# How to Upgrade a Water Heater

#### Step 1 Prepare the Water Heater

The first step is to shut off the water on the cold side of the water heater.

Open up a hot water faucet to relieve some of the pressure in the lines.

If the water heater is gas, turn the switch over to the 'Pilot' position. If it's electric, turn the power off at the breaker.

Drain about a gallon of water out of the tank to relieve more pressure and to lower the water level.

#### Step 2 Prepare the Pipes

Use a tape measure to estimate the length of each section of 3/4" copper pipe, then transfer the measurement to each section of pipe and cut the pieces to length.

Assemble the pieces together including any fittings.

Next, screw the male adaptors in place on the valve and continue to fit the pieces together.

Test the assembly in place to check the measurements.

#### Step 3 Cut the Cold Water Line

Align the pre-fitted valve assembly to the cold water line. Make a mark where the 90-degree angles intersect the water line.

Use a pipe cutter to cut the pipe closest to the water line first then move on to the top of the pipe and cut.

#### Step 4 Assemble the Expansion Tank Connections

Make sure that the length of the pipe coming off the 'T' is as short as possible to limit strain on the connection.

Clean and flux the joints while assembling the expansion tank connection. Make sure there is a threaded male adaptor to connect the tank into at the end.

Solder all the joints together and let the assembly cool thoroughly, then add Teflon paste to the threads of the tank.

Install the 'T' and female adaptor for the expansion tank. Use two slip-joint pliers to screw the tank into the threaded male adaptor. Be sure the tank is secure.

If the water heater is electric, turn the water on and test for leaks.

#### Step 5 Install an Automatic Shutoff Valve

The automatic shutoff valve has an option that will also shut off the gas on gas water heaters. A licensed technician will need to do the installation.

Here are the steps:

* Use pliers to remove the thermal coupling from the gas valve then install the automatic shutoff valve coupling in its place (Image 1).
* Next, insert the wire from the valve into the hole in the coupling and secure the wire. Use pliers to tighten the connection (Image 2), but be very careful not to over-tighten.
* Remove the cap from the shutoff valve and insert the wire ends into the sockets on the valve (Image 3).
* Secure the wire to the water heater. Finally, turn on the water heater.

#### Step 6 Build a Pan

If there is not a pan underneath the water heater, it is possible to build one without having to drain the tank and put one underneath.

The damming system is a strip of rubber that is 'T' shaped (Image 1) to keep the water in.

Once the area has been measured around the tank, cut the rubber to length.

Apply plumber's putty to the bottom of the rubber and put in place by attaching both ends to a coupler. Then, coat the inside bottom edge with a silicone sealer.

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