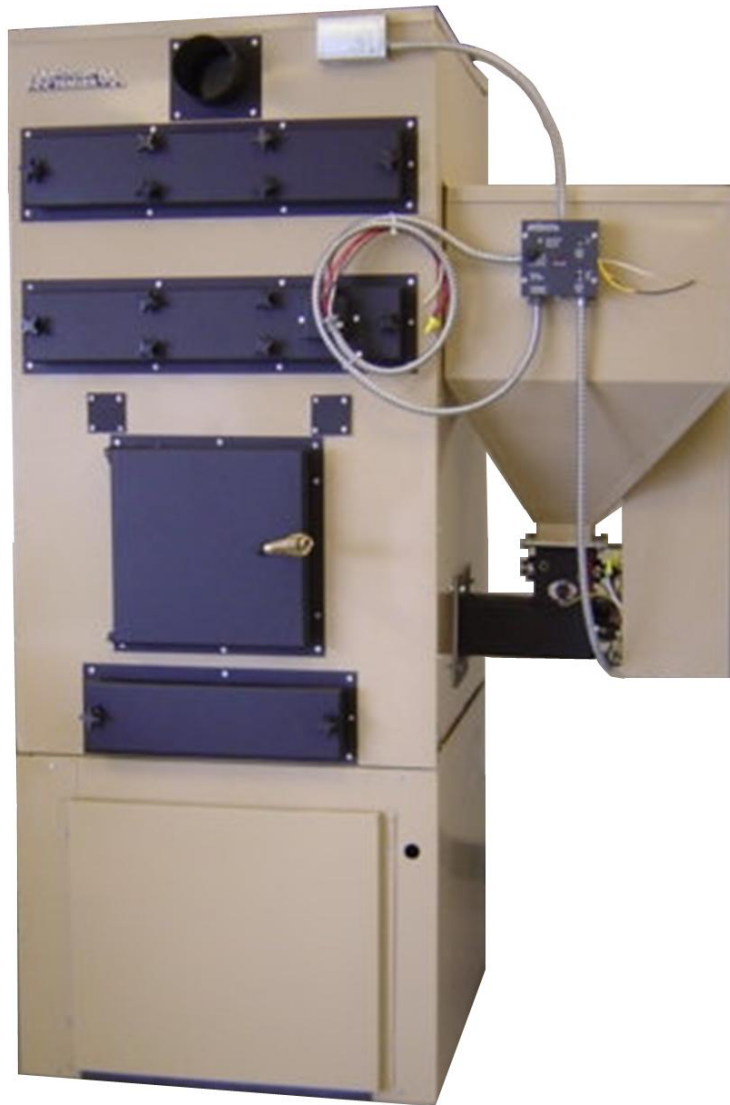


# *Installation/Operator's Manual*



Listed

## **SAFETY NOTICE**

Please read entire manual before installation and use of this pellet fuel-burning boiler. Failure to follow these instructions could result in property damage, bodily injury or even death. Contact local building or fire officials about restrictions and installation inspection requirements in your area.

## **SAVE THESE INSTRUCTIONS**



## **GBU130 PELLET/CORN FURNACE**

PINNACLE STOVE SALES INC  
1089 HIGHWAY 97 NORTH  
QUESNEL, BC V2J 7C9  
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**COMPONENT DIAGRAM**  
**FRONT VIEW**

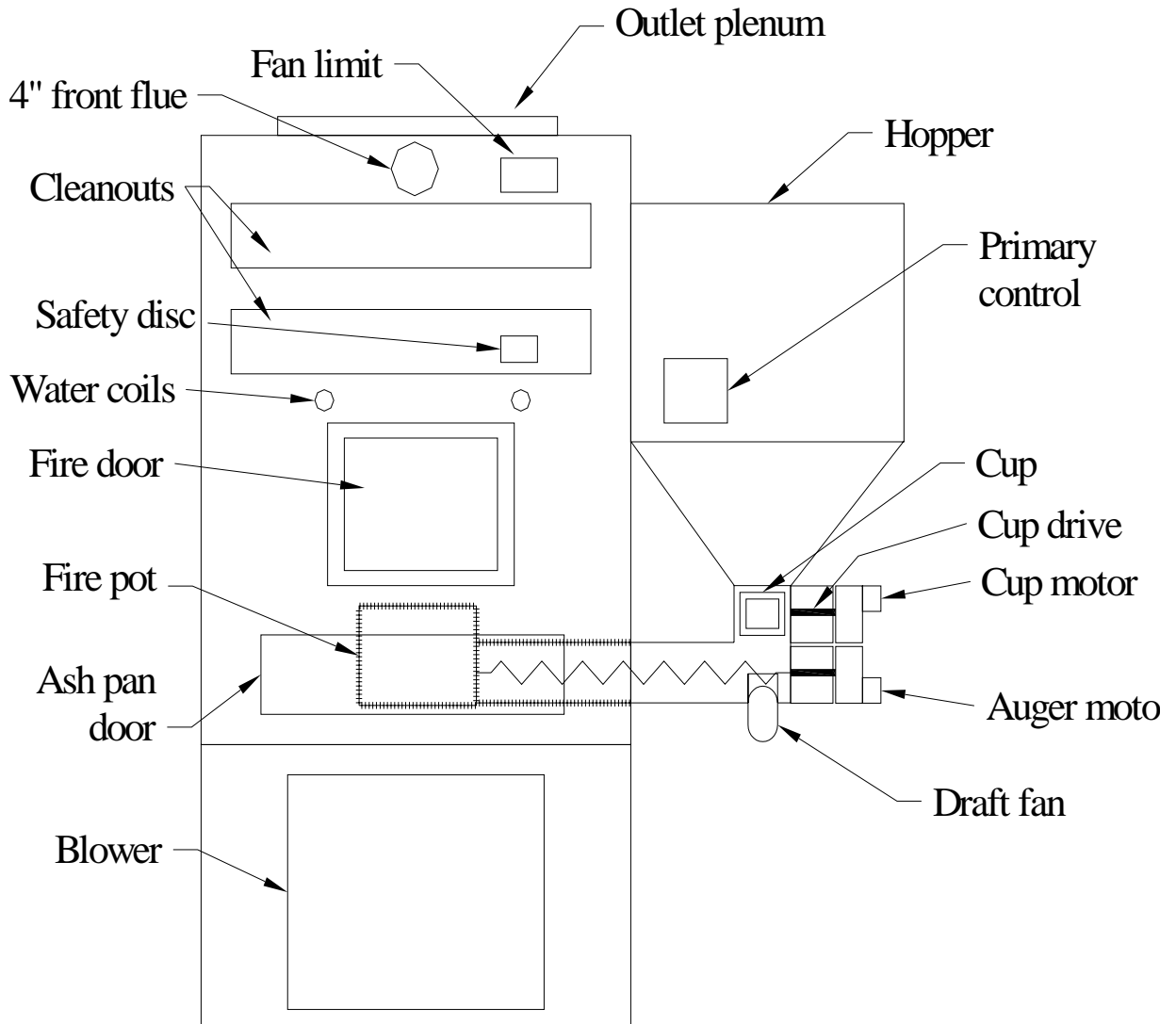


Figure 1

**COMPONENT DIAGRAM**  
**SIDE VIEW**

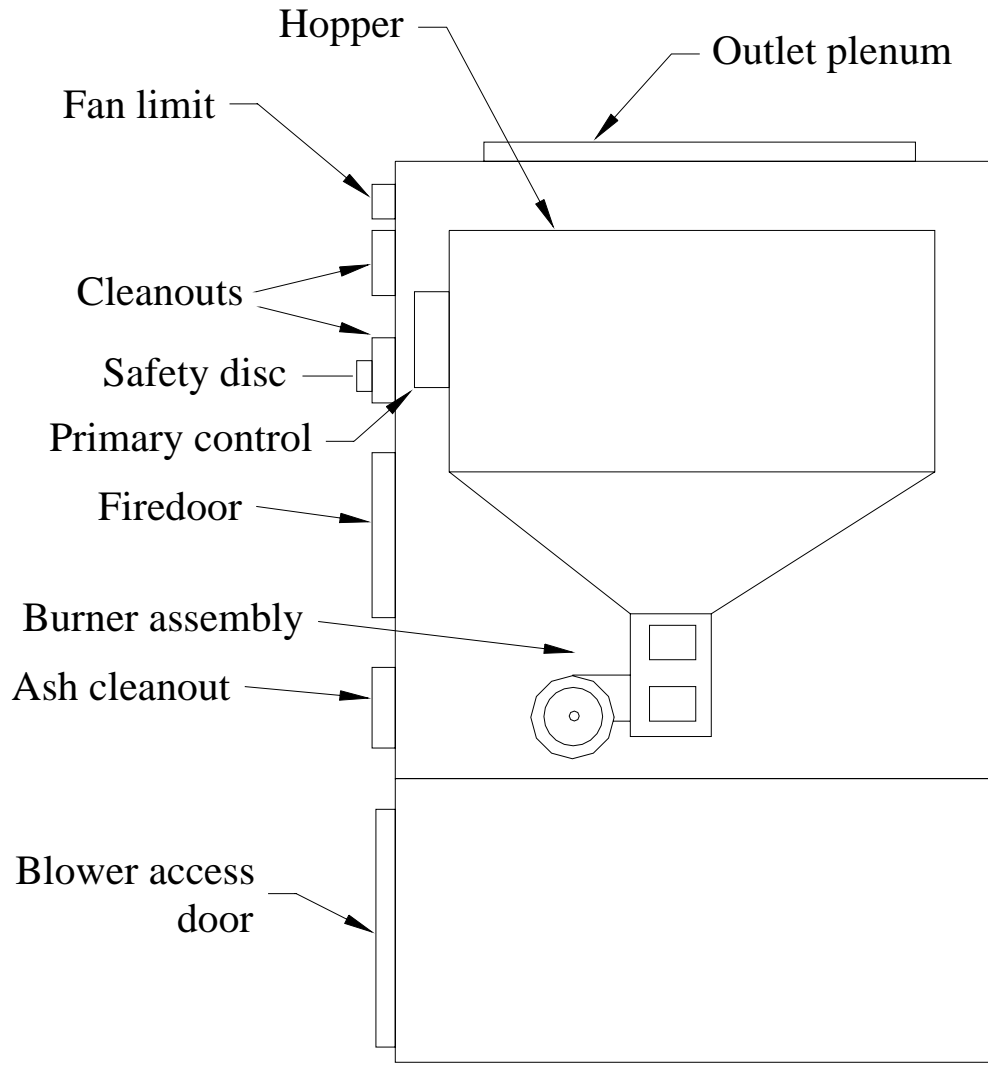
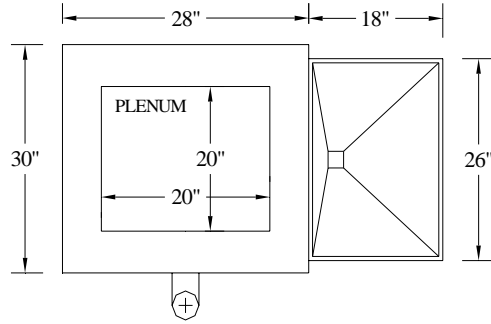
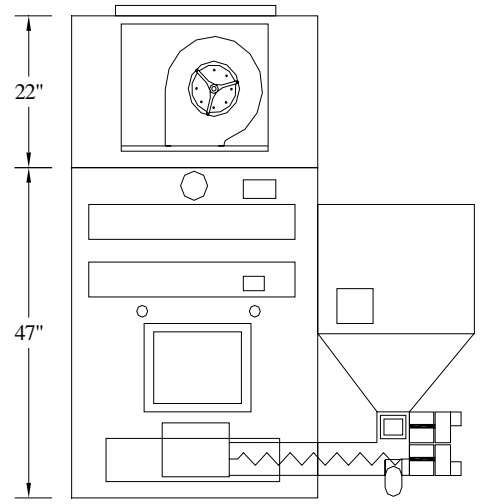


Figure 2

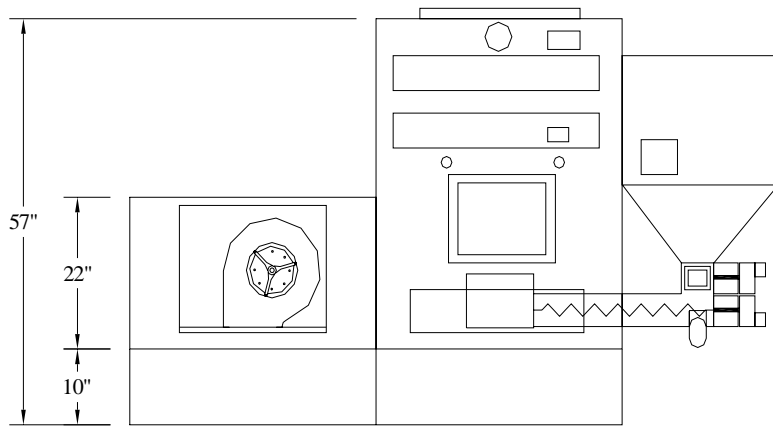
# FURNACE SPECIFICATIONS



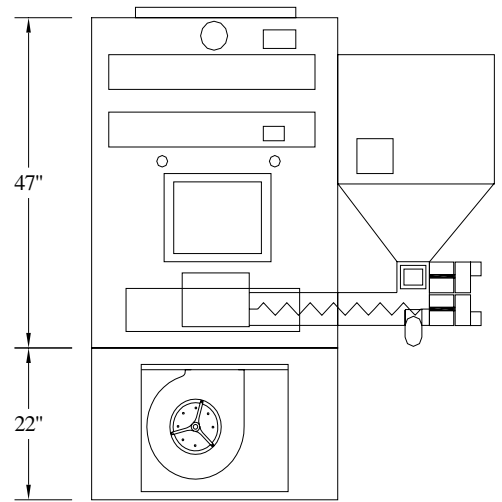
TOP VIEW



DOWN FLOW



LOW BOY



UP FLOW

SHIPPING WEIGHT

BASIC UNIT.....	485 lbs
FAN SECTION.....	98 lbs

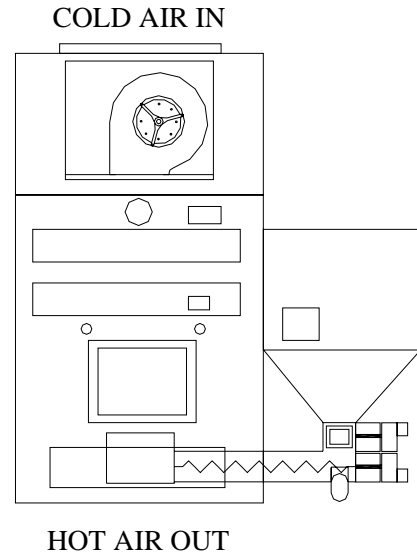
Figure 3

## CONFIGURATION ASSEMBLY

The General is designed as a component system. The basic unit must be assembled into either up flow, down flow, or lowboy configuration.

### DOWN FLOW

Unscrew and remove the top plenum connector from the basic unit and attach to the fan compartment opposite the blower outlet. Set the basic unit in place on the floor and set flanges on the sides, front and back. Secure with sheet metal screws. Seal the flanges with foil tape or silicon caulk. Set the fan section atop the flanges and secure. Make sure the blower unit is blowing down. Insert the burner/hopper assembly and secure. Connect the fan power lead from the burner to the fan compartment.



### UP FLOW

Lay the basic unit on its back, on the floor. Set the fan section on the floor in position, and attach the flanges on the sides, front and back and secure with sheet metal screws. Seal the flanges with foil tape or silicon caulk. Slide the (flanges) fan compartment into place and secure to the bottom of the basic unit. Make sure the blower is blowing up. Insert the burner / hopper assembly and secure. Connect the fan power lead from the burner to the fan compartment.

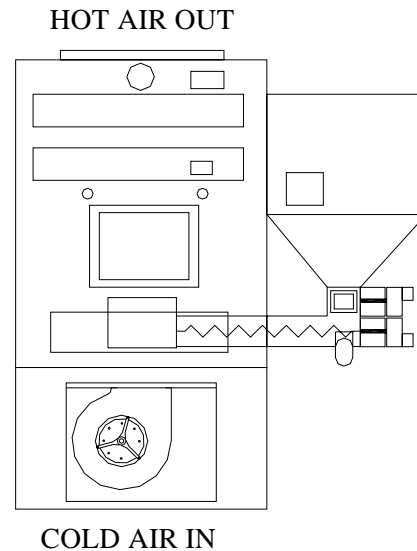


Figure 4

## LOWBOY

Determine which side the fan section will be located on, and which side of the basic unit the burner/hopper assembly will be mounted on. Position the bases appropriately, at the sides of the bases out where they will meet and secure together with sheet metal screws, and seal with foil tape. Set the basic unit on the appropriate base. Set the fan section on the appropriate base. Seal the joints with foil tape. Make sure the blower is blowing down. Insert the burner/hopper assembly and secure. Connect the fan power lead from the burner to the fan compartment.

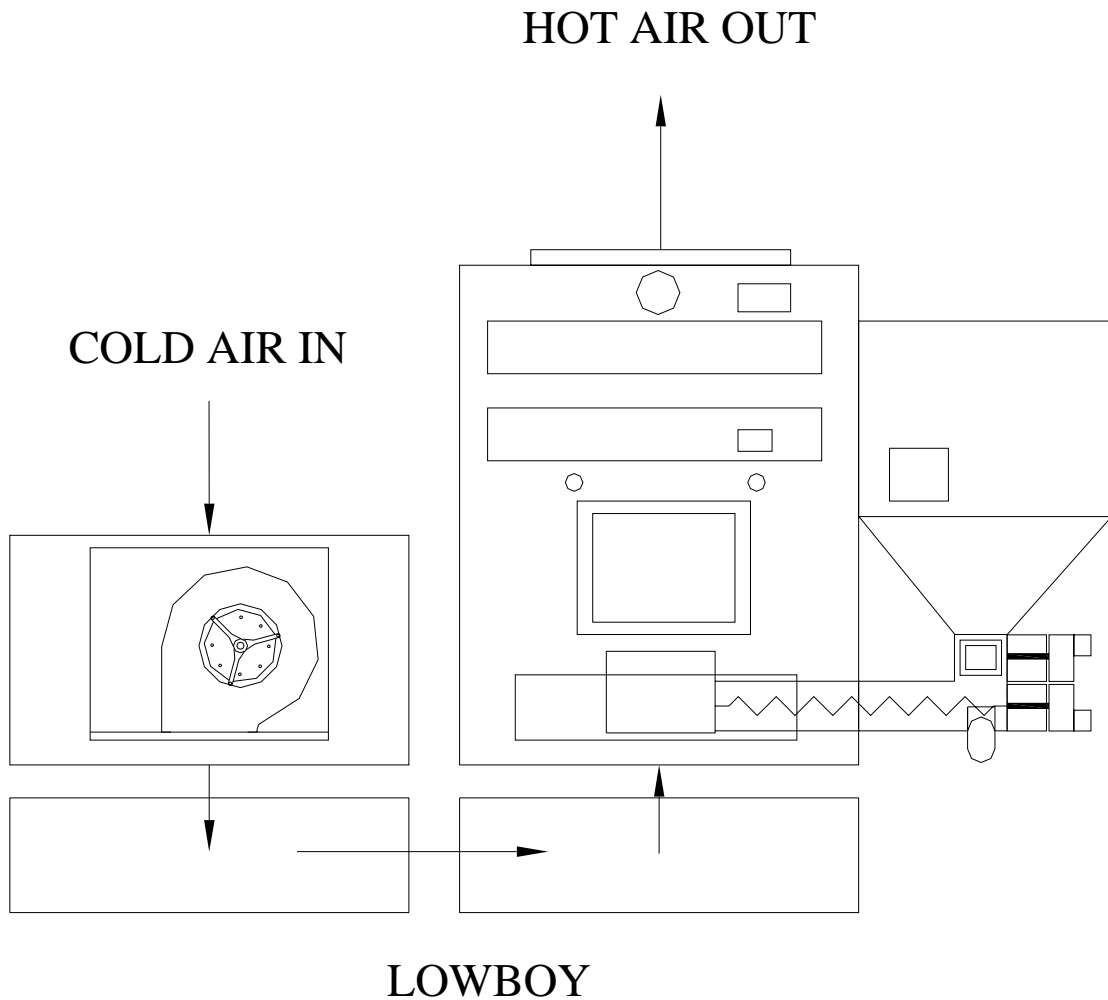


Figure 5

# CLEARANCES TO COMBUSTIBLE CONSTRUCTION

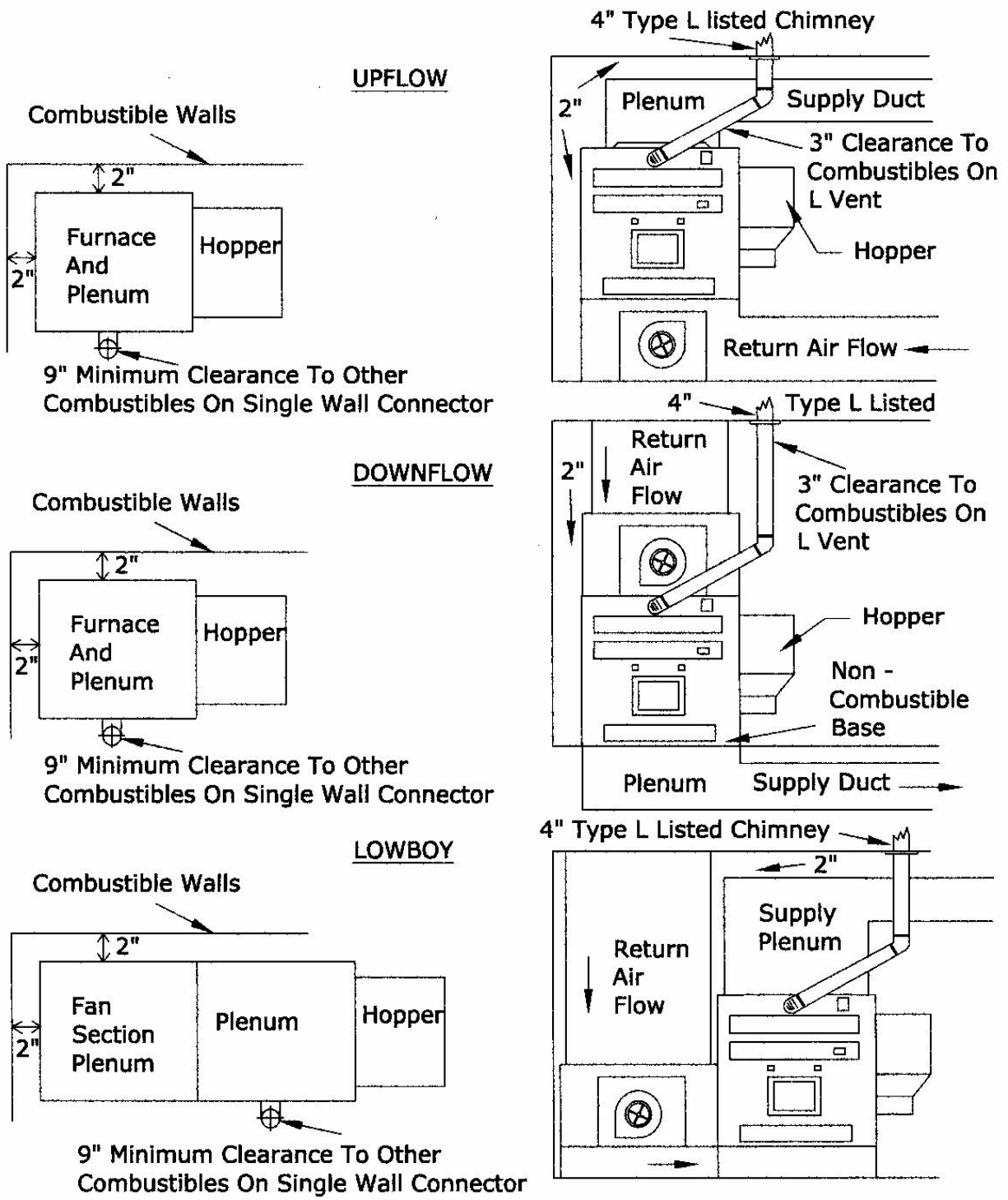


Figure 6

Allow 3 feet clearance at front of unit to provide easy access and clearance to combustible materials.



## **CONTROL AND COMPONENT FUNCTIONS**

AUGER The auger transfers the pellet fuel from the hopper end of the burner tube down and into the fire pot.

AUGER DRIVE MOTOR The auger drive motor turns the auger.

BURNER TUBE The burner tube contains two passageways, one for the auger tube and the other for combustion air. This tube supplies both the fuel and combustion air to the fire pot.

BLOWER The blower forces return air over the furnace heat exchanger and into the home's duct system. The blower is controlled by the fan limit control.

CUP The cup meters the amount of fuel and then delivers it down to the auger. The cup will deliver a set amount of fuel and is termed 1 cup, 2 cup, 3 cup, or 4 cup.

CUP DRIVE MOTOR The cup drive motor turns the cup.

DRAFT INDUCER The draft inducer takes combustion air, forces it down the burner tube and into the fire pot where combustion occurs. The flame can be adjusted by regulating the damper on the draft inducer.

FAN LIMIT CONTROL The fan limit control automatically activates the blower on temperature rise, and disengages the blower on temperature fall. Normally this control is set to bring the blower on at 140 F and then turn the blower off at 100 F. The fan limit control also features a 200 F limit, where if the temperature for whatever reason, may climb to 200 F this control cuts power to the burner, but keeps the blower running to cool the hear exchanger.

FIRE POT The fire pot is where combustion occurs. Pellets are delivered into the fire pot by the auger. The heat of the fire in the fire pot causes gases to oxidize off the pellets, and as the combustion air mixes with these gases, they burn with a flame similar to that of an oil or gas fire.

HOPPER The hopper is where the pellets are stored and then funnelled down to feed the cup.

## **GENERAL INSTRUCTIONS**

1. A licensed and bonded heating contractor must be used for installation.
2. Install this furnace in accordance with local mechanical codes and regulations. Consult manual J of the National Warm Air Heating Association or ARI 230 to estimate hearing requirements.
3. Always install this furnace with adequate return and supply duct systems.
4. The installer must explain in detail, the operations of this furnace to the owner/operator, including minor service requirements.
5. Never block or restrict any air intake ports. Dangerous overheating can result.
6. Install this furnace with safe clearances to combustible surfaces.
7. Connect this furnace to its own independent Class L chimney at least 4 inches in diameter.
8. This is a good furnace, but it cannot make up for a poor or incorrect installation.
9. Repair should be done only by a qualified service person.
10. Never stack or pile combustible materials against the furnace.
11. Never use, store, or dispose of flammable liquids near the furnace.
12. The manufacturer accepts no responsibility for improper installation of this pellet furnace or improper use or negligence of any kind with continued use of the furnace.
13. For the pellet unit the manufacturer recommends fuelling this furnace with ¼" diameter, 8000 BTU/pound, 8% moisture content, 1% ash content, wood based pelletized fuel. For the corn unit the manufacturer recommends corn with moisture content between 9 – 13%. Do not attempt to burn lesser grade fuels.
14. If this furnace runs out of fuel, or misfires, it will automatically shut off. If this occurs, you must manually re-light the pellet burner, and depress the red reset button to activate burner.
15. Do not operate this furnace with the door open.
16. Exterior metal plates and flue of the furnace are hot during operation. Do not touch with bare hands, or allow children to play near the furnace unattended.
17. Do not allow anyone to operate the furnace that is not familiar with its operation.
18. Never add pellets by hand to a smouldering fire, or a hot fire pot, dangerous smoking could result.

## **FURNACE LOCATION AND COMBUSTION AIR**

1. Locate the furnace as close as possible to the chimney and in accordance with air distribution system. Consider ease of operation and service accessibility.
2. The furnace requires combustion air. Minimum room size that requires no outside combustion air is 48 square feet of floor space. If the room is smaller, then provide at least 12 square inches of outside air vent.
3. Do not locate this furnace in a sleeping room.

## **DUCT SYSTEM**

1. Connect the air duct systems both supply and return. Always insure an adequate distribution system for the home, which the furnace is intended to heat. Recommended supply trunk line size: 8 ¾" x 20". Plenum connector size on the top of the unit is 20" wide by 20" deep. For down flow installations, the entire bottom of the unit is the outlet.
2. Minimum clearance to combustibles above the supply plenum is 2 inches. Trunk line clearance is 2 inches but can be reduced to 0 inches after 4 feet
3. Plenums mounted on the furnace should be constructed from 26 gauge-galvanized steel. For supply and return extensions, metal duct, duct board, thermaflex, and/or insulated metal pipe are all acceptable.
4. This furnace does not come equipped with air filters. Manufacturer recommends the installation on the return airside, of metal filter racks, electronic air cleaner, or remote filter grills.

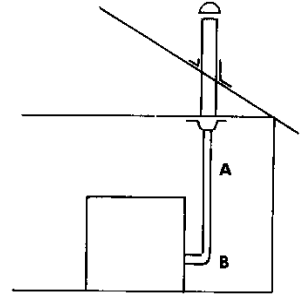
## CHIMNEY AND VENTING

Chimney required for the GBU130 is 4" Class "L" (also known as PL vent). A starting collar must be used to attach the venting system to the furnace. When connecting into a Class "A" or masonry chimney an approved 4" liner **MUST** be used to prevent back drafting of the chimney.

### EXISTING CLASS "A" CHIMNEY:

Run 4" Class "L" connector from the furnace connection to a positive connection with the class "A" chimney. **AN APPROVED 4" LINER MUST BE USED IN CLASS "A" CHIMNEYS.** Make sure each joint is firmly locked in place. Make sure the attachment of Class "L" to the Class "A" chimney is secure with sheet metal screws. Seal all joints with high temperature silicone. Class "L" connector should maintain a pitch on rise from the furnace to the chimney of at least 1/4" per foot.

- A.) "L" Vent connector 4"                      B.) "L" Vent elbow 90° adj. 4"

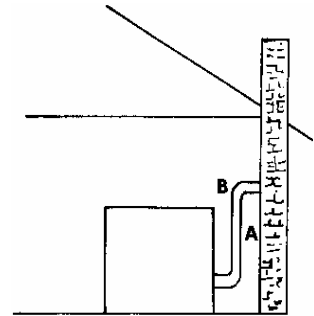


**EXISTING MASONRY CHIMNEY:** Run 4" Class "L" connector from the furnace connection to a positive connection with the masonry chimney. Make sure each joint is firmly locked in place. Make sure the penetration of the Class "L" connector into the masonry chimney is sound and secured with high temperature cement. Seal all joints with high temperature silicone. Class "L" connector should maintain a pitch on rise from the furnace to the chimney of at least 1/4" per foot.

### **AN APPROVED 4" LINER MUST BE USED IN MASONRY CHIMNEYS.**

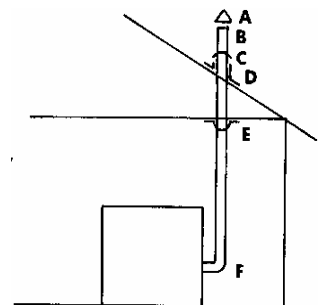
Your new furnace is so efficient; an unlined chimney could remain cold and cause a downward pressure creating poor burning, incomplete combustion or back draft.

- A.) "L" Vent connector 4"                      B.) "L" Vent elbow 90° adj. 4"



**NEW VERTICAL INSTALLATIONS:** Install 4" Class "L" chimney add accessories according to manufacturers instructions and local codes (3" clearance to combustibles). Run Class "L" chimney all the way from the furnace connection to point of termination. Make sure each joint is firmly locked in place. Seal all joints with high temperature silicone. Class "L" connector should maintain a pitch on rise from the furnace to the chimney of at least 1/4" per foot.

- A.) Vertical top 4"                                      D.) Adj. Flashing 4"  
 B.) "L" Vent pipe 4"                                E.) Fire stop spacer 4"  
 C.) Storm Collar 4"                                F.) "L" Vent 90° adj. 4" clean out tee



## HORIZONTAL TERMINATION IS NOT RECOMMENDED

Figure 7

## CHIMNEY



Figure 8

The chimney that this unit is connected to (Class L all fuel, or masonry) should extend above the roof line of adjacent buildings to prevent downdraft situations.

1. Vent connectors shall be installed without any downward pitch from the appliances and without any dips or sags.
2. Vent connectors shall be pitched upward from the appliance at least  $\frac{1}{4}$  inch per foot.
3. Vent connectors shall be firmly attached to the vent outlet collar of the stove with sheet metal screws.
4. The chimney shall extend at least 3 feet above the highest point where they pass through the roof of a building and at least 2 feet higher than any portion of any building within 10 feet.

## **CONNECTION OF FLUE PIPE TO MASONRY CHIMNEY THROUGH A WALL**

1. Before installation, examine the chimney to spot cracks, loose mortar, or other signs of deterioration. If evidence of disrepair is noted, the stove should not be installed until repairs have been made. All chimneys **MUST** be lined with an approved 4" liner to prevent back drafting of the chimney.
2. Most walls contain wood even though they are made of sheetrock or plaster on the outside. These walls are combustible and procedures must be taken for safe penetration.
3. A section of 4" diameter class L chimney, finish wall plate, high temperature cement, and sheet metal screws will be required for this installation.
4. Frame an opening in the wall large enough to maintain a 3" air space around the L chimney section. Insert the L chimney section into the Fireclay thimble in the masonry chimney, being sure it does not protrude beyond the edge of the flue lining. Seal the L chimney connection to the Fireclay thimble with high temperature cement.
5. Slip the finish wall plate over the L chimney section and secure to both the wall and L chimney with screws. During installation, always check to assure that a 3" air space is being maintained to the wood framing. Do not fill the void space with insulation.
6. Now you can complete the connection to the furnace with L chimney venting.

## **ELECTRICAL WIRING**

1. Make sure that the power source conforms to the requirements of the furnace. Disconnect the power source before performing any electrical work.
2. Connect the electrical power according to the appropriate wiring diagram on the following pages.
3. All power leads should be installed with approved nuts, fittings, cable, and connectors.

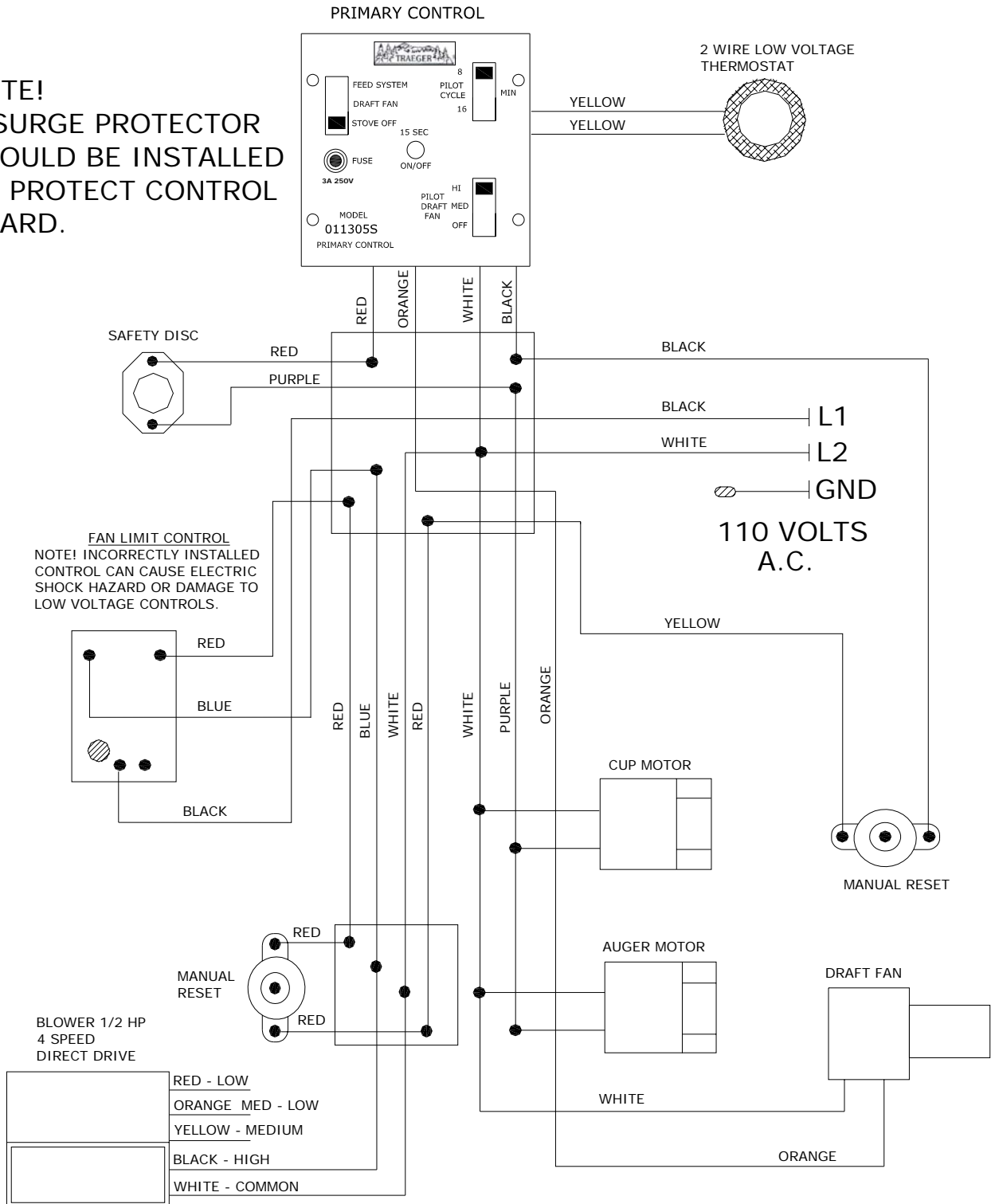
## **THERMOSTAT INSTALLATION**

Thermostat is not included with unit.

1. Honeywell model T87F or equivalent low voltage thermostat should be used. Switching voltage is 9 volts. Programmable thermostats can be used provided they are low voltage compatible.
2. Install the thermostat in a central location according to manufacturer's instructions.
3. Run the thermostat wire using 18/5 stat wires.
4. Set the heat anticipator at .04 amps.
5. See wiring diagram (next page) for thermostat terminal locations.

# GBU130 FURNACE WIRING

**NOTE!**  
A SURGE PROTECTOR  
SHOULD BE INSTALLED  
TO PROTECT CONTROL  
BOARD.

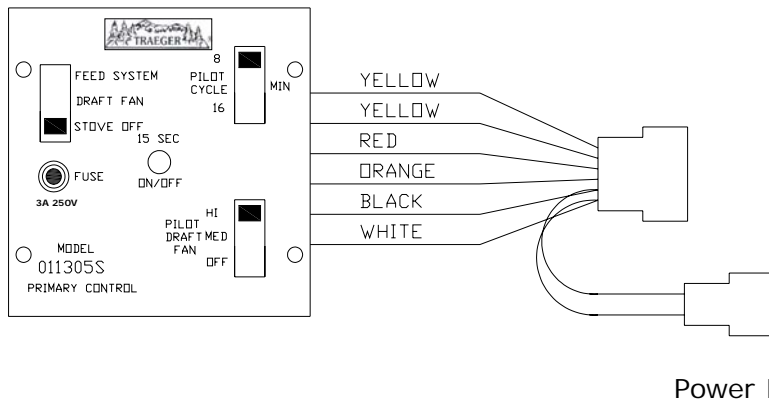


BD 01/19/02 REV 2

Figure 9



## PRIMARY CONTROL 011350S SEQUENCE OF OPERATION



The Traeger 011350S primary control is a high-tech, state of the art computer. The control performs the function of piloting the system when the thermostat does not call for heat. It conserves fuel consumption.

### FUSE

The computer board is protected by a 3-amp fuse. There are many manufacturers of this fuse. Fuses are readily available at your local hardware or auto parts store. i.e. Napa Balkamp #782-1046 AGC 3.

### RED LIGHT INDICATOR 15 SECOND ON/OFF

When the wall thermostat circuit is closed, and calling for heat, the light indicator will remain dim as long as the circuit is closed. When the thermostat is open (not calling for heat) the light will blink from bright to dim every 15 seconds as part of the counting procedure.

### ON TIME (2MINUTES)

The On Time controls the amount of time the burner stays active (fuel is fed). It operates in conjunction with the cycle time and is pre-set in the control at 2 minutes

### PILOT CYCLE TIME SWITCH

The PILOT CYCLE time switch controls the total cycle both on and off, 8 or 16 minutes.

### COMBINATION FUNCTION OF ON TIME AND CYCLE TIME

The On Time is subtracted by the Cycle Time Example: With the On Time pre-set at 2 minutes and the Cycle Time set at 16 minutes, the unit would come on (feed corn) for 2 minutes and not feed corn for 14 minutes. This gives you a complete cycle time of 16 minutes.

### WIRING

The 011350S primary control has 6 lead wires. A wiring colour code is provided on back of each control. Black is line power. White is neutral. Red is load and feeds the auger motor and cup motor. Orange feeds the draft inducer. 2 yellows go to the wall thermostat.

### POWER SWITCH

The POWER switch cuts power to burner but not blower fan system and to shut the furnace down.

### PILOT DRAFT SWITCH

The PILOT DRAFT switch controls the speed of the draft inducer on pilot or idle mode. Normally set on Medium, but will vary with differing chimney configurations.

## **BURNING CORN IN THE GBU130**

1. The GBU130 will burn most types of clean-shelled corn. It is not necessary to mix the corn with wood pellets, although some people have had good success burning a 50/50 mix.
2. Typically burning corn requires a bit more combustion air than wood pellets. The shutter on the draft inducer should be initially set at 50% open, the cycle time at 8 minutes, and the pilot draft switch on the primary control at medium.
3. We don't recommend direct venting when corn is the primary fuel. For corn burning, the GBU130 needs a natural draft and this can only come from a vertical chimney. We do recommend stainless chimney be used. Corn, by nature, is more acidic than pellets and can eat away steel or galvanized chimney.
4. The moisture content of the corn should be 15% or less, and care should be taken to ensure that there are no foreign objects in the corn (i.e. sticks, stalks, cob pieces) which will jam the feed system.
5. We recommend starting a corn fire with wood pellets as corn has a dense shell that can be difficult to start. Place 1" of course oyster shell in the bottom of the pot before using. Use a non-volatile approved fire starter to light the pellets.
6. Corn has more BTU's than wood pellets, about 10,000 BTU's per pound more. Thus the furnace may have to be metered down to prevent over firing.
7. When burning corn, the primary combustion takes place on a fluidized bed at the bottom of the fire pot. A white calcium-like deposit (clinker) will be present in the bottom of the fire pot. Under heavy usage it may be necessary to remove the clinker daily. Stir the pot with a metal stirrer and flick out any clinker you find into the ash pan. A bit of oyster shell will be removed with the clinker. When all oyster shell has been removed, about every 300 – 400 pounds of corn (approx 4-6 days) remove pot for a thorough cleaning and replace with spare pot, or clean and replace used pot.
8. **We would recommend purchasing an extra pot to make cleaning easier and generate less wear on your pot.**
9. Turn the switch on the primary control to the draft fan position, this will allow the remaining fuel to be burnt up and help cool down the fire pot.
10. When the pot is cool you can pull out the slide plate at the bottom of the pot and tap the clinker out into the ash pan. Alternately let the pot cool **completely** to the touch, remove it from the unit and place into a bucket of water to dissolve the clinker.
11. **DO NOT PLACE HOT POT IN WATER. IT MAY SERIOUSLY WARP THE POT.** If you have a spare pot you can then let the used pot sit in the air for 2-3 days, the clinker will absorb moisture from the air and turn powdery, then dump the residue out. **DO NOT USE ANY OBJECT TO POUND OUT THE CLINKER; THIS WILL DAMAGE YOUR POT.**

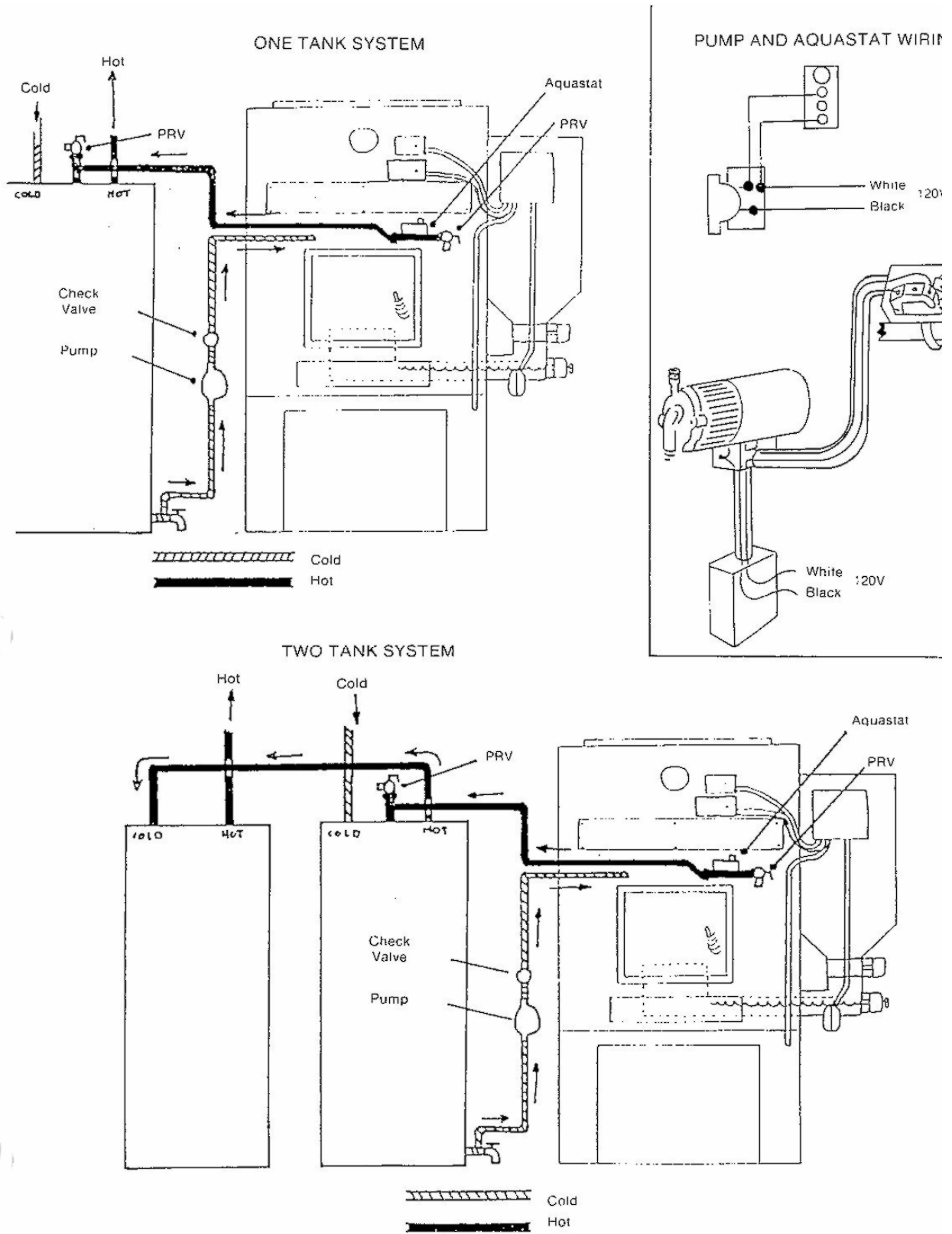
## **INITIAL START-UP INSTRUCTIONS**

1. Turn power on to the furnace
2. If your furnace is equipped with a domestic hot water system, open any valves to fill the system. Open the pressure relief valve to purge any air out of the system. Start and stop the pump 3 or 4 times to purge the system and to ensure proper operation. Set the aqua stat at 130° F.
3. Push in the white summer fan button on the fan limit control starting the fan. Check the fan unit to make sure that it is running freely. Pull the button back out, de-activating the fan.
4. Remove the cover on the fan limit control. Make sure that the fan-off tab is set at 100° F, the fan-on tab at 150° F, and the high limit at 200° F.
5. Set off / on switch to draft fan, Open the furnace door, place your hand over the fire pot and see if the draft inducer is forcing air into the fire pot. Set off / on switch to stove off.
6. Load the hopper with fuel.
7. Turn the thermostat to 90°F.
8. If burning pellets, place 2 cups of pellets in the bottom of the fire pot. If burning corn see page 18, number 5 in Burning Corn instructions. Apply non-volatile lighting material such as Seymour Firelighter, That Stuff, or Lightening Nugget, and light with a match. Close fire door and allow enough time for fire to establish before setting off / on switch to feed system.
9. After a few minutes of having a well-established fire the low limit snap switch mounted on the lower heat exchanger cover will lock in and turn the feed system on.
10. Set thermostat at your normal comfort level.
11. Remove the fan limit cover and observe the dial rotation as internal temperatures rise. Observe the engaging of the blower.

## **DOMESTIC HOT WATER SYSTEM**

1. The water coil system plumbs into any standard hot water heater. The system is controlled by a surface mount aqua stat. When water temperatures reach 130 degrees (manually adjustable), the aqua stat activates the pump. Water is drawn off the bottom of the water heater (tee off drain valve), pulled into the pump, pushed up past the swing check valve, into the horizontal coil located in the upper portion of the firebox, through the coil, out the opposite side of the coil, past the aqua stat and pressure relief valve, back over and into the top of the water heater (tee off tank pressure relief valve). The pump will continue to operate until water temperatures drop back down below the aqua stat setting.
2. The water heater should be at least of 52 gallon capacity. It should be no more than 15 feet away from the furnace on one level. If farther away, or on 2 levels, the system may require a holding tank or larger pump.
3. Determine which ports of the coil will be the supply and return. Place the fittings provided for the pressure relief valve on the outlet side. Solder fittings onto coil with 95/5 solder.
4. Mount the aqua stat on the stem just below the pressure relief valve.
5. Using Teflon tape to seal, screw the pressure relief valve into the  $\frac{3}{4}$ " adapter.
6. Plumb the pump; check valve, supply and return lines to and from the water heater according to the following diagrams. Use  $\frac{1}{2}$ " type M copper tube and insulate with  $\frac{1}{2}$ " I.D. –  $\frac{3}{4}$ " wall tubing insulation.
7. Charge the system with water and check all joints for any leaks.
8. Wire in the pump and aqua stat in accordance with wiring diagram.
9. Don't let anyone show you a better way to plumb the water system. Install exactly as shown in our diagram.

# ONE TANK / TWO TANK SYSTEMS



16

Figure 10

## **MAINTENANCE**

1. Check the fire pot for any residue build up. Clean and dispose of them when completely cooled.
2. Check the ash pan regularly and empty as necessary. Dispose of the ashes in a metal container and when cooled, bury them to prevent any spontaneous fires.
3. Check the upper heat exchangers by removing the heat exchanger plate once per month for any fly ash accumulation. Clean heat exchangers if necessary.
4. If the blower was purchased with your unit, oil the blower motor once a year with 10 drops of SAE non-detergent oil.
5. Clean the air filters regularly.
6. Inspect the flue pipe and chimney at least once per year. Clean as needed.



## **TROUBLE SHOOTING GUIDE**

Tools Essential for Trouble Shooting

1. Furnace Installation and Operation manual
2. Circuit Tester / Volt Meter
3. Molex pin Extractor
4. Volt Meter

**ATTENTION: Before attempting any trouble shooting:**

1. Check your outlet (for 070) or your wiring to breaker box (130 & 150) to insure proper polarity and grounding.
2. Check flue for any blockage.
3. Take time to clean burn pot and heat exchangers.

**STEP #1**

**CIRCULATING BLOWER CHECK**

NOTE: The factory setting for the blower is to come on at 150°F and off at 100°.

Find the blower limit control; it is a silver part with the Honeywell Tradeline label. It will have a white button. Pull the switch to the on position.

Should the blower fail to come on the first step is to check the power source. If the power source is OK you will need to make sure that all wire leads are properly connected. If the blower still fails to run, replacement will be necessary.

**STEP #2**

**CONFIRM POWER TO CONTROL BOARD**

Turn Main power switch from the "Stove Off" position to the "Draft Fan" position. If the red indicator light comes on, there is power to the control board. If the light does not come on check the following:

- A. Power Source (See Step #1)
- B. Fuse
- C. Burner Manual Reset – If the fuse is not blown and the reset button has not popped out, inspect the Molex connection. Finally, using a voltmeter, check for power at the power switch. If the meter indicates 100v and the light still doesn't come on, replace the control board.

**STEP 3#**  
**CONFIRM DRAFT FAN OPERATION**

Be sure the main power switch is in the "Draft Fan" position. This will cause the draft fan to operate at full power (110v). The draft fan will operate at 70 – 75v when pilot draft switch is set at high. It will receive 60 – 65v in the medium position and zero volts in the off position when furnace is not feeding fuel. You should be able to hear the draft fan come to full speed. You can check movement of air by placing you hand over the fire pot. If movement of air is not obvious, make sure that the shutter is open.

**STEP #4**  
**INSPECT FUEL METERING CUP FOR BLOCKAGE**

To inspect the metering cup, first you will need to empty the hopper. Reach down through the hopper and rock the cup back and forth. The cup should mover ¼ of an inch. If it does not move, something is jamming it. Sometimes the obstruction can be removed by rotating the blade on the cup motor counter clockwise. If this doesn't work you will have to remove the cup motor and cup to remove the blockage.

**STEP #5**  
**CONFIRM CUP AND AUGER MOTOR OPERATION**

Place a jumper wire between the leads to the safety disc located on the exhaust flange. Set the main power switch to "feed system". Both the cup and auger motor should start now. If the motors run but the fuel metering cup and/or auger do not turn, check the cast iron couplers to make certain that the set screw is tight or that a coupler has not snapped off. NOTE: Anytime you are checking the motors, you should verify the speed at which motors are turning. This can be accomplished by timing the revolution of the coupler. Using the setscrew as a reference the bottom motor (Auger) will make one revolution in 10 seconds. The top motor (cup) will make approximately one revolution every 45 seconds. Remove jumper wire and plug wire leads back to safety disc.

**STEP #6**  
**RELIGHT THE FURNACE**

Use normal start up procedure to restart the furnace.

**INSTALLATION/ADJUSTMENT RELATED PROBLEMS**

PROBLEM: **Incomplete combustion, unburned fuel.**  
SOLUTION: 1. Adjust air shutter to a more open position.  
2. Make sure of correct chimney, is chimney drafting?  
Is the chimney direct vented? Is it a tight basement?  
Outside air may be needed. What is fuel moisture?



PROBLEM: **Burns fuel too quickly and may have difficulty holding a fire on pilot.**

SOLUTION: Adjust air shutter to a more closed position. If this doesn't solve the problem, use a draft meter and check for an over drafting chimney. To solve over drafting use the following procedures:

**Masonry Chimney:** Cover top with a plate and mount a 4" cap. If that doesn't slow it down, use a barometric damper.

**Pellet Vent:** Install a barometric damper.

PROBLEM: **Smoking**

SOLUTION: Make sure that the chimney is not direct vented on a windy side of the house. Also check gaskets to insure proper sealing. Adjust damper opening, might be too far closed. Is heat exchanger clean? Is chimney clean?

PROBLEM: **Auger squeaks**

SOLUTION: Adjust pillow block bearing by loosening screws on each side. Let auger run for one minute. Tighten screws. Auger should realign itself. Possible build up of carbon on end of auger where it enters burn pot.

PROBLEM: **Decrease in heat output**

SOLUTION: Thoroughly clean heat exchanger. Did you start using a different brand of fuel? Shutter on draft fan moved?

## **OPERATOR RELATED PROBLEMS**

PROBLEM: **Feed system does not lock in.**

SOLUTION: Repeat start up using more fuel.

PROBLEM: **Furnace will not start up after power outage.**

SOLUTION: Depress blower manual reset.

PROBLEM: **Furnace will not feed fuel.**

SOLUTION: Check for blockage in metering cup.  
Is there fuel in the hopper?

# **FUEL RELATED PROBLEMS**

## **Symptoms of Poor Fuel:**

1. Unburned pellets
2. Fire pot overflows as a result of high moisture content.
3. Lack of heat.
4. Excessive ash build-up.
5. Incorrect size.

## **PROBLEM**

### **NO HEAT**

# 1. Pellet fire has gone out during normal operation.

CHECK CAUSES: 1, 2, 3, 7, 8, 10, 11, 13, 14, 15, 17, 21, 23, 24, 25, 26, 28, 36, 42 or 45.

# 2. Blown fuse or circuit breaker.

CHECK CAUSES: 2, 3, 7, 8, 16, 17, 27, 43, 44 or 45.

# 3. Unit will not lock in on start up.

CHECK CAUSES: 2, 5, 10, 11, 15, 20, 21, 25 or 34.

# 4. Fire has gone out during turned down pilot time.

CHECK CAUSES: 1, 2, 5, 10, 11, 14, 15, 20, 21, 23, 24, 28, 39, 40 or 42.

### **PERFORMANCE DEFICIENCIES:**

# 5. Unit burns with a dirty lazy flame.

CHECK CAUSES: 5, 29, 36, 40, 59 or 60.

# 6. Furnace burns too many pellets.

CHECK CAUSES: 5, 14, 21, 28, 30, 31, 32, 53 or 59.

# 7. Shocked when touching furnace.

CHECK CAUSES: 16, 17, 44 or 45.

# 8. Furnace is up to temperature, but won't run on thermostat.

CHECK CAUSES: 13, 17, 18, 19, 23, 24 or 25.

# 9. Fire pot is full of pellets when burning.

CHECK CAUSES: 5, 20, 29, 36, 37, 40, 53, 59 or 60.

#10. The blower cycles on and off too much.

CHECK CAUSES: 9, 12, 22 or 59.

#11. Furnace burns without regard to thermostat, overheats.

CHECK CAUSES: 4, 8, 13, 14, 18, 30, 31, 33 or 50

#12. Furnace doesn't make as much heat as it used to.

CHECK CAUSES: 5, 32, 37, 40, 53, 56, 57 or 59.

#13. Circulating blower will not run at all.

CHECK CAUSES: 9, 12, 17, 22, 45 or 56.

#14. Remote thermostat is not accurate by thermometer.

CHECK CAUSES: 18, 30, 31, 32, 33, 48 or 54.

#15. The circulating blower runs continually.

CHECK CAUSES: 9, 12, 38 or 53.

#16. The furnace will not heat the whole house.

CHECK CAUSES: 30 or 32.

### **UNDESIRABLE BY-PRODUCTS**

#17. Owner smells fumes in home.

CHECK CAUSES: 5, 6, 14, 20, 21, 29, 35, 36, 37, 40, 46, 49 or 58.

#18. Dust in the room and on the furniture.

CHECK CAUSES: 4, 6, 35, 41, 49 or 59.

#19. Large amounts of unburned pellets in ash pan.

CHECK CAUSES: 5, 20, 21, 29, 36, 37, 40, 53 or 57.

#20. Large amounts of soft ash and hard clinkers in fire pot.

CHECK CAUSES: 53.

#21. Furnace smokes out vent running on pilot or full burn.

CHECK CAUSES: 5, 13, 14, 20, 21, 28, 29, 34, 37, 39, 40 or 53.

#22. The Furnace makes too much noise.

CHECK CAUSES: 8, 22, 28, 36, 47, 51 or 55.

# **FUEL RELATED PROBLEMS**

## **CAUSES**

**1. The pellets in the hopper have tunnelled out or have bridged over.**

**Remedy:** Check the fines content and or length of the pellets against the manufacturer's specifications.

**2. An impurity in the pellets has hung up the cup.**

**Remedy:** The cup is not turning and the motor is very hot. Unplug the stove, empty the hopper, dislodge the foreign object, check the cup operation and refuel.

**3. An impurity in the pellets has hung up the auger.**

**Remedy:** The cup is turning but the auger is not. Loosen the coupling on the auger and try to turn free. Do not force it. You may have to remove the auger to clear.

**4. Fines and dust are accumulating in the burner compartment area.**

**Remedy:** Check the seal between the hopper and the burner flanges as well as the hopper seam seals. Reseal.

**5. The heat exchanger is full of ash.**

**Remedy:** Shut the furnace off, let cool, remove all heat exchanger cover plates and vacuum out. Check the exhaust vent system while you are at it.

**6. The main fire door has been left ajar.**

**Remedy:** Close the door completely and make sure it is secure.

**7. Cup motor is defective.**

**Remedy:** Unhook motor from drive coupling, give motor power and check for operation. Replace motor if defective.

**8. Auger motor is defective.**

**Remedy:** Unhook motor from drive coupling, give motor power and check for operation. Replace motor if defective.

**9. Fan limit control is defective.**

**Remedy:** Replace with new control.

**10. Safety disc defective.**

**Remedy:** The safety disc is normally open and closes on temperature rise. It must be up to temperature and lock in to allow the burner to run. If you are sure that it is not reacting to temperature, then you can test its defectiveness by bypassing from one terminal to another. If burner activates after bypassing, then replace safety disc.

**11. Safety disc is set wrong.**

**Remedy:** Reset the safety disc according to manufacturers recommended settings.

**12. Fan limit control settings are off.**

**Remedy:** The first peg is the fan off setting (at which temperature the blower will turn off), the second peg is the fan on setting (at which temperature the blower will turn on) and the third peg is the limit setting (high temperature shut down). All reading left to right. Check the settings as per the manufacturers recommended settings.

**13. Primary control is defective.**

**Remedy:** Verify that this control is defective by tracing power during switching. Don't guess! If defective replace.

**14. Primary control setting wrong.**

**Remedy:** Check setting according to manufacturer's recommended settings. Remember that **on** time is amount of time burner will run during pilot burn, and Cycle time is the total cycle both **on** and **off**. To find the off time, subtract the on time from the cycle time. Reset and adjust draft setting accordingly.

**15. Ash builds up behind safety disc.**

**Remedy:** Ash has accumulated behind the safety disc, thereby acting as an insulator on the safety disc sensing area. Clean the heat exchanger, particularly behind the safety disc.

**16. Improper stove ground.**

**Remedy:** Check the ground. Check the outlet. Just because there is a three-prong outlet receptacle does not mean that there is a ground wire hooked up to it, and then where does that ground wire go to? This appliance must be properly grounded. Also remember that the primary control grounds itself to the junction box, so never work on the unit with the primary control off the junction box with the power on.

**17. Loose wiring connection.**

**Remedy:** Check power location with tester. Trace power in to control function. Look for loose wires, wire nuts, terminals, and tighten. Make sure that the power is off when looking for loose wires.

**18. Defective thermostat.**

**Remedy:** Remove the thermostat from the wall, cross the two wires, if this activates the burner then replace the thermostat.

**19. Break in thermostat wire.**

**Remedy:** Go back to the wiring connection at the furnace where the thermostat wires tie in to the yellow primary control wires, disconnect the thermostat wires, cross the yellow leads off the primary control for the thermostat, if this activates the burner then either find the break in the thermostat wire line or replace the entire line.

**20. Draft rheostat on primary control set too low.**

**Remedy:** Switch draft setting to next highest setting.

**21. Draft rheostat on primary control set too high.**

**Remedy:** Switch draft setting to next lowest setting.

**22. Defective blower motor.**

**Remedy:** Depress white button on fan limit control to check blower activation. If not activated, pullout white button and connect power directly to blower leads, if not activated by direct power then remove and replace blower.

**23. Loose coupling on cup drive assembly.**

**Remedy:** Tighten set screw down onto flat part of shafts with allen wrench. Remember that the motor can be turning and everything looks like it is moving, but actually the couplings are just turning, not the shaft or the cup.

**24. Loose coupling on auger drive assembly.**

**Remedy:** Tighten set screw down onto flat part of shafts with Allen wrench. See second comment above to note.

**25. Burner limit 200-degree manual reset popped.**

**Remedy:** Depress red button in between cup and auger motor. Verify correct operation of the cup, auger, and draft inducer motors. Possible motor failure evident.

**26. No voltage to stove.**

**Remedy:** Check power backward, j-box, power cord, outlet, circuit breaker, etc. Also check 3 amp fuse in primary control.

**27. Too many appliances on the circuit.**

**Remedy:** The unit should be on a separate circuit.

**28. Too much chimney draft.**

**Remedy:** Check draw with a draft gauge. Maximum draft is .08 inches. If draw exceeds .08 reduce chimney outlet to accomplish.

**29. Too little draft.**

**Remedy:** Check draw of chimney with a draft gauge. Minimum draft is .04 inches. You may have to add more chimney pipe.

**30. Improper thermostat location.**

**Remedy:** Relocate thermostat to location that reflects better overall desired temperature scheme.

**31. Thermostat set too high.**

**Remedy:** Turn it down to a more comfortable setting.

**32. The heat demand of the house is too great for the BTU output of the furnace.**

**Remedy:** Re-examine the area to be heated and the calculated heat loss. The furnace may be too small for the house. The furnace could be working perfectly but the demand is too great. That's the reason why we build different size furnaces. Remedy, get a larger furnace, or lower the heat loss of the home.

**33. Unit is oversized for the area to be heated.**

**Remedy:** Replace with a smaller unit, or provide more air distribution to other rooms.

**34. Not enough pellets placed in fire pot on start-up to bring the furnace up to lock in temperature on the safety disc.**

**Remedy:** Stop operation, let the unit cool (never place pellets by hand into a hot fire pot), and re-light with more (2-3 cups) pellets in the fire pot.

**35. Door or glass seal worn or broken.**

**Remedy:** Replace with new gasket.

**36. Draft inducer motor defective.**

**Remedy:** Remove inducer motor from housing and connect to direct power, if non-functioning, replace with new motor.

**37. Flue vent outlet blocked.**

**Remedy:** Check piping and outlet to verify clear passage.

**38. Summer (white) fan button pushed in on fan limit control.**

**Remedy:** Pull button back out to auto position.

**39. Air shutter on draft inducer too far open.**

**Remedy:** Close down air shutter to 50%.

**40. Air shutter on draft inducer too far closed.**

**Remedy:** Open air shutter up to 50%.

**41. Dust present due to carelessness when loading the stove.**

**Remedy:** Take your time when loading pellets into hopper.

**42. Unit has run out of fuel.**

**Remedy:** Load hopper.

**43. Undersized or overloaded service wiring.**

**Remedy:** Call your electrical contractor.

**44. Power surge.**

**Remedy:** Call your electrical contractor.

**45. Power short in unit.**

**Remedy:** Locate short circuit and correct.

**46. Pellets in hopper are giving off an odour.**

**Remedy:** Change the brand of pellets you are using, some species of wood have unpleasant odours.

**47. Mounting bolts on the blower are loose.**

**Remedy:** Tighten the mounting bolts.

**48. Remote thermostat is not level.**

**Remedy:** Level the thermostat using a water bulb.

**49. Ash pan door or other heat exchanger cover plate not on tight.**

**Remedy:** Tighten all nuts and check all gaskets.

**50. Thermostat wires are shorting out.**

**Remedy:** Remove thermostat from the base, if burner continues to run, go back to tie in at primary control yellow leads, disconnect and separate, if burner stops, then you have a short in the remote wires. Trace and correct or replace. Look for tacks or nails through wires.

**51. A bearing is failing on the blower motor.**

**Remedy:** Replace the blower.

**52. Fan limit control is stuck.**

**Remedy:** Make sure that the white button is in the auto position, tap the fan limit control lightly. If this does not shut off the blower then replace the fan limit control.

**53. Bad pellets.**

**Remedy:** Are you using approved pellets that meet the manufacturer's specifications? Use of non approved pellets will impair the functioning of your stove and may void your warranty.

**54. That's the nature of the Honeywell T87F thermostat.**

**Remedy:** Adjust thermostat to your comfort level not a numbered dial.

**55. Normal draft inducer hum anytime the unit is plugged in.**

**Remedy:** Install duro-dyne duct isolator.

**56. Blower blades are dirty and full of lint and/or hair.**

**Remedy:** Clean the blades.

**57. Draft inducer blades are dirty and full of lint and/or hair.**

**Remedy:** Clean the blades.

**58. Furnace venting improperly installed.**

**Remedy:** Check installation manual to verify correct install on unit.

**59. Aluminium air filter is dirty.**

**Remedy:** Remove from furnace and wash.

**60. Inadequate return air. Too small, restricted, or is pulling unconditioned air.**

**Remedy:** Consult qualified HVAC ducting contractor for proper installation.





**WARRANTY**  
NON TRANSFERABLE

MODEL: GBU130 SERIAL NUMBER: \_\_\_\_\_

DATE PURCHASED: \_\_\_\_\_ FROM: \_\_\_\_\_

**Complete Unit Warranty**

The manufacturer provides a warranty on all steel parts (except burn pot) and electrical components against defects in material or workmanship under normal use and maintenance for a period of one (1) year from the installation date. **There is expressly no warranty on the following components:** burn pots, fiberglass rope gasket, paint, or gaskets. This warranty covers defects in materials and workmanship in covered components, provided the product has been installed and operated strictly in accordance with Manufacturer's printed instructions. This warranty does not cover damage or breakage caused by improper handling, misuse or unauthorized modification. Without limiting the foregoing, the use of fuels other than pelletized wood or fuel corn will void all warranties and liabilities. Commercial applications are warranted for a period of three (3) months on steel parts and electrical components. Pinnacle Stoves Sales Inc. reserves the right to determine commercial applications. All claims under this warranty must be made in writing to the Manufacturer at Pinnacle Stove Sales Inc, 1089 Hwy 97 North, Quesnel BC V2J 2Y3 and should include the following.

1. Name, address, and telephone number of servicing dealer.
2. Name, address, and telephone number of purchaser.
3. Date of purchase.
4. Model & serial number of unit.
5. Nature of the defect, malfunction and/or complaint.

**Local representatives are to inspect parts and or unit. If the inspection indicates that the failure was due to defective material or workmanship in covered components and that the other terms and conditions of this warranty have been complied with the manufacturer's sole duty and liability under this warranty shall be limited to the manufacturer's replacement or repair, at manufacturer's option, of the defective unit or part. The purchaser shall assume all costs of shipping to and from the manufacturer. Removal, reinstallation and diagnostic costs are not covered under this warranty.**

**Extended Parts Warranty**

**In addition to the above complete unit warranty, the following applies:**  
**Five (5) year extended warranty, pro-rated, on heat exchanger, residential use.**  
**One (1) year extended warranty, pro-rated, on heat exchanger, commercial use**

NEITHER THE MANUFACTURER, NOR THE SUPPLIER TO THE PURCHASER, ACCEPTS RESPONSIBILITY, LEGAL OR OTHERWISE, FOR INCIDENTAL OR CONSEQUENTIAL DAMAGE TO PROPERTY OR PERSONS RESULTING FROM THE USE OF THIS PRODUCT, ANY WARRANTY IMPLIED BY LAW, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS, SHALL BE LIMITED TO ONE YEAR FROM THE DATE OF ORIGINAL PURCHASE. WHETHER A CLAIM IS MADE AGAINST THE MANUFACTURER BASED ON A BREACH OF THIS WARRANTY OR ANY OTHER TYPE OF WARRANTY, EXPRESSED OR IMPLIED BY LAW, MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR OTHER DAMAGES OF ANY NATURE WHATSOEVER IN EXCESS OF THE ORIGINAL PURCHASE PRICE OF THIS PRODUCT. ALL WARRANTIES BY MANUFACTURER ARE SET FORTH HEREIN AND NO CLAIM SHALL BE MADE AGAINST MANUFACTURER ON ANY ORAL WARRANTY OR REPRESENTATION.

Some states/provinces may not allow the exclusion or limitation of consequential damages, or limitations of implied warranties, so the limitations or exclusions set forth in this warranty 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, province to province.

## PARTS LIST

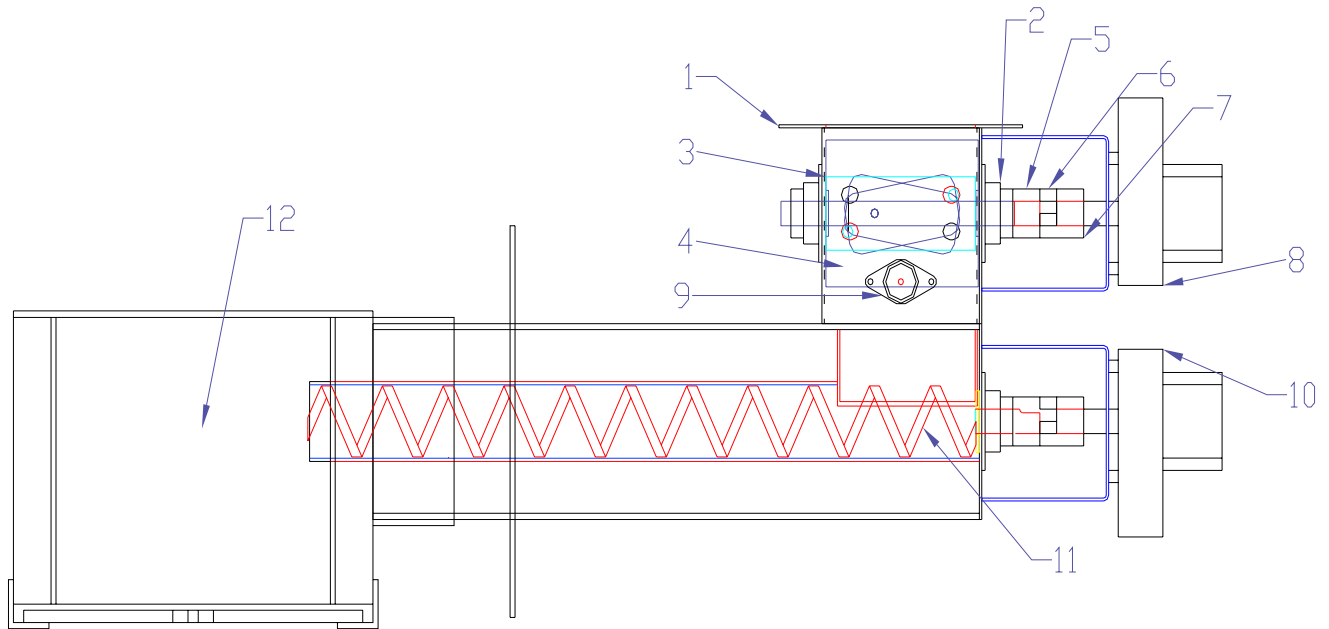


Figure 11

1. Hopper connector flange	F000226P	8. Cup motor	F000101P
2. Pillow block ball bearing	F000505P	9. Manual reset	F000105P
3. Cutting blades (2) ea.	F000513P-2	10. Auger motor	F000102P
4. Fuel metering cup	F130512P	11. Auger/shaft assembly	F130293A
5. ½" love joy coupling	F000507P	12. Multi Fuel Pot	F130999S
6. Spider	F000505P	13. Draft Inducer Fan	F000103A
7. ½" love joy coupling	F000507P	(not Shown)	