

40 SERIES GAS BURNER CONTROLLER TROUBLESHOOTING



Before a new controller is installed in gas burner the following tests must be performed. If not damage to controller may occur and void warranty!

Step 1. Remove Controller, connect 120 volts to burner making sure the (hot) wire is connected to the (L) terminal and the (neutral) wire to the (N) terminal. Using a volt meter confirm the following voltages at each of the terminals.

L to 1 (120 Volts)	L to 3 (120 Volts)	L to 8 (120 Volts)	L to 9 (120 Volts)	L to 12 (120 Volts)
-----------------------	-----------------------	-----------------------	-----------------------	------------------------

Step 2. Check air damper (controller removed)

With power to burner as in step 1 (allow air damper to open) use a volt meter and measure voltage at terminals 5 & N. If 120 volts is not present replace air damper.	Remove power to burner at terminal strip, use an ohm meter and measure resistance between terminals L & N. If 575 (± 30 ohms) is not present replace air damper.
---	---

Step 3. Check air switch (controller removed) and no power to burner.

Using ohm meter check for continuity between terminals 8 & 12 (closed contacts) if not replace air switch.	Using ohm meter check for absence of continuity between terminals 7 & 12 (open contacts) if not replace air switch.
--	---

Step 4. Check Blower motor (controller removed)

With no power to burner, Using ohm meter, check for continuity between terminals 1&3, 3&8, 9&1, 9&3. If any of the connections are open replace blower motor.	Jump terminal 5 & 8, apply power to burner, verify that blower motor runs smooth and without excessive noise.	Verify voltage readings with blower motor running, Terminal 9 to 3 (156 volts) Terminal 1 to 3 (72 volts) Terminal 8 to 3 (120 volts) If there is a $\pm 5\%$ discrepancy in any of the voltage readings replace blower motor.
---	---	--

Step 5. Check gas train valves (Remove Power)

Using ohm meter verify resistance of (Asco) gas solenoid valve coil. Resistance should be about 102 ohms. If coil is open, replace solenoid valve.	Using ohm meter verify resistance of (Karl Duges) gas shut off valve coil. Resistance should be about 3.40 ohms. If coil is open, replace shut off valve.	Remove gas valve wires from terminals V1 & V2. Using ohm meter verify resistance of solenoid valve & shutoff valve together. Resistance should be about 114 ohms.
--	---	---

Step 6. Check gas train valve (amp draw)

Turn off main gas valve to burner. Remove gas valve wires from V1 & V2 on terminal strip; apply 120 volts to gas train valves. Using amp meter check amperage draw. Reading is about 0.2 amps.

After all steps are confirmed, new controller can be installed on burner.
Please proceed to the start up directions in the burner manual.

NOTE: Please refer to step 1 when making electrical connections as burner will not operate with the Phase/Neutral wires reversed and damage to the controller will occur!