



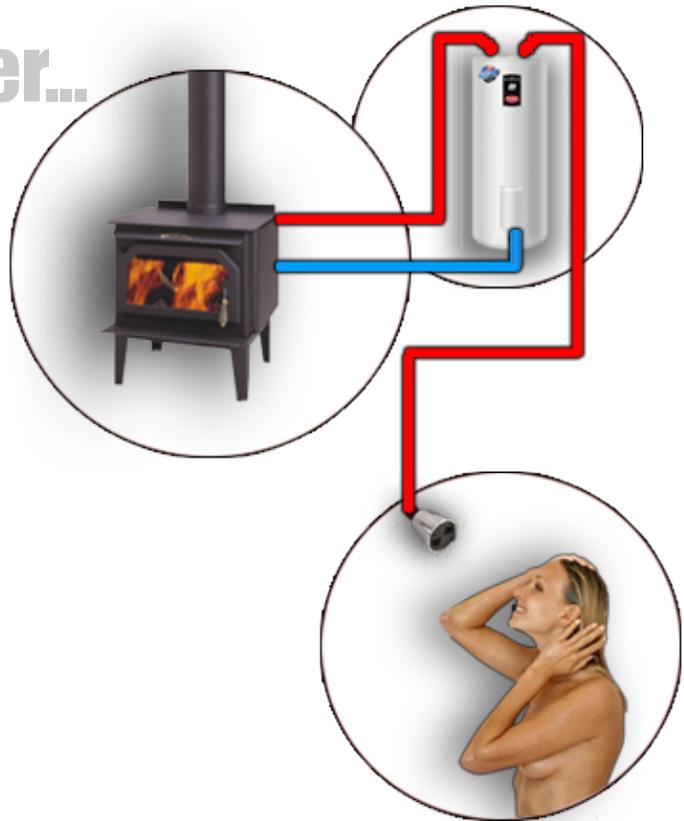
the stainless steel water-heater for your woodstove

USER'S MANUAL

Get Into Hot Water...

Heating water while heating the home with renewable wood has been done for centuries and is now reemerging as a way to substantially reduce both monthly utilities costs and the reliance on limited fossil fuel supplies.

Therma-coil is made of the highest quality stainless steel to let you safely and simply make a difference in your family's wallet and well as the planet.



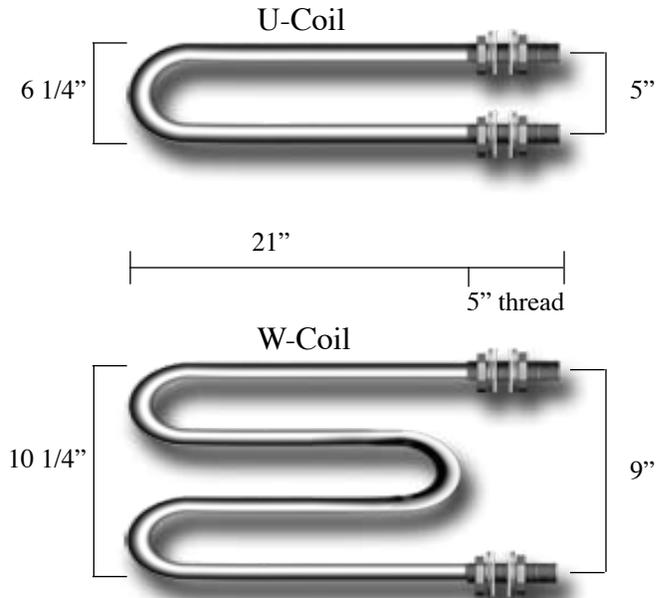
About the Therma-Coil

Water heating is the second largest utility load in a home after heating/cooling, and woodstove water-heating is a logical way of reducing monthly utility costs for woodstove users. Therma-coil is a stainless steel heat exchanger placed inside the stove firebox where the consistent heat is. Constructed of heavy-wall stainless steel pipe, Therma-coil has no joints and mounts securely in most stoves with gaskets sealing the stove-wall penetration against smoke leakage. Early materials used for heat exchangers were often unsuitable for long life in today's high temperature woodstoves. That is why Therma-coil uses only the highest grade stainless steel with a simple and efficient mounting method to insure many years of safe and trouble free service.

Some simple thermosiphon systems often pay for themselves in one season (a 100% annual return on the investment). Conventional water heaters cost money every month for their lifetime in addition to their initial cost. Therma-coil saves you money every month you use it. As utility prices go up, you are assured of at least one part of your winter costs to remain low with a Therma-coil. Woodstove water-heating also compliments solar systems perfectly by contributing hot water during the marginal solar times of the year.

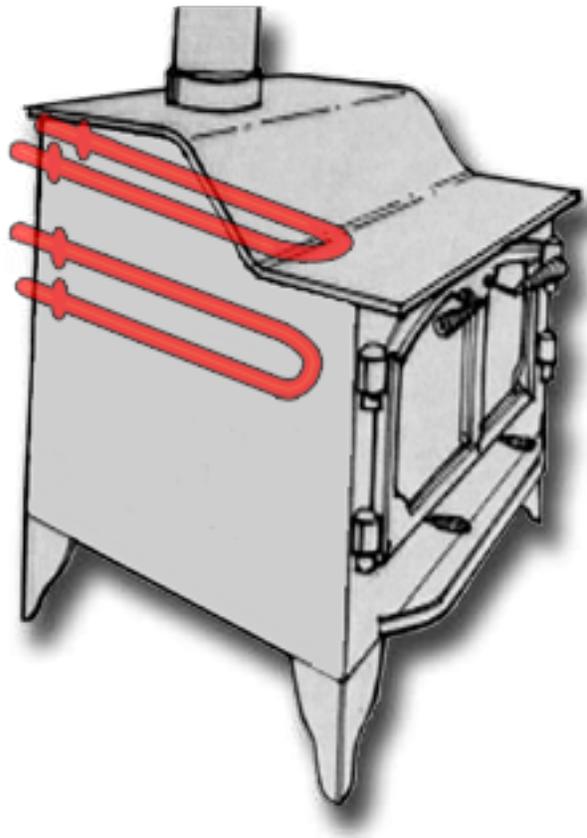
What Size?

Therma-coil is manufactured in two sizes depending on the stove size and the amount of hot water needed. Smaller stoves tend to have a higher firebox temperature and generally are better suited to the single U-shaped model. Larger fireboxes need more surface area and generally work best with the W-shaped model. Climates that use woodstoves all the time throughout long winters will see more hot water produced in a Therma-coil than milder areas with intermittent stove use and should be sized accordingly. Measure the inside of the stove to determine which coil will fit, remembering that the Therma-coil is 16" long inside the stove with an additional 5" threaded nipple length that exit through the stove wall (overall length is 21").



Placement

Therma-coil placement inside the stove also determines sizing. The coil can be placed inside the firebox vertically along the side or the rear of the stove exiting out the rear or side stove wall. However, this usually takes up firebox space, can get covered with ashes that are pushed up and reduce performance, and is more prone to being hit with logs. When possible, it is recommended the coil be placed high inside the stove, horizontally under the griddle and out of the way of logs. Therma-coil will capture some of the heat escaping up the flue in this location. Increasing the amount of hot-water at a later date can be accomplished by adding another Therma-coil and plumbing it in series with the first one. In most cases, the heat needed for domestic water heating will not affect the burn characteristics of the stove.



Installing the Therma-Coil in the Stove

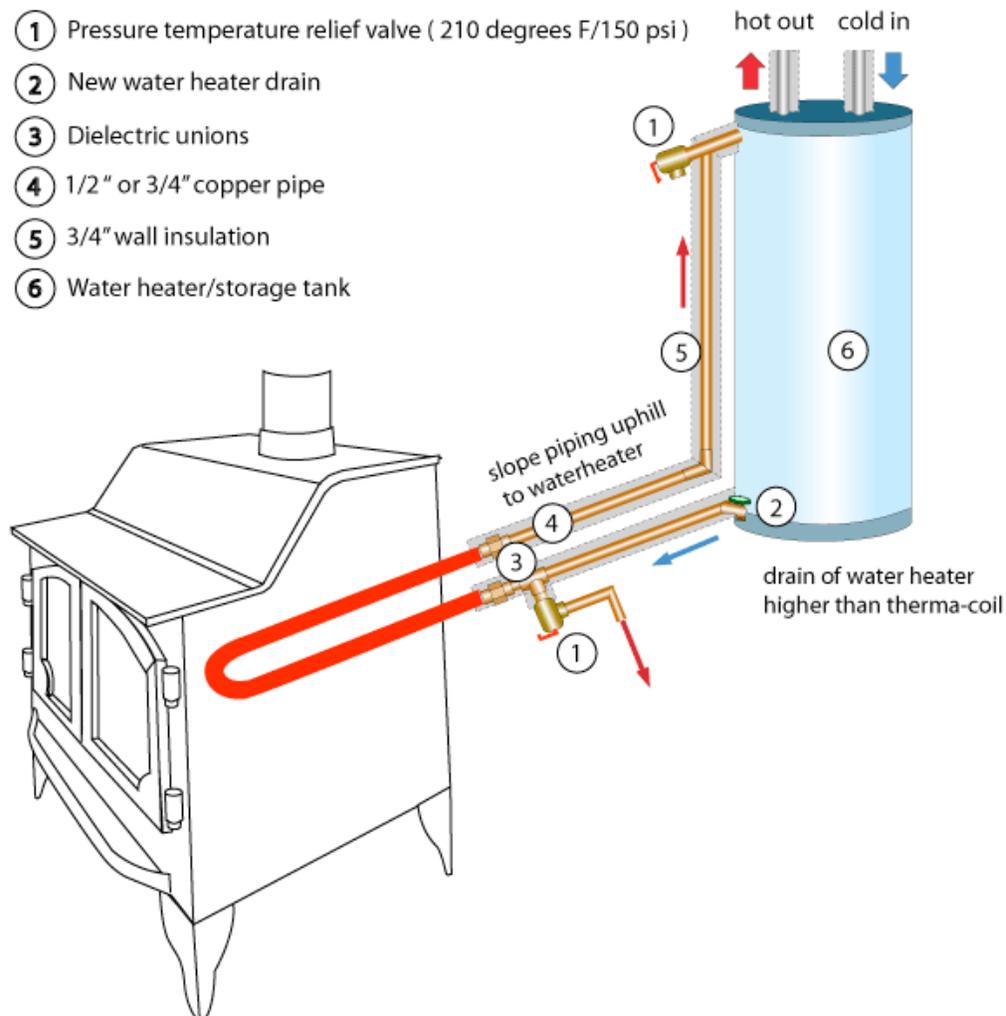
- 1) Measure inside the stove and using a punch and the template provided, punch two marks in the stove wall.
- 2) Check again inside and out, remembering the 6" nipples will go through the holes made in the stove as well as any heat shields that your stove may have. The Therma-coil should exit out the rear of the stove when possible, so plumbing to and from the stove is hidden.
- 3) Remove the pilot drill bit from the hole saw provided and use it to drill from the inside of the stove through the stove wall and heat shields (if any), using oil on the bit to help drilling.
- 4) Double check the measurements of the holes inside and out for proper fit of the Therma-coil. If the full length cannot stab straight through the stove wall and heat shields, it may be necessary to drill the heat shields with a larger hole saw than is provided to get the necessary clearance.
- 5) Replace the drill bit into the hole saw, and using the hole saw while adding oil often, drill through the stove wall.
- 6) Screw the first nut onto the threads and run it down to a suitable place on the nipple, depending on how much nipple will exit out the back of the stove and how much of the Therma-coil can fit inside the stove.
- 7) Add the flat washer and gasket washer and place the Therma-coil into the stove and through the holes. On the outside of the stove, place the gasket, flat washer, and nut onto the nipple against the heavy steel stove wall.
- 8) Tighten as much as possible with a wrench to insure no smoke leakage and a strong mounting.

Plumbing

Thermosiphon (passive) Method

The easiest, most economical and desirable method of Thermo-coil water heating is the thermosiphon, using no pumps, controls or electricity. Heated water from the Thermo-coil is less dense, lighter, and naturally rises to the top of the water-heater or storage tank. The cooler water in the bottom of the water-heater/storage tank is heavier and “falls” down the plumbing line to the Thermo-coil, completing the cycle. The flow is slow and is reduced by long runs. This is only possible if the water heater or storage tank is higher than the woodstove and close to it. An ideal thermosiphon arrangement would be to place the water-heater on the next floor above the woodstove, in an attic, closet, or elevated in the garage opposite the woodstove wall (a stand can be built under the water-heater).

Sloping the piping at least 1 foot rise for every 2 feet horizontal run would be a good rule of thumb using 3/8” (well insulated) copper pipe. Soft copper reduces sharp turns and is easier to install in most situations. Local plumbing codes and methods should always be adhered to.

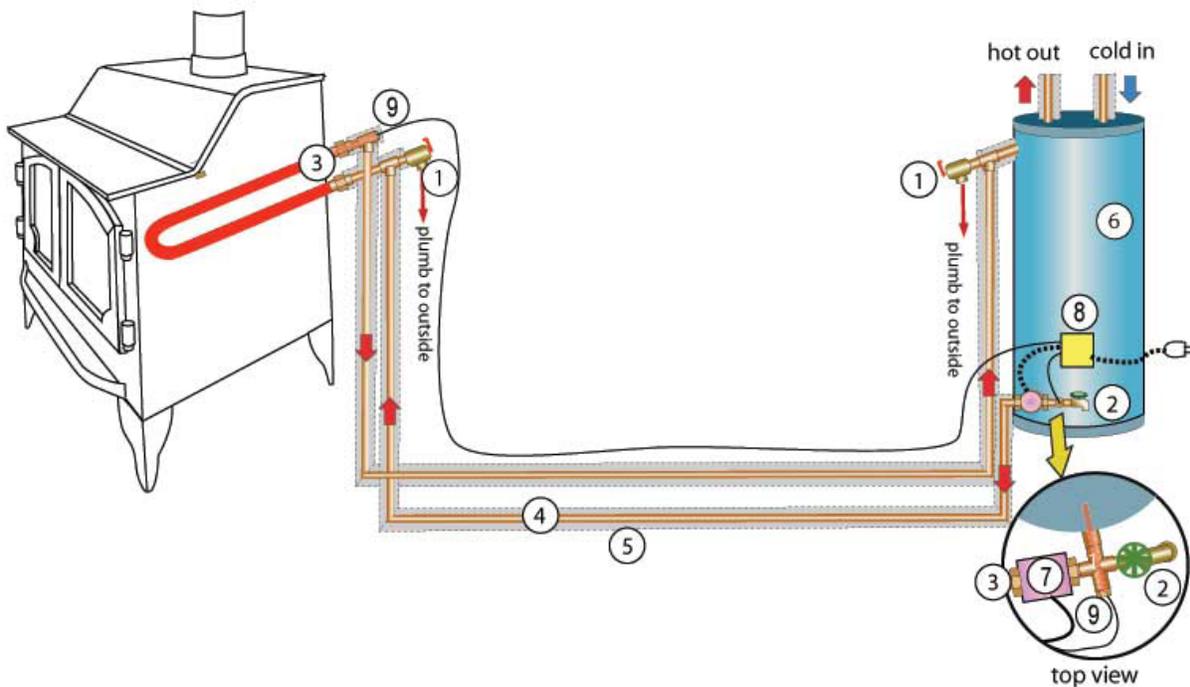


Plumbing

Pumped (active) Method

When the water heater isn't located close to and higher than the stove, a small circulator pump and controller is used. The differential controller compares a probe sensor inside the bottom of the water heater / storage tank, and a probe sensor inside the therma-coil exit line. Whenever the stove water is hotter than the storage tank, the controller turns on the circulating pump. The pump circulates the cooler water from the bottom of the water heater, through the Therma-coil where it is heated, and back to the top of the water heater (costing only pennies a day in electricity.)

- ① Pressure temperature relief valve (210 degrees F/150 psi)
 - ② New water-heater drain
 - ③ Dielectric unions
 - ④ 1/2" or 3/4" copper pipe
 - ⑤ 3/4" wall insulation
 - ⑥ Water-heater/storage tank
 - ⑦ circulating pump
 - ⑧ differential controller
 - ⑨ probe sensors
- 18-2 sensor wire
..... 110 VAC



Contact

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