

THERMOCOUPLE REPLACEMENT INSTRUCTIONS - NATURAL GAS MODELS (ALL MODELS EXCEPT 30T)

Kit Contents: 1 Thermocouple and 1 Thermocouple Clip

IMPORTANT: For correct water heater operation, it is essential that the thermocouple assembly be properly installed. If you lack the necessary skills to properly perform the installation, you should not proceed, but get help from a qualified service technician.

1. Before performing any maintenance it is important to turn off the gas supply to the water heater at the manual gas shut-off valve. This valve is typically located beside the water heater. Note the position of the shut-off valve in the open/on position then proceed to turn it off.
2. On the lower front of the water heater locate the combination gas control valve/thermostat. (See Figure 1) Depress and hold the lock tab located under the gas control knob on the right. Rotate the gas control knob on the combination gas control valve/thermostat clockwise until "OFF" aligns with the mark on the front of the gas valve. Once the gas supply has been shut-off, remove outer door. (See Figure 1)
3. Using a 1/4" nut driver or socket loosen the two screws securing the manifold door assembly until they are free. Do not totally remove the screws and plastic retainer washers from the manifold door. The screws and retainer washers will be needed to reattach the manifold door. (See Figure 1)
4. In this step, the thermocouple, manifold tube, pilot tube and igniter wire will be disconnected from the combination gas control valve/thermostat. (See Figure 2) Using a 7/16" wrench disconnect the thermocouple (left-hand thread) and pilot tube (right-hand thread). Using a 3/4" wrench disconnect the manifold tube (right-hand thread). Carefully pull the igniter wire from the igniter button.
5. Grasp the manifold tube and push down slightly to free the manifold tube, pilot tube, and thermocouple from the combination gas control valve/thermostat. Carefully remove the manifold assembly from the burner compartment. **BE SURE NOT TO DAMAGE INTERNAL PARTS.**
6. With the manifold assembly removed, use a brush (a toothbrush works well) and/or vacuum to clean the flame arrestor both top and bottom. (See Figure 3) It is important to clean inside the combustion chamber and underneath the water heater. In lint/dust prone areas such as laundry rooms, it is recommended that the Filter Accessory Kit (part number: 6910609 or 6910610) be installed. **NOTE:** Anytime maintenance is performed on the combustion chamber it is recommended that the flame arrestor be cleaned inside and out.
7. Once the manifold assembly is removed from the water heater, locate the retainer clip securing the two-piece wire connector to the manifold door. (Note the orientation of the retainer clip). Insert the tip of a large flat head screwdriver between the clip and the top of the two-piece wire connector. (See Figure 4) Carefully rotate the screwdriver to raise the clip.
8. With the retainer clip removed carefully push the two-piece wire connector through the manifold door. It may be necessary to slide the connector out one piece at a time. Keep the two-piece wire connector and retainer clip for re-installation.

Figure 1

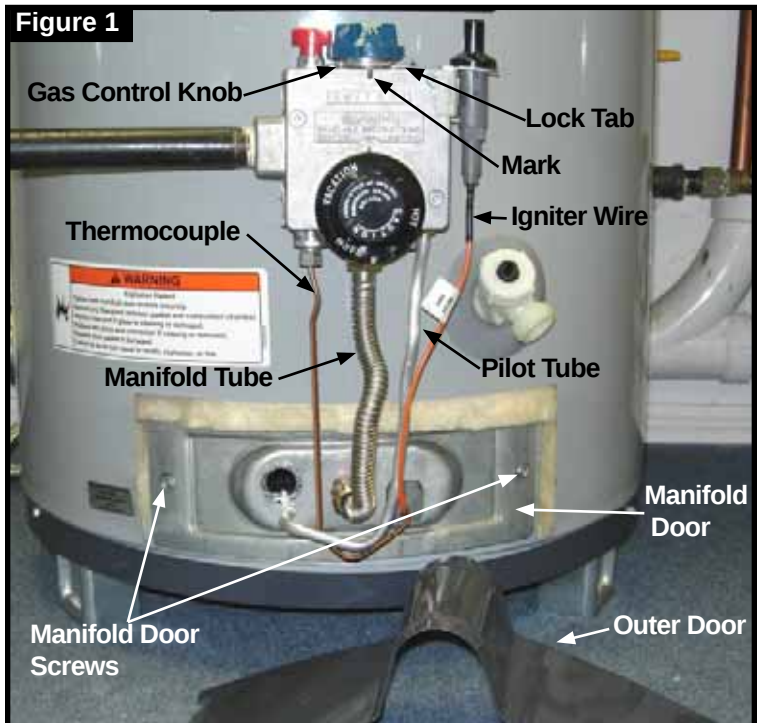


Figure 2

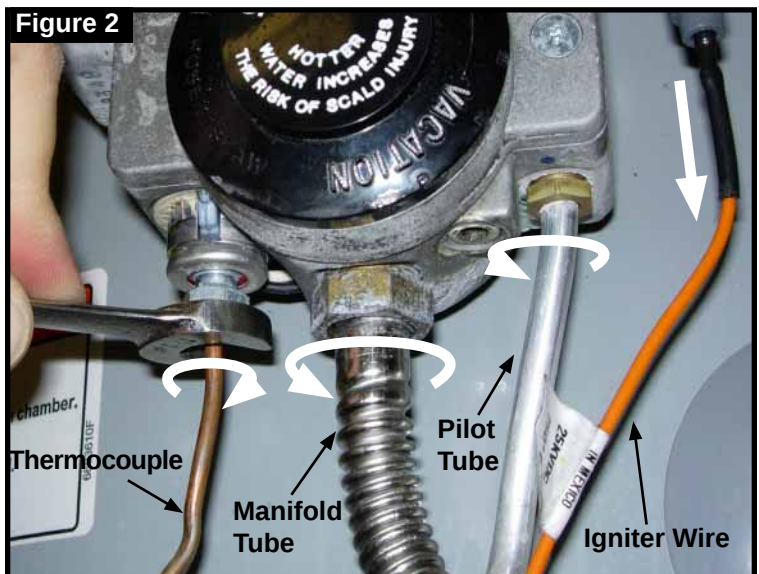
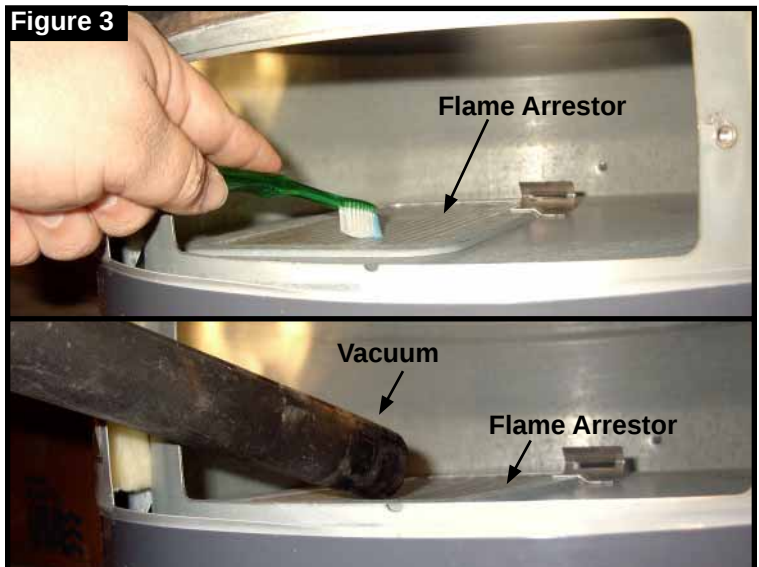


Figure 3



9. Locate the clip holding the thermocouple to the pilot tube. (If your model does not have a clip, proceed to the next step.) Before unsnapping the thermocouple from the clip note the clip's location on the larger diameter section of the thermocouple. (See Figure 5)
10. Locate the thermocouple where it connects to the rear of the pilot assembly. Pull the thermocouple from the rear of the pilot assembly as shown in Figure 6. NOTE: For clarity the burner is not shown in the photo. Do not remove the burner. Once the thermocouple is disconnected from the pilot assembly, it may now be removed from the manifold door assembly.
11. If your new thermocouple is pre-bent to the shape on page 4 then skip to step 12. If your new thermocouple is coiled then use the bending template on page 4 as a guide to carefully bend the new thermocouple supplied with the kit. When bending, do not kink or crease the thermocouple. It is essential for the proper operation of the water heater that the thermocouple be bent smoothly without kinks or creases.
12. Insert the tip of the thermocouple through the hole in the front of the manifold door and route it in the same configuration as the old thermocouple. (See Figure 7) IMPORTANT: It is essential for the proper operation of the water heater that the thermocouple be routed correctly. For clarity purposes the burner is not shown in the photo.
13. Insert the thermocouple tip into the hole provided in the pilot assembly. Then push the thermocouple completely forward until it is seated against the pilot assembly bracket. (See Figure 8) An audible click is typically heard when the thermocouple is fully seated. IMPORTANT: The thermocouple must be fully seated. For clarity purposes the burner is not shown in the photo.
14. Snap the thermocouple back into the clip connecting it to the pilot tube. (See Figure 9) If your water heater does not have a clip, reference the table below to determine the correct clip to use. Slide the clip over the pilot tube first, then snap the thermocouple into the clip. Use the template on page 4 for the location of the clip.

Thermocouple Clip Table:

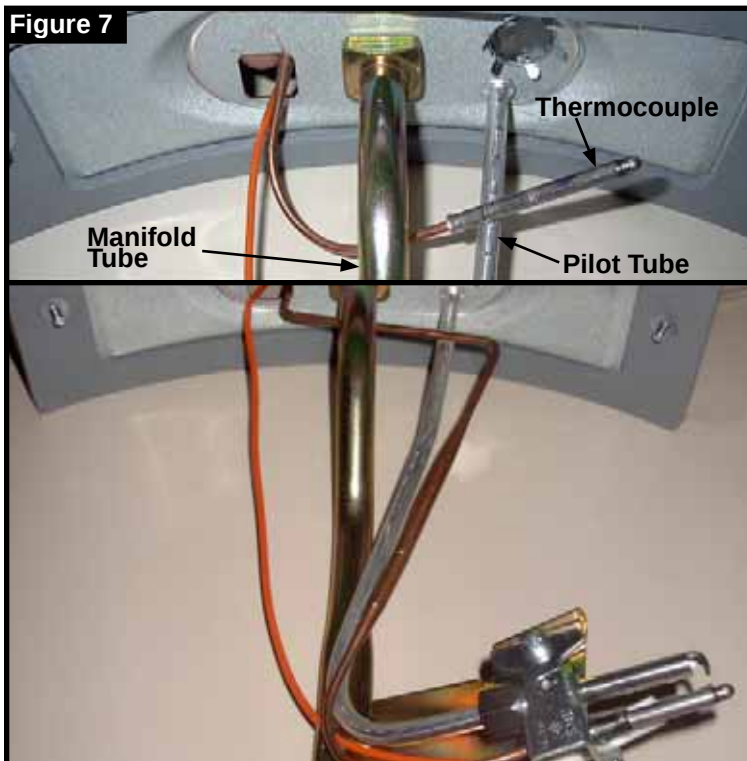
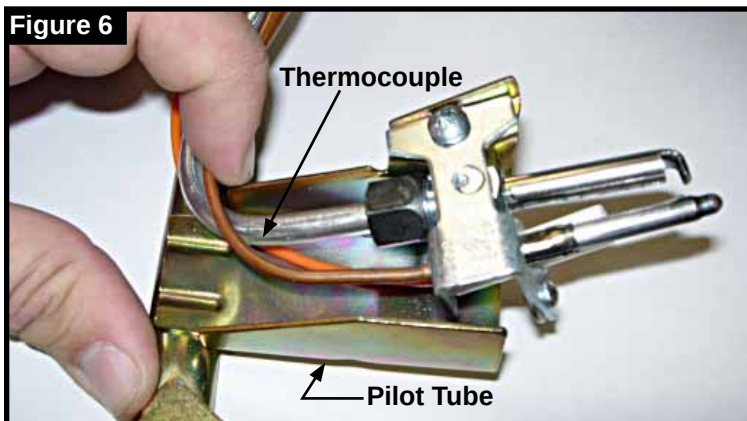
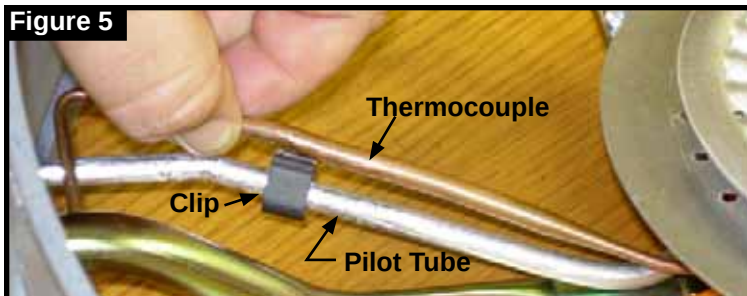
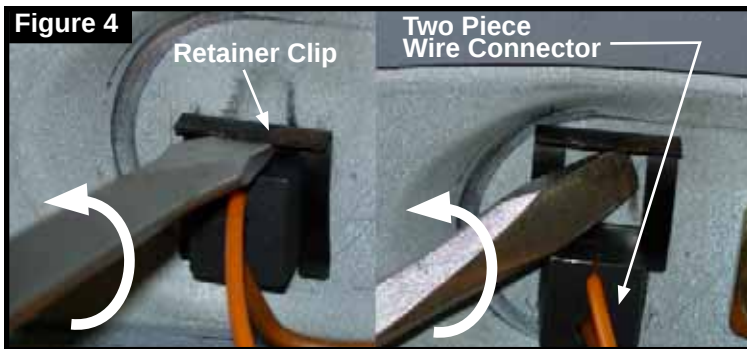
This clip fits the following models:

30 gallon (Short)
40 gallon (Short & Tall)
50 gallon (Tall)

Note: Reference the model number on your data plate for a T or S indicating a Tall or Short model.



15. Reinstall the two-piece wire connector in the manifold door. The igniter wire must be seated above the thermocouple in the two-piece wire connector. It may be necessary to insert the connector one side at a time. Once both sides of the two-piece wire connector are in place, secure it with the retainer clip.



16. Carefully insert the manifold assembly into the combustion chamber making sure that the tip of the manifold assembly engages with the slot in the bracket inside the combustion chamber. (See Figure 10) Once seated make sure there is no fiberglass insulation between the gasket and the combustion chamber.
17. Securely tighten the two screws that hold the manifold door assembly to the skirt.
18. In this step the thermocouple, manifold tube, pilot tube, and igniter wire must be reconnected to the combination gas control valve/thermostat. (See Figure 11) Using a 3/4" wrench (right-hand thread) reconnect the manifold tube. Reconnect the thermocouple (left-hand thread) using a 7/16" wrench. NOTE: When connecting the thermocouple tighten by hand, then use a wrench to tighten one quarter turn only. Reconnect the pilot tube (right-hand thread) using a 7/16" wrench. NOTE: Do not cross thread or apply any thread sealant to the fittings. Reconnect the igniter wire to the igniter button.
19. Turn the gas supply on at the manual gas shut-off valve, and refer to the lighting instructions on the outside of the water heater. Check for leaks using a chloride-free soap and water solution (bubbles forming indicate a leak) or other approved method. Do not use open flame. ALL LEAKS MUST BE FIXED IMMEDIATELY. Ensure proper operation of the water heater and reattach outer door.

Figure 8

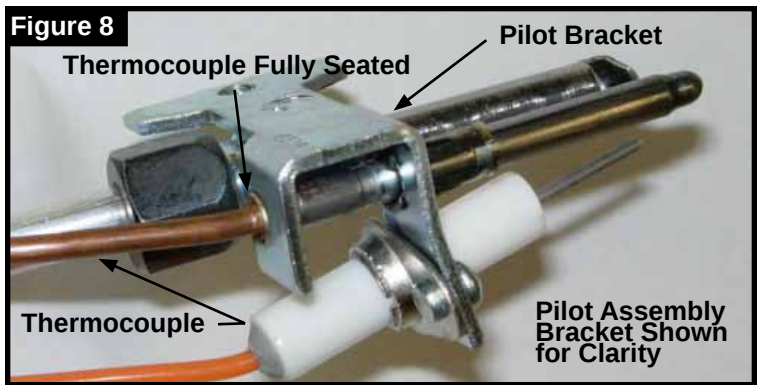


Figure 9

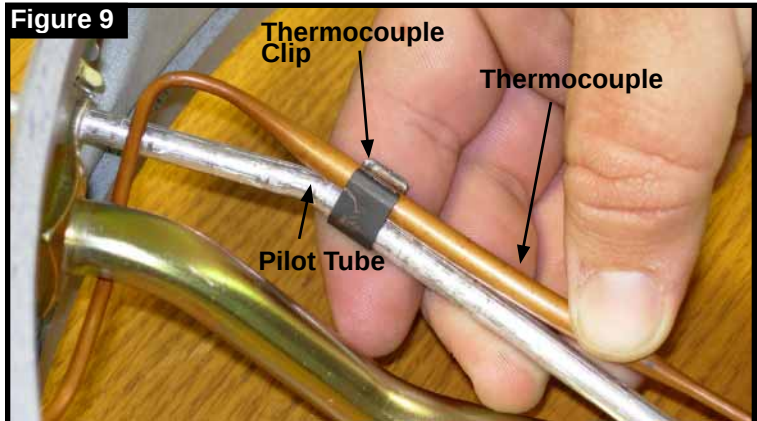


Figure 10

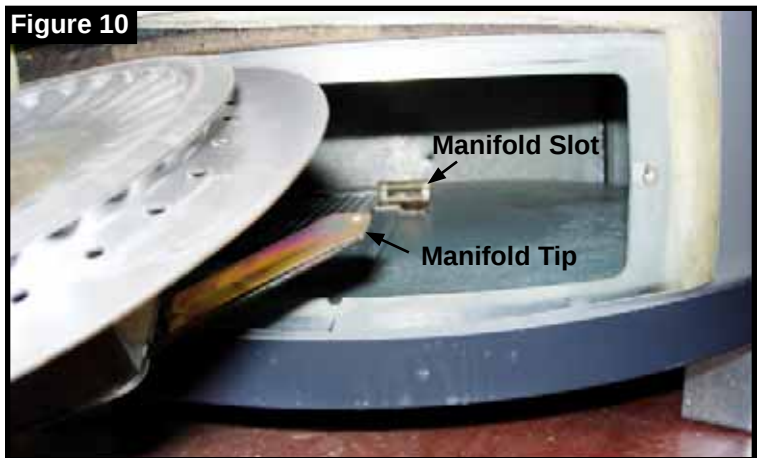
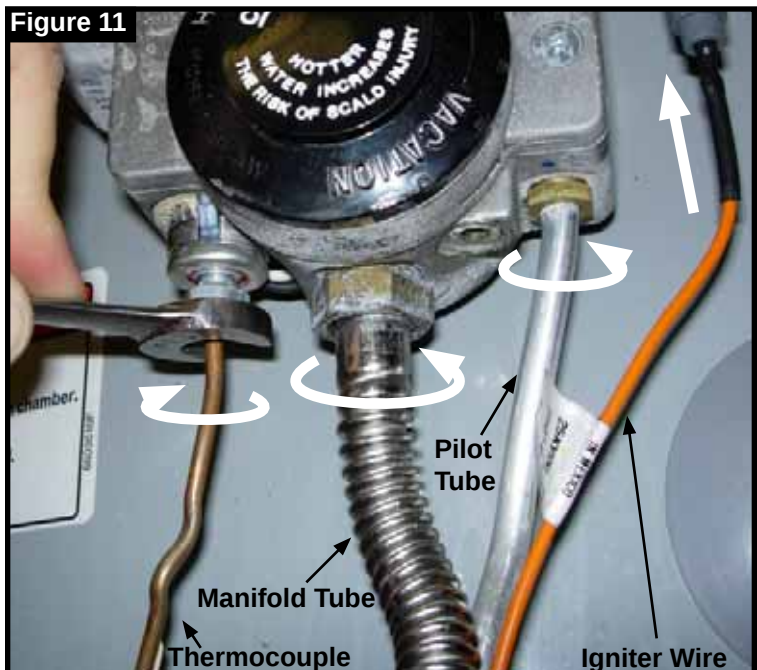
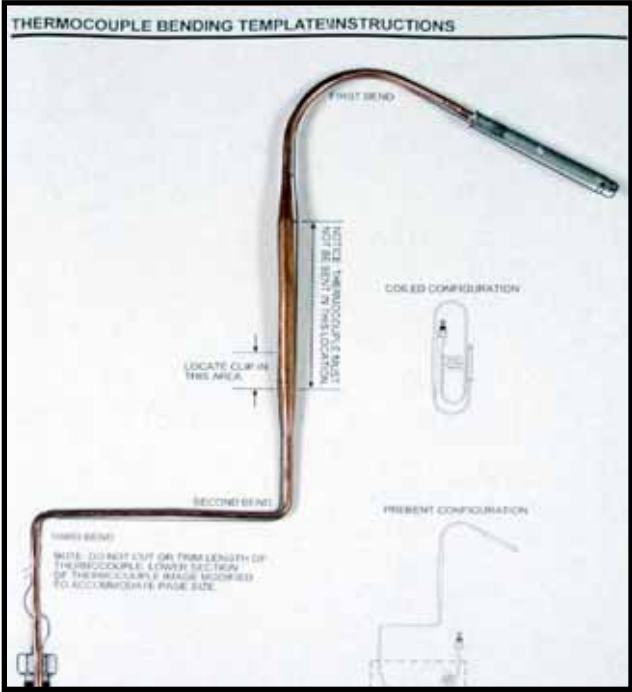


Figure 11



THERMOCOUPLE BENDING TEMPLATE\INSTRUCTIONS



FIRST BEND

NOTICE: THERMOCOUPLE MUST NOT BE BENT IN THIS LOCATION.

LOCATE CLIP IN THIS AREA.

SECOND BEND

THIRD BEND

NOTE: DO NOT CUT OR TRIM LENGTH OF THERMOCOUPLE. LOWER SECTION OF THERMOCOUPLE IMAGE MODIFIED TO ACCOMMODATE PAGE SIZE.

COILED CONFIGURATION

PREBENT CONFIGURATION

NOTE: THIS SECTION OF THE PREBENT THERMOCOUPLE MAY BE UN-COILED TO ACCOMMODATE INSTALLATION.