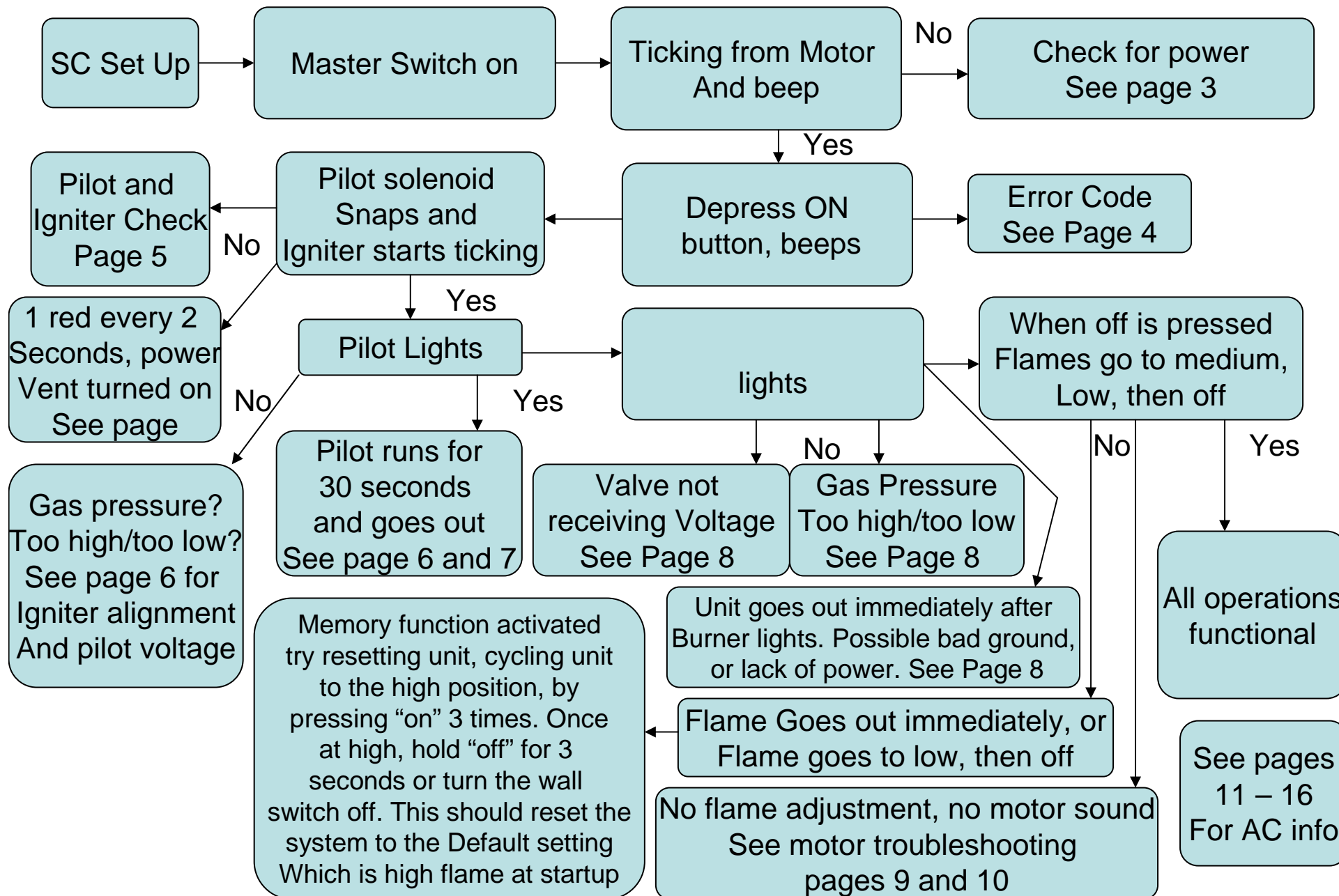


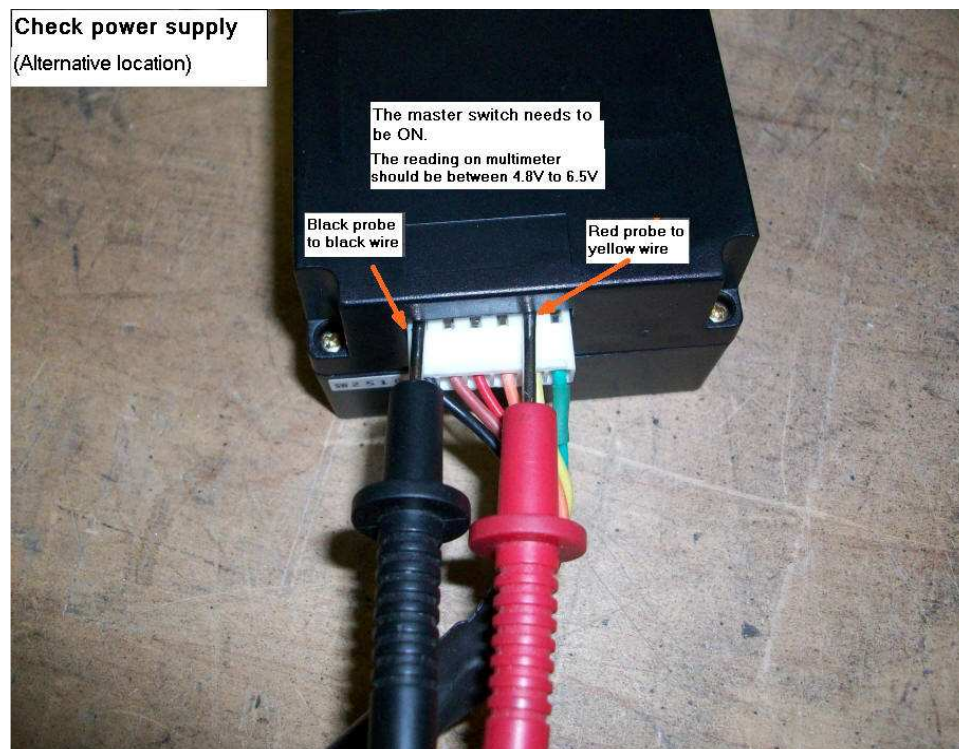
Signature Command

Troubleshooting Guide



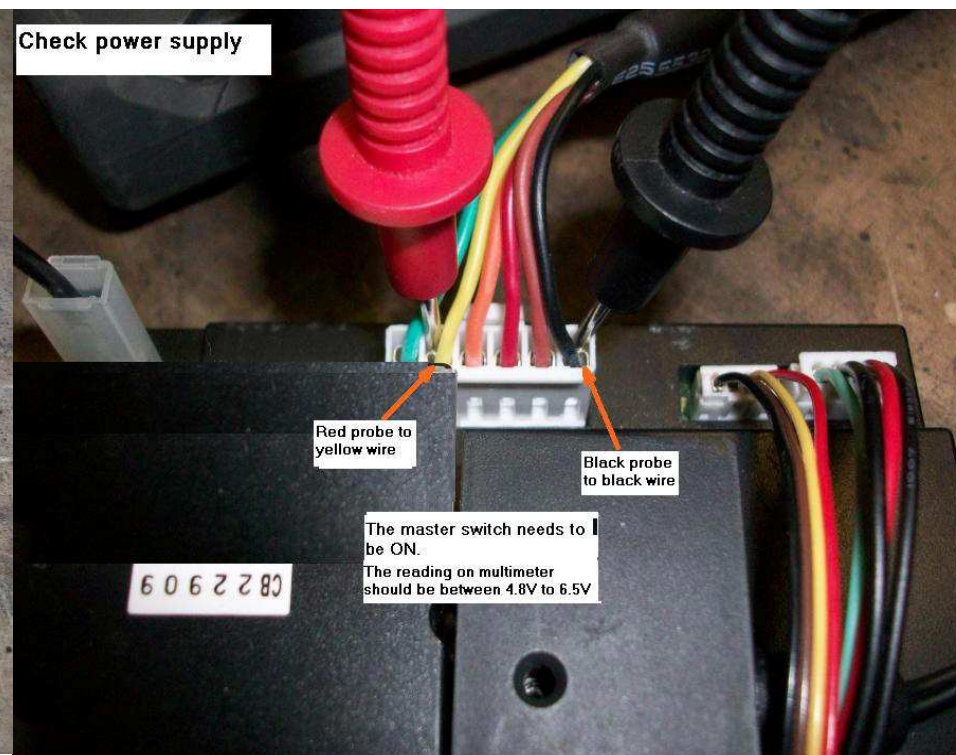
Check for Power

Check power supply
(Alternative location)



Battery or AC check at the
command center

Check power supply



Battery or AC power supplied
To Control Board

Error Codes before ignition

There are 3 possible error codes that may occur when trying to turn the unit on

1. One Red – Conversion Cover missing
2. Two Red – Spark Fail
3. Three Red – No sensor Signal

If conversion cover missing code (1 Red), remove the conversion chip, ensuring all pins are clean and straight and insert it back into the control board.

If spark fail code (2 red) indicator is given, check to ensure that there is a good ground to the valve bracket. Check for any damage to igniter wire where it could be shorted to ground.

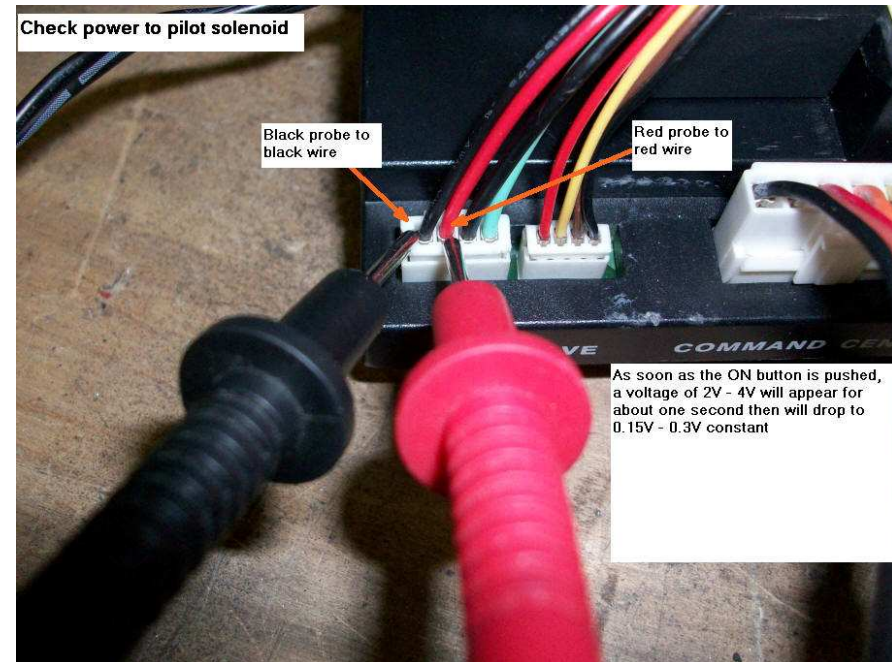
If No sensor signal code (3 red), check for proper ground to valve terminal. A clean sensor is crucial for proper operation. The sensor can be cleaned with emery cloth to remove silicone or other deposits. Try removing the sensor wire from the board and try again, if the sparker starts then there is an issue with the flame sensor. If the unit still gives 3 red flashes with wire disconnected and ground is solid then the control board is likely bad.

Other checks for the flame sensor include a resistance test. A good flame sensor will typically have less than 5 ohms. A reading of above 15 ohms might indicate too much resistance in the wire and may lead to pilot rectification issues

Pilot and Igniter Checks

At the same time that the pilot solenoid snaps, the igniter should start to send a spark to the “Z” bend electrode in the pilot assembly. If the sparking can be heard but no spark is jumping from the electrode to the front part of the pilot hood, try adjusting the electrode and the position of the hood so that the igniter sparks towards the front part of the hood. If it does not spark at the pilot, check for a bare portion of the wire that could be shorting out somewhere other than the pilot. Check for a proper ground to the valve bracket. Check for pinched wires that could be adding more resistance than the system can handle and correct if necessary

If the igniter can still be heard, but no visible spark anywhere you may also try disconnecting the igniter wire from the control board “I” terminal and hold the white portion of the connector and hold it 3/8” away from the control board and turn the unit on. If you see a spark jump across the terminal there is an improper gap or a short somewhere. If no spark jumps to the wire but you hear the spark, there is a short in the control board and it needs to be replaced.



The Pilot Solenoid should give audible snap, this will then allow gas to be released through the valve to pilot assembly. If no snap is heard from the valve, check to ensure you have 2 – 4 Volts DC to the pilot solenoid. After pilot solenoid is open by the initial voltage it will drop to 0.15 – 0.3 VDC to maintain the solenoid open. If no voltage is applied to the solenoid, the board may be bad. If voltage is being applied the pilot solenoid may be stuck, try tapping a few times to loosen, if that does not work, the valve may be faulty.

Pilot light but goes out after 30 seconds

This fault will usually be indicated by 3 red flashes followed by 1 green every 2 seconds. This is indicating the flame sensor never rectified the flame to the control board. This could be caused by a poor ground. Check to ensure the ground going to the valve bracket is good and tight. An improper flame hitting the sensor can cause this. Check to ensure the flame is fully engulfing the flame sensor, carefully adjust the pilot hood and sensor for better impingement on the sense rod. A clean sensor is crucial for proper operation. The sensor can be cleaned with emery cloth to remove silicone or other deposits.

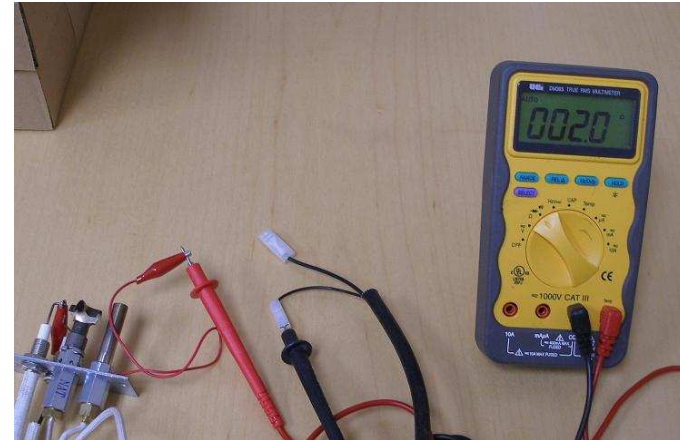
To test the flame sensor, disconnect the Flame sensor wire from the “S” terminal on the control board beside the two thermopile leads. Set your multimeter to Micro Amps (μA). Place the red meter lead into the sensor connector and the black lead to the “S” Terminal on the control board. After the flame is turned on the voltage will build until it goes above 0.2 micro amps at which point the burner should light.



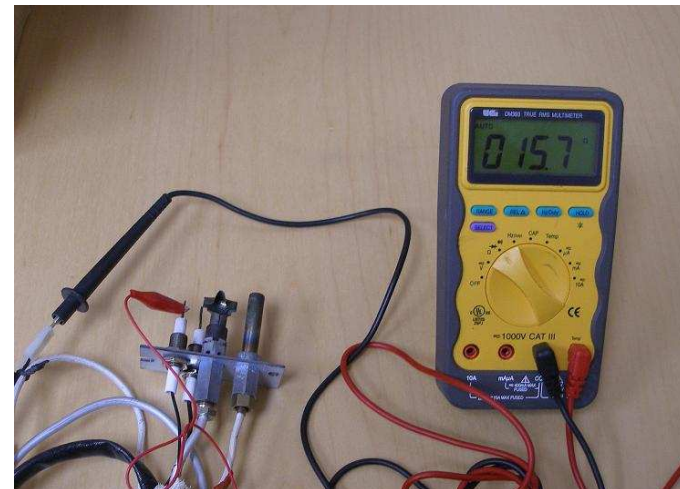
Flame Sensor resistance

- **Rectification occurs when the flame impinges on the flame sensor by allowing current to flow through it to ground.**
- **High resistance can affect the current's ability to flow to ground.**
- **A dirty flame sensor will increase the ohms and decrease the likelihood of flame rectification**

A sensor with low resistance



A sensor with high resistance



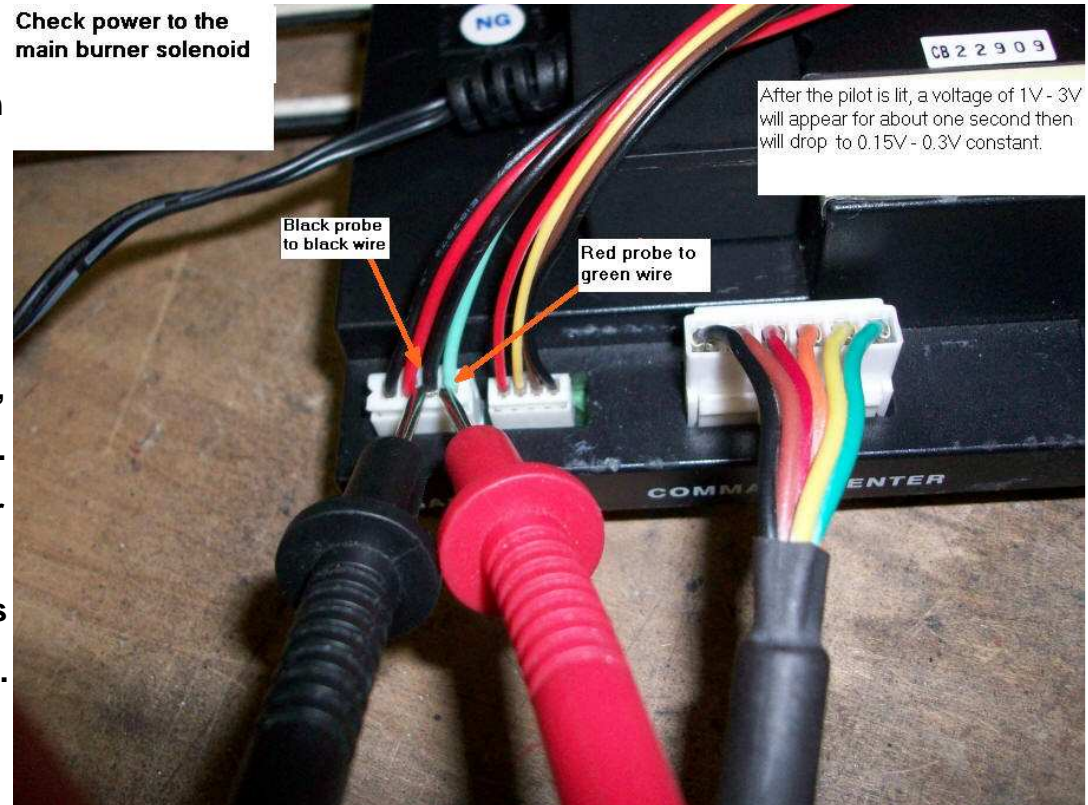
Valve Problems

After pilot rectification occurs, the control board energizes the main valve solenoid. If the pilot continues to burn after 30 seconds and no error code is shown, the board then assumes the main solenoid is open. There could be an issue with the board not sending the correct voltage. The board will supply the solenoid with 1 to 3 VDC for approximately 1 - 3 seconds, this will open the solenoid. Once the solenoid has opened, the voltage drops to 0.15 to 0.3 VDC to maintain the solenoid in the open position.

A poor ground can affect your valve staying open. The circuit flows through the solenoid to ground, if the ground does not have a solid connection the valve may shut off immediately after opening. To remedy, try tightening the ground connection on the valve bracket ensuring there is no paint or other insulator between the terminal and the metal.

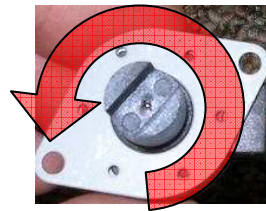
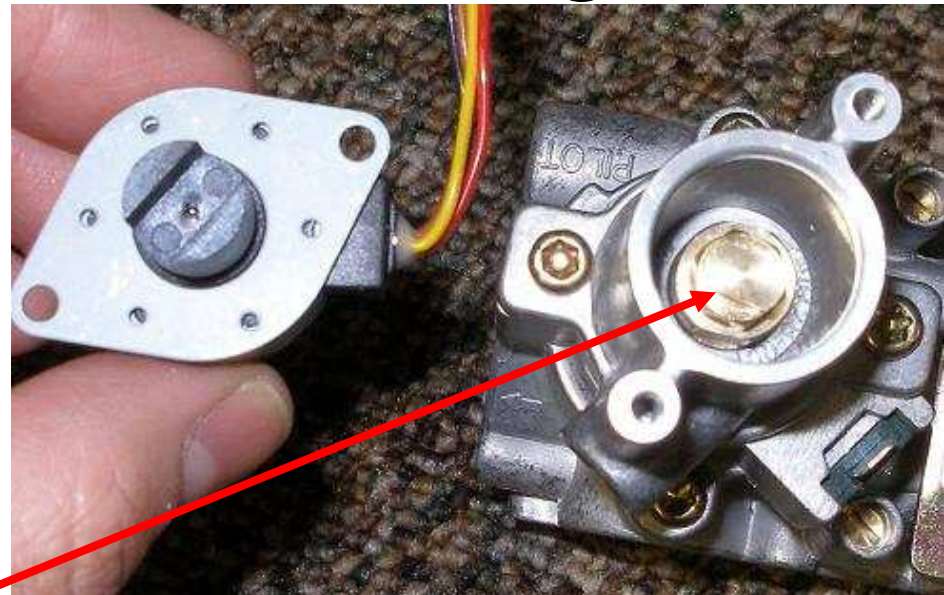
If the gas pressure is higher than the rated maximums (10.5" w.c. NG or 13" w.c. LP) then there may be too much back pressure for the solenoid to open. If this is the case, the pressure must be dropped before the appliance to the allowable pressure ranges. If the gas pressure drops below the allowable input, the pilot will become too small to maintain rectification. Ensure that the minimum inlet gas pressure is maintained after burner ignites.

Check power to the
main burner solenoid

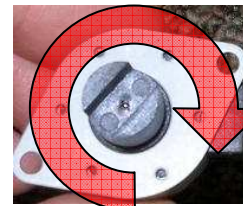


Motor Troubleshooting

If the valve does not make any flame height adjustment. Check that the motor still makes noise like it is trying to cycle the valve, but because it does not have high torque it can get jammed if not aligned properly. To ensure proper alignment, disconnect the motor from the valve solenoid, verify that it turns in open air. If it does not turn then there may be something wrong with the motor. Also verify that the valve stem can be rotated using a pair of needle nose pliers. Once confirmed that it does turn, reseal the motor back onto the valve, loosely at first until flame adjustment is proper. Then retighten the screws until they are snug, but do not over-tighten.



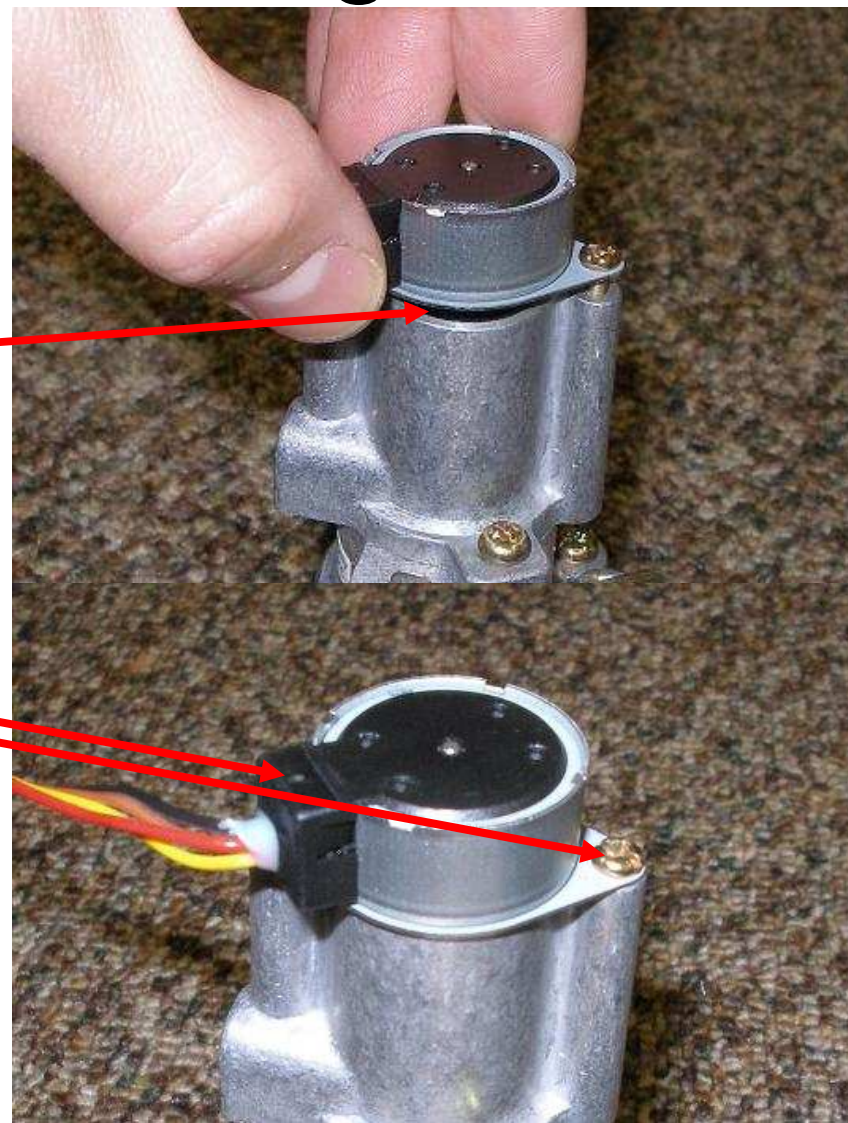
Motor will turn counter clockwise when adjusting up or when master switch is reset



Motor will turn clockwise when adjusting down

Motor Troubleshooting cont.

If the motor does turn in open air try reseating the motor back onto the valve, loosely at first until flame adjustment is proper. Then retighten the screws until they are snug, but do not over-tighten.



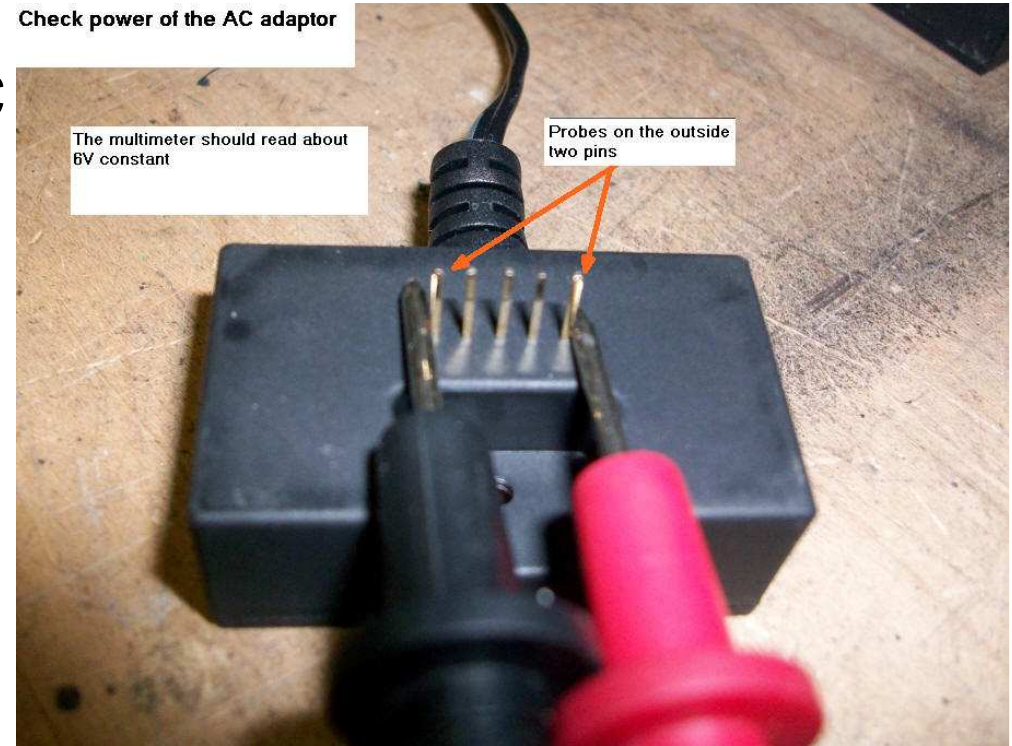
AC adapter

The AC adapter supplied with all basic Signature Command units transforms the 120 VAC to approx 6 VDC. To verify, plug the AC adapter into a working 120 VAC socket

Check power of the AC adaptor

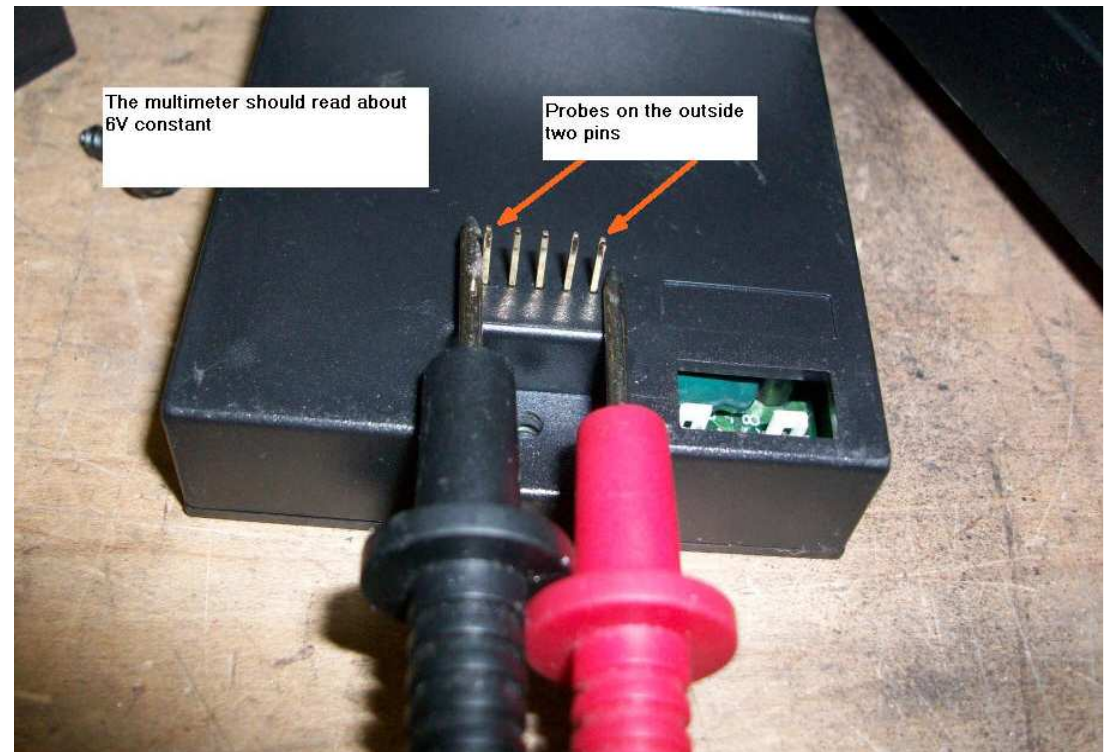
The multimeter should read about 6V constant

Probes on the outside two pins



SCSACM Module

The accessory AC module SCSACM which is supplied with all Total Signature Command units transforms the 120 VAC to approx 6 VDC. To verify, plug the AC adapter into a working 120 VAC socket.



SCSACM Module

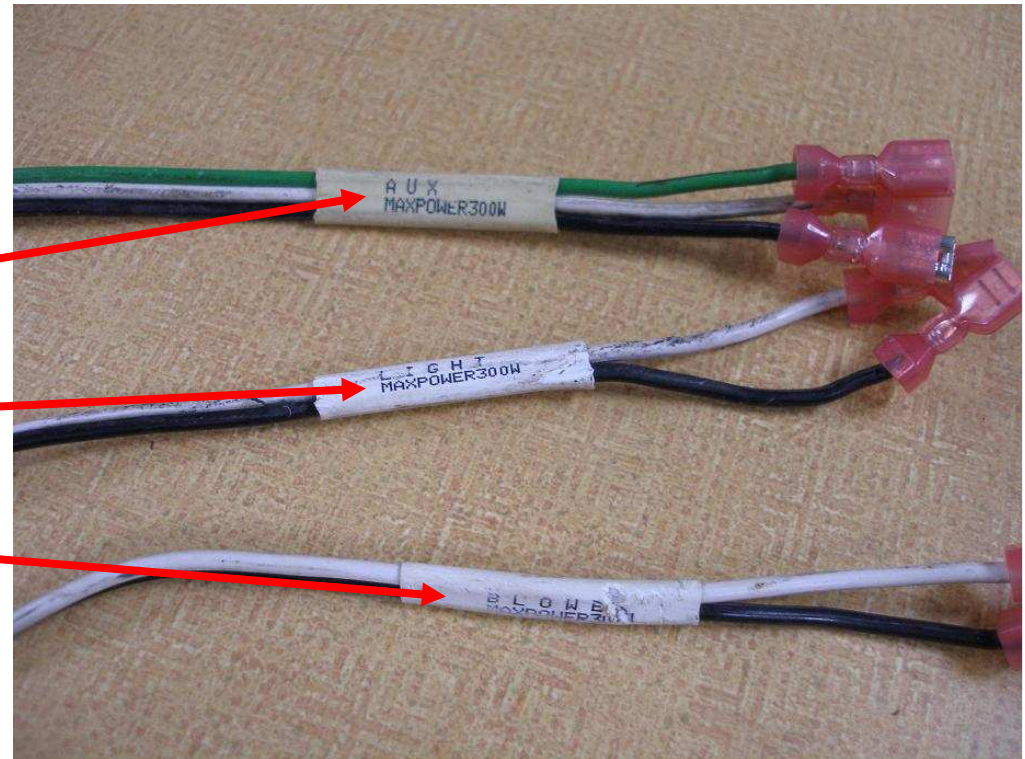
The three ports that the SCSACM control are also important test points to understand why a particular component may not be working correctly. The three terminals are

AUX

LIGHT

BLOWER.

All three are 120 VAC, 300 W max power but they all operate very differently than each other.



SCSACM Blower Terminals

The blower terminals are always supplying 120 VAC when tested as an open circuit. It is only when you test the terminals under load do you see that the voltage is changing.

When Blower is on high, reading under load is around 115-118 VAC. With it set to medium under load it is around 95-100 VAC and with it set to low it is around 85-90 VAC.

NOTE: The Blower may only be operated when the flames are running.

SCSACM Light Terminals

The light terminals on the SCSACM work similar to that of a dimmer switch. It reduces the amount of voltage applied to the load depending on the setting even on an open circuit.

On high the light terminals on an open circuit will produce 115-118 VAC. The medium setting drops the Voltage to 95-100 VAC and on low the open circuit testing is reduced to 65-70 VAC

NOTE: The lights may be operated when the flames are on or off.

SCSACM Auxiliary Terminals

The Auxiliary terminals are 120 VAC, and may be on or off, there is no reduction or different voltages/amperages available. The AUX terminal is a set of 3 wires, black, white and green. If the auxiliary wires are being used for something inside the fireplace the Green ground wire is not used because the fireplace chassis and components are already grounded. If an external accessory is used that requires a ground the green ground wire must then be connected.

NOTE: On the units with a rear burner shutdown the AUX terminal is being utilized by the 120 VAC solenoid. When Aux is turned off it will turn off the rear burner when voltage is applied. The Auxiliary function may be operated when the flames are on or off.