

**Ignition Conversion Kit Instructions**  
Applies to: Models F and B

**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**

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

**NOTE:** A unit with a vent damper (Option AV7) requires P/N 257010, an ignition controller for intermittent spark pilot with lockout (Option AH3)

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.

IGNITION CONVERSION KIT SELECTION CHART for Models F and B					
Kits to convert from standing pilot to spark-ignited, intermittent recycling safety pilot (without lockout)			Kits to convert from standing pilot to spark-ignited, intermittent safety with 100% lockout		
Model	Gas Type	Kit P/N	Model	Gas Type	Kit P/N
F/B 25-165	Natural	<b>100525</b>	F/B 25-165	Natural	<b>100528</b>
F/B 200-250		<b>100526</b>	F/B 200-250		<b>100529</b>
F 300-400; B 300		<b>100527</b>	F 300-400; B 300		<b>100530</b>
B 400		<b>102348</b>	B 400		<b>102349</b>
See pages 7-8 for a parts listing of each kit.			F/B 25-200	Propane	<b>100531</b>
			F 250-400; B 250-300		<b>100532</b>
			B 400		<b>102350</b>

**WARNING:** 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.

**Instructions for  
Installing Ignition  
Conversion Kit**

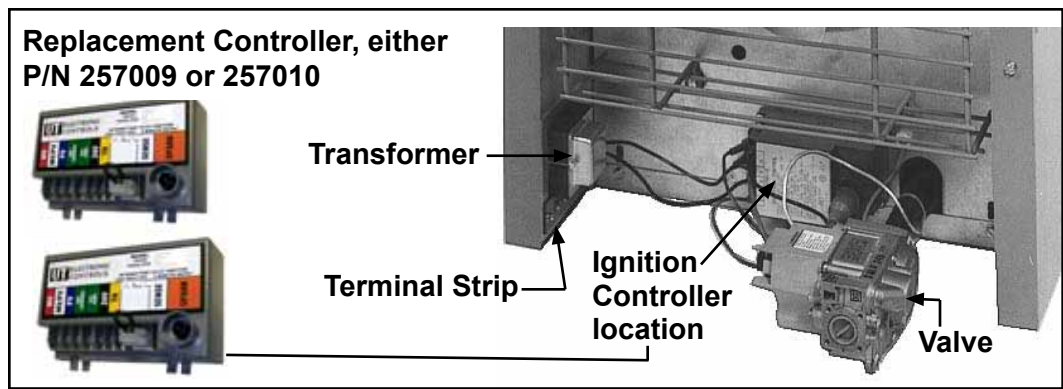
1. Turn off the gas supply at a shutoff valve upstream of the combination valve and turn off the electrical supply.
- 2. Change Combination Valve**  
Disconnect the main gas line, the wires and the pilot tubing from the valve and remove the valve. Install the valve provided with the kit being sure that the gas flow through the valve is in the proper direction and that the valve is in an allowable orientation. Follow the valve manufacturer's instructions and, if applicable, the replacement valve kit instructions for details on installing the valve.  
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** (See **FIGURE 1** for location.)  
Attach the ignition controller mounting **bracket** to the rear of the heater using the holes in the cabinet and the #10x3/8" screws in the kit. Position the ignition controller on the bracket with the wire terminals across the bottom. Use the #8x5/8" screws to attach the ignition controller to the bracket.

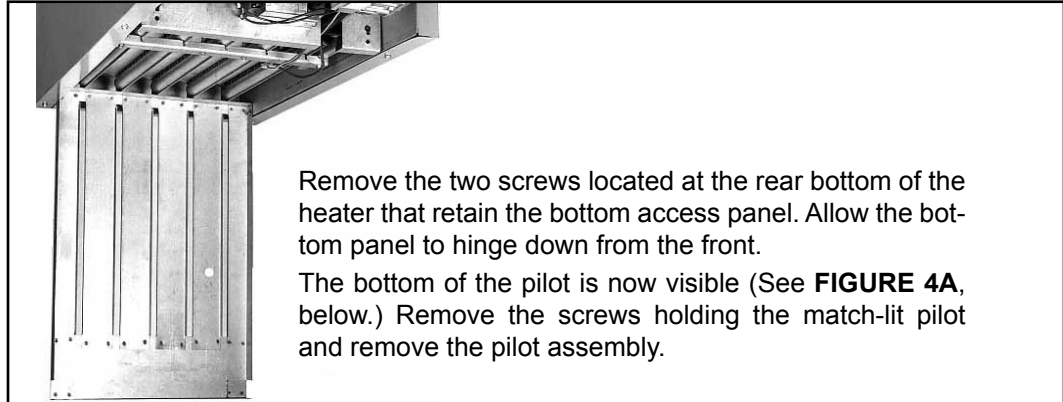
## Instructions (cont'd)

**FIGURE 1 - Ignition  
Control Location**

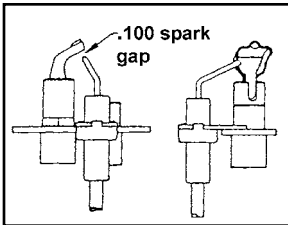


### 4. Change Pilot

**FIGURE 2 - Bottom  
Access Panel Open**

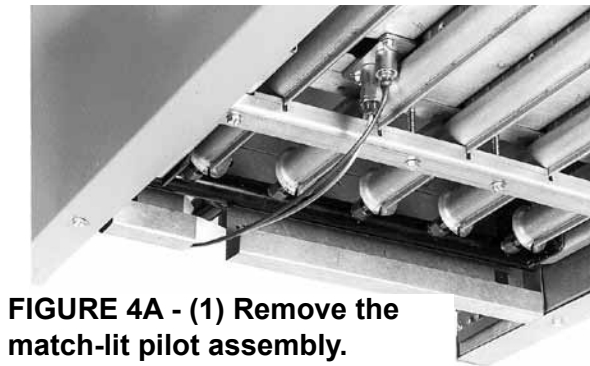


**FIGURE 3 - Pilot  
Spark Gap**

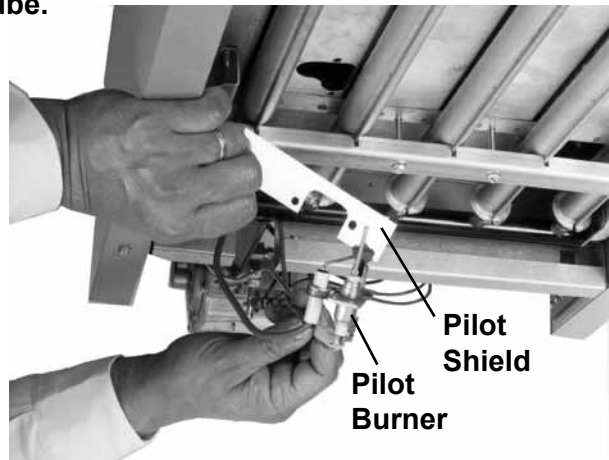


The match-lit pilot consisted of the pilot with hood and the flame-sensing thermocouple. The new spark pilot assembly has a hooded pilot, a flame sensor rod, and an ignitor. Before installing the pilot, verify the correct spark gap between the pilot hood and the ignitor. See **FIGURE 3**. The spark gap 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.

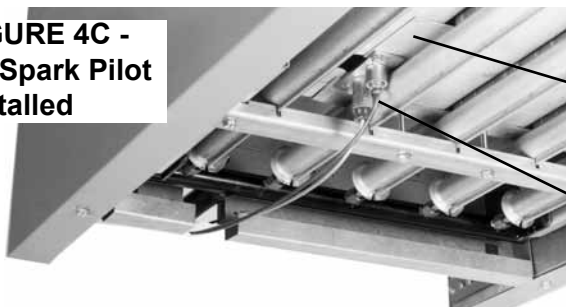
Install the spark pilot assembly being sure that the pilot burner is extended toward the burner tube. Be sure to include the pilot shield that is used only with the spark pilot assembly. (See **FIGURES 4A, 4B, and 4C.**)



**FIGURE 4B - (2) Install the pilot shield and spark pilot  
assembly with pilot burner extending toward the  
burner tube.**



**FIGURE 4C -  
(3) Spark Pilot  
Installed**



**CAUTION:**  
**Control, P/N**  
**257010, with**  
**lockout is**  
**required with**  
**a vent damper.**  
**The controller**  
**has a safety**  
**feature that**  
**once it is used**  
**with a vent**  
**damper, it**  
**will no longer**  
**operate a unit**  
**without a vent**  
**damper.**

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 "SENSE" 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 ("SPARK") 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 (Follow the appropriate new wiring diagram label in the kit.)**

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 and the new wiring diagram label in the kit.

(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 6):

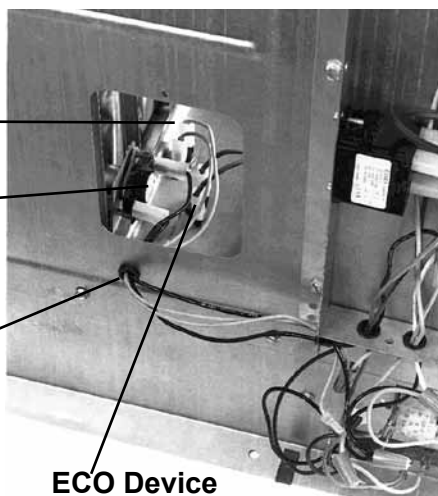
(1) On the rear of the heater (fan panel), remove the Heyco device (strain relief bushing) that holds the two red wires going through the fan panel. (These wires were disconnected from the gas valve in Step 2.)

(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. 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.

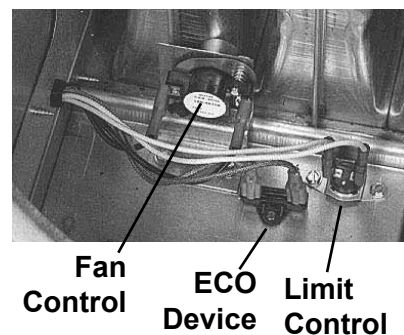
(3) Remove the Heyco device (See **FIGURE 5**) from the inner side panel. Add the two red ECO wires to the fan and limit wires that are already there. Using pliers, rein-

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

Limit Control  
Fan Control  
Add the ECO wires to the Heyco device holding the fan and limit wires.  
ECO Device



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



## Instructions (cont'd)

### (b) ECO (Energy Cutoff) Wiring (cont'd)

stall 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) Re-attach the small fan and limit control access panel.

(c) **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 Diagram, page 6).

### 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.

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**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.**

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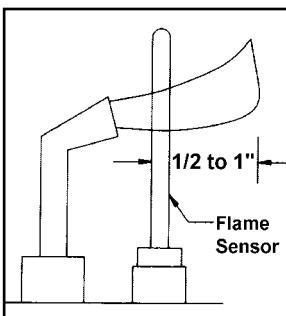
Turn on the electric and the gas. Relight, following the instructions on the new lighting instruction plate.

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

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**FIGURE 7 - Proper  
Flame Adjustment**



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  $\frac{1}{2}$  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.

### 8. Adjust Manifold Pressure

Depending on how the unit was originally equipped, the correct pressure adjustment may depend on the area of the country in terms of elevation. Check the elevation listed on the rating plate.

- a) If the rating plate indicates 0-2000 ft, and the installation is located at 0-2000 ft, follow the instructions to check the manifold pressure to be sure that it is 3.5 inches w.c. for natural gas or 10.0 inches w.c. for propane.
- b) If the rating plate indicates a higher elevation the elevation adjustment was made at the factory by an orifice change. Follow the instructions to check the manifold pressure to be sure that it is 3.5 inches w.c. for natural gas or 10.0 inches w.c. for propane.
- c) If the rating plate indicates 0-2000 ft and the actual elevation is higher, determine the correct manifold pressure for the elevation and follow the instructions to set the valve outlet pressure.

Manifold Pressure Settings by Elevation			
Elevation Ranges		Natural Gas	Propane
Feet	Meters	(inches W.C.)	
0- 2000	1-610	3.5	10.0
2001-3000	911-915	2.8	7.7
3001-4000	916-1220	2.5	7.1
4001-5000	1221-1525	2.3	6.4
5001-6000	1526-1830	2.1	5.8
6001-7000	1831-2135	1.9	5.2
7001-8000	2136-2440	1.7	4.6
8001-9000	2441-2745	1.5	4.1

### **Instructions:**

- 1) With the manual valve positioned to prevent flow to the main burners, connect a manometer to the 1/8" pipe outlet pressure tap in the valve. Use a water column manometer that is readable to the nearest tenth of an inch. **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.
- 2) Remove the cap from the pressure adjusting screw and adjust the manifold pressure to the pressure determined to be correct for the installation. Cycle the main burners once or twice to properly seat the adjustment spring in the valve.

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

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- 3) Measure the manifold pressure. If further adjustment is necessary, correct pressure setting by turning the regulator screw IN (clockwise) to increase pressure. Turn regulator screw OUT (counterclockwise) to decrease pressure. When the pressure is correct, remove the manometer and replace the cap. Check for leaks at the pressure tap fitting.

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**CAUTION: DO NOT bottom out the gas valve regulator adjustment screw. This can result in unregulated manifold pressure causing excess overfire and heat exchanger failure.**

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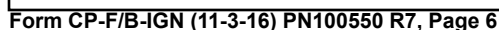
- 3) With the heater operating, determine that the inlet pressure to the heater is between 5 and 14 inches w.c. for natural gas or between 11 and 14 inches w.c. for propane gas. Take this reading as close as possible to the heater. (Most heaters are equipped with gas valves that have an inlet pressure tap.) If the inlet pressure is not within the specified range the inlet pressure must be corrected and the manifold pressure re-checked.
  - 4) If the gas valve has been adjusted for operation above 2000 ft, find the high altitude manifold pressure label in the kit. Using a permanent marker, fill-in the pressure setting and adhere the label to the heater in a conspicuous location close to the gas valve.
- 9. Check for reliable and safe operation by operating the heater for several complete cycles. CHECK FOR PROPER OPERATION OF ALL SAFETY FEATURES.**

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**WARNING: Wait at least five minutes before attempting to relight heater in the event of pilot outage or improper ignition.**

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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.



## Parts Lists - Ignition Conversion Kits for Models F and B

**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.**

**SECTION 1 - Kits to convert natural gas units from standing pilot to spark-ignited, intermittent safety pilot without lockout, Option AH2 (not applicable to propane units – propane requires 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	257009	Ignition Control Non-Lockout, UTEC 1003-638A
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assembly (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 25-65
1	258174	For Model B 25-100 w/direct drive motor & B 50-165 w/belt drive motor (no contactor)
1	258175	For Model B 75-165 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

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	257009	Ignition Control Non-Lockout, UTEC 1003-638A
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assembly (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 25-65
1	258174	For Model B 25-100 w/direct drive motor & B 50-165 w/belt drive motor (no contactor)
1	258175	For Model B 75-165 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

Ignition Conversion Kit P/N 102348		
Applies to: Model B 400, Natural Gas		
Qty	P/N	Description
1	222037	Replacement Valve Kit including P/N 221525 Valve, W/R #36H32-441; Compression Nut, P/N 97572; and Instruction Sheet, P/N 222038
1	257009	Ignition Control Non-Lockout, UTEC 1003-638A
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assembly (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
1	258175	For Model B 400 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B 400 with a starter.

Ignition Conversion Kit P/N 100527		
Applies to: Model F 300-400, Natural Gas; Model B 300, Natural Gas		
Qty	P/N	Description
1	222037	Replacement Valve Kit including P/N 221525 Valve, W/R #36H32-441; Compression Nut, P/N 97572; and Instruction Sheet, P/N 222038
1	257009	Ignition Control Non-Lockout, UTEC 1003-638A
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assembly (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 30-400
1	258174	For Model B 25-100 w/direct drive motor & B 50-165 w/belt drive motor (no contactor)
1	258175	For Model B 300 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

**SECTION 2 - Kits to convert natural gas units from standing pilot to spark-ignited, intermittent safety pilot with lockout, Option AH3.**

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	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
3	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 25-65
1	258174	For Model B 25-100 w/direct drive motor & B 50-165 w/belt drive motor (no contactor)
1	258175	For Model B 75-165 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter .



## SECTION 2 - Kits to convert natural gas units from standing pilot to spark-ignited, intermittent safety pilot with lockout, Option AH3 (cont'd).

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	257010	Ignition Control w/100% Lockout, UTEC 1003-514
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	173303	Red Wire Assy (I.C. "24V")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assy (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 200-250
1	258174	For Model B 200-250 w/direct drive motor & I B 50-165 w/belt drive motor (no contactor)
1	258175	For Model B 200-250 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram fFor Model B with a starter.

Ignition Conversion Kit P/N 100530		
Applies to: Model F 300-400, Natural Gas; Model B 300, Natural Gas		
Qty	P/N	Description
1	222037	Replacement Valve Kit including P/N 221525 Valve, W/R #36H32-441; Compression Nut, P/N 97572; and Instruction Sheet, P/N 222038
1	257010	Ignition Control w/100% Lockout, UTEC 1003-514
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	173303	Red Wire Assy (I.C. "24V")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assy (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 300-400
1	258175	For Model B 300 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

Ignition Conversion Kit P/N 102349		
Applies to: Model B 400, Natural Gas		
Qty	P/N	Description
1	222037	Replacement Valve Kit including P/N 221525 Valve, W/R #36H32-441; Compression Nut, P/N 97572; and Instruction Sheet, P/N 222038
1	257010	Ignition Control w/100% Lockout, UTEC 1003-514
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	173303	Red Wire Assy (I.C. "24V")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assy (I.C. "TH")
1	97204	Pilot Shield
1	97534	Pilot Assy, Johnson #Q9OFF-1
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
1	258175	For Model B 400 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

## SECTION 3 - Ignition Conversion Kits to convert propane gas units from standing pilot to spark-ignited, intermittent pilot safety system with lockout, Option AH3.

Ignition Conversion Kit P/N 100531		
Applies to: Model F 25-200, Propane; Model B 25-200, Propane		
Qty	P/N	Description
1	96310	Gas Valve, 1/2", M/H #VR8204-M1018 (single stage)
1	257010	Ignition Control w/100% Lockout, UTEC 1003-514
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	173303	Red Wire Assy (I.C. "24V")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assy (I.C. "TH")
1	97204	Pilot Shield
1	97535	Pilot Assy, Johnson #Q9OFF-2
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 25-200
1	258174	For Model B 25-200 w/direct drive motor and B 50-165 w/belt drive motor (no contactor)
1	258175	For Model B 75-200 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

Ignition Conversion Kit P/N 100532		
Applies to: Model F 250-400, Propane; Model B 250-300, Propane		
Qty	P/N	Description
1	221634	Replacement Valve Kit including P/N 221526 Valve, W/R #36H32-4422; Compression Nut, P/N 97572; 1/2x3/4 Hex Bushing, P/N 37385; and Instruction Sheet, P/N 222039
1	257010	Ignition Control w/100% Lockout, UTEC 1003-514
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	173303	Red Wire Assy (I.C. "24V")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assy (I.C. "TH")
1	97204	Pilot Shield
1	97535	Pilot Assy, Johnson #Q9OFF-2
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	102708	Transformer, 35 VA, Basler #BE141640-RAK
2	103152	Screws, #6 x 1-3/4" Ig (for mounting transformer)
2	111233	Clips, Tinnerman #C6310-6Z-4 (for transformer screws)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
Wiring Diagrams (select the one that matches the heater):		
1	258173	For Model F 250-400
1	258174	For Model B 250 with belt drive motor (no contactor)
1	258175	For Model B 250-300 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B with a starter.

Ignition Conversion Kit P/N 102350		
Applies to: Model B 400, Propane		
Qty	P/N	Description
1	221634	Replacement Valve Kit including P/N 221526 Valve, W/R #36H32-442; Compression Nut, P/N 97572; 1/2x3/4 Hex Bushing, P/N 37385; and Instruction Sheet, P/N 222039
1	257010	Ignition Control w/100% Lockout, UTEC 1003-514
1	133108	Black Wire Assy (I.C. "MV")
1	98215	Brown Wire Assy (I.C. "MV/PV")
1	98214	Blue Wire Assy (I.C. "PV")
1	257074	Green Wire Assy (I.C. "GND BURNER")
1	98215	Brown Wire Assy I.C. "24V GND")
1	173303	Red Wire Assy (I.C. "24V")
1	257014	Red Wire Assy (I.C. "SENSE")
1	173307	Black Wire Assy (I.C. "TH")
1	97204	Pilot Shield
1	97535	Pilot Assy, Johnson #Q9OFF-2
1	98044	Red Wire Assy (ECO to Transformer) 18 ga. x 20", 150°C w/2 Terminals
1	257012	Controller Bracket
2	96426	#10 x 3/8" Ig Screws (to attach bracket to heater)
4	195638	#8 x 3/8" Ig Screws (to attach control to bracket)
1	96101	Lighting Instruction Plate
1	100550	Instruction Sheet CP-F/B-IGN
1	258175	For Model B 400 with belt drive motor with contactor
1	Special	Consult factory for Wiring Diagram for Model B 400 with a starter.

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