

"FIREPLACE/HEARTHSTOVE SETUP"

TROUBLE SHOOTING GUIDE

Listing of problems and there probable solutions.

I. NO FUEL FEED:

- A. No Power.
 - a. Check to see stove is plugged in.
 - b. Check to see if there's been a power interruption; (Press Start Switch)
 - c. Check to see that Stove hasn't overheated. (See Section 16)
 - d. Repair as needed.
- B. Loose, or Faulty Auger Motor.
- C. Jammed Auger.
- D. Power Interruption.
 - a. If power interruption stems from the Power Company; re-light Stove when power returns.
 - b. If the Auger Tubes or the Stove top (WF1 only) has overheated, the temperature sensors will shut the Stove down. Wait for the Stove to cool down before restarting.

II. SOOT ON THE WINDOW.

Note: A significant amount of soot deposited on the window will be caused by lack of air to the fire. The following items can effect the combustion air supply to the fire:

- A. Faulty Door Gasket.
- B. Door latch out of adjustment
- C. Incorrectly adjusted, Damper.
- D. Check to see that the door is tightly shut.
- E. Check for any blockage in the air inlet or the exhaust vent.
- F. The exhaust vent system may be too long or have too many bends causing a loss of draft. Increase the exhaust to a 4 inch diameter pipe.
- G. If air intake draws from the chimney, insufficient oxygen may be getting to the fire. Air Intake needs to be run to the outside.

NO HEAT FROM THE HEAT EXCHANGER.

- A. Check to see that air is being blown from the heat exchanger grill above the bay window. If not, the Convection Blower should be checked. (See Section 16)

FIRE GOES OUT AT LOW FUEL FEED.

- A. Fuel flow setting too low for pellets being used.
- B. Check to see that the damper is adjusted correctly.
- C. Check to see that the auger motor is functioning properly.

"ERRATIC FIRE"

- A. Check timer to see that it is functioning properly. Correct functioning at Max. is 6 seconds on and 1 second off; at minimum, 6 seconds on and 20 seconds off.
- B. Check to see that there is no blockage in hopper keeping pellets from flowing freely or that the pellets are "bridging" at the bottom of the hopper. Determine cause of blockage, remove blockage and free up pellets as needed.

"SMOKE OR ODOR FROM STOVE WHEN IT IS SHUT OFF."

- A. Insufficient vertical height of Chimney and or too much heat loss from chimney causing the natural chimney draft to be insufficient to evacuate the fire box of smoke.
- B. Hopper Lids not closed or sealed properly.
- C. Door Gasket not sealing properly.

TROUBLE SHOOTING AND REPAIR GUIDE
COMPONENT, DESCRIPTION, LOCATION, FUNCTION; TROUBLE SHOOTING:

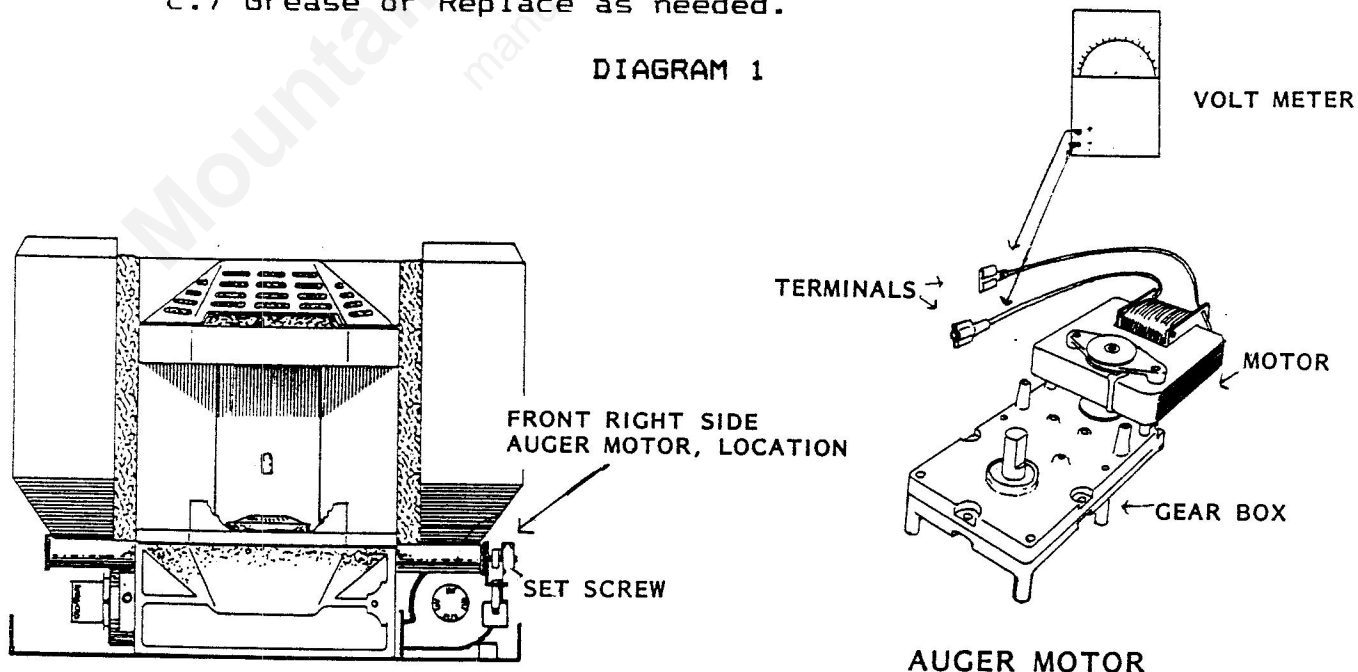
ANY ELECTRICAL SERVICE WORK SHOULD BE UNDERTAKEN BY QUALIFIED SERVICE PERSONNEL ONLY!

SECTION: 1

AUGER MOTOR:

1. Location: Behind right front panel of stove; remove panel for access. (See Diagram 1)
2. Function: The Auger Motor drives the Auger which feeds the pellets to the burner head.
3. Trouble Shooting:
 - A. Verify correct operation by;
 - a.) Visually inspect to see if auger is turning.
 - b.) Use Volt Meter to see that you have power to motor when timer is on. (for test procedure see diagram 1)
 - c.) Repair or Replace as needed.
 - B. If Auger will not turn, but power is present to the motor;
 - a.) Check electrical connections to motor terminals for tightness.
 - b.) Check to see that Set Screw holding auger motor to Auger is tight.
 - c.) Check Gear Box for damaged gears.
 - d.) Repair or Replace as needed
 - c. Noisy Auger Motor; (Open Gear Case and check);
 - a.) To see that there's grease on each gear in the gear case.
 - b.) To see that there are no faulty gears. If Motor operates but shaft doesn't rotate, this would indicate a Gear Box failure.
 - c.) Grease or Replace as needed.

DIAGRAM 1

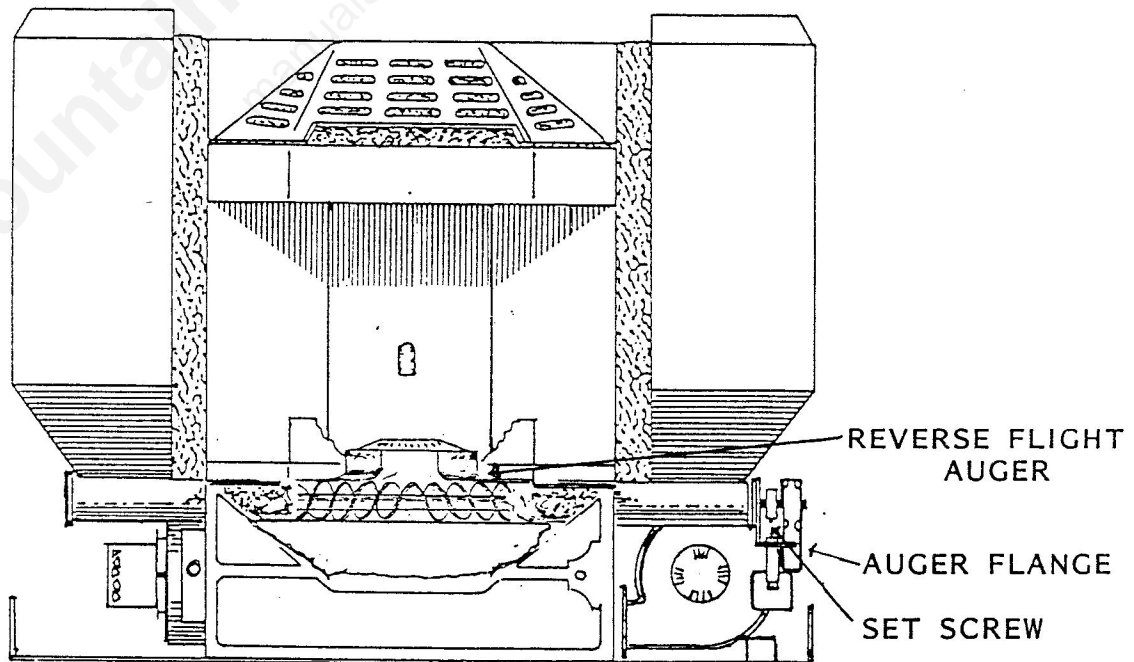


SECTION: 2

AUGER

1. Access to each end of the Auger flange is behind the two front or side access panels. (See Diagram 2)
2. Function: The Auger feeds the pellets to the burner head.
3. Trouble Shooting:
 - A. Verify correct operation by;
 - a.) Visually inspect to see if auger is turning.
 - B. Auger doesn't rotate (Jammed); But Auger Motor's OK.
 - a.) Check to see that the Auger isn't jammed; by rocking the gear box back and forth by hand. You should have approx. two (2") inches of movement. If jammed, repair as follows;
 1. Disconnect Power to Stove.
 2. Disconnect electrical connections to Auger Motor.
 3. Loosen Auger set screw and remove Auger Motor.
 4. Remove pellets from both hoppers. (Shop Vacuum ok)
 5. Unbolt Auger tube end flange (right Hand end only) and withdraw Auger.
 6. Inspect pellets withdrawn for any foreign objects.
 7. Check to see if there has been a build up of Carbon beneath the burner head, which is blocking the free flow of pellets up onto the burner head. Clean if necessary. (chip off with chisel or screw driver.)
 8. Check alignment of Auger Tube and Cast Iron Burner Elbow. (one/eighth inch misalignment is acceptable)
 9. Check for bent Auger Shaft. (Replace Auger if bent)

DIAGRAM 2

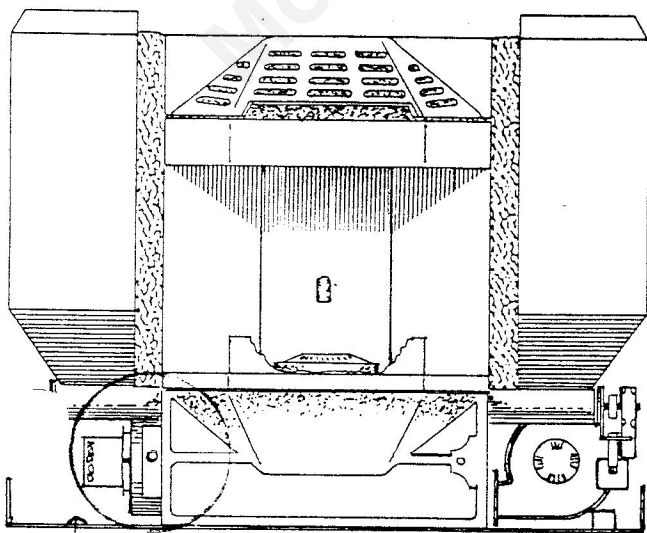


SECTION: 3

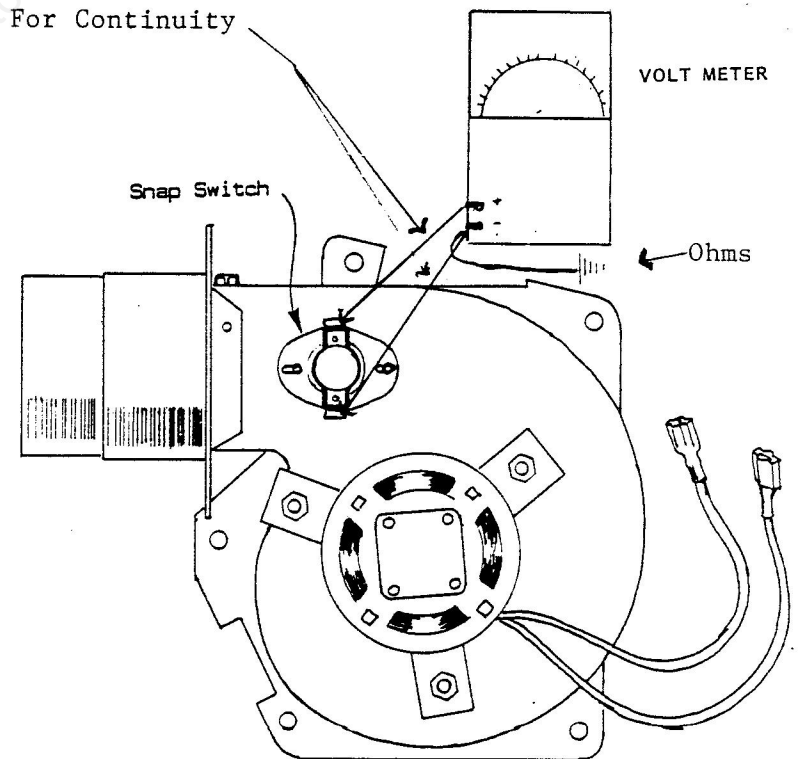
EXHAUST SNAP SWITCH:)

1. Location: Snap Switch is located on the Combustion Fan, which is located behind the left front panel of the stove. Remove left panel for access. (See Diagram 3)
2. Function: Controls the convection fans' on and off cycle. When you first start the stove the Convection Fan will not switch on until the exhaust temperature reaches approx. 140 degrees. When stove is shut off the exhaust snap switch keeps the convection fan going until the exhaust temperature falls to approx. 120 degrees, at which time it will shut off.
3. Trouble Shooting:
 - A. Verify Correct Operation by:
 - a.) Check to see that Convection Fan turns on within approx. 15-30 minutes and off in 30-60 minutes. The on and off times will vary depending on the stoves fuel flow rate.
 - b.) Check connections to see that wires are firmly attached.
 - c.) Use Volt Meter to see that you have power to the Exhaust Snap Switch when stove is heated up. (see Diagram 3) The Snap Switch will be open circuit when cold. (See Section 16)
 - d.) Replace Snap Switch as needed with Part # 2E248A.

DIAGRAM 3



FRONT LEFT SIDE
COMBUSTION FAN, LOCATION



COMBUSTION FAN with SNAP SWITCH

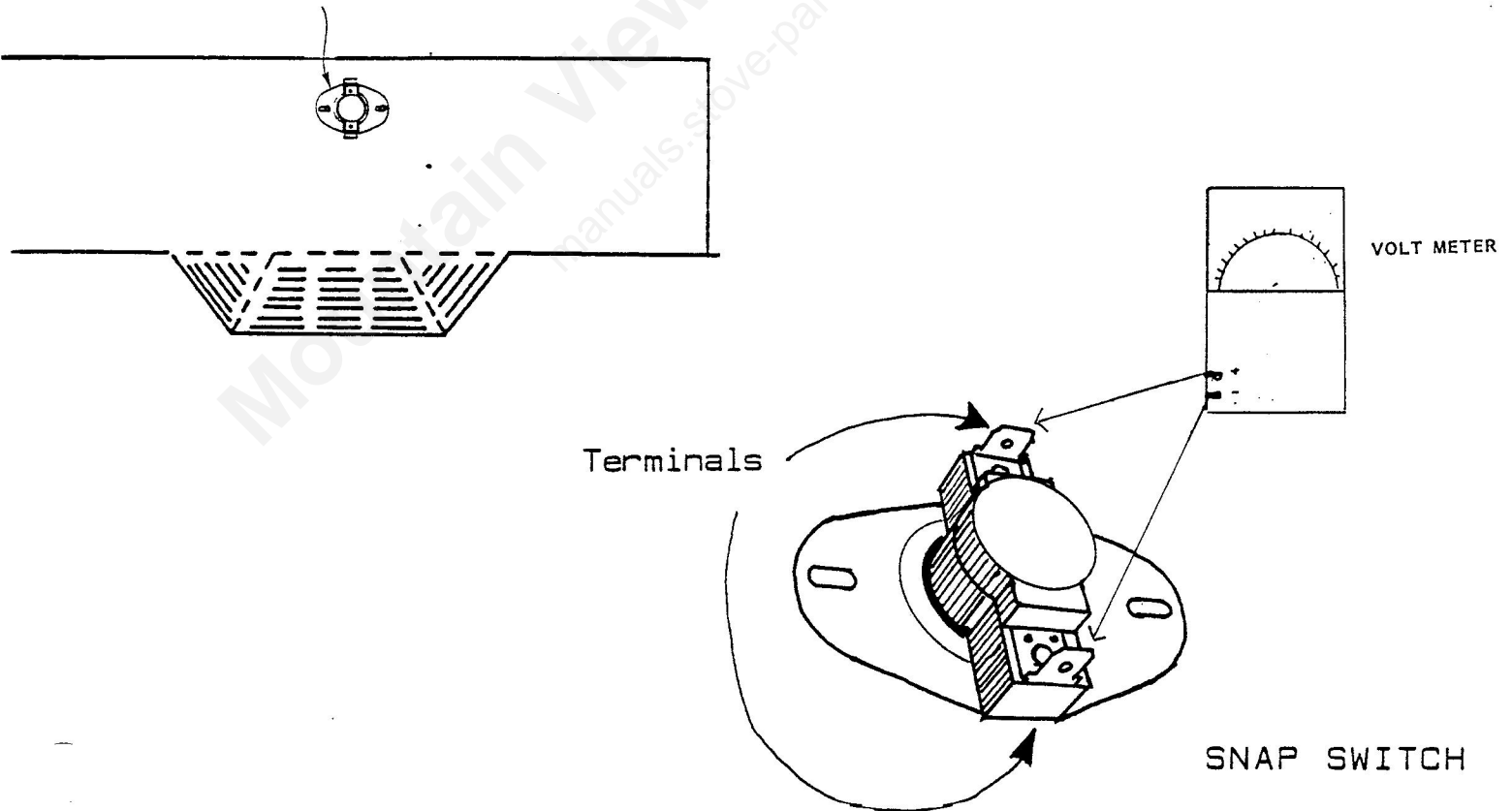
SECTION: 4

OVER HEAT SNAP SWITCH: (WF1 only)

1. Location: Snap Switch is located between the inner and outer top case of the Fireplace. Access is gained by the removal of the access panel on the top casing of the Stove. (See Diagram 4)
2. Function: If Fireplace over heats, the Snap Switch will shut Fireplace off to prevent excess heat from being transmitted to the combustible surrounds.
3. Trouble Shooting:
 - A. Verify Correct Operation by:
 - a.) Check connections to see that wires are firmly attached.
 - b.) If the Stove has automatically shut off, wait at least 1 hour for Stove to cool down before checking the Snap Switches operation. After one or more hours, Re-start the Stove. If Stove starts up, check that convection fan is operating correctly. (See Section 3)
 - c.) If Stove will not restart, check that there's electrical power to the ON/Off Switch. if there is no power see section 5

DIAGRAM 4

TOP VIEW
OVER HEAT SNAP SWITCH, LOCATION



SECTION 5

OVER HEAT SNAP SWITCH (Auger Feed Tube)

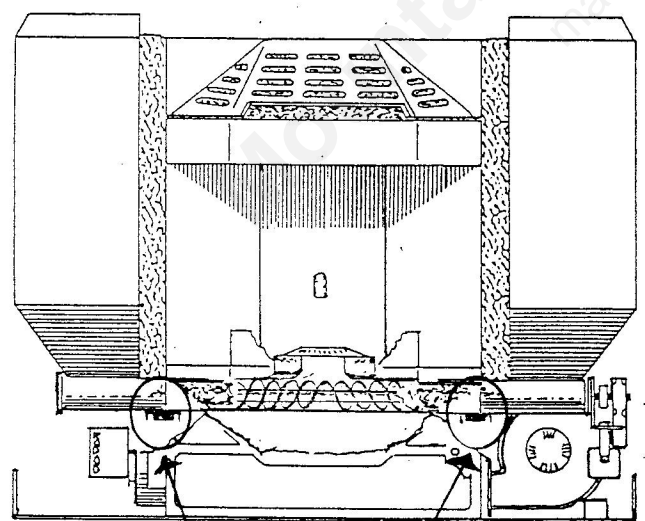
1. Location: There are two (2) snap switches located one on each side of the Auger Feed Tube. Remove both left and Right panels, for access. (see Diagram 5)
2. Function: If pellets should start to burn back into the pellet feed system, Snap Switches will sense the rise in temperature and shut stove off automatically.

NOTE: IT IS CRITICAL THAT THESE SNAP SWITCHES ARE IN DIRECT CONTACT WITH THE FEED TUBE AND THAT THEY ARE FUNCTIONING PROPERLY. IF THERE IS ANY INDICATION THAT THEY ARE NOT FUNCTIONING CORRECTLY (ie. LOWER PART OF HOPPER GETS EXCESSIVELY HOT OR THE PELLETS BURN BACK INTO THE HOPPER.) THE SNAP SWITCHES SHOULD BE INSPECTED FOR GOOD THERMAL CONTACT WITH THE AUGER TUBE AND REPLACED IF THEY DO NOT OPERATE.

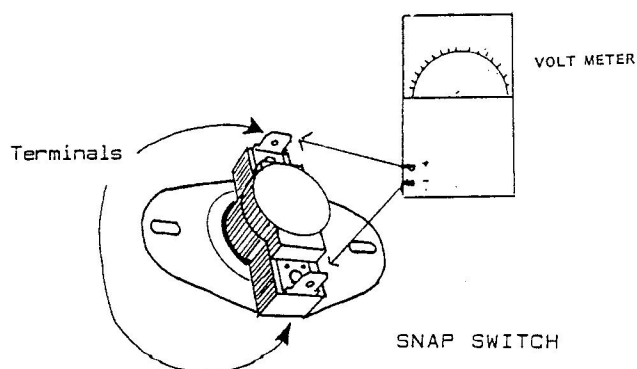
3. Trouble Shooting:

- A. Verify or trouble shoot operation by;
 - a.) If the Stove has automatically shut off, wait at least 1 hour for the stove to cool down before checking the operations of the Snap Switch ('s). Re-start Stove and auger pellets to the top of burner head. Check that there is adequate fuel in the hoppers and that the Damper is not pulled out too far.
 - b.) If the Stove will not restart, (See Section 16)

DIAGRAM 5



FRONT VIEW
AUGER TUBE (Over Heat Snap Switch), LOCATION



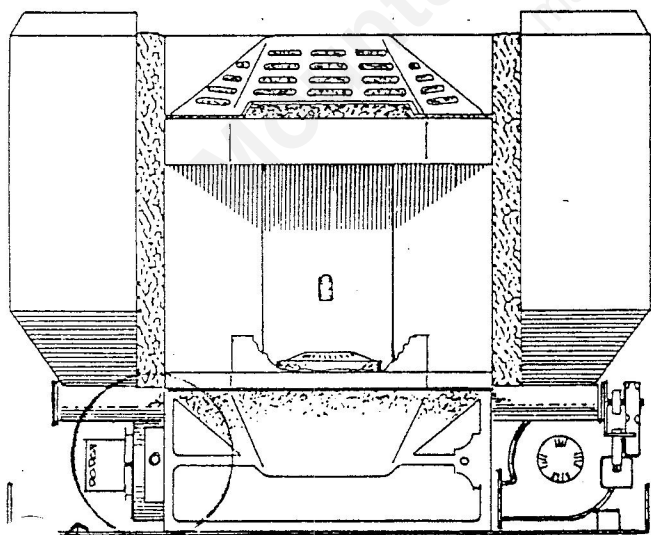
SNAP SWITCH

SECTION: 6

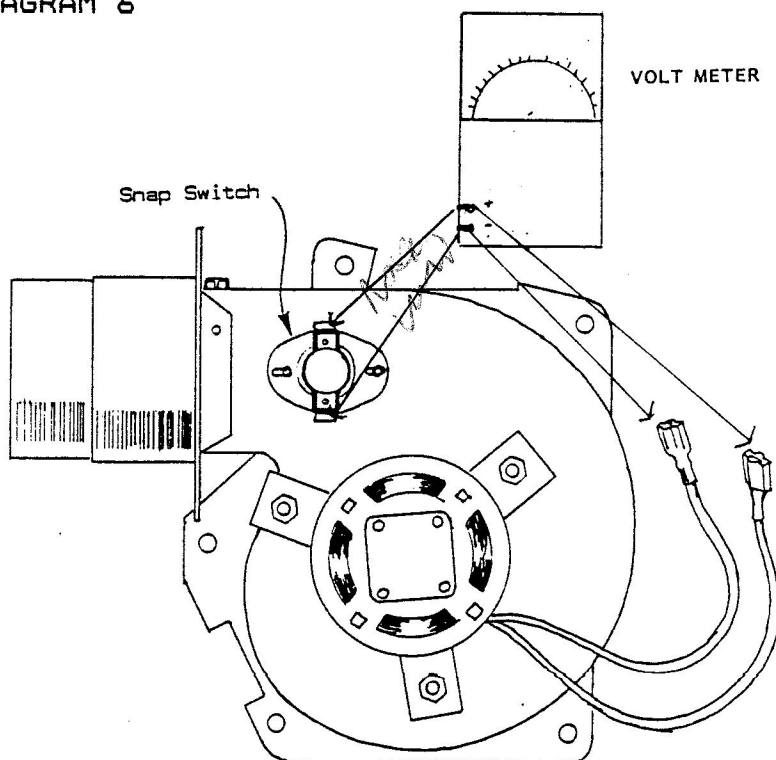
COMBUSTION FAN

1. Location: Combustion Fan is located behind the left panel. Remove left side panel for access. (see Diagram 6)
2. Function: The Combustion Fan draws air through the Burner Head and firebox, providing the necessary air for combustion.
3. Trouble Shooting:
 - A. Verify correct operation by;
 - a.) Take pressure reading (Use Magnahelic Pressure Gauge) to verify that the fan is drawing the correct amount of air through the Burner Head.
 - b.) Use Volt Meter to see that there is power to fan when Stove is turned on.
 - c.) Repair or Replace as needed.
 - B. If Fan will not rotate, but Power is present;
 - a.) Check to see that all electrical connections are firmly attached.
 - b.) Wait at least one hour for blower to cool down. If thermal switch in motor has tripped the blower should re-start. Check that adequate cooling air is available to the blower from outside the Stove.
 - c.) Remove fan from Stove and check that impeller is free to rotate.
 - d.) If motor is burned out replace blower assembly.
 - C. Fan is Noisy;
 - a.) Make sure fan is fastened firmly to stove.
 - b.) Repair or Replace as needed

DIAGRAM 6



FRONT LEFT SIDE
COMBUSTION FAN, LOCATION



COMBUSTION FAN with SNAP SWITCH

SECTION: 7

CONVECTION FAN

1. Location: Convection Fan is located behind the right front panel. Remove right side panel for access. (see Diagram 7)
2. Function: The Convection Fan blows air across the Heat Exchange Fins, providing the main source of convection heat from the Stove.

Its operation is controlled by the exhaust Snap Switch (See Section 3). If the convection fan fails to operate, the Over Heat Snap Switch located on the top of the Stove (WF1 only) will automatically shut the Stove off.

3. Trouble Shooting:

A. Verify correct operation by;

- a.) Use Volt Meter to see that there is power to fan when Stove is hot enough to close the Exhaust Snap Switch.
- b.) Repair or Replace as needed.

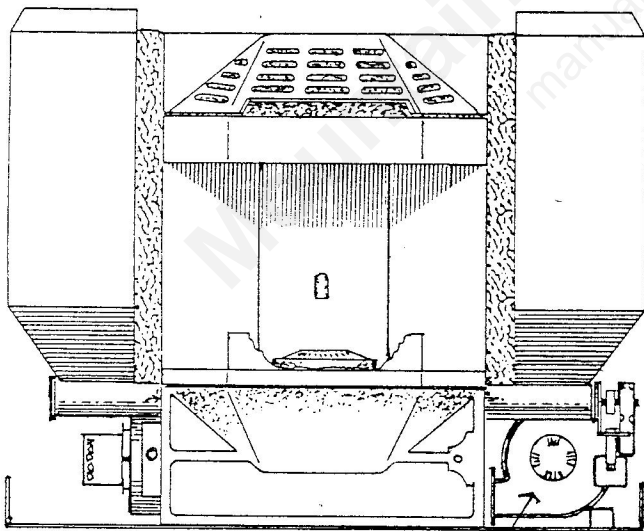
B. If Fan will not turn on , but Power is present;

- a.) Check to see that all electrical connections are firmly attached.
- b.) Check to see that Fan blade is clean and not binding.
- c.) Repair or Replace as needed.

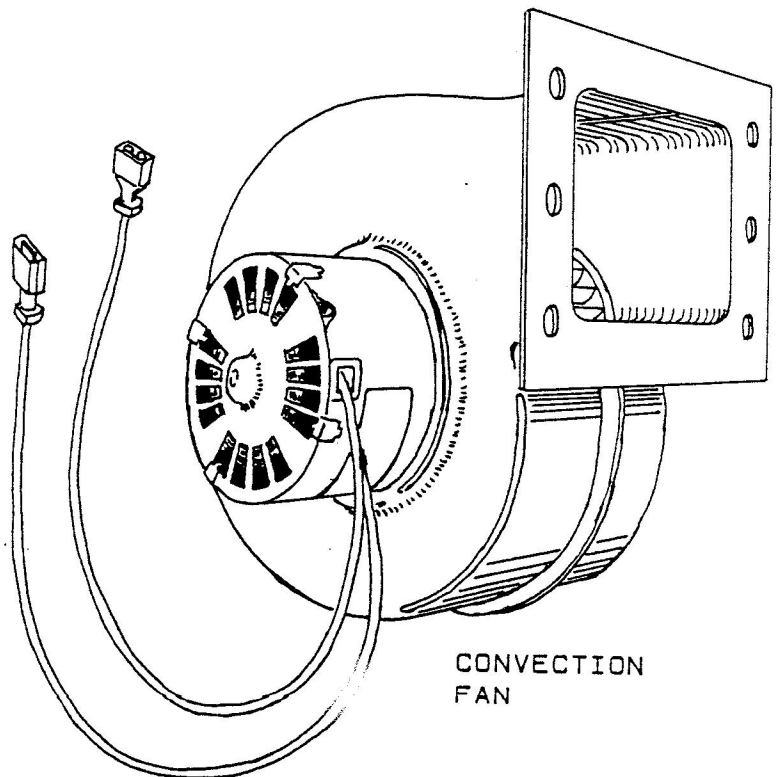
C. Fan is Noisy;

- a.) Make sure fan is fastened firmly to stove.
- b.) Repair or Replace as needed

DIAGRAM 7



FRONT RIGHT SIDE
CONVECTION FAN, LOCATION



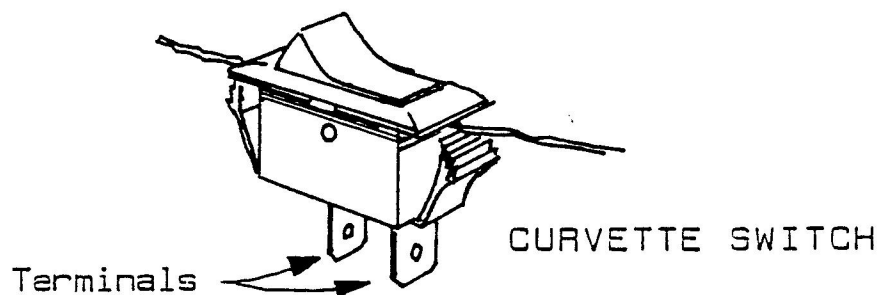
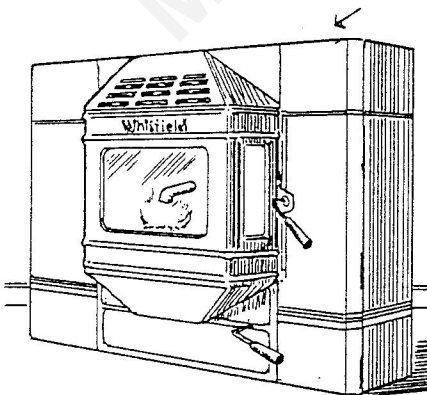
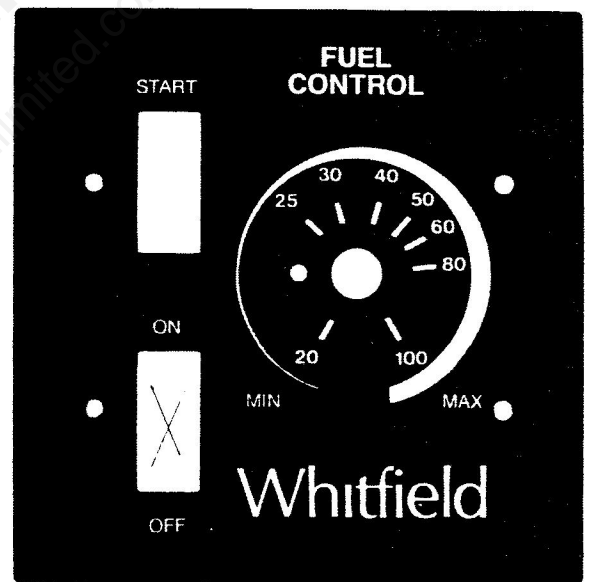
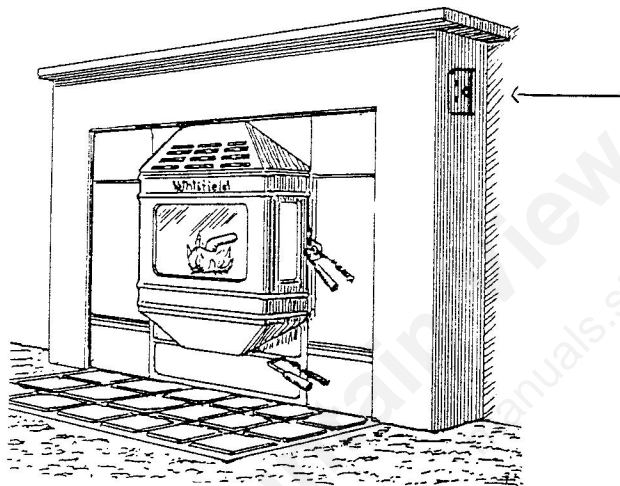
CONVECTION
FAN

SECTION: 8

ON/OFF SWITCH

1. Location: On/Off Switch is located on the control module which is located inside the right hopper lid on the WF2 and the remote module on the WF1. (See Diagram 8)
2. Function; The On/Off Switch starts the Fans and the Auger Motor when the Start Switch (See Start Switch) is engaged and turns them off when it is turned off.
3. Trouble Shooting:
 - A. Verify correct operation by;
 - a.) Visually inspect (and listen) to see that Fans and Auger Motor are running when switch is turned on and the Start Switch is engaged.
 - b.) Use Volt Meter to see that there is power through the Switch when turned on. (See Diagram 8)
 - c.) Repair or Replace as needed.

DIAGRAM 8

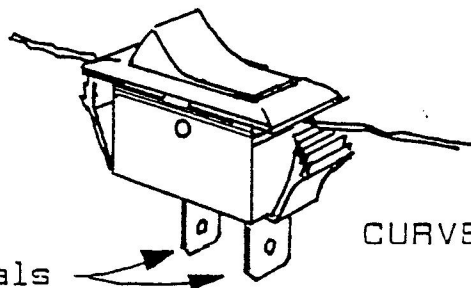
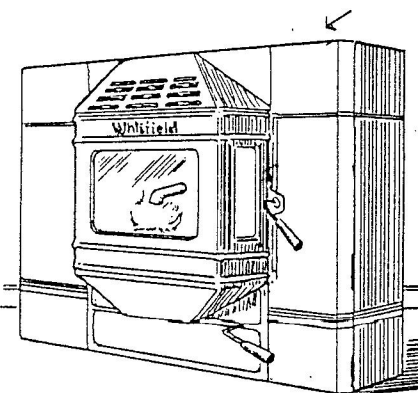
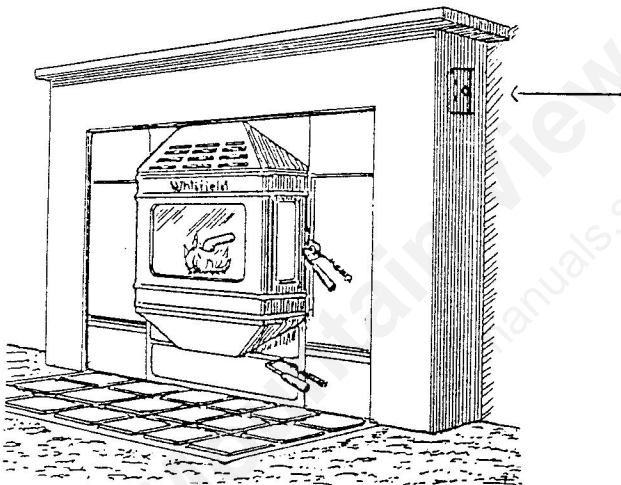


SECTION: 9

START SWITCH:

1. Location: The Start Switch is a momentary On/Off switch which is located on the control module inside the right hopper lid on the WF2 and the remote module on the WF1. (See Diagram 9)
2. Function; The Start Switch initiates a relay that switches power to the blowers and auger motor. Any time the Stove has been turned off, shuts off automatically or loses power the Start Switch will need to be re-engaged to start.
3. Trouble Shooting:
 - A. Verify correct operation by;
 - a.) Visually inspect (and listen) to see that Fans and Auger Motor are running when On/Off switch is turned on and the Start Switch is engaged.
 - b.) If there is power to the On/Off Switch, but the Blowers And Auger Motor do not start; check to see that the Electrical Connections to the Start Switch are firmly attached.

DIAGRAM 9



CURVETTE SWITCH

SECTION; 10

FIXED TIMER

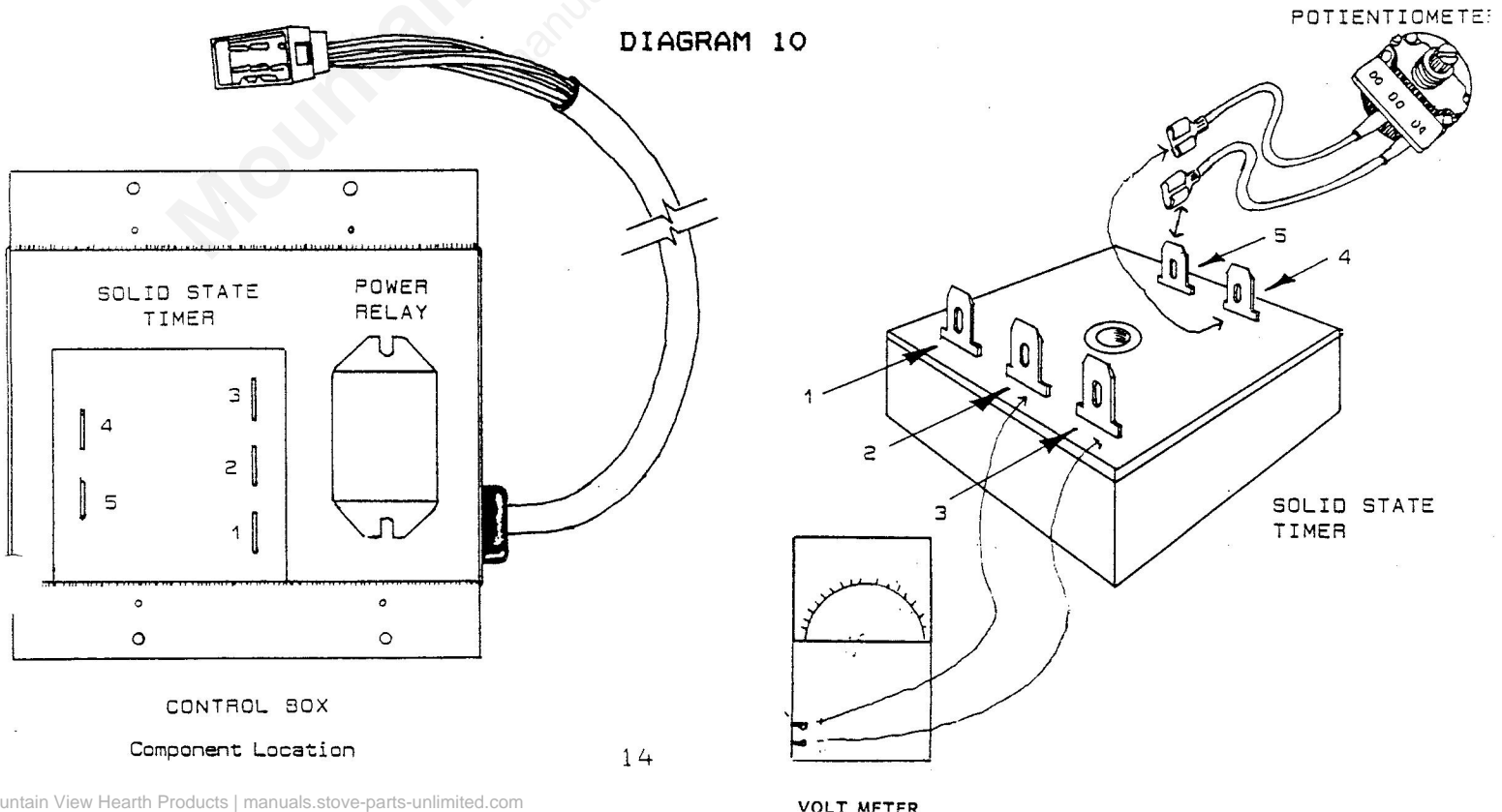
1. Location: The Recycling Timer is located inside the control module box. Access is gained by removing the switch plate on the module box. (See Diagram 10)
2. Function: The recycling Timer switches power On and Off to the Auger Motor, cyclical. The On Time is approx. six (6) seconds and the Off Time is variable from approx. one to twenty (1-20) seconds and is controlled by the potentiometer. (See Section 11)

3. Trouble Shooting:

- A. If there is power to the On/Off Switch but the Auger will not run;
 - a.) Check the operation of the Auger Motor (See Section 1).
 - b.) With a Volt Meter measure for input voltage across terminals 2 and 3 on the Recycling timer.
 - c.) Check to see that the Electrical Connections of the Potentiometer wire to terminals 4 and 5 of the Recycling Timer are firmly attached.
 - d.) If a,b,and c are satisfactory but there is no output voltage across terminals 1 and 3 of the Recycling Timer, the Timer should be replaced.

NOTE: IF THE AUGER MOTOR CIRCUIT IS SHORTED TO GROUND, THE RECYCLING TIMER WILL BURN OUT. ALWAYS DISCONNECT POWER BEFORE WORKING ON ANY ELECTRICAL COMPONENT!

- B. Auger Motor appears to run continuously no matter where the control knob is set.
 - a.) Check Potentiometer (See Section 11)
 - b.) If Potentiometer checks out, replace Recycling Timer.

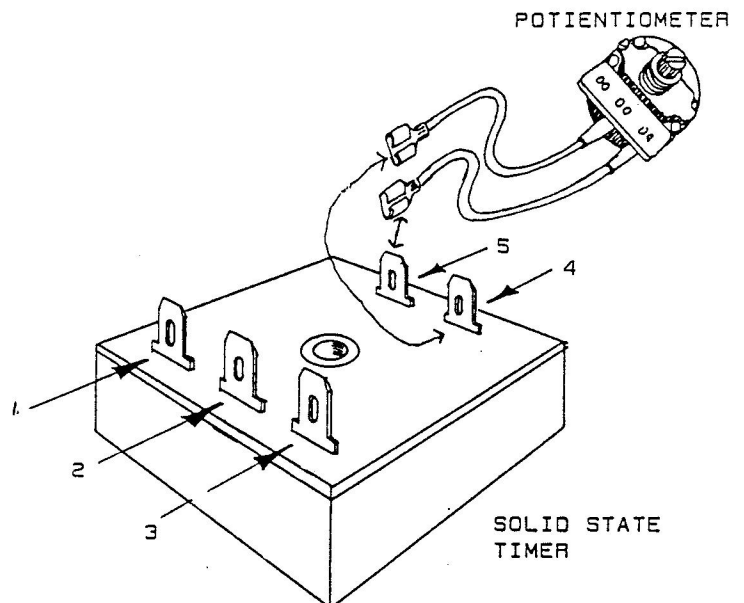


SECTION: 11

POTENTIOMETER

1. Location: The Potentiometer is located on the front panel of the control module box. Access is gained by removing the front panel on the module box. (See Diagram 11)
2. Function: The Potentiometer, controls the off cycle of the Auger Motor. The Off Time is adjustable from one (1) to approx. twenty (20) seconds.
3. Trouble Shooting:
 - A. Auger Motor appears to run continuously no matter where the Control Knob is set.
 - a. Remove Potentiometer. Measure resistance across Potentiometer wires using a Volt Meter on its Ohm setting. Rotate the Knob clockwise,; the readings should change from approx. 1.5 (MegOhm) to 0. If readings are substantially different, replace Potentiometer.
 - B. Turning the Control Knob clockwise increases the fuel feed rate and vice versa turning it counter clockwise decreases it.
 - a.) The wires on the Potentiometer are attached to the wrong terminals. Replace Potentiometer.
 - b.) Potentiometer is wired correct but still doesn't work correctly. Replace Potentiometer.

DIAGRAM 11



SECTION: 12

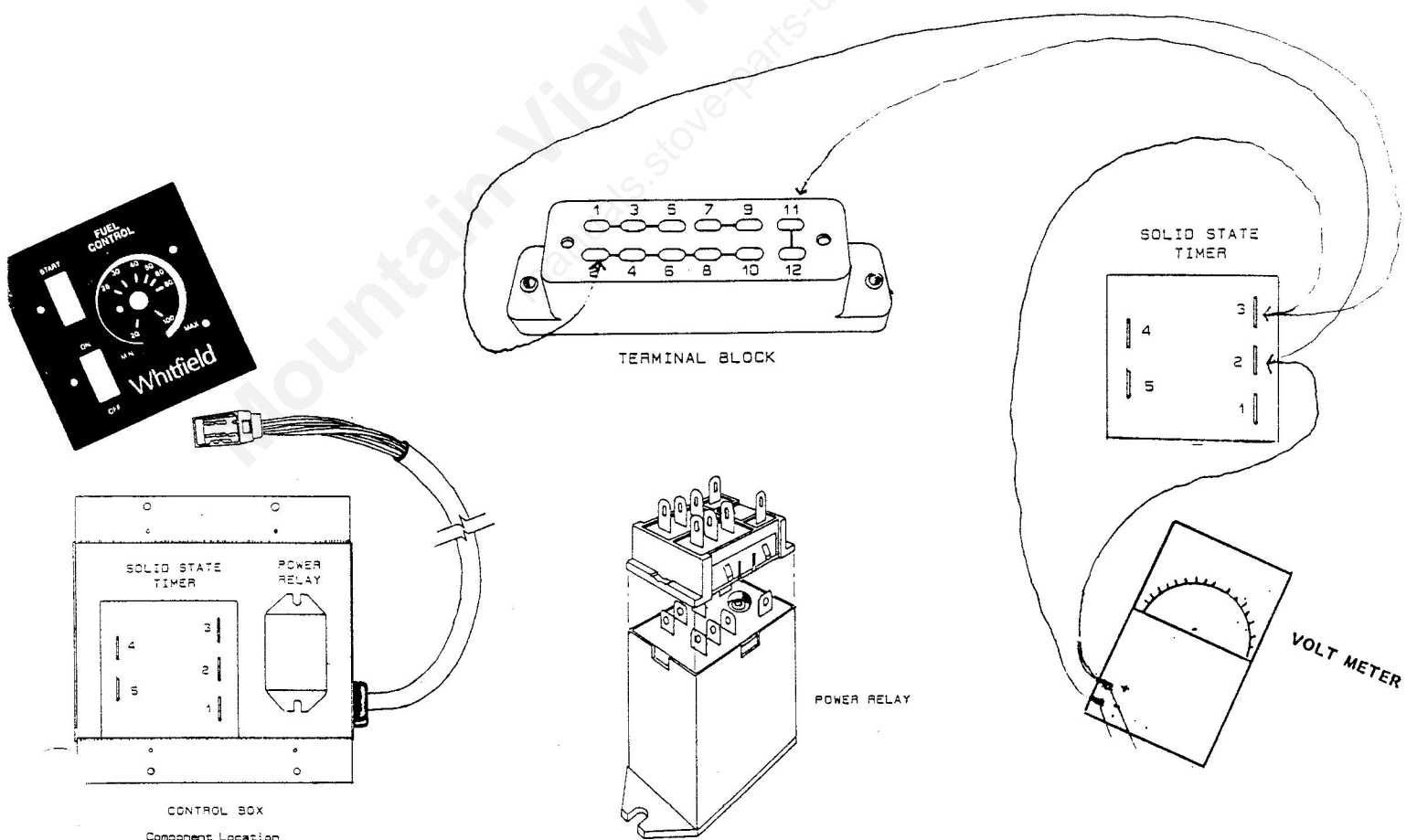
POWER RELAY

1. Location: Power Relay is located in the Control Module Box. Access is gained by removing front Control Module Panel. (See Diagram 12)
2. Function: Power Relay switches power to the Blowers and Auger Motor when the Momentary Start Switch is engaged. When input power to the Relay is lost due to power failure, the Relay cuts the power to the Blowers and Auger Motor. The relay can only be re-energized by pushing the Start Switch.
3. Trouble Shooting:
 - A. You have Power to the On/Off Switch but no power to the Auger Motor or Combustion Blower.
 - a.) Check to see that the wires to the Start switch are firmly attached.
 - b.) Check to see that the wires to the Relay terminal are firmly attached. (See Diagram 12.1)
 - c.) Check to see that there is power to the Recycling Timer Terminals 2 and 3. If not remove Relay Terminal Block from Relay, detach Relay from Control Module and replace with a new relay. (See Diagram 12.1)

DIAGRAM 12

DIAGRAM 12.1

DIAGRAM 12.2

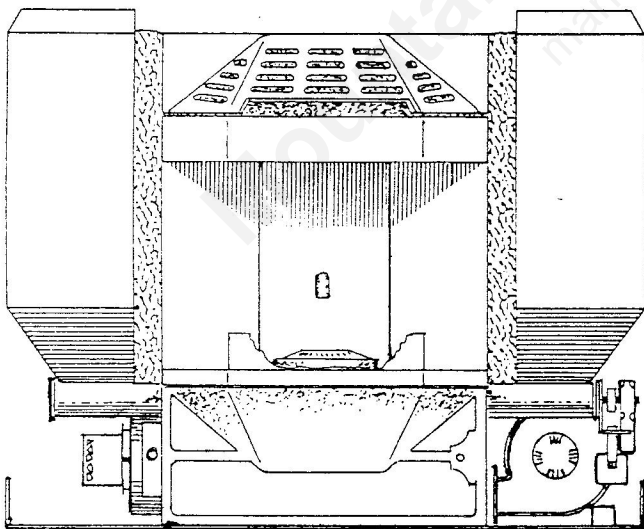


SECTION: 13

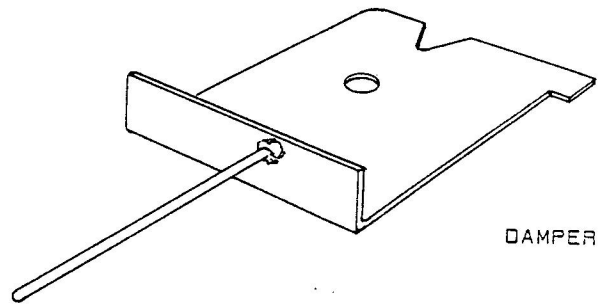
STOVE DAMPER

1. Location: Damper is located on the left front side, of the Stove near the bottom of the stove. (See Diagram 13)
2. Function: The Damper allows for the regulation of the Primary and Secondary Combustion Air to the Burner Head.
3. Trouble Shooting:
 - A. Damper Sticks;
 - b. Damper sticks;
 1. Check to see that the Combustion fan hasn't been over tightened. (Loosen as necessary; take care not to over loosen!)
 2. Check to see that the Damper is free of any metal burrs or welding slag; (clean or file as needed).
 3. Check to see that Damper isn't warped; (Repair or Replace as needed)
 4. Check to see if Damper is coated with creosote; (Clean Damper with creosote remover and determine the reason for creosote problem and eliminate reason.

DIAGRAM 13



FRONT VIEW
DAMPER, LOCATION



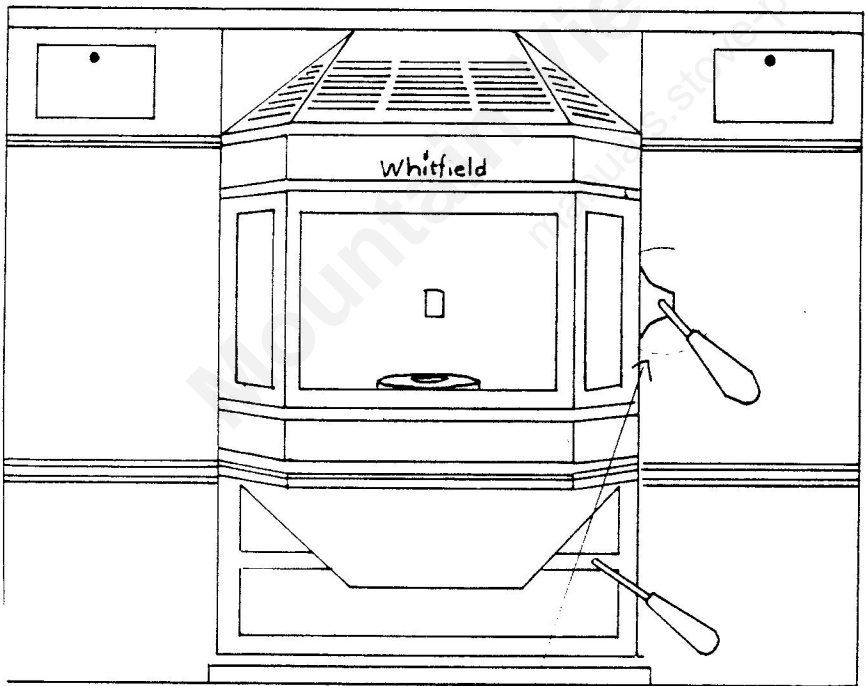
DAMPER

SECTION: 14

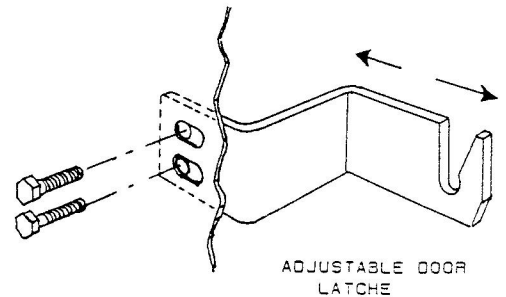
ADJUSTABLE DOOR LATCHES

1. Location: Both the Main and Ash Pan Access Door Latches are located on the right front facing side of the stove. (See Diagram 14).
2. Function: The Door Latch for the Main Stove Door is adjustable. This allows the door to be tightened or loosened as needed, to assure a tight seal between the door and the stove frame. The door Latch is adjusted by 2 bolts located on the right inner side of the Firebox. Access is from inside the firebox behind the right hand side piece of Ceraboard.
3. Trouble Shooting:
 - A. Take a test strip of paper, approx. 1 inch wide. Close the door on the paper strip. Pull on the paper strip. There should be good friction between the door gasket and the paper. Repeat this procedure around the entire perimeter of the door gasket. Adjust or replace gasket and or door latch as needed.

DIAGRAM 14



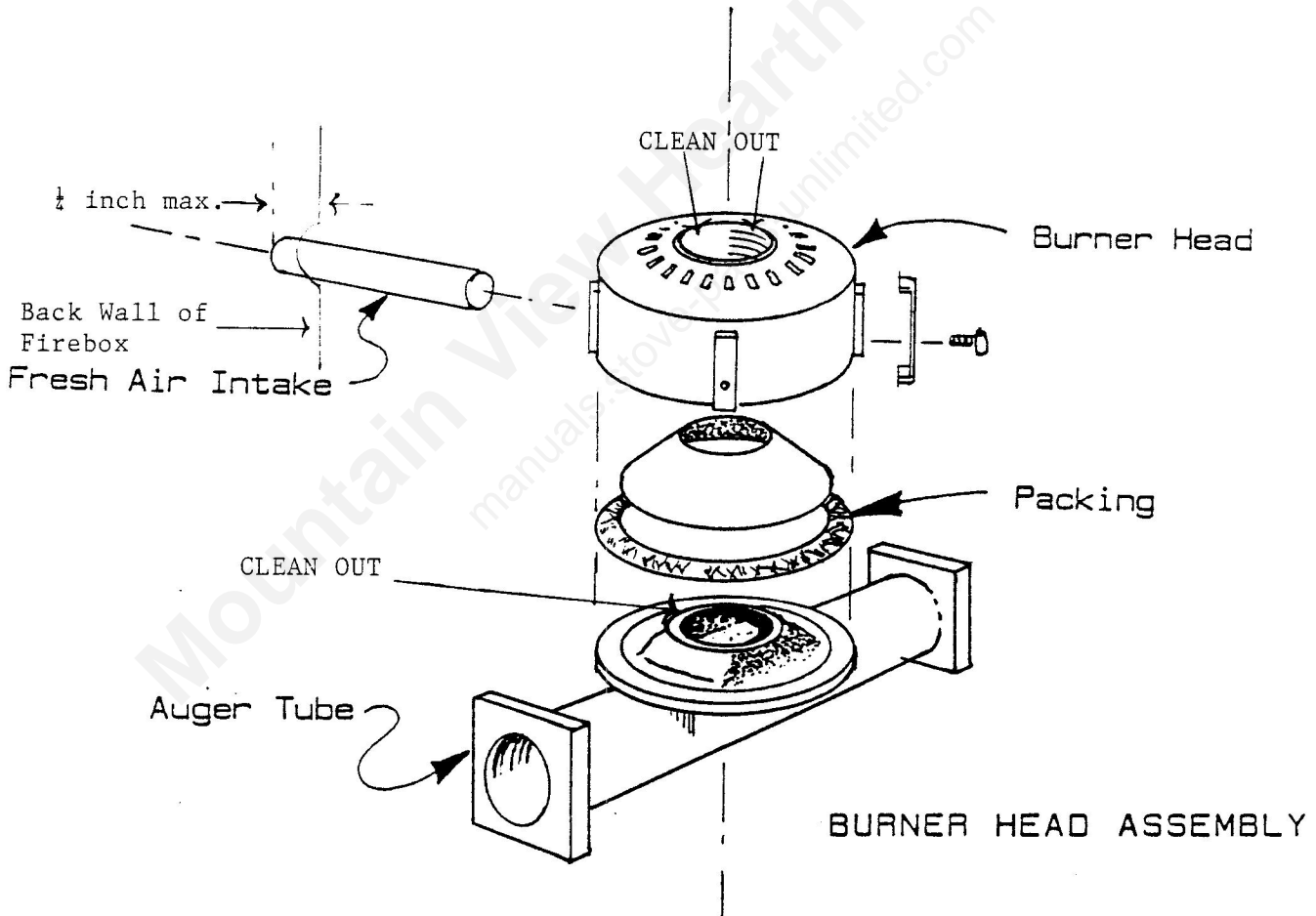
FRONT VIEW
DOOR LATCH, LOCATION



SECTION 15

BURNER HEAD AND AUGER CLEAN OUT: (Possible Carbon Buildup)

It is important to occasionally check the Burner Head and Auger for any possible Carbon buildup. If Carbon is present chip it off the burner head and auger surfaces and remove. Failure to keep this area free from Carbon will restrict the flow of pellets and will eventually cause an auger jam.



"FIREPLACE/HEARTHSTOVE SETUP"

It's important to recognize the fact that a Pellet Stove is an Appliance more than it is a Stove in the traditional sense. As such there are important operational and Installation differences which must be understood and adhered to by the Dealer and the Customer if they are to avoid unnecessary problems.

When the Whitfield Fireplace/Hearth Stoves are produced, the Hoppers and Hopper Lids are sealed to predetermined levels. It is extremely important that these seals be maintained at or near their original points. Failure of these seals could result in the leakage of smoke, poor burn characteristics or even the possibilities of "burn back conditions" in high winds during a power failure or shut down!

[Perform following Test Procedures to verify conformance.]

NOTE: HOPPERS AND AUGER TUBE NEED TO BE EMPTY WHEN PERFORMING THIS TEST PROCEDURE.

1. HOPPERS and HOPPER LIDS:

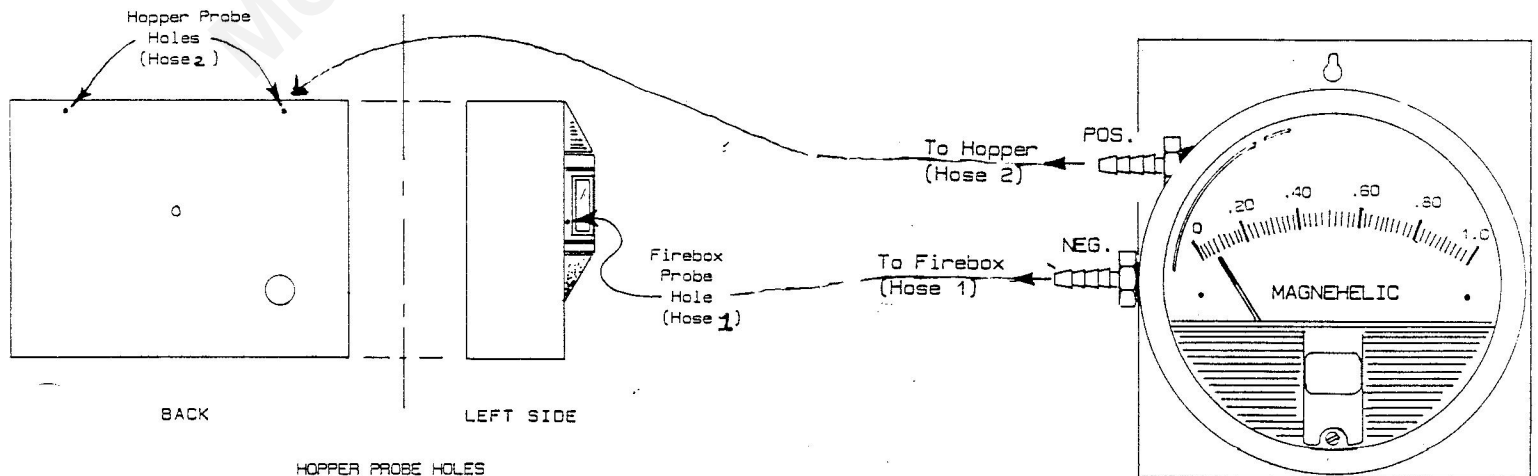
- A. Block off ventilation tubes that connect the hopper to the firebox (1 per hopper). Be sure to unblock the tubes (after) this check.
- B. Install Pressure Gauge (Magnehelic) hose 1 in test probe hole on the left side of the door. Turn on Stove and adjust damper to give a reading of .6. Install hose 2 in the hole on the Right Hopper (See Diagram). With Hopper Lids firmly closed you should get a reading in the range of .03-.06. If you fail to obtain this pressure you will need to check the Lid Gaskets and the Hopper joints to be sure they are sealed completely. Repeat the exact same Procedure on the Left Hopper also.

2. FIRE BOX DOOR and ASH PAN DOOR:

Check to see that the Gaskets are firmly seated in the grooves provided for this purpose on the doors. Repair or Replace if needed.

DIAGRAM 1

DIAGRAM 2



SECTION 16:

(Page 1)

DETAILED TROUBLE SHOOTING WF1/WF2 ELECTRICAL CIRCUITS AND COMPONENTS

1. POWER TO OUTLET:
 - A. Check wall outlet with voltmeter or test light for power.
2. POWER TO STOVE:
 - A. Plug Stove into wall outlet. Check for power across terminals 5 and 8 on the Terminal Block.
3. ACCESS TO STOVE COMPONENTS:
 - A. Remove left and right access panels.
4. ELECTRICAL GROUNDING:
 - A. Remove Control Panel cover plate. Check that the Potentiometer and the Switches are not grounding out.
5. OVER HEAT SNAP SWITCH:
 - A. Check for power across terminals 7 and 8. If there is no power then one of the overheat Snap Switches has tripped out. Wait for Stove to cool down before continuing, or bypass Snap Switches by connecting a jumper wire across terminals 5 and 7. (Be sure to remove jumper wire after trouble shooting).
6. ON/OFF SWITCH:
 - A. Turn on the ON/OFF Switch on the control panel. Check for power across terminals 4 and 7 on the Power Relay. If there is no power check the wire connections on the ON/OFF switch. replace the ON/OFF Switch if necessary.
7. START SWITCH:
 - A. Press the Start Switch. Check for power across terminals 3 and 7 on the Power Relay. If there is no power check to see that the relay coil is energized by checking for power across terminals 7 and 8 on the Power Relay. If there is still no power check the wiring connections across the Start Switch. replace the Start Switch if necessary.
8. AUGER MOTOR TIMER:

Check to see that there is power to the Auger Motor Timer and the Combustion Fan by checking for power across terminals 2 and 3 on the Solid State Timer.
9. AUGER MOTOR
 - A. Turn the Potentiometer to Max. If the Auger Motor is not operating check for power across terminals 1 and 3 on the Solid State Recycling Timer. If there is no power and the combustion fan is operating, remove the Timer block and replace. Before switching power back on to the Timer, check to see that the Auger Motor windings are not burned out. Switch Voltmeter to Ohms setting. The resistance measured across the Auger Motor should be approx. 13 Ohms. If the resistance is close to zero, replace the Auger Motor. Failure to replace a burned out Auger Motor will immediately burn out the new Timer.

SECTION 16:

Page 2

DETAILED TROUBLE SHOOTING WF1/WF2 ELECTRICAL CIRCUITS AND COMPONENTS

10. COMBUSTION FAN:

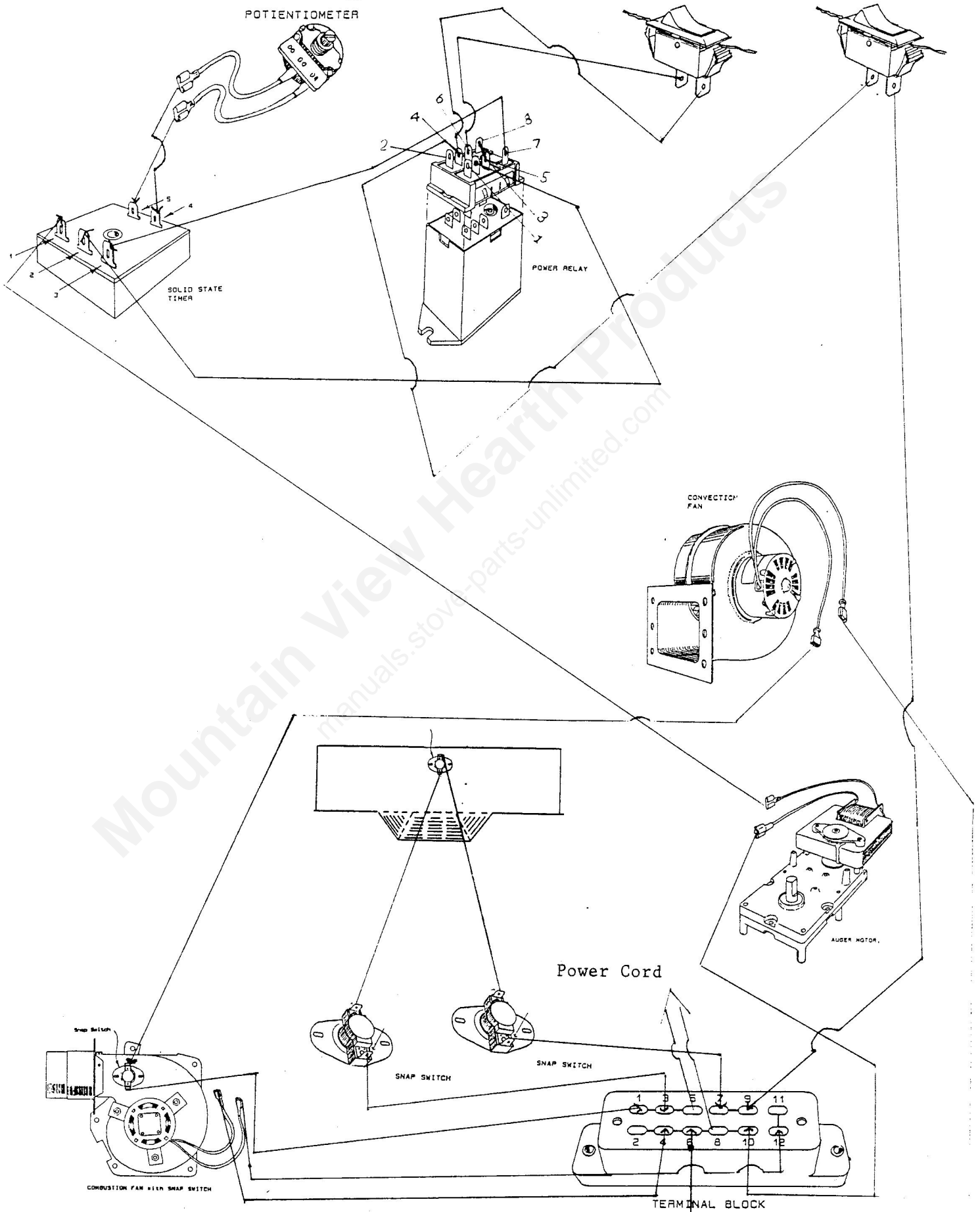
A. If the Combustion Fan is not operating but power was measured across terminals 2 and 3 of the Timer block, check power across terminals 12 and 4 of the terminal block. If there is no power at the terminal block check for wiring continuity from the control panel to the terminal block through the control panel plug in (P) (WF1 only). Replace Combustion Fan if necessary.

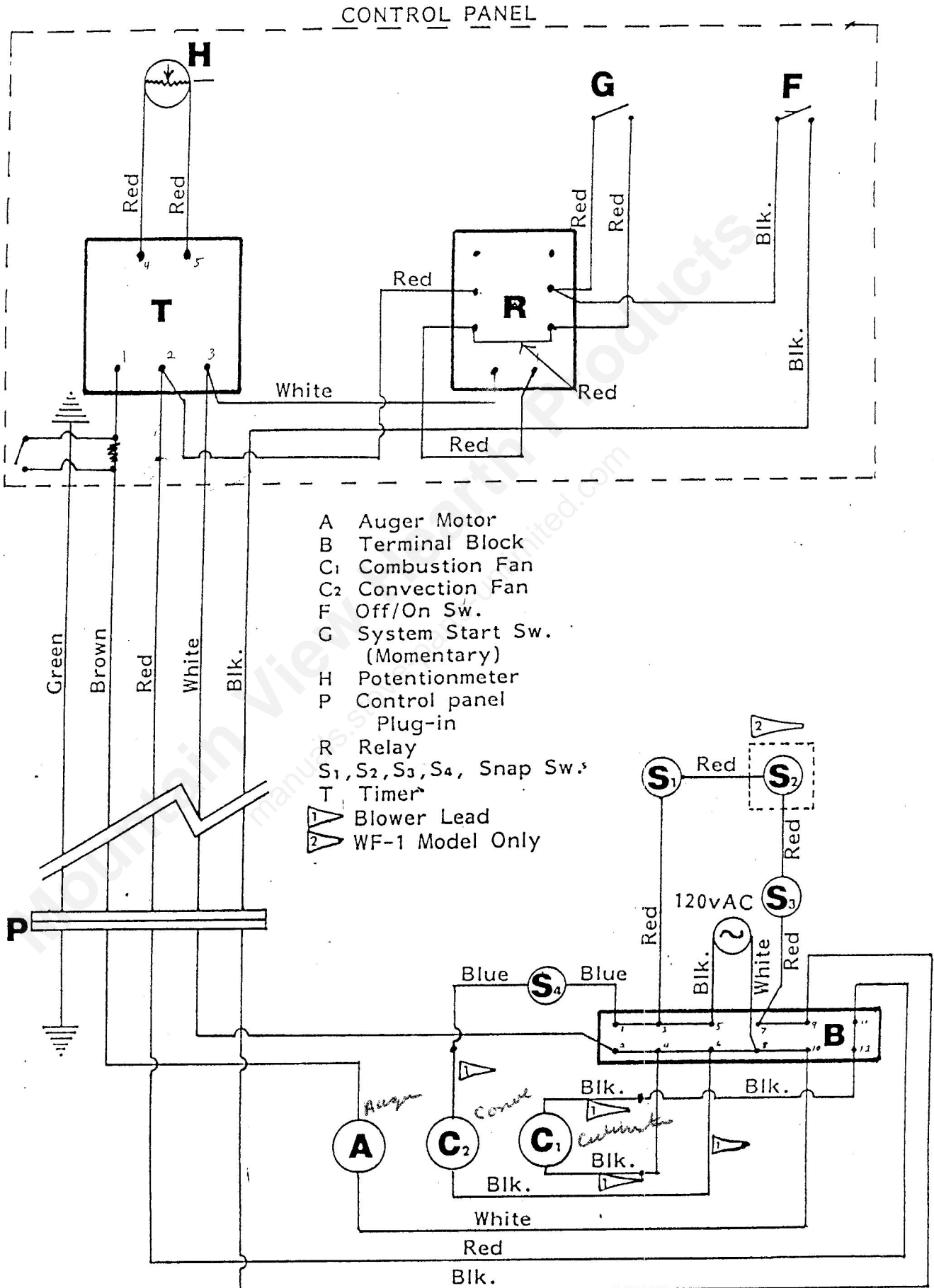
11. CONVECTION FAN:

A. To check the Convection Fan, place a jumper wire across the terminals of the Snap Switch mounted on the housing of the Combustion fan. If Convection fan still fails to operate check to see that the wire connectors are firmly attached. Replace Convection Fan if necessary.

B. If the Convection Fan operates but fails to switch on automatically when the stove has heated up, replace the Snap Switch on the Combustion Fan.

WIRING (Location) DIAGRAM
WF1/2)





WF-1/WF-2 ; WIRING DIAGRAM