one day's accumulation.

Always assure safety by having a clearly understood plan of how to handle a chimney fire, should one occur.

### **In conclusion, creosote can best be controlled as follows:**

1. Burning dry split wood.
2. Mixing small and large pieces of wood
3. During warm weather using smaller split wood
4. Keeping stack temperature up by using double wall pipe on flue runs and protect outside chimney installations in a chase. Minimize elbows and keep flue runs as short as possible and ensure tight connections.
5. Checking daily for creosote until experience shows how often cleaning is required. Remember a clean chimney is a safe chimney.
6. Having a clearly understood plan should a chimney fire occur.

**WARNING: FAILURE TO INSPECT AND CLEAN YOUR CHIMNEY SYSTEM REGULARLY CAN RESULT IN A SERIOUS FIRE WHICH MAY DAMAGE YOUR CHIMNEY OR CAUSE A HOUSE FIRE**



## **WHAT KIND OF WOOD?**

There is an old idea that using some green wood will insure long burn times. **THIS IS WRONG!** Always remember, the dryer the wood the better it is. It takes a great deal of energy to evaporate the moisture contained in green wood and that energy will not be heating your house. Also, green or wet wood will greatly increase creosote problems.

In most cases the harder the wood the more heat. In all cases, the dryer the wood the more heat it products. We recommend at least 12 months drying time, protected from rain, for split firewood,

Our wood furnaces are not designed for burning coal and doing so will void the warranty.

Never burn salt-water driftwood. It is very corrosive and will damage the firebox. Burning salty wood also voids the warranty.

This controlled combustion firebox has been designed for high efficiency and long burn times. The proper time to add more wood is when the last charge has been reduced to a glowing charcoal bed. There will be very little smoke at this stage in the burn cycle.

**WARNING: BURNING WET UNSEASONED WOOD CAN CAUSE EXCESSIVE CREOSOTE ACCUMULATION. WHEN CREOSOTE IS IGNITED IT CAN CAUSE A CHIMNEY FIRE WHICH MAY RESULT IN A SERIOUS HOUSE FIRE.**

## **MAINTENANCE**

Maintain fire door gaskets to ensure a tight seal. Use 7/8" replacement gasket.

### **WARNING:**

DO NOT OPERATE THIS WOOD FURNACE IF THE DOOR GASKET IS MISSING OR DAMAGED. DANGEROUS OVERFIRING CAN OCCUR WHICH CAN DAMAGE THE APPLIANCE OR IGNITE CREOSOTE IN THE CHIMNEY, POSSIBLY CAUSING A HOUSE FIRE. IF ANY PART OF THE WOODSTOVE OR FLUE SYSTEM IS GLOWING THE FURNACE IS BEING OVERFIRED.

A broken firebrick should be replaced to prevent warping of the firebox.

OPERATE THE ALTERNATE ELECTRIC, GAS OR OIL FURNACE PERIODICALLY TO ENSURE THAT IT WILL OPERATE SATISFACTORILY WHEN NEEDED.

INSPECT VENT PIPES, VENT PIPE JOINTS AND VENT PIPE SEALS REGULARLY TO ENSURE THAT SMOKE AND FLUE GASES ARE NOT DRAWN INTO, OR CIRCULATED BY, THE AIR CIRCULATION SYSTEM

Your appliance has been manufactured in the Valley Comfort tradition of high quality. To ensure years of trouble free operation, have your furnace serviced regularly by your Valley Comfort dealer.

After each heating season thoroughly clean the chimney and firebox so your system is ready for next fall. Inspect all firebricks and replace any damaged bricks.

Have a warm safe winter!

# **INSTALLATION INSTRUCTIONS**

## **GENERAL**

Please take time to read these instructions thoroughly. Not following the instructions could result in a faulty installation causing serious problems. Along with these general instructions you must follow the specific instructions which pertain to your particular installation i.e.: add-on to electric, gas, oil or independent installations.

## **FREIGHT DAMAGE**

This product was carefully inspected before it left Valley Comfort. Inspect the unit thoroughly upon its arrival. If damage is found report it to the carrier and then immediately file a freight damage claim. Your local Valley Comfort dealer will assist if required.

## **PARTS INCLUDED WITH VC120**

1. Furnace
2. 3 Fan limit controls and bracket
3. Thermostat (Honeywell T822d or equivalent)
4. Large baffle brick holders
5. Small baffle brick holder
6. Full size firebricks
7. Cut firebricks
8. Mesh cover for combustion air inlet
9. Poker
10. Ash shovel
11. Instruction book

## **OPTIONAL EQUIPMENT**

1. Blower and cabinet for independent use (900 cfm. to 1200 cfm.)
2. 24 volt control transformer

## **USAGE**

The VC120 may be installed as follows:

1. **An add-on to any of the following furnaces:**
  - A. An electric forced air furnace rated at 15 KW to 30 KW with a minimum size fan of 900 cfm.
  - B. A forced air gas furnace with a maximum output of 140,000 btu. and a minimum size fan of 900 cfm.
  - C. An oil furnace having an oil input as shown on the nameplate of not more than 1.25 usgph. and a fan capacity of not less than 900 cfm..
2. As an independent forced air wood furnace equipped with a blower of not less than 900 cfm. capacity.

## CAUTIONS

1. All installations must comply with local building safety codes.
2. Installation shall be by a licensed, qualified installer experienced in heating equipment installations.
3. **THE WOOD SECTION MUST BE VENTED INTO A CHIMNEY APPROVED FOR SOLID FUEL USE IN GOOD CONDITION. MOST GAS FURNACES ARE VENTED INTO "B" VENTS, THIS IS UNACCEPTABLE FOR SOLID FUEL APPLIANCES. THE VC120 MUST NOT BE VENTED INTO ANY TYPE OF CHIMNEY THAT ALSO SERVES AS A GAS APPLIANCE VENT.**
4. **DO NOT CONNECT THE DUCT WORK SO REVERSE OR PARALLEL FLOW IS POSSIBLE.**
5. DO NOT RELOCATE ANY OF THE CONTROLS ON THE ORIGINAL OR ALTERNATE FURNACE.
6. Ensure that all existing or alternate furnace systems are in good operating condition before installing the add-on.

**Valley comfort Systems Inc. supports the Wood Energy Technology Transfer Inc. This organization provides training and certification for personnel involved in installation and maintenance of wood heating systems across Canada.**

## MINIMUM CLEARANCES TO COMBUSTIBLES

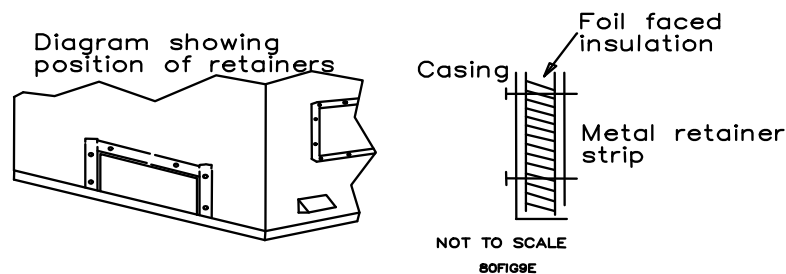
Wood charging end	- 48 in.
One side	- 6 in.
Other side for servicing	- 24 in.
Single wall flue to combustibles	
including electric wiring and electric furnace	- 18 in.
Plenum and first 6 ft. of supply duct	- 2 in.

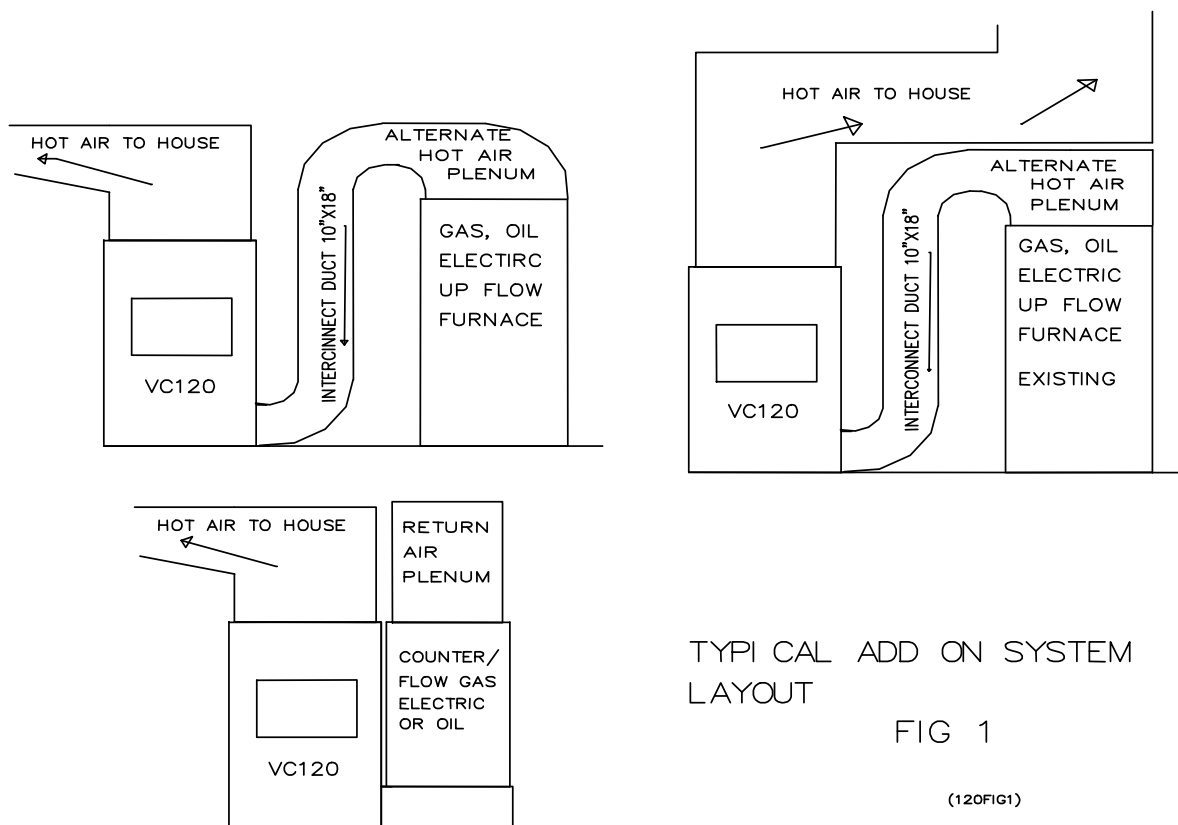
If the furnace sits on a combustible floor, a non-combustible shield must be used underneath and extending 6 in. out from all sides and 18 in. out from the charging end. This floor protection is required to prevent sparks from falling onto the combustible floor. See CSA B365-M87) It is not required to be a heat protective covering.

This furnace must be installed in compliance with all local codes and regulations.

## LOCATION RE ALTERNATE FURNACE

The VC120 can be located on either side of the alternate furnace, and in a series downstream configuration, as space permits. Minimum size of the interconnect duct is 10 in. x 18 in. DO NOT USE INTERCONNECT DUCT ELBOWS THAT HAVE AN INSIDE RADIUS OF LESS THAN 6" (150mm.). NOTE: After interconnect duct opening has been cut into the side of the VC120, insulation must be fastened back to the furnace cabinet all around the opening. Use the metal strips provided to hold the insulation tightly against the cabinet inside. This will prevent the insulation from dislodging due to blower induced vibration. (see diagram below)





### Typical installation illustration

## PRESSURE LOSS

Before any changes are made to the existing furnace system you must establish the working parameters of that system. You can then insure that addition of the add-on has not degraded the operation of the original system, and correct air flow will be maintained. Change all filters in the system to insure maximum free air flow. Using an accurate manometer check the static pressure at the end of a typical duct near the exit to the house. Check the static pressure in the plenum above the existing furnace also.

**Pressure drop = Static pressure at furnace -(minus) static pressure at duct exit**

Record the pressure drop of the original system.

Addition of the add-on furnace will add airflow resistance in the system. After installation is complete measure the pressure drop in the same run measured before add-on installation. If the air flow has diminished the blower speed should be adjusted to compensate. When using a belted blower the pulley size should be changed or adjusted to speed up the blower. If the pulley size is adjusted measure the blower motor current to insure that it is still within the nameplate rating. It may be necessary to replace the motor with a more powerful motor. If a direct drive blower is used change to a higher speed. Do not change the blower size.

## COMBUSTION AIR

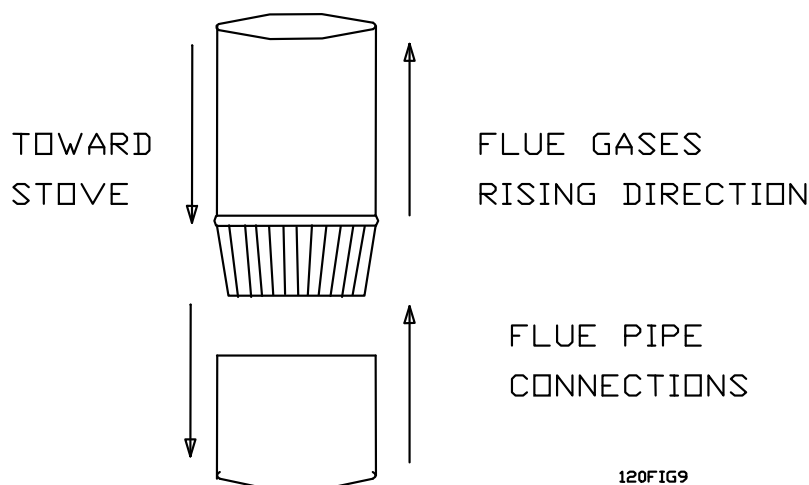
Insure adequate combustion air allowing for all other exhausting type appliances in the dwelling (range hoods, dryers, etc). Outside combustion air can be connected directly to the combustion air inlet on either side of the lower front cover. Cut an opening 3 1/2" x 9 1/2" (Fig 1A). Use a 4"x10" to 6" round boot to connect outside air duct. Minimum duct for outside air is 6" with not more than 2 90o elbows in line, keep this outside air line as short as practical. If you do not use outside combustion air you must cover the opening cut in the lower front cover with the mesh screen provided in the furnace accessory kit.

## LOCATION RE FLUE

The Chimney must be an approved chimney for use with solid fuel fired appliances, It must be in good repair, free from leaks and obstructions. If using a masonry chimney, it must meet the minimum standards of the building code of Canada. **The wood flue must always enter the chimney below the oil flue. You must comply with the local authority having jurisdiction and CSA installation standard B365-M87. DO NOT OPERATE THE VC120 WITH A DRAFT OF OVER .06 INCHES WATER COLUMN. HIGHER DRAFT LEVELS MAY CAUSE THE FIRE TO BURN OUT OF CONTROL AND CREATE A FIRE HAZARD.**

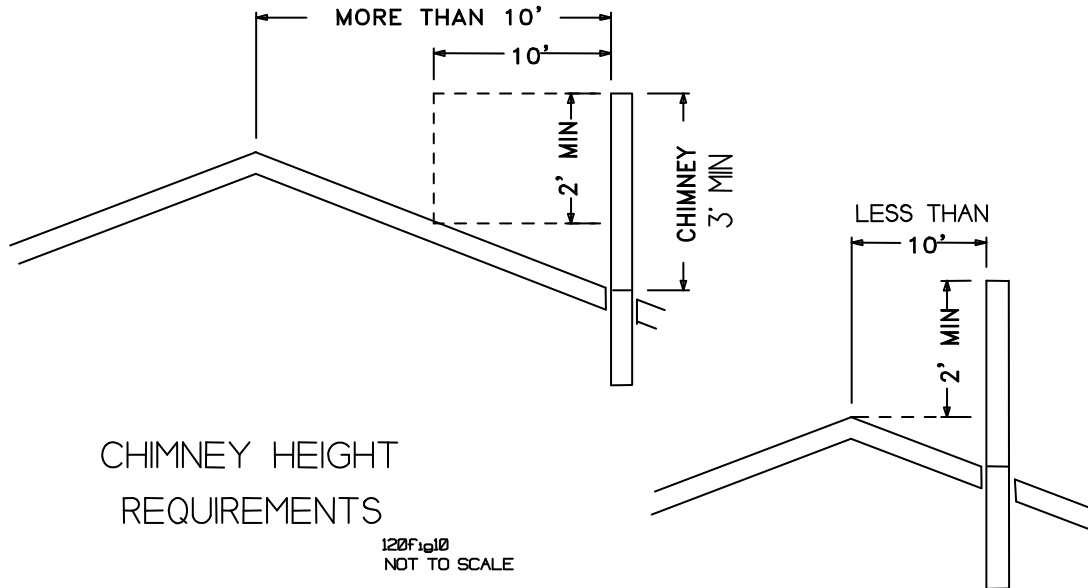
Flue pipe between the furnace and the chimney should be as short and direct as possible and have a minimum rise of 1/4" per running foot. The chimney connector must be attached to either an approved masonry chimney or one of the listed factory built chimneys suitable for use with solid wood fuel. All joints must be tight and fastened with sheet metal screws. Place the small (crimped) end of the pipe into the furnace collar and into each preceding length of pipe to insure that any creosote which might form will run back down into the furnace see fig 10 below..

**WARNING: Chimney connector is to be used only within the room, between the stove and ceiling/wall. Never use a chimney connector to pass through a combustible ceiling or wall. Always maintain the minimum clearances to combustibles as required by the applicable building codes.** Recommended draft is .04 in. water COLUMN. It is unsafe to operate the furnace with more than .06 in. water column draft. Use a barometric control if necessary to achieve this.



## CHIMNEY HEIGHT REQUIREMENTS

Regardless of whether you use a masonry chimney, or a listed metal chimney, it must be the required height above the roof and other obstructions. The minimum requirement is that the chimney must be at least 3 feet higher than the highest point where it passes through the roof and at least 2 feet higher than the highest part of the roof or structure that is within 10 feet, measured horizontally, from the chimney



The height requirement is necessary in the interest of safety and does not necessarily assure proper flue draft. Use a minimum total system height of 12 feet, measured from the stove flue collar to the top of the chimney, not including the chimney cap.

## CABINET INSTALLATION

Attach the cabinet parts to the firebox using the drill/self tapping screws provided. Following is the sequence of cabinet assembly:

1. place the top rear panel over the smoke pipe and install the adjustable collar around the flue pipe.
2. Remove temporary screws around bottom pan edges. Install side panels with lower edge inside bottom pan lip. Secure around bottom edge and with 1 screw in upper front flange.
3. Install rear panel over side panels and secure with screws along sides.
4. Install upper front panel and secure with 2 screws on each side.

## THERMOSTATS

Your system uses two thermostats - one to control the wood add-on and one to control the alternate furnace. The alternate (electric, gas or oil) thermostat must be interlocked to the limit switches provided on the wood furnace plenum. This is to prevent the alternate furnace from operating when the plenum temperature rises above 150oF. Thermostats should be mounted side by side on an inside wall out of direct sunlight or other heat sources.

## ELECTRICAL GENERAL

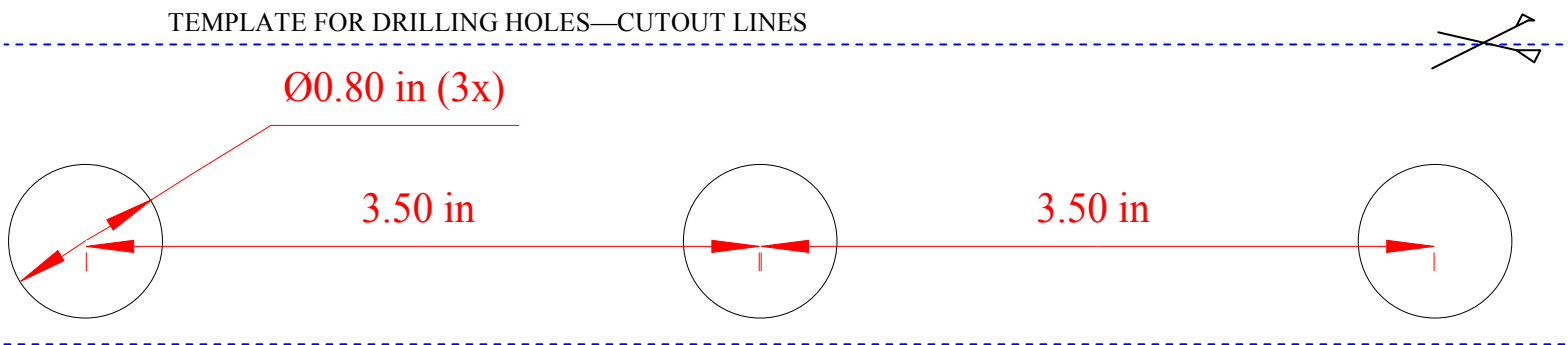
All wiring on the VC120 shall be fastened to the insulated cabinet surfaces only. This is to prevent overheating by direct contact with firebox components.

Electrical installation must be done by a qualified licensed electrician, experienced in control circuit wiring.

## FAN LIMIT INSTALLATION

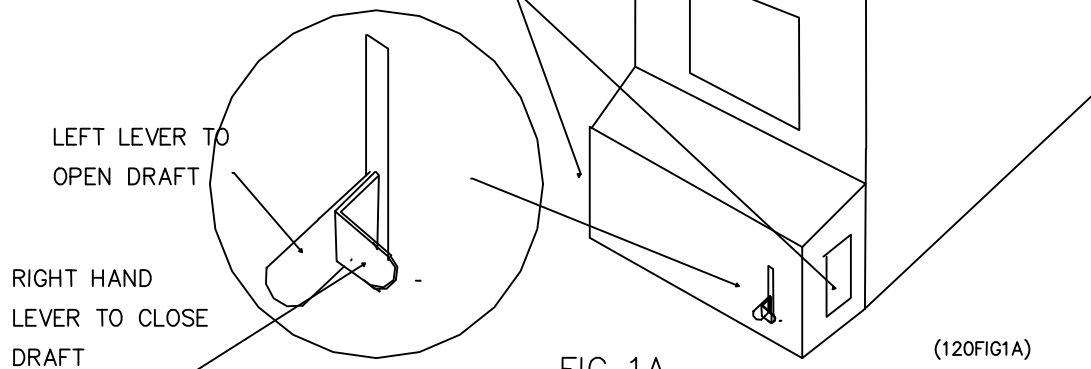
Using the bracket provided, install the fan limit junction box assembly onto the furnace cabinet and warm air plenum, centering it above the firebox fuel door. All wiring must be routed on the outside of the cabinet surface. Installation of wiring must be by a qualified electrician. See instructions for wiring diagrams which apply to your specific installation.

TEMPLATE FOR DRILLING HOLES—CUTOUT LINES



FAN/LIMIT CONTROL & ELECTRICAL JUNCTION BOX LOCATION. MOUNTED TO FRONT OF PLENUM USING TWO PLY MOUNTING BRACKET. ELECTRICAL WIRING ROUTED ON OUTSIDE OF CABINET WITH 1/4" STANDOFF CLIPS.

OUTSIDE COMBUSTION AIR CONNECT TO EITHER SIDE OF LOWER FRONT COVER BOX USING 4"X10"X6" RND BOOT TO CONNECT TO 6" DUCT





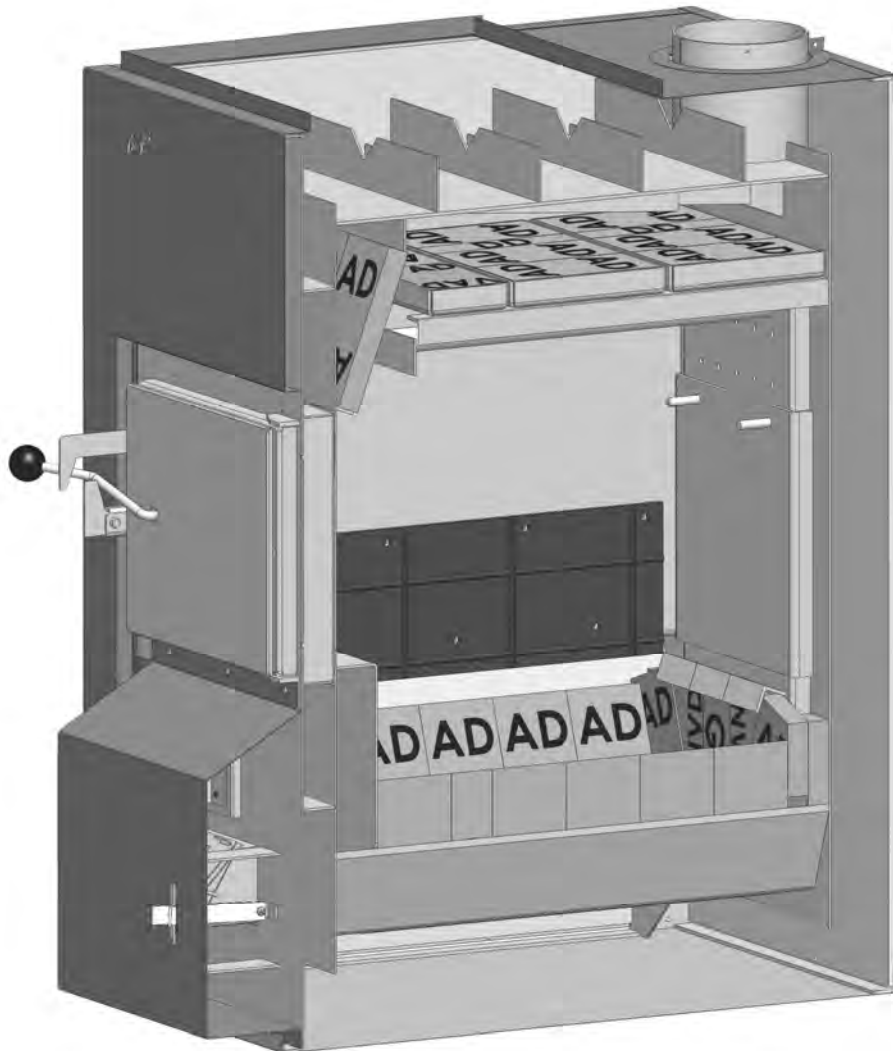
## **BRICK AND BAFFLE INSTALLATION**

Firebox bricks and baffle components are shipped separately to reduce unit weight and ease installations.

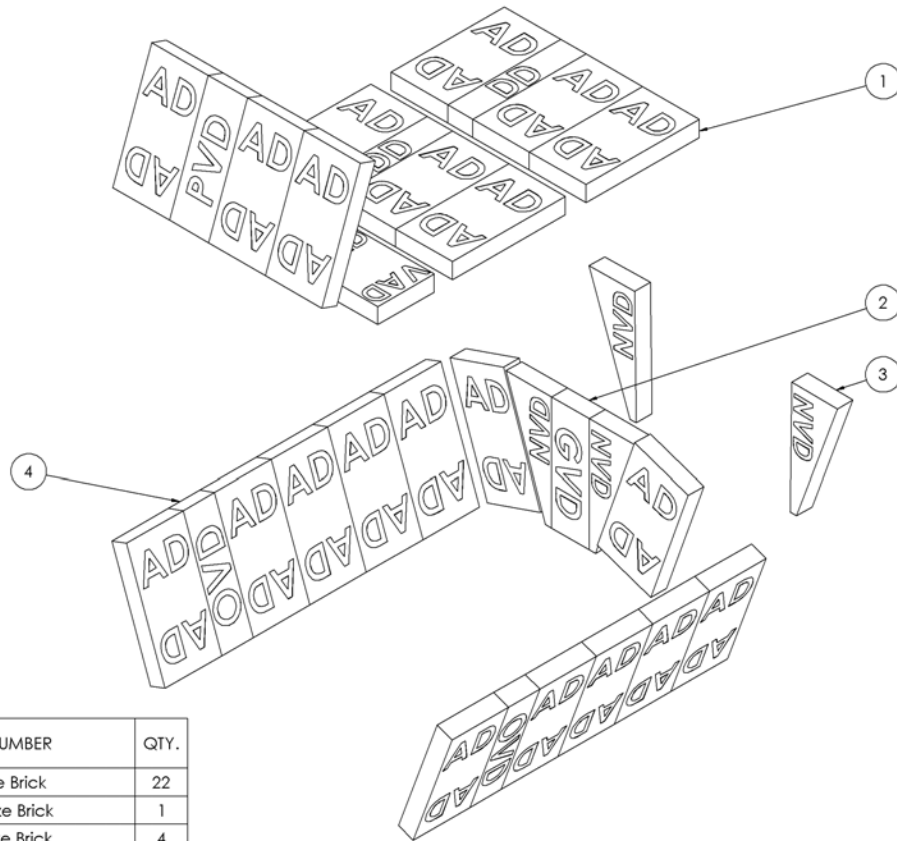
### **NEVER OPERATE THE FURNACE WITHOUT FIRST INSTALLING ALL BRICKS AND BAFFLES IN THE FIRE BOX.**

**Caution: Firebricks are heavy. Use all necessary precautions to prevent injury from bricks falling during installation.**

Install the bricks in the baffle holders and install the baffles in the upper firebox on the supports provided as per the following diagram below. Care must be taken to ensure that the baffle holders are situated correctly and sitting solidly on the side supports to prevent flue gases from escaping around the baffle. Missing or improperly installed baffle bricks will increase flue gas temperatures resulting in dangerous conditions. Operating efficiency is also greatly reduced which means you will burn more wood than necessary. (FIG 2). Hang the rear firebox protection plate on the hooks provided.



Install firebox liner bricks in the sequence indicated by letter in the following diagram.



ITEM NO.	PART NUMBER	QTY.
1	AD Size Brick	22
2	GVD Size Brick	1
3	NVD Size Brick	4
4	OVD Size Brick	2
5	DD Size Brick	2
6	VAD Size Brick	1
7	PVD Size Brick	1

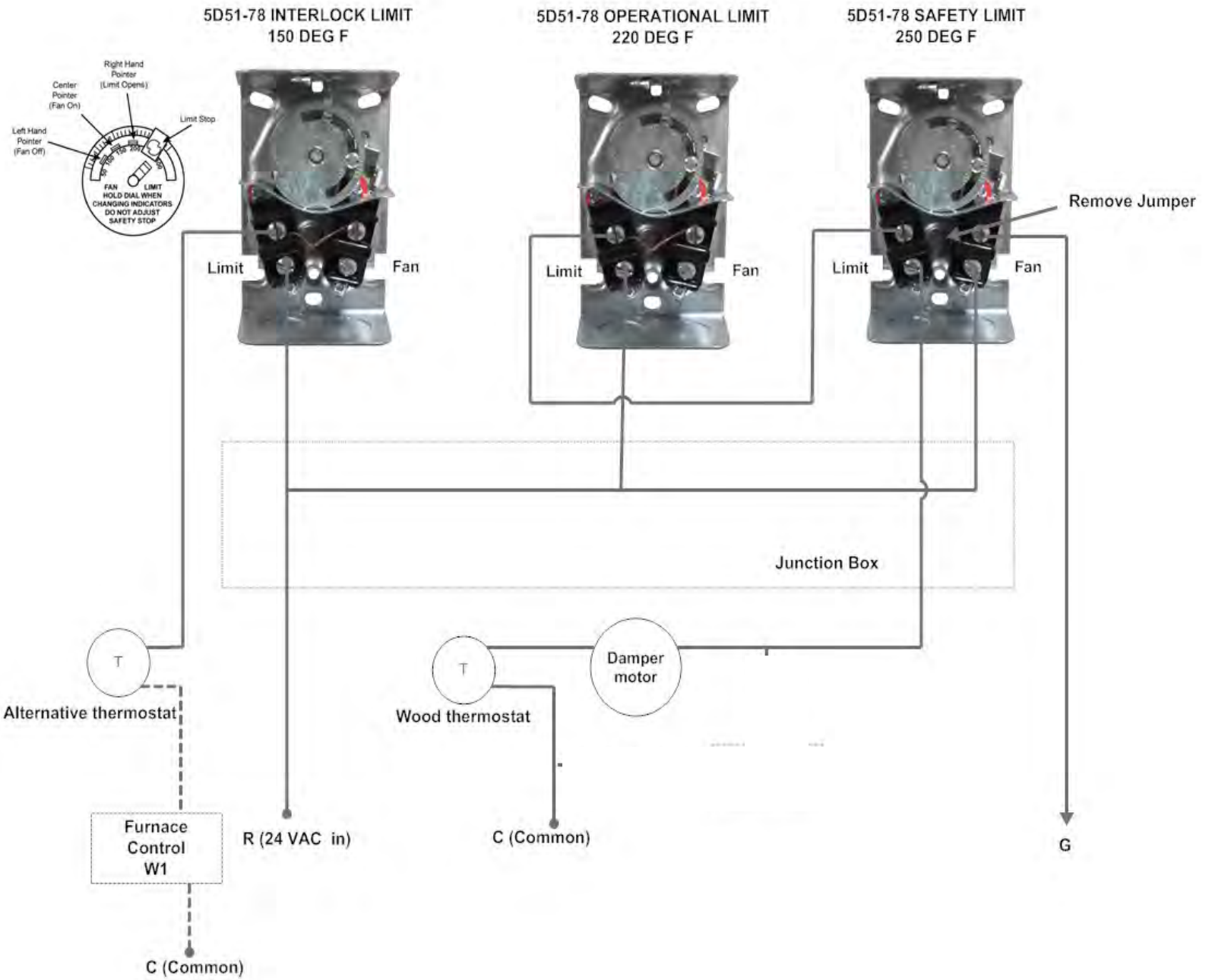
### **ADD-ON TO ELECTRIC FURNACE**

The VC120 may be added to an electric furnace with heating capacity between 15KW and 30KW. Minimum blower capacity must be at least 900 cfm. Electric furnaces approved for installation in any position can be inverted and used in a down flow position using an adapter duct between the furnace and the add-on as indicated in fig. 1. The electric furnace may be located on either side of the VC120 but clearances to combustibles must be maintained. Refer to general and pressure loss (pg 13) instruction portions of this manual also.

If changes are made to the installation of the electric furnace they must comply with CSA Standard C22.1.

An interlock limit switch must be included in the control circuitry to prevents the electric furnace from operating when the output plenum temperature is above 150oF. Typical wiring diagram follows, Fig 4 and 4A.

# ELECTRICAL CONNECTIONS WOOD/ELECTRIC WITH W1,R,G AND C CONNECTIONS.



**You must connect the alternate furnace thermostat through the interlock limit switch to provide interlock lockout of the alternate furnace when the wood plenum rises above 150 degrees.**

## **ADD-ON TO GAS FURNACE**

The VC120 may be connected to a gas furnace having a rated input of up to 140,000 BTU. Minimum blower capacity must be at least 900 cfm. A counter flow gas furnace may be used with an interconnect duct as indicated in Fig 1. A regular up flow gas furnace may be used and connected as per Fig 1. The VC120 can be located on either side of the gas furnace. Minimum interconnect duct size is 10" x 18" with minimum 6" inside radius elbows. Do not, under any circumstances, connect the VC120 flue to a chimney that also vents the gas furnace. The wood furnace requires a chimney approved for solid fuel use. Maintain clearances to all combustibles. Refer to general instructions portions of this manual also.

THE OPERATION OF THE GAS FURNACE MUST BE VERIFIED FOR ACCEPTABLE OPERATION, BEFORE AND AFTER INSTALLATION OF THE ADD ON, BY A GAS FITTER WHO IS RECOGNIZED BY THE REGULATORY AUTHORITY. DO NOT CONNECT TO ANY FURNACE THAT HAS NOT BEEN CERTIFIED INITIALLY AS COMPLYING WITH CGA STANDARD CAN1-2.3 OR ITS PRECEDENTS. DO NOT CONNECT TO ANY FURNACE THAT IS NOT EQUIPPED WITH AN AIR CIRCULATION BLOWER.

DO NOT CONNECT, UNDER ANY CIRCUMSTANCES, TO A CHIMNEY SERVING A GAS FURNACE OR OTHER GAS APPLIANCE.

AN INTERLOCK LIMIT SWITCH MUST BE INCLUDED IN THE CONTROL CIRCUITRY PREVENTING THE GAS FURNACE FROM OPERATING WHEN THE SYSTEM OUTPUT PLENUM TEMPERATURE IS ABOVE 150°F. TYPICAL WIRING DIAGRAM FOLLOWS: FIG 5.

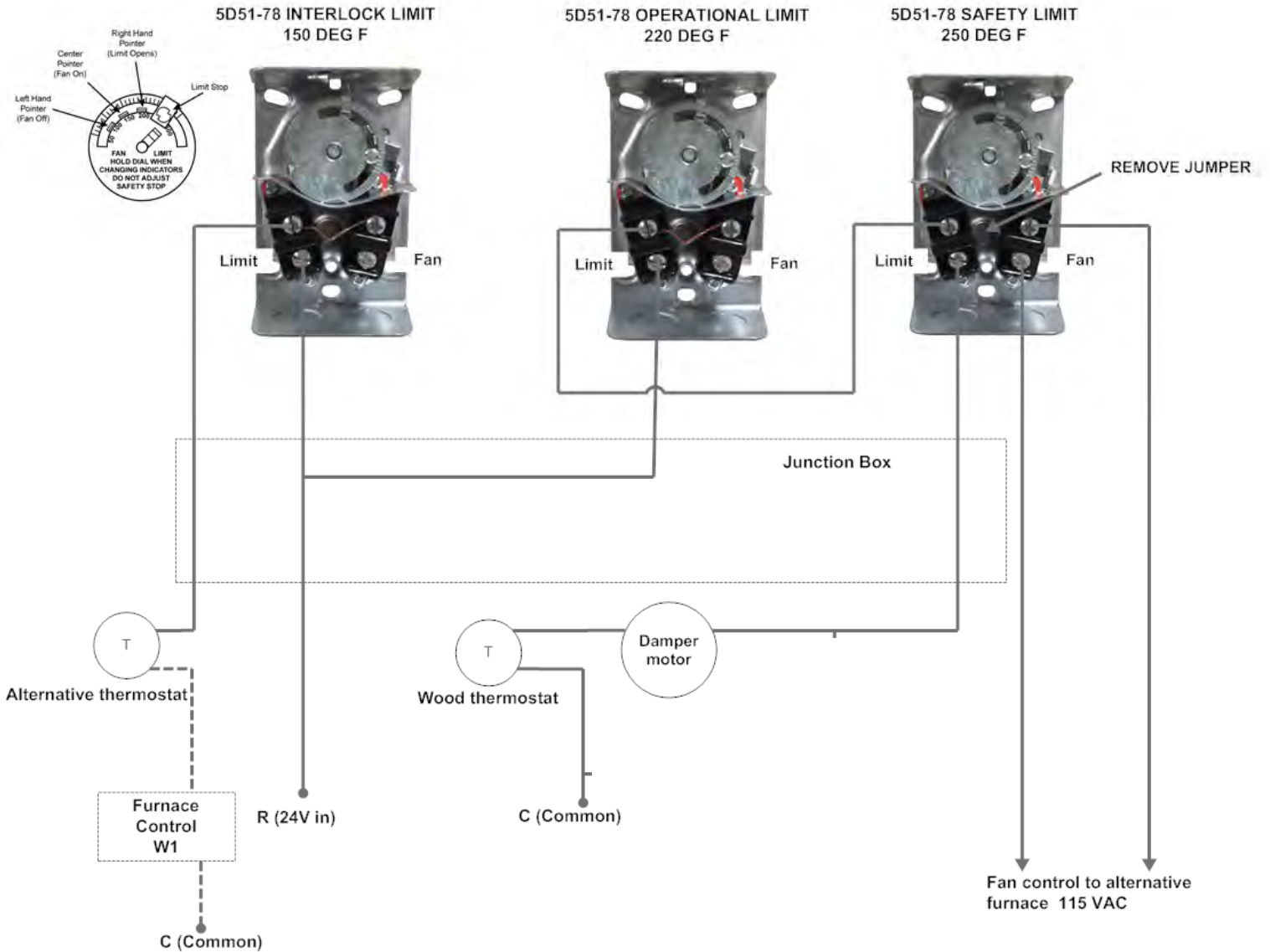
## **ADD-ON TO OIL FURNACE**

The VC120 may be connected to an oil furnace having a rated input of up to 1.25 USGPH. Minimum blower capacity must be at least 900 cfm.. A regular up flow oil furnace may be used and connected as per fig. 1. The VC120 can be located on either side of the oil furnace. Minimum interconnect duct size is 10" X 18" with minimum 6" inside radius elbows. The wood furnace requires a chimney approved for solid fuel use. Maintain clearances to all combustibles. Refer to general instructions portions of this manual also.

If changes are made to the installation of the oil furnace these changes must comply with CSA Standard B139.

An interlock limit switch must be included in the control circuitry preventing the oil furnace from operating when the system output plenum temperature is above 150°F. Typical wiring diagram follows:

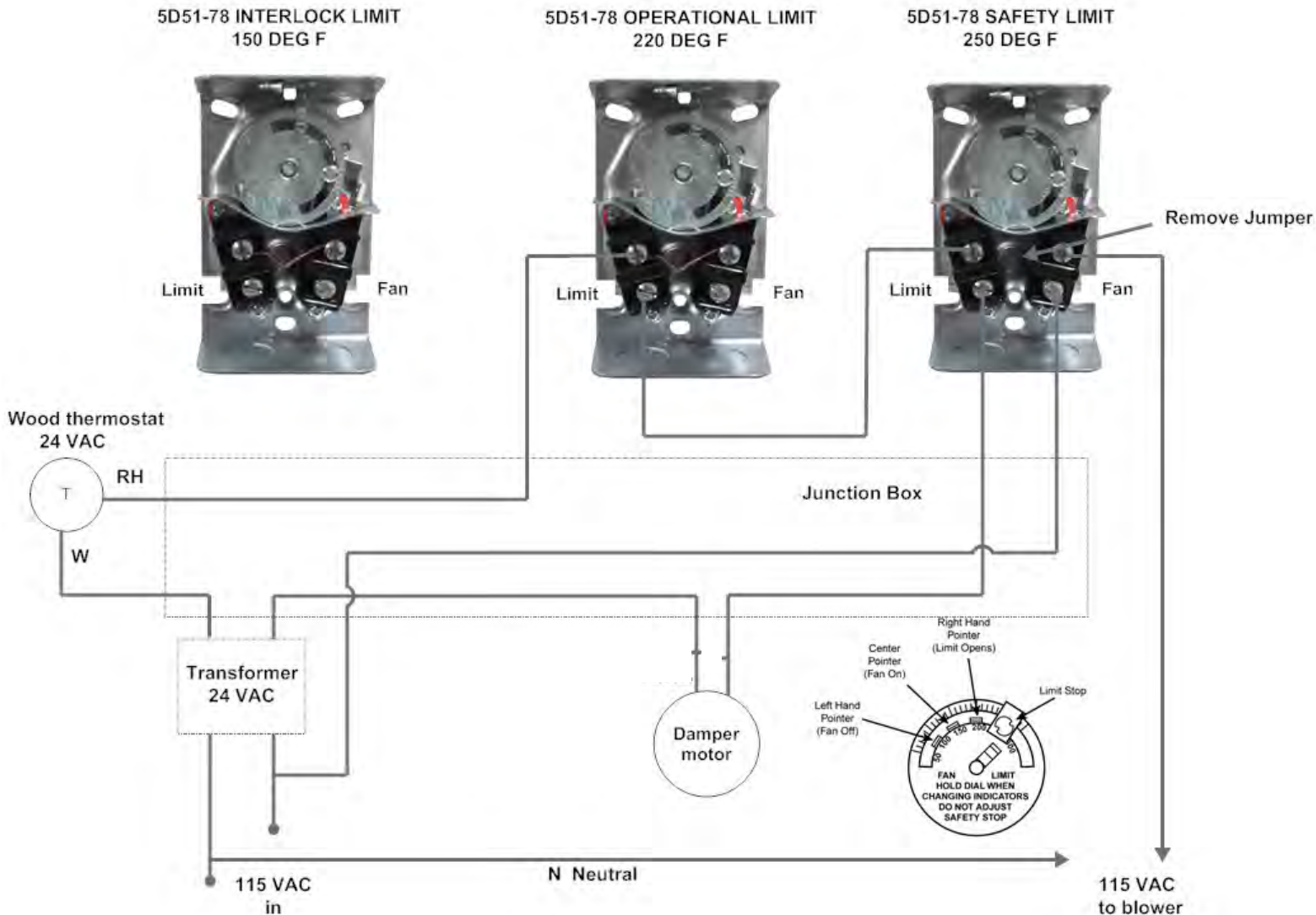
# ELECTRICAL CONNECTIONS WOOD/OIL WOOD/GAS AND WOOD/ELECTRIC



## INDEPENDENT WOOD FURNACE

When installed with a blower cabinet mounted on either side the VC 120 becomes an INDEPENDENT wood only furnace. The blower must have a minimum 900 cfm. capacity. In this configuration the interlock limit is not used. See Electrical Diagram on page 22.

# WIRING AS AN INDEPENDENT FORCED AIR WOOD FURNACE EQUIPPED WITH A VB 1000 BLOWER

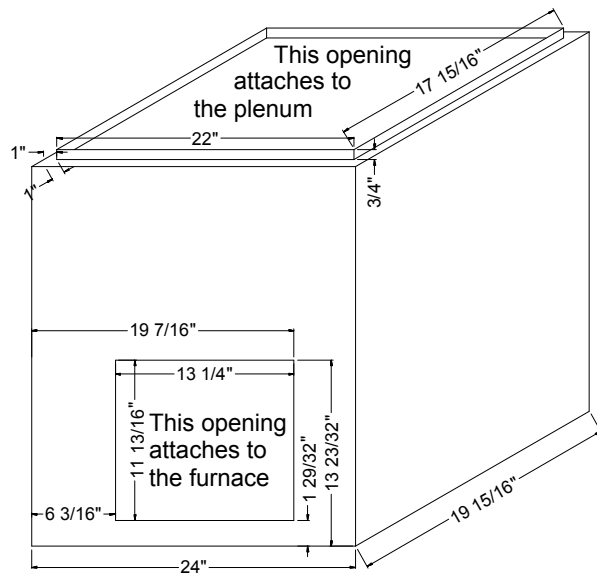
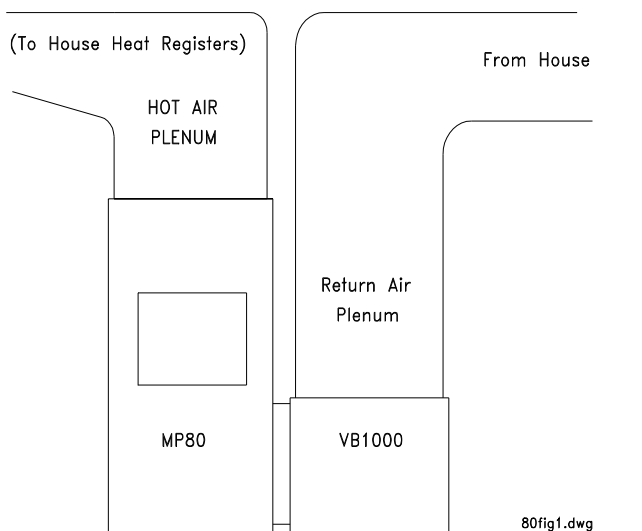


When installing in a stand-alone configuration with a VB1000 blower. Only 2 out of the three limit switches are used. The middle limit is the Operating Limit and the right limit switch is the Safety Limit. The left limit is only for use with an alternate furnace.

24 Volt Transformer is included with the VB1000 Blower

# **VB1000 Valley Comfort Blower Specifications**

## **For use with Valley Comfort MP80 & VC120 Wood Furnace (Stand Alone Applications)**



### **1/3 HP 110V Motor**

- Adjustable from 900cfm to 1200 cfm
- 20ga Steel Cabinet Construction
- High Quality Baked Enamel Finish
- Color matched to Valley Comfort Wood Furnaces
- Complete with 24" X 20" Air Filter

Please check the dimensions on this drawing against the unit you are installing, as there may be some slight variation in the dimensions due to manufacturing tolerances and or changes.

# WARRANTY

## BLAZE KING WOOD LIMITED WARRANTY

Blaze King and its respective brands extend the following warranty for wood fired appliances purchased from an authorized Blaze King dealer and installed in the United States of America or Canada. Warranty starts with date of purchase by the original owner (End User) except as noted for replacement parts.

Warranty Period		Components Covered	
Parts	Labor	Wood	
1 Year		X	All parts, materials and surface finishes (flaking and peeling) Subject to Conditions, Exclusion, and Limitations listed
2 Years		X	Fan assemblies and motors, thermal sensors, catalytic thermometer , bi-metallic thermostat assembly
5 Years	2 Year	X	Firebox & Heat Exchanger, Bypass Door Steel Components
6 Years		X	Catalyst Combustor ( see Conditions, Exclusions, and Limitations)
1 Year		X	Other Replacement Parts
See Conditions, Exclusions, and Limitations.			



## Blaze King Wood Limited 5 Year Warranty

Blaze King is the manufacturer of the Blaze King line of heating products. At Blaze King, our commitment to the highest level of quality and customer service is the most important thing we do. Each Blaze King stove is built on a tradition of using only the finest materials and is backed by our limited warranty to the original purchaser. With Blaze King, you're not just buying a stove; you're buying a company with years of unequalled performance and quality.

### **Limited Six (6) Year Warranty:**

The CATALYTIC COMBUSTOR is under warranty by Blaze King for six (6) years from the date of original retail purchase. The purchaser shall pay the following share of the then current retail price for the combustor: The first three (3) years no charge, 4th year 60%; 5th year 70%, 6<sup>th</sup> year 80%. The Combustor must be returned to your dealer along with a completed COMBUSTOR FAILURE REPORT and original proof of purchase document.

### **Limited (5) Year Warranty:**

Under this warranty, Blaze King covers the stove body and accessories against defects in materials and workmanship, for part repair or replacement for the first five (5) years \*\*\* to the original purchaser. This Warranty covers: All Steel firebox components against defects in material and workmanship. Please see the exclusions and limitation section below as certain restrictions and exclusions apply to this warranty.

### **Limited Two (2) Year Warranty:**

Under this warranty, Blaze King covers, fan assemblies and modular thermostat against defects in materials and workmanship, for part repair or replacement and limited labor for the first two (2) years to the original purchaser. Please see the exclusions and limitation section below as certain restrictions and exclusions apply to this warranty.

### **Limited One (1) Year Warranty:**

Under this warranty, Blaze King covers all parts and materials against defects in materials and workmanship including exterior paint finishes, for part repair or replacement and limited labor for the first year to the original purchaser. Please see the exclusions and limitation section below as certain restrictions and exclusions apply to this warranty.

### **How the Warranty Works**

1. All warranties by the manufacturer are set herein and no claim shall be made against the manufacturer on any oral warranty or representation. All claims under this Limited Warranty must be made in writing by your dealer.
2. Any stove or part thereof that is repaired or replaced during the Limited Warranty period will be warranted under the terms of the Limited Warranty for a period not exceeding the remaining term of the original Limited Warranty or six (6) months, whichever is longer.
3. For any part or parts of this stove, which in our judgment show evidence of defects, Blaze King reserves the option to repair or to replace the defective part(s) through an accredited distributor or agent, provided the defective part is returned to the distributor or agent, transportation prepaid, if requested.
4. If you discover a problem that you think may be covered by the Limited Warranty, you MUST REPORT it to your Blaze King dealer WITHIN 30 DAYS from the date the problem was first detected, giving them proof of purchase and the date of purchase. The dealer will investigate the problem and work with Blaze King to determine whether the problem:
  - a) Is covered by the Limited Warranty or
  - b) Can be fixed in your home or does the product need to be returned to Blaze King for repair.
5. If Blaze King determines that the stove needs to be returned to Blaze King for repair, the customer has the responsibility and the expense of removing it from their home and shipping it to Blaze King. If the problem is covered by the Warranty, Blaze King will repair or replace the item at their discretion and the customer will be responsible for return shipping and re-installation in their home.
6. If the problem is not covered by the Limited Warranty, the customer will be responsible for all repair costs, as well as all storage, shipping and the cost of removing and re-installing the stove.

If you are not satisfied with the service provided by the Blaze King dealer, write to Blaze King at the address listed on the last page of the Owner's Manual. Include a copy of the original purchase invoice and a description of the problem.

### **Exclusions and Limitations:**

1. This Warranty does not cover tarnish, discoloration or wear on the plated surfaces. Painted finishes will change colour after initial firing and will continue to change through the lifetime of the stove. This is normal occurrence for all high temperature coatings.
2. This Warranty does not cover gasket material or firebrick.
3. Blaze King strongly recommends installation by a certified installer. Failure to comply may adversely affect coverage under the terms of this warranty. This Limited Warranty covers defects in materials and workmanship only if the product has been installed in accordance with local building and fire codes; in their absence refer to the owner's manual. If the product is damaged or broken as a result of any alteration, wilful abuse, mishandling, accident, neglect, or misuse of the product, the Limited Warranty does not apply.
4. The stove must be operated and maintained at all times in accordance with the instructions in the Owner's Manual. If the unit shows signs of neglect or misuse, it is not covered under the terms of this Warranty policy. Performance problems due to operator error will not be covered by the Limited Warranty policy.
5. Some minor expansion, contraction, or movement of certain parts and resulting noise, is normal and not a defect and, therefore, is not covered under this Limited Warranty.
6. Misuse includes over-firing. Over-firing can be identified later by warped plates and paint pigment being burnt off. Over-firing this appliance can cause serious damage and will nullify the Limited Warranty.
7. The Limited Warranty will cover glass thermal breakage only and will not cover misuse of the stove glass, including but not limited to:
  - a) Glass that is struck, has surface contaminates or has had harsh or abrasive cleaners used on it.
  - b) If the door is slammed or is closed while wood in the firebox is protruding out the stove opening thus striking the glass.
8. This warranty does not cover products made or provided by other manufacturers and used in conjunction with the operation of this stove without prior authorization from Blaze King. The use of such products may nullify the Limited Warranty on this stove. If unsure as to the extent of this Limited Warranty, contact your authorized Blaze King dealer before installation.
9. Blaze King will not be responsible for inadequate performance caused by environmental conditions.
10. The Limited Warranty does not cover installation and operational related problems such as use of downdrafts or spillage caused by environmental conditions. Environmental conditions include but are not limited to nearby trees, buildings, roof tops, wind, hills, mountains, inadequate venting or ventilation, excessive offsets, negative air pressures or other influences caused by mechanical systems such as furnaces, fans, clothes dryers etc.
11. The Limited Warranty does not cover damage caused by burning salt-saturated wood, corrosive driftwood, chemically treated wood or any fuel not recommended in the Owner's Manual (use cord wood only).

The Limited Warranty is void if:

  - a) The stove has been operated in atmospheres contaminated by chlorine, fluorine or other damaging chemicals.
  - b) The stove is subject to submersion in water or prolonged periods of dampness or condensation.
  - c) Any damage to the unit, combustion chamber or other components due to water, or weather damage which is the result of, but not limited to, improper chimney/venting installation.
  - d) Salt air in coastal areas or high humidity can be corrosive to the finish; these environmental conditions can cause rusting. Damage caused by salt air or high humidity is not covered by the Limited Warranty.
12. Exclusions to the Limited Warranty include: injury, loss of use, damage, failure to function due to accident, negligence, misuse, improper installation, alteration or adjustment of the manufacturer's settings of components, lack of proper and regular maintenance, alteration, or act of God.
13. The Limited Warranty does not cover damage caused to the stove while in transit. If this occurs, do not operate the stove and contact your courier and/or dealer.
14. The Limited Warranty does not extend to or include paint, door or glass gaskets or firebricks damage caused by normal wear and tear, such as paint discoloration or chipping, worn or torn gaskets, chipped or cracked firebrick, etc.
15. The Limited Warranty does not include damage to the unit caused by abuse, improper installation, or modification of the unit.
16. Damage to plated surfaces caused by fingerprints, scratches, melted items, or other external scores and residues left on the plated surfaces from the use of abrasive cleaners or polishes is not covered in this warranty.
17. Blaze King is free of liability for any damages caused by the stove, as well as inconvenience expenses and materials. The Limited Warranty does not cover incidental or consequential damages.
18. The Limited Warranty does not cover any loss or damage incurred by the use or removal of any component or apparatus to or from the Blaze King stove without the express written permission of Blaze King and bearing a Blaze King label of approval.
19. Any statement or representation of Blaze King Products and their performance contained in Blaze King advertising, packaging literature, or printed material is not part of the Limited Warranty.
20. The Limited Warranty is automatically voided if the stove's serial number has been removed or altered in any way. If the stove is used for commercial purposes, it is excluded from the Limited Warranty.
21. No dealer, distributor, or similar person has the authority to represent or warrant Blaze King Products beyond the terms contained within the Limited Warranty. Blaze King assumes no liability for such warranties or representations.

22. Blaze King will not cover the cost of the removal or re-installation of the stove, hearth, facing, mantels, venting or other components.

23. Labor to replace or repair items under this Limited Warranty will be covered per our warranty service fee reimbursement and labor rates are set per component schedule. Labor rates vary from location to location and as such total labor costs may not be covered. Please consult with your dealer or service technician for any additional charges such as travel time or additional labor charges that may apply.

24. For parts of the Blaze King woodstove or fireplace insert warranted beyond the first year, the five year limited warranty will have the same obligations as described in this document, provided, however that the purchaser shall pay the following percentage of the then current retail cost of the repair or the replacement, according to the year after purchase in the which the defect is brought to the attention of Blaze King.\*\*\* During the 2<sup>nd</sup> year----purchaser pays 20%.

3<sup>rd</sup> year ----purchaser pays 40%. 4<sup>th</sup> year -----purchaser pays 60%. 5<sup>th</sup> year---- purchaser pays 80%.

25. If a defect or problem is determined by Blaze King to be non warrantable, Blaze King is not liable for travel costs for service work. In the event of in-home repair work, the customer will pay any in-home travel fees or service charges required by the Authorized Dealer.

26. At no time will Blaze King be liable for any consequential damages which exceed the purchase price of the unit. Blaze King has no obligation to enhance or modify any stove once manufactured (example: as a stove model evolves, field modifications or upgrades will not be performed).

27. This Limited Warranty is applicable only to the original purchaser and it is non-transferable.

28. This warranty only covers Blaze King Products that are purchased through an authorized Blaze King dealer.

29. If for any reason any section of the Limited Warranty is declared invalid, the balance of the warranty remains in effect and all other clauses shall remain in effect.

30. The Limited Warranty is the only warranty supplied by Blaze King, the manufacturer of the stove. All other warranties, whether express or implied, are hereby expressly disclaimed and the purchaser's recourse is expressly limited to the Limited Warranty.

31. Blaze King and its employees or representatives will not assume any liability for damages, either directly or indirectly, caused by improper usage, operation, installation, servicing or maintenance of this stove.

32. Blaze King reserves the right to make changes without notice. Please complete and mail the warranty registration card and have the installer fill in the installation data sheet in the back of the manual for warranty and future reference.

33. Blaze King is responsible for stocking parts for a maximum of seven (7) years after discontinuing the manufacture or incorporation of the item into its products. An exception to this would be if an OEM supplier is not able to supply a part.

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