

# Instructions for Ignition Conversion Kit, P/N 216970

Applies to : **Model TR**

## Ignition Conversion Kit Components

Ignition Conversion Kit Package P/N		216970
<i>Components:</i>		
Green Wire Assembly (additional ground wire)		216973
DSI Ignition Control, UTC #1016-426 (See <b>FIGURE 1</b> .)		204955
DSI Electrode Assembly	Use 3/8" lg screw to attach electrode to the new bracket.	204611
DSI Electrode Mounting Bracket		216972
#8-18 x 3/8"lg Sheetmetal Screw		195638
Brass Plug (Plug pilot on the gas valve.)		107367
Dome Plug, DP500 (Plug hole in compartment wall.)		82413
Orange Twist-on Wire Connector		16354
Wire Tie		(2) 20913
Clear RTV		53335
Wiring Diagram Label		216974
Lighting Instruction Label (French/English)		204372

**FIGURE 1 - DSI Ignition Control, UTC D1016-426, P/N 204955**



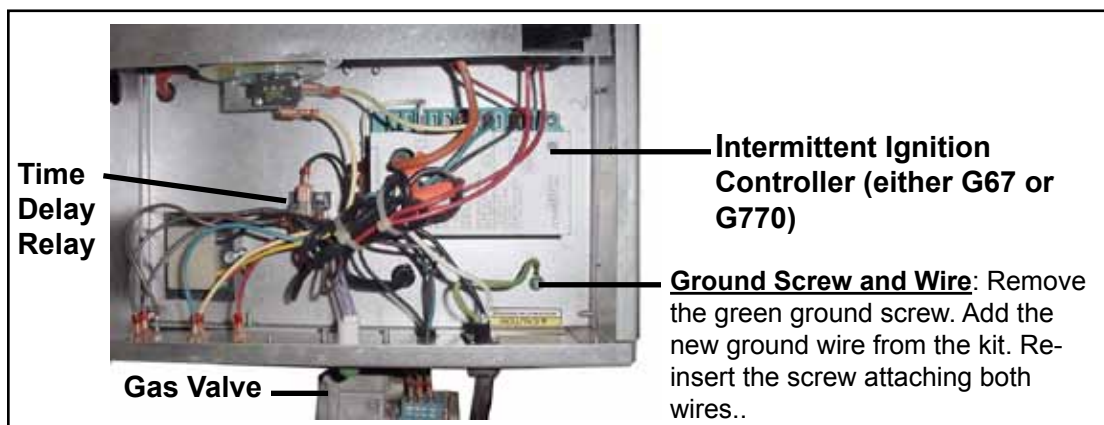
**DANGER:** This ignition conversion kit is to be installed by a qualified service agency in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. Failure to follow instructions could result in death, serious injury, and/or property damage.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

## Ignition Conversion Instructions

1. Turn off the gas and the electric.
2. Add a second ground wire.

Open the hinged access door. In the electrical control compartment, locate the green ground screw (**FIGURE 2**). Remove the ground screw, add the ring from the new ground wire, and re-insert the screw. Two ground wires are now attached with the ground screw.

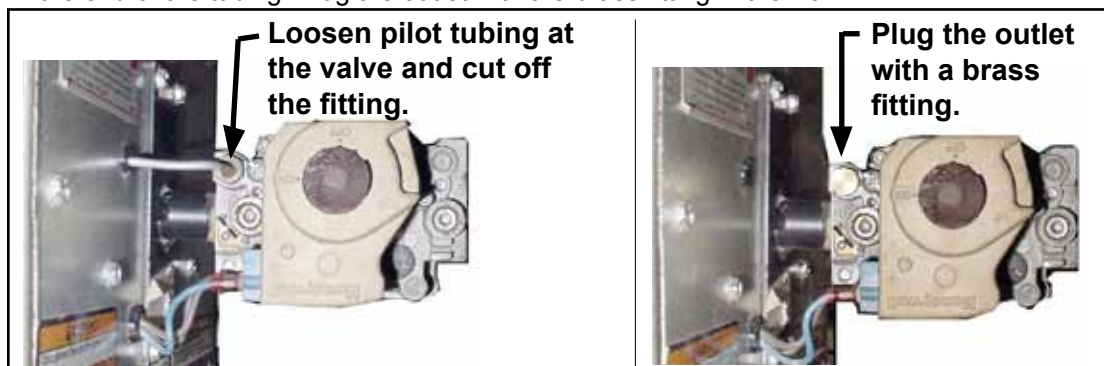
**FIGURE 2 - Electrical Control Compartment with Original Intermittent Ignition System**



3. Remove the pilot tubing and the pilot.

At the gas valve disconnect the pilot tubing (**FIGURE 3**). Cut off and discard the fitting on the end of the tubing. Plug the outlet with the brass fitting in the kit.

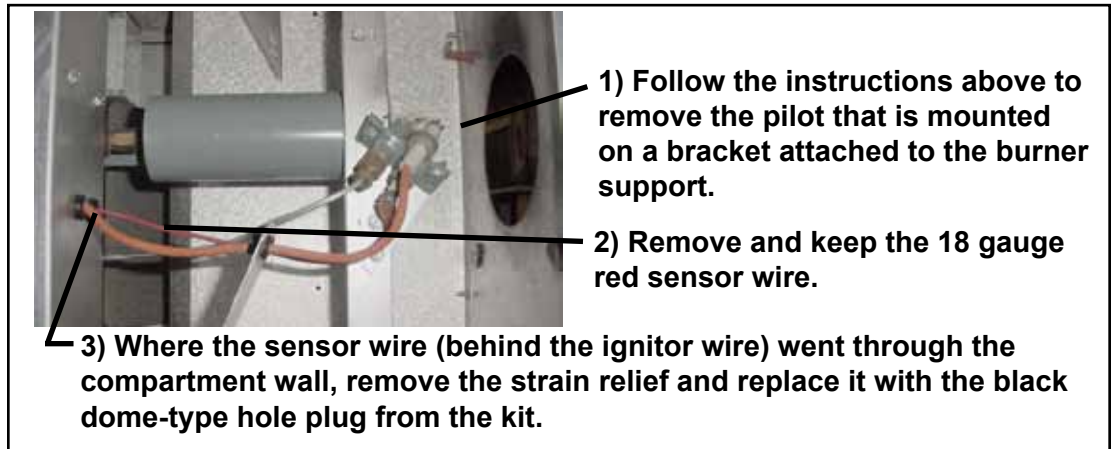
**FIGURE 3 - Side View of Valve showing Removal of Pilot Tubing**



**3. Remove the Pilot Tubing and the Pilot (cont'd)**

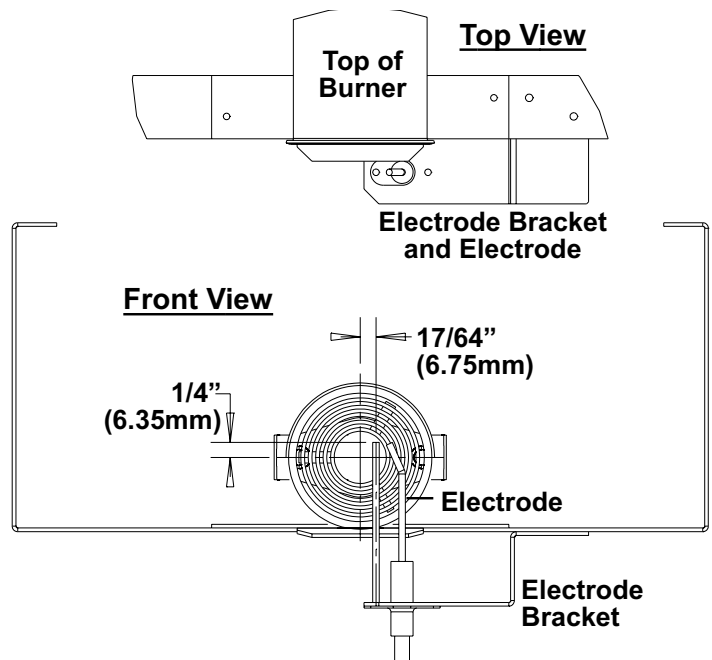
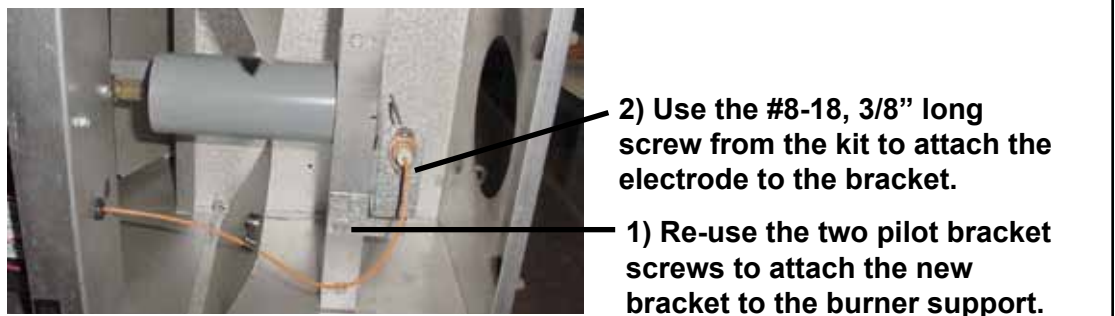
Inside the burner compartment locate the pilot mounted on a bracket. See **FIGURE 4**. Remove (and save) the two screws that attach the bracket to the burner support. Remove the pilot bracket with the pilot attached. Disconnect the 18 gauge red sensor wire from the pilot. Discard the pilot assembly including the bracket, pilot, tubing, and the ignitor wire. Pull the red sensor wire through the compartment wall and remove the strain relief from the hole. Replace the strain relief with the black dome-type hole plug in the conversion kit. Save the wire.

**FIGURE 4**  
- Burner Compartment Showing Intermittent Ignition System Pilot Assembly

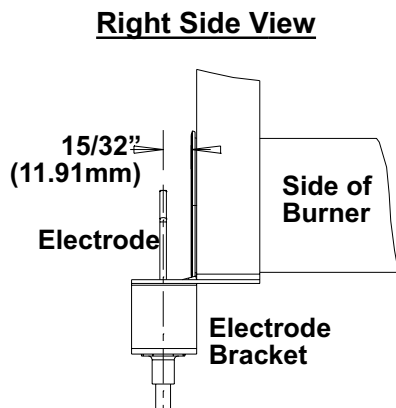


**4. Install the new bracket and DSI electrode.** Position the bracket on the burner support as illustrated in **FIGURE 5**. Attach using the same screws that held the pilot bracket. Slide the electrode through the hole in the bracket and secure using the 3/8" long screw in the conversion kit. Check the location of the electrode with the drawing in **FIGURE 5**. Route the electrode wire through the bushing in the baffle, through the remaining strain relief in the wall, and into the electrical control compartment.

**FIGURE 5**  
- Burner Compartment with New Electrode Bracket and the DSI Electrode

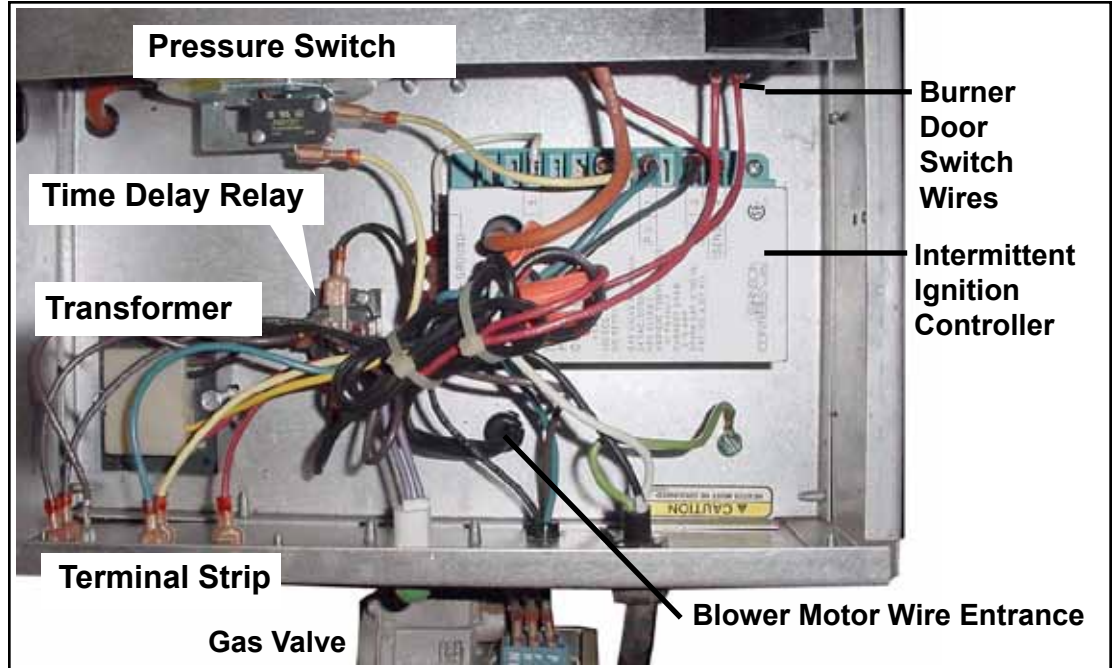


**Location of the DSI Electrode in Relation to the Burner**



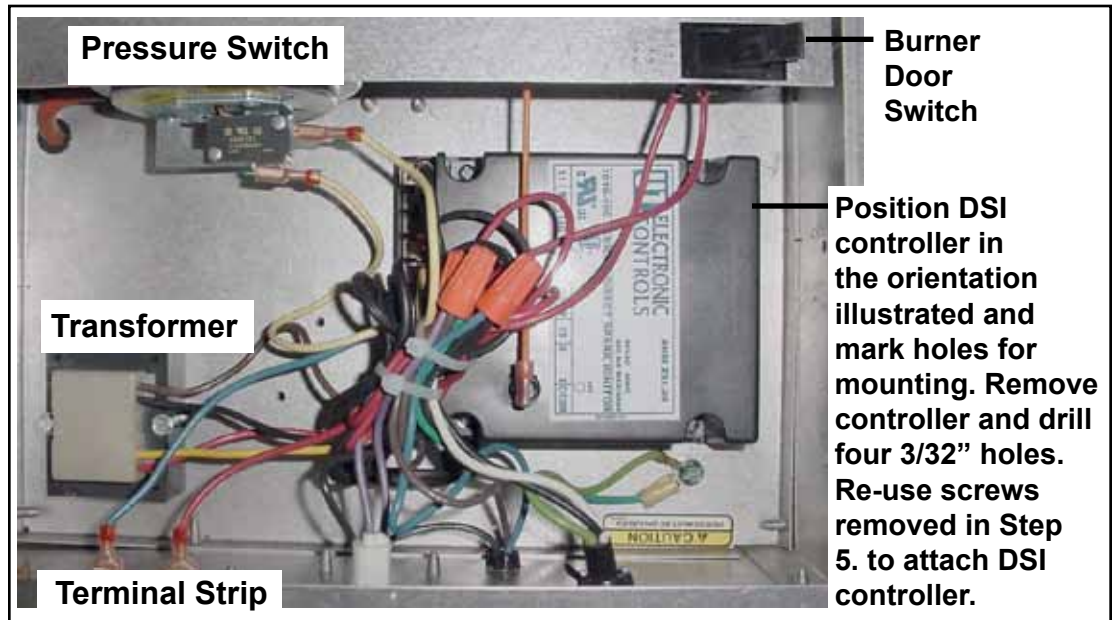
5. **Remove the time delay relay and intermittent ignition controller.** Refer to **FIGURE 6** and locate the time delay relay and the ignition controller. Cut the wire ties; remove and discard. At the ignition controller, disconnect the brown and blue wires that come from the gas valve. Cut off the quick connect terminals and strip the ends of these two wires. Disconnect the remaining quick connect terminals from the ignition controller and from the time delay relay. **Do not discard any wiring.** Remove and save the screws attaching the time delay relay. Discard the relay. Remove and save the screws attaching the ignition controller. Discard the controller.

**FIGURE 6**  
- Electrical  
Compartment  
with Original  
Intermittent  
Ignition System



6. **Install and wire the direct spark ignition (DSI) controller.** Refer to **FIGURE 7** and position the direct spark ignition controller. Mark the four holes needed for attaching the controller. Remove the controller and drill the four 3/32" diameter holes. Attach the new controller using the screws removed in Step 5 above.

**FIGURE 7**  
- Electrical  
Compartment  
with DSI  
Ignition System



**Refer to**  
**FIGURES 6 & 7**  
**and the Wiring**  
**Diagram (page 4)**  
**to Connect the**  
**Wires:**

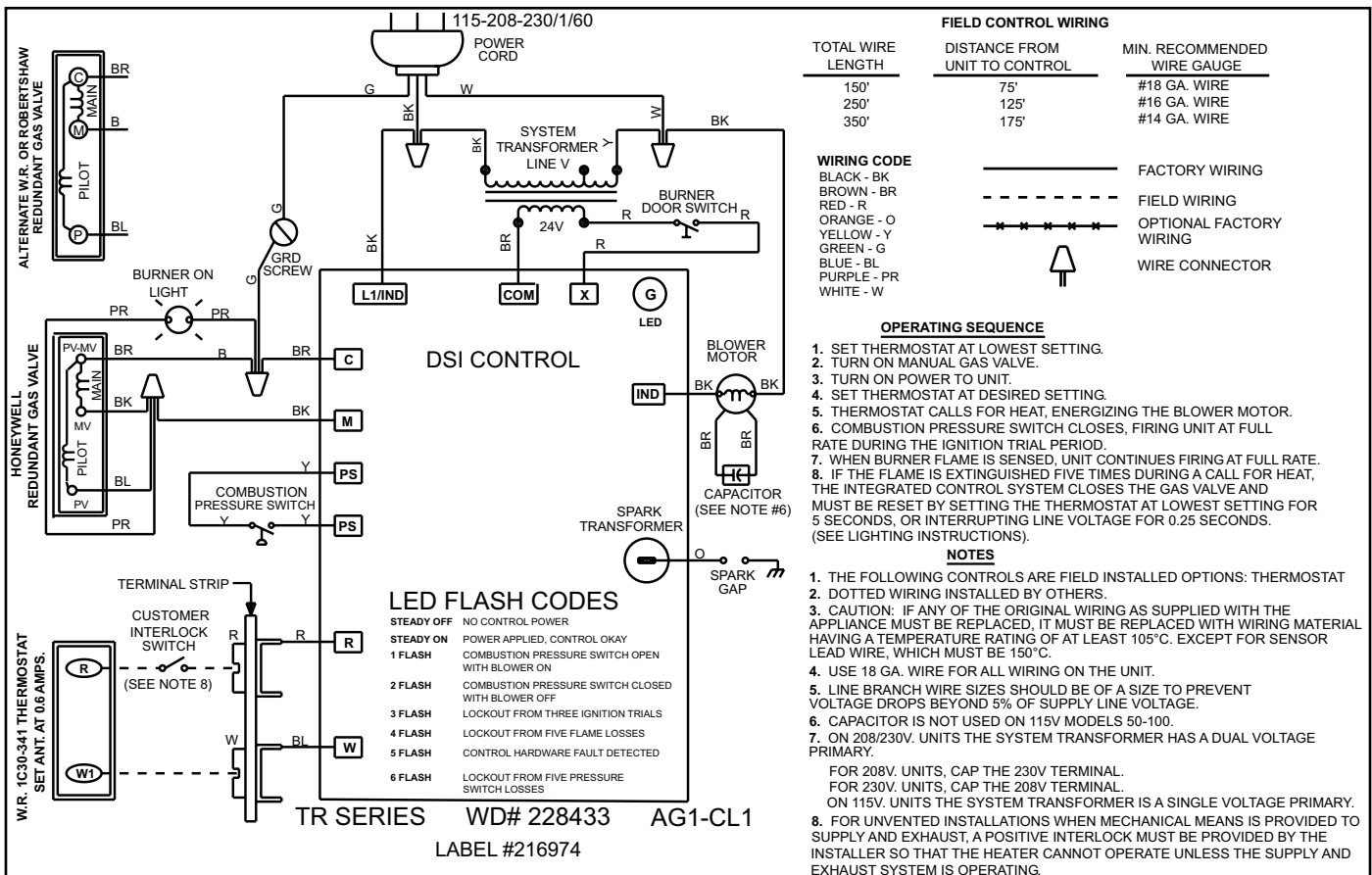
- Connect the DSI electrode wire to the spark transformer terminal on the DSI control.
- Connect the black wire from the blower motor to the "IND" terminal on the DSI control.
- Find the "unconnected" black wire coming from the "L1" twist-on wire connector. Connect it to terminal "L1/IND" on the DSI control.
- At the terminal strip disconnect the burner door switch red wire from terminal "R". Connect it to terminal "X" on the DSI control.

**6. Install and Wire the Direct Spark Ignition Controller (cont'd)**

**Refer to FIGURES 6 & 7 and the Wiring Diagram below to Connect the Wires (cont'd):**

- At the terminal strip disconnect the transformer brown wire from the ground terminal. Connect it to terminal “COM” on the DSI control.
- At the terminal strip disconnect the brown wire from the ground terminal. Connect it to terminal “C” on the DSI control. At the opposite end, cut off the quick connect terminal and strip the wire.
- Find the blue wire attached to terminal “W1” on the terminal strip. Connect it to terminal “W” on the DSI control.
- Find the black wire from the twist-on wire connector. Connect it to terminal “MV” on the DSI control.
- Find the yellow wire from the pressure switch. Connect it to terminal “PS2” on the DSI control.
- At the terminal strip disconnect the yellow wire from terminal “W1”. Connect it to terminal “PS1” on the DSI control.
- Using the red wire removed with the pilot (Step 3.), connect one end to “R” on the terminal strip and the other to terminal “R” on the DSI control.
- Find the purple wire from the indicator light. Cut off the quick connect terminal and strip the end of the wire.
- Find and remove the twist-on wire connector that contains a purple and two black wires (hold on to the wires). Using the same connector, reconnect the same wires plus the blue wire from the gas valve. Refer to the wiring diagram for details.
- Using the twist-on connector provided in the kit, connect the purple, green, and two brown wires. Refer to the wiring diagram for details.
- Verify all connections with the wiring diagram. Secure the wires with the two new wire ties.

7. Inside the electrical control compartment, apply a small amount of clear RTV on the strain relief where the electrode wire goes through the compartment wall and on the old pilot tubing snub bushing. Put RTV on all remaining holes in the control compartment.
8. Remove and discard the old lighting instruction plates (both the English and the French version) and the original wiring diagram. Select a conspicuous location for the new labels. Be sure the location is clean and dry. Adhere the new lighting instruction label and the new wiring diagram label.
9. Close the hinged door. Turn on the electric and the gas. Test the unit for proper operation.



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