

Ignition Conversion Kits to Convert Models F and B with Standing Pilot to Spark-Ignited, Intermittent Safety Pilot System With or Without Lockout

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury, or death. Read the installation instructions thoroughly before installing this equipment.

Description/Application

The ignition conversion kits in this form are for Model F and Model B unit heaters equipped with standing pilot and single stage gas valve. Before beginning conversion, determine that your kit is compatible with your heater. Spark-ignited, intermittent safety pilot systems without lockout are not available with propane gas; propane gas requires 100% lockout.

IMPORTANT NOTE: These are *not* gas conversion kits, ignition conversion only.

IGNITION CONVERSION KIT SELECTION CHART MODELS F and B			
Model	Gas	Kit Description	Kit P/N
B/F 25-165	Natural	Spark-ignited, intermittent recycling safety pilot (without lockout)	100525
B/F 200-250	Natural	Spark-ignited, intermittent recycling safety pilot (without lockout)	100526
F 300-400 B 300	Natural	Spark-ignited, intermittent recycling safety pilot (without lockout)	100527
B-400	Natural	Spark-ignited, intermittent recycling safety pilot (without lockout)	102348
F/B 25-165	Natural	Spark-ignited, intermittent safety pilot with 100% lockout	100528
F/B 200-250	Natural	Spark-ignited, intermittent safety pilot with 100% lockout	100529
F 300-400 B 300	Natural	Spark-ignited, intermittent safety pilot with 100% lockout	100530
B 400	Natural	Spark-ignited, intermittent safety pilot with 100% lockout	102349
F/B 25-200	Propane	Spark-ignited, intermittent safety pilot with 100% lockout	100531
F 250-400 B 250-300	Propane	Spark-ignited, intermittent safety pilot with 100% lockout	100532
B 400	Propane	Spark-ignited, intermittent safety pilot with 100% lockout	102350

See pages 6-8 for a parts listing of each kit.

Instructions

DANGER: This ignition conversion kit is to be installed by a qualified agency in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. Failure to follow instructions could result in death, serious injury, and or property damage. The qualified agency performing this work assumes responsibility for this installation.

1. Turn off the gas supply at a shutoff valve upstream of the combination valve and turn off the electrical supply.
2. **Change Combination Valve**
 Disconnect the main gas line, the wires and the pilot tubing from the valve and remove the valve. Install the valve provided with the kit being sure that the gas flow through the valve is in the proper direction. Consult the valve manufacturer's instructions for additional de-

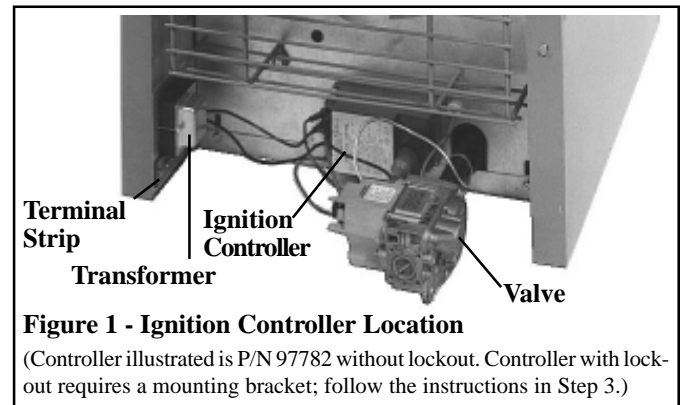
tails on installing the valve. **Note:** If the valve is a P/N 96309 or 96311 (White Rodgers Model), install it in the upright position with the "control knob" to the top.

Reconnect the main gas line. Do not reconnect the pilot tubing or wires at this time.

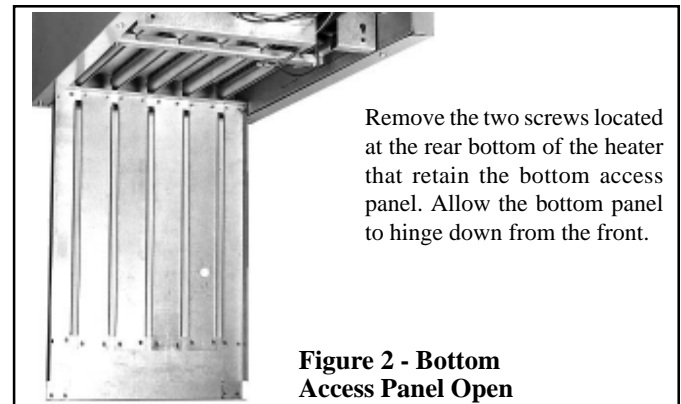
WARNING: The operating valve is the primary safety shutoff. The gas supply line must be free of dirt or scale before connecting the unit to ensure positive closure.

3. Install the Ignition Controller (Figure 1)

If installing a conversion kit without lockout (Ignition Controller P/N 97782, Johnson #G67BG-5), attach the controller directly to the rear of the heater using the holes and the two 5/8" screws in the kit. The wire terminals will be on the left side as shown in Figure 1. **If installing a conversion kit with lockout** (Ignition Controller P/N 97547, Johnson #G77ONGC-4), attach the ignition controller mounting bracket to the rear of the heater using the holes in the cabinet and the 3/8" screws in the kit. Position the ignition controller on the bracket with the wire terminals across the bottom. Use the 5/8" screws to attach the ignition controller to the bracket.



4. Change Pilot

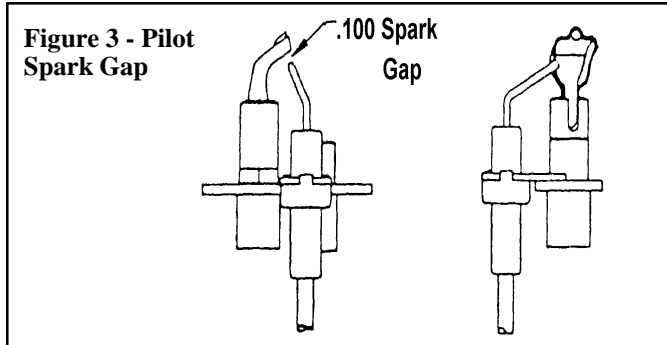


The bottom of the pilot is now visible (See Figure 4A, page 2.) Remove the screws holding the match-lit pilot and remove the pilot assembly.

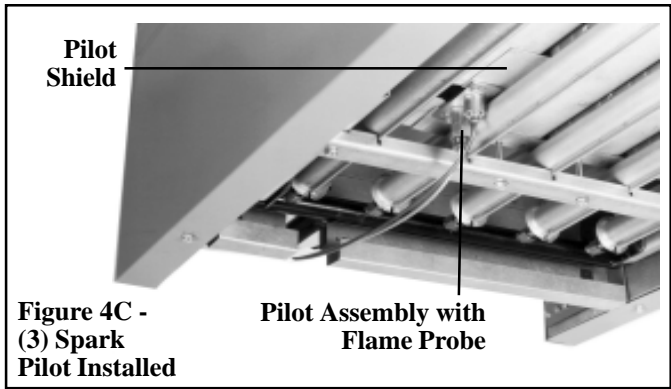
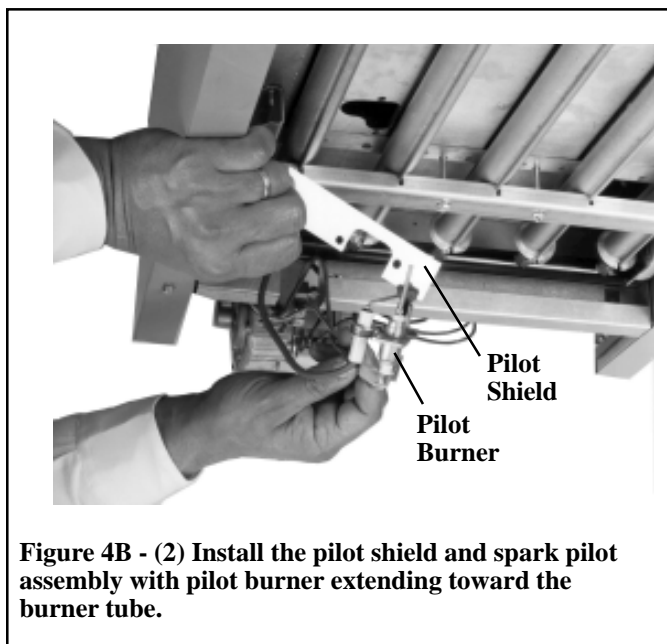
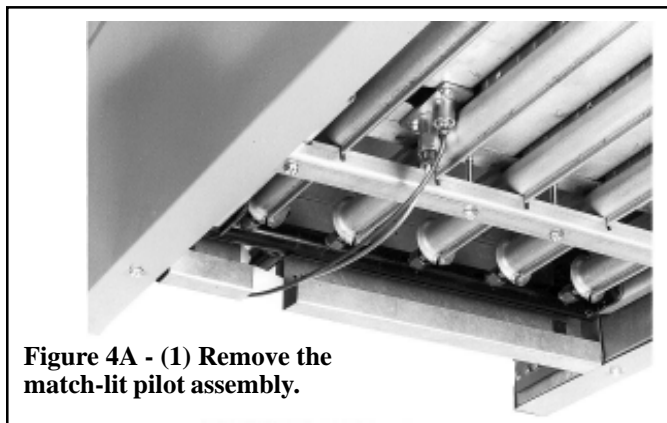
INSTRUCTIONS (cont'd)

4. Change Pilot (cont'd)

The match-lit pilot consisted of the pilot with hood and the flame-sensing thermocouple. The new spark pilot assembly has a hooded pilot, a flame sensor rod, and an ignitor. Before installing the pilot, verify the correct spark gap between the pilot hood and the ignitor. See Figure 3. The spark gap must be maintained at .100". The spark gap is set by the manufacturer and should be correct, but it is wise to recheck before installation. If adjustment is required, hold the ceramic base with a pair of pliers while adjusting the rod.



Install the spark pilot assembly being sure that the pilot burner is extended toward the burner tube. Be sure to include the pilot shield that is used only with the spark pilot assembly. (See Figures 4A, 4B, and 4C.)



Attach one end of the flame sensor wire (150°C red silicone wire) to the flame probe on the pilot assembly. Attach the other end of the flame sensor wire to Terminal No. 4 on the ignition controller. Attach the free end of the high tension spark wire (wire attached to the ignitor on the pilot assembly) to the spike terminal on the ignition controller. Push the wire firmly so that the spike is fully inserted and the wire secure.

Connect the pilot tubing to the gas valve. Position the tubing, high tension wire and flame sensor wire in a location where they will not interfere with gas or air entering the burner or be pinched by the bottom panel. Do not wrap the high tension wire and the flame sensor wire together. The tubing and the wires may be routed through the opening for the manifold pipe.

5. Wiring

Remove the outer left heater side panel (left when facing the rear of the heater), revealing the wiring.

Using the wires on the heater and the new wire assemblies in the kit, make the connections according to the instructions below. Consult the wiring diagram on page 5.

(a) **Replace transformer** – Models with standard 115 volt supply require a transformer change when converting to spark ignition. Models with optional 208, 230 or 460 supply voltage do not require a transformer change. If your unit requires a transformer change, disconnect the wires from the transformer and remove the transformer from the heater. (See Figure 1) To install the new transformer, through the “large” hole in the side panel for mounting the transformer, slide the Tinnerman clips over the transformer screw holes. Insert the new transformer in the mounting hole and fasten with the 1-3/4" long screws included in the kit. Reconnect the brown wire from the terminal strip and the line voltage yellow and black wires. Do not reconnect the blue wire.

(b) **ECO (Energy Cutoff) Wiring** – The ECO wiring on a unit with a standard pilot is routed through the rear of the heater. When the unit is converted to spark, the ECO wiring must be re-routed through the side panel. Follow these instructions to re-route and reconnect the ECO wires (Refer to Wiring Diagram on page 5):

- (1) On the rear of the heater (fan panel), remove the Heyco device (strain relief bushing) that holds the two red wires going through the fan panel. (These wires were disconnected from the gas valve in Step 2.)
- (2) On the side of the heater, remove the small fan/limit control access panel (See Figure 5). Reach through the access hole and pull both red wires completely through the fan panel into the heater where the ECO is located (See Figures 5). One of these wires will be used on the converted heater, but the other must be replaced with the longer red wire in the conversion kit. Carefully disconnect one of the wires from the ECO control and discard that wire. The red ECO wire in the kit has two different terminals. Connect the end with the straight insulated terminal to the ECO control.
- (3) Remove the Heyco device (See Figure 5) from the inner side panel. Add the two red ECO wires to the fan and limit wires

that are already there. Using pliers, reinstall the Heyco device. Check to be sure that none of the wires (ECO, fan or limit) come in contact with the heat exchanger tubes.

- (4) Connect the red ECO wire with the 90° insulated terminal to the transformer. If a new transformer was not installed, disconnect the blue wire to make this connection. If a new transformer was installed, make the connection on the 24V side where the blue wire had been connected to the old transformer.
- (5) At the terminal strip (See Figure 1), disconnect and discard the blue wire. At the same place on the terminal strip, connect the other red ECO wire.
- (6) Replace the small fan and limit control access panel.

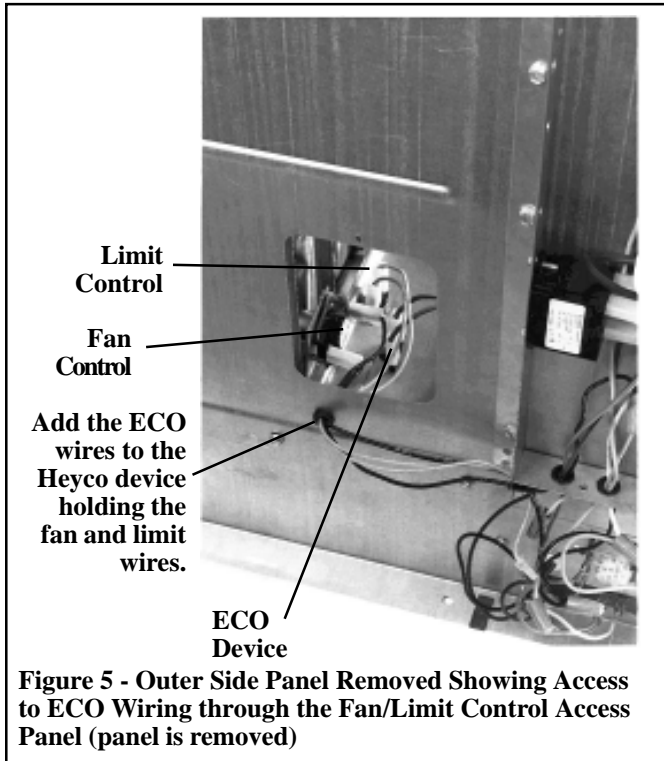


Figure 5 - Outer Side Panel Removed Showing Access to ECO Wiring through the Fan/Limit Control Access Panel (panel is removed)

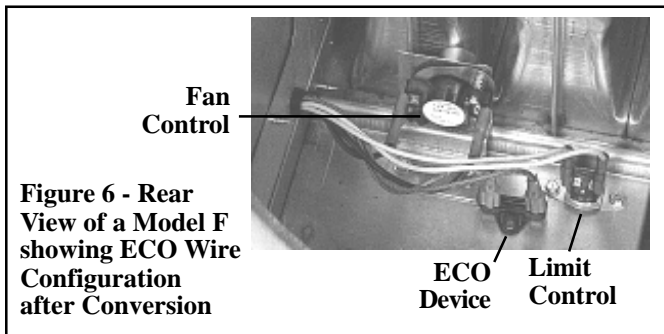


Figure 6 - Rear View of a Model F showing ECO Wire Configuration after Conversion

- (c) **Ignition Control** – Attach the black wire removed from the gas valve in Step No. 2 to terminal No. 2 on the ignition controller, and attach the brown wire removed in Step No. 2 to the ground strip on the ignition controller. You should have remaining in your kit a blue, black and brown wire. Attach the blue wire to terminal No. 1, the black wire to terminal No. 3, and the brown wire to the ground strip.
- (d) **Combination Gas Valve** – Connect the blue, black and brown wires from the ignition control. Attach the blue wire either to the P, TH-TR or PV terminal, depending on the gas valve model. Attach the black wire to either M, TH or MV terminal. Attach the brown wire to the terminal marked either C, TR or PV-MV. (See Wiring Diagram, page 5.)

6. Change the Lighting Instruction Plate and the Wiring Diagram on Heater

Lighting Instruction Plate – The new lighting instruction plate is self-adhesive and can be placed over the original lighting instruction plate. Make sure the surface of the old instruction plate is clean and dry. Remove the backing and adhere the new lighting instruction plate so that it covers the original standing pilot instruction plate.

Wiring Diagram – The new wiring diagram is also self-adhesive and is made to cover the original diagram on the heater.

If the heater is a Model F; a Model B with a direct drive blower motor; a Model B with a belt-driven blower with a motor without a contactor; or a Model B with a belt driven blower with a motor with a contactor, select the diagram that matches the heater. Remove the backing and adhere it over the diagram on the heater.

If the heater is a Model B with a belt-driven blower with a motor with a starter, contact your Reznor Representative, providing the complete model number, the serial number, and the number of the wiring diagram originally supplied on the heater. When the custom wiring diagram arrives, verify that it matches, remove the backing, and adhere it over the wiring diagram on the heater.

7. Check the main gas line for leaks using a commercial leak detecting fluid or a rich soap and water solution. Leaks are indicated by the presence of bubbles.

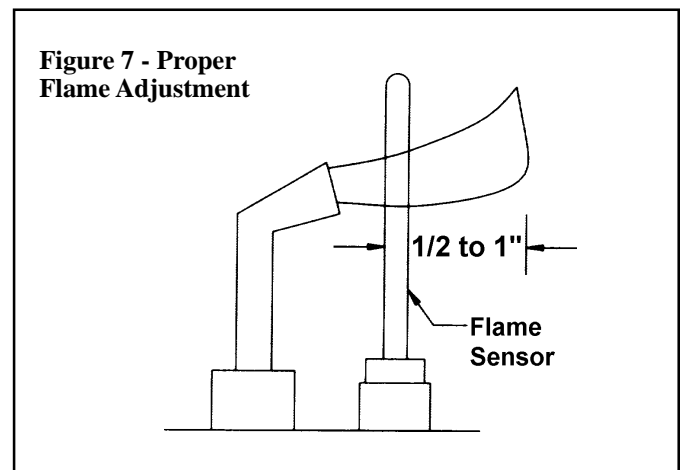
WARNING: All components of gas supply must be leak tested prior to placing equipment in service. NEVER TEST FOR LEAKS WITH AN OPEN FLAME. Failure to comply could result in severe personal injury, property damage or death.

Turn on the electric and the gas. Relight, following the instructions on the new lighting instruction plate.

WARNING: In the event of improper ignition, wait at least five minutes before attempting to relight heater.

Check all gas connections including the pilot connections for leaks. If a leak cannot be stopped by tightening, replace the part.

Observe the pilot flame through the pilot lighting hole. The flame should extend ½ to 1" past the flame sensing device. (Figure 7)



To adjust the pilot flame, remove the pilot adjustment cover screw from the combination valve. Turn the inner adjustment screw clockwise to decrease or counterclockwise to increase the pilot flame. Replace the cover screw after adjustment to prevent gas leakage.

INSTRUCTIONS (cont'd)

8. Adjust Manifold Pressure

Follow these requirements and instructions to adjust manifold gas pressure:

For Natural Gas – The regulator in the valve must be adjusted to provide a manifold pressure of 3.5" w.c. Inlet pressure to the valve must be a minimum of 5" w.c., and a maximum of 14" w.c.

For Propane Gas – The regulator in the valve must be adjusted to provide a manifold pressure of 10" w.c. Inlet pressure to the valve must be a minimum of 11" w.c., and a maximum of 14" w.c.

WARNING: Manifold gas pressure must never exceed 3.5" w.c. for natural gas or 10" w.c. for propane gas.

Instructions – Before attempting to measure or adjust the manifold gas pressure, be certain that the inlet (supply) pressure is within the specified range for the gas being used both when the heater is in operation and on standby. Incorrect inlet pressure could cause excessive manifold gas pressure immediately or at some future time.

With the manual valve (on the combustion valve) positioned to prevent flow to the main burners, connect a manometer to the 1/8" pipe outlet pressure tap in the valve. Open the valve and operate the heater to measure the manifold gas pressure. **NOTE:** A manometer (fluid filled gauge) is recommended rather than a spring type gauge due to the difficulty of maintaining calibration of a spring type gauge.

If the manometer indicates that the manifold pressure needs adjusting, set the correct pressure by turning the regulator screw on the valve IN (clockwise) to increase pressure. Turn regulator screw OUT (counterclockwise) to decrease the pressure.

9. Check for reliable and safe operation by operating the heater for several complete cycles. **CHECK FOR PROPER OPERATION OF ALL SAFETY FEATURES.**

10. Replace the side panel and close the bottom access panel. Restore the heater to normal operation. If a thermostat with a heat anticipator is used, it should be reset to approximately .8 amperes.

FOR YOUR SAFETY

If you smell gas:

1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

The use and storage of gasoline or other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.

DANGER: The gas burner in Reznor gas-fired equipment is designed and equipped to provide safe and economically controlled complete combustion. However, if the installation does not permit the burner to receive the proper supply of combustion air, complete combustion may not occur. The result is incomplete combustion which produces carbon monoxide, a poisonous gas that can cause death. Safe operation of indirect-fired gas burning equipment requires a properly operating vent system which vents all flue products to the outside atmosphere. FAILURE TO PROVIDE PROPER VENTING WILL RESULT IN A HEALTH HAZARD WHICH COULD CAUSE SERIOUS PERSONAL INJURY OR DEATH.

Always comply with the combustion air requirements in the installation codes and instructions. Combustion air at the burner should be regulated only by manufacturer-provided equipment. **NEVER RESTRICT OR OTHERWISE ALTER THE SUPPLY OF COMBUSTION AIR TO ANY HEATER.** Indoor units installed in a confined space must be supplied with air for combustion as required by Code and in the heater installation manual. **MAINTAIN THE VENT SYSTEM IN STRUCTURALLY SOUND AND PROPERLY OPERATING CONDITION.**

Typical Wiring Diagram - Intermittent Spark Pilot, Single-Stage Heating, Natural Gas and Intermittent Spark Pilot with Timed Lockout, Single-Stage Heating, Natural or Propane

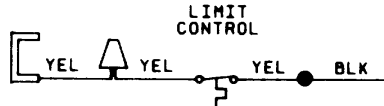
Field and Replacement Wiring Notes

1. Dotted wiring supplied by others.
2. Thermostat supplied as optional equipment.
3. Use 14 gauge wire for line wiring to unit.
4. Use 18 gauge wire for control wiring.
5. Line and blower or fan control branch circuit wire sizes should be of a size to prevent voltage drops beyond 5% of supply line voltage.

FIELD CONTROL WIRING		
Length and Gauge		
Total Wire Length	Distance from Unit to Control	Minimum Recommended Wire Gauge
150'	75'	#18 Ga.
250'	125'	#16 Ga.
350'	175'	#14 Ga.

CAUTION: If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105° C, except for limit control, energy cutoff, blocked vent switch, and sensor lead wires which must be 150° C.

★Blocked vent switch shown in this diagram is standard on all Model F and B units manufactured beginning April 1991. Units manufactured prior to April 1991 do not include the blocked vent switch.

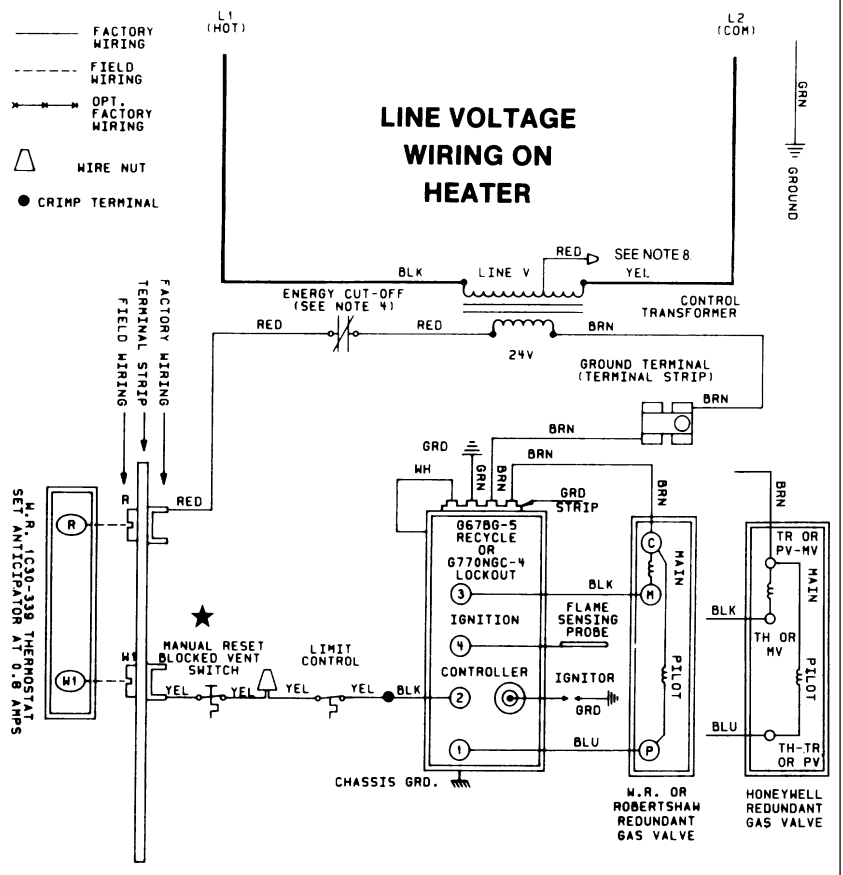


Operating Sequence

1. Set thermostat at its lowest setting.
2. Turn on main and pilot manual gas valves.
3. Set thermostat at desired setting.
4. Thermostat calls for heat, firing the unit at full rate after pilot proving sequence.
5. Fan control senses heat exchanger temperature, energizing the fan motor.
6. If the flame is extinguished during main burner operation, the safety switch closes the main valve and recycles the spark gap. On units equipped with the G770NGC-4 lockout control, if the pilot is not established within 120 seconds (approx.), the unit will lockout and must be reset by interrupting power to the control circuit (See Lighting Instruction Plate).

NOTES:

1. The following controls are field-installed options: thermostat
2. The following controls are factory-installed options: summer/winter switch
3. Dotted wiring installed by others.
4. **WARNING:** An ECO circuit interruption is a major failure caused by a malfunction of the primary safety controls or mis-wiring and will require correction of the cause of failure and the replacement of the fan and limit control wiring before the unit can be returned to service.
5. **CAUTION:** If any of the original wiring as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105°C, except for sensor lead wire, ECO device wire, blocked vent switch wire, and limit control wiring which must be 150°C.
6. Use 18 ga. wire for all wiring on the unit.
7. Line and fan motor branch wire sizes should be of a size to prevent voltage drops beyond 5% of supply line voltage.
8. On 230V units, the control transformer has dual voltage primary
For 230V units, use black and yellow leads (cap red)
- On 208V units, the control transformer has dual voltage primary
For 208V units, use black and red leads (cap yellow)
- On 115V units, the control transformer is single voltage primary.
For 115V units, use black and yellow leads.
9. See Installation Instructions for greater detail.



Parts Lists of Conversion Kits to Convert from Standing Pilot to Spark-Ignited, Intermittent Safety Pilot System with or without Lockout - Apply to Models F and B

Section 1 - Kits to convert **natural gas** units from standing pilot to spark-ignited, intermittent safety pilot **without lockout** (not applicable to propane units – propane requires spark-ignited, intermittent pilot with lockout).

Ignition Conversion Kit P/N 100525

**Applies to: Model F 25-165, Natural Gas
Model B 25-165, Natural Gas**

Qty	P/N	Description
1	96307	Gas Valve, 1/2", M/H #VR8204-M1000 (Single stage)
1	97782	Ignition Controller, Johnson #G67BG-5
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. X 21". 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 25-65
1	177966	For Model B 25-100 with direct drive motor and Model B 50-165 with belt drive motor (no contactor)
1	177967	For Model B 75-165 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 100526

**Applies to: Model F 200-250, Natural Gas
Model B 200-250, Natural Gas**

Qty	P/N	Description
1	121599	Gas Valve, 1/2", M/H #VR8304M2816 (single stage)
1	97782	Ignition Controller, Johnson #G67BG-5
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. X 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 200-250
1	177966	For Model B 200-250 with belt drive motor (no contactor)
1	177967	For Model B 200-250 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 100527

**Applies to: Model F 300-400, Natural Gas
Model B 300, Natural Gas**

Qty	P/N	Description
1	96309	Gas Valve, 3/4", W/R 36C68-452 (single stage)
1	97782	Ignition Controller, Johnson #G67BG-5
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE 14160-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-A (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 300-400
1	177967	For Model B 300 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 102348

Applies to: Model B 400, Natural Gas

Qty	P/N	Description
1	96309	Gas Valve, 3/4", W/R 36C68-452 (single stage)
1	97782	Ignition Controller, Johnson #G67BG-5
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagram (consult your Representative providing Model No., Serial No. and original Wiring diagram No.):		
1	Consult	Wiring Diagram – For Model B 400 with a starter Factory

Section 2 - Ignition Conversion Kits to convert natural gas units from standing pilot to spark-ignited, intermittent pilot safety system with lockout.

Ignition Conversion Kit P/N 100528

**Applies to: Model F 25-165, Natural Gas
Model B 25-165, Natural Gas**

Qty	P/N	Description
1	96307	Gas Valve, 1/2", M/H #VR8204-M1000 (Single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 25-65
1	177966	For Model B 25-100 with direct drive motor and Model B 50-165 with belt drive motor (no contactor)
1	177967	For Model B 75-165 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 100529

**Applies to: Model F 200-250, Natural Gas
Model B 200-250, Natural Gas**

Qty	P/N	Description
1	121599	Gas Valve, 1/2", M/H #VR8304M2816 (single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. X 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 200-250
1	177966	For Model B 200-250 with belt drive motor (no contactor)
1	177967	For Model B 200-250 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 100530

**Applies to: Model F 300-400, Natural Gas
Model B 300, Natural Gas**

Qty	P/N	Description
1	96309	Gas Valve, 3/4", W/R 36C68-452 (single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE 14160-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-A (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 300-400
1	177967	For Model B 300 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 102349

Applies to: Model B 400, Natural Gas

Qty	P/N	Description
1	96309	Gas Valve, 3/4", W/R 36C68-452 (single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. X 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (consult your Representative providing Model No., Serial No. and original Wiring diagram No.):		
1	Consult	Wiring Diagram – For Model B 400 with a starter Factory

Section 3 - Ignition Conversion Kits to convert propane gas units from standing pilot to spark-ignited, intermittent pilot safety system with lockout.

Ignition Conversion Kit P/N 100531

Applies to: Model F 25-200, Natural Gas

Model B 25-200 Natural Gas

Qty	P/N	Description
1	96310	Valve, 1/2", M/H #VR8204-M1018 (single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97535	Pilot Assy, Johnson #Q9OFF-2
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 25-200
1	177966	For Model B 25-100 with direct drive motor and Model B 50-165 with belt drive motor (no contactor)
1	177967	For Model B 75-200 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 100532

Applies to: Model F 250-400, Propane Gas

Model B 250-300, Propane Gas

Qty	P/N	Description
1	96311	Gas Valve, 1/2", W/R #36C68-325 (single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97535	Pilot Assy, Johnson #Q9OFF-2
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" lg (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (select the one that matches the heater):		
1	177965	For Model F 250-400
1	177966	For Model B 250 with belt drive motor (no contactor)
1	177967	For Model B 250-300 with belt drive motor with contactor
1	Consult	Wiring Diagram – For Model B with a starter Factory

Ignition Conversion Kit P/N 102350

Applies to: Model B 400, Propane Gas

Qty	P/N	Description
1	96311	Gas Valve, 3/4", W/R 36C68-325 (single stage)
1	111736	Ignition Controller Mounting Bracket
2	96426	Screws, #10LGM x 3/8" long (for attaching bracket)
1	97547	Ignition Controller, Johnson #G77ONGC-4
2	110076	Screws, #6 x 5/8" long (for mounting controller)
1	97575	Red Wire Assy (Flame Probe to Ignition Controller), 18 ga. x 21", 150°C with two Terminals
1	97204	Pilot Shield
1	97535	Pilot Assy, Johnson #Q9OFF-2
1	98044	Red Wire Assy (ECO Device to Transformer) 18 ga. x 20", 150°C with two Terminals
1	97482	Blue Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97483	Black Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	97484	Brown Wire Assy (Ignition Controller to Gas Valve), 18 ga. x 8", 105°C with Two Terminals
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP20
Wiring Diagrams (consult your Representative providing Model No., Serial No. and original Wiring diagram No.):		
1	Consult	Wiring Diagram – For Model B 400 with a starter Factory

NOTE: These kits are ignition conversion kits only; NOT gas conversion kits.

WARNING: These kits are for Reznor Models F and B only. Do not use them on any other products.

Thomas & Betts