Millivolt Troubleshooting Guide
Gas Products
NOVA SIT Valves

1) Thermocouple Millivolt Check

2) Safety Magnet Testing

3) Thermopile Millivolt Check

4) Circuit Millivolt Check

5) Valve Operating Head Test

REGENCY
FIREPLACE PRODUCTS

Thermocouple Millivolt Check

Symptom - Pilot light will not hold

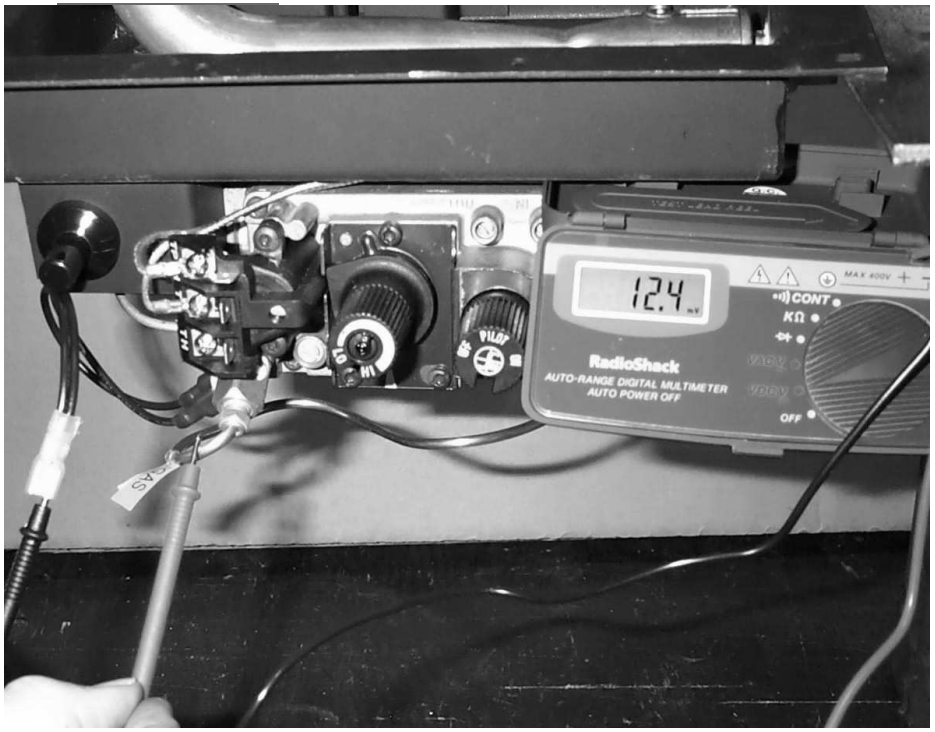
Thermocouples have a maximum output of 25 to 30 millivolts

Millivolt reading for thermocouple ***Pilot On:*** 8 to 30 mv

Set meter to MV or Volts DC

Place one lead to wire (supplied)

place one lead to outer casing



- If the millivolt reading is less then 7 mv then ***change the thermocouple***
- Shutdown time for thermocouple after flame failure is up to 90 sec.
- The drop out range for thermocouple magnet is 6 to 2 mv.
- If thermocouple reading is good, proceed to safety magnet test. (Next Page)

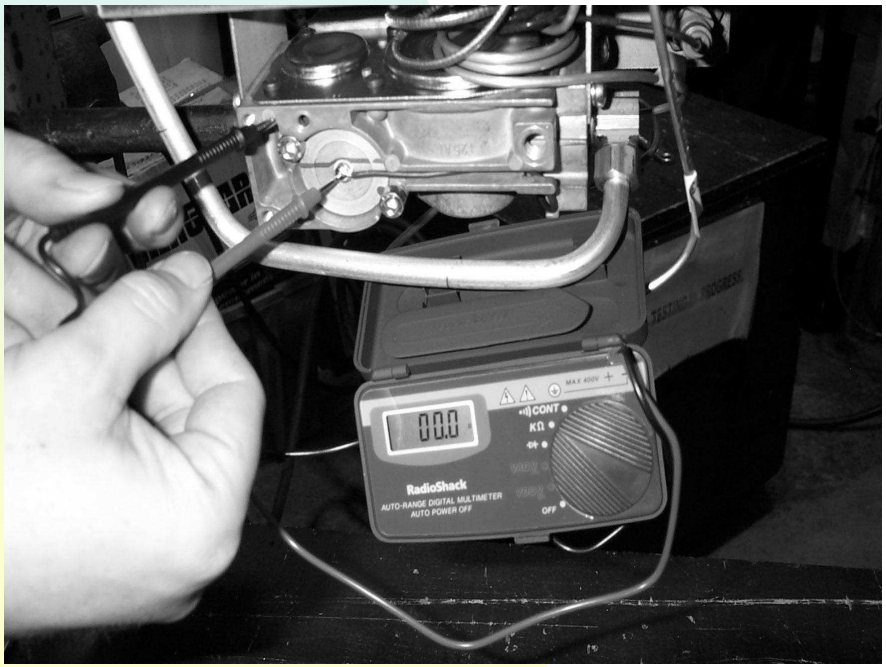
Safety Magnet Testing (pilot flame magnet)

Set meter to Ohms for this test

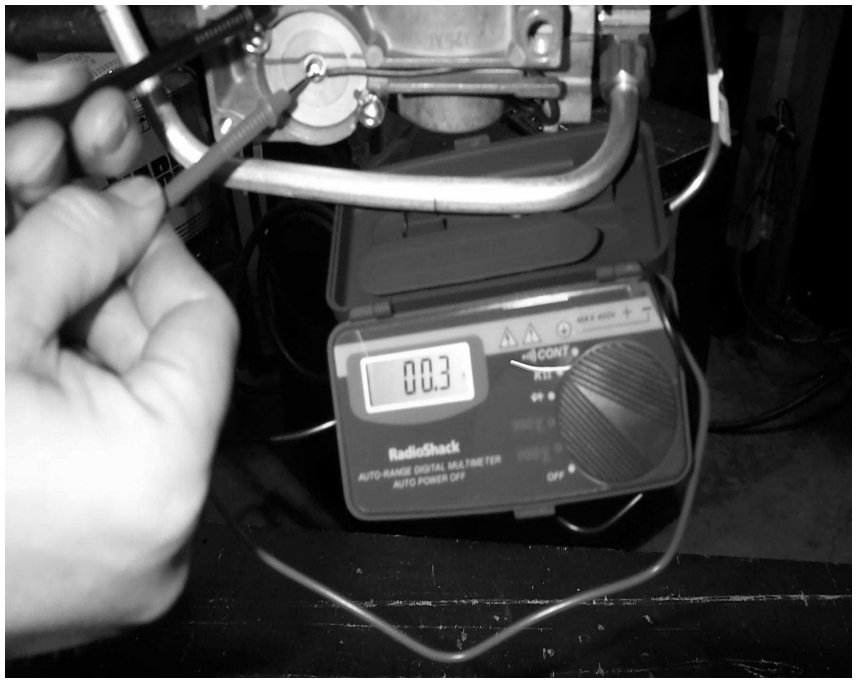
While taking a Millivolt reading on a safety magnet, ***disconnect thermocouple & wires from the valve.***

Place one meter lead to soldered point on back of valve and one to ground.

Good reading is **0 to 0.2 Ohms**. If the reading is higher,magnet is defective therefore ***Change the Valve - Do not try to repair.***



Good Reading



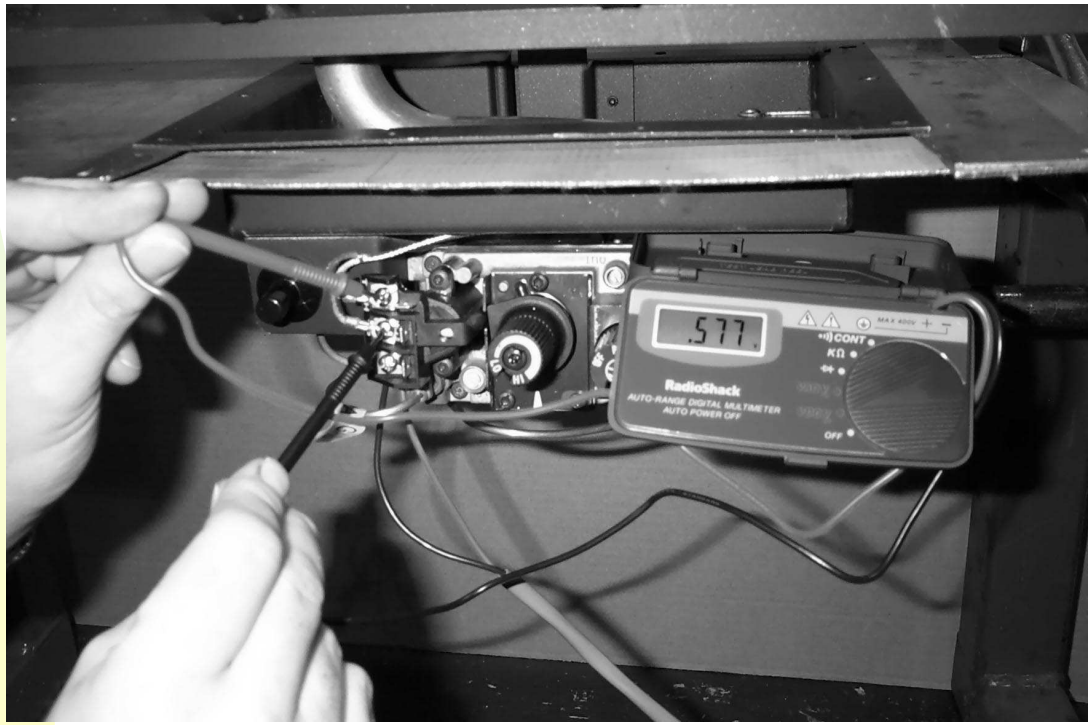
Bad Reading

Thermopile Millivolt Check

Symptom - Intermittent shutdown or main burner will not light with on/off switch.

Set meter to Volts DC / Millivolts

Thermopile Output- ***MAIN BURNER OFF :*** 325 mv minimum required for system to operate consistently. If lower than 325 mv, ***change the thermopile.***



Thermopile Millivolt Check

Symptom - Intermittent shutdown or main burner will not light with on/off switch.

Thermopile Output- ***MAIN BURNER ON:*** 110 mv minimum required for system to operate consistently. If lower than 110 mv, conduct valve operating head test. If valve proves good, ***change the thermopile.***

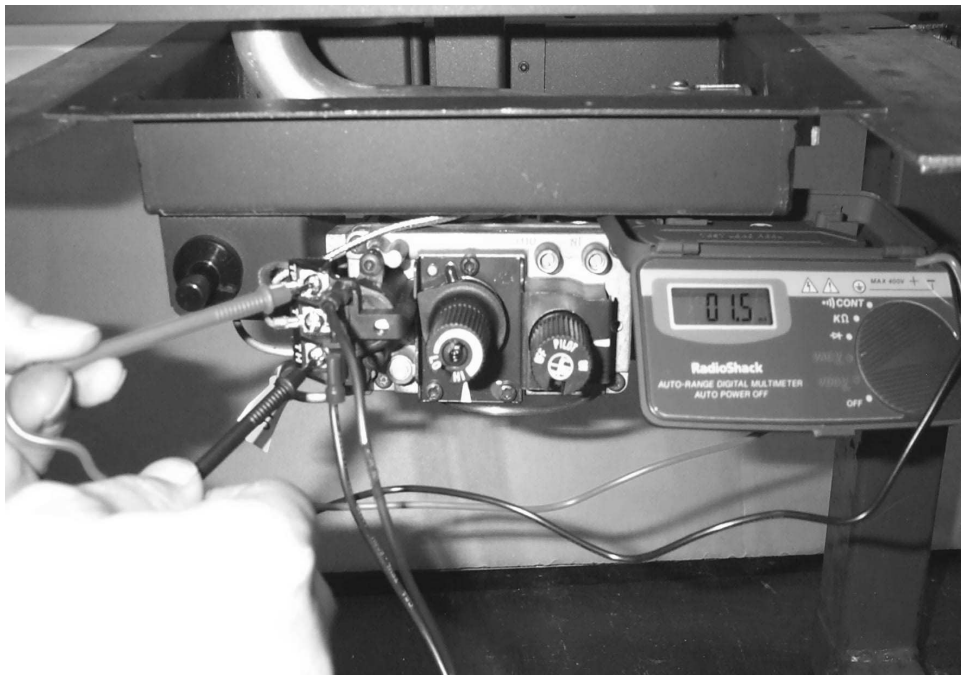
Circuit Millivolt Check

Symptom - Intermittent shutdown or main burner will not light with on/off switch.

The Thermopile, energized by the pilot flame, generates sufficient power to operate the gas valve and on/off switch.

Voltage drop across the switch terminals ***Burner on:*** 35 mv or less.

Set meter to MV or Volts DC
Place one lead to TP/TH and
place one lead to TH



*If higher than 35mv
check connections
and switch.

Circuit Millivolt Check

Symptom - Intermittent shutdown or main burner will not light with on/off switch.

The Thermopile, energized by the pilot flame, generates sufficient power to operate the gas valve and on/off switch.

Set meter to Ohms
Place one lead to each spade switch in ***on*** position

*If higher than 0.3 ohms replace switch

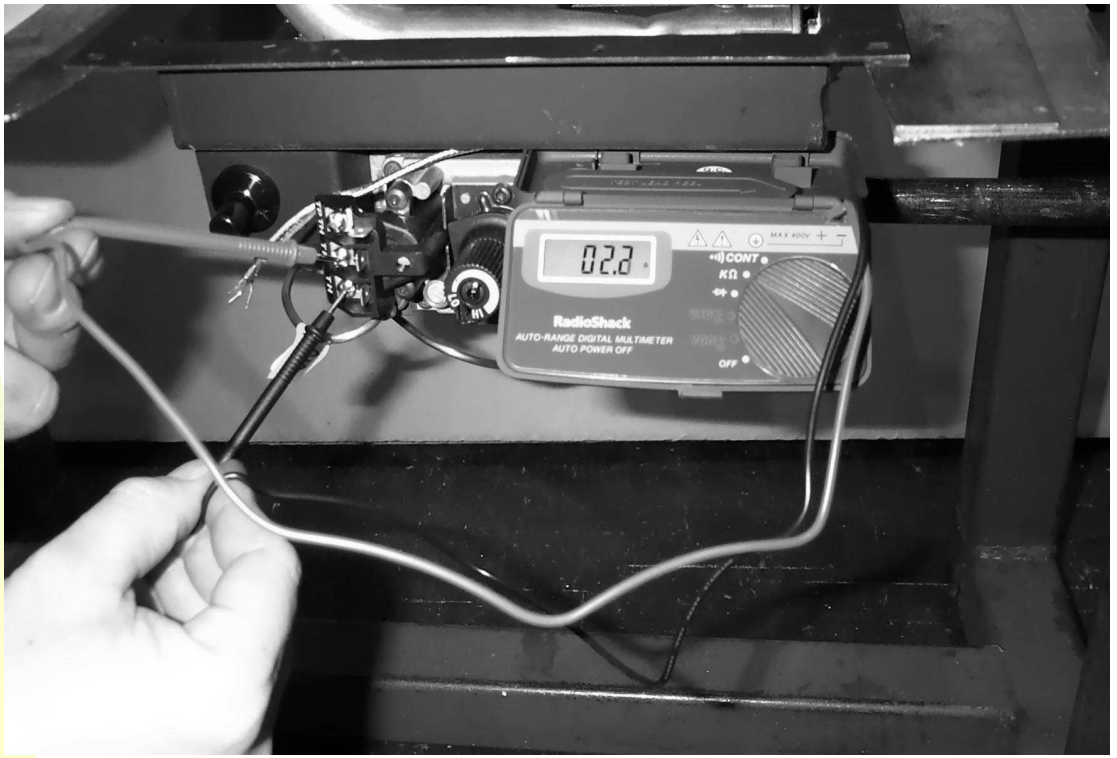
Valve Operating Head Test

- ***Symptom - Intermittent shutdown or main burner fails when burner switch or thermostat is turned on.***
- ***Before conducting this test, disconnect all leads from valve.***

Set meter to ***Ohms*** for this test.

One lead goes to ***TP***, One lead goes to ***TH***

Good reading is 0 to 2.6 ohms***,*** if reading are higher, change the valve.



Carbon Build up

- ***Symptom - carbon build up on glass and/or logs.***

- This is the result of incomplete combustion.
- Insufficient primary air - Check primary air shutter is set to manufactures setting.
- Incorrectly set logs - Check that log positioning is as installation manual specifies.
- Oversized orifice (burner & pilot) - Check orifice size to rating plate attached to the appliance.
- Too high pressure - Check inlet & manifold pressure for possible overfiring.
- Incorrect or impure fuel.
- Other possible causes - Too much ember material and/or rockwool, dirty primary air shutter inlet, un-serviced appliance.