

# WEGA

## PELLET STOVE

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## 1. INFORMATION ON THE WEGA PELLET STOVE:

120 lb hopper	80 hrs continous single load operation
Interchangeable side panels	Available in various steel colors or white ceramic tiles
Cast iron burn pot	For lower maintenance and ability to use all pellet fuel grades
250 F warming shelf	slow cooking and warming capability
7,000 - 40,000 BTU output	Wide operational range
Sealed ball bearings components	No lubrication necessary
5 year limited warranty	2 years on all electrical parts
Weight	350 lbs
Overall height	37 3/8"
Width	28 1/4"
Depth	25"
Flue size	3"
Overall efficiency	78%
Heating capacity	2500 sq. ft.

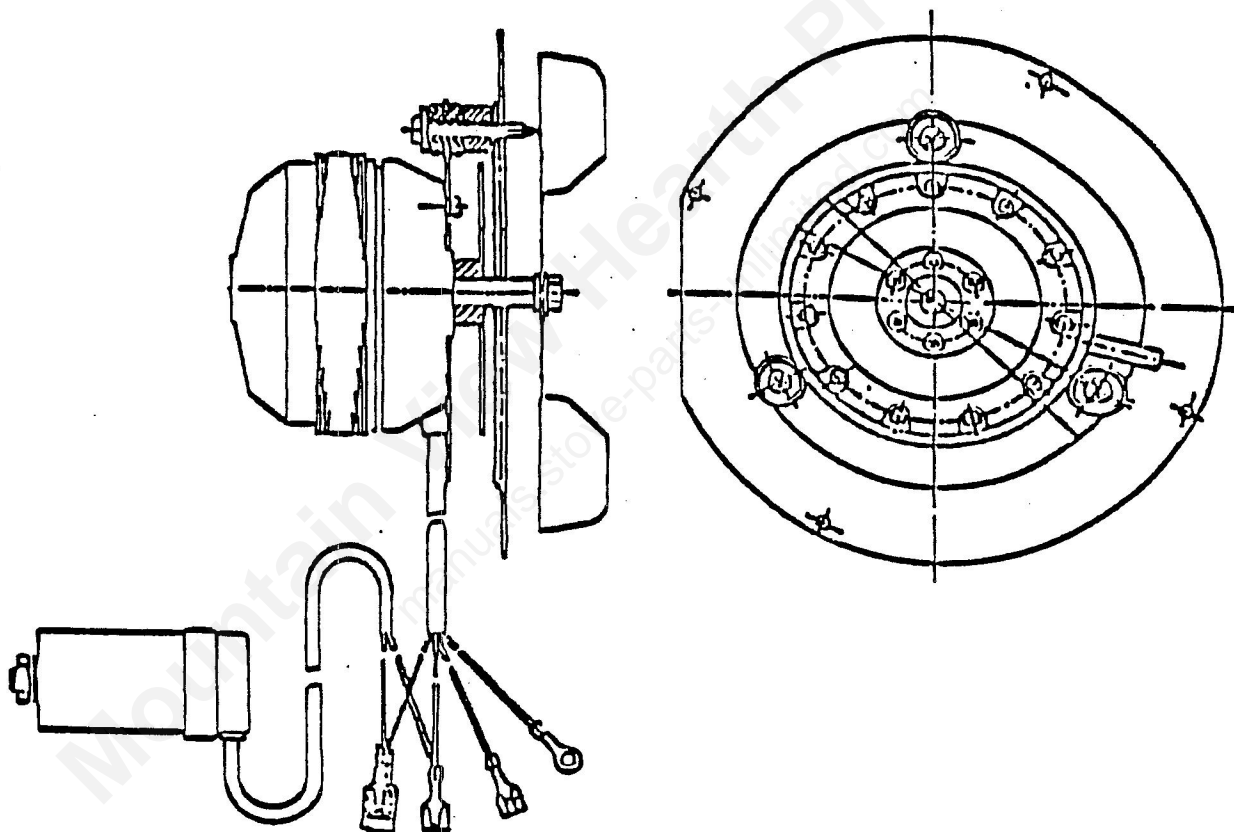
## 2. ELECTRICAL COMPONENTS:

### 2.1 COMBUSTION MOTOR:

- > Manufactured by EBM (Germany)
- > 115 Volts, 0.31 Amps
- > Sealed ball bearings
- > Capacitor controlled for protection from current fluctuation
- > UL listed
- > Single stainless steel impellar
- > RPM range: 1600 - 2500 RPM
- > Serial #: R2E150-AN89-09

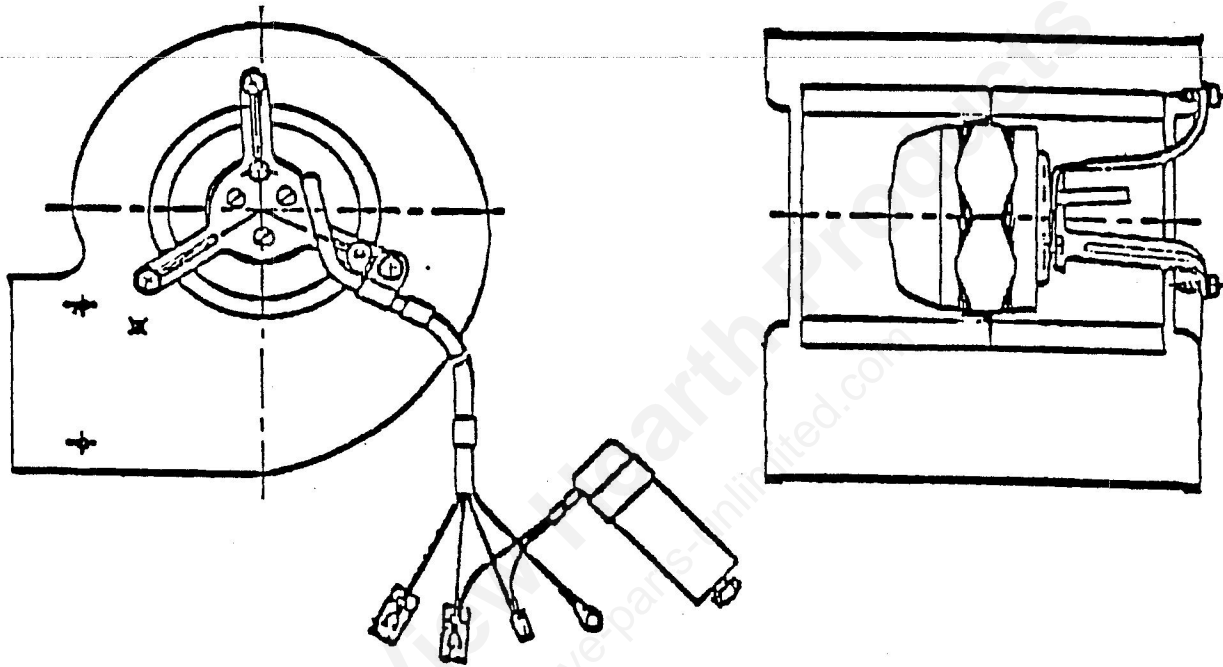
#### NOTE:

The same motor as found on the Integra without the Hall IC circuit.



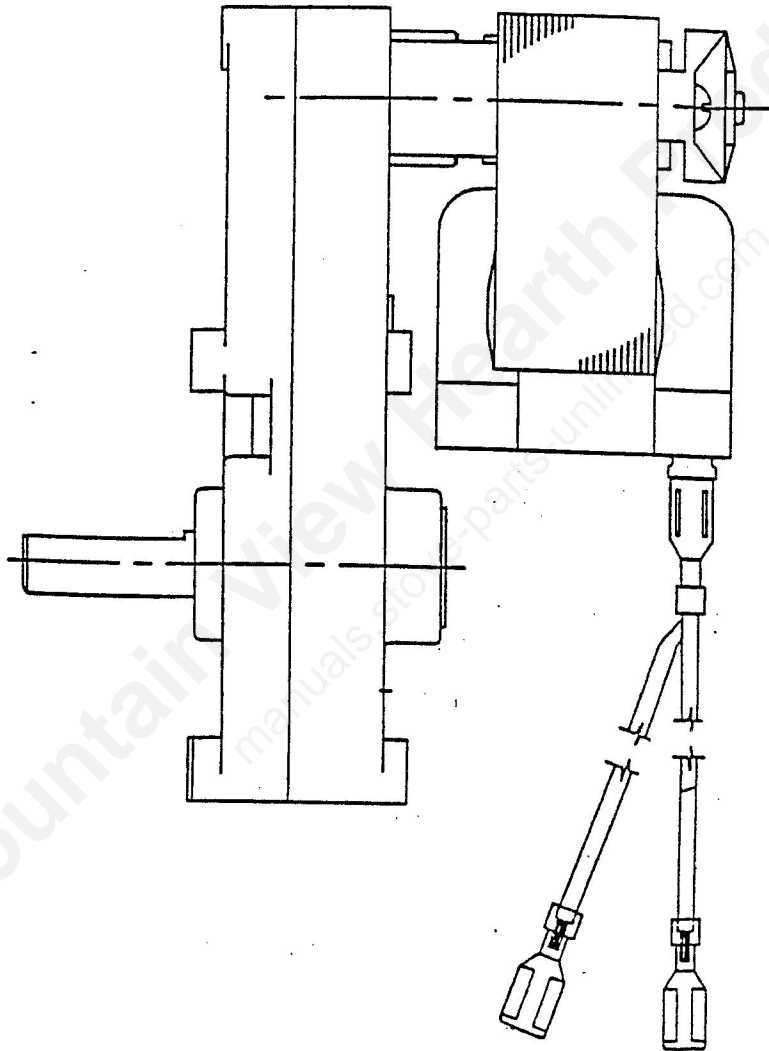
## 2.2 CONVECTION MOTOR:

- > Manufactured by EBM (Germany)
- > 120 Volts, 0.8 Amp, 60 Hz.
- > Capacitor controlled for protection from fluctuation in current
- > UL listed
- > RPM range: 700 - 1800 RPM
- > Serial #: 02E097-BD30-97
- > cfm = 194cuft/min



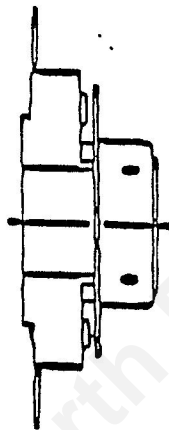
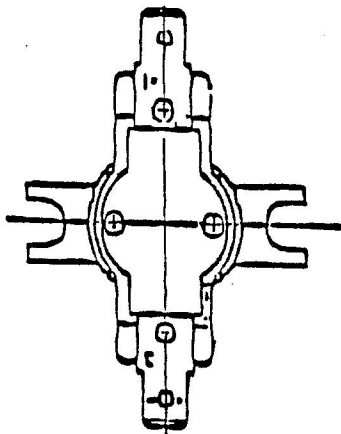
### 2.3 AUGER MOTOR:

- > Manufactured by Merkle Korff (USA)
- > Used in many American pellet stoves
- > 120 Volts, 0.55 Amps
- > 1.1 RPM
- > Same motor used in the Integra series
- > UL listed
- > Ser. #: GF X 4728 Rev. D



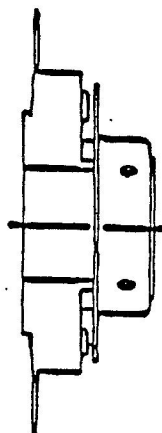
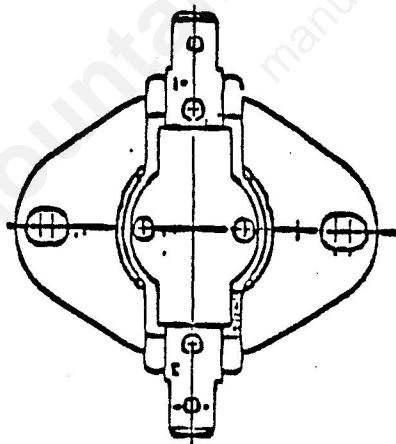
## 2.4 HIGH LIMIT SWITCH:

- > Normally closed switch
- > Opens after overheating
- > Interrupts power to the auger motor
- > Closing temp: 192° F (+ - 6)
- > Opening temp: 212° F (+ - 5)
- > Manufactured by Stemco (USA)
- > Bi - metal switch



## 2.5 LOW LIMIT SWITCH:

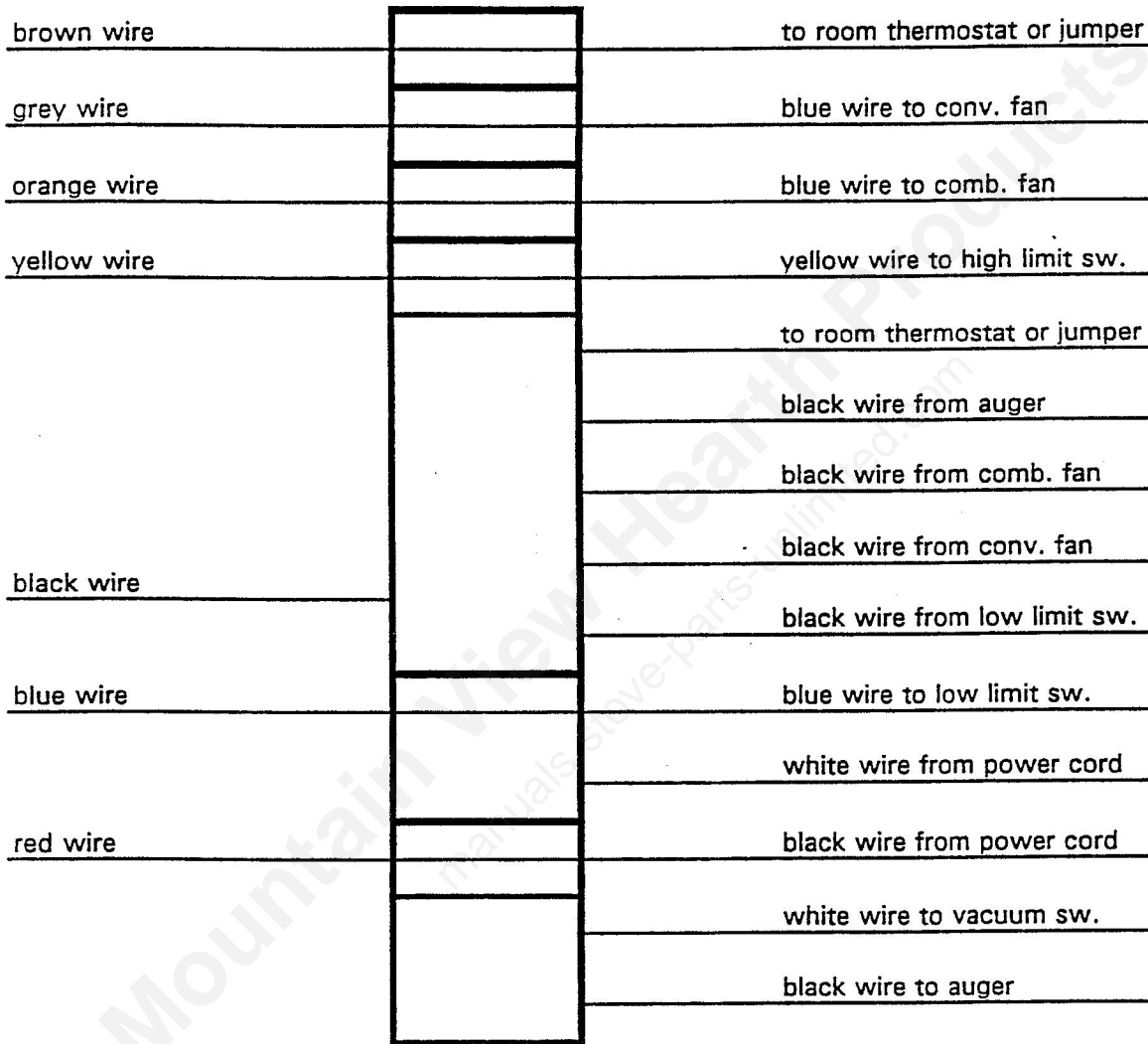
- > Normally open switch
- > Closes when exhaust reaches sufficient temperature
- > Closing temp: 142° F (+ - 6)
- > Opening temp: 122° F (+ - 5)
- > Manufactured by Therm O Disc
- > Bi - metal switch



## 2.5 TERMINAL BLOCK AND WIRING HARNESS:

- > Made with PVC
- > 22 connection terminals
- > Same as on the Integra
- > Wiring harness:

- \* connection between circuit board and terminalblock
- \* 7 wires connected to a bigger cable



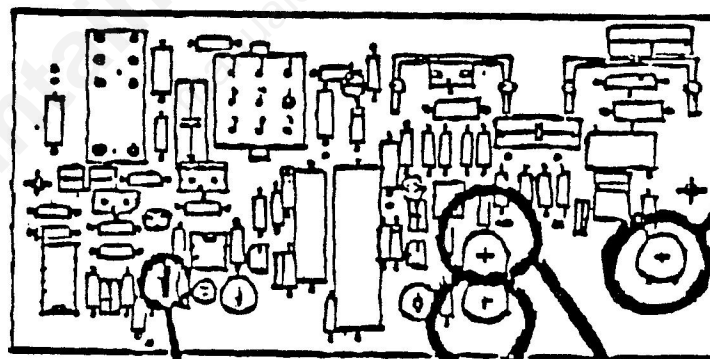
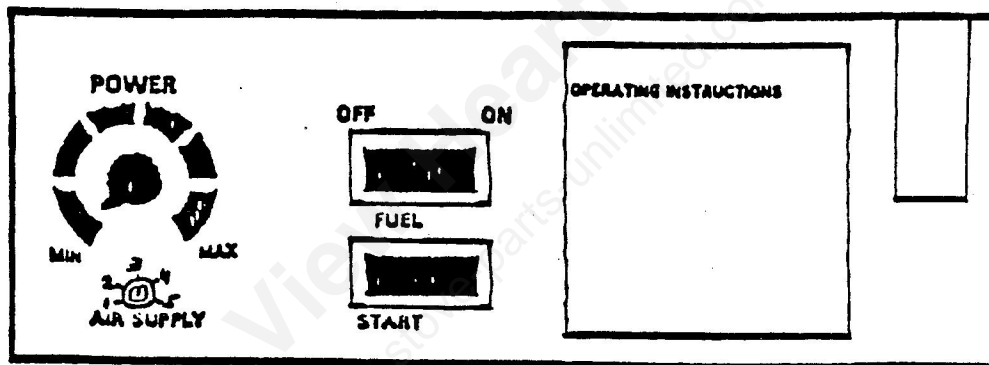
## 2.6 CIRCUIT BOARD + USER CONTROL BOARD:

- > Combined circuit board and user control board
- > TFK chips
- > No changeable chips
- > Manufactured by Hieslmeyer
- > new board equipped with a fuse: 250 Volt, 2 Amp ow blow fuse
- > 4 potentiometers on the backside:
  - 1 for convection fan
  - 1 for auger feed
  - 2 for combustion fan

### NOTE:

To increase turn clockwise.  
To decrease turn counter clockwise.

- > User side:
  - \* operating instructions
  - \* auger light
  - \* fuel on/off switch
  - \* start switch
  - \* power knob
  - \* air supply adjustment

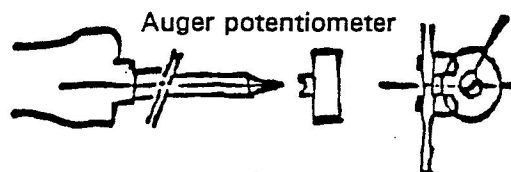


Auger motor

don't turn

don't turn

Convection motor



Auger potentiometer

To increase the motor speed turn clockwise.

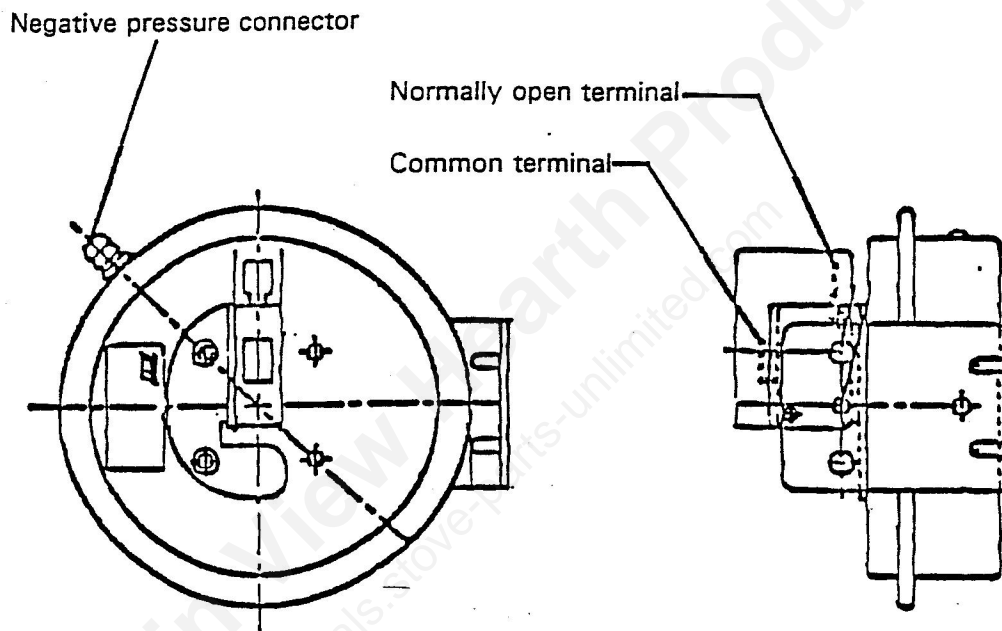
To decrease the motor speed turn counter-clockwise.

## 2.7 VACUUM DIFFERENTIAL SWITCH:

- > interrupts power to the auger motor if vacuum in combustion chamber is lost
- > Closes: 0.33 w.c.
- > Opens: 0.15 w.c.
- > Operating temp.: -40° F to +190° F
- > Single pole, normally open contacts

### NOTE:

Wire from the auger should go to the common terminal;  
wire from the high limit switch should go to the open terminal!



### **3. OTHER COMPONENTS:**

**3.1 BASIC FRAME (MADE OUT OF THE WEGA COOK STOVE)**

**3.2 DOOR (LEFT AND RIGHT) + DOORHANDLE + WINDOW  
SINGLE DOOR ON NEW STOVE, SIMILAR TO INTEGRA STYLE**

**3.3 WARMING SHELF + TILES**

**3.4 SIX HEAT EXCHANGE TUBES + CLEANING ROD**

**3.5 FIREBRICKS**

**3.6 ASH PAN + BURN POT**

**3.7 HOPPER + HOPPERLID**

**3.8 BOTTOM REAR PANEL**

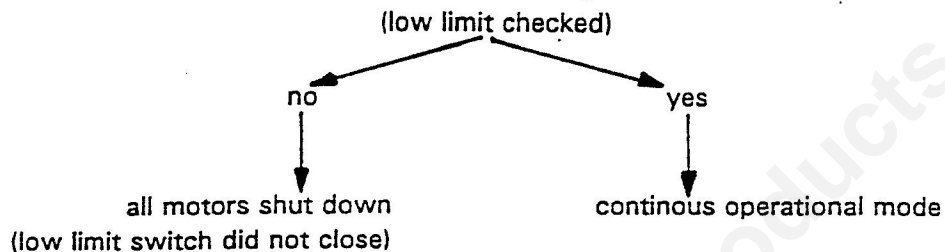
**3.9 SIDE PANELS IN A VARIETY OF COLORS AND MATERIAL**

**3.10 AUGER + SHAFT**

## 4. FUNCTION OF THE STOVE:

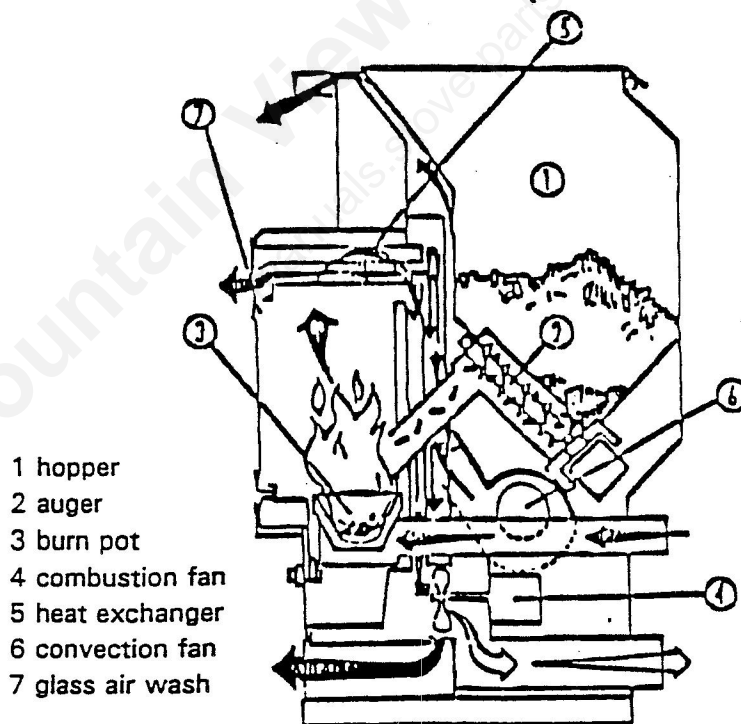
### 4.1 PROGRAM ON STOVE:

- > Stove is started with start button
- > Auger is switched on after fire is started
- > All motors begin running at start of program
- > Adjustments are made with the power knob
- > Damper and vacuum switch control the combustion motor speed
- > After 30 minutes: Is stove hot enough?  
(low limit checked)



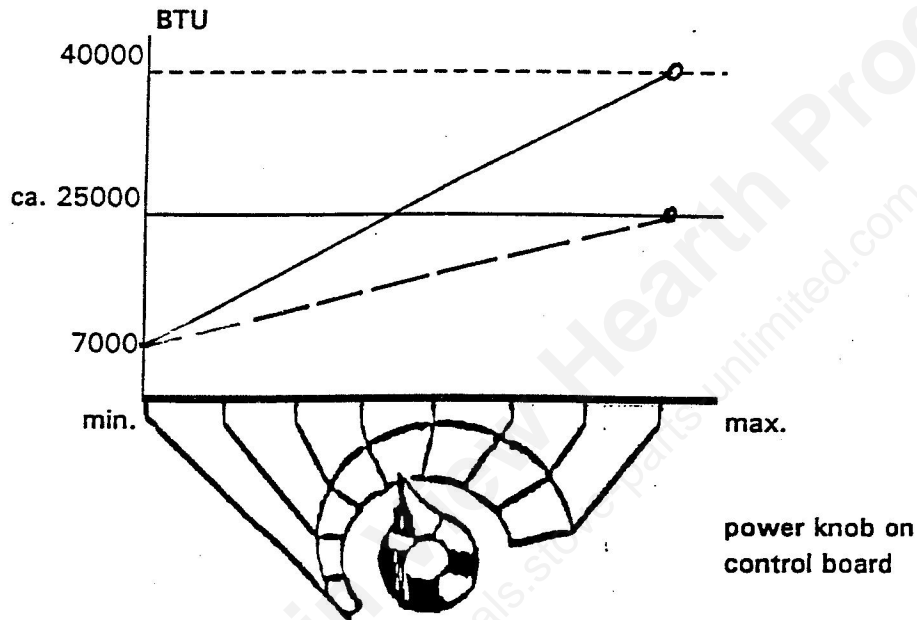
### 4.2 WHAT HAPPENS IN THE STOVE:

- > Air is sucked in by the combustion motor
- > Negative pressure in combustion chamber
- > Turning power knob adjusts auger feed, convection air and combustion motor speed simultaneously
- > Stove is shut off with on/off fuel switch
- > Shuts down auger feed
- > Stove cools down and shuts itself off



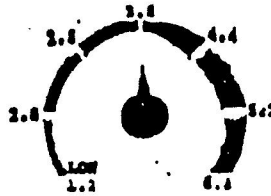
#### 4.3 THERMOSTAT OPTION:

- > 115 Volts AC thermostat
- > Connected in place of jumper wire on terminal block between 1st and 5th terminal
- > Set thermostat on certain temperature
- > Stove operates at power knob setting until reaching desired thermostat temperature. Once achieved stove then runs on 50% of dial setting until room temperature falls below thermostat setting. The stove then runs at dial setting again.



#### 4.4 USER CONTROL BOARD:

- > power knob:
  - \* Adjustment of heat output
  - \* Infinitely variable
  - \* Adjusts all motors
- > pellet consumption lbs/hr:



- > auger light:
  - \* Flashes whenever power is sent to auger motor
  - \* 4.5 sec. cycle

	on time	off time
min.	12%	88%
max.	80%	20%

- > on/off switch:
  - \* Starts the stove
  - \* All motors start at power knob setting
- > fuel switch on/off:
  - \* Controls the auger feed
  - \* on = auger cycles
  - \* off = auger stops
  - \* Shuts down the stove by depriving pellets to fire
- > air adjustment:
  - \* For nominal combustion air adjustment
  - \* Adjustable from 1 to 5
  - \* Factory setting at 3
  - \* Owners fine tune adjustment
- > auger potentiometer on backside:
  - \* To adjust nominal feed rate
  - \* Turning clockwise = increases fuel feed
  - \* Turning counter clockwise = decreases fuel feed
- > convection fan potentiometer:
  - \* On backside
  - \* For nominal room air adjustment
  - \* Turning clockwise = decreases fan speed
  - \* Turning counter clockwise = increases fan speed
- > combustion fan potentiometer on backside:
  - \* 2 pots very close together
  - \* **DO NOT ADJUST**
  - \* Use only adjustment on top to adjust combustion air

#### 4.5 ROOM CONVECTION AIR:

- > Convection motor draws in cold room air in
- > Cold air passes through heat exchange area gathering heat from tubes
- > Hot air is blown out through heat exchange tubes above the doors

#### 4.6 AIR WASH:

- > Gap between the glass and the cast iron door
- > located along the top edge of the glass
- > Thickness of a credit card
- > negative pressure in burn area draws room air in
- > cold air is focused down inside glass face
- > produces a moving air barrier between glass and moving ash

**NOTE:**

The air wash system operates more efficiently on higher setting due to greater negative pressure.

#### 4.7 SAFETY FUNCTIONS:

- > high limit switch:
  - \* Normally closed switch
  - \* Power runs through it
  - \* If stove temperature rises (over 212° F), switch opens and stops power from reaching auger motor

**NOTE:**

If high limit switch shuts down auger feed the auger light will still blink on and off.

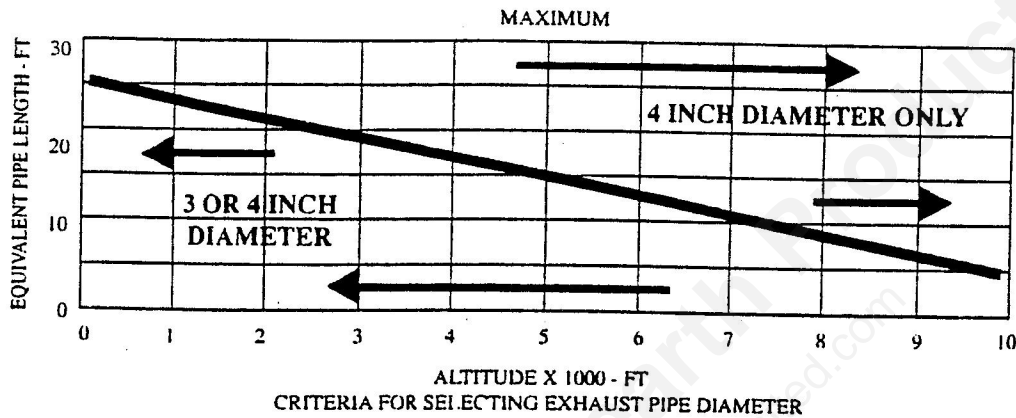
- > low limit switch:
  - \* Normally open
  - \* Closes once exhaust temperature rises above 142° F
  - \* Reopens when exhaust cools below 122° F
  - \* Alerts circuit board to start shut down program
- > others:
  - \* Capacitors on convection and combustion motors offers protection from power fluctuation
  - \* Negative pressure prevent leaks into the room
  - \* Vacuum switch opens auger circuit if a loss in negative pressure is detected. This protection stops auger feed if door is opened

## 5. BURNING AND INSTALLATION OF THE STOVE

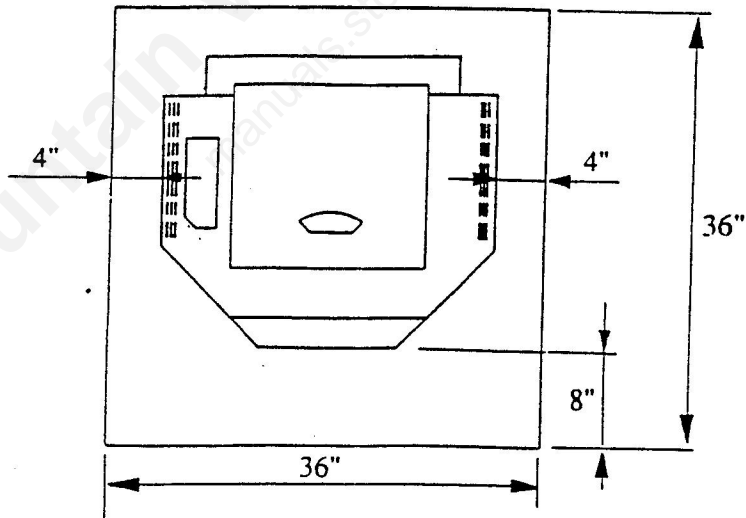
### 5.1 EXHAUST SYSTEM:

- > Non combustible floor protection required
- > List type pellet venting
- > 3" or 4" diameter

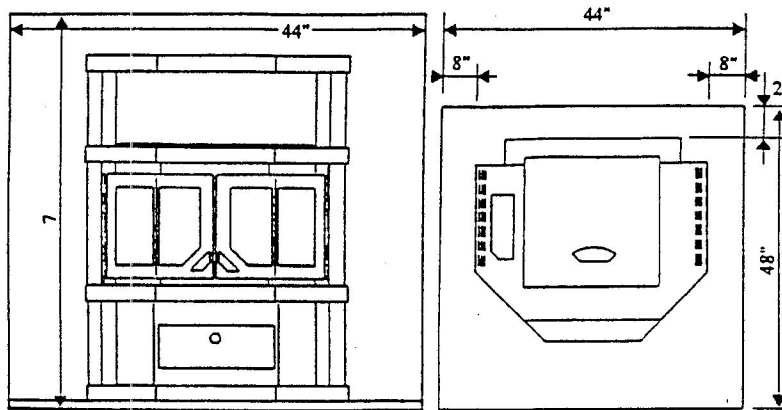
horizontal straight pipe	-	1 x actual length ft.
vertical straight pipe	-	0.5 x actual length ft.
90 degree elbow or tee	-	5 ft.
45 degree elbow	-	3 ft.



### FLOOR PROTECTION

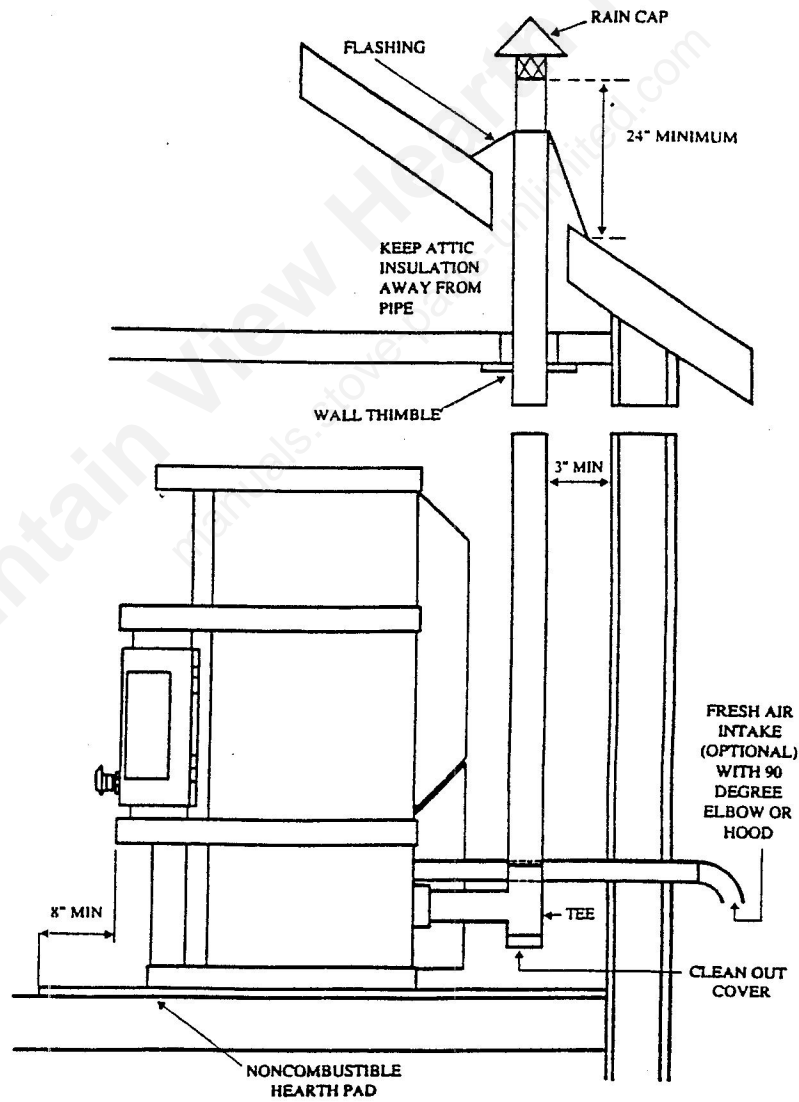


## 5.2 CLEARANCE TO COMBUSTIBLES:

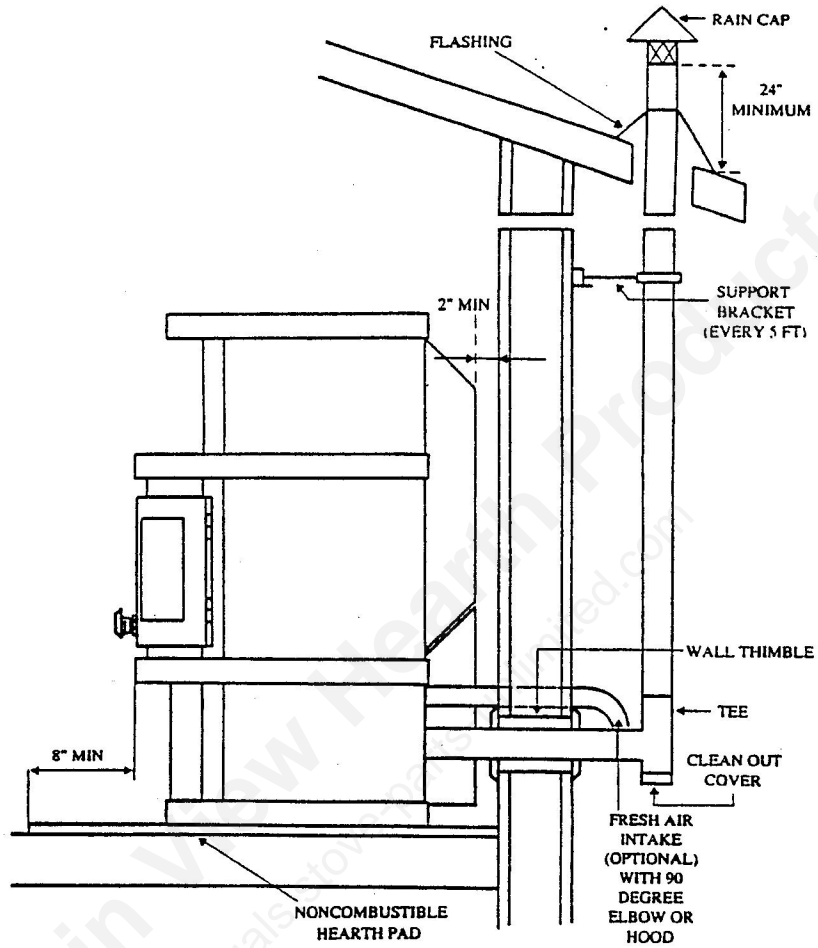


## 5.3 INSTALLATION:

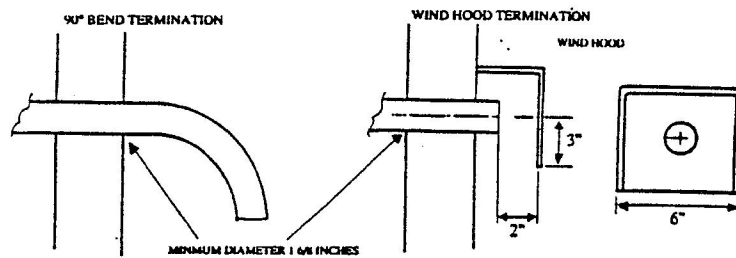
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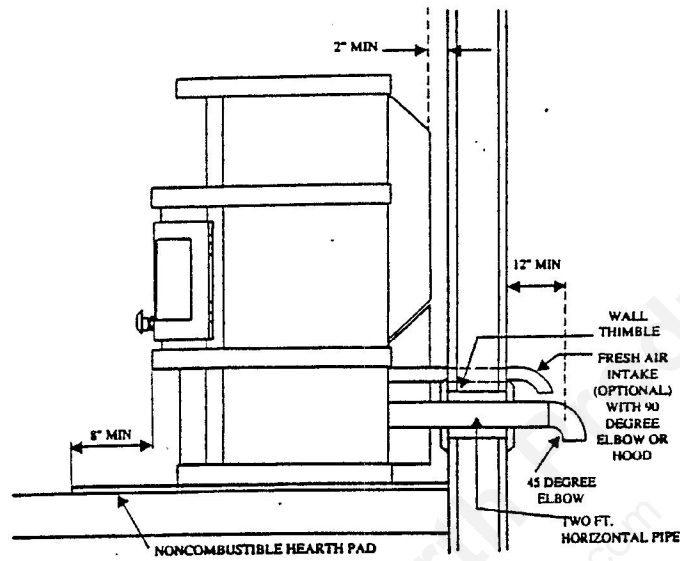
B:



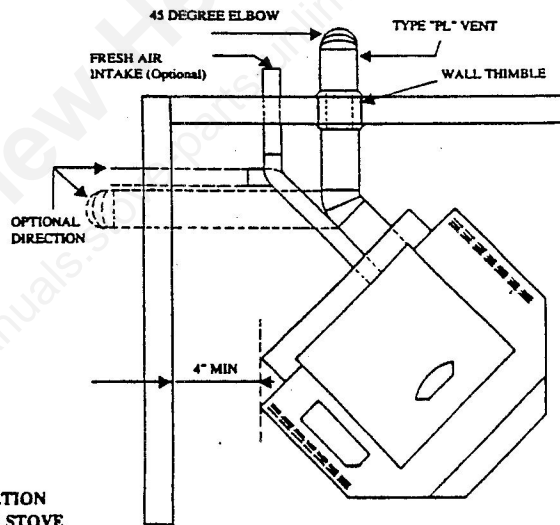
#### 5.4 OUTSIDE COMBUSTION AIR CONNECTION:



## 5.5 INSTALLATION OPTIONS:



OUTSIDE WALL TERMINATION  
USING FREESTANDING STOVE



CORNER INSTALLATION  
OF FREESTANDING STOVE

## 5.6 PREBURN PROCEDURES:

- 1 Check shipping carton for any sign of external damage caused by shipping! If container damage is present make thorough inspection of stove for damage! If any damage is present, document damage and file claim against shipper!

**NOTE:**

Austroflamm is not responsible for shipping damage and cannot initiate claim!

- 2 Check stove to make sure all components are present
- 3 Check bottom of the hopper to make sure there is no foreign material that could jam the auger
- 4 Connect power cord to 120Volts AC
- 5 Fill pellets in hopper and start the stove letting it run for one cold cycle (30 minutes). This will prime the auger.
- 6 After stove is off, put a small handful of pellets in the burn pot, use a gel fire starter (stir around a little bit) and light it. Close the door and let the fire burn. Turn the fuel switch to the on position as needed. Set the power knob to desired operating position.
- 7 Let stove burn at least one hour, opening and closing doors every 10 minutes to make sure the door gasket does not stick to curing paint.
- 8 Turn fuel switch to off and let the stove cool down; it will shut itself off.
- 9 You now have a product that you can install with confidence that it will function correctly, provided you have properly instructed the customer to the operational and maintenance procedures!

## 5.7 MAINTENANCE SCHEDULES:

**Burn pot:** clean as needed, 2 to 7 times weekly depending on characteristics of pellet fuel used and operational habits of stove owner

**Ash pan:** clean as needed, visually apparent

**Door glass:** as needed, usually daily, can be more or less frequent depending on characteristics of pellet fuel used and operational habits of stove owner

**Heat exchange rods:** once or twice a day, depending on characteristics of pellet fuel used and operational habits of stove owner

**Hopper:** let hopper run almost empty and vacuum sawdust from around auger. Do this monthly if dumping pellets directly from the bag to hopper.

**Annual service:** remove combustion fan from cast aluminium housing, clean impellar and housing area, clean out area in combustion chamber (ash pan and burn pot), clean heat exchange tubes, clean all the vent piping, remove convection fan and clean impellar, clean hopper and auger shaft, clean dirt and dust from all rear areas of the stove, particularly auger motor and areas close to circuitry!

## 5.8 Cleaning Procedures:

NOTE:

This procedure will require gaining access to the front, rear, and right side of the unit with enough room to move freely.

NOTE:

Ensure all power is removed from unit.

This procedure can be simplified if you arrive with the appropriate tools and materials. Having these items on hand can expedite the procedure. The tools may consist of the following:

- |                        |                                   |
|------------------------|-----------------------------------|
| 1 Ash vacuum           | 6 Small soft bristled brush       |
| 2 Flashlight           | 7 Pipe cleaning brush for 3" pipe |
| 3 Metric ratchet set   | 8 Combustion motor gasket         |
| 4 Philipps screwdriver | 9 4mm hex key wrench              |
| 5 Flat tip screwdriver |                                   |

First, gain access to the burn area by opening the doors and remove any ash or pellets from the burn pot. Remove the burn pot and place it aside. Using the cold hand tool supplied with the unit unlock and remove the ash pan.

Examine the air intake pipe and burn pot holder to determine if ash and pellets have dropped through the bottom of the burn pot. Next, inspect the ash pan void and associated combustion airways which extend to the rear of the unit. You may wish to vacuum out the entire chamber and wipe it down with a pipe brush.

At the rear of the stove loosen four Phillips screws holding the bottom rear panel. This panel should lift out of the way. You should now see the back draft damper near the exhaust pipe. Special attention should be given to the weight's position before removal. With the 4mm hex key wrench loosen set screw on the damper weight and remove the weight. Remove the four 10mm screws securing the back access plate and remove the plate. Carefully vacuum out any ash deposits from both sides of the damper.

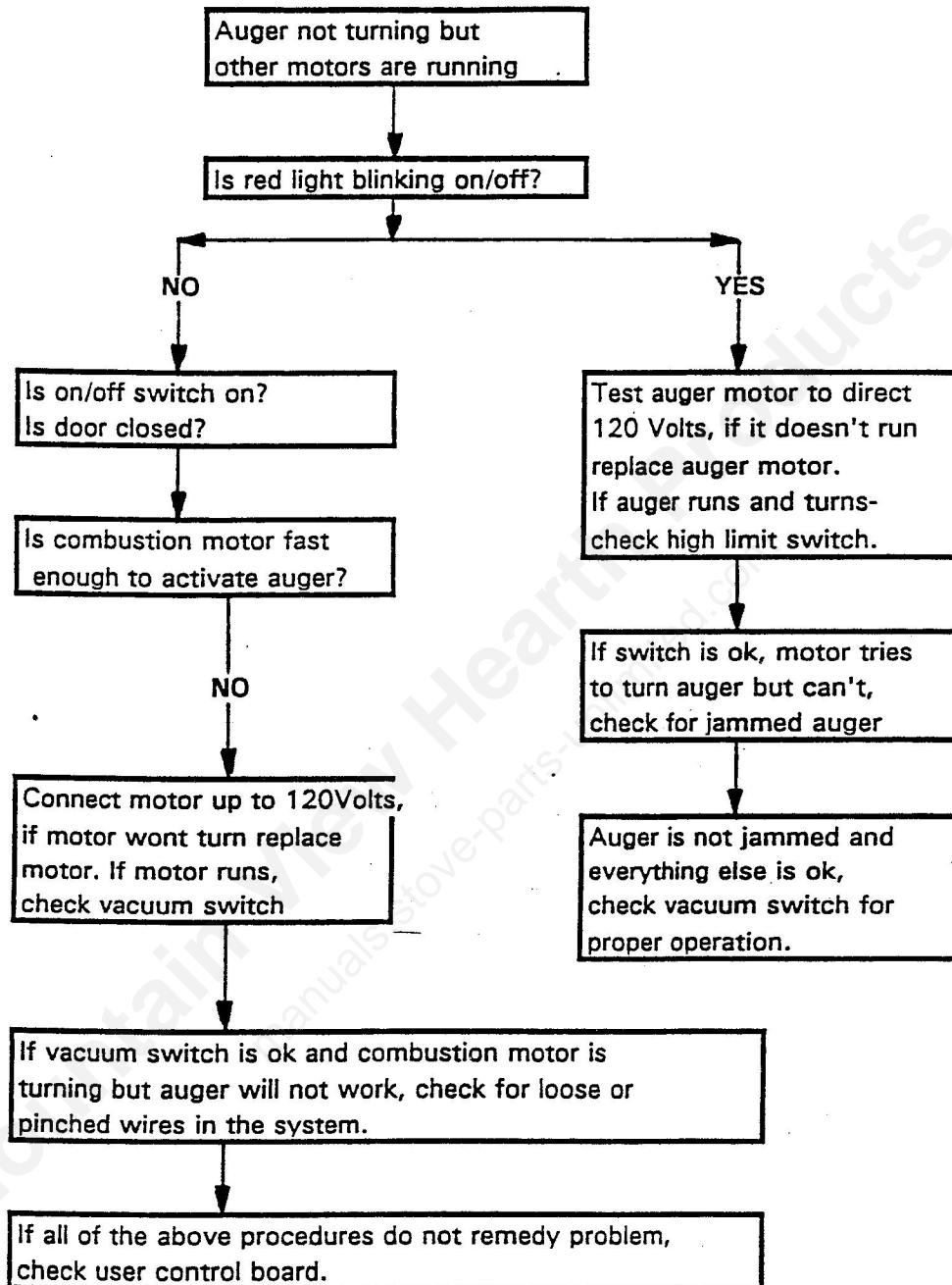
The bottom and center side panels will need to be removed from the right side of the stove. This can be made easier by removing the retaining bar from the rear of the stove with the Phillips screwdriver. Once the retaining bar is removed the panels should simply slide out the back. The combustion motor will be clearly visible. With the 8mm socket remove the four screws securing the motor to its housing and the two screws securing the low limit switch. The combustion motor should be inspected and its blades wiped clean. Brushing off the low limit switch may prevent premature shut downs. Once completed, regasket the motor and reinstall.

You may wish to check the hopper to determine if the auger is packed in fines. This is an easy way to prevent future callbacks and takes just a few moments. If you find a build - up of fines, vacuum out what you can. If the problem is serious, you may need to remove the shaft and clean out the residue from the back side of the unit.

Performing this procedure a minimum of once every two tons will maintain proper combustion, prevent future service requirements, and extend the life of the stove. Many times customers will observe the procedure and perform it themselves. Routinely cleaning the stove will protect a valuable investment the customer has made in your company. It is in your best interest to let the customer know it was a good investment.

## 6. TROUBLE SHOOTING

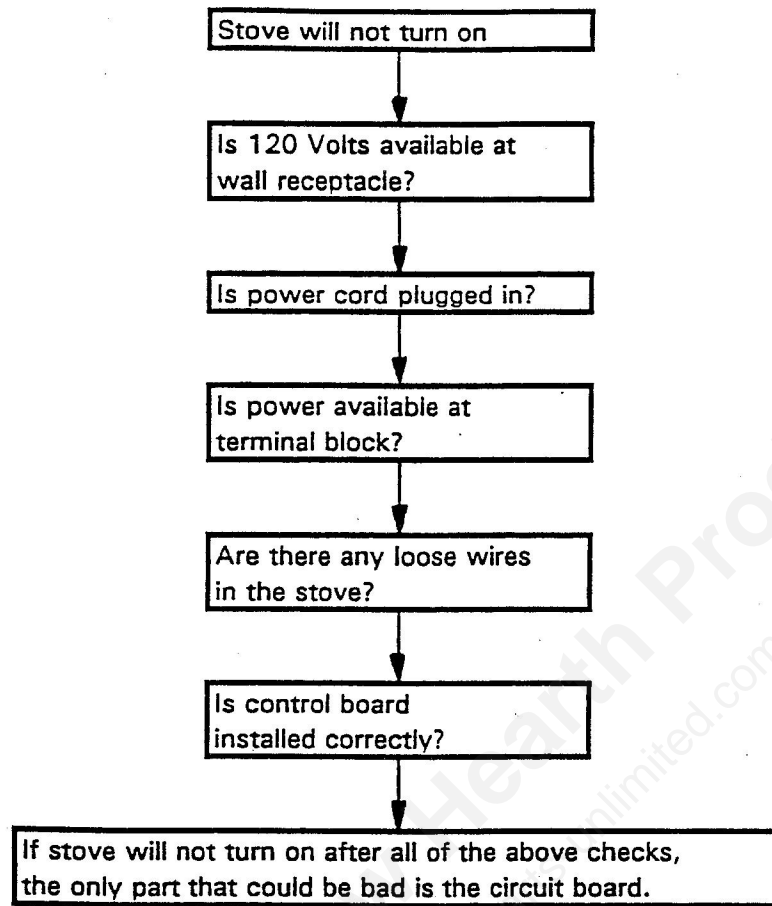
### 6.1 AUGER NOT TURNING:



**NOTE:**

If red light is indicating that auger is working, circuit board is not the problem.

## 6.2 STOVE WILL NOT TURN ON:



### NOTE:

If stove shuts down, no matter after what time, check low limit switch and high limit switch first. If the two switches are ok, go to regular trouble shooting procedure.

### 6.3 SPECIFIC SYMPTOMS:

- Bad low limit switch:**
- \* stove stays on even when cold
  - \* stove starts, runs for 30 minutes then stops
  - \* stove starts in operational mode (all motors are running) when plugged in even when on/off switch is in off position
  - \* stove runs on low for a while, then all the motors stops (this can also be caused by adjustment of low pellet feed)

**Convection motor shuts down (any time after start up) but other motors continue to run, check for correct wiring or blockage in fan. Let motor run on 120 Volts out of the receptacle. See if motor gets to hot while operating in stove.**

- Check circuit board if**
- \* there is no control over stove functions
  - \* no control over pellet feed
  - \* the auger continues to feed, even when the stove is shut off

**7. DIFFERENT READINGS:**

**7.1 INFORMATION ABOUT EXHAUST TEMPERATURE, CO AND CO2:**

	Power knob setting	
	minimum	maximum
Exhaust temperature	176° F - 194° F	428° F - 464° F
CO	200 ppm	100 ppm
CO2	3%	8%

**7.2 VACUUM IN COMBUSTION CHAMBER:**

Power knob setting	Stove cold	
	in "WC	in mbar
minimum	ca. 0.79	0.53 to 0.85
medium	ca. 1.9	1.30 to 1.38
maximum	ca. 2.47	1.67 to 1.74

**7.3 RPM READING ON THE MOTORS:**

Power knob setting	Combustion motor	Convection motor
minimum	1450 - 1550 RPMs	500 - 600 RPMs
maximum	2400 - 2550 RPMs	1700 - 1800 RPMs

## 7.4 OPERATIONAL VOLTAGE TEST:

> **Combustion motor:**

to take a voltage reading on the combustion motor use a multimeter in the AC Volts mode and place one probe at the terminal with the orange wire from the control board and the other probe to ground; voltage to the motor can vary, depending on the air potentiometer adjustment.

> **Convection motor:**

place one probe at the terminal with the grey wire from the control board and the other probe to ground

> **Auger motor:**

auger motor voltage is always 120 Volts, only the time sequence changes; place one probe at the terminal with the yellow wire from the control board and the other one to ground

> **Combustion motor ratings**

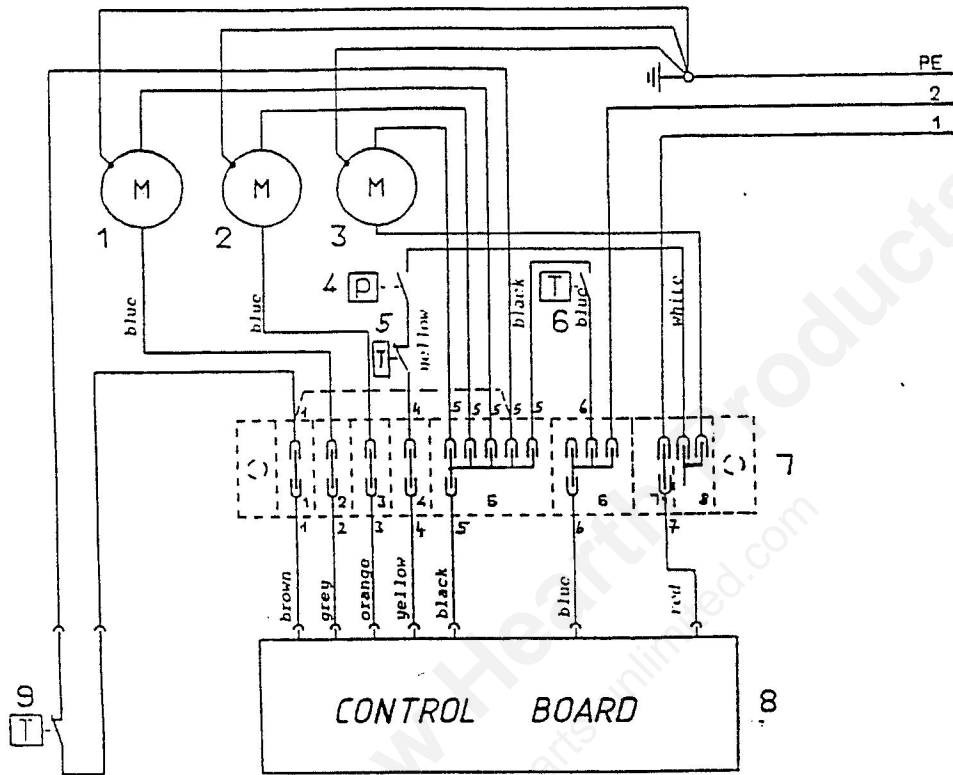
power knob	air supply		
	1 minimum	3 medium	5 maximum
minimum	88 Volts	72 Volts	53 Volts
medium	77 Volts	63 Volts	43 Volts
maximum	65 Volts	48 Volts	32 Volts

> **convection motor ratings (with potentiometer on 12 o'clock setting)**

power knob	
minimum	96 Volts
medium	86 Volts
maximum	40 Volts

## 8. SCHEMATICS

Main connection  
110 V - 60 Hz



- 1 Convection fan
- 2 Combustion motor
- 3 Auger motor
- 4 Vacuum switch
- 5 High temperature switch
- 6 Low temperature switch
- 7 Terminal block
- 8 Control board
- 9 Room thermostat

## Wega Pellet Component Symptom / Problem Guide

Control Board	No Power to the stove	Defective board, Check fuse, fuse holder, wiring harness and molex connector
	Erratic Operation	Defective Board Outputs, Check Voltages and amperages to motors
	One or All motors at 120V	Defective Board Output
	No Red Light	Defective Auger Output, Check Rocker Switch for proper operation
	Red Light Blinking fast (flashing)	Defective Board Output
	Improper Voltages to Motors	Defective Board Outputs, Dirty Stove
	Stove blows fuses	Defective Board, Check Amperages on all motors & stove for short circuit (grounding to stove body)
	No Control over the stove	Defective Rheostat, Check if the thermostat jumper is intact
	Motors do not adjust when knob turned	Defective Rheostat, Check if the thermostat jumper is intact
	Stove won't turn On	Defective Board, Check Rocker Switch
Low Limit Switch	Stove stops after startup	Defective Switch or Wiring to the switch
	Convection and Combustion motors are running when stove is plugged in	Defective Switch or Wiring to the switch
High Limit Switch	New Switch won't work	Check for melted wiring on Combustion Motor housing
	No auger feed yet Red Light blinks	Switch is lightened to tight
Vacuum Switch	Intermittent Auger Feed	Defective Switch or Wiring to the switch.
	New Switch won't work	Defective Switch or Wiring to the switch.
Convection Motor	No auger feed yet Red Light blinks	Switch is lightened to tight
	Intermittent Auger Feed	Defective Switch or Wiring in the switch, Plugged or broken vacuum tubing / nipple.
Combustion Motor	Motor will not run on minimum setting	Defective Switch or Wiring in the switch, Plugged or broken vacuum tubing / nipple.
	Motor will not run at all	Dirty Fan, Defective or bent squirrel cage, defective bearings
Auger Motor	Motor will not run on minimum setting	Dirty Fan, Defective fan motor (Drawing to much amperage)
	Motor will not run at all	Defective Fan Motor (Drawing to much amperage), Check voltages to fan for proper board function
Wiring Harness	Noisy Motor / Squealing / Grinding	Defective Fan Motor (Drawing to much amperage), Check voltages to fan for proper board function
	Motor will not work at all	Defective control board
Wiring Harness	Intermittent Auger Feed	Grease in gear box is away from the gears, Loose collar screw, Defective gear box
	Stove blows fuses	Defective motor or gear box, Spindle in the armature assembly is dropping out of the gear box.
Wiring Harness	No User Board function	Check Spindle in the armature assembly, Control Board, High Limit & Vacuum Switch
	No Air Sensor function	Check Wiring for Crimps, Cuts or bad connections, Check for continuity through wires
Wiring Harness	Erratic Operation	Check wiring for grounding out to stove body.
		Check Wiring for Crimps, Cuts or bad connections, Check for continuity through wires
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