

TRUBLE SHOOTING CHART

DUO-THERM 65900 SERIES FORCED AIR FURNACE

A. Pilot won't light

1. No gas to furnace: Check tank valve, regulator; check for restriction in piping.
2. Plugged pilot orifice: Clean with lacquer thinner or compressed air, or replace orifice.
3. Restricted pilot tube: Clean tube; if crimped, replace tubing.
4. Defective gas control: Check pilot adjustment screw. If open, control is internally restricted. Replace control.
5. Ignitor electrode not arcing: Check for improper electrode setting. Re-adjust if necessary. Electrode should have 1/8" gap to pilot hood. Also check for cracked electrode or wire insulation.

Check spark pump. Should be able to create strong arc across 1/8" gap.

B. Pilot goes out when button is released

1. Flame not hitting thermocouple: Check pilot adjustment screw, pilot orifice; check for restriction in pilot burner.
2. Defective thermocouple: Check output with millivolt meter and thermocouple adaptor (ITT #103050 G). If output is less than 8 millivolts, replace thermocouple.

Connection should be finger-tight, plus 1/4" turn. DO NOT OVER TIGHTEN.

Replace control.

C. Main burner won't light - blower runs when thermostat is closed.

1. Air prover switch not closing: Check blower rotation. If 12 volt polarity is reversed, blower will run backwards; however, air prover switch will not close.

Also, if battery voltage is low, air prover switch will not close. Blower wheel should

be clean for proper air flow. Check for proper alignment of actuator blade with blower housing; realign if necessary. If air prover switch is internally defective, replace switch.

Check voltage across switch. Voltage reading indicates open switch. If defective replace.

Check control dial - must be in "on" position. Check voltage at control terminals. If 12 volts is present and burner does not light, control is defective; replace.

Replace control.

Check fuses, wiring connections. Note: special fuse in heater does not change appearance when blown.

Check by by-passing thermostat; if defective, replace.

Check by shorting together thermostat wire connections in heater. Repair or replace thermostat wire if needed.

Check by shorting across terminals 5 and 7 on relay. Blower should start. Replace relay if defective.

Apply 12 volts to black and red motor leads. If motor does not run replace motor.

Turn wheel by hand. Realign or replace wheel if necessary.

Check for closed thermostat contacts. If damaged or defective, replace thermostat.

Remove thermostat wire at heater. If blower stops, check wiring for shorts. Repair short or replace wire, if needed.

Remove blue wire from terminal. Check voltage across terminals 5 and 7. No reading indicates contacts are closed. Replace relay.

2. Open limit switch:

3. Defective gas control:

1. Defective gas control:

1. No power to unit:

2. Defective thermostat:

3. Broken thermostat wire:

4. Defective thermostat relay:

5. Defective blower motor:

6. Stuck blower wheel:

1. Defective thermostat:

2. Short in thermostat wire:

3. Stuck thermostat relay:

D. Main burner won't shut off when blower shuts off.

E. Blower won't start when thermostat is closed.

F. Blower won't shut off.

4. Stuck fan switch:

Check voltage across switch. No reading indicates closed contacts. If contacts remain closed after cool-down, replace fan switch.

1. Internal short in gas control:

Replace control and thermostat.

Check amp draw; replace motor if defective.

Check wiring connections; check for loose wires, or wire connections touching metal casing.

2. Short to ground inside unit:

I. Pilot outage (during high fire cycle).

1. Air restriction:

Check intake and exhaust vents for air restrictions. Check draft blower wheel for tightness. Wheel should be clean for proper air flow.

J. Pilot outage (pilot stage).

1. Air leak in sealed system:

Check all gaskets, vent connections, draft blower assembly, etc. Air tightness is important for proper operation.

2. Pilot flame too large:

Check gas pressure. Adjust pilot at control. If pilot orifice is damaged or enlarged, replace orifice.

3. Weak thermocouple: (See also Section B.)

Check thermocouple output with millivolt meter and thermocouple adaptor (ITT #103050G). If output is below 8 millivolts, replace thermocouple.

G. Thermostat anticipator burned out.

H. Fuse blown.

CONVERTOR PROBLEMS

COMBINATION 110 - 12 VOLT UNITS ONLY

1A. Unit fails to switch from battery to 110 volt operation.

1. No 110 volt power to unit:
2. Defective transformer:

Check fuses and connections in power supply. Check transformer output. Yellow to black - approximately 14 volts. Yellow to yellow, 28 to 30 volts. If defective, replace transformer. Note: Before replacing transformer check rectifier for shorts. A defective rectifier will cause transformer to fail again.

3. Defective rectifier:

Check with ohm meter. Place one probe on "+" terminal and touch other probe to both AC terminals, in turn. Reverse probes and repeat test. Meter should show continuity on one test, open reading on other test. If meter shows continuity or open on both tests, replace rectifier.

4. Defective switching relay:

Apply 12 VDC to terminals A and B. Relay should switch. If defective, replace relay.

Manual provided courtesy  
Bryant RV Services  
[www.byantrv.com](http://www.byantrv.com)

All manuals are believed to be released for distribution, and/or in the public domain.

Service manuals provided with the understanding that persons using them are well versed in proper safety practices, and are familiar with basic safety procedures, including, but not limited to safety procedures dealing with 120 volt electricity, high amperage 12 volt circuits an LPG (propane) systems.

If in doubt, consult a professional (better safe than sorry).