### **Quick Diagnostics For 2 Stage Furnaces**

Tools Required: Multimeter All tests performed at Control Board. Wire color codes:

#### WHITE

With the ON/OFF Switch turned on, there will always be DC power at the white connection. The thermostat can be turned on or off. If there is no power at this location, check the ON/OFF Switch. If the Switch is in the on position, check to confirm that the Limit Switch is closed. If not, replace the Limit Switch. If the Limit Switch is closed, check to confirm DC coming into red wire into furnace. Correct problem, fuse, or disconnected red wire.

#### **BLACK:**

Black wire comes from the Sail Switch. There will be no power at this location unless furnace blower is operating. If the blower is running at least 6 volts and there is no reading on the black connection, replace Sail Switch.

#### BLUE: 1

Power from the Thermostat. The Thermostat provides power to the furnace as a signal rather than typical, straight DC voltage. With the meter attached to the blue wire, you will see varying voltages displayed, rather than one solid reading like you will see with our standard furnace. If no reading, the Thermostat is probably defective. Before the Thermostat is replaced, check all wiring.

#### **BLUE: 2**

Power from Control Board, to the Ignition Board. Reading at the blue 2 is straight DC voltage. There is no reading at this location when the Thermostat is in the fan only mode. When the Thermostat is turned to heat mode, you will see a reading at blue 2. If there is no power on blue 2 when the thermostat is in heat mode, replace the Control Board.

#### **ORANGE:**

Ignore

#### **BROWN:**

Power from Control Board to third coil on Valve, high heat only. During low heat mode there will be no reading at the brown wire connection. When the mode is changed to high heat there will be a solid voltage reading at this location. If no reading during high heat, replace Control Board.



# FURNACE -Electronic Ignition Model TROUBLE SHOOTING GUIDE

Effective: 8/10/98

Guides are only intended for use on Atwood® products by service technicians who have successfully completed Atwood® training. This guide should be used in conjunction with the appropriate Instruction Manual provided with the product and any applicable Industry Standards. This is not intended to be a complete list. Please direct questions concerning service of Atwood® products to 866-869-3118 option 5 before proceeding.

No electrical power to the furnace	Reconnect or replace power source.*
Thermostat defective	
Thermostat wires broken or shorted	Replace wire or wires*
	Reset circuit breaker. Check amp draw from motor
Defective or tripped (circuit breaker)	According to furnace's specifications.
Blower relay defective	Replace relay
Wire off motor	
Wire off relay	
Improper ground	
Blower motor defective	Replace motor
LOWER RUNS - BUT FAILS TO IGI	NITE
Low Voltage/High Voltage	Correct Power Supply*
Gas pressure incorrect	Set pressure to a minimum of 11" W.C. with all appliances running.
	(Replace regulator if not obtainable).*
	Clean and secure grounds established*
Air intake restricted	
12 volt polarity reversed	
	Check voltage first. If 12 VDC while running, replace motor.
Exhaust blocked	
Combustion air wheel loose	
Sail switch defective or wire off	
Limit switch defective or wire off	
Edge connector on circuit board dirty	
	Clean plug contacts. If still defective, replace. (check on board tester when possible).
Gas valve defective	Replace valve or valve coil, depending on problem encountered.
	Clean main burner orifice or replace.
High tension lead wire defective	
	Adjust electrode (take care not to damage porcelain).
Electrode defective	
Obstructed burner head	
URNER IGNITES BUT IGNITION SY	YSTEM "LOCKS OUT" AND TURNS BURNER OFF
Low gas pressure	Set pressure to a minimum of 11" W.C. with all appliances running.
	Replace regulator if not obtainable.*
Exhaust blocked	
Combustion air wheel loose	,
	Adjust electrode according to furnace specifications.
Electrode defective	
Circuit Board defective	Clean plug contacts. If still defective, replace. (Check on board tester
	when possible).
Flame sensor wire between electrode	Replace wire
and circuit board defective	<b>5</b>
Air leakage at gaskets	
Defective heat exchanger	Replace neat exchanger

\*indicates NOT covered under warranty.

continued backside

### FURNACE - ELECTRONIC IGNITION Model (continued) Effective: 8/10/98

CAUSE	SOLUTION	
SOOTING (caused by lazy yellow flame)		
Low gas pressure	*Set pressure to a minimum of 11" W.C. with all appliances	
	running. Replace regulator if not obtainable.	
Low voltage		
Air leakage at gasketsCombustion wheel installed backwards or loose		
Blockage in heating chamber or burner head		
Faulty motor		
Wrong vent kit or draft cap		
FAN RUNS CONTINUOUSLY WITH THERMOSTAT	·	
Defective thermostat		
Shorted thermostat leads		
Defective relay	'	
LIMITING = BURNER CYCLING ON AND OFF - BLOWER RUNS CONSTANTLY WITH THERMOSTAT ON		
Restricted or insufficient discharge ducting	a. Ducting must meet furnace's minimum requirements.*	
	b. No excess ducting or unnecessary bends.*	
Eurnaga over fired	c. All closeable registers must be fully open and unrestricted.*Set gas pressure to a minimum of 11" W.C. with all appliances	
Fulliace over lifeu	running replace regulator, if not obtainable. Also, check main	
	burner orifice, it must comply with furnace's specifications.*	
Restricted return air supply	Make sure return air meets furnace minimum requirements.*	
Defective limit switch	Replace limit switch	
BLOWER SHUTS OFF AT SAME TIME BURNEF	SHUTS OFF	
Wired wrong		
Faulty relay	· · · · · ·	
BLOWER VIBRATES OR IS NOISY		
Motor mount loose		
	a. Ducting must meet furnace's minimum requirements*	
	<ul><li>b. No excess ducting or unnecessary bends.*</li><li>c. All closeable registers must be fully open and unrestricted.</li></ul>	
Damaged blower wheel		
Motor shaft bent		
INSUFFICIENT HEAT		
Furnace under fired	1. Set gas pressure to 11" W.C. with all appliances running,	
	replace regulator if not obtainable. Also, check main burner	
	orifice, it must comply with furnace's specifications.	
	2. Check ducting and return air according to furnaces	
Furnace impreparity sized for each/or senditions	specifications.*	
Furnace improperly sized for coach/or conditions	nepiace iumace with proper size.	



INTERNET: http://www.atwoodmobile.com

# FURNACE - Pilot Model TROUBLE SHOOTING GUIDE

Effective: 8/10/98

Guides are only intended for use on Atwood® products by service technicians who have successfully completed Atwood® training. This guide should be used in conjunction with the appropriate Instruction Manual provided with the product and any applicable Industry Standards. This is not intended to be a complete list. Please direct questions concerning service of Atwood® products to 866-869-3118 before proceeding.

CAUSE SOLUTION

No electrical power to the furnace Current overload protector device Reset circuit breaker. Check amp draw from motor defective or tripped (circuit breaker) according to furnace's specifications.  Thermostat defective Replace wire or wires. Thermostat located in high area Blower motor defective Replace motor. Blower relay defective Replace relay. Wire off motor Reconnect wire.* Improper ground Clean and secure grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE Low Voltage/High Voltage Correct power supply.* 12 volt polarity reversed Gas valve defective Replace regulator if not obtainable). Limit switch defective or wire off Sal switch defective or wire off Burner orifice blocked Combustion air wheel loose Burner head adjustment Reposition and tighten. Sex pressition and tighten. Air intake restricted Replace or tighten. Burner or loose wire Motor running slow Chean and Secure or replace. Clean ari intake.* Broken or loose wire Replace or tighten. Motor running slow Chean changes. Clean or replace or rifice Replace or tighten. Motor running slow Chean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Chean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Chean changes. Clean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Chean changes. Clean changes. Clean changes. Clean or replace or flore Replace or tighten. Motor running slow Chean changes. Chean	BURNER FAILS TO IGNITE AND - BLOWER FAILS TO RUN		
Current overload protector device  Thermostat defective Replace thermostat.  Replace wire or wires.  Thermostat wires broken Replace wire or wires.  Thermostat located in high area Blower motor defective Replace motor.  Blower relay defective Replace motor.  Blower relay defective Replace motor.  Wire off motor Reconnect wire.*  Wire off relay Reconnect wire.*  Improper ground  Correct power supply.*  Correct power supply.*  Low Voltage/High Voltage Correct polarity.*  Furnace grounding wires not secure Gas valve defective or wire off Replace valve or valve coil, depending on problem encountered.  Resonnect wire or replace.  Sail switch defective or wire off Reconnect wire or replace.  Sail switch defective or wire off Reconnect wire or replace.  Combustion air wheel loose Burner orifice blocked Combustion air wheel loose Burner head adjustment Reposition and tighten.  Reposition and tighten.  Replace or righten.  Exhaust blocked Clean each and secure replace.  Clean exhaust.*  Air intake restricted Broken or loose wire Replace or tighten*  Motor running slow Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged Clean or replace orifice Thermocouple defective Replace from the surface or replace orifice Replace or tighten*  Motor running slow Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged Clean or replace orifice Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON" Restricted return air supply Restricted scharge duct system  Ake sure return air meets furnace's minimum requirements.  A. Make sure return air meets furnace's minimum requirements.*  C. Make sure not on a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable.	No electrical power to the furnace	Reconnect or replace nower source *	
tripped (circuit breaker).according to furnace's specifications.  Thermostat wires broken Replace wire or wires. Thermostat wires broken Replace wire or wires. Thermostat located in high area Blower motor defective Replace relay. Wire off motor Reconnect wire.* Wire off relay Reconnect wire.* Replace relay. Wire off relay Reconnect wire.* Replace wire or wire.* Replace relay. Wire off relay Reconnect wire.* Reconnect wire.* Improper ground Clean and secure grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage Correct power supply.* Correct polarity.* Furnace grounding wires not secure Gas valve defective Replace valve or valve coil, depending on problem encountered. Replace regulator if not obtainable). Limit switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace. Combustion air wheel loose Reposition and tighten. Burner head adjustment Reposition and tighten. Burner head adjustment Reposition and tighten. Air intake restricted Clean air intake.* Broken or loose wire Replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.* Clean exhaust.* Alr intake restricted Replace grunding first. Replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.* Replace pilot assembly defective Restricted return air supply Restricted discharge duct system  Make sure return air meets furnace's minimum requirements.  A Make sure there is no excess ducting or unnecessary bends.* C. Make sure return air meets furnace's minimum requirements.* Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Thermostat defective Replace wire or wires. Thermostat located in high area Reloate thermostat. Blower motor defective Replace motor. Blower relay defective Replace motor. Reconnect wire.* Wire off motor Reconnect wire.* Improper ground Reconnect wire.*  BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage Correct power supply.*  12 volt polarity reversed Clean and secure grounds established.* Gas valve defective Replace valve or valve coil, depending on problem encountered. Gas pressure incorrect Set pressure to a minimum of 11" W.C. with all appliances running. (Replace regulator if not obtainable).  Limit switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace. Combustion air wheel loose Reposition and tighten. Burner orifice blocked Clean main burner orifice or replace. Combustion air wheel loose Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked Clean air intake.*  Air intake restricted Clean ir intake.* Broken or loose wire Replace or tighten.*  Motor running slow Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged Clean or replace or rifice Plugged Clean or replace or replace.  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply Make sure return air meets furnace's minimum requirements.*  b. Make sure any closeable registers are fully open and unrestricted.  Replace limit swi	darront overload protector device		
Thermostat wires broken Thermostat located in high area Relocate thermostat. Blower motor defective Replace motor. Blower relay defective Replace relay. Wire off motor Reconnect wire.* Wire off relay Reconnect wire.* Improper ground Clean and secure grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE Low Voltage/High Voltage Correct polarity.* Furnace grounding wires not secure Gas valve defective Replace valve or valve coil, depending on problem encountered. Gas pressure incorrect Replace valve or valve coil, depending on problem encountered. Gas pressure incorrect Replace valve or valve coil, depending on problem encountered. Gas pressure incorrect Replace valve or valve coil, depending on problem encountered. Replace valve or valve coil, depending on problem encountered. Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace. Combustion air wheel loose Reposition and tighten. Burner head adjustment Reposition and tighten. Adjust burner according to furnace specifications. Exhaust blocked Clean exhaust.* Air intake restricted Clean exhaust.* Air intake restricted Clean exhaust.* Air intake restricted Clean or replace or replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.* Pilot orifice plugged Clean or replace orifice Thermocouple defective Replace thermocouple Replace first seembly defective Replace pilot assembly BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON" Restricted discharge duct system  Make sure return air meets furnace's minimum requirements.* b. Make sure there is no excess ducting or unnecessary bends.* c. Make sure any closeable registers are fully open and unrestricted. Beplace limit switch. Replace limit switch. Replace regulator if not obtainable. Also, check main burner	Thermostat defective		
Thermostat located in high area  Blower motor defective  Blower relay defective  Replace motor.  Wire off motor  Reconnect wire.*  Wire off relay  Reconnect wire.*  Replace grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage  Correct power supply.*  12 volt polarity reversed  Correct power supply.*  12 volt polarity reversed  Gas valve defective  Replace valve or valve coil, depending on problem encountered.  Replace regulator if not obtainable).  Limit switch defective or wire off  Reconnect wire or replace.  Sail switch defective or wire off  Reconnect wire or replace.  Combustion air wheel loose  Reposition and tighten.  Burner head adjustment  Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked  Clean exhaust.*  Air intake restricted  Broken or loose wire  Replace or tighten*  Motor running slow  Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged  Clean or replace orifice  Replace or tighten*  Motor running slow  Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged  Clean or replace orifice  Replace pilot assembly defective  Replace pilot assembly defective  Replace pilot assembly by  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply  Make sure return air meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends. *  c. Make sure any closeable registers are fully open and unrestricted.  Replace limit switch.  Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable. Also, check main burner running. Replace regulator if not obtainable.			
Blower motor defective Replace motor. Blower relay defective Replace relay. Wire off motor Reconnect wire.* Wire off motor Reconnect wire.* Wire off motor Reconnect wire.* Improper ground Clean and secure grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE Low Voltage/High Voltage Correct polarity.* Furnace grounding wires not secure Clean and secure grounds established* Gas valve defective Replace valve or valve coil, depending on problem encountered. Gas pressure incorrect "Set pressure to a minimum of 11"W.C. with all appliances running. (Replace regulator if not obtainable). Limit switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace. Combustion air wheel loose Reposition and tighten. Burner head adjustment Reposition and tighten. Burner head adjustment Reposition and tighten. Clean exhaust.* Air intake restricted Clean ir intake.* Broken or loose wire Replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.* Pilot orifice plugged Clean or replace orifice Thermocouple defective Replace thermocouple Pilot assembly defective Replace thermocouple Restricted return air supply Make sure return air meets furnace's minimum requirements.*  a. Make sure any closeable registers are fully open and unrestricted. Replace limit switch.* Furnace over fired Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Blower relay defective Reconnect wire.* Wire off relay Reconnect wire.* Wire off relay Reconnect wire.* Clean and secure grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage Correct power supply.* 12 volt polarity reversed Correct power supply.* Clean and secure grounding wires not secure Gas valve defective Replace valve or valve coil, depending on problem encountered. Gas pressure incorrect Sail switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reposition and tighten. Adjust burner according to furnace specifications. Exhaust blocked Clean are shaust.* Air intake restricted Clean are shaust.* Air intake restricted Clean are intake.* Broken or loose wire Replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.* Pilot orifice plugged Clean or replace orifice Plugged Clean or replace orifice Plugged Replace thermocouple Pilot assembly defective Replace thermocouple Replace first mare supply Restricted return air supply Make sure return air meets furnace's minimum requirements.*  Defective limit switch Replace limit switch. Furnace over fired Sunday S	Rlower motor defective	Replace motor	
Wire off relay————————————————————————————————————			
Wire off relay — Reconnect wire.*   Improper ground — Clean and secure grounds.*  BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage — Correct power supply.*  12 volt polarity reversed — Correct polarity.*  Furnace grounding wires not secure — Clean and secure grounds established*  Gas valve defective — Replace valve or valve coil, depending on problem encountered.  Gas pressure incorrect — *Set pressure to a minimum of 11" W.C. with all appliances running. (Replace regulator if not obtainable).  Limit switch defective or wire off — Reconnect wire or replace.  Sail switch defective or wire off — Reconnect wire or replace.  Burner orifice blocked — Clean main burner orifice or replace.  Combustion air wheel loose — Reposition and tighten.  Burner head adjustment — Reposition and tighten.  Exhaust blocked — Clean exhaust.*  Air intake restricted — Clean air intake.*  Broken or loose wire — Replace or tighten*  Motor running slow — Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged — Clean or replace orifice  Thermocouple defective — Replace thermocouple  Pilot assembly defective — Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON" —  Restricted return air supply — Make sure return air meets furnace's minimum requirements.  Burner defective limit switch — Replace limit switch.*  C. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch — Replace limit switch.*  Furnace over fired — Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage			
BLOWER RUNS - BUT FAILS TO IGNITE  Low Voltage/High Voltage			
Low Voltage/High Voltage Correct power supply.*  12 volt polarity reversed Correct polarity.*  Furnace grounding wires not secure Clean and secure grounds established*  Gas valve defective Replace valve or valve coil, depending on problem encountered.  *Set pressure to a minimum of 11"W.C. with all appliances running. (Replace regulator if not obtainable).  Limit switch defective or wire off Reconnect wire or replace.  Sail switch defective or wire off Reconnect wire or replace.  Burner orifice blocked Clean main burner orifice or replace.  Combustion air wheel loose Reposition and tighten.  Burner head adjustment Reposition and tighten.  Burner head adjustment Reposition and tighten.  Exhaust blocked Clean exhaust.*  Air intake restricted Clean air intake.*  Broken or loose wire Replace or tighten*  Motor running slow Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged Clean or replace orifice  Thermocouple defective Replace thermocouple  Pilot assembly defective Replace thermocouple  Pilot assembly defective Replace thermocouple  Restricted return air supply Ake sure return air meets furnace's minimum requirements.  Restricted discharge duct system Ake sure return air meets furnace's minimum requirements.  **Defective limit switch Replace limit switch.**  C. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch Replace limit switch.  Set gas pressure to a minimum of 11"WC with all appliances running. Replace regulator if not obtainable. Also, check main burner		•	
12 volt polarity reversed Furnace grounding wires not secure Gas valve defective Gas valve defective Gas pressure incorrect  Clean and secure grounds established* Replace valve or valve coil, depending on problem encountered.  Set pressure to a minimum of 11"W.C. with all appliances running. (Replace regulator if not obtainable).  Limit switch defective or wire off Reconnect wire or replace. Sail switch defective or wire off Reconnect wire or replace.  Burner orifice blocked Clean main burner orifice or replace.  Combustion air wheel loose Reposition and tighten.  Burner head adjustment Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked Clean exhaust.* Air intake restricted Clean ari intake.*  Broken or loose wire Replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged Clean or replace orifice Thermocouple defective Replace thermocouple Pilot assembly defective Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply Make sure return air meets furnace's minimum requirements.  a. Make sure ducting meets furnace's minimum requirements.  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch Replace limit switch.*  Furnace over fired Set gas pressure to a minimum of 11"WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Furnace grounding wires not secure  Gas valve defective  Gas pressure incorrect  *Set pressure to a minimum of 11" W.C. with all appliances running.  (Replace regulator if not obtainable).  Limit switch defective or wire off  Reconnect wire or replace.  Sail switch defective or wire off  Reconnect wire or replace.  Sail switch defective or wire off  Reconnect wire or replace.  Combustion air wheel loose  Burner head adjustment  Reposition and tighten.  Burner head adjustment  Reposition and tighten.  Exhaust blocked  Clean exhaust.*  Air intake restricted  Clean air intake.*  Broken or loose wire  Replace or tighten*  Motor running slow  Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged  Clean or replace orifice  Thermocouple defective  Replace thermocouple  Pilot assembly defective  Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply  Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system  a. Make sure ducting meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch  Replace limit switch.*  Furnace over fired  Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Gas valve defective Replace valve or valve coil, depending on problem encountered.  Gas pressure incorrect *Set pressure to a minimum of 11" W.C. with all appliances running. (Replace regulator if not obtainable).  Limit switch defective or wire off Reconnect wire or replace.  Sail switch defective or wire off Reconnect wire or replace.  Burner orifice blocked Clean main burner orifice or replace.  Combustion air wheel loose Reposition and tighten.  Burner head adjustment Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked Clean exhaust.*  Air intake restricted Clean air intake.*  Broken or loose wire Replace or tighten*  Motor running slow Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged Clean or replace orifice  Thermocouple defective Replace thermocouple  Pilot assembly defective Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system a. Make sure ducting meets furnace's minimum requirements.  C. Make sure there is no excess ducting or unnecessary bends.*  C. Make sure there is no excess ducting or unnecessary bends.*  C. Make sure any closeable registers are fully open and unrestricted.  Replace limit switch.  Furnace over fired Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Gas pressure incorrect—— *Set pressure to a minimum of 11" W.C. with all appliances running.  (Replace regulator if not obtainable).  Limit switch defective or wire off—— Reconnect wire or replace.  Sail switch defective or wire off—— Reconnect wire or replace.  Burner orifice blocked—— Clean main burner orifice or replace.  Combustion air wheel loose—— Reposition and tighten.  Burner head adjustment—— Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked—— Clean exhaust.*  Air intake restricted—— Replace or tighten*  Motor running slow—— Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged—— Clean or replace orifice  Thermocouple defective—— Replace thermocouple  Pilot assembly defective—— Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply—— Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system—— a. Make sure ducting meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch—— Replace limit switch.*  Furnace over fired——— Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
(Replace regulator if not obtainable).  Limit switch defective or wire off			
Limit switch defective or wire off Sail switch defective or wire off Burner orifice blocked Clean main burner orifice or replace. Combustion air wheel loose Burner head adjustment Burner head adjustment Reposition and tighten. Burner head adjustment Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked Clean exhaust.* Air intake restricted Clean air intake.* Broken or loose wire Replace or tighten* Motor running slow Check voltage first. If 12 VDC while running, replace motor.* Pilot orifice plugged Clean or replace orifice Thermocouple defective Replace thermocouple Pilot assembly defective Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Make sure return air meets furnace's minimum requirements.  a. Make sure ducting meets furnace's minimum requirements.* b. Make sure there is no excess ducting or unnecessary bends.* c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch Replace limit switch.* Furnace over fired Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner	das pressure incorrect		
Sail switch defective or wire off ——Reconnect wire or replace.  Burner orifice blocked ——Clean main burner orifice or replace.  Combustion air wheel loose ——Reposition and tighten.  Burner head adjustment ——Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked ——Clean exhaust.*  Air intake restricted ——Clean air intake.*  Broken or loose wire ——Replace or tighten*  Motor running slow ——Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged ——Clean or replace orifice  Thermocouple defective ——Replace thermocouple  Pilot assembly defective ——Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON" ——  Restricted return air supply ——Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system ——a. Make sure ducting meets furnace's minimum requirements.  C. Make sure there is no excess ducting or unnecessary bends.*  C. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch ——Replace limit switch.*  Furnace over fired ——Set gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner	Limit switch defective or wire off		
Burner orifice blocked — Clean main burner orifice or replace.  Combustion air wheel loose — Reposition and tighten.  Burner head adjustment — Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked — Clean exhaust.*  Air intake restricted — Clean air intake.*  Broken or loose wire — Replace or tighten*  Motor running slow — Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged — Clean or replace orifice  Thermocouple defective — Replace thermocouple  Pilot assembly defective — Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON"  Restricted return air supply — Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system — a. Make sure ducting meets furnace's minimum requirements.  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch — Replace limit switch.*  Furnace over fired — Set gas pressure to a minimum of 11 "WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Combustion air wheel loose ——Reposition and tighten.  Burner head adjustment ——Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked ——Clean exhaust.*  Air intake restricted ——Clean air intake.*  Broken or loose wire ——Replace or tighten*  Motor running slow ——Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged ——Clean or replace orifice  Thermocouple defective ——Replace thermocouple  Pilot assembly defective ——Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON" ——  Restricted return air supply ——Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system ——a. Make sure ducting meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch ——Replace limit switch.*  Furnace over fired ——Set gas pressure to a minimum of 11″WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Burner head adjustment ——Reposition and tighten. Adjust burner according to furnace specifications.  Exhaust blocked ——Clean exhaust.*  Air intake restricted ——Clean air intake.*  Broken or loose wire ——Replace or tighten*  Motor running slow ——Check voltage first. If 12 VDC while running, replace motor.*  Pilot orifice plugged ——Clean or replace orifice  Thermocouple defective ——Replace thermocouple  Pilot assembly defective ——Replace pilot assembly  BURNER CYCLING ON AND OFF - BLOWER RUNS CONTINUOUSLY WITH THERMOSTAT "ON" ——  Restricted return air supply ——Make sure return air meets furnace's minimum requirements.  Restricted discharge duct system ——a. Make sure ducting meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch ——Replace limit switch.*  Furnace over fired ——Set gas pressure to a minimum of 11″WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
specifications.  Exhaust blocked ————————————————————————————————————			
Exhaust blocked ————————————————————————————————————	Barrior rioda dajustiriorit		
Air intake restricted ————————————————————————————————————	Exhaust blocked	Clean exhaust *	
Broken or loose wire ————————————————————————————————————			
Motor running slow			
Pilot orifice plugged ———————————————————————————————————			
Thermocouple defective ————————————————————————————————————			
Pilot assembly defective————————————————————————————————————			
Restricted return air supply			
Restricted discharge duct systema. Make sure ducting meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch	-	· · · · ·	
Restricted discharge duct systema. Make sure ducting meets furnace's minimum requirements.*  b. Make sure there is no excess ducting or unnecessary bends.*  c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch	Restricted return air supply	Make sure return air meets furnace's minimum requirements	
b. Make sure there is no excess ducting or unnecessary bends.* c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switch			
c. Make sure any closeable registers are fully open and unrestricted.  Defective limit switchReplace limit switch.*  Furnace over firedSet gas pressure to a minimum of 11″WC with all appliances running. Replace regulator if not obtainable. Also, check main burner	Trock rotou diconarge duct cyclem		
Defective limit switchReplace limit switch.* Furnace over firedSet gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner			
Furnace over firedSet gas pressure to a minimum of 11" WC with all appliances running. Replace regulator if not obtainable. Also, check main burner	Defective limit switch		
running. Replace regulator if not obtainable. Also, check main burner			
, , , , , , , , , , , , , , , , , , ,		orifice, it must comply with furnace's specifications.	

\*indicates NOT covered under warranty.

TOC 👚

CAUSE **SOLUTION** BLOWER SHUTS OFF AT SAME TIME BURNER SHUTS OFF Faulty relay -------Replace relay Thermostat wired wrong ------Correct wiring\* BURNER FAILS TO IGNITE AND - BLOWER FAILS TO RUN No electrical power to the furnace ------Reconnect or replace power source.\* BLOWER VIBRATES OR IS NOISY Damaged blower wheel ------Replace blower wheel. Motor shaft bent------Replace motor Loose motor -----Tighten motor mounting bracket. Restricted discharge duct system------a. Make sure ducting meets furnace's minimum requirements.\* b. Make sure there is no excess ducting or unnecessary bends.\* c. Make sure any closable registers are fully open and unrestricted.\* PILOT FAILS TO IGNITE OR STAY LIT Plugged pilot orifice ------Clean or replace pilot orifice. Electrode out of adjustment ------Adjust electrode to furnace's specifications. Pilot tube defective ------Replace tube. Piezo sparker defective ------Replace sparker Defective thermocouple ------Replace thermocouple. Defective valve ------Replace valve. Vent kit not sealed ------Seal vent where it meets with the furnace.\* MICA window missing ------Replace MICA Combustion air hose plugged or collapsed------Replace combustion hose Water in propane -----Add alcohol to the propane bottles.\* Burner plate gasket or ------Replace gaskets pilot gasket not sealed LAZY FLAME (yellow) High gas pressure----\*Set pressure to a minimum of 11" W.C. with all appliances running. Replace regulator if not obtainable.

Burner out of adjustment -------Adjust burner according to furnace specification. Combustion wheel installed backwards or loose ------Reposition wheel and tighten. Air leakage at gaskets ------Replace gaskets Low voltage------Correct power supply\* FAN RUNS CONTINUOUSLY WITH THERMOSTAT "OFF" Shorted thermostat leads ------Replace wire or wires. Defective relay -----Replace relay Defective thermostat ------Replace thermostat INSUFFICIENT HEAT Furnace under fired ------1. Set gas pressure to 11" W.C. with all appliances running, replace regulator if not obtainable. Also, check main burner orifice, it must comply with furnace's specifications.\* 2. Check ducting and return air according to furnaces specifications. Furnace limiting ------Check ducting and return air. It must comply with furnace's

specifications.\*

<sup>\*</sup>indicates NOT covered under warranty.