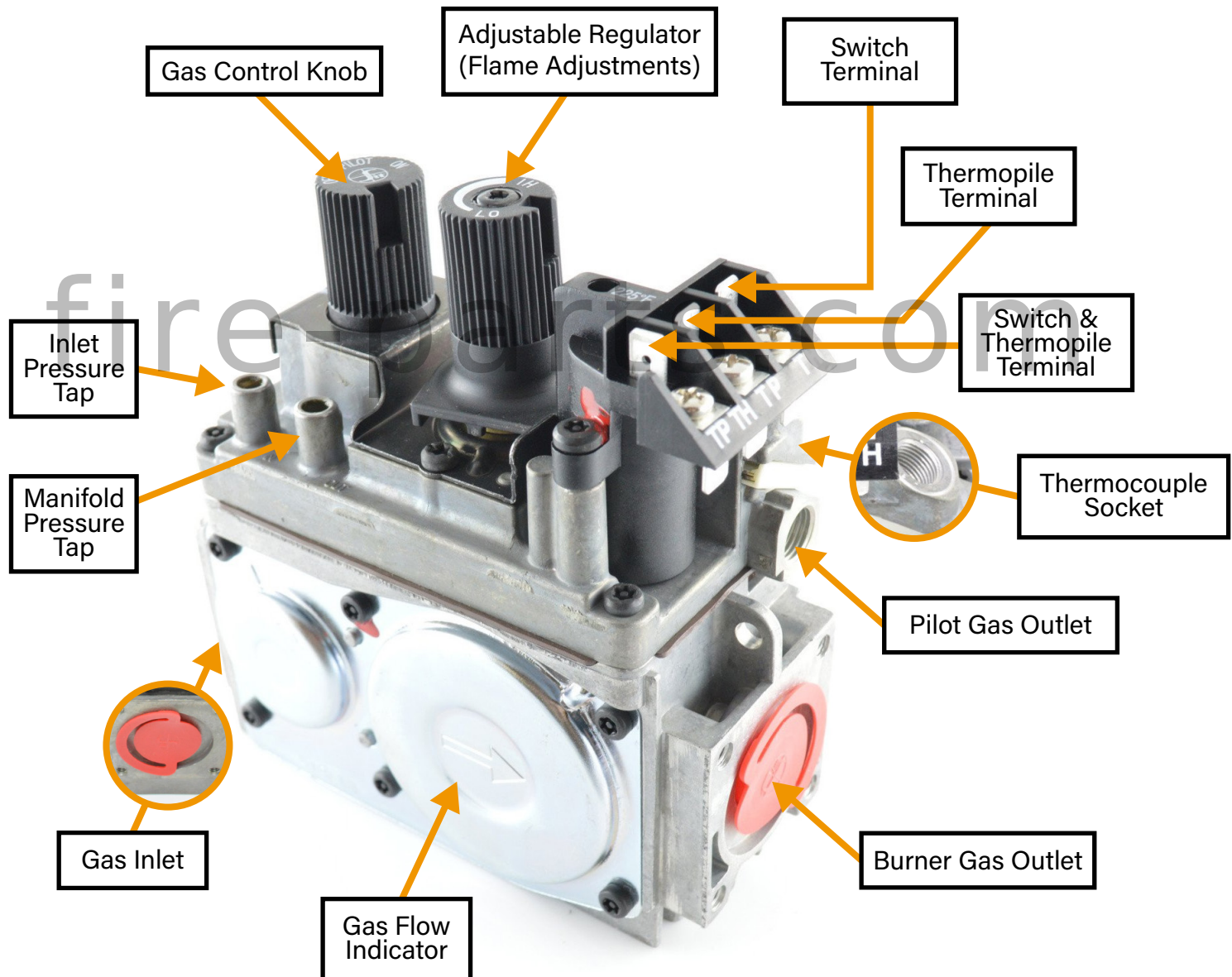


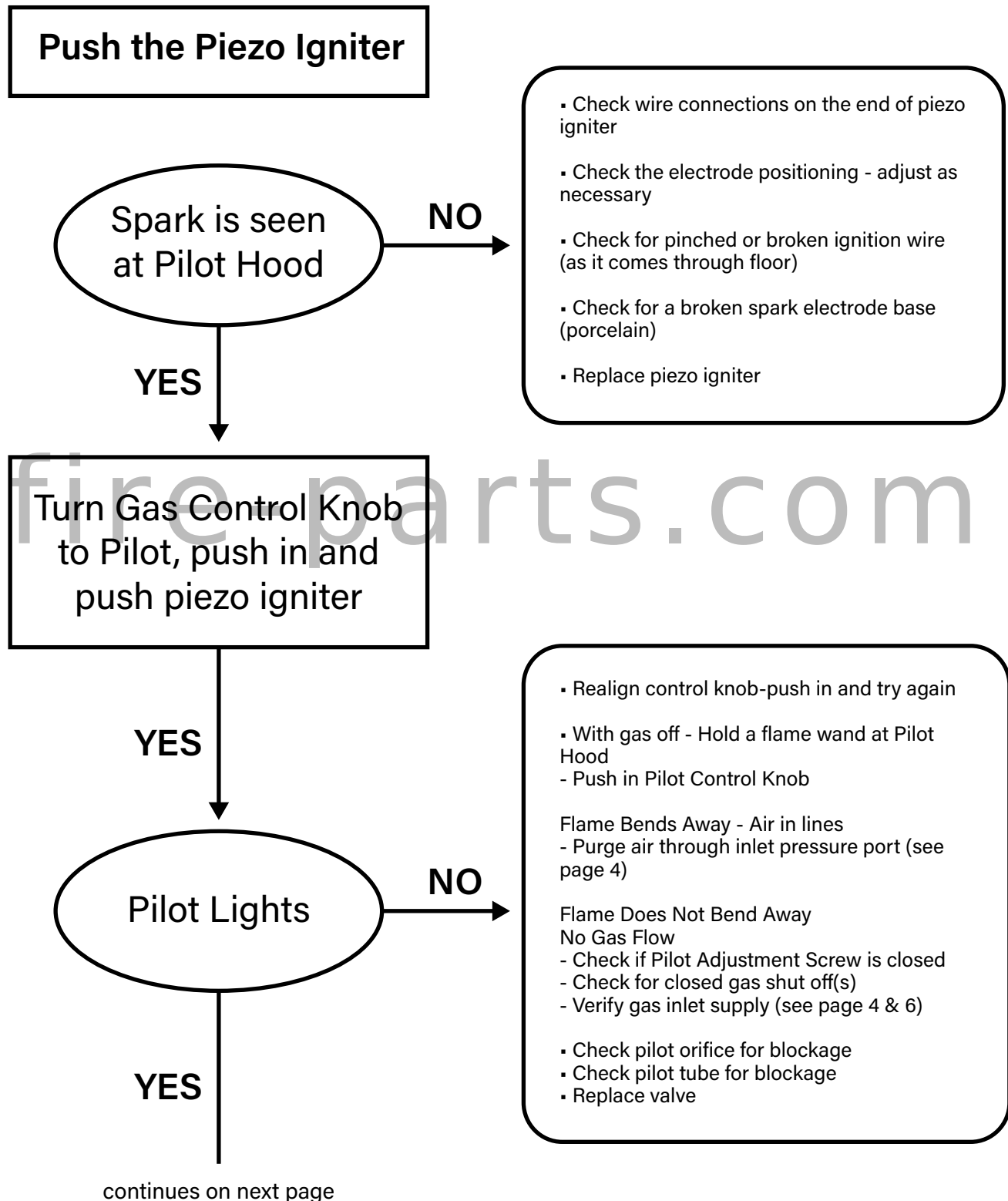
SIT Gas Control Valve

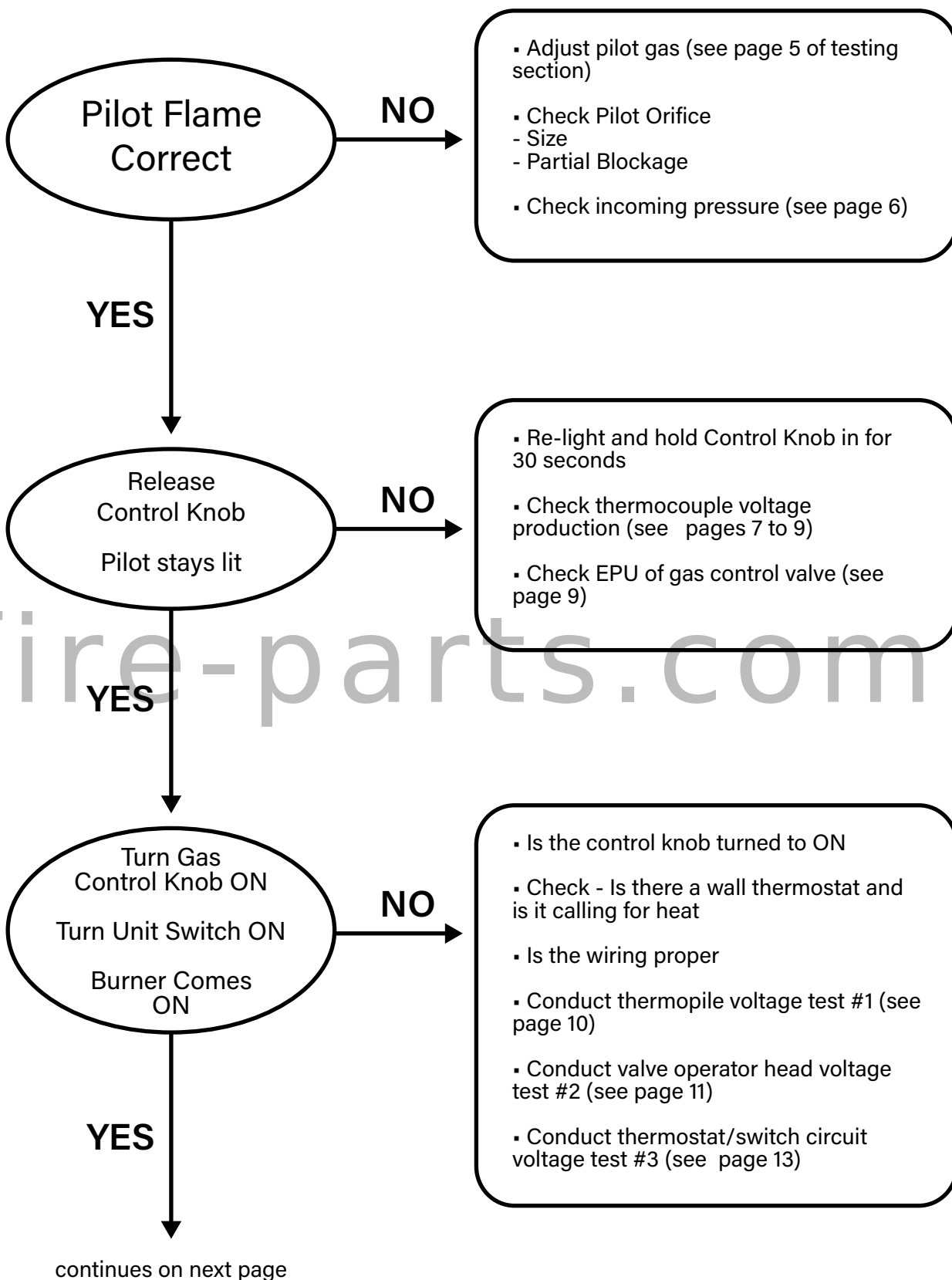


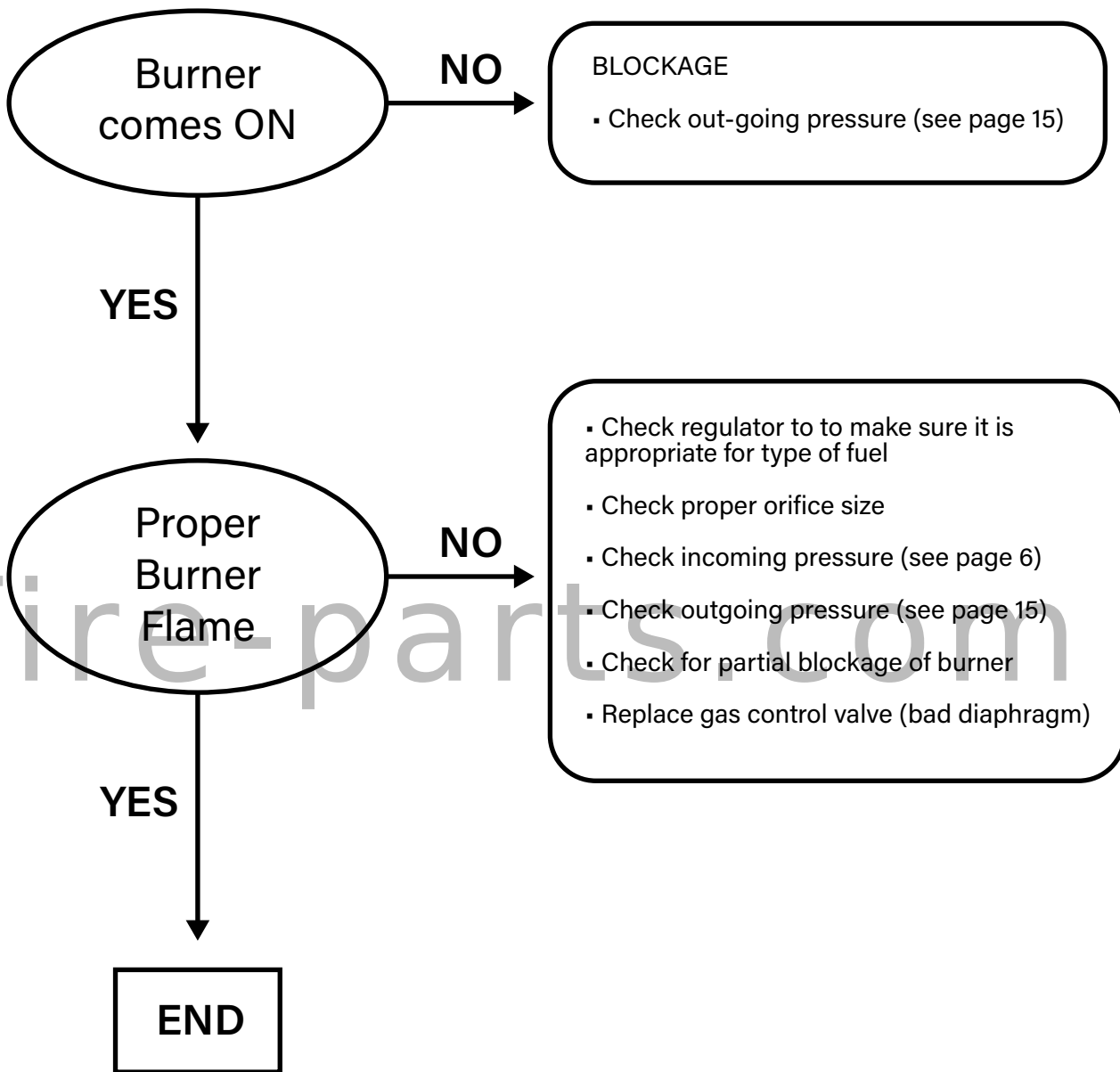
SIT Gas Control Valve

Troubleshooting Flow Chart	1 - 3
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Purging Air	6
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Thermopile Testing (Voltage Test 1)	12
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Thermostat Circuit Test (Voltage Test 3)	15
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Measuring Outgoing Gas Pressure	17

SIT Gas Troubleshooting Flow Chart

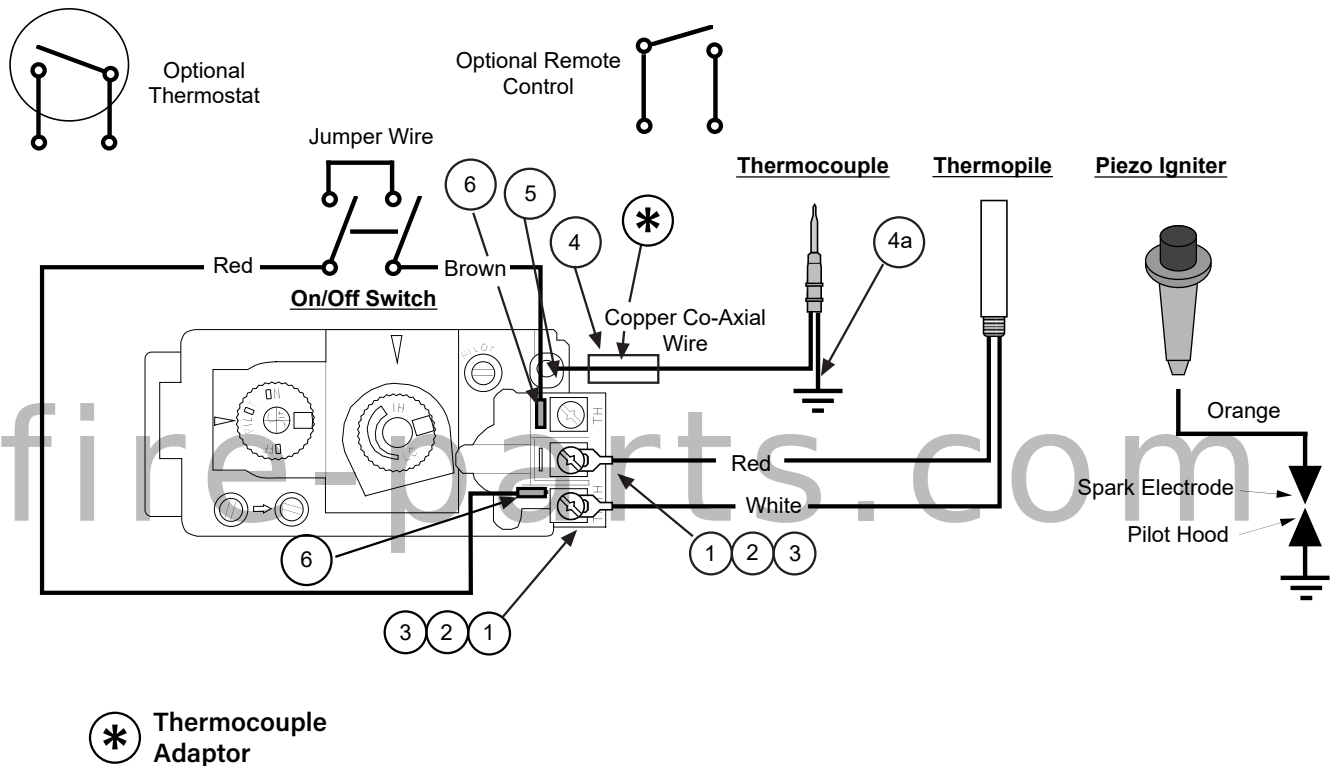






Testing Direct Vents using a SIT Gas Control

Wiring Diagram



TESTING	TEST LEAD PLACEMENT	READINGS	REFERENCE PAGE
THERMOPILE	① - ①	300 MV or Greater	7
INTERNAL VALVE	② - ②	Minimum 225 MV - But Not Equal or Greater than Test ① - ①	8
THERMOSTAT CIRCUIT	③ - ③	145 MV or Greater-But Not Equal To ① - ①	10
THERMOCOUPLE	④ - ④	Minimum 6 MV	4-5
EPU	⑤ -	Continuity	6
SWITCH CIRCUIT CONTINUITY	Disconnect ⑥ - ⑥ and Test Wire	Continuity	11

SIT Gas Control Valve



- Millivolt gas valve
- Is modulating remote compatible
- Contains a pilot side and burner side operation

- Operation head coil resistance
2.25 OHMS
+ .5 OHMS

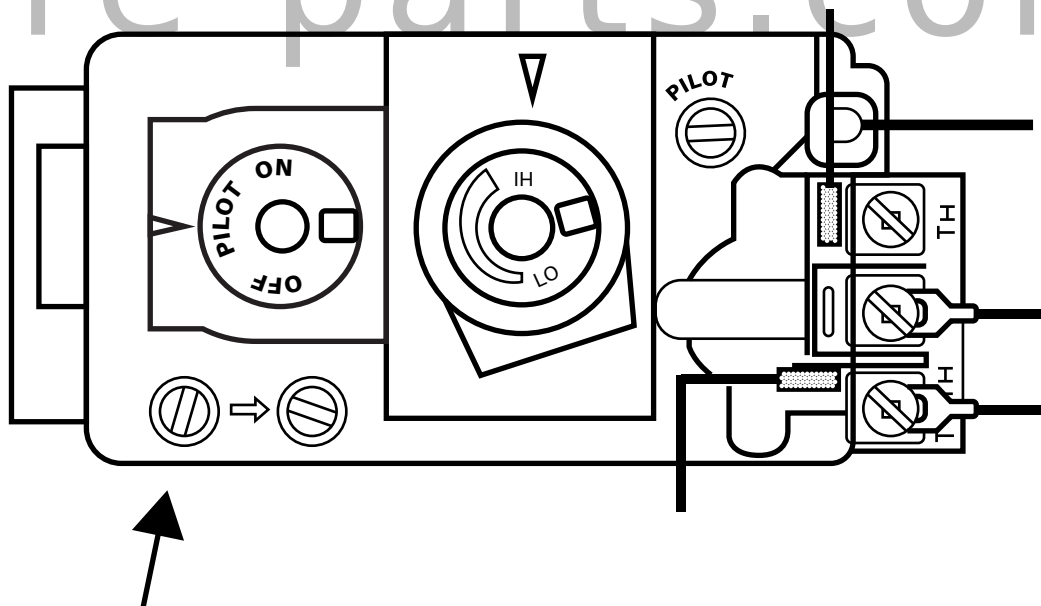
- EPU coil resistance
.018 OHMS
+.003

Pilot
Does Not
Light

Purging Air From Gas Supply Lines

SIT Gas Control Valve

- Loosen inlet pressure tap 2-3 turns
- Leave open until air is purged
- Tighten pressure tap



- Loosen pressure tap 2-3 turns
(No cover cap)

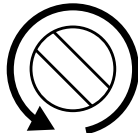


SIT Pilot Flame Adjustment

- No cover cap screw (Uses Double O Ring)
- Turn Adjustment Screw



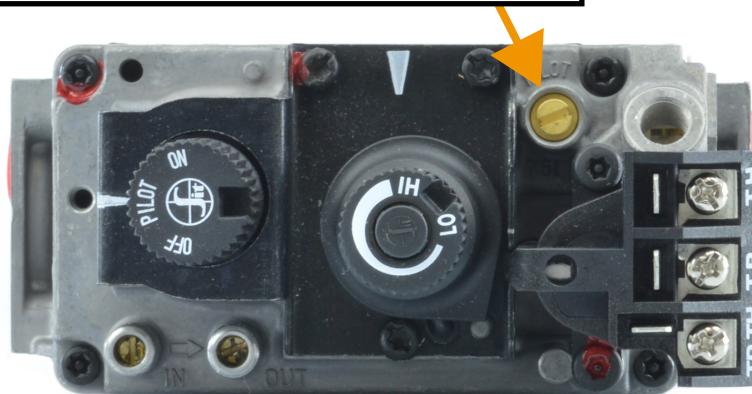
SMALLER
FLAME



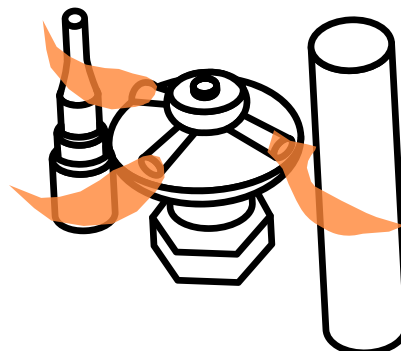
LARGER
FLAME

- Pilot Flame should be a soft blue flame with good Thermocouple/Thermopile Engagement

To adjust the pilot flame, turn this screw clockwise to lower the flame/counter-clockwise to raise the flame.



The pilot flame must contact the thermocouple and thermopile. Adjust the pilot flame up or down as necessary.



Burner
Does Not
Have Proper
Flame

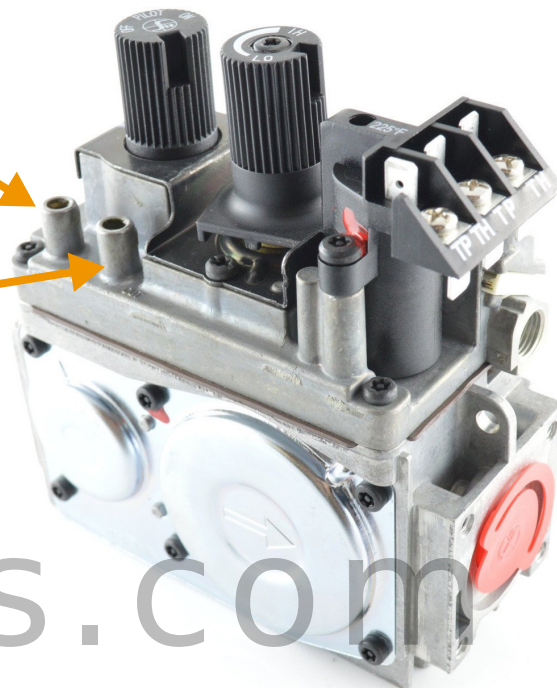
Pilot
Flame not
Correct

SIT Pilot Flame Adjustment



Gas Inlet
Pressure
- Test Port

Gas Outlet
Pressure
- Test Port



SIT Control Valve

Digital Pressure Gauge

- 1) Zero out digital pressure gauge
- 2) Loosen inlet pressure tap (about two or three turns)
- 3) Slip pressure hose over the inlet port
- 4) Light the pilot
- 5) Turn control knob to ON
- 6) Turn ON the main burner (high)
- 7) Read pressure (see chart)

Then

- 8) Turn OFF burner
- 9) Turn control knob to OFF
- 10) Remove pressure hose
- 11) Tighten pressure port screw

Min. Inlet Pressure

NG

LP

5 W.C.

11 W.C.

With Main Burner ON

Pilot Does
Not Stay Lit

Testing Thermocouple

Voltage on a SIT or Robertshaw
Gas Control Valve

Testing MV Production

SIT Gas Control
Minimum 6 MV



Thermocouple Adaptor

Screw
thermocouple
into the gas
control valve

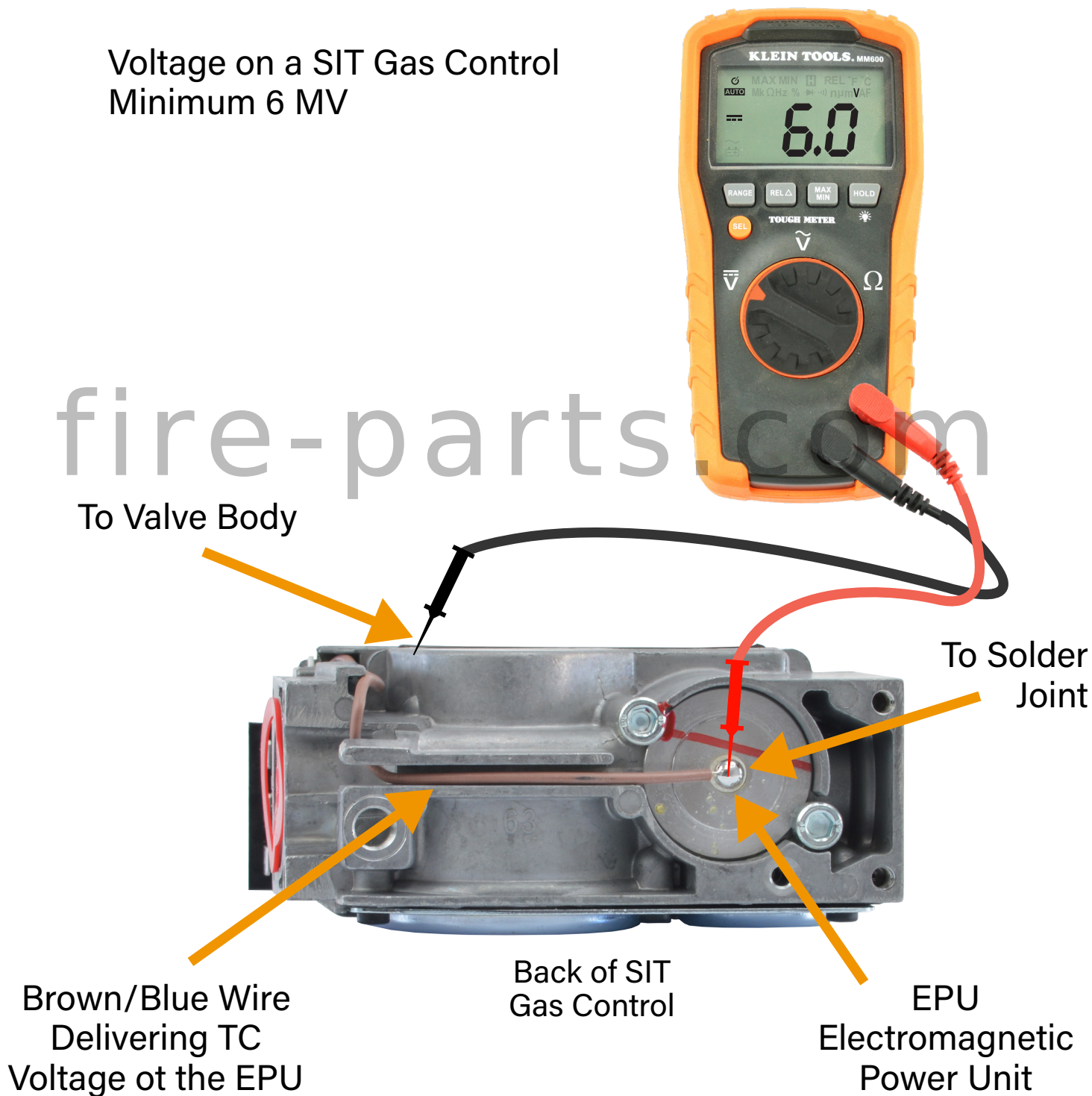


Pilot Does
Not Stay Lit

Testing Thermocouple

Voltage on a SIT Gas Control
Minimum 6 MV

fire-parts.com



Pilot Does
Not Stay Lit

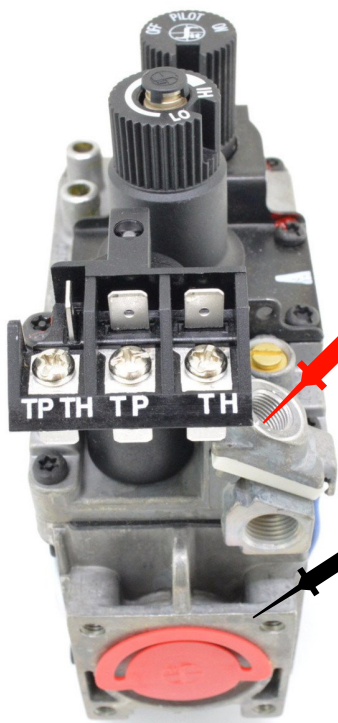
Testing Pilot Coil (EPU) for Continuity



1. Socket Center to any ground
point*

or

2. Ground to solder joint on the bottom of
the valve** - Disconnect Thermocouple
from valve



SIT Control Valve

1. EPU Coil
Continuity
Test*

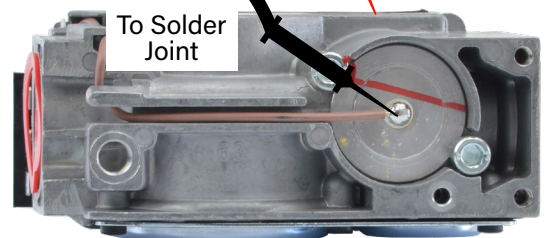
* Make sure your test lead does
not touch the side on the socket

2. EPU Coil
Continuity
Test*

** Disconnect
Thermocouple
From Unit

To Valve
Body

To Solder
Joint



Burner
Does Not
Light

Voltage Testing

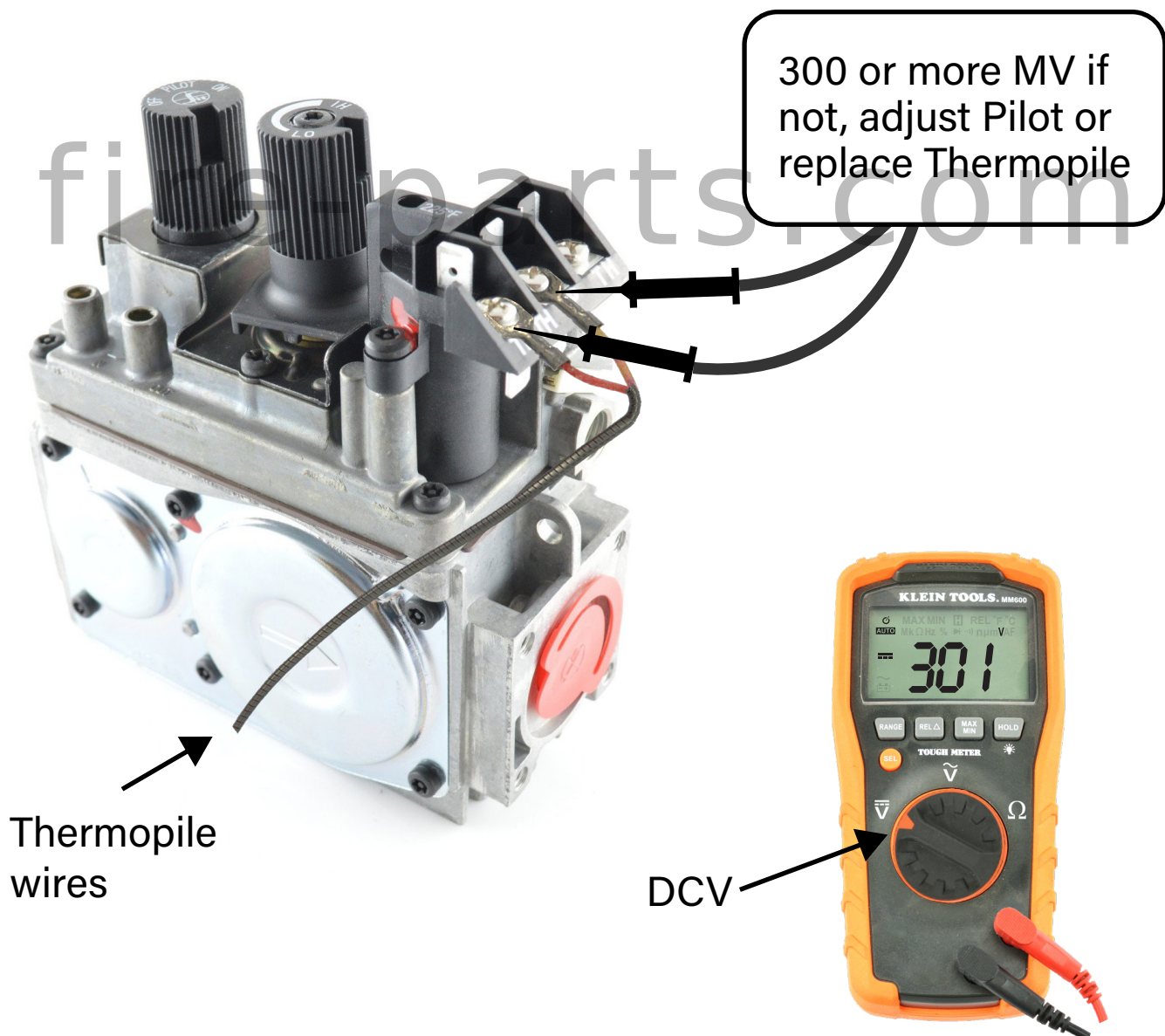
Thermopile Test 1

Control Knob in Pilot position

1. Pilot lit for
approximately 3
minutes

2. Disconnect all
wires EXCEPT the
Thermopile wires

300 or more MV if
not, adjust Pilot or
replace Thermopile



Burner
Does Not
Light

Voltage Testing

Operator Head Test 2

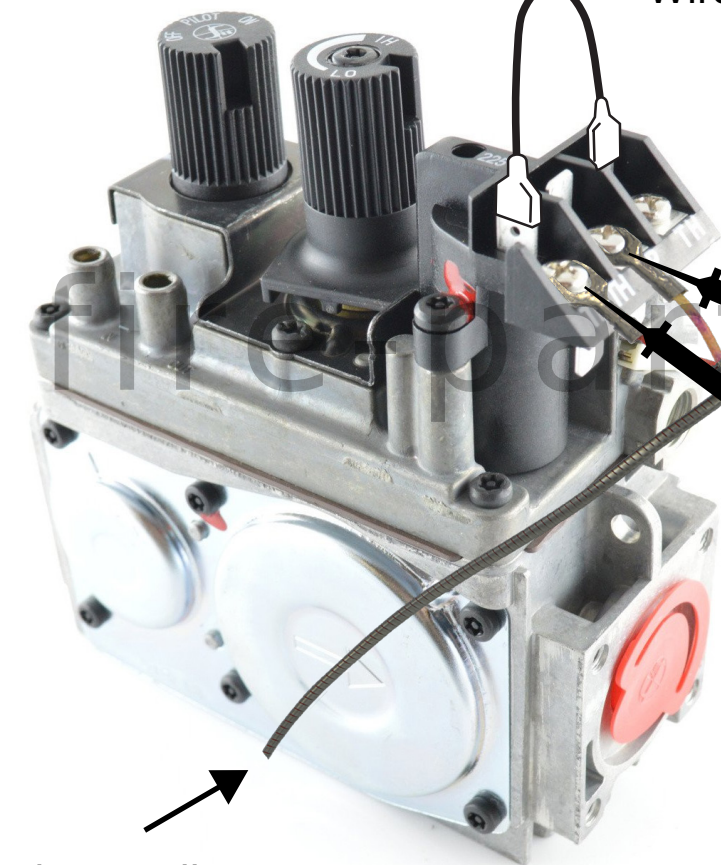
Control Knob in Pilot position

225* MV or Greater

*NOTE: Voltage should not be equal to or greater than the voltage in test #1

If it is, you have an open (defective) Operator Head and the Valve needs replacing

Place Jumper Wire



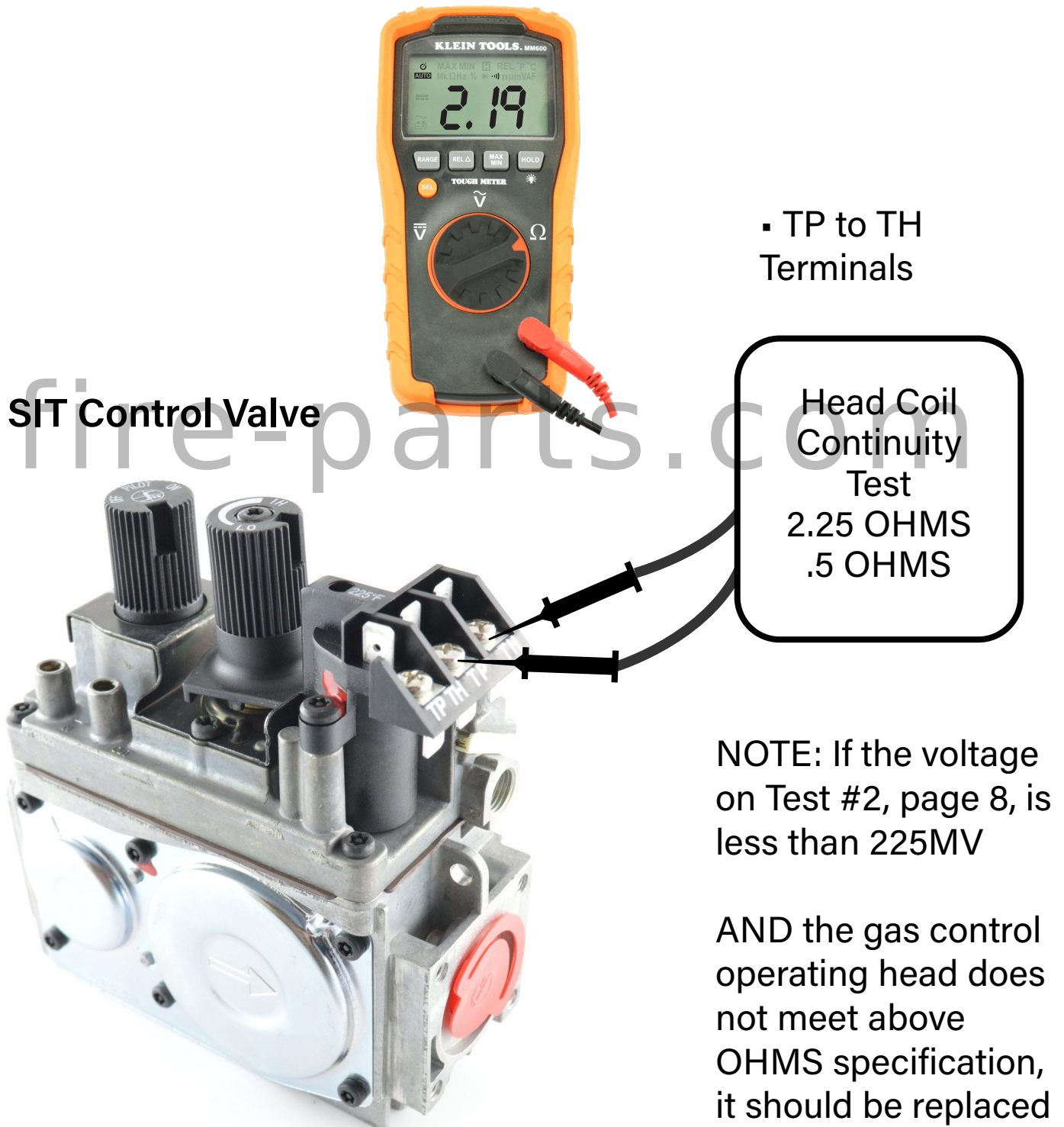
Thermopile
wires

* if less than 225MV, this indicates Operator Head has too much resistance - replace Gas Control Valve.
(Conduct a resistance test on page 12)

DCV



Coil Operator Head Test for Continuity



Burner
Does Not
Light

Voltage Testing

Thermostat Circuit Test 3

Control Knob in Pilot position

Remove Jumper Wire
and Connect
Thermostat Circuit
Wires - Turn Burner
Switch ON

145 MV or Greater

If = to or greater than Test #1
there is a switch circuit problem
- Conduct a continuity test on
the thermostat switch circuit
(see page 16)

Thermopile
wires

DCV

Burner
Does Not
Light

Thermostat/Switch Circuit Continuity Test

Remove thermostat
switch circuit wires



- Test continuity of the thermostat switch circuit
- Turn rocker switch ON or make sure thermostat contact are closed
- NO continuity - Bad wires or defective thermostat/switch

Burner
Does Not
Light

Measuring Outgoing Gas Pressure



Gas Inlet
Pressure
- Test Port

Gas Outlet
Pressure
- Test Port



fire-parts.com

Digital Pressure Gauge

- 1) Loosen output pressure tap (about two or three turns)
- 2) Zero out digital pressure gauge
- 3) Slip pressure hose over the outlet port
- 4) Light the pilot (knob on pilot)
- 5) Turn control knob to ON
- 6) Turn ON the main burner (high)
- 7) Read pressure (see chart)

Then

- 8) Turn OFF burner
- 9) Turn control knob to OFF
- 10) Remove pressure hose
- 11) Tighten pressure port screw

SIT Control Valve

No Outgoing Pressure
replace Regulator Body
- Then if necessary, Gas
Control Valve

Outgoing Pressure but
still no Flame
- Check Burner Orifice for
Blockage
- Check Burner Supply
Tube

Output Pressure

NG	LP
1.8 3.5 W.C.	2.7 11 W.C.
With Main Burner ON	