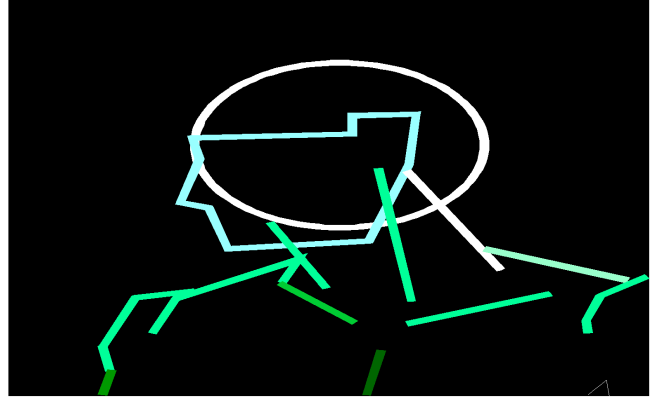


Professional



Development

DSI

(Direct Spark Ignition)

HSI

(Hot Surface Ignitor)

Troubleshooting Guide

HEAT-N-GLO

No one builds a better fire

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Troubleshooting Guide DSI (Direct Spark Ignition)

General Information

This troubleshooting guide is intended for use by **QUALIFIED SERVICE TECHNICIANS ONLY**. It is designed to help **QUALIFIED SERVICE TECHNICIANS** troubleshoot HEAT-N-GLO gas products.

This guide is **NOT** intended to be used by appliance owners or builders.

To ensure safe troubleshooting procedures, **QUALIFIED SERVICE TECHNICIANS** should have the installation manual before starting any troubleshooting. The proper tools and equipment should also be available when servicing a gas appliance with DSI.

WARNING: If you are not a **QUALIFIED SERVICE TECHNICIAN**, do not attempt to service gas appliances with DSI. Service done by **UNQUALIFIED** service persons could result in the risk of property damage and/or personal injury.

DSI uses 120 VAC electrical supply to operate various controls and components. Knowledge of electrical principles and safety procedures is essential for anyone working with electricity since it is a potential source of great danger.

WARNING: DISCONNECT THE 110/120 VAC WHEN CHECKING WIRE CONNECTIONS OR CHANGING PARTS.

Tools and Instruments

To properly adjust, service or troubleshoot gas appliances, the service technician must have the proper hand tools and test equipment.

Suggested List of Hand Tools

- Open-end wrenches: 3/8", 7/16", 9/16"
- Adjustable end wrenches: 8" and 10"
- 1/4" , 5/16" inch nut driver
- Straight screwdrivers (including small 1/8" blade for pilot adjustment; also stubby straight)
- Phillips screwdrivers #1 and #2 (stubby phillips)
- 3/16" hex key or set (T-handle needed in some cases)
- Wire-cutting pliers
- Needles nose pliers
- Pipe wrenches: 8"-14"
- Tin snips
- Flashlight
- Numbered drill index
- Tubing cutter

- Flaring tool
- Soft-bristled toothbrush
- Soft 1" paint brush
- Electric drill: 1/4"-3/8"

Suggested Listing of Testing Equipment.

- Multi-meter (measures AC and millivolts)
- Manometer (gas pressure)
- Gas sniffer or leak detection fluid

Miscellaneous

- Pipe joint compound
- Smoke match
- Drop cloth (tarp)
- Glass cleaner/towels
- vacuum
- Leather gloves
- Grate from woodburning fireplace to set hot logs on.

ALL TOOLS AND TEST EQUIPMENT SHOULD BE PROPERLY STORED AND MAINTAINED

Section 1

RAM 1MC1-01

RAM 1MC1-05

Requirements

Parts Identification

Junction Box and DSI Module (Electricity Flow)

Wiring Diagram

Problems:

1. The ignitor will not spark
2. Ignitor sparks, no flame.
3. Flame comes on, but will not stay lit.

Troubleshooting Guide

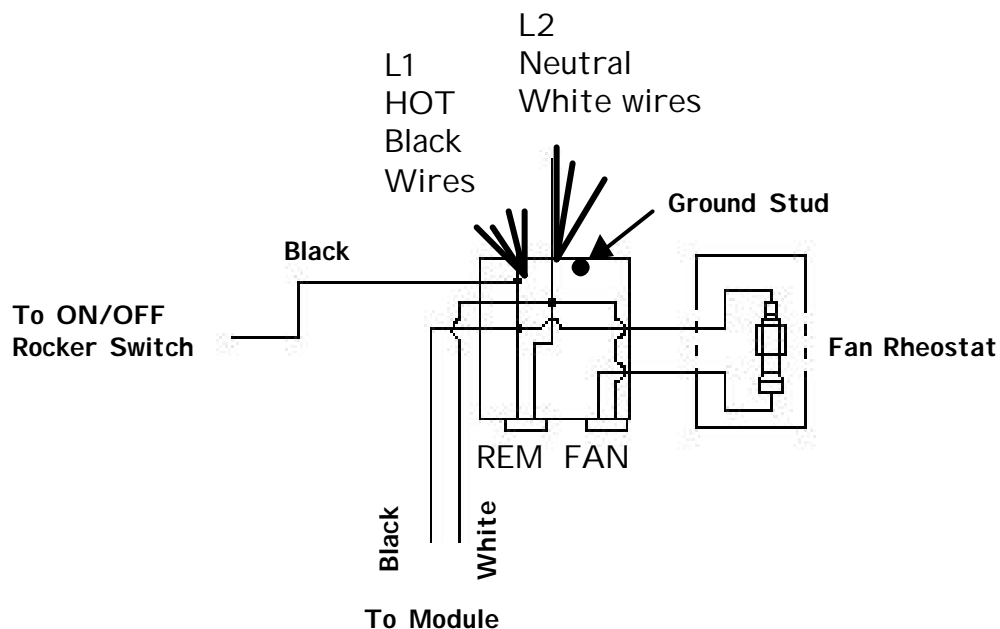
DSI (Direct Spark Ignition)

Requirements

The DSI fireplace products require 110/120 VAC to operate. The junction box must be wired to 110/120 VAC. The junction box will have either three or four black wires depending on the DSI system and will have three white wires. The black wires are the hot wires and the white wires are neutral. Two of the black wires and two of the white wires are for the receptacles on the junction box (marked REM for remote and FAN for the blower/fan). The third and/or fourth black wire and the third white wire is for the DSI system. The junction box will also have a ground stud for the green ground wire.

fire-parts.com

Junction Box



NOTE: The junction box **must be** grounded for the DSI system to operate. The unit works on flame rectification which changes AC to DC (direct current). DC requires a positive and a negative (ground).

RAM 1MC1-01 and RAM 1MC1-05

Parts Identification

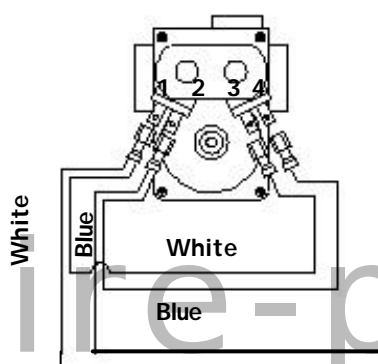
NOTE: The difference between the -01 and the -05 is the spark trial time.

The -01 has a four seconds, trial time and the -05 has a seven seconds trial time. Otherwise they function the same.

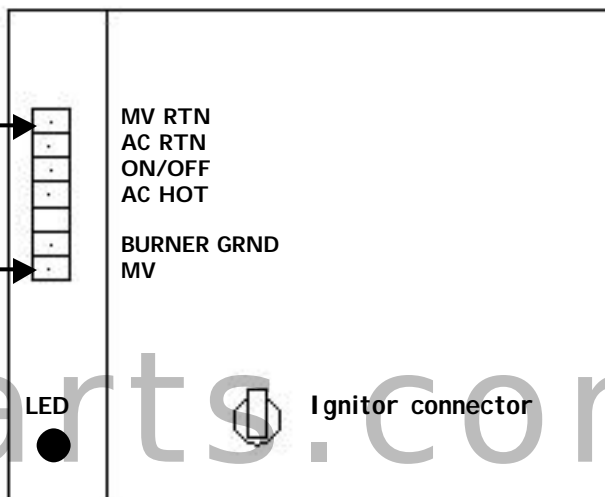
Module #501-592

RAM 1MC1-01/ RAM 1MC1-05

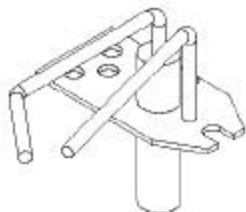
Part # 476-500 DSI Control Valve



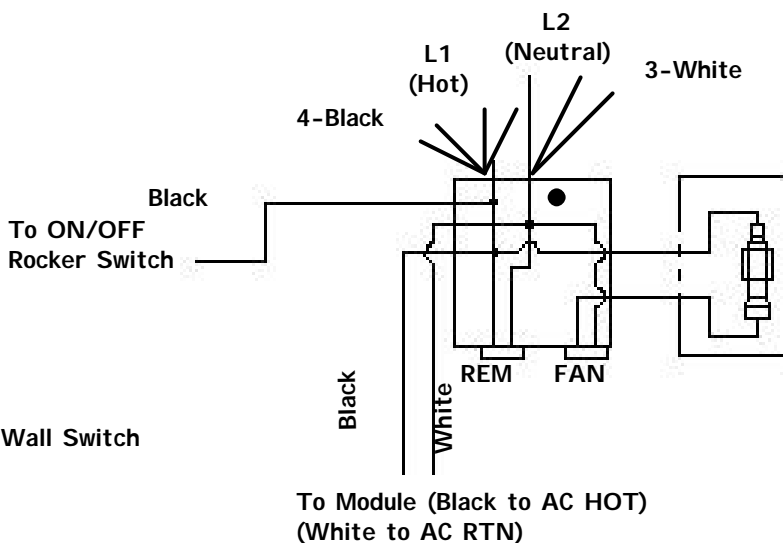
To Module (Blue to MV)
(White to MV RTN)



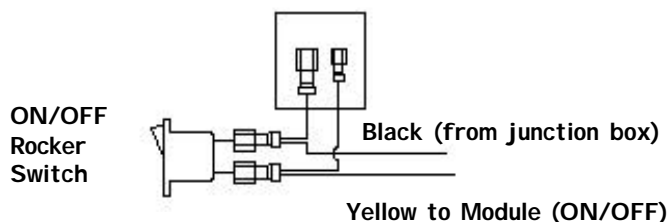
Part # 501-591 Ignitor



Part # 100-254A Junction Box 120 VAC



Optional Remote Wall Switch



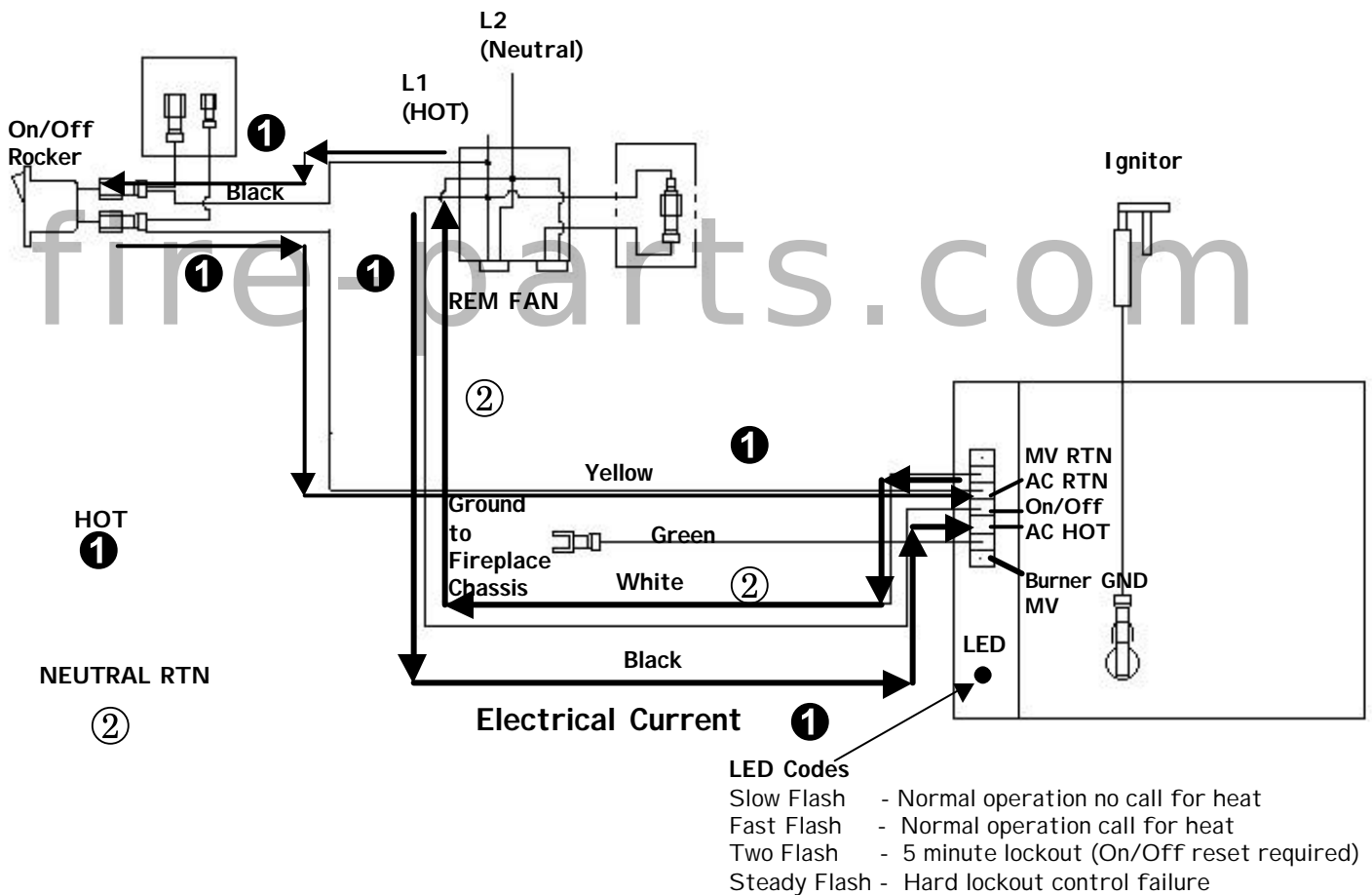
Part # SRV60-521 ON/OFF Rocker Switch

Junction Box/Module

Electricity

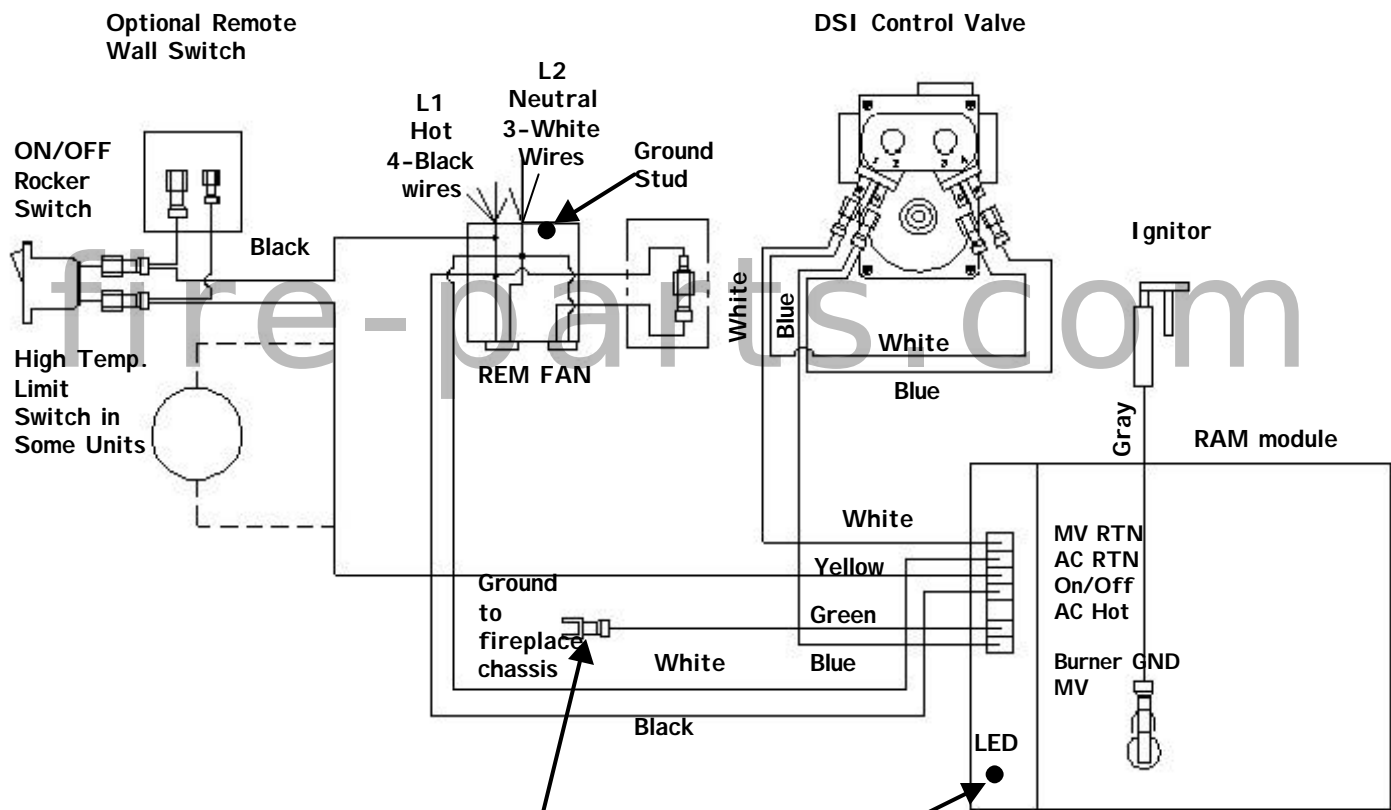
Electric current must have a continuous path from start to finish like a circle in order for the circuit to be complete and working.

The module is the brains and requires 110/120 VAC to operate. The 110/120 VAC come from the junction box. If there is not electricity to the module the fireplace will not work.



RAM 1MC1-01 and RAM 1MC1-05

Wiring Diagram



Note: When connecting ground wire, NO barriers such as paint, oil, or any insulating material is present on ground leads.

LED codes:

- Slow Flash - Normal operation no call for heat.
- Fast Flash - Normal operation call for heat.
- Two Flash - 5 minute lockout (reset required)
- Steady Flash - Hard lockout control failure.

Problem: The ignitor will not spark (Ram 1MC1-01/05).

Is the **LED** flashing?

YES,- The problem is the **module** or the **ignitor**

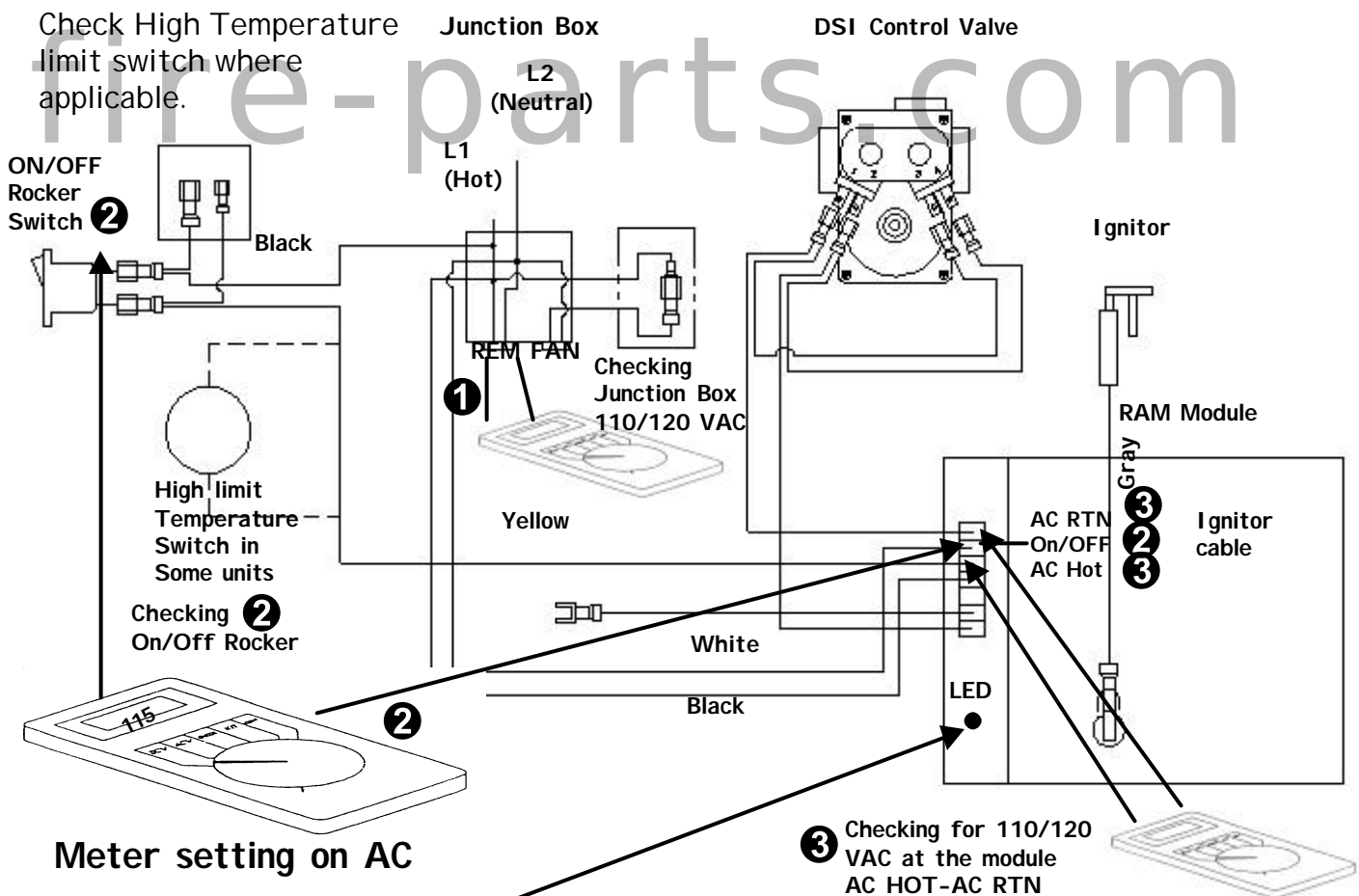
Check gray cable for the **ignitor**, make sure the connections are tight.

The **LED** is not flashing.

- 1 NO,-** Check for 110/120 VAC at the **REM** on the junction box.
Electricity, check circuit breaker and/or wiring in the junction box.
- 2 YES,-** Check On/Off rocker switch for 110/120 VAC. With the On/Off rocker switch. **"ON"**, place one of the lead wires from volt meter to the black wire on the switch, the other lead wire from the volt meter to **On/Off** pin (yellow wire) on the module.
- 3 YES,-** Check if there is 110/120 VAC at the module. Place one of the lead wires from the volt meter to AC HOT (black wire) and the other lead wire from the volt meter to AC RTN (white wire) on the module. If there is 110/120 VAC, **REPLACE THE MODULE.**

If **two flashes** on the **LED**, the system is in a 5 minute lockout. Reset On/Off switch and/or circuit breaker.

Check High Temperature limit switch where applicable.



LED codes:

- Slow Flash - Normal operation no call for heat.
- Fast Flash - Normal operation call for heat
- Two Flash - 5 minute lockout (On/Off reset required)
- Steady Flash- Hard lockout control failure

**Problem: The ignitor will not spark (RAM 1MC1-01/05).
High Temperature Limit Switch**

Units with a high temperature limit switch.

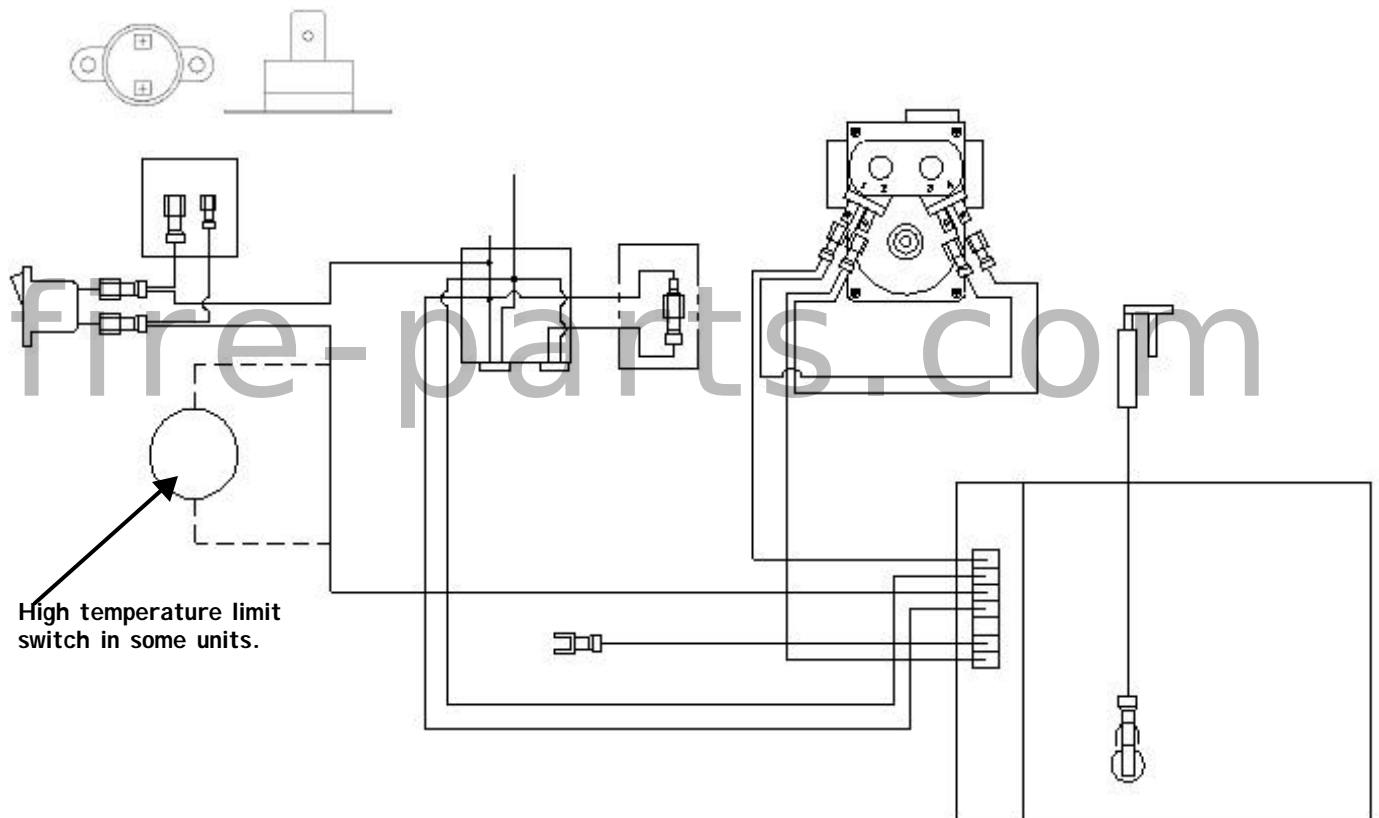
The high temperature limit switch is normally open.

Does the high temperature limit switch have continuity?

YES,- REPLACE THE HIGH TEMPERATURE LIMIT.

NO, - SEE THE IGNITOR WILL NOT SPARK (see pervious page).

**High Temperature Limit Switch
Part # SRV066-531**



**Problem: Ignitor sparks for 4 to 7 seconds no flame. Locks out.
(Ram 1MC-01/05)**

Is the ignitor over the burner ports?

NO,- Adjust ignitor bracket so ignitor is over the burner ports.

Is there air in the gas line?

YES,- Bleed the air from the gas line.

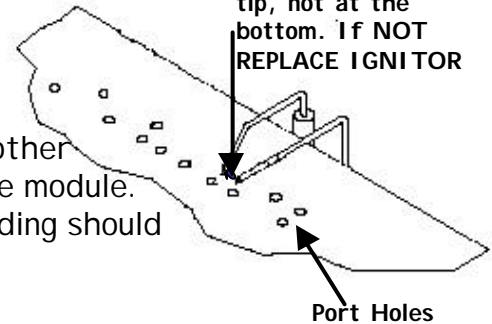
Is there 110/120 VAC at gas valve?

To check: Place one of the lead wires from the meter to MV **①** on the module, place the other lead wire from the meter to MV RTN **②** on the module.

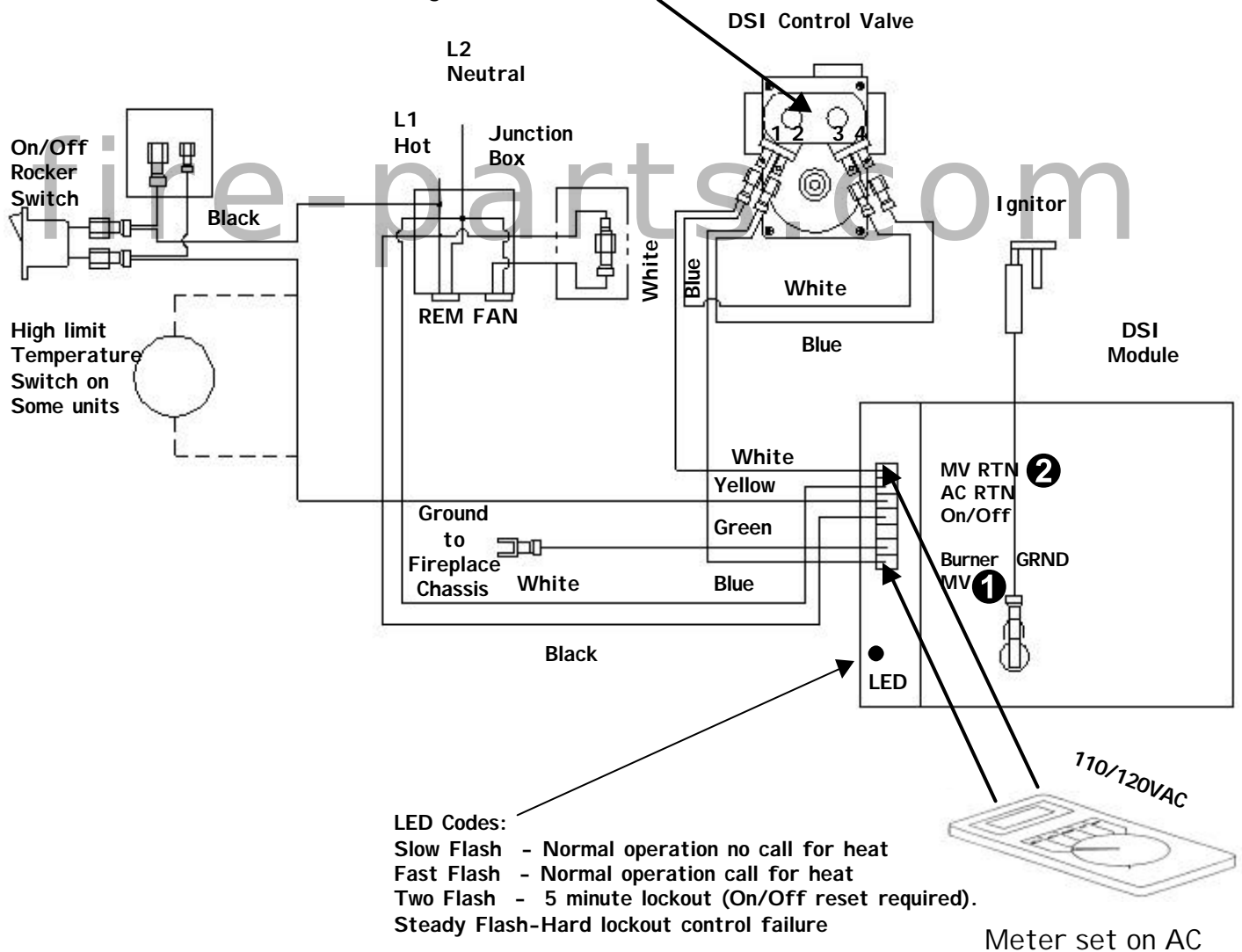
Turn "ON" the On/Off rocker switch. The reading should be 110/120 VAC.

YES,- If the valve is not opening **REPLACE VALVE.**

Make sure ignitor is sparking at the tip, not at the bottom. If NOT REPLACE IGNITOR

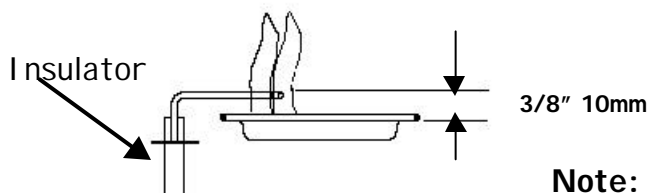


Check wires on the gas valve, terminal 1- white wire goes to terminal 3. Terminal- 2 blue wire goes to terminal- 4.

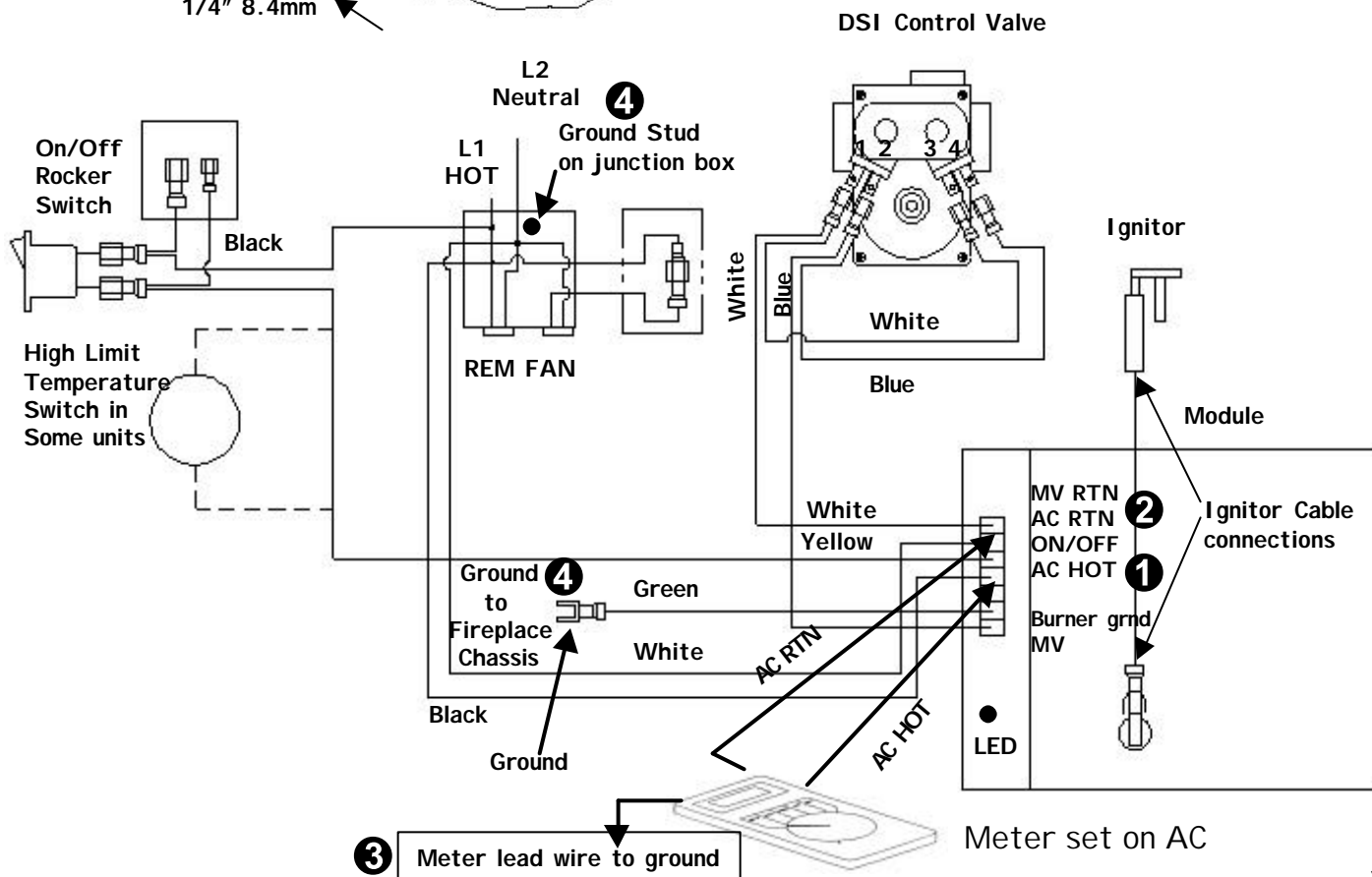
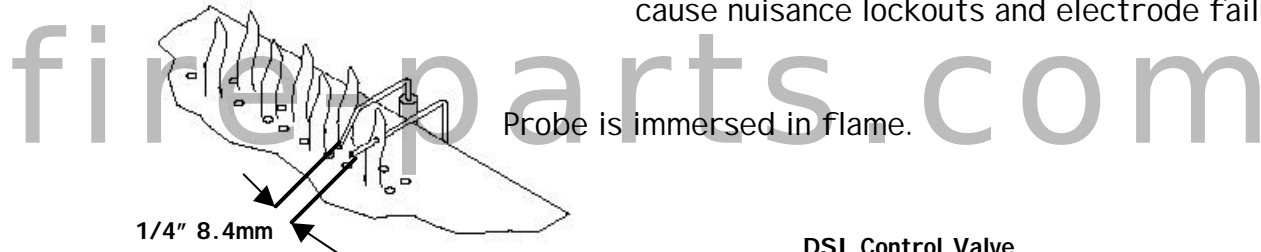


Problem: Flame comes on, but will not stay lit (RAM 1MC-01/05).

1. **Check electrical polarity.** To check polarity place one of the lead wires from the meter to **120 VAC HOT ①** terminal on the module. Place the other lead wire from the meter to **③ ground**. It should read 110/120 VAC. Then place one of the lead wires from the meter to **120 VAC RTN ②** and the other lead wire from the meter to **ground. ③** This should read **0 volts**. If these are reversed, disconnect power source and switch the polarity at the junction box.
2. **Check ignitor position.** Make sure that the probe is immersed in flame at all times when the burner is lit.
3. **Check ground.** The **junction box** must be grounded. **④** The **burner** must be grounded **④** Make sure the ground wire has a good connection.
4. **Ignitor cable.** Make sure the ignitor cable has a good connection.



Note: Flame too close to the ceramic insulator can cause nuisance lockouts and electrode failure.



Section 2

RAM 1MC1-05

Robertshaw Valve

Parts Identification

Wiring Diagram

Problems:

1. The ignitor will not spark.
2. Ignitor sparks, no flame.
3. Flame comes on, but will not stay lit.

RAM 1MC1-05 Robertshaw Valve

Parts Identification

NOTE: The difference between the -01 and the -05 is the spark trial time.

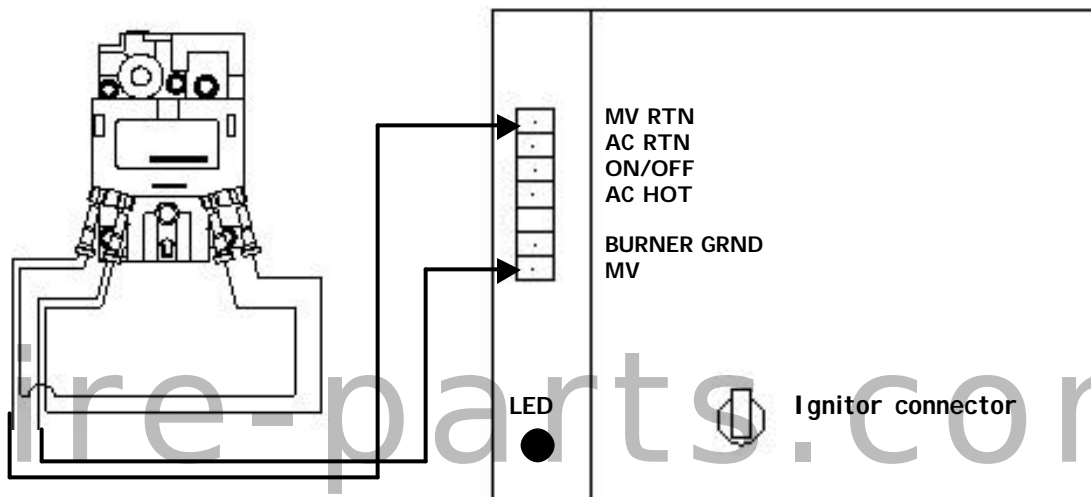
The -01 has a four seconds trial time and the -05 has a seven seconds trial time. Otherwise they function the same.

Part # 475-500

Robertshaw
DSI Control Valve

Module #501-592

RAM 1MCI-05

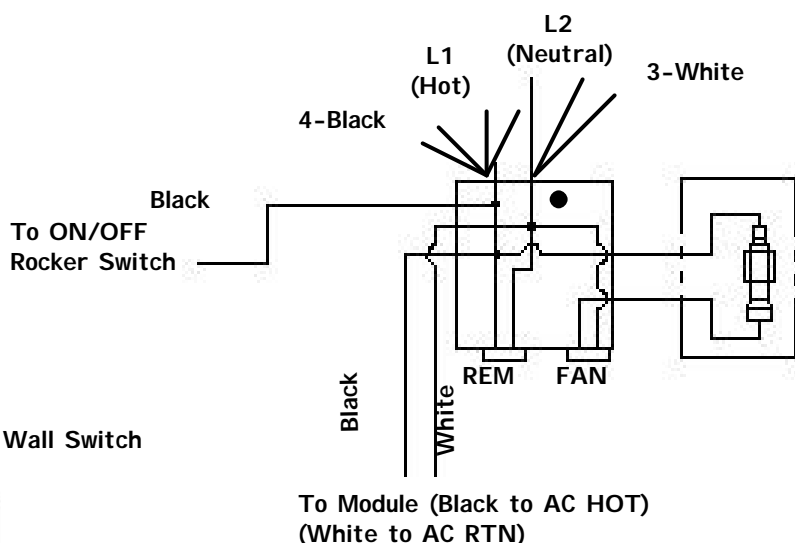


To Module (Blue to MV)
(White to MV RTN)

Part # 476-591
Ignitor

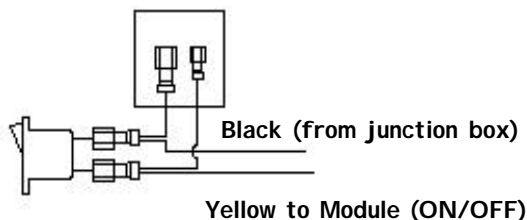


Part # 100-254A
Junction Box 120 VAC



Optional Remote Wall Switch

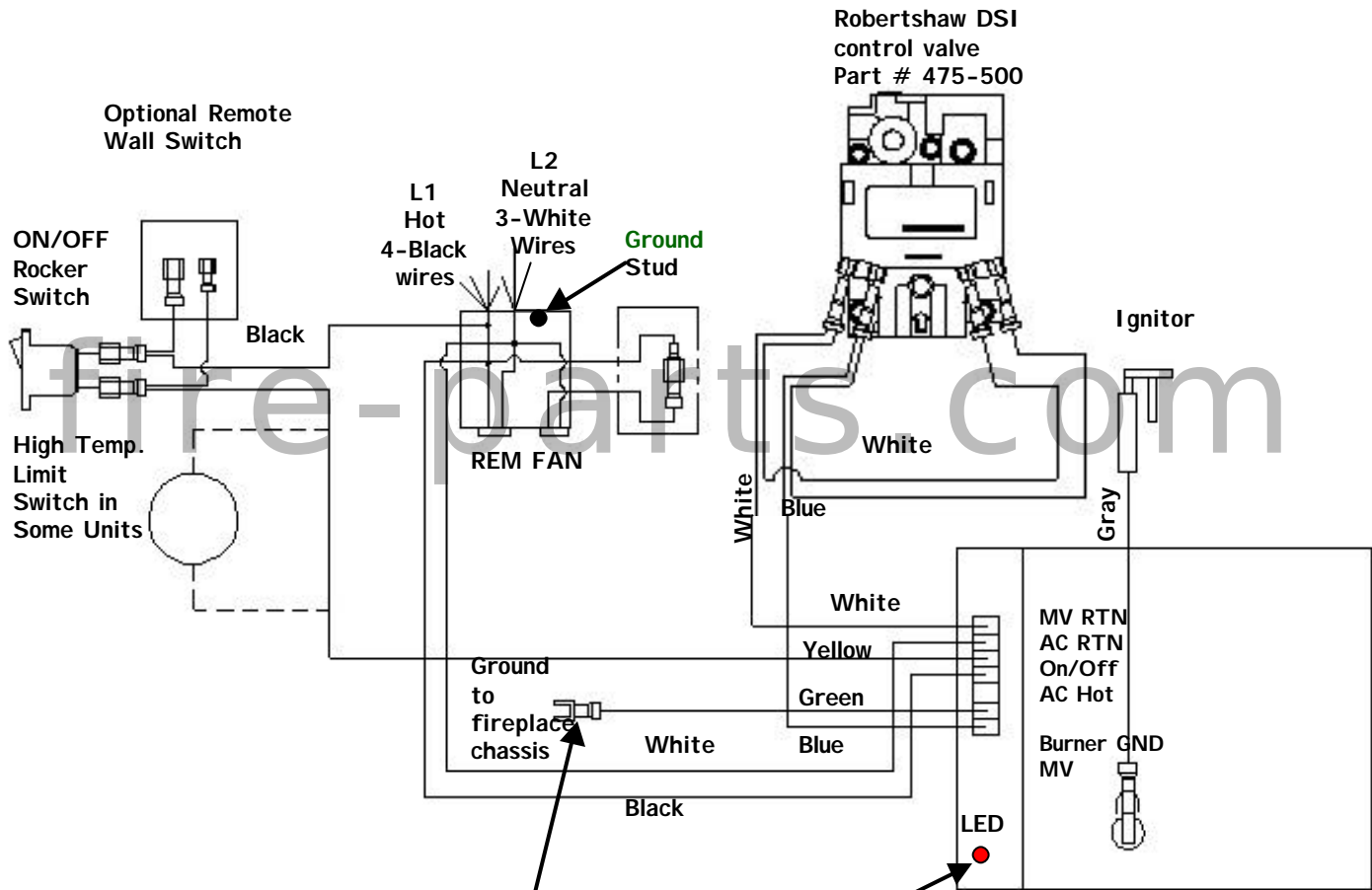
ON/OFF
Rocker
Switch



Part # SRV60-521
ON/OFF Rocker Switch

RAM 1MC1-05 (Robertshaw Valve)

Wiring Diagram



Note: When connecting ground wire, NO barriers such as paint, oil, or any insulating material is present on ground leads.

LED codes:

- Slow Flash - Normal operation no call for heat.
- Fast Flash - Normal operation call for heat.
- Two Flash - 5 minute lockout (reset required)
- Steady Flash - Hard lockout control failure.

Problem: The ignitor will not spark (Ram 1MC1-05 Robertshaw valve).

Is the **LED** flashing?

YES, - The problem is the **module** or the **ignitor**

Check gray cable for the **ignitor**, make sure the connections are tight.

The **LED** is not flashing.

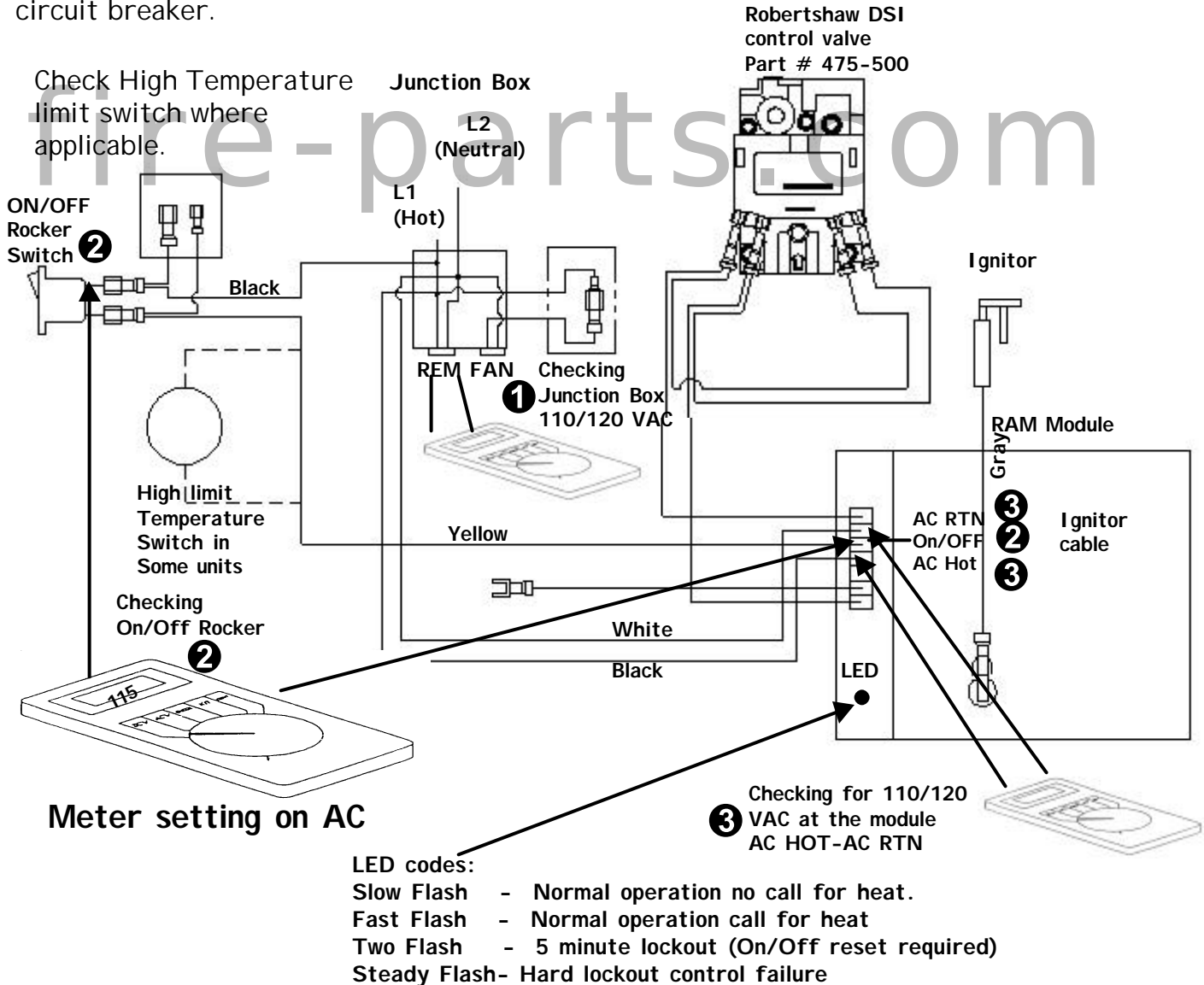
1 NO, - Check for 110/120 VAC at the **REM** on the junction box.

Electricity, check circuit breaker and/or wiring in the junction box.

2 YES, - Check On/Off rocker switch for 110/120 VAC. With the On/Off rocker switch. "ON", place one of the lead wires from volt meter to the black wire on the switch, the other lead wire from the volt meter to **On/Off** pin (yellow wire) on the module.

3 YES, - Check if there is 110/120 VAC at the module. Place one of the lead wires from the volt meter to AC HOT (black wire) and the other lead wire from the volt meter to AC RTN (white wire) on the module. If there is 110/120 VAC, **REPLACE THE MODULE.**

If **two flashes** on the **LED**, the system is in a 5 minute lockout. Reset On/Off switch and/or circuit breaker.



**Problem: The ignitor will not spark (RAM 1MC1-05 Robertshaw valve).
High Temperature Limit Switch**

Units with a high temperature limit switch.

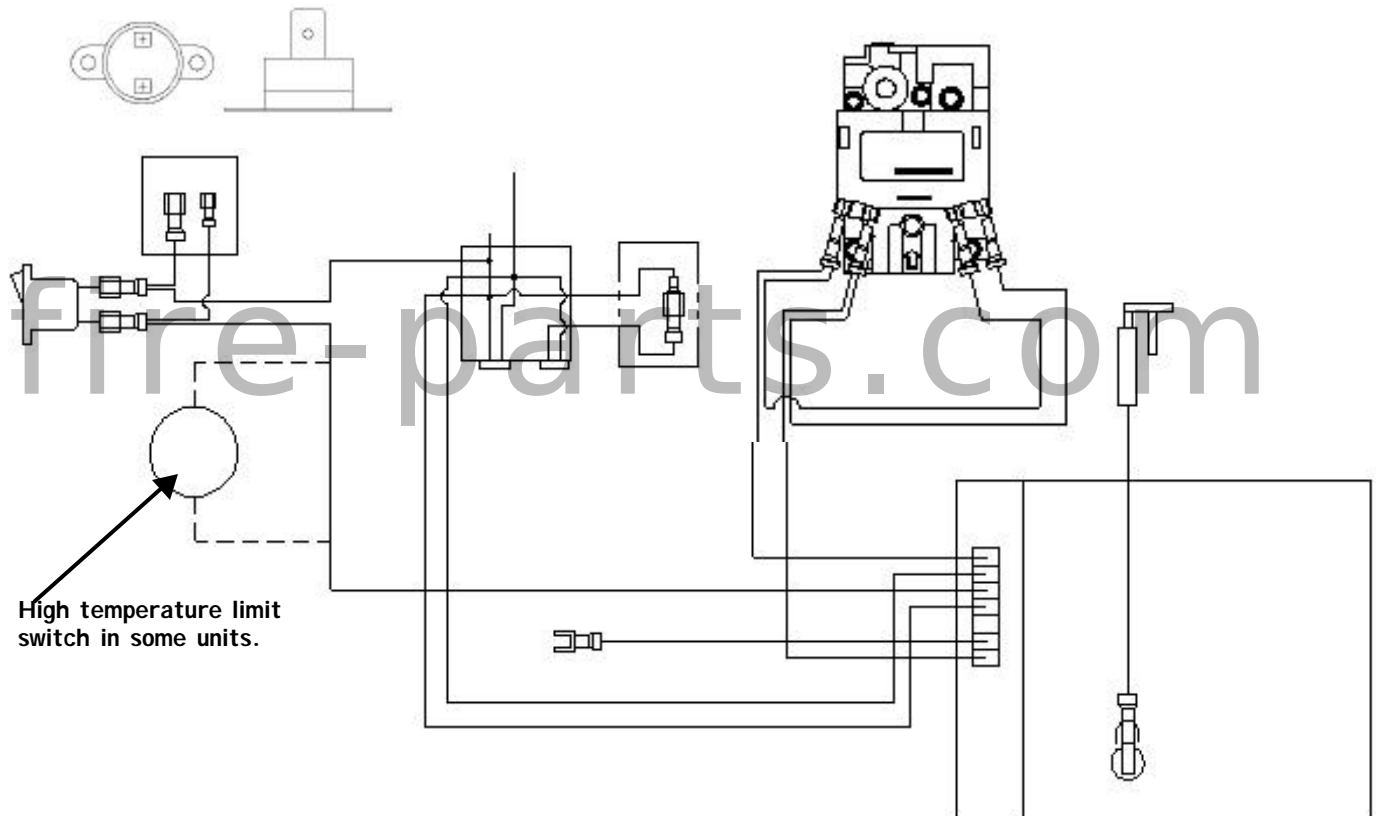
The high temperature limit switch is normally open.

Does the high temperature limit switch have continuity?

YES,- REPLACE THE HIGH TEMPERATURE LIMIT.

NO, - SEE THE IGNITOR WILL NOT SPARK (see previous page).

High Temperature Limit Switch
Part # SRV066-531



**Problem: Ignitor sparks for 4 to 7 seconds no flame. Locks out.
(Ram 1MC-05 Robertshaw valve)**

Is the ignitor over the burner ports?

NO,- Adjust ignitor bracket so ignitor is over the burner ports.

Is there air in the gas line?

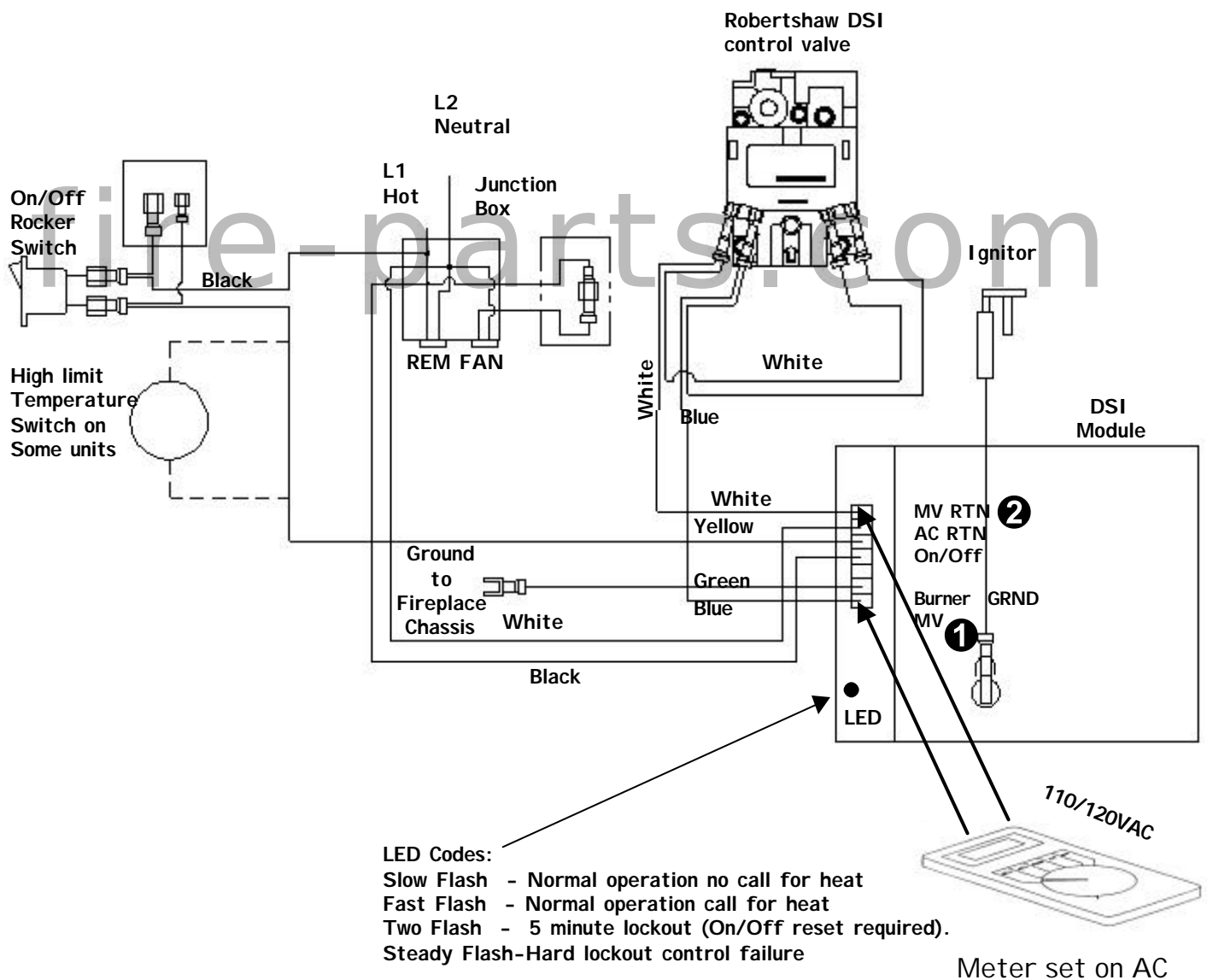
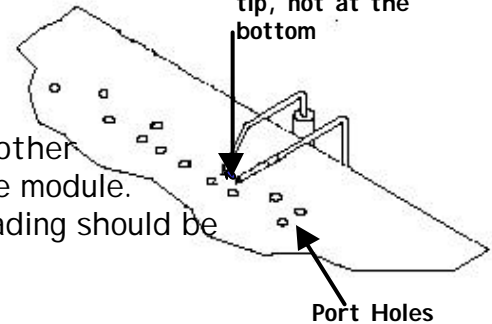
YES,- Bleed the air from the gas line.

Is there 110/120 VAC at gas valve?

To check: Place one of the lead wires from the meter to MV **①** on the module, place the other lead wire from the meter to MV RTN **②** on the module. Turn "ON" the On/Off rocker switch. The reading should be 110/120 VAC.

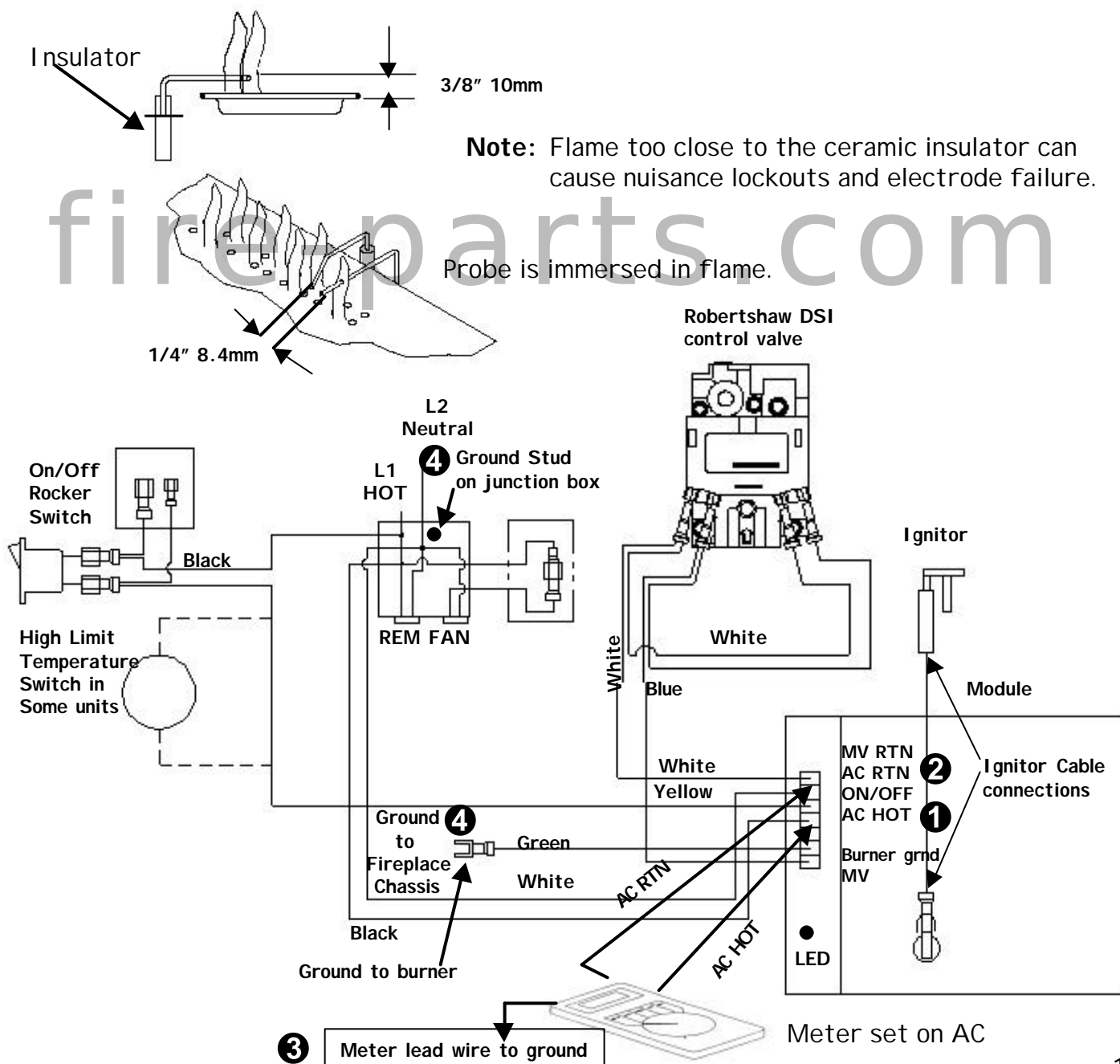
YES,- If the valve is not opening **REPLACE VALVE.**

Make sure ignitor is sparking at the tip, not at the bottom



Problem: Flame comes on, but will not stay lit (RAM 1MC-05 Robertshaw).

1. **Check electrical polarity.** To check polarity place one of the lead wires from the meter to **120 VAC HOT** ① terminal on the module. Place the other lead wire from the meter to **ground**. ③ It should read 110/120 VAC. Then place one of the lead wires from the meter to **120 VAC RTN** ② and the other lead wire from the meter to **ground**. ③ This should read **0 volts**. If these are reversed, disconnect power source and switch the polarity at the junction box.
2. **Check ignitor position.** Make sure that the probe is immersed in flame at all times when the burner is lit.
3. **Check ground.** The **junction box** must be grounded. The **burner** must be grounded ④ Make sure the ground wire has a good connection.
4. **Ignitor cable.** Make sure the ignitor cable has a good connection.



Section 3

RAM-1-RS

Parts Identification

Wiring

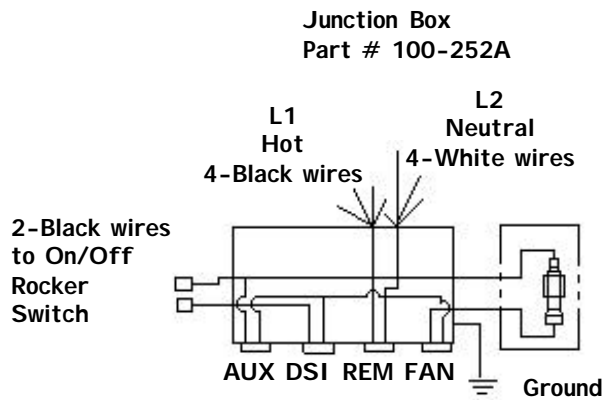
fire-parts.com

Problems:

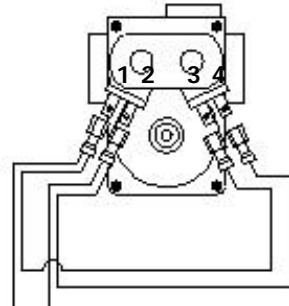
1. Ignitor will not spark.
2. Ignitor sparks, no flame.
3. Flame comes on, but will not stay lit.

RAM-1-RS

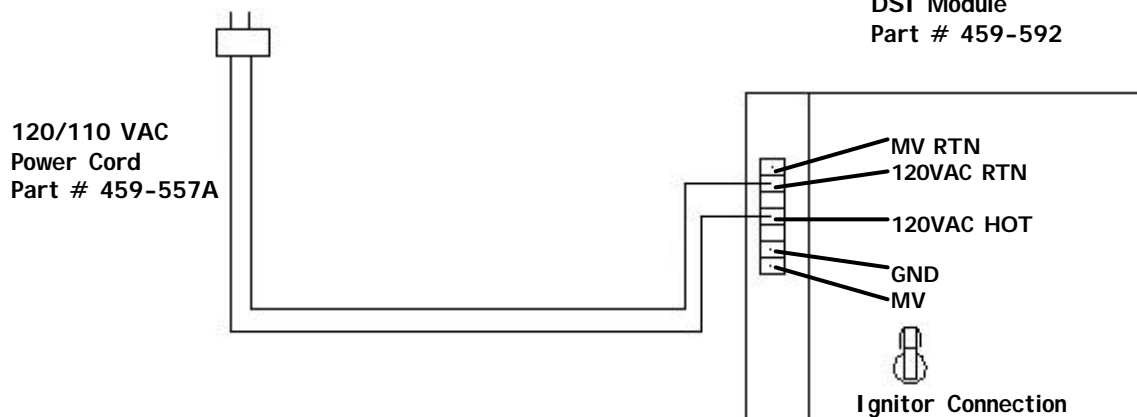
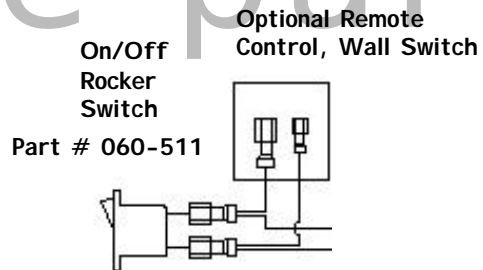
Part Identification



DSI Control Valve
Part # 476-500

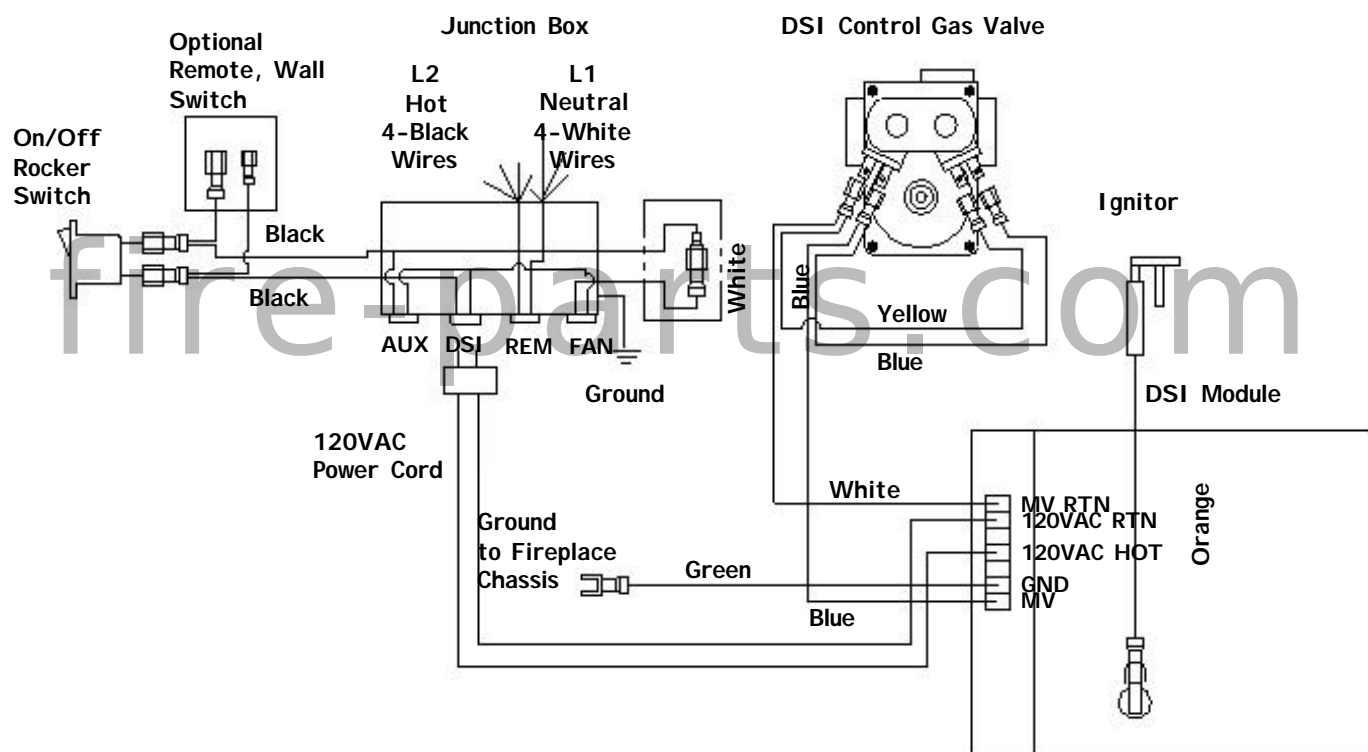


Ignitor
Part # 501-592



RAM-1-RS

Wiring Diagram



Problem: The Ignitor will not spark (RAM-1-RS).

Is there 110/120 VAC to the junction box at the remote receptacle?

① **NO**, - Check circuit breaker and junction box wiring.

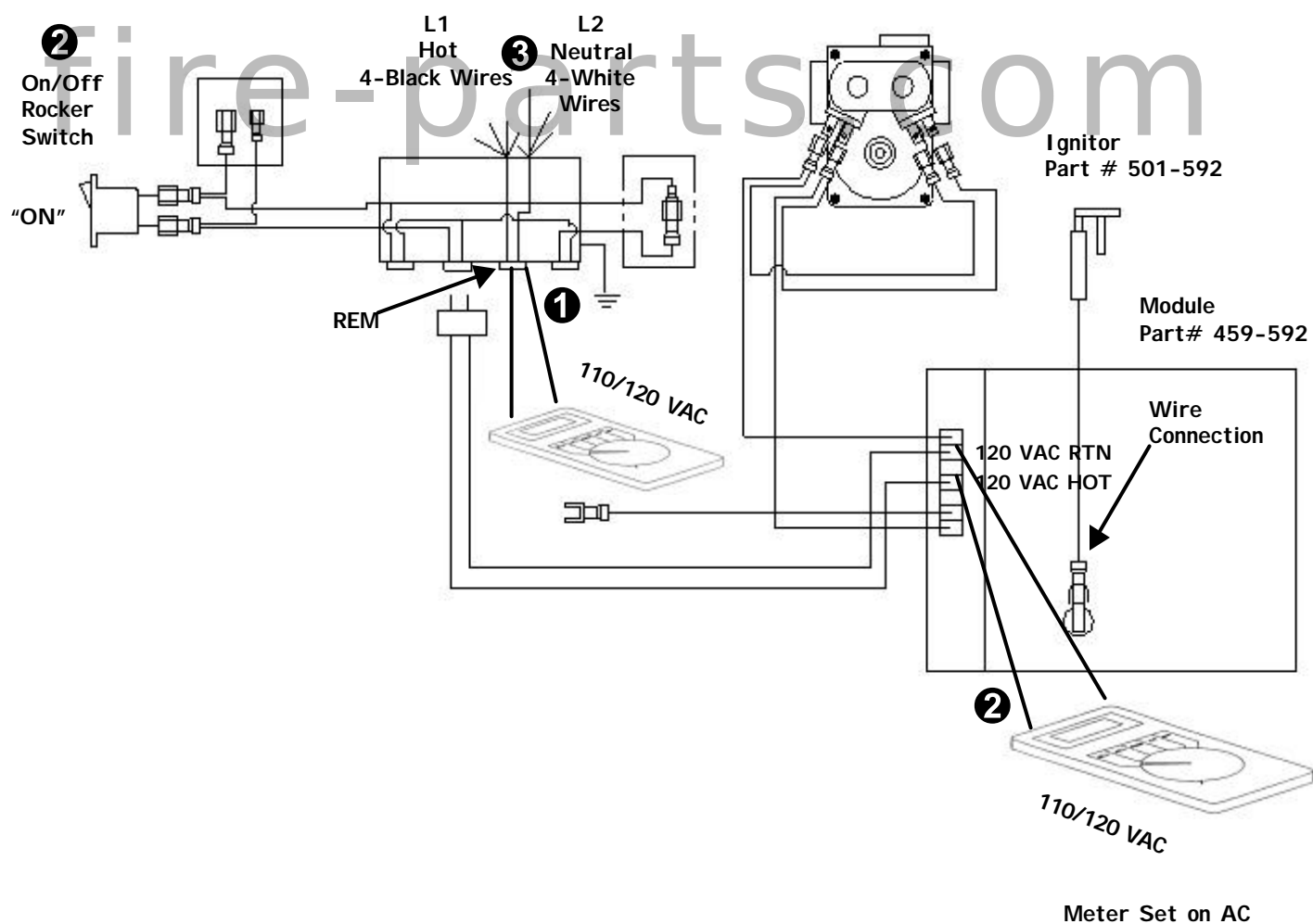
Is the ignitor wire (orange) connected to the top of module?

NO, - Connect the orange wire to the module from the electrode.

② **YES**, - With the rocker switch in the "ON" position there should be 110/120 VAC at 120 VAC RTN and 120 VAC HOT.

③ **NO**, - Check junction box wiring.

YES, - REPLACE MODULE, NO SPARK, REPLACE THE IGNITOR.



Problem: Ignitor sparks, no flame (RAM-1-RS).

Is the gas shut-off in the "on" position?

NO, - Turn on the gas shut off.

Is there air in the gas line?

YES, - Purge the gas line of air.

Is there blockage at the gas valve?

YES, - Remove the obstruction.

Is the burner ports on the burner blocked?
(too many embers)

YES, - Remove and reposition embers.

Is the burner orifice plugged?

YES, - Remove and clean the burner orifice.

Is the ignitor over the port holes?

NO, - Adjust electrode bracket so ignitor positioned over port holes.

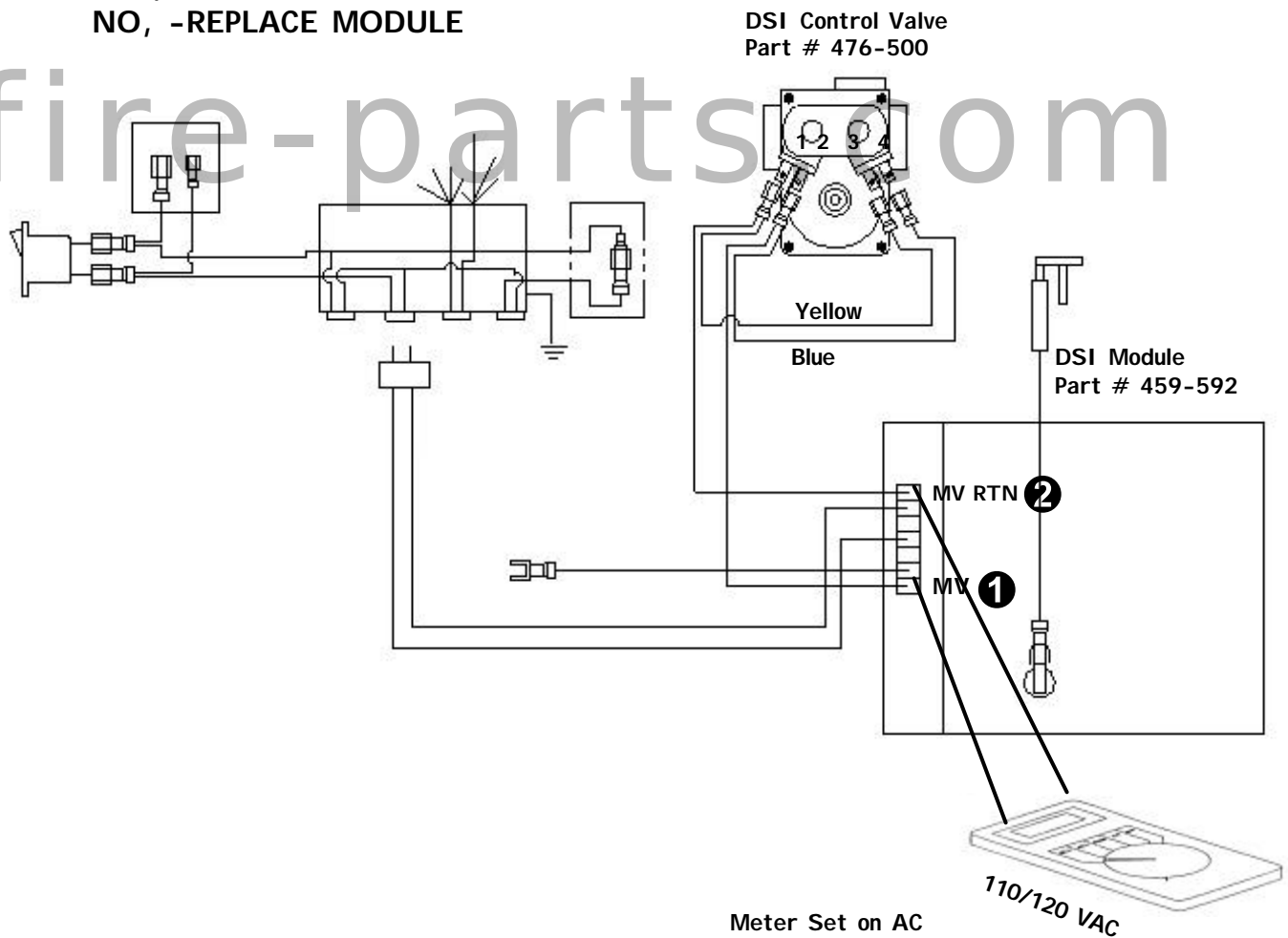
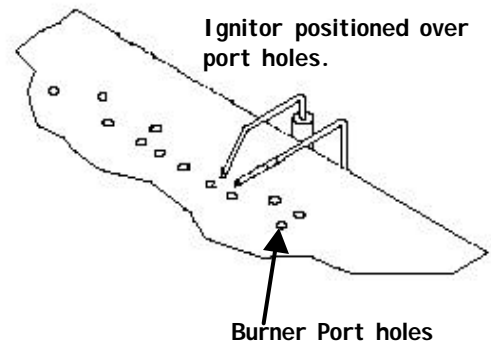
Is the ceramic cracked on the ignitor.

YES, REPLACE IGNITOR

Is there 120 VAC between MV ① and MV RTN? ②

YES, -REPLACE VALVE.

NO, -REPLACE MODULE



Problem: Burner lights, but won't stay lit (RAM-1-RS).

Is the ignitor engulfed in the flame?

NO, - Adjust bracket so the ignitor is engulfed in the flame.

Is the junction box grounded?

NO, - Make sure the junction box is grounded. **4**

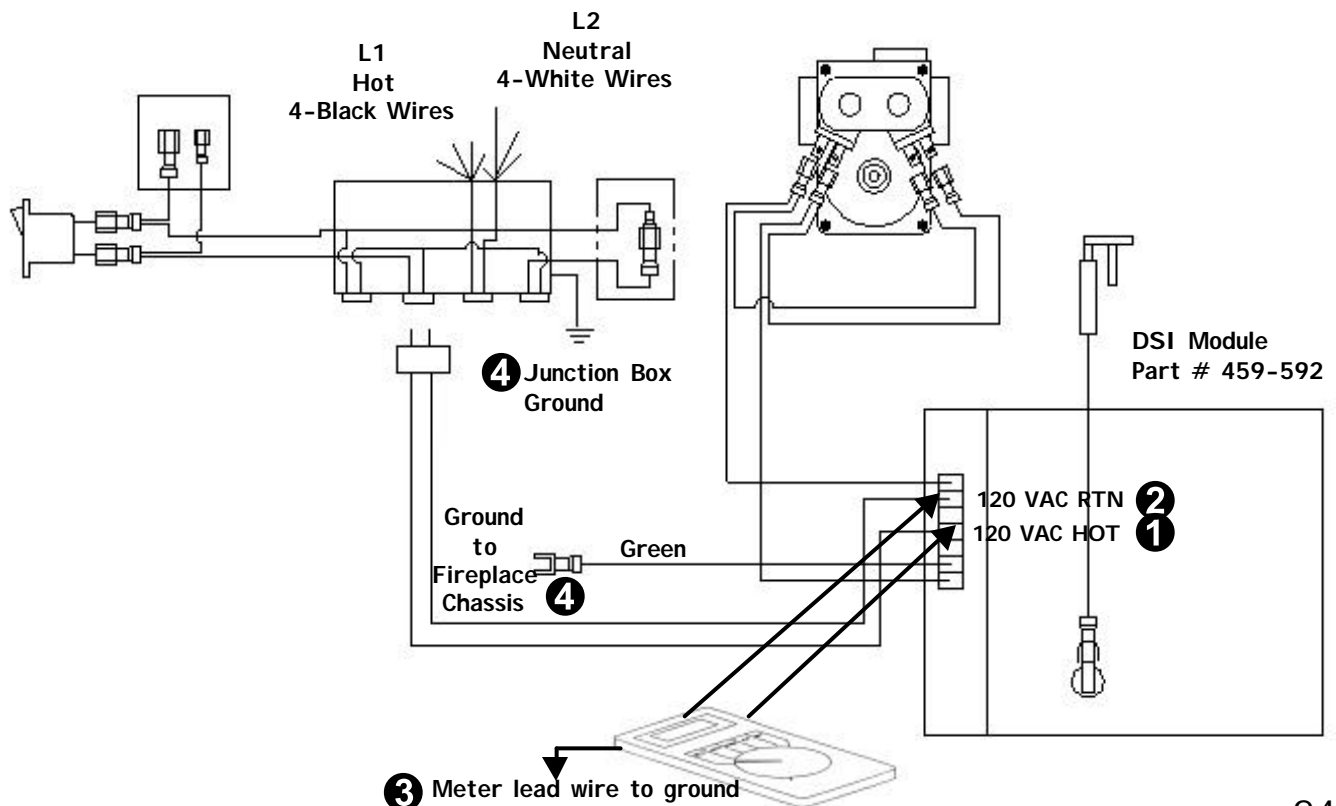
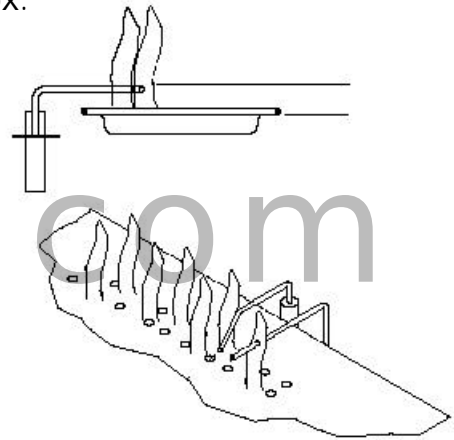
Is the module grounded to the burner?

NO, - Make sure the module is grounded on bare metal and fasten securely to the burner. **4**

YES, - Check the electrical polarity.

To check polarity place one of the lead wires from the meter to 120 VAC HOT **1** terminal on the module. Place the other lead wire from the meter to ground. **3** It should read 110/120 VAC. Then place one of the lead wires from the meter to 120 VAC RTN **2** and the other lead wire from the meter to ground. **3** The reading should be 0 volts. If these are reversed, disconnect power source and switch the polarity wires at the junction box.

YES, - Polarity is correct. REPLACE MODULE.



Section 4

DSI System

Fenwal 24

Volt System

Parts Identification

Wiring

Problems:

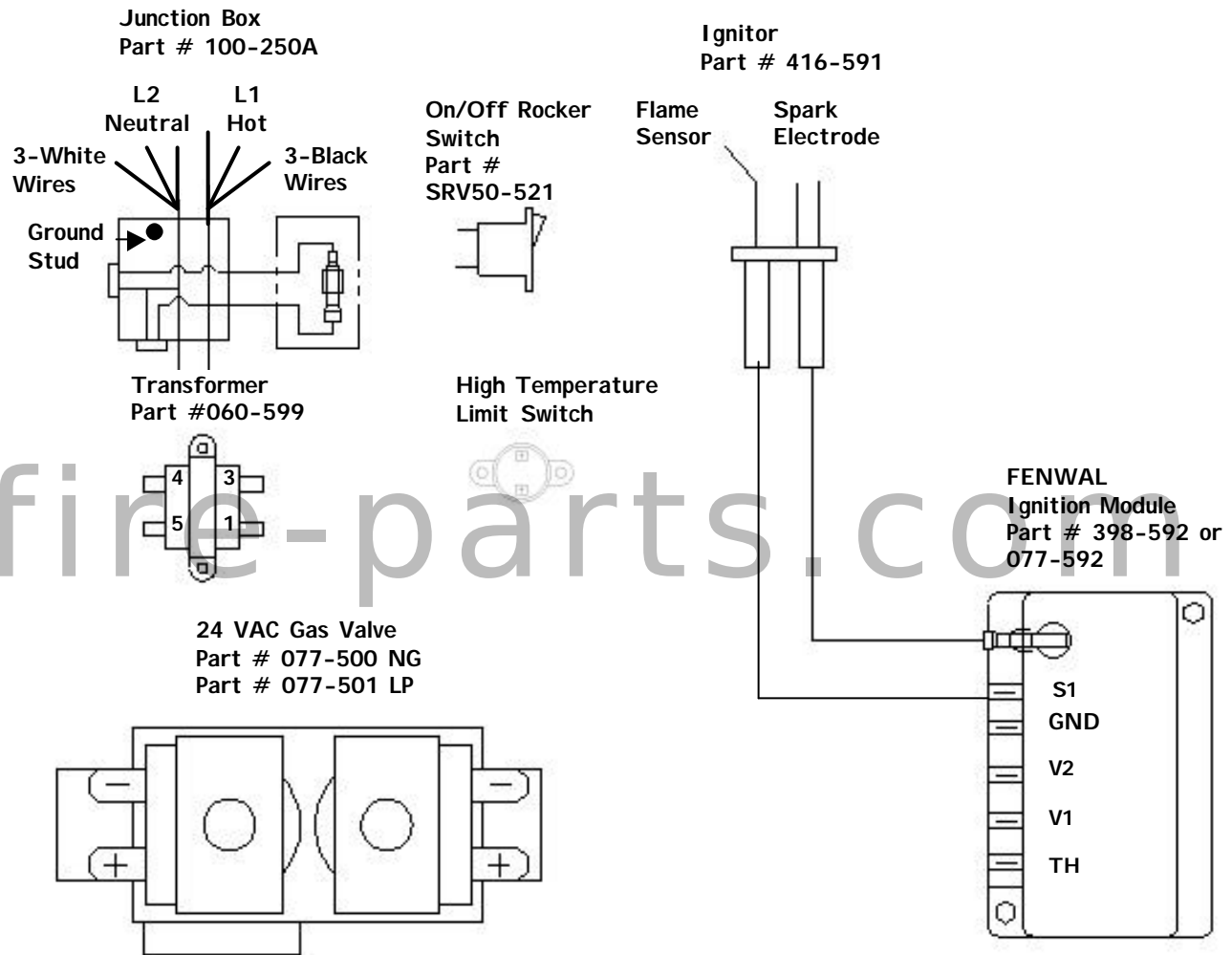
1. The ignitor will not spark.
2. Ignitor sparks, no flame.
3. Flame comes on, but will not stay lit

Fenwal 24 Volt System

Part Identification

Note: Fenwal (Triton Series 2460D) with a five minute lockout.

DSI System



Note: Fenwal (Triton Series 2460D) with a five minute lockout.



Problem: The ignitor will not spark (FENWAL).

Is there 110/120 VAC at the remote (REM) receptacle on the Junction Box?

NO, - Check circuit breaker and junction box wiring.

1 YES, - With rocker switch "ON", is there 110/120 VAC at terminals 1 and 3 at the transformer?

NO, - Check wiring to On/Off switch and transformer.

2 Is there 24 VAC at terminals 4 & 5 at the transformer?

NO, - **REPLACE THE TRANSFORMER.**

YES, - With the rocker switch **ON**, is there 24 VAC between V1 and V2 wires going to the module? **3**

NO, - **REPLACE MODULE**

4 Is the **orange** electrode wire connected to the module?

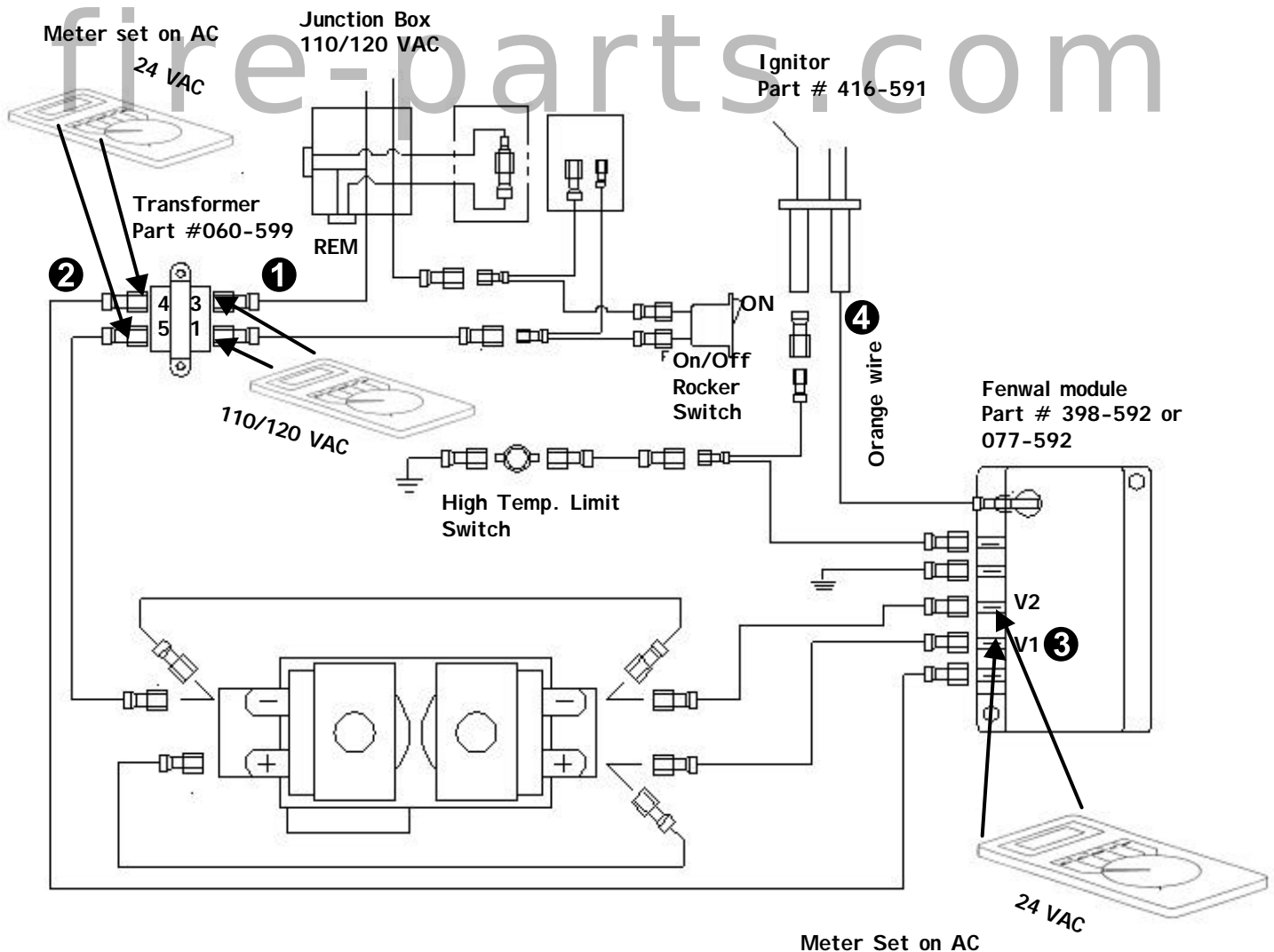
NO, - Connect orange wire to the module.

Are high temp. switch connections good (where applicable, Ref. Manual)?

YES, - Check continuity, the switch is normally open. Should not have continuity.

YES, - **REPLACE HIGH TEMPERATURE LIMIT SWITCH.**

YES, - **REPLACE SPARK ELECTRODE.**



Meter Set on AC

Problem: Spark at the electrode, burner won't light (FENWAL).

Is the gas shut-off in the "on" position?

NO, - Turn on the gas shut off.

Is there air in the gas line?

YES, - Purge the gas line of air.

Is there blockage at the gas valve?

YES, - Remove the obstruction.

Are the burner ports blocked?

(too many embers)

YES, - Remove and reposition the embers.

Is the burner orifice plugged?

YES, - Remove the orifice and clean.

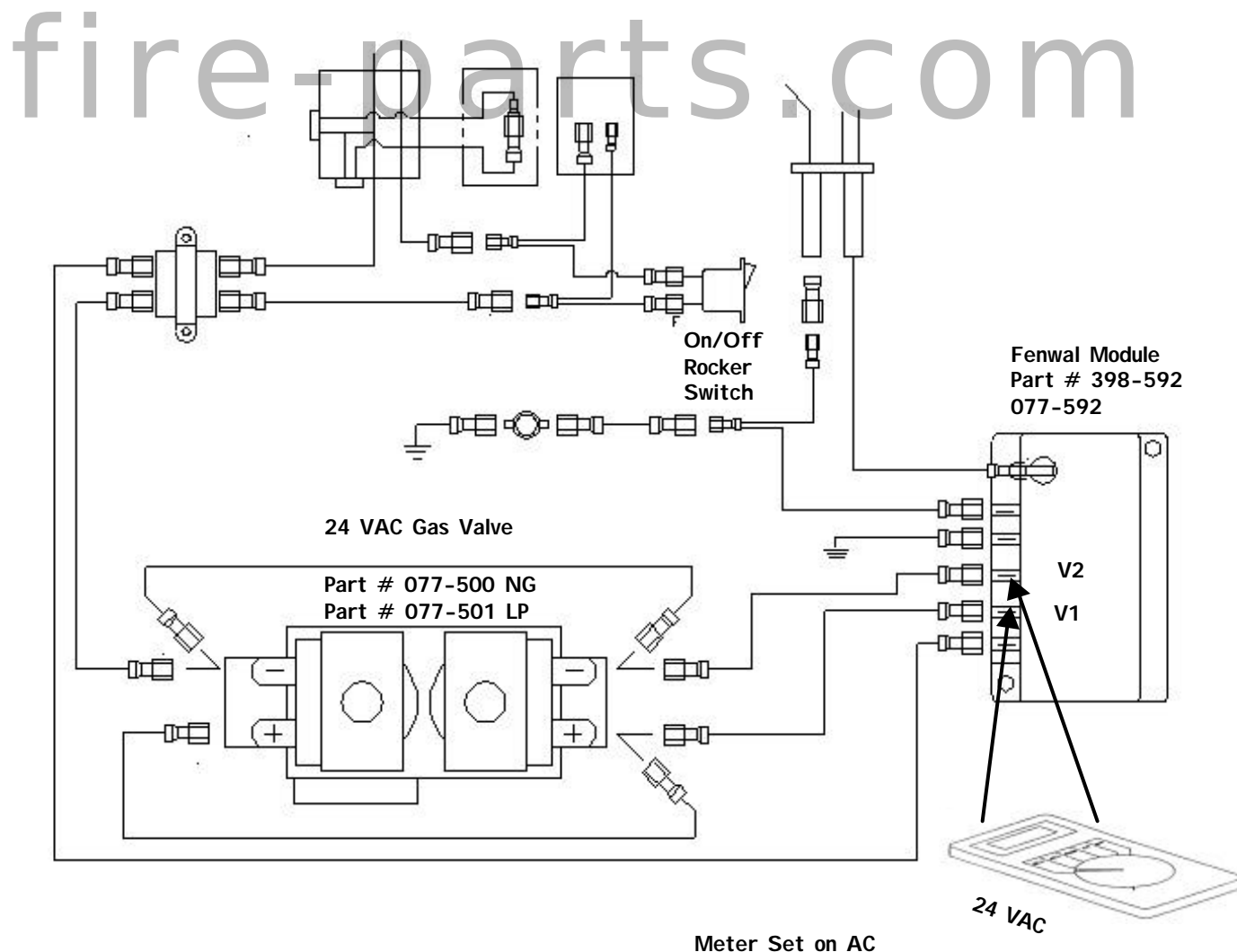
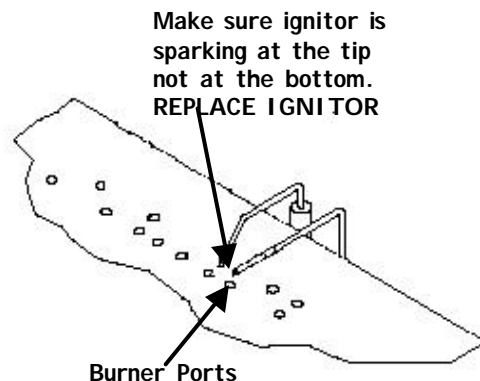
Is the ignitor over the burner port holes?

NO, - Reposition the ignitor so it is over the burner port holes.

Is there 24 VAC at **V1** and **V2** on the module?

NO, - **REPLACE THE MODULE.**

YES, - **REPLACE THE VALVE.**



Problem: Burner lights, but won't stay lit (FENWAL).

Is yellow flame sensor wire connected to S1 at the module?

NO,- Connect the wire. Check wire connections.

Are the connections good for the high temp. limit switch (where applicable Ref. Manual)? HTL is normally open. The limit switch should not have continuity.

YES ,- REPLACE HIGH TEMP. LIMIT SWITCH.

Is burner grounded to the module?

NO,- Ground burner to module.

Is junction box grounded?

NO,- Ground junction box.

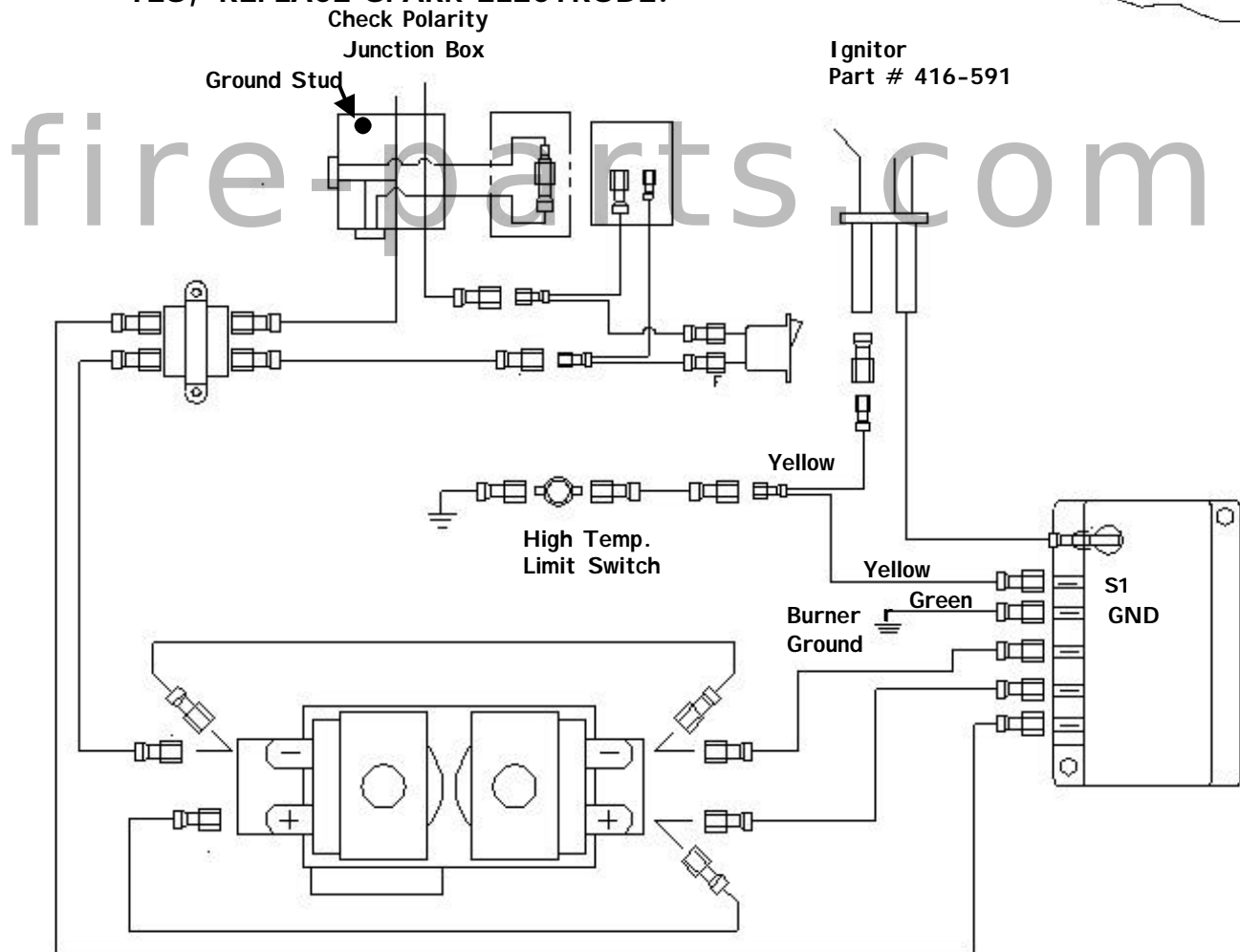
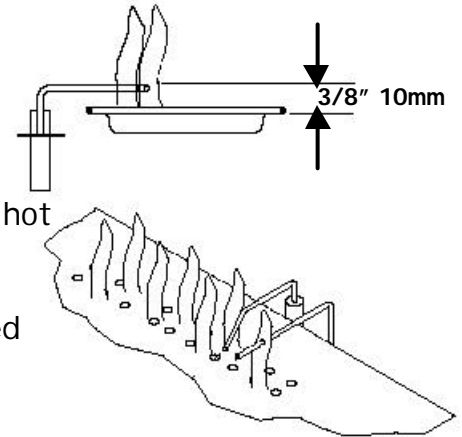
Is the polarity correct?

NO,- Disconnect 110/120 VAC at source and reverse hot and common.

Does the flame engulf the flame sensor?

NO,- Adjust bracket assy. so flame sensor is engulfed in flame.

YES,-REPLACE SPARK ELECTRODE.



Section 5

DSI System

CFX-DA

Parts Identification

Wiring

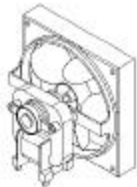
Problems:

1. Ignitor will not spark.
2. Ignitor sparks, but not flame
3. Flame comes on, but won't stay lit.
4. Flame comes on, turns blue goes out.

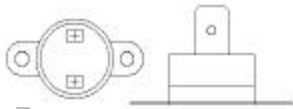
CFX-DA

Parts Identification

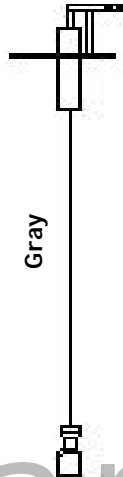
Combustion Blower
Part # 514-500



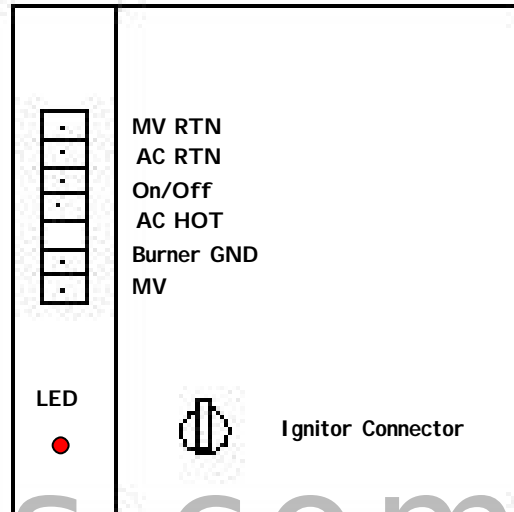
High Temperature Limit Switch
Part # 514-530



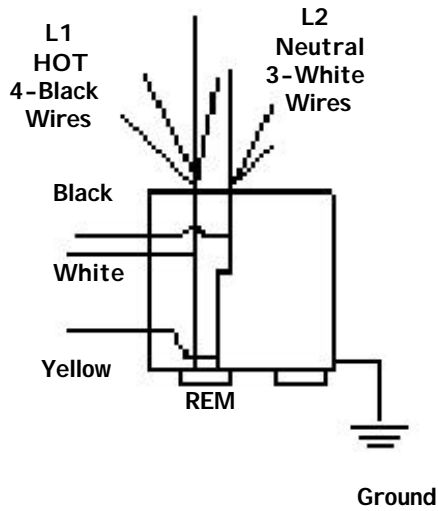
Ignitor
Part # 501-591



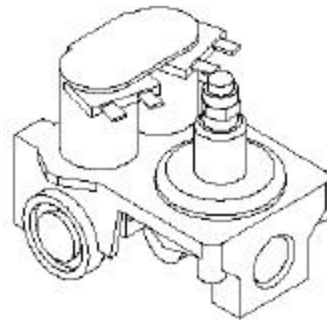
DSI Module
Part # 501-592



Junction Box
Part # 100-256A



DSI Control Valve
Part # 476-500

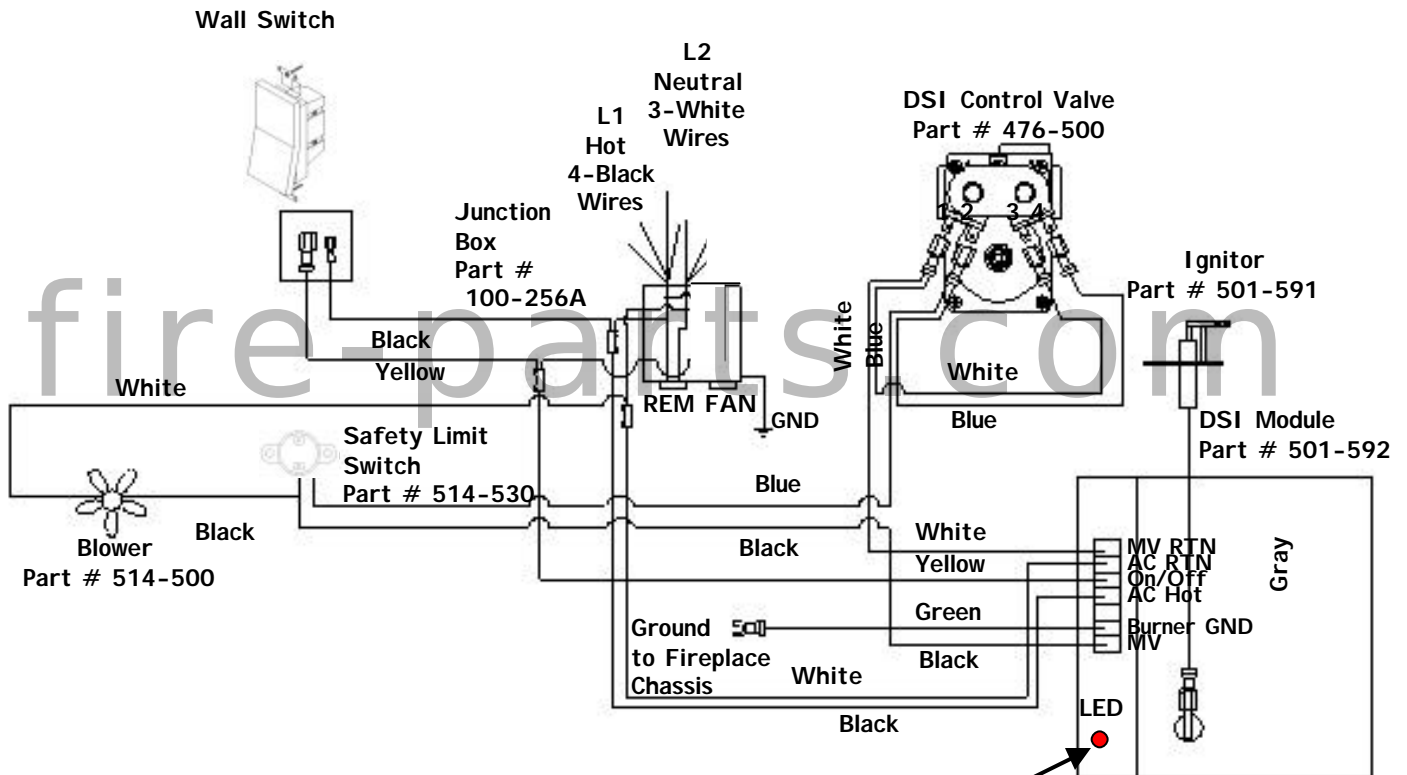


Wall Switch
Part # 130-511



CFX-DA

Wiring Diagram



LED codes:

- | | |
|--------------|--------------------------------------|
| Slow Flash | - Normal operation no call for heat. |
| Fast Flash | - Normal operation call for heat. |
| Two Flash | - 5 minute lockout (reset required) |
| Steady Flash | - Hard Lockout control failure |

Problem: The ignitor will not spark (CFX-DA).

Is the LED flashing?

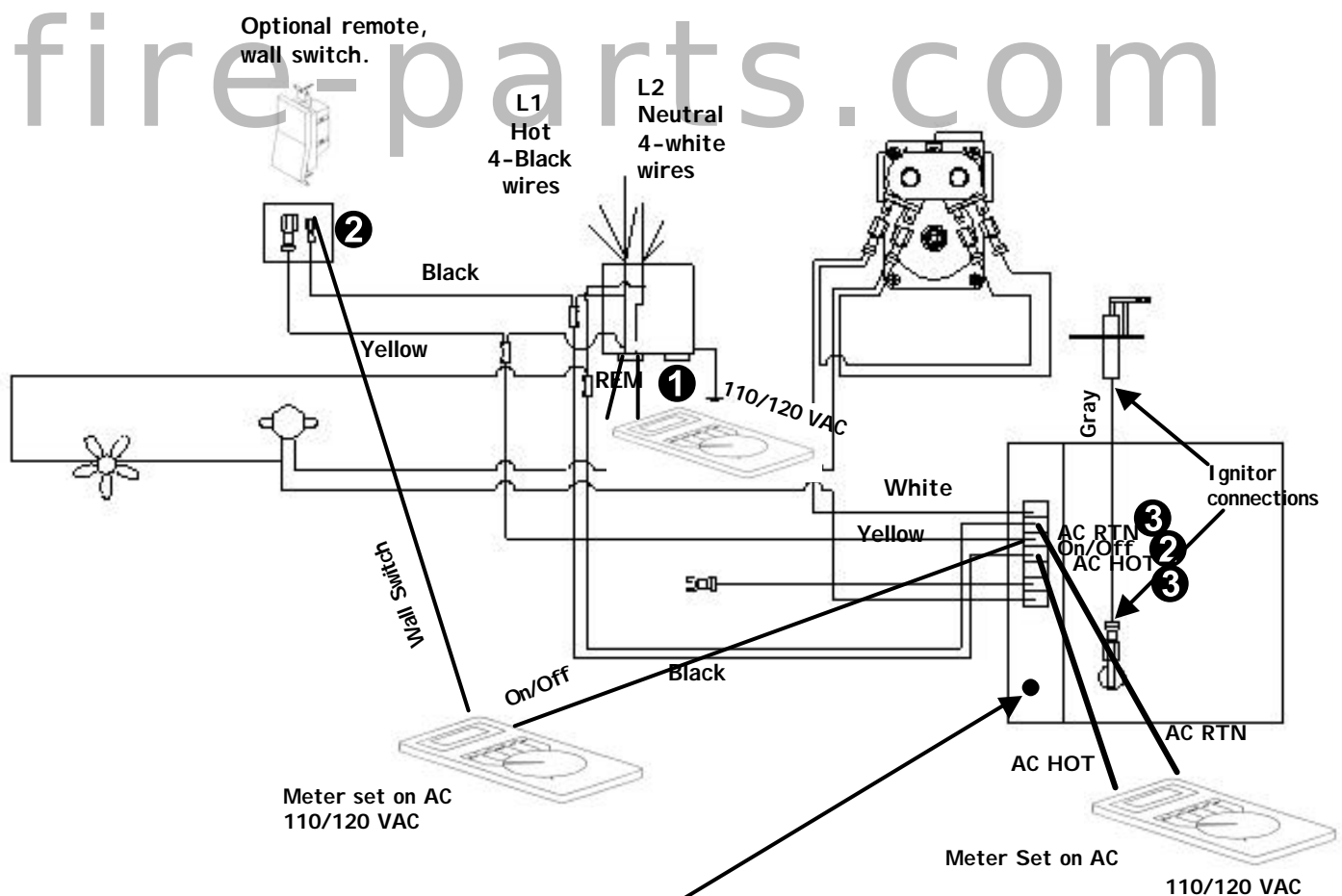
YES,- The problem is the ignitor or the module.

Check gray cable for the ignitor, make sure the connections are tight.

The LED is not flashing.

- ① Check for 110/120 VAC at the REM on the junction box.
Electricity, check circuit breaker and/or wiring in the junction box.
- ② YES,- Check wall switch for 110/120 VAC. With the wall switch "ON", place one of the lead wires from volt meter to the black wire leading to the wall switch.
The other lead wire from the volt meter to On/Off pin (yellow wire) on the module.
- ③ YES,- Check if there is 110/120 VAC at the module. Place one of the lead wires from the volt meter to AC HOT (black wire) and the other lead wire from the volt meter to AC RTN (white wire) on the module. If there is 110/120 VAC, REPLACE THE MODULE.

If two flashes on the LED, the system is in a 5 minute lockout. Reset wall switch and/or circuit breaker.



LED codes:

Slow Flash - Normal operation no call for heat.

Fast Flash - Normal operation call for heat.

Two Flash - 5-minute lockout (wall switch reset required)

Steady Flash- Hard lockout control failure.

Problem: The ignitor sparks, but no flame. (CFX-DA).

Is the gas shut-off in the "ON" position?

NO, - Turn the gas shut-off "ON".

Is there air in the gas line?

YES, - Purge the gas line of air.

Is there blockage at the gas valve?

YES, - Remove the obstruction.

Are the burner ports blocked?

(too many embers)

YES, - Remove and reposition the embers.

Is the burner orifice plugged?

YES, - Remove the orifice and clean.

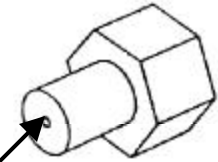
Is the ignitor over the port holes on the burner?

NO, - Reposition the ignitor bracket so the ignitor is over the port holes.

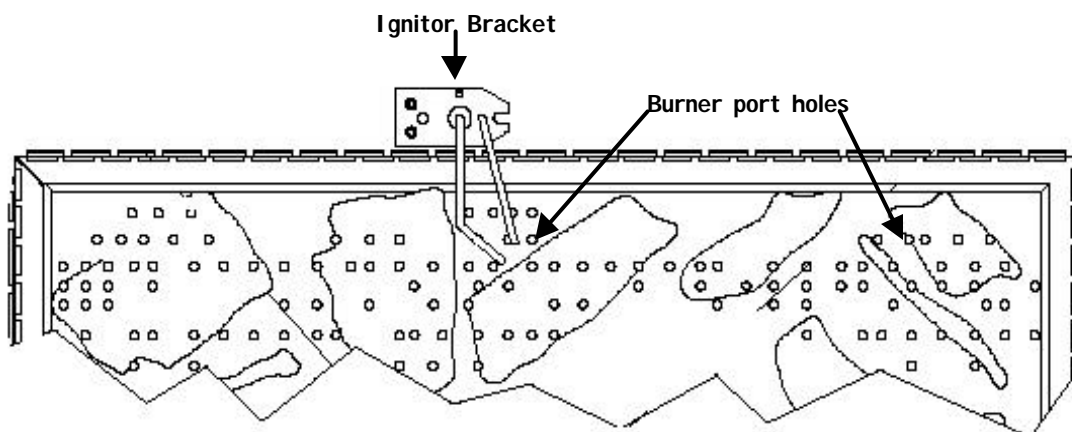
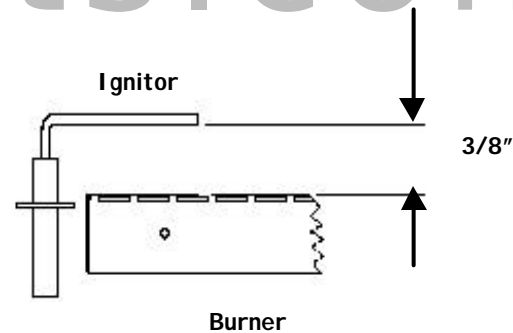
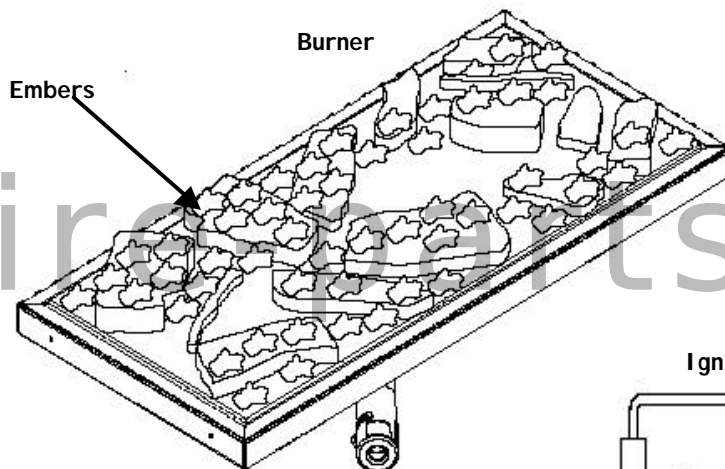
Gas shut-off "ON" position



Burner orifice



Plugged!



Problem: The ignitor sparks, but no flame. (cont.) (CFX-DA)

Wall switch turned "ON".

Is there 110/120 VAC between MV RTN and MV pins ? ❶

❷ NO, - Does the High temperature limit switch have continuity?

Check the high temperature limit switch for continuity. Disconnect the power source. Remove the wires from the high temperature limit switch and check continuity. The high temperature limit switch is normally closed and should have continuity. If the high temperature limit switch does not have continuity, REPLACE THE HIGH TEMPERATURE LIMIT SWITCH.

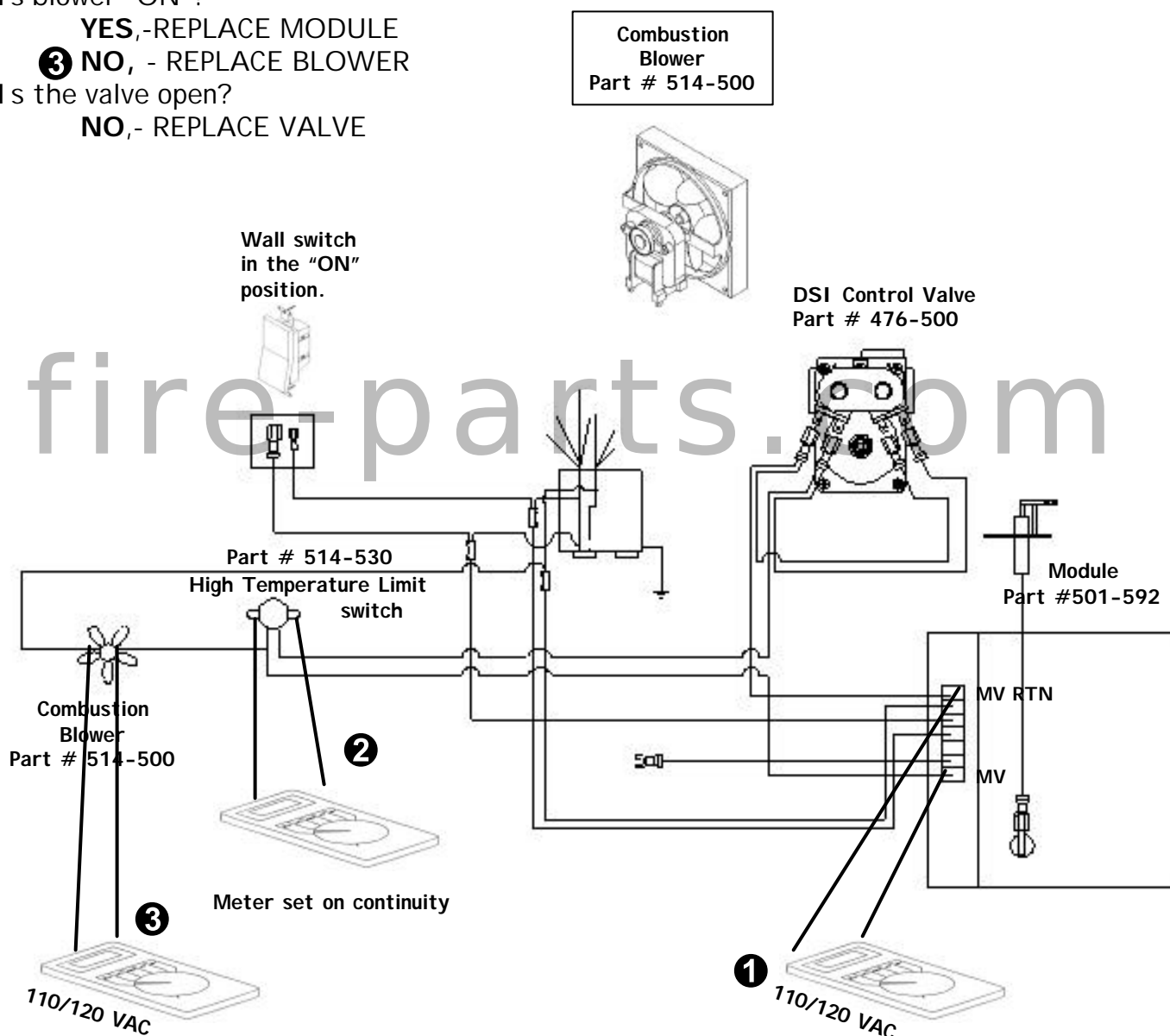
Is blower "ON"?

YES, -REPLACE MODULE

❸ NO, - REPLACE BLOWER

Is the valve open?

NO, - REPLACE VALVE



Meter set on AC

Blower does not work.

Check for 110/120 VAC on connections.

YES, -REPLACE BLOWER

Meter set on AC

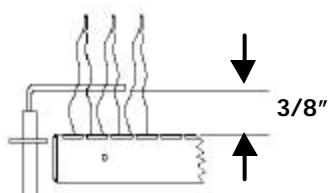
Problem: Flame comes on, but will not stay lit (CFX-DA).

Check electrical polarity: To check polarity place one of the lead wires from the meter to 120 VAC HOT **①** terminal on the module. Place the other lead wire from the meter to ground. **③** It should read 110/120 VAC. Then place one of the lead wires from the meter to 120 VAC RTN. **②** And the other lead wire from the meter to ground. **③** This should read 0 volts. If these are reversed, disconnect the power source and switch the polarity at the junction box.

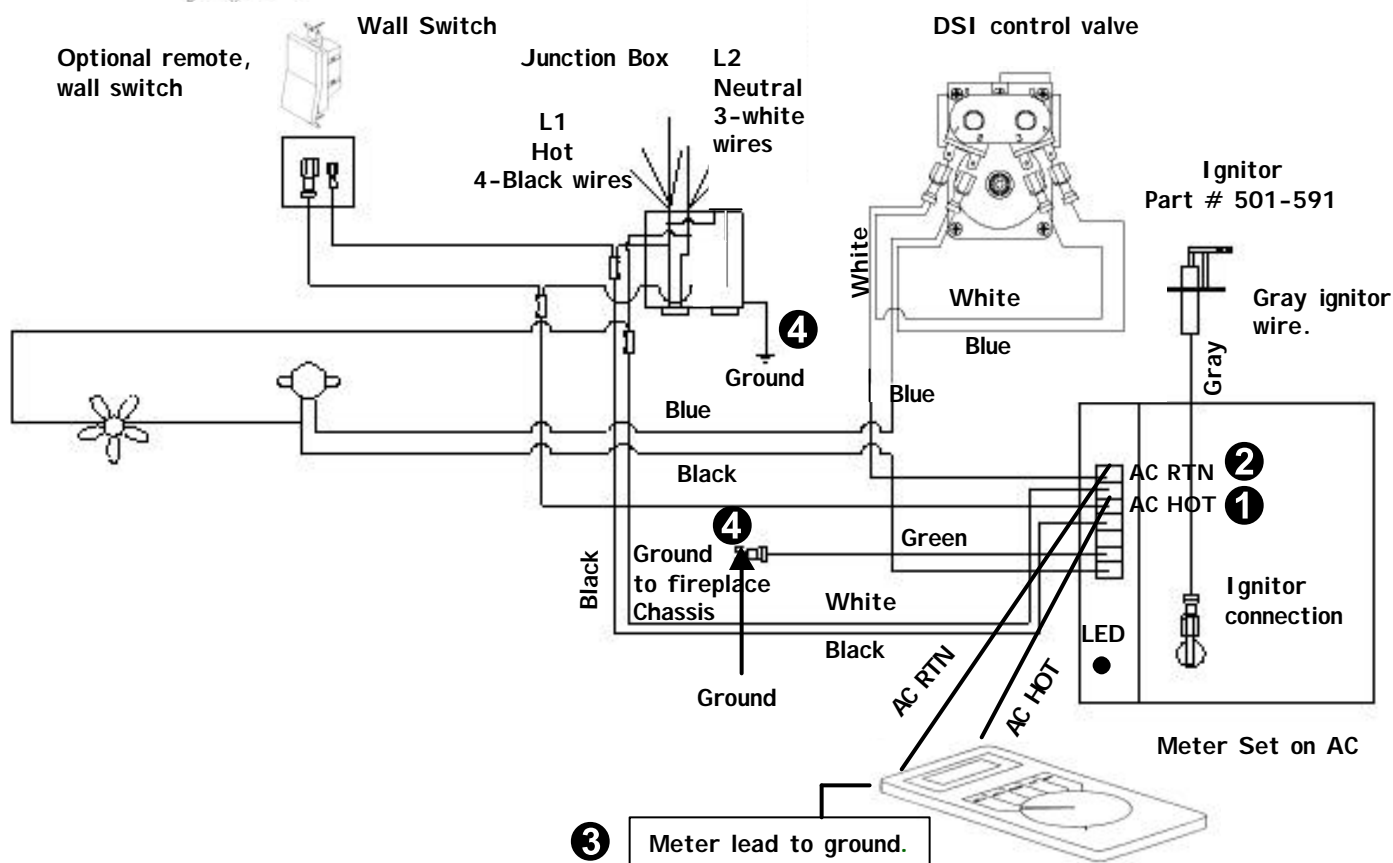
Check ignitor position: Make sure that the probe is immersed in the flame at all times.

Check ground: Grate **MUST BE** installed to operate correctly. Check ground wire. **④** Make sure the junction box is grounded. **④**

Ignitor cable: Make sure the ignitor cable has a good connection.



NOTE: Flame too close to the ceramic insulator can cause nuisance lockouts and electrode failure.



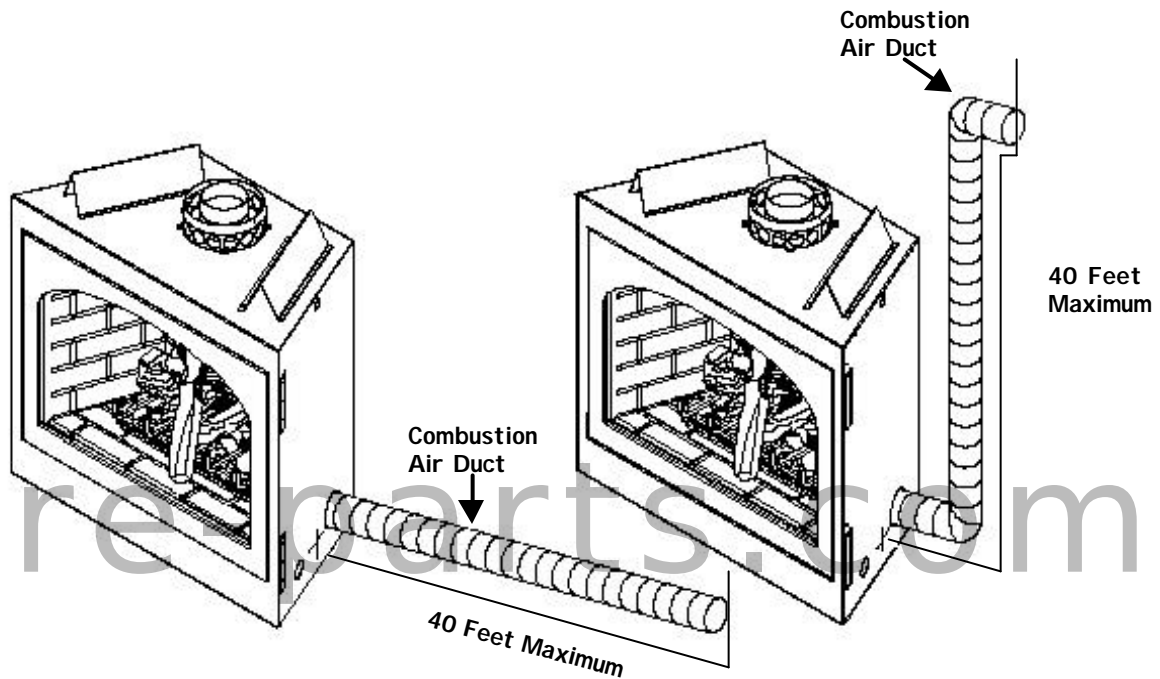
Flame comes on, turns blue and goes out.

Is the outside air connected?

The CFX-DA requires outside air, AK-CFX air kit for combustion air.

Is the blower "ON"?

NO,- REPLACE BLOWER



WARNING: THE COMBUSTION AIR DUCT MUST NEVER ELBOW DOWN AT ANY TIME.

Section 6

DSI System

Grand-50-C

Parts Identification

Wiring

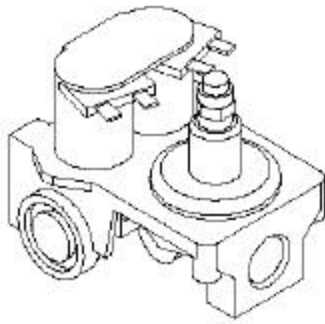
Problems:

1. Ignitor will not spark.
2. Ignitor sparks, but no flame.
3. Flame comes on, but won't stay lit.

Grand-50-C

Parts Identification

2-DSI Control Valves
Part # 476-500

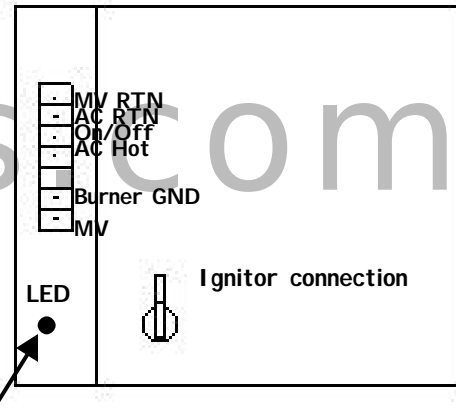


Ignitor
Part # 501-591



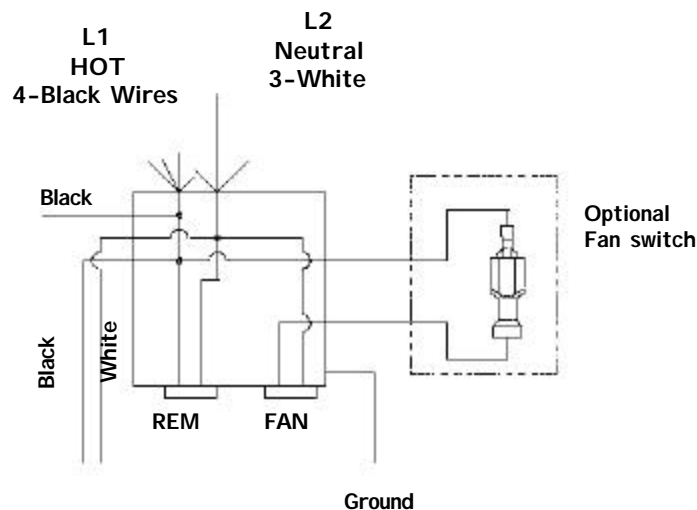
DSI Module
Part # 501-591

2-On/Off
Rocker switches
Part # 60-511

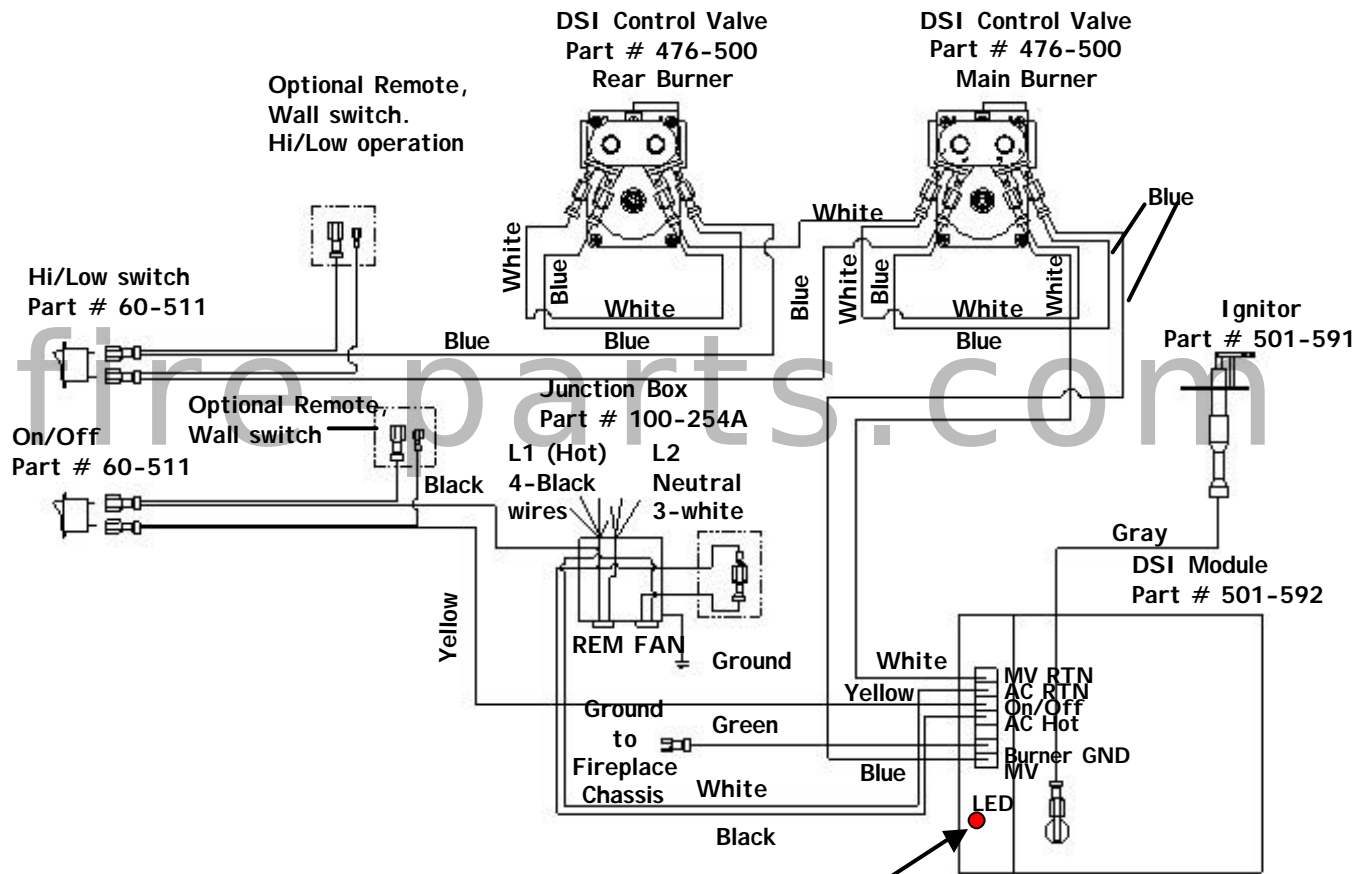


LED codes:

- Slow Flash - Normal operation no call for heat.
- Fast Flash - Normal operation call for heat.
- Two Flash - 5-minute lockout (reset required)
- Steady Flash - Hard Lockout control failure



Grand-50-C Wiring Diagram



LED codes:

- Slow Flash - Normal operation no call for heat.
- Fast Flash - Normal operation call for heat.
- Two Flash - 5 minute lockout (reset required).
- Steady Flash - Hard lockout control failure.

Problem: The ignitor will not spark (Grand-50-C).

Is the LED flashing?

YES,- The problem is the ignitor or the module.

Check gray cable for the ignitor, make sure the connections are tight.

The LED is not flashing.

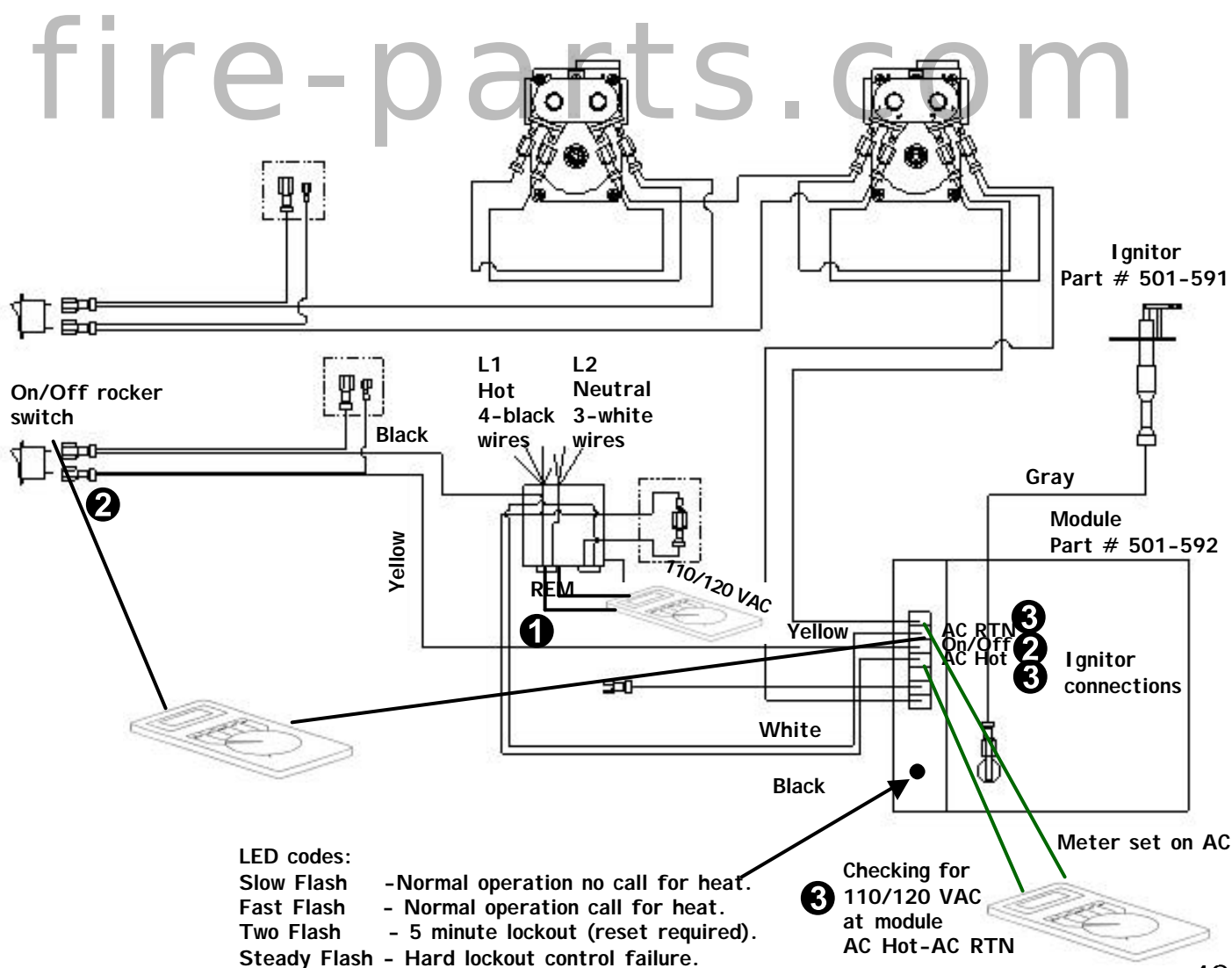
- 1 Check for 110/120 VAC at the REM on the junction box.

Electricity, check circuit breaker and/or wiring in the junction box.

- 2 YES,- Check On/Off rocker switch for 110/120 VAC. With the On/Off rocker switch "ON", place one of the lead wires from volt meter to the black wire on the switch. The other lead wire from the volt meter to On/Off pin (yellow wire) on the module.

- 3 YES,- Check if there is 110/120 VAC at the module. Place one of the lead wires from the volt meter to AC HOT (black wire) and the other lead wire from the volt meter to AC RTN (white wire) on the module. If there is 110/120 VAC, REPLACE THE MODULE.

If two flashes on the LED, the system is in a 5 minute lockout. Reset On/Off switch and/or circuit breaker.



Problem: The ignitor sparks, but no flame (Grand-50-C).

Is the gas shut off in the "ON" position?

NO, - Turn the gas shut-off "ON".

Is there air in the gas line?

YES, - Purge the gas line of air.

Is there blockage at the gas valve?

YES, - Remove the obstruction.

Are the burner ports blocked?

(too many embers)

YES, - Remove and reposition the embers.

Is the burner orifice plugged?

YES, - Remove the burner orifice and clean.

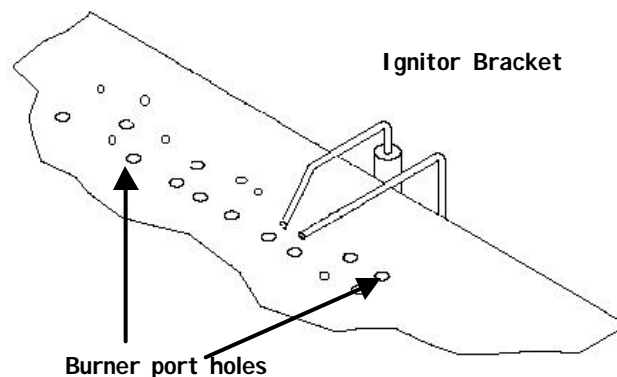
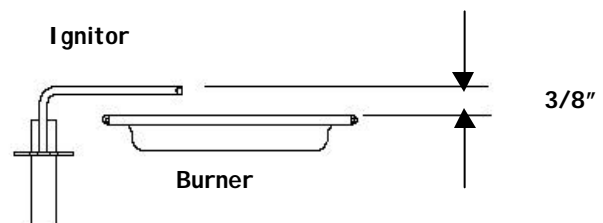
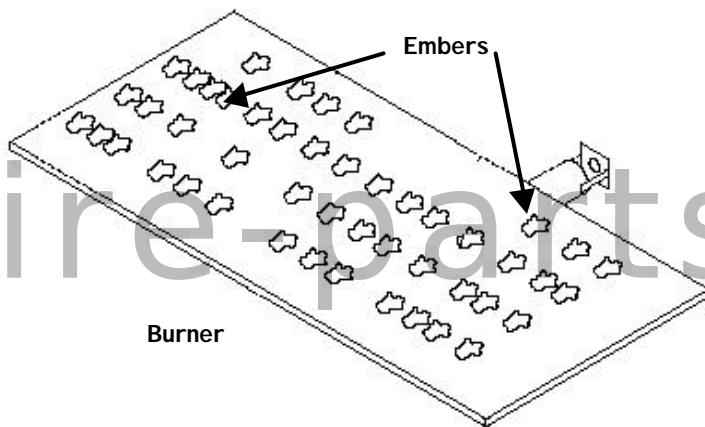
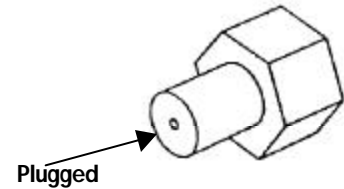
Is the ignitor over the port holes on the burner?

NO, - Reposition the ignitor bracket so the ignitor is over the port holes.

Gas Shut-off "ON" position



Burner orifice



Problem: The ignitor sparks, but no flame (Grand-50-C) (con't).

① Is there 110/120 VAC at the On/Off rocker switch?

To check: Place one of the lead wires from the meter to the black wire on the On/Off rocker switch, the other lead wire from your meter to the On/Off pin on the module (yellow wire).

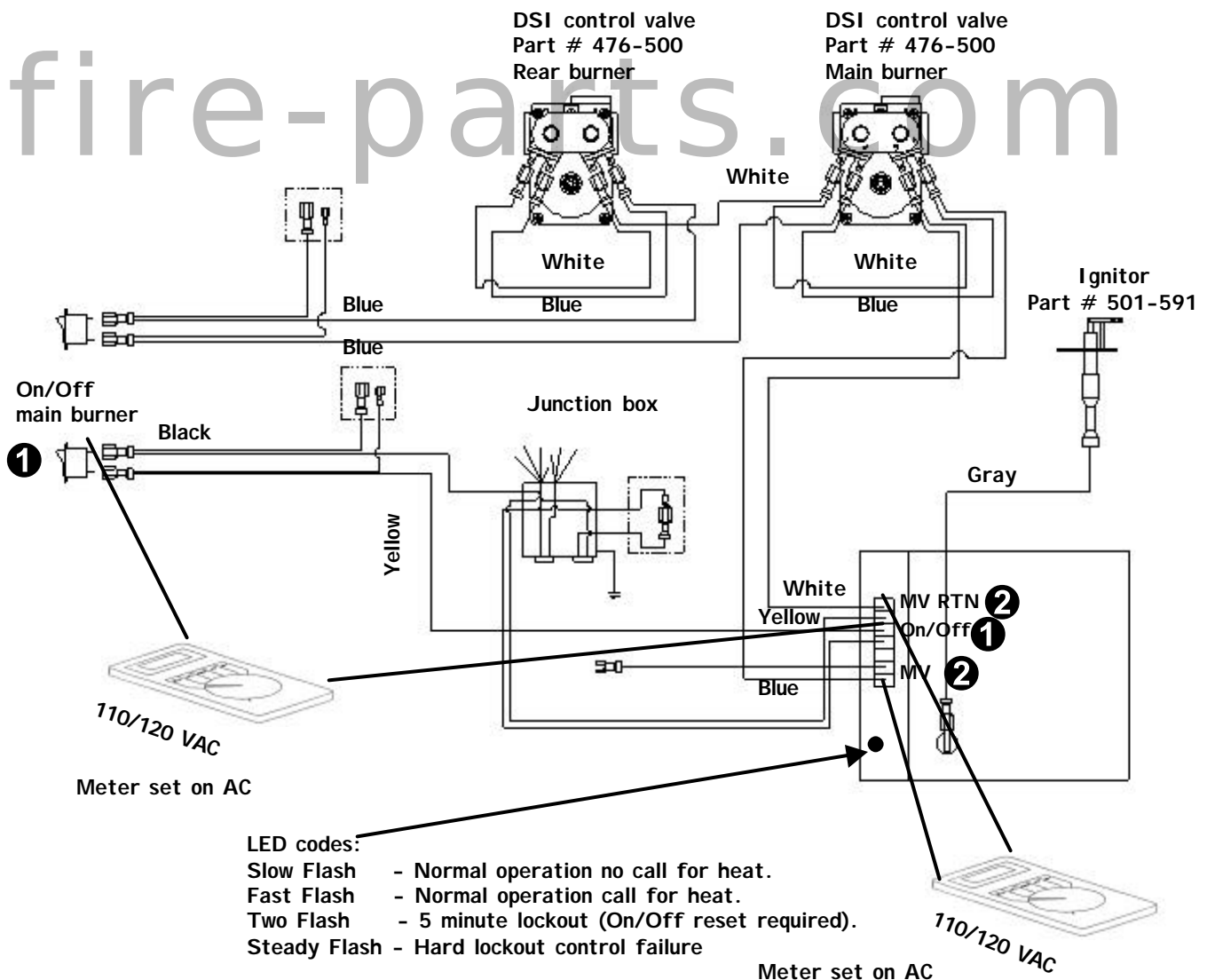
NO, - Check wire connections.

② With the On/Off rocker switch "ON".

Is there 110/120 VAC at the gas valve?

To check: Place one of the lead wires from the meter to MV on the module, place the other lead wire from the meter to MV RTN on the module. The reading should be 110/120 VAC.

YES,- REPLACE THE VALVE. MAIN BURNER



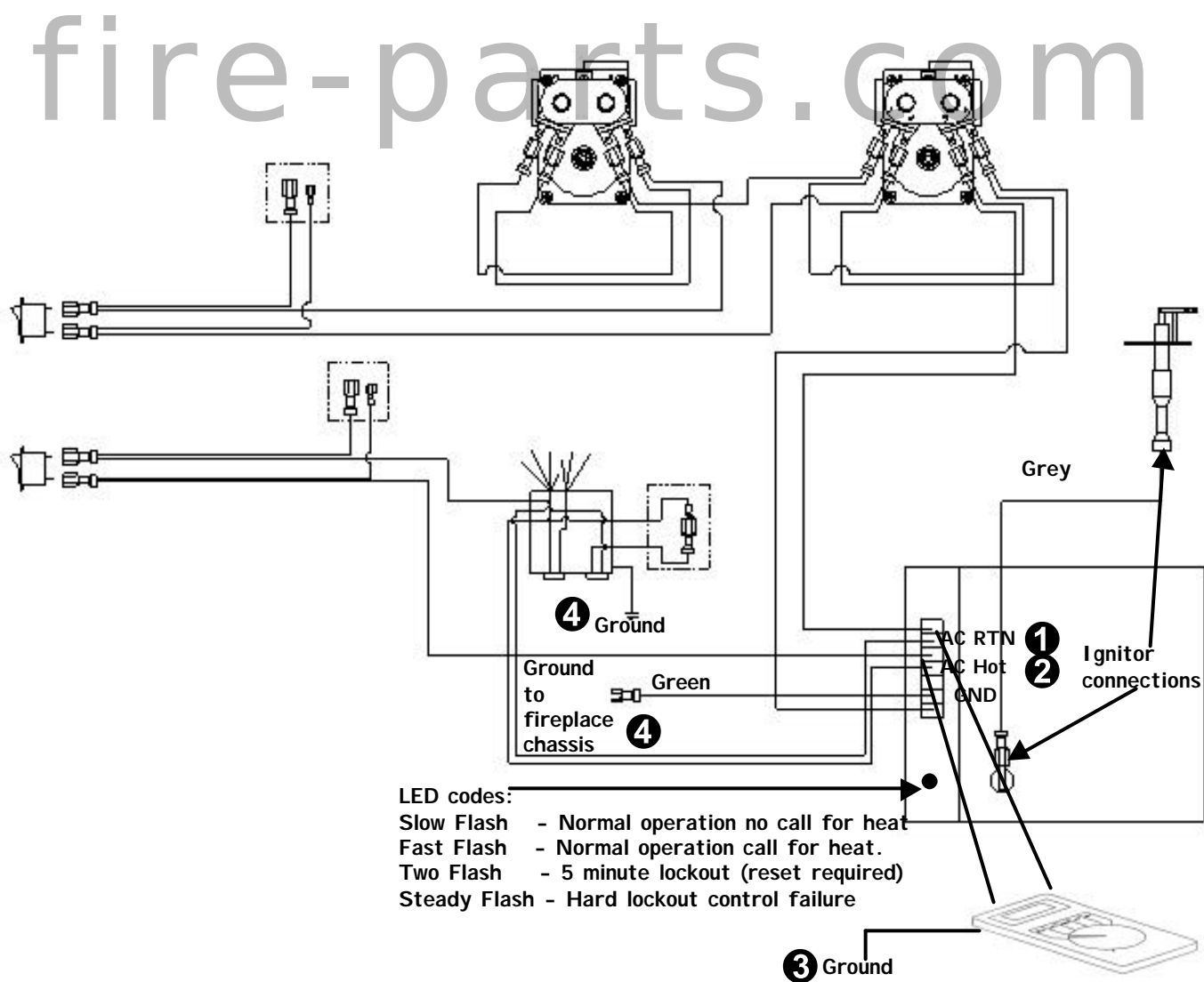
Problem: Flame comes on, but will not stay lit (Grand-50-C).

Check electrical polarity: To check polarity place one of the lead wires from the meter to 120 VAC Hot **①** terminal on the module. Place the other lead wires from the meter to ground. **③** It should read 110/120 VAC. Then place one of lead wires from the meter to 120 VAC RTN. **②** And the other lead wire from the meter to ground. **③** The reading should be 0 volts. If these are reversed, disconnect the power source and switch the polarity at the junction box.

Check ignitor position: Make sure that the probe is immersed in the flame at all times.

Check ground: Make sure the junction box and module is grounded. **④**

Ignitor cable: Make sure the ignitor cable has a good connection.



Section 7

HSI

Hot Surface Ignitor

Requirements

Parts Identification

Wiring, with high temperature limit switch and glass microswitch.

Wiring with high temperature limit switch.

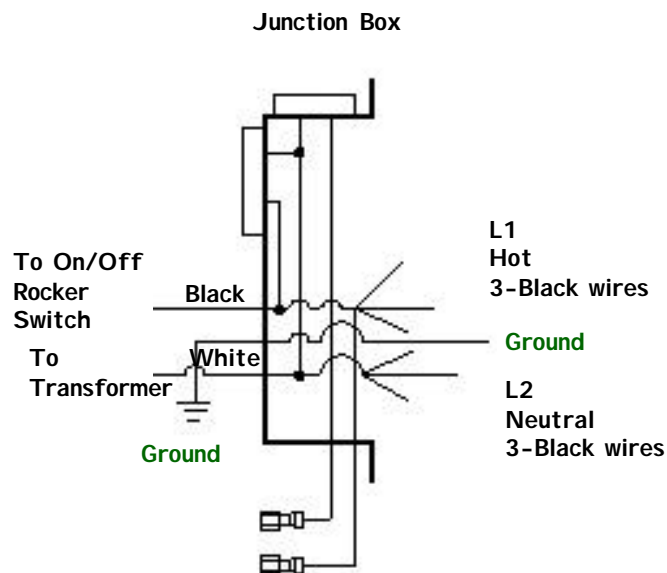
Problems:

1. Ignitor will not glow.
2. Ignitor will not glow (con't)
3. Ignitor glows, but no flame.
4. Flame comes on, but won't stay lit.

HSI Troubleshooting (Hot Surface Ignitor)

Requirements

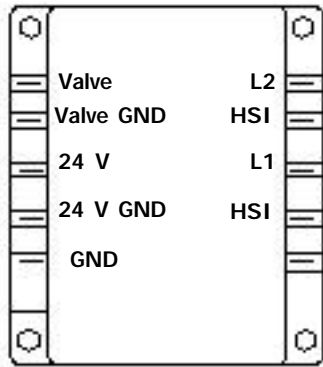
The HSI fireplace products require 110/120 VAC to operate. The junction box must be wired to 110/120 VAC. The junction box will have three black wires (HOT) and three white wires (Neutral), and a ground stud for the ground wire. Two of the black wires are for the receptacles on the junction box (marked REM for remote and FAN for blower/fan). The other black wire and white wire is for the HSI system.



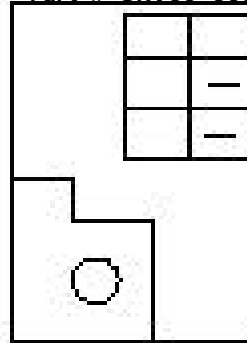
HSI (Hot Surface Ignitor)

Parts Identification

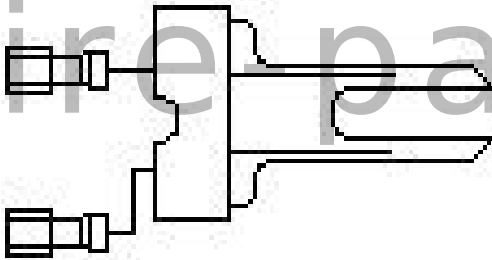
Module
Part # SRV60-592



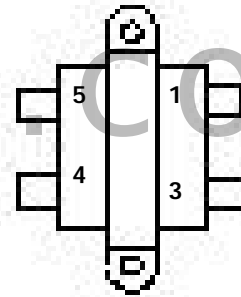
Honeywell Valve-NG
Part # SRV60-502
Honeywell Valve-LP
Part # SRV60-503



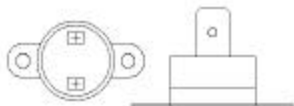
Ignitor
Part # SRV60-593



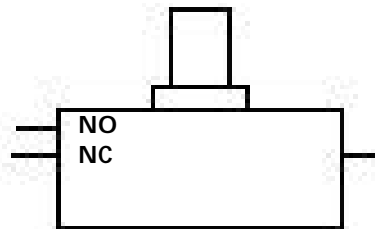
Honeywell Transformer
Part # SRV60-599



High Temperature Limit
Switch
Part # SRV66-531

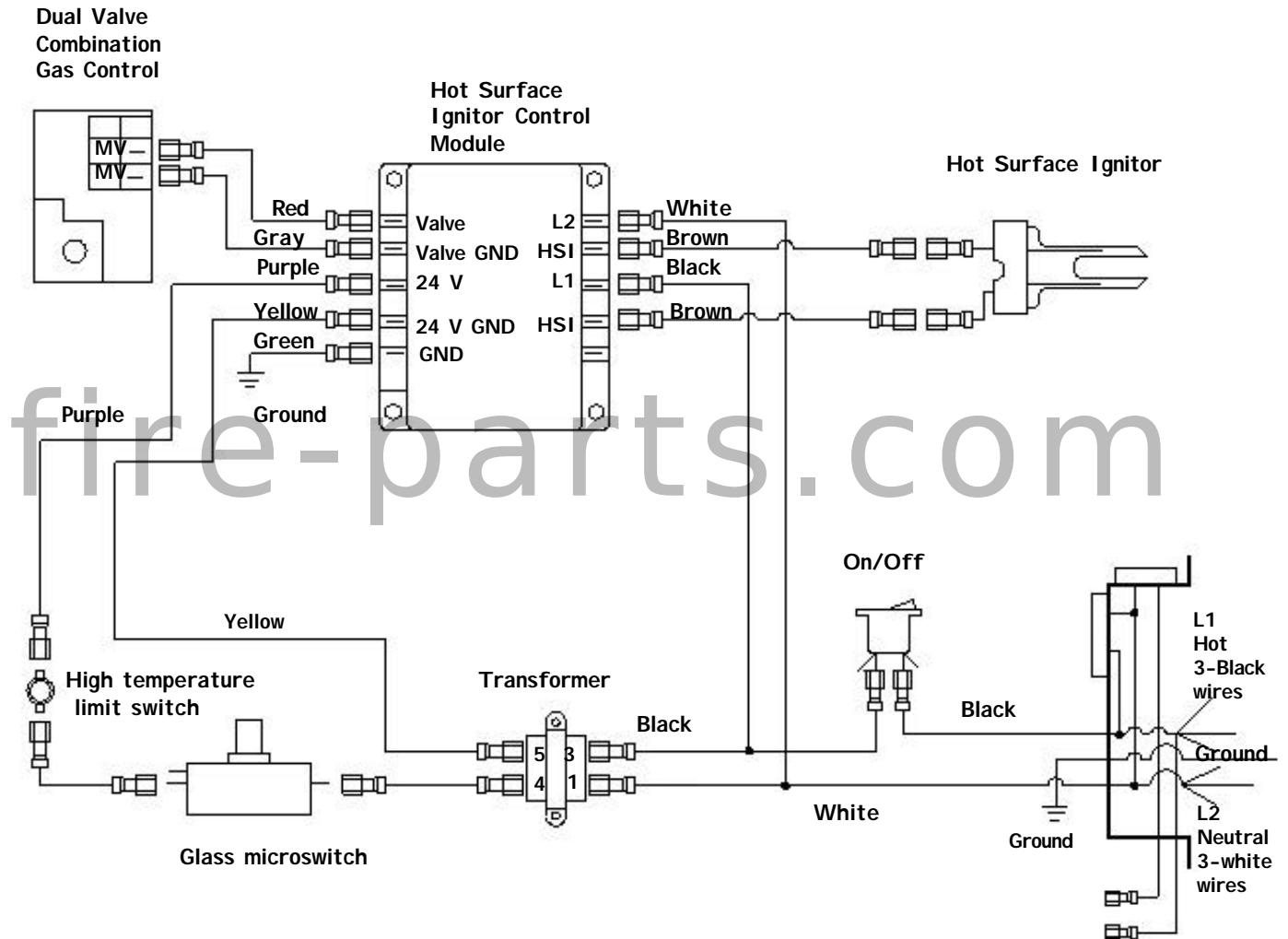


Glass Microswitch
Part # SRV60-514



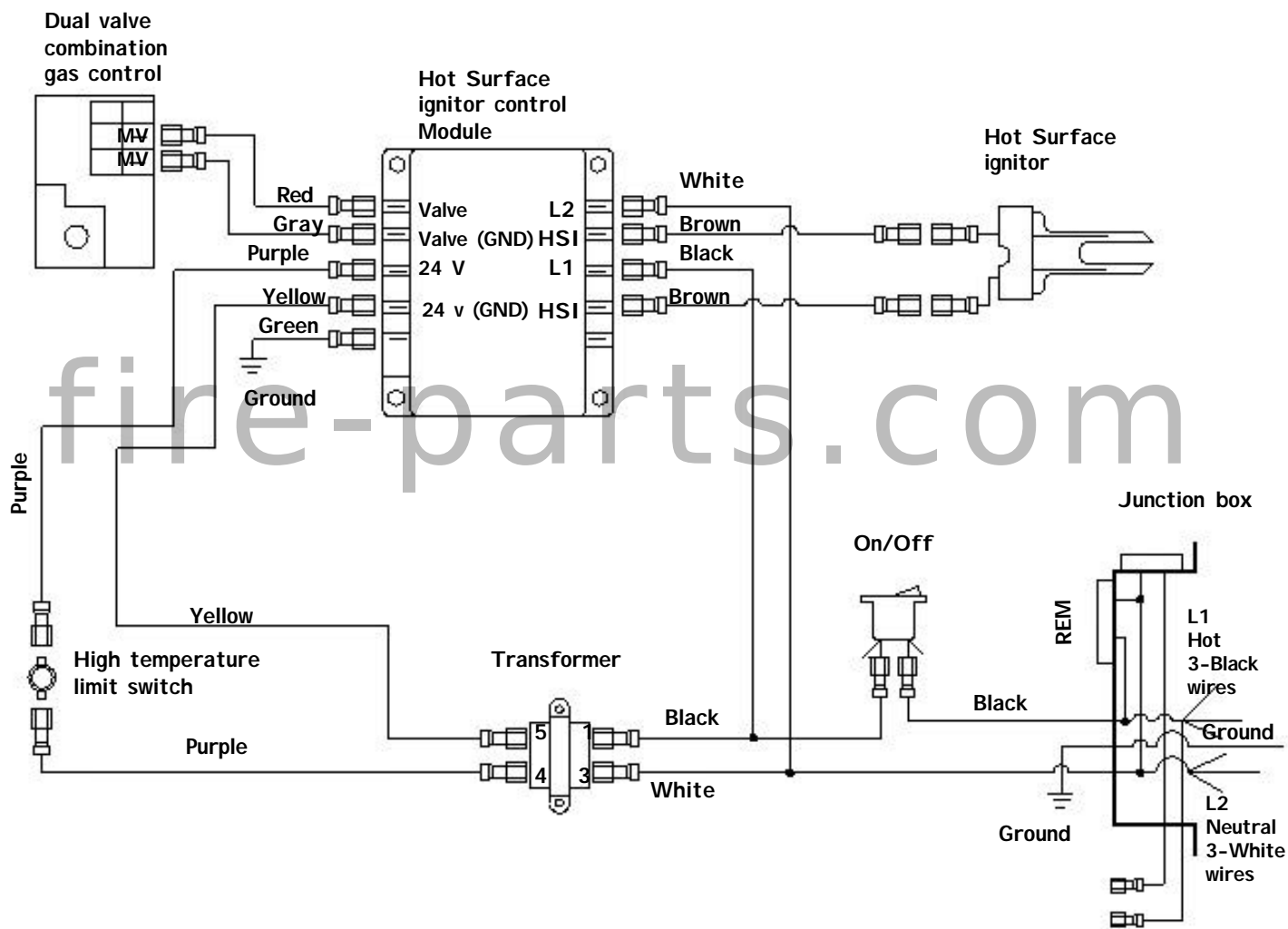
Hot Surface Ignitor

Wiring Diagram with high temperature limit switch and glass microswitch.



Hot Surface Ignitor

Wiring Diagram with high temperature limit switch



Problem: Ignitor will not glow (HSI).

The ignitor will not glow unless there is 24 VAC on the 24 VAC side of the module. Also check wiring to see if there is a high temperature limit switch and/or glass microswitch in the system. Not all units have High Temp. or microswitches. With the On/Off rocker Switch "ON".

Is there 110/120 VAC at 1 and 3 on the transformer? **1**

2 NO, - Check REM on junction box, circuit breaker, and wiring connections.

Is there 24 VAC at terminals 4 and 5? **3**

NO, - REPLACE TRANSFORMER

Is there 24 VAC at terminal 24 V and 24 V GND on module? **4**

NO, - Does the high temperature limit switch have continuity?

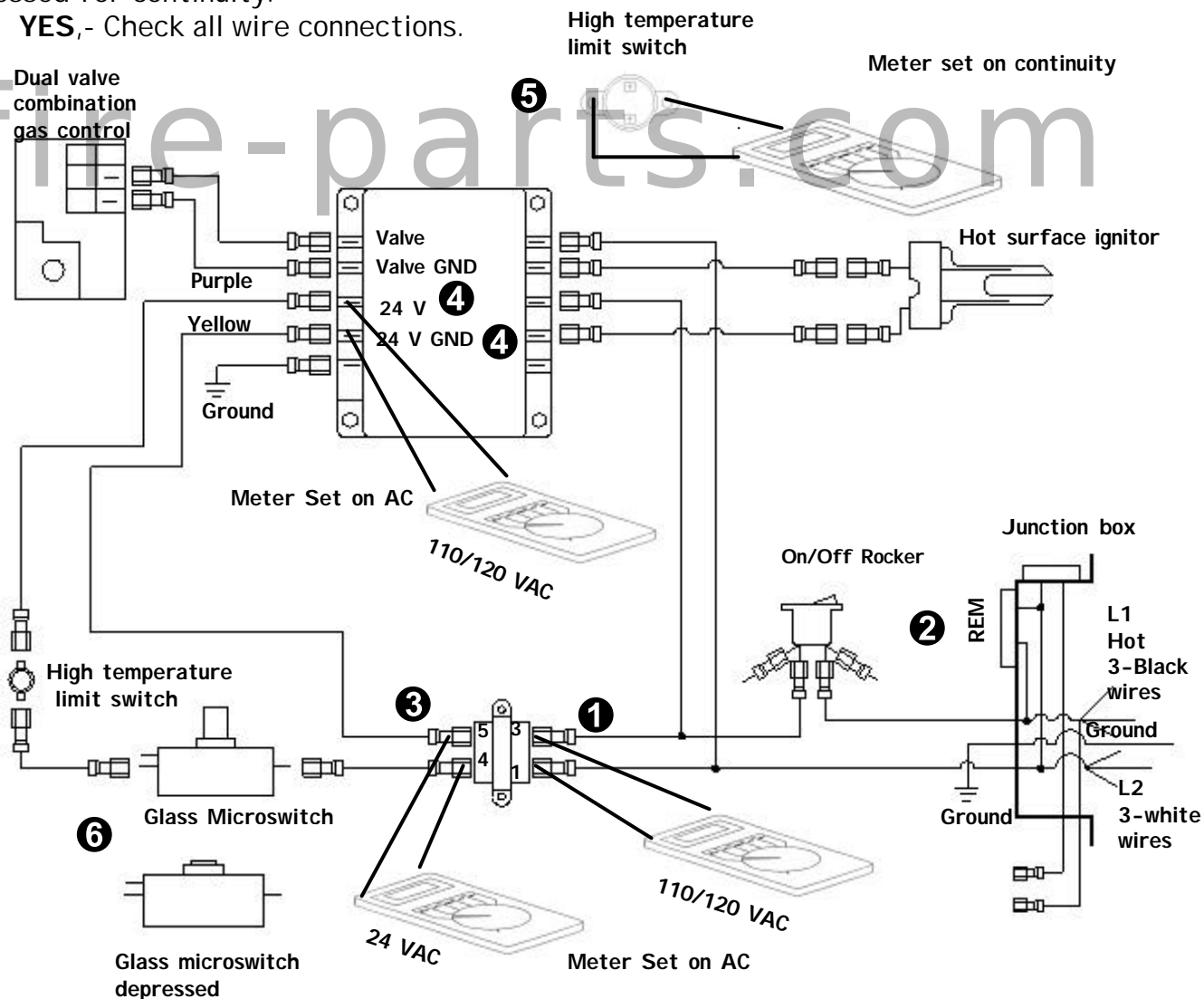
Remove the HTL and check it for continuity. The high temperature limit switch is normally closed and should have continuity. **5**

If it does not have continuity **REPLACE HIGH TEMPERATURE LIMIT SWITCH.**

Is the glass microswitch depressed? **6**

In order for current to flow through the glass microswitch the switch must be depressed for continuity.

YES, - Check all wire connections.



Problem: Ignitor will not glow (HSI) (con't).

Is the On/Off rocker switch turned "ON"?

NO, - Turn "ON" the switch.

1 Is there 110/120 VAC at the remote (REM) on the junction box?

NO, - Check circuit breaker and junction box wiring.

2 Is there 110/120 VAC at L1 and L2 on the module?

3 Is there 110/120 VAC at the connectors for the Ignitor?

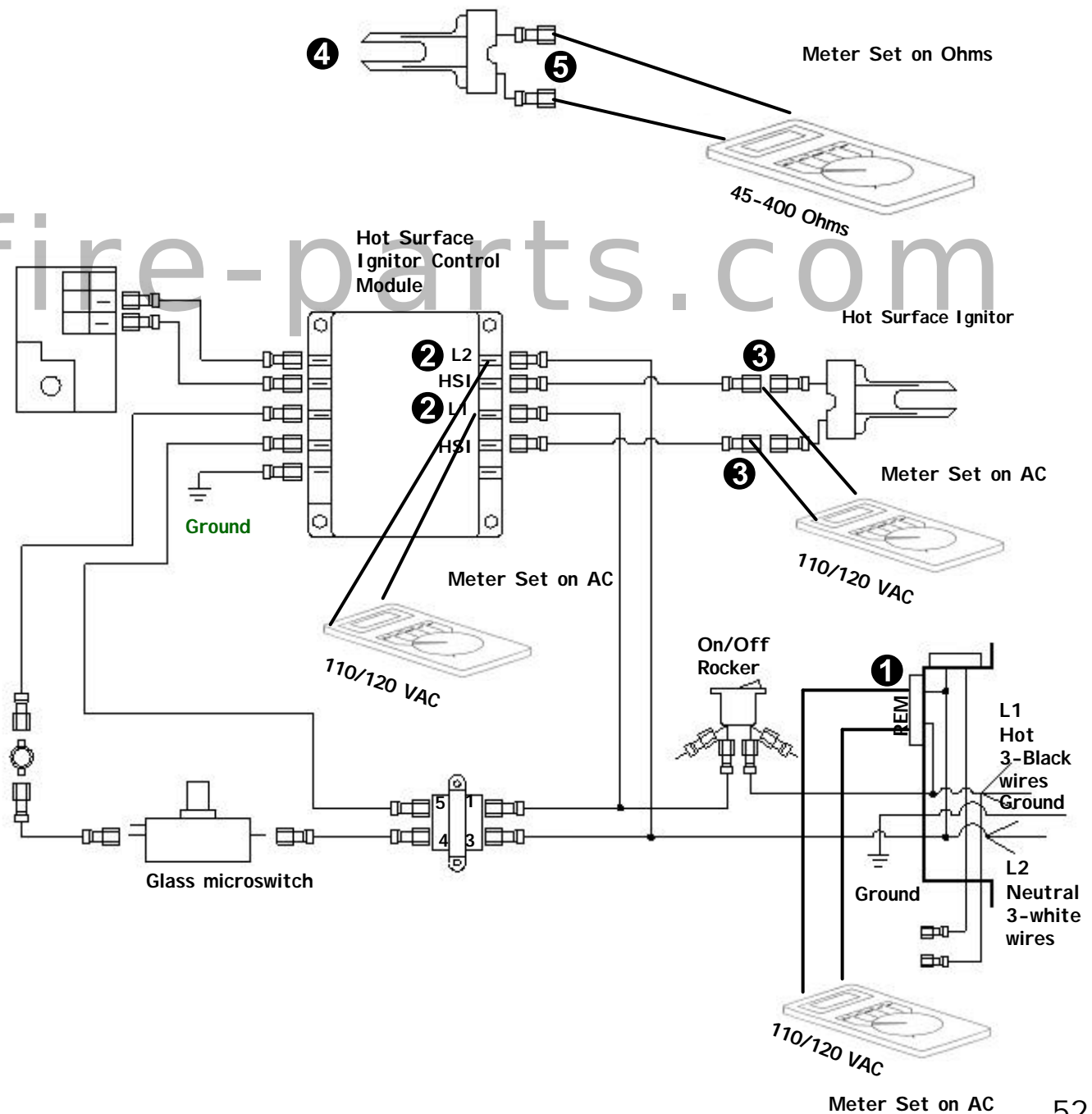
NO, - REPLACE THE MODULE.

4 Is the ignitor cracked?

YES, - REPLACE IGNITOR

5 **NO**, - Is there between 45-400 ohms on the ignitor?

NO, - REPLACE IGNITOR.



Meter Set on AC

Problem: Ignitor glows, but no flame (HSI).

Check wiring to see if there is a high temperature limit switch and/or glass microswitch in the system. Not all units have High Temp. or microswitches. With the On/Off rocker Switch "ON".

Is there 110/120 VAC at 1 and 3 on the transformer? **1**

NO, - Check REM on junction box, circuit breaker, and wiring connections. **2**

Is there 24 VAC at terminals 4 and 5? **3**

NO, - REPLACE TRANSFORMER

Is there 24 VAC at terminal 24 V and 24 V GND on module? **4**

5 NO, - Does the high temperature limit switch have continuity?

Remove the high temperature limit and check it for continuity. The high temperature limit switch is normally closed and should have continuity.

If it does not have continuity **REPLACE HIGH TEMPERATURE LIMIT SWITCH.**

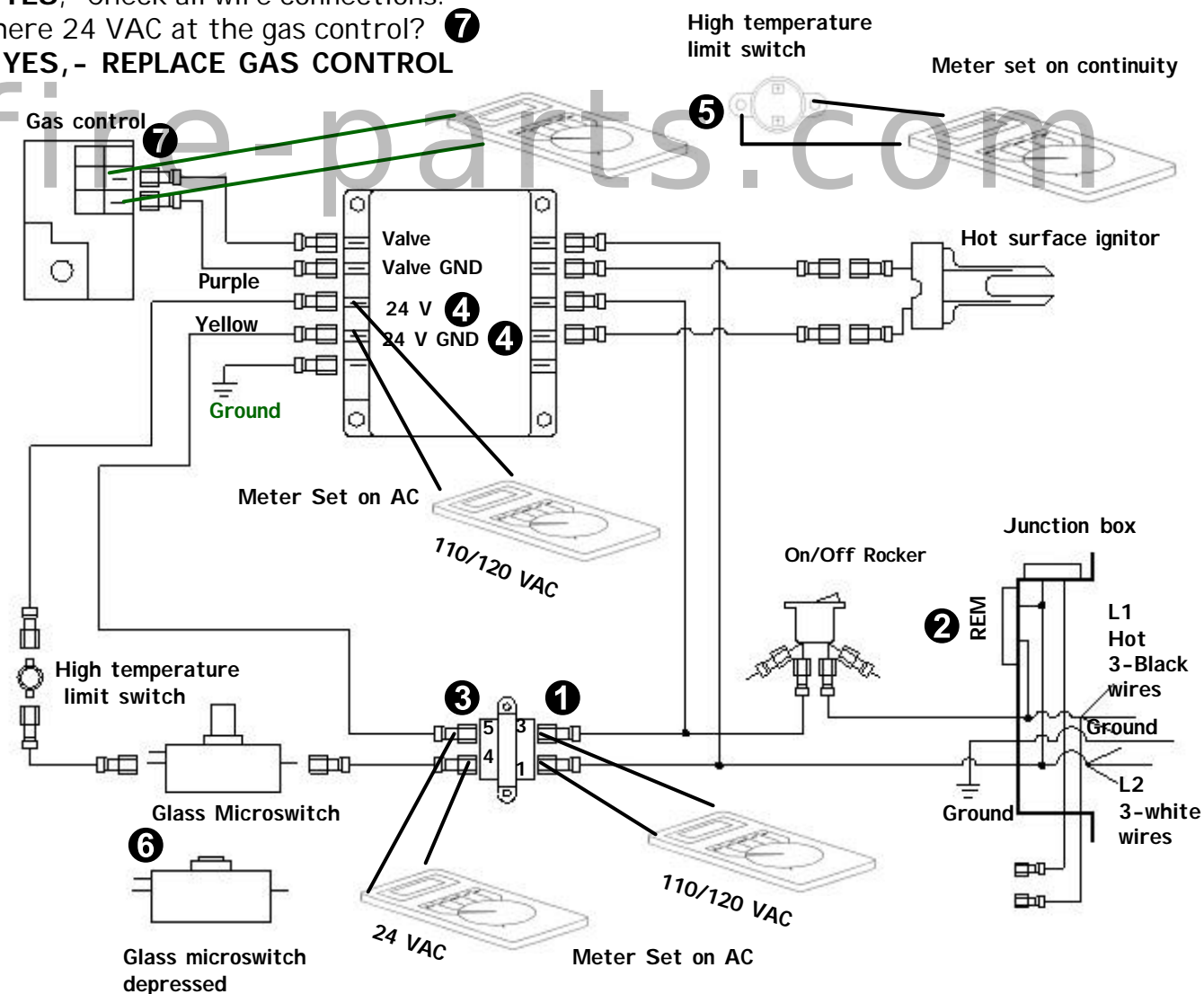
Is the glass microswitch depressed?

In order for current to flow through the glass microswitch the switch must be depressed for continuity. **6**

YES, - Check all wire connections.

Is there 24 VAC at the gas control? **7**

YES, - **REPLACE GAS CONTROL**



Problem: Flame comes on, but won't stay lit (HSI).

Is the junction box grounded?

1 NO, - Ground the junction box.

Is the module grounded to the burner?

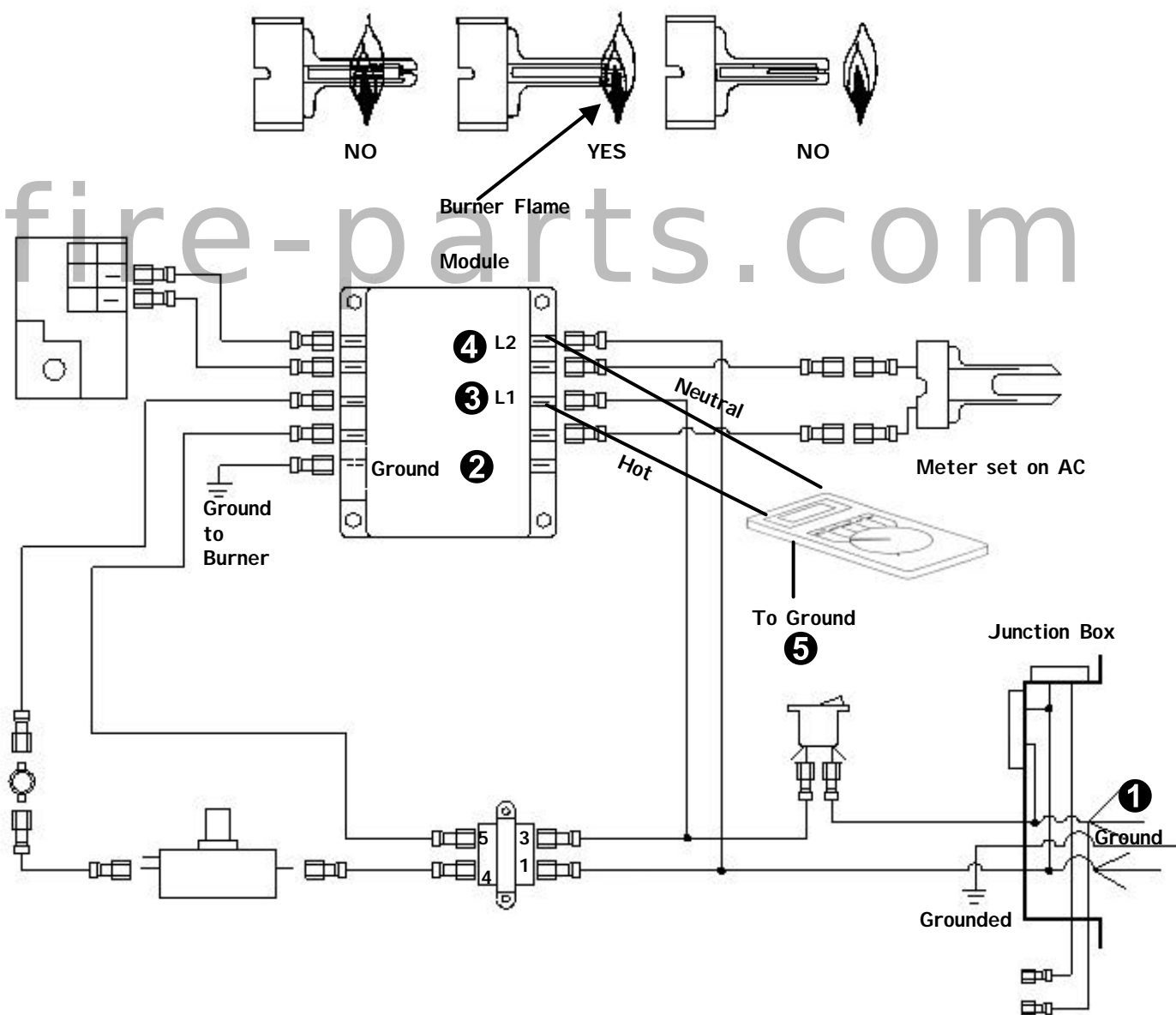
2 NO, - Ground the module.

Is the polarity correct?

NO, - To check polarity place one of the lead wires from the meter to L1 **3** terminal on the module and the other lead wire to ground. **5** It should read 110/120 VAC. Then place one of the lead wires from the meter to L2 **4** on the module. And the other lead wire from the meter to ground. **5** This reading should be 0 volts. If these readings are reversed, disconnect the power source and switch the polarity at the junction box.

Is the ignitor immersed in the flames?

NO, - Reposition the ignitor bracket so the ignitor is over the post holes.



Section 8

Power Vent

Model PVK-80

Requirements

Wiring

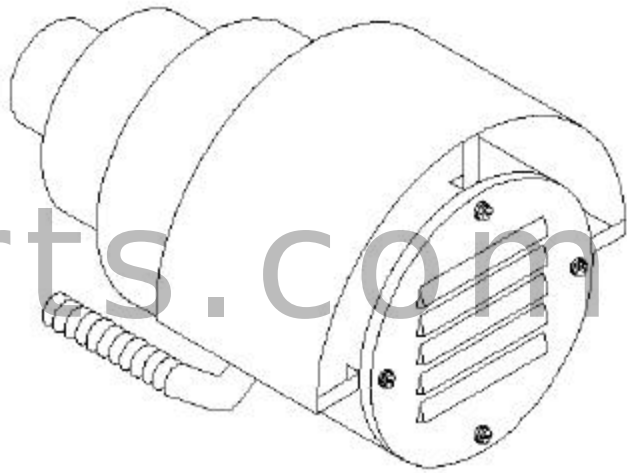
DSI Systems

Fenwal Wiring

RAM-1-RS Wining

RAM 1MC-01/05 Wiring

Setting Exhaust Control



Power Vent Model PVK-80

Requirements

Any HNG gas fireplace fitted with the PVK-80 Power Vent must utilize HSI (hot surface ignition) or DSI (direct spark ignition) fireplace gas controls. Fireplaces equipped with millivolt standing pilot type gas controls **CANNOT** use this Power Vent.

The PVK-80 Power Vent operates on 120 VAC, 60Hz electrical service which is supplied at the fireplace junction box.

The device **MUST BE** installed by a qualified installer in accordance with the instructions.

Disconnect electrical power supply before making wiring connections.

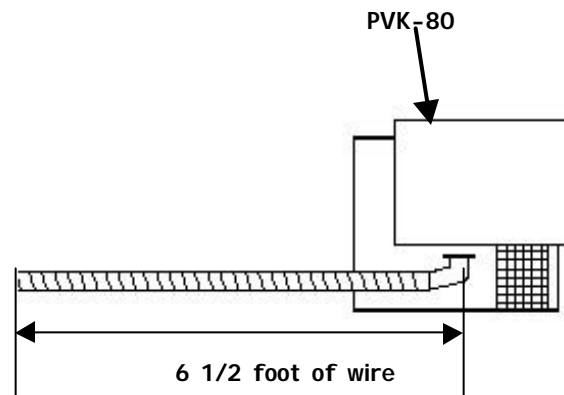
Venting of more than one appliance in a common vent system is PROHIBITED.

CAUTION: Failure to install, operate, and maintain the power venting system in accordance with manufacturer's instructions will result in conditions which may cause bodily injury and/or property damage.

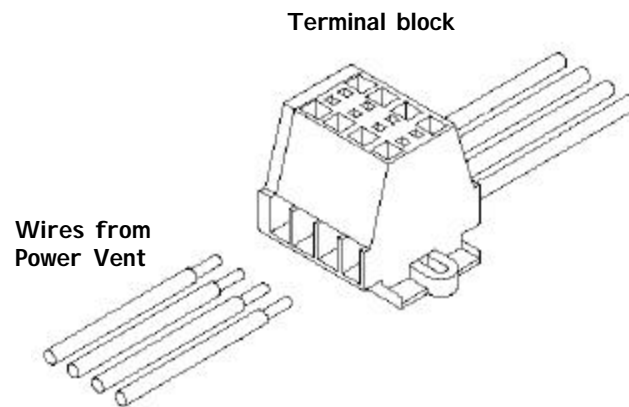
Power Vent (PVK-80)

Wiring the Power Vent

Note: The PVK-80 Power Vent includes a 6 1/2 foot 4-wire assembly wired into the cap fan motor. If this wire assembly will not reach the fireplace, the wires may need to be spliced to additional wire lengths in a junction box inside the building. Follow applicable electric codes.

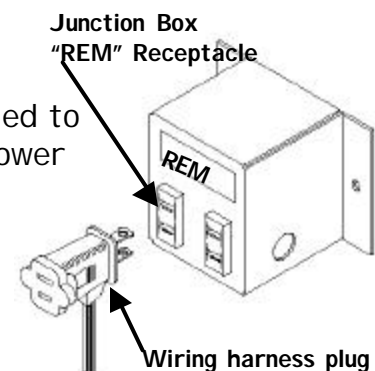


The PVK-80 terminal block/wiring harness assembly is in the cavity under the fireplace next to the valve assembly.



CAUTION: Carefully match the corresponding colored wire to the appropriate position on the terminal block.

NOTE: Electrical service of 120 VAC must be supplied to the junction box of the fireplace in order for the power vent to operate correctly.



For DSI Fireplace:

The fireplace may have one of three DSI systems.

System 1: Has a gas valve, transformer, and module mounted to a plate inside the control compartment.

System 2: Has a gas valve, a module and a junction box with four receptacles.

System 3: Has a gas valve, a module and a junction box with two receptacles.

WARNING: If any unsafe condition is determined when inspecting the installation and operation of the fireplace and Power Vent, the equipment should be shut off. Corrections **MUST** be made before the equipment is put into continuous operation.

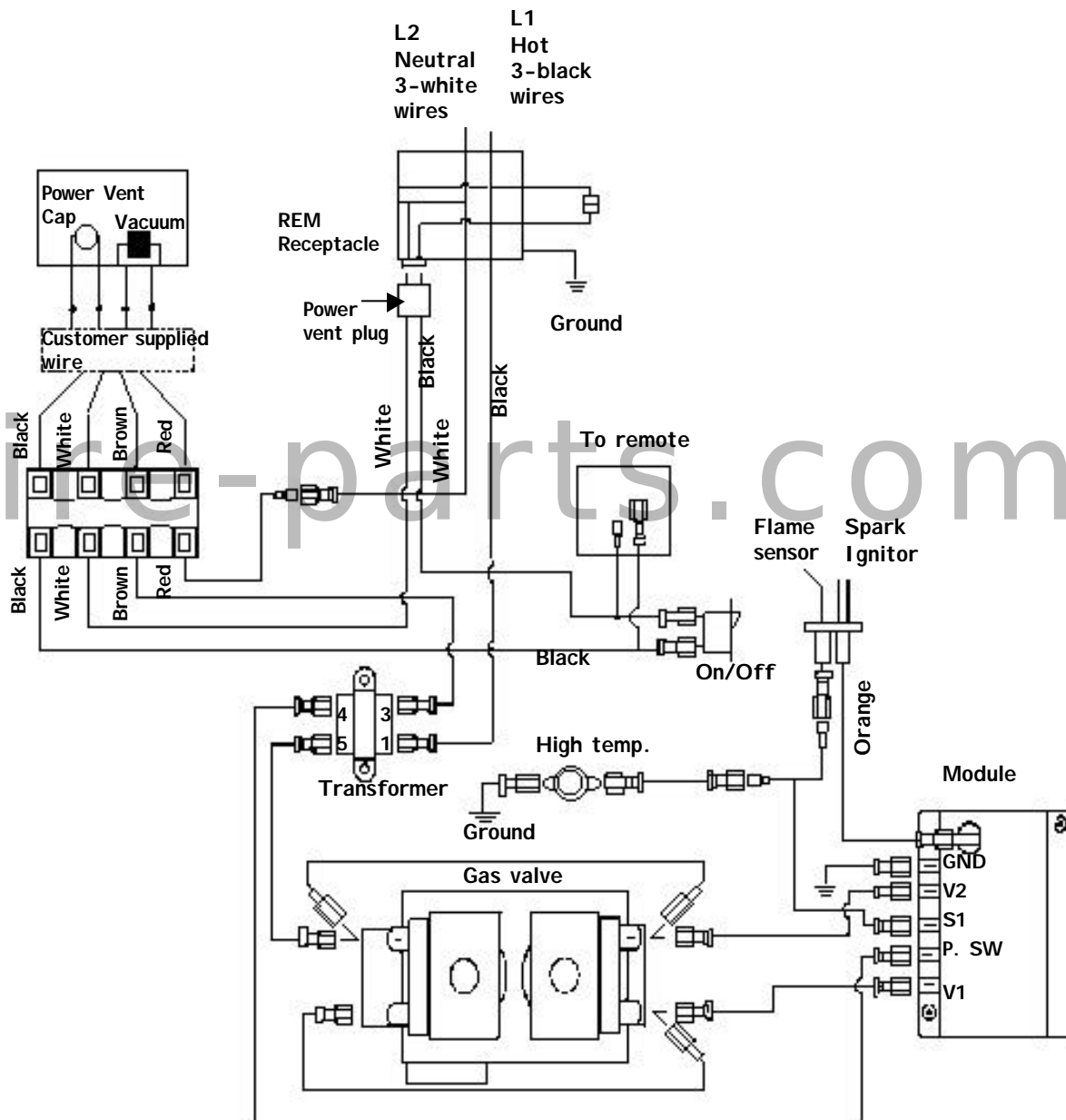
CAUTION: Before performing any maintenance or repair to the power vent assembly, make sure electrical power is disconnected to the fireplace.

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Power Vent (PVK-80) (Fenwal)

CAUTION: Before performing any maintenance or repair to the power vent assembly, make sure electrical power is disconnected to the fireplace.

Note: During periods of operation after turning the fireplace "ON", there may be a slight delay before the fireplace ignites. This is due to the time necessary for the fan to reach operating speed and to remove any gases from the combustion chamber.

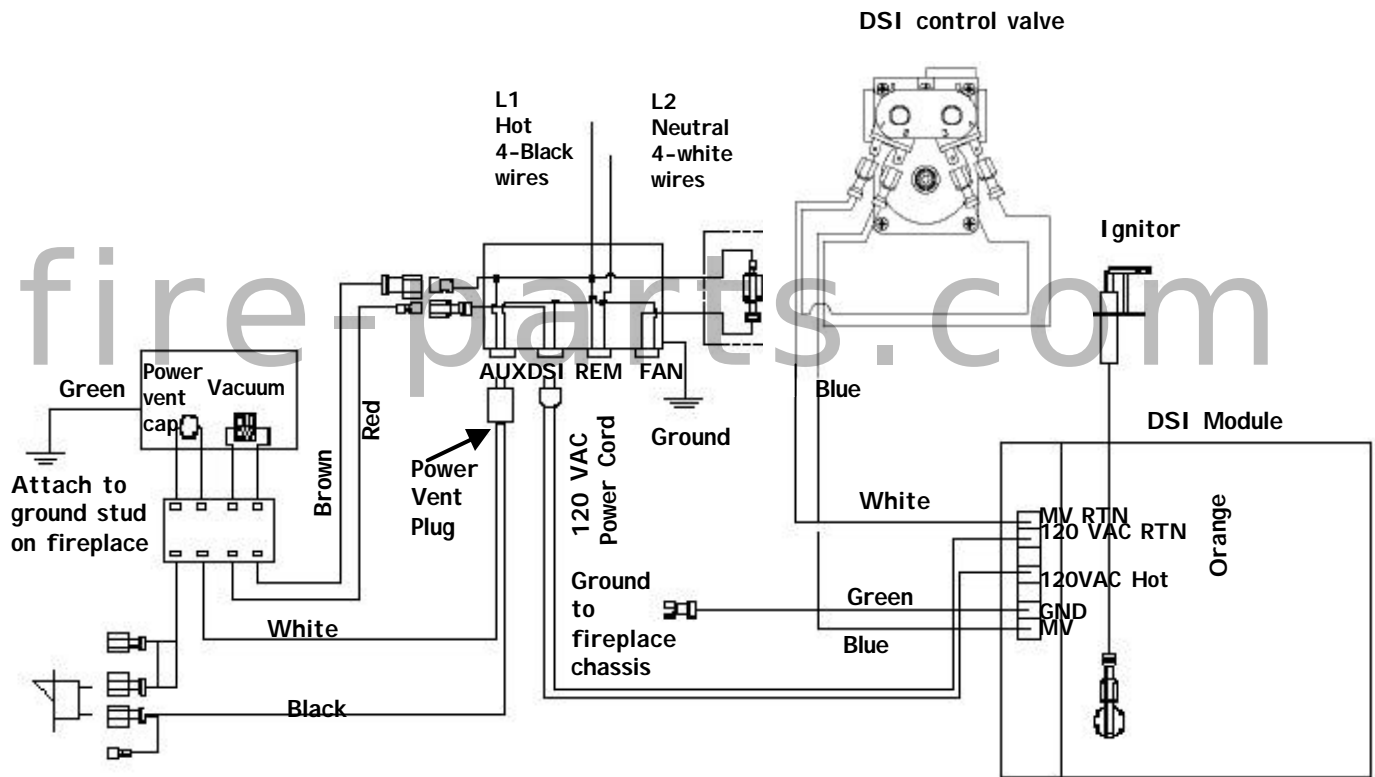


Power Vent (PVK-80) (RAM-1-RS)

Note: Power vent is plugged into "AUX" not "REM".

CAUTION: Before performing any maintenance or repair to the power vent assembly, make sure electrical power is disconnected to the fireplace.

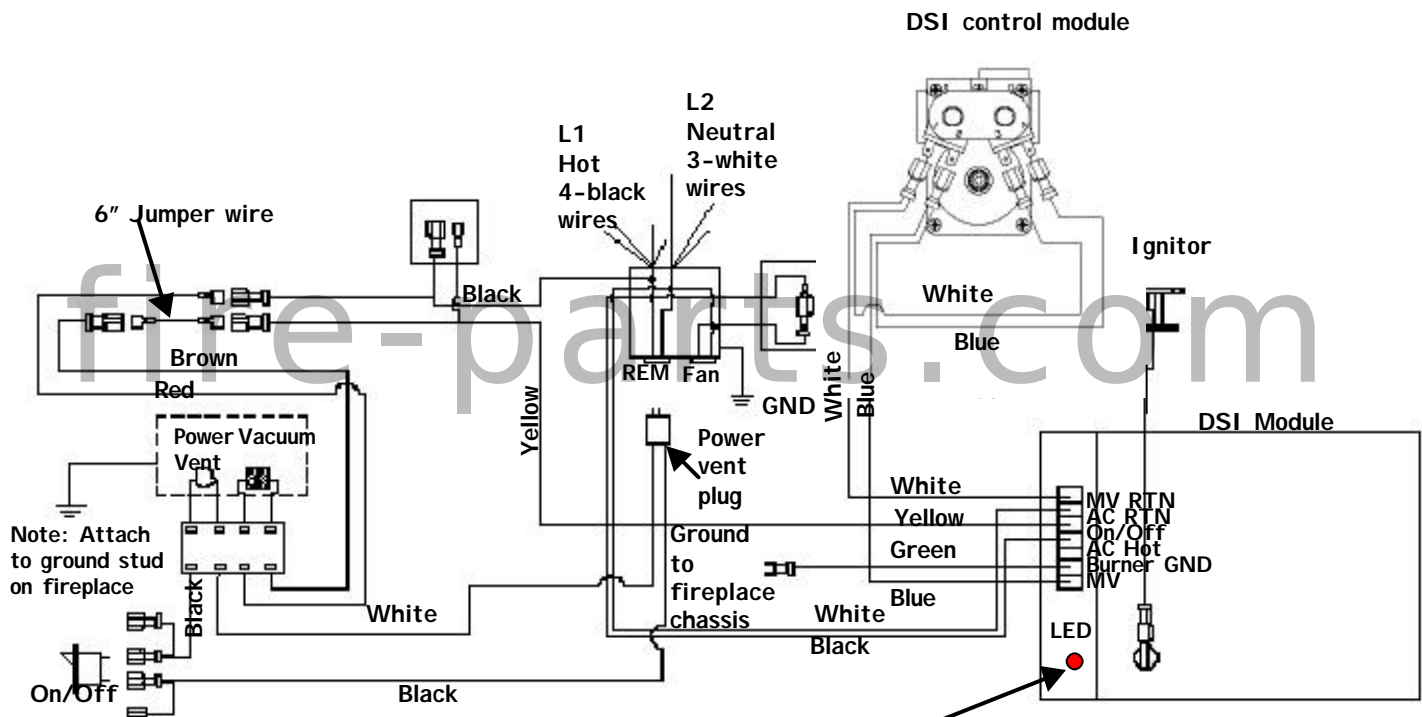
Note: During periods of operation after turning the fireplace "ON", there may be a slight delay before the fireplace ignites. This is due to the time necessary for the fan to reach operating speed and to remove any gases from the combustion chamber.



Power Vent (PVK-80) (RAM 1MC1-01/05)

CAUTION: Before performing any maintenance or repair to the power vent assembly make sure electrical power is disconnected to the fireplace.

Note: During periods of operation after turning the fireplace "ON", there may be a slight delay before the fireplace ignites. This is due to the time necessary for the fan to reach operating speed and to remove any gases from the combustion chamber.



LED codes:

- Slow Flash - Normal operation no call for heat.
- Fast Flash - Normal operation call for heat.
- Two Flash - 5 minute lockout (reset required).
- Steady Flash - Hard lockout control failure.

Setting the exhaust control (Power Vent) (PVK-80).

The need to adjust the exhaust control will depend upon fireplace combustion box volume, vent run configuration, and **MOST IMPORTANT** - burner flame characteristics.

Leave the control lever in the closed position when first operating the appliance during the installation inspection.

- If the burner flames are short, active, and jumping remove the lever screw and slightly open the exhaust control. Check the burner flames and adjust the lever again, as necessary, until the flames are stable, strong, and steady.
- If the burner flames are tall, lifting, floating, and ghost like-the exhaust control is open too far and **MUST** be closed enough until these observations are corrected.

When the burner flames have been optimized, secure the exhaust control lever to the Power Vent housing with the sheetmetal screw. **DO NOT CHANGE THIS SETTING.**

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