



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

www.valleycomfort.com

Email vcsales@vip.net

SPECIFICATIONS

Model	VC120
Rating	120,000 btu. nominal
Height	50 1/2"
Width	29 1/2"
Length	36"
Flue collar	7" I.D.
Flue pipe center to rear	5 1/2"
Recommended flue pressure	.04" water column (draft)
Hot air plenum opening	22" L x 26" W
Fire door opening	15" x 13"
Firebox length	27"
Width	17"
Height	32"
Capacity	8.5 cu. ft.
Fuel length	26"
Firebox design features	<ol style="list-style-type: none"> 1) distributed draft system with preheated primary air 2) Post burn preheated secondary air 3) Brick baffle system to retain high combustion temperatures
Construction	10 ga. firebox brick lined 10 ga. heat exchanger 24 ga. cabinet brick baffles
Weight	660 lbs.

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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, OR ENGINE OIL, OR RAGS SOAKED IN THESE FLUIDS.**
- ✓ **Combustible material including fire wood must be stored well away from the furnace, outside of the distances specified for "clearance to combustibles".**
- ✓ **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", as a child and a young man, he was determined to produce a more efficient Canadian heater. He succeeded! That's over 35 years ago and ever since 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 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 in all our products.

This instruction booklet will give you some ideas and important instructions that will assure maximum usage and service life from 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. After lighting and when the fire grows add larger wood.
- The first time you light your furnace, high temperature paints will give off an odor. 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, dependent on plenum temperature.

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WHAT KIND OF WOOD?

There is an old idea that you should use some green wood to 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 greatly increases creosote problems.

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

Your wood-burning furnace is not designed to burn coal which is unsafe and voids the warranty.

Never burn salt-water driftwood that 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 stage. There will be very little smoke at this stage in the burn cycle.

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

OPERATIONS

- Draft is created by the heated air rising in the chimney system, and 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.

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OPERATIONS (CONTD)

- During a power failure, use extreme caution not to over fire. 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 result in damage.
- If your furnace is operating as an add-on combination unit remember both units will not fire maximum 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.

- Never fill the firebox above the top of the firebox liner bricks during a power failure.
- 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 14)
- When the power returns the damper motor will open and the manual control will return to normal position. Even without the manual control opened 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 14)
- 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.

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CREOSOTE

In any wood-burning appliance, creosote can be a problem. The best way to handle it is to prevent or minimize it by proper firing methods. If it does occur you should understand its nature and have a plan to handle it. Always assure safety by having a clearly understood plan of how to handle a chimney fire, if it ever occurs.

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 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

At stack temperature below 120°C (250°F), the creosote will condense out of the gasses (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. Small intense fires therefore cause less creosote than large, low smoldering fires. We recommend that each day, preferably in the morning, a small intense fire be maintained. This daily practice should burn out the small deposits of creosote before they build to a dangerous level. Morning and evening the draft should be opened for at least 20 minutes by turning the thermostat up. NEVER "burn out" large deposits of more than one days accumulation.

In conclusion, creosote can best be controlled as follows:

1. Burn dry split wood.
2. Mix small and large pieces of wood
3. During warm weather use smaller split wood
4. Keep 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. Check daily for creosote until experience shows how often cleaning is required. Remember a clean chimney is a safe chimney.
6. Have 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

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MAINTENANCE

Maintain fire door gaskets to ensure a tight seal. Use 1" 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 warpage 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, AND 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!

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INSTALLATION INSTRUCTIONS

GENERAL

Please take time to read these instructions thoroughly. You have invested your money in a quality product. However, too much haste now, could result in a faulty installation, and cause serious problems. In addition to these general installation instructions which apply to all installations 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 and report any damage 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. Fan limit control (Honeywell L4064 or equivalent) 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. or 1200 cfm..
2. 24 volt control transformer
3. Domestic hot water coil, model DHW80C

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.

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CAUTIONS

1. All installations must comply with local building safety codes.
2. Installation shall be by a licensed, qualified mechanical 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 A CHIMNEY OF ANY TYPE 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. For your safety and satisfaction your system must be properly installed.

MINIMUM CLEARANCES TO COMBUSTIBLES

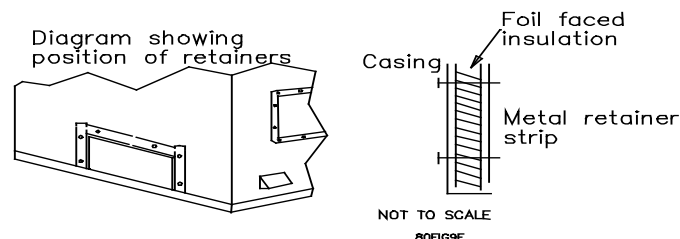
Wood charging end	- 48 in.
One side	- 6 in.
Other side for servicing	- 24 in.
Single wall flue to combustibles including electric wiring and electric furnace	- 18 in.
Plenum and first 6 ft. of supply duct	- 2 in.

If the furnace sits on a combustible floor, a non-combustible shield must be used underneath and extend 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

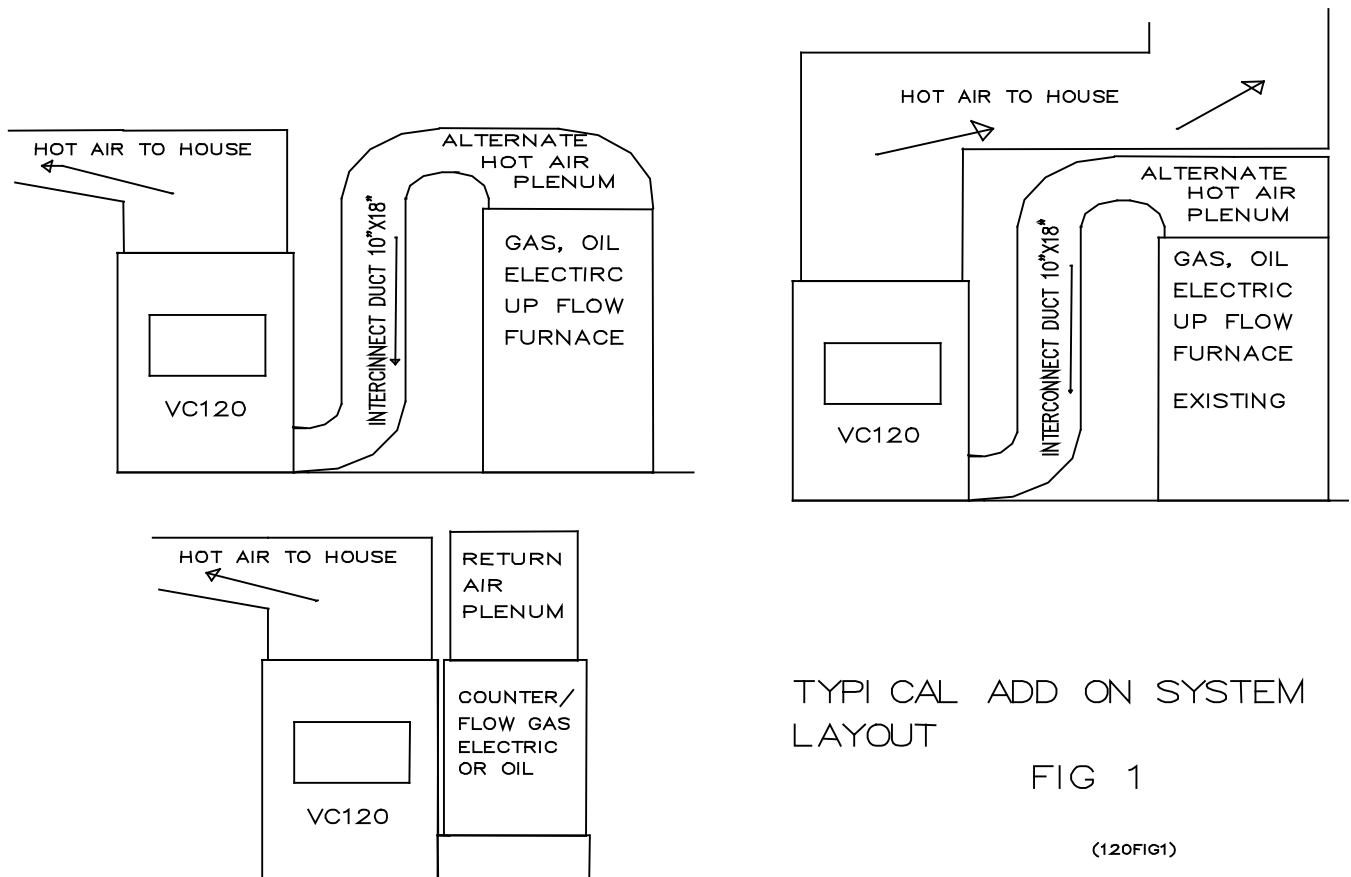
The VC120 can be located on either side of the alternate furnace as space permits, in a series downstream configuration. Minimum size of the interconnect duct is 10 in. x 18 in. DO NOT USE INTERCONNECT DUCT ELBOWS THAT HAVE AN INSIDE RADIUS OF LESS THAN 6" (150mm.). **NOTE:** After interconnect duct 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, to prevent the insulation from dislodging due to blower induced vibration.



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Typical installation illustration



TYPICAL ADD ON SYSTEM LAYOUT

FIG 1

(120FIG1)

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 is 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 and then check the static pressure in the plenum above the existing furnace.

$$\text{Pressure drop} = \text{Static pressure at furnace} - (\text{minus}) \text{static pressure at duct exit}$$

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.

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COMBUSTION AIR

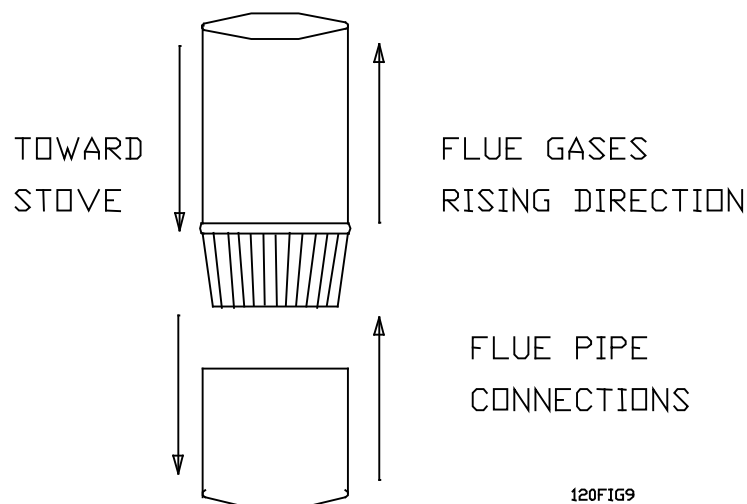
Insure adequate combustion air allowing for all other exhausting type appliances in the dwelling (range hoods, dryers, etc). Outside combustion air can be connected directly to the combustion air inlet on either side of the lower front cover, cut an opening 3 1/2" x 9 1/2" (Fig 1A). Use a 4"x10" to 6" round boot to connect outside air duct. Minimum duct for outside air is 6" with not more than 2 90° 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 with the furnace accessory kit.

LOCATION RE FLUE

The Chimney must be an approved chimney for use with solid fuel fired appliances, 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, rising a minimum 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 chimney connector to pass through a combustible ceiling or wall. Always maintain the minimum clearances to combustibles as required by the building applicable codes.



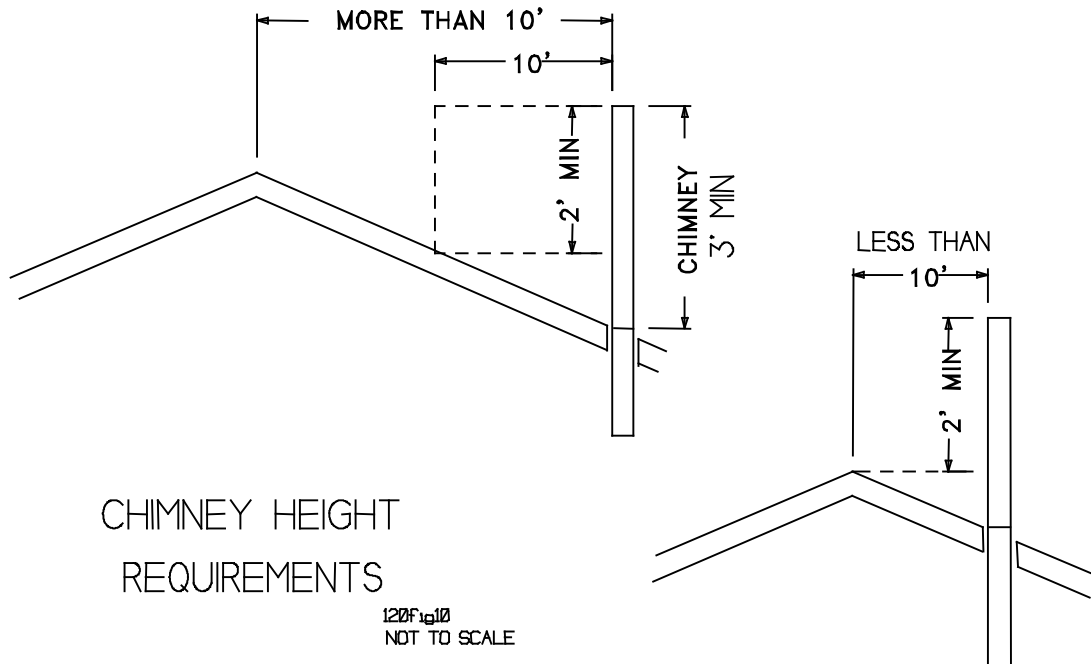
Recommended draft is .04 in. water COLUMN. It is unsafe to operate the furnace with more than .07 in. water column draft, use a barometric control if necessary to achieve this.

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CHIMNEY HEIGHT REQUIREMENTS

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



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 switch provided on the wood furnace plenum, to prevent the alternate furnace from operating when the plenum temperature rises above 150°F. Thermostats should be mounted side by side on an inside wall out of direct sunlight or other heat sources.

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ELECTRICAL GENERAL

All wiring on the VC120 shall be fastened to the insulated cabinet surfaces only, 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, centered 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 specific type instructions for wiring diagrams that apply.

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

LEFT LEVER TO OPEN DRAFT

RIGHT HAND LEVER TO CLOSE DRAFT

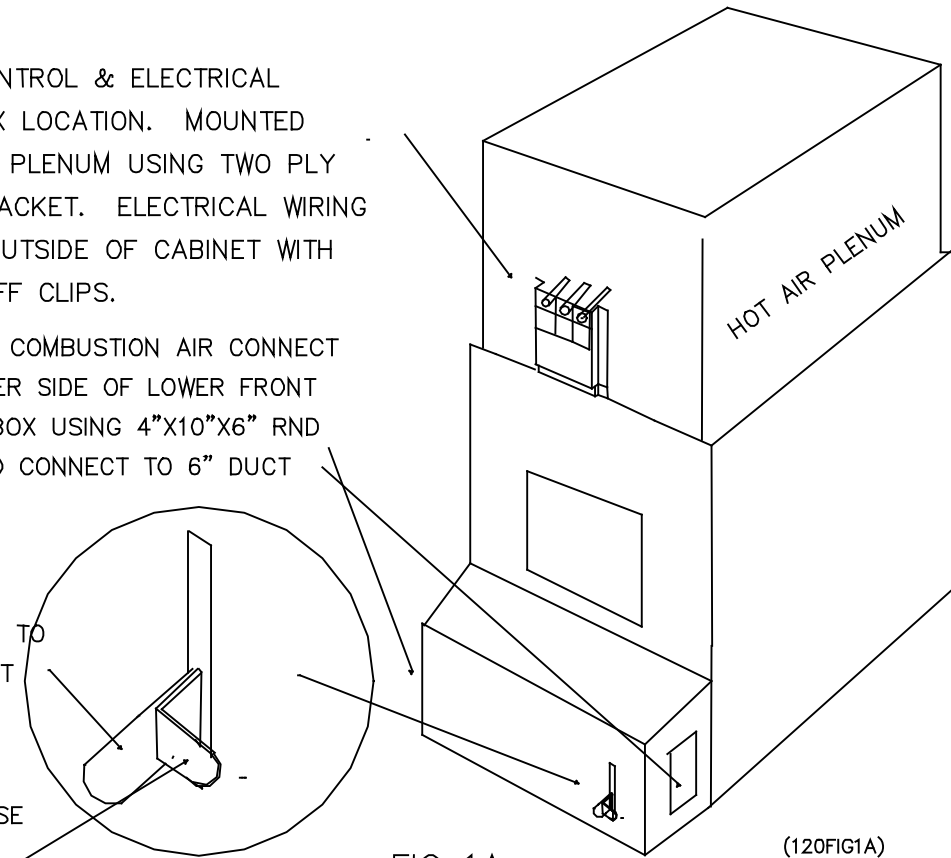


FIG 1A

(120FIG1A)

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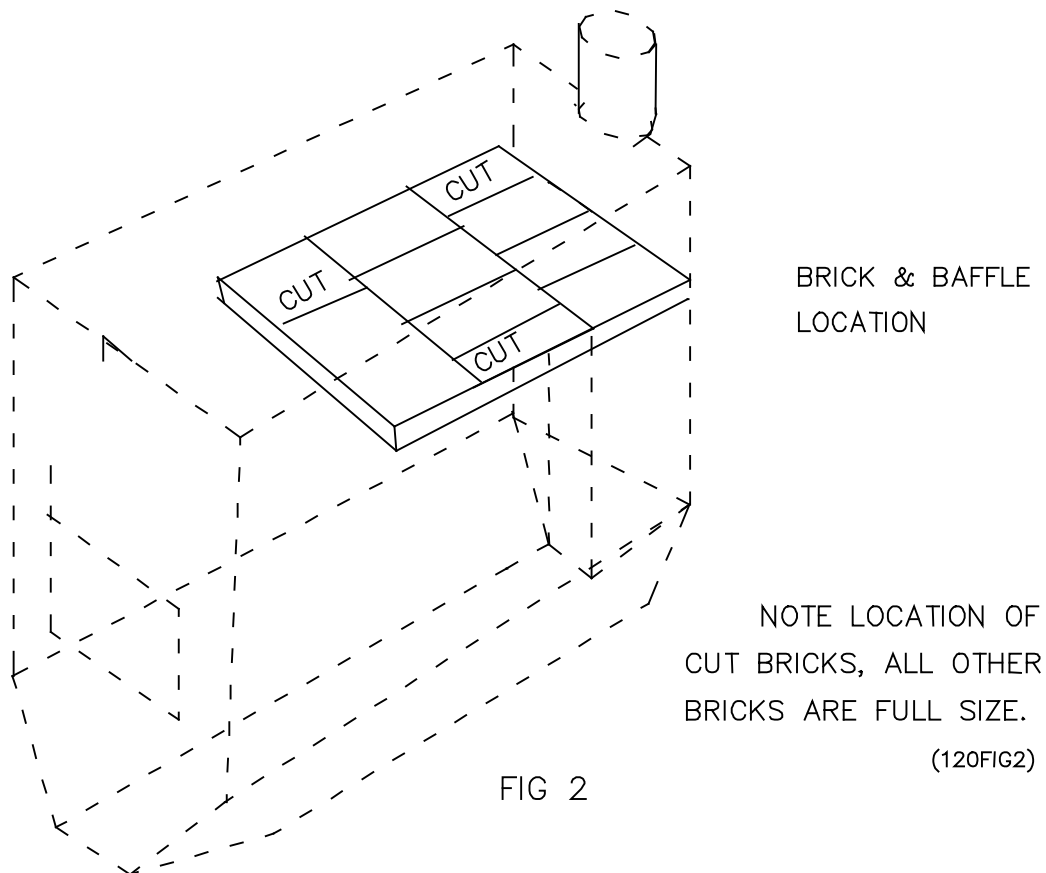
BRICK AND BAFFLE INSTALLATION

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

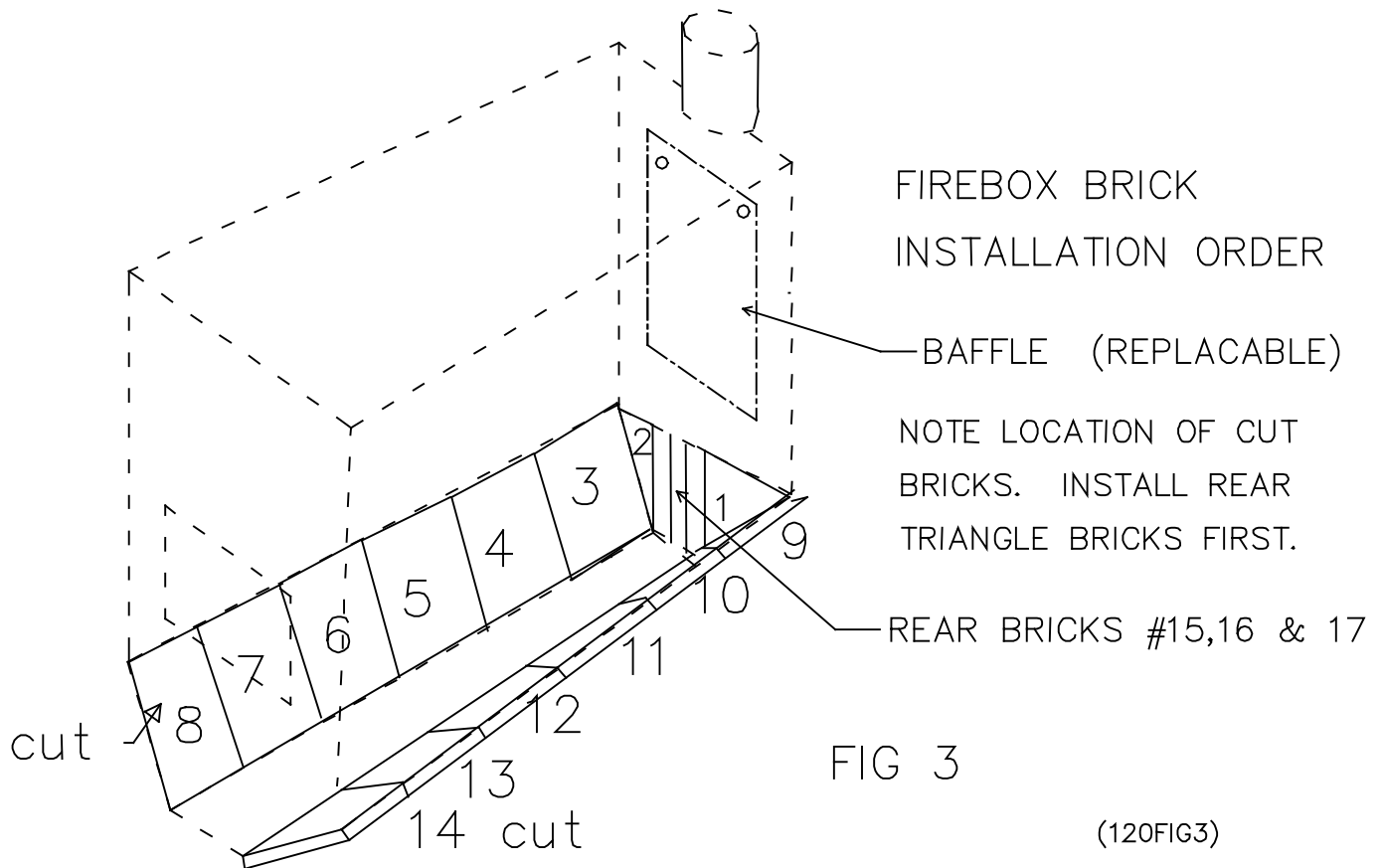
NEVER OPERATE THE FURNACE WITHOUT FIRST INSTALLING ALL BRICKS AND BAFFLES IN THE FIRE BOX.

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. 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 and could result 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 brick in the sequence indicated by number in the following diagram. (FIG 3)



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 10) instruction portions of this manual also.

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

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

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 THAT PREVENTS 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 shall comply with CSA Standard B139.

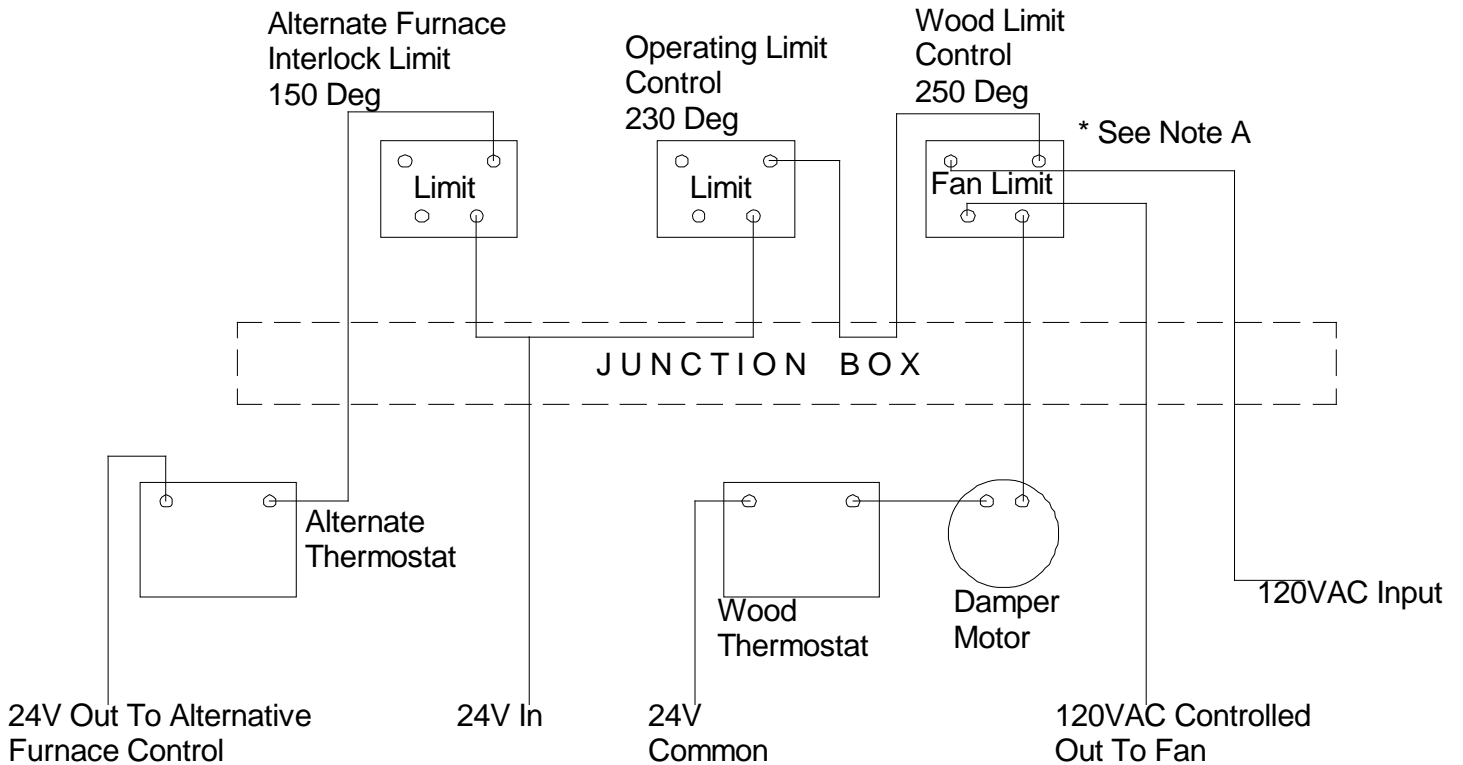
An interlock limit switch must be included in the control circuitry that prevents the oil furnace from operating when the system output plenum temperature is above 150°F. Typical wiring diagram follows:

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ELECTRICAL CONNECTIONS WOOD/OIL WOOD/GAS

This Figure is not a physical representation of your electrical connections. Limit switches and relays may be laid-out differently than shown. The words and letters marked on the switches and relays should be followed and connections made to the proper locations.



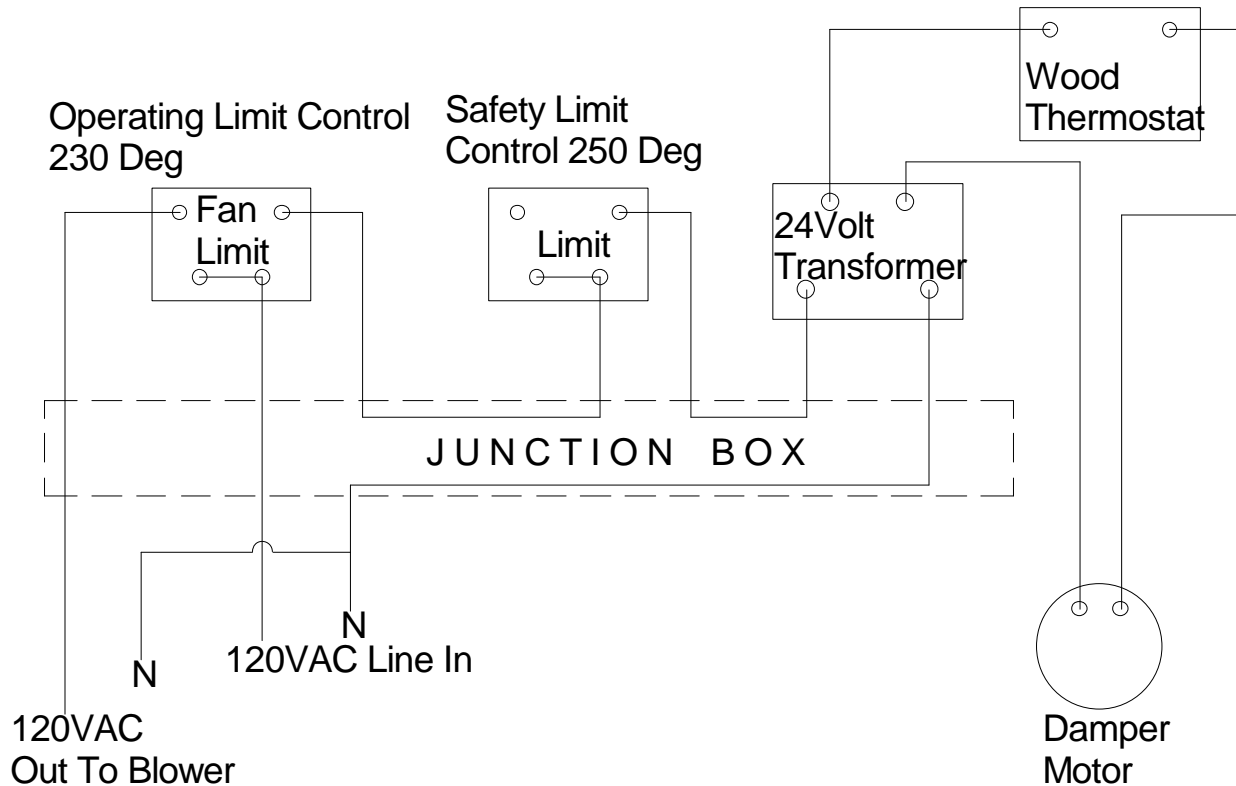
* Note A: You must cut or remove the jumper between the Fan and Limit sides of the Wood Limit Control

WIRING DIAGRAM FOR THE CONNECTION OF VC120 TO AN ALTERNATIVE GAS OR OIL FURNACE WITH 120 VAC FAN CONTROL.

FIG 5

INDEPENDENT WOOD FURNACE

When installed with a blower cabinet mounted on either side the VC120 becomes an INDEPENDENT wood only furnace. The blower must have a minimum 900 cfm. capacity (1/3 hp.). In this configuration the interlock limit is not used. Figure 6 shows the electrical connections, (use only 2 limit switches).



NOTE: When used as an independant wood furnace do not use the alternative furnace interlock relay which is supplied with the control kit.

WIRING DIAGRAM FOR THE CONNECTION OF VC120 AS AN INDEPENDANT WOOD FURNACE.

FIG 6

DOMESTIC WATER COIL INSTALLATION (OPTIONAL)

GENERAL

This is a water preheating system and is designed to preheat incoming cold water before it enters your regular domestic hot water tank. As a gravity flow system, care must be taken to ensure a continuous rising flow path for the water from the cool (lower) tank outlet to the warm (upper) inlet, see fig 7. A non-insulated circulating tank must be used as a range boiler.

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CAUTIONS:

1. The coil and system must be installed by a qualified tradesman who is familiar with domestic hot water systems.
2. Adhere to all local building codes during the installation.
3. Do not fire the stove unless there is free flowing water in the system.
4. Exercise great caution to avoid burns when opening valves because high temperature water may be present. Temperature controlled mixing valves are a good precaution in all hot water systems.
5. All piping within the range boiler circulating system shall be 3/4" inside diameter.
6. Provide a drain valve that is lower than the lowest lines involved in the system.
7. In areas where mineral deposits are a problem, the inlet water to the system should be softened and filtered before entering the system.
8. Vent all pressure relief valves outside or to a safe location.
9. DO NOT INSTALL ANY SHUT OFF VALVES IN THE CIRCULATING PIPE RUNS.

INSTALLING THE COIL:

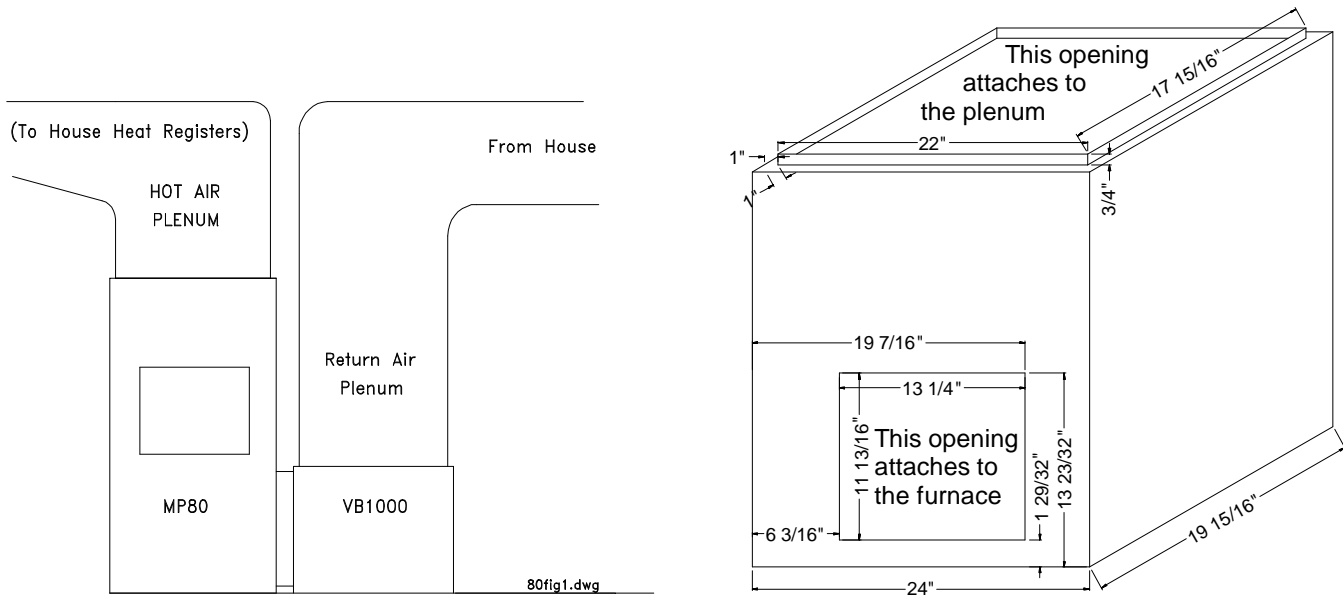
1. The DHW80C domestic hot water coil may be mounted on either side of the furnace on the outside of the fire box as shown in Fig 7.
2. Using the coil casting as a template, mark and carefully drill 4 9/32" mounting holes in the firebox. Install the water coil on the outside of the firebox using the bolts provided.
3. Mark the location of the coil pipes leaving the cabinet and punch 2 7/8" holes through the cabinet and insulation.
4. Connect the coil to the non-insulated circulating tank of minimum capacity 32 Can. gallons (40 US), as shown in figure 8. Check to make sure there is a continual rise in the hot water line between the coil and the circulating tank. Use union joints in the circulating lines to facilitate service at a future time.
5. Test all joints under water pressure before firing the furnace.
6. After installation is complete fire the furnace and carefully monitor temperatures to ensure the system is operating properly.

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VB1000 Valley Comfort Blower Specifications

**For use with Valley Comfort MP80 & VC120 Wood Furnaces.
(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.

Note: A light layer of stove cement may be required to ensure 100% contact between the firebox and coil

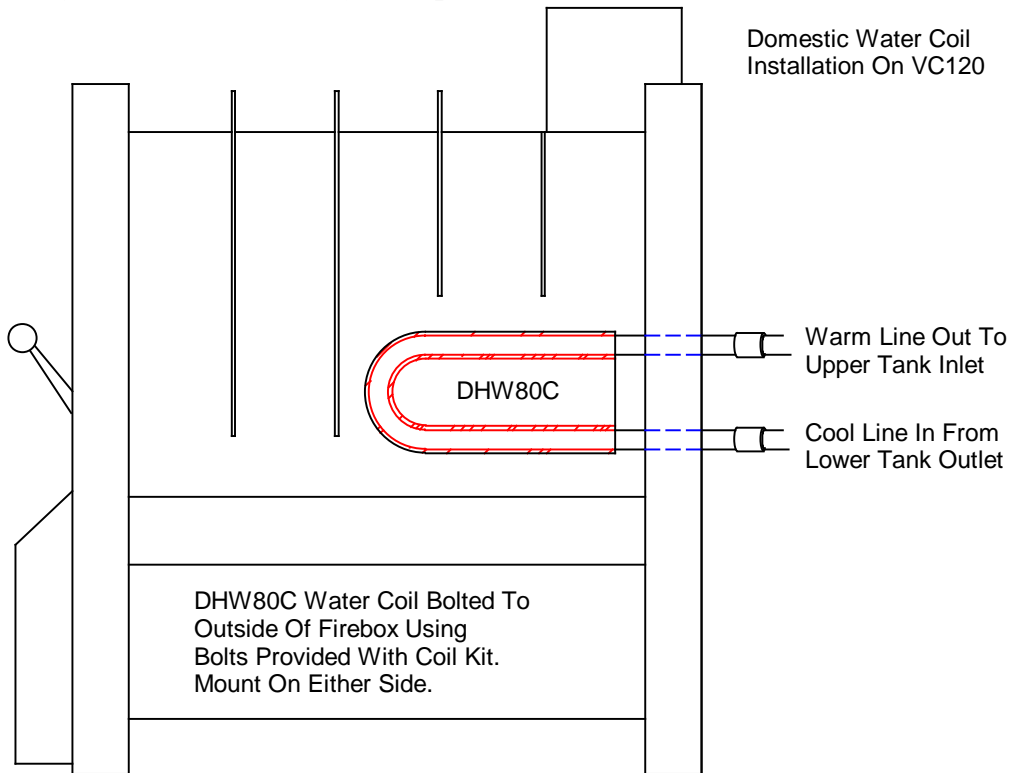
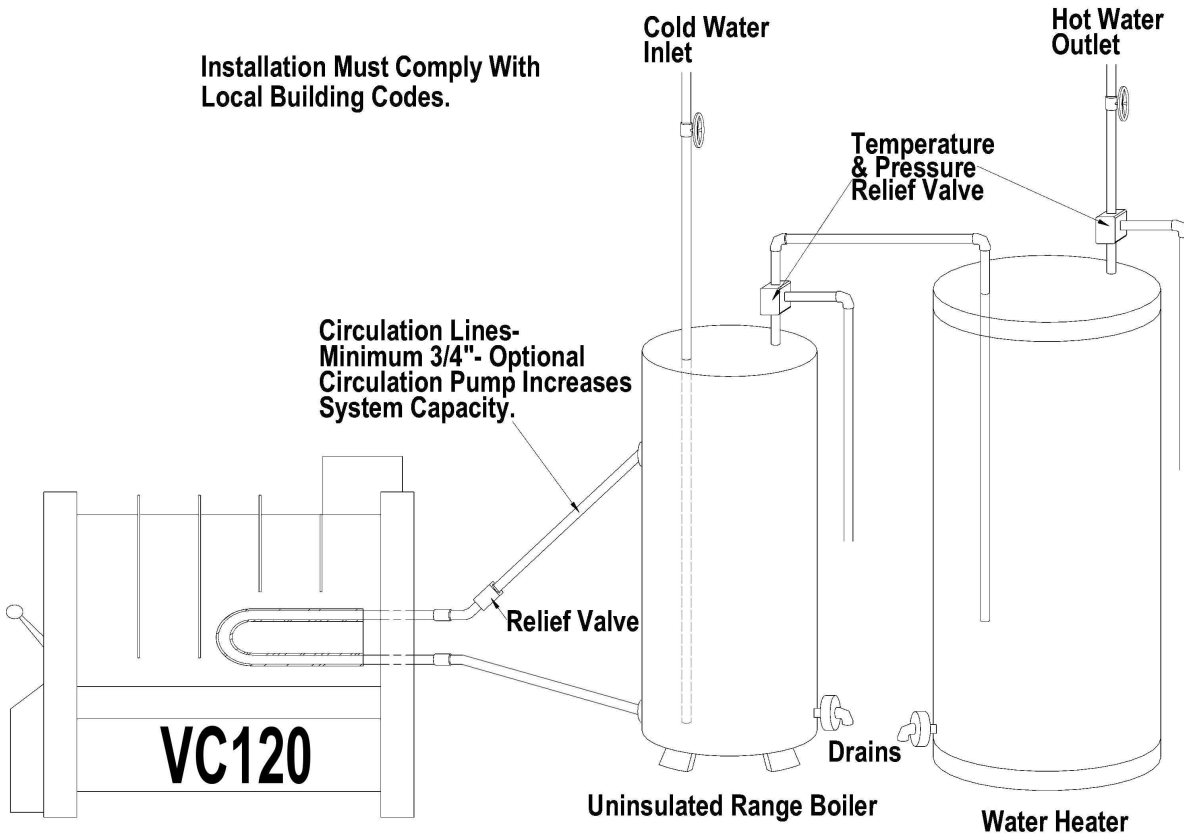


Fig. 7

Installation Must Comply With Local Building Codes.



PREFERRED SYSTEM - WATA-HEATER CONNECTIONS Fig. 8

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**VALLEY COMFORT SYSTEMS INC.
LIMITED WARRANTY - VC120**

**WARNING: TO VALIDATE THIS WARRANTY YOU MUST COMPLETE AND RETURN THE
WARRANTY CARD WITHIN 20 DAYS OF THE DATE OF PURCHASE.**

WHAT THE WARRANTY COVERS:

This warranty contains different terms that cover different parts of the furnace. VALLEY COMFORT SYSTEMS INC warrants the STEEL COMPONENTS including the COMBUSTION CHAMBER and CAST LINERS of the VALLEY COMFORT furnace, which is delivered with this warranty, against defects in material or workmanship to you, the original retail purchaser (hereafter referred to as purchaser), for a period of up to five (5) years following the date of original retail purchase, subject to the provisions of RESPONSIBILITIES OF THE COMPANY below. VALLEY COMFORT SYSTEMS INC warrants the FAN LIMIT CONTROLS, THERMOSTAT, DAMPER MOTOR, DOOR GASKETS, ELECTRICAL RELAYS (if applicable) and the BLOWER MOTOR (if applicable) of the VALLEY COMFORT furnace, which is delivered with this warranty, against defects in material or workmanship, to the purchaser, for a period of one (1) year following the date of original retail purchase, subject to the provisions of RESPONSIBILITIES OF THE COMPANY below. No person is authorized to modify this warranty or to make any additional warranties on behalf of the manufacturer, VALLEY COMFORT SYSTEMS INC.

WHAT THE WARRANTY DOES NOT COVER:

Unless otherwise provided by law or covered by this warranty, VALLEY COMFORT SYSTEMS INC is not responsible for removal, transportation or re-installation of any product repaired or replaced pursuant to this warranty. VALLEY COMFORT SYSTEMS INC shall in no event be liable for special, incidental, consequential, indirect or other similar damages arising from the breach of the warranty, even if VALLEY COMFORT SYSTEMS INC has been advised of the possibility of such damages. Some provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. VALLEY COMFORT SYSTEMS INC limits all implied warranties, if any, including the warranties of merchantability or fitness for particular purpose, to one (1) year from the date of original retail purchase. Some provinces do not allow limitations on how long implied warranty lasts, so the above limitation may not apply to you. Actions for breach of this warranty must be brought within one (1) year of the expiration of this warranty.

HOW YOU CAN GET SERVICE:

If this product requires repair or replacement due to defects in material or workmanship covered by this warranty, contact your VALLEY COMFORT dealer and explain the defect. If the dealer does not repair or replace the product to your satisfaction, contact the Service Department of VALLEY COMFORT SYSTEMS INC at 1-250-493-7444 or write to 1290 Commercial Way, Penticton, BC, V2A 3H5. Please explain the defect and state the model, serial number, date of retail purchase, and the name and address of your VALLEY COMFORT dealer. VALLEY COMFORT SYSTEMS INC may request that the defective part, parts, or the entire furnace, be shipped to VALLEY COMFORT SYSTEMS INC at the purchaser's expense.

RESPONSIBILITIES OF THE COMPANY:

IF the purchaser has complied with all of the terms and conditions of this warranty and IF the purchaser has notified VALLEY COMFORT SYSTEMS INC of a defect prior to the expiration of the respective warranty period and after shipment, VALLEY COMFORT SYSTEMS INC will either repair or replace the product, AT ITS ELECTION, or MAY ELECT to refund a portion of the purchase price, based on the formula below, if it cannot readily and quickly provide the purchaser with a replacement, if the purchaser is willing to accept such a refund. The repaired product or replacement will be returned to a VALLEY COMFORT dealer nearest the purchaser at VALLEY Comfort's expense. IF it is determined by VALLEY COMFORT SYSTEMS INC that there is no defect, or that the defect resulted from causes not within the scope of this warranty, THEN the purchaser must bear the cost of storing the product and of returning the product to the purchaser. For parts of this furnace warranted beyond the first year, VALLEY COMFORT SYSTEMS INC will have the same obligations as described in this paragraph, 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 which the defect is brought to the attention of VALLEY COMFORT SYSTEMS INC:

- during the 2nd year purchaser pays 20%
- during the 3rd year purchaser pays 40%
- during the 4th year purchaser pays 60%
- during the 5th year purchaser pays 80%

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VALLEY COMFORT SYSTEMS INC LIMITED WARRANTY - VC120

MISUSE OF FURNACE NULLIFIES WARRANTY:

The above warranty is conditional upon the proper installation and use of the furnace according to the manufacturer's directions embodied in the Owner's Installation and Operation Instructions published by VALLEY COMFORT SYSTEMS INC and in compliance with the local building or fire codes in the area where it is installed. The furnace should be inspected by the Local Building Inspector or Fire Department prior to beginning use. A copy of the Owner's Installation and Operation Instructions is provided with each unit, or can be obtained by writing to VALLEY COMFORT SYSTEMS INC at the address shown below. **READ THE OWNER'S INSTALLATION AND OPERATION INSTRUCTIONS BEFORE INSTALLING OR USING THE FURNACE. SAVE THESE INSTRUCTIONS FOR FURTHER MAINTENANCE AND SAFETY PROCEDURES.** Alteration of, abuse of, damage to, lack of maintenance of, faulty repair, OR misuse of the furnace, **VOIDS** this warranty. Use of fuel other than natural untreated wood (such as artificial logs, wood exposed to salt water, or coal that may burn at excessively high temperatures or may release fumes that can explode) will **VOID** this warranty. Burning the furnace with the loading door open (other than during the brief start-up period) will also **VOID** this warranty.

OTHER LEGAL RIGHTS OF THE PURCHASER:

This warranty gives you specific legal rights, and you may have other rights that vary from province to province. All parts of this warranty are to be interpreted in accordance with the laws of British Columbia/Canada. If you do not agree to the purchase of the furnace on the terms and conditions set out in this warranty, then you must return the furnace to the dealer prior to use or installation, and the purchase price will be refunded.

THIS WARRANTY ONLY COVERS UNITS INSTALLED IN CANADA OR THE U.S.A.

**PLEASE KEEP YOUR RECEIPT, AS PROOF OF PURCHASE.
ALL WARRANTY CLAIMS SHOULD BE MADE THROUGH THE DEALER YOU
ORIGINALLY PURCHASED YOUR HEATER FROM:**

WARNING

**TO VALIDATE THIS WARRANTY, YOU MUST
COMPLETE AND RETURN THE WARRANTY CARD
WITH 20 DAYS OF THE DATE OF PURCHASE**

this product is proudly manufactured in Canada by:

**VALLEY COMFORT SYSTEMS INC.
1290 COMMERCIAL WAY
PENTICTON, BRITISH COLUMBIA
V2A 3H5
(250) 493-7444
www.valleycomfort.com
Email vcsales@vip.net**

VALLEY COMFORT SYSTEMS INC.
1290 COMMERCIAL WAY, PENTICTON, B.C., V2A 3H5, (250) 493-7444

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