HOMEOWNER REPAIR GUIDE

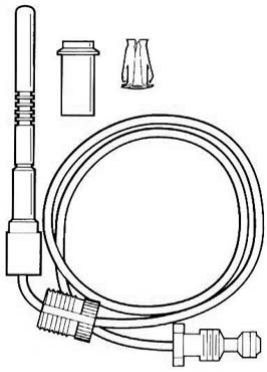
REPLACING A THERMOCOUPLE

A furnace repair anyone can do

During the winter months, we all depend on our heating systems to keep us warm. When they stop working, we can't ignore them, but must act quickly.

WHAT A THERMOCOUPLE DOES

One common cause of furnace breakdown that can be easily diagnosed and repaired is failure of the **thermocouple**. The thermocouple is a safety device on most furnaces and boilers *(*see note)* that tells the gas control valve whether or not your pilot light is burning. (It prevents gas from being released into an unlit furnace.) When the thermocouple is defective, even though the pilot light is burning, the main burner won't light – no matter how cold it gets.



30 millivolt thermocouple

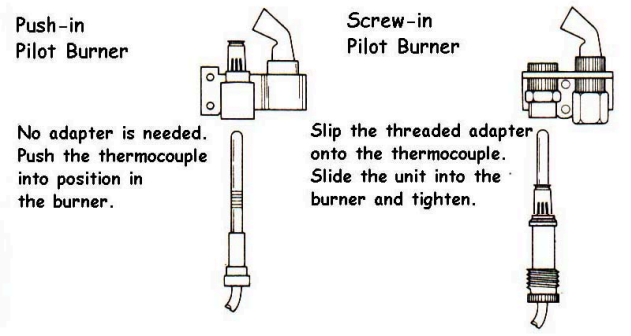
FINDING THE THERMOCOUPLE

The thermocouple looks like a piece of metal tubing smaller than a soda straw. To find it, first locate the gas control valve. This is the box that the main gas line enters, where you turn the gas on in the furnace. (On most furnaces, it also houses the button that you hold open or push to relight the pilot.) Once you have located the gas control box, follow the three pipes leaving the bottom of the box:

PIPE	LEADS TO
Largest	The main burner
Medium	The pilot (this pipe will not be present in some furnaces with electronic ignition)
Smallest	The thermocouple. The other end of the thermocouple sits in the flame of the pilot light.

REPLACING IT

1. After you locate the thermocouple, turn off the gas to the furnace.
2. Unscrew the thermocouple from the control box and from where it is attached near the pilot light.
3. Replacement thermocouples are readily available, and come in four standard lengths (18”, 24”, 30”, and 36”). Simply take the thermocouple you’ve removed to any home supply store, hardware store, or heating/plumbing supply store to get an identical model. (You might take the furnace model and serial number with you, in case there’s a question.)
4. Reverse the process to install the new thermocouple.



Push-in and screw-in pilot burners

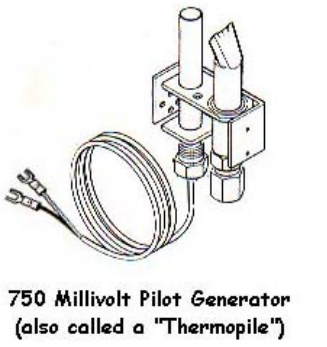
This is the same process you use to replace the thermocouple on your hot water heater. Expect to pay a minimal cost for the thermocouple; you'll save a lot of money by replacing it yourself.

TIP

You might even consider buying an “extra” thermocouple to have on hand, before you actually need a new one.

*NOTE: THERMOPILES

While most furnaces and boilers have a thermocouple, in some boilers and gravity furnaces a **thermopile** (pilot generator) will generate electricity to operate the gas control valve. You can distinguish this device from the metal tube of a thermocouple by the two wires in sheathing that lead to it. It is not difficult to replace a thermopile; simply remove the two wires connecting it to the gas control valve and remove the nut holding the thermopile in place. However, replacement thermopiles are less readily available than thermocouples, so you will probably need to go to a heating supply store.



750 millivolt pilot generator (thermopile)

Home Repair Resource center

Home Repair Resource Center empowers homeowners to maintain their homes for sustainable and diverse communities.

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