

Obtaining Domestic Hot Water from a Wood or Coal Stove

Many folks have expressed a desire to obtain hot water from their stoves.

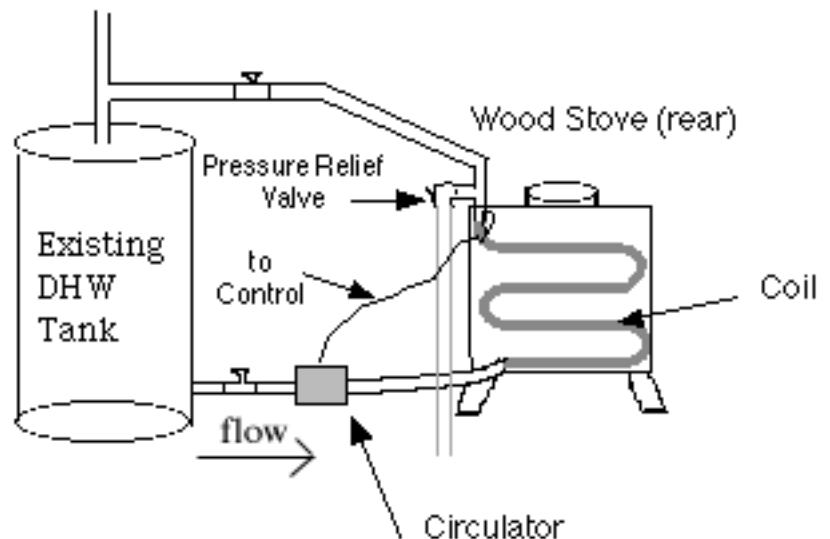
First, I should mention that this article refers to Domestic Hot Water, meaning the water that is used to wash dishes, take showers, etc. A woodstove cannot produce the volumes of water needed to heat your home through a baseboard or radiator system. If you are looking to heat your entire home AND produce your Domestic Hot Water, take a look at the wood burning and multi-fuel boilers from [HS TARM](#).

There are two different types of heat exchangers which can be fitted to stoves and used to heat your domestic water.

1. External Heat exchangers - if the stove has a large flat surface on the rear, then a serpentine can be fabricated that goes against the rear. If it is enclosed with a layer of sheet metal behind this coil, it will provide better heat. I've had them custom made..but the same shops that make DHW coils (tankless heater) for hot water boilers. These coils were made from a finned copper (usually 3/4"), so much the better for heat exchange. You could make your own by using 180 degree copper bends, but use high-temp (silver) solder so the coils don't come apart if they ever hit a very high temperature. This would only happen if they ran out of water and the stove was VERY hot. Input would be into the bottom of the coil, and output from the top. A pressure relief valve should be installed next to the coil...WITH NO VALVES BETWEEN THIS PRESSURE RELIEF VALVE AND THE COIL.

2. Internal Heat Exchangers - A few companies make such an item, although it may not be easy to find. The best ones are small tanks or coils made of stainless steel. The kits come with instructions and a pressure relief valve. In order to install an internal heat exchanger, a hole must be drilled into the stove body. This may be a job for a professional, as you don't want to compromise the safety or integrity of your stove.

Internal heat exchangers produce more hot water than external ones, however this increased heating ability also makes them more prone to overheat. Make certain that your installation meets all local plumbing codes and that your pressure relief valve is piped down through the floor or in a direction where steam exiting from it will not be near a person.



In many installations a pump and control will be needed. The only exception is when the unit is close to a tank and can be set up for a thermosyphon (the rising and falling of heated and cooled water) loop. I have used 1/100 HP brass circulators (available from Graingers) along with an aquastat to make the pump turn off and on when the water at the top of the coil heats and cools. I usually set this control to go "on" at 140 degrees and "off" at approx. 120. This then circulates heated water back to the hot water storage tank.

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