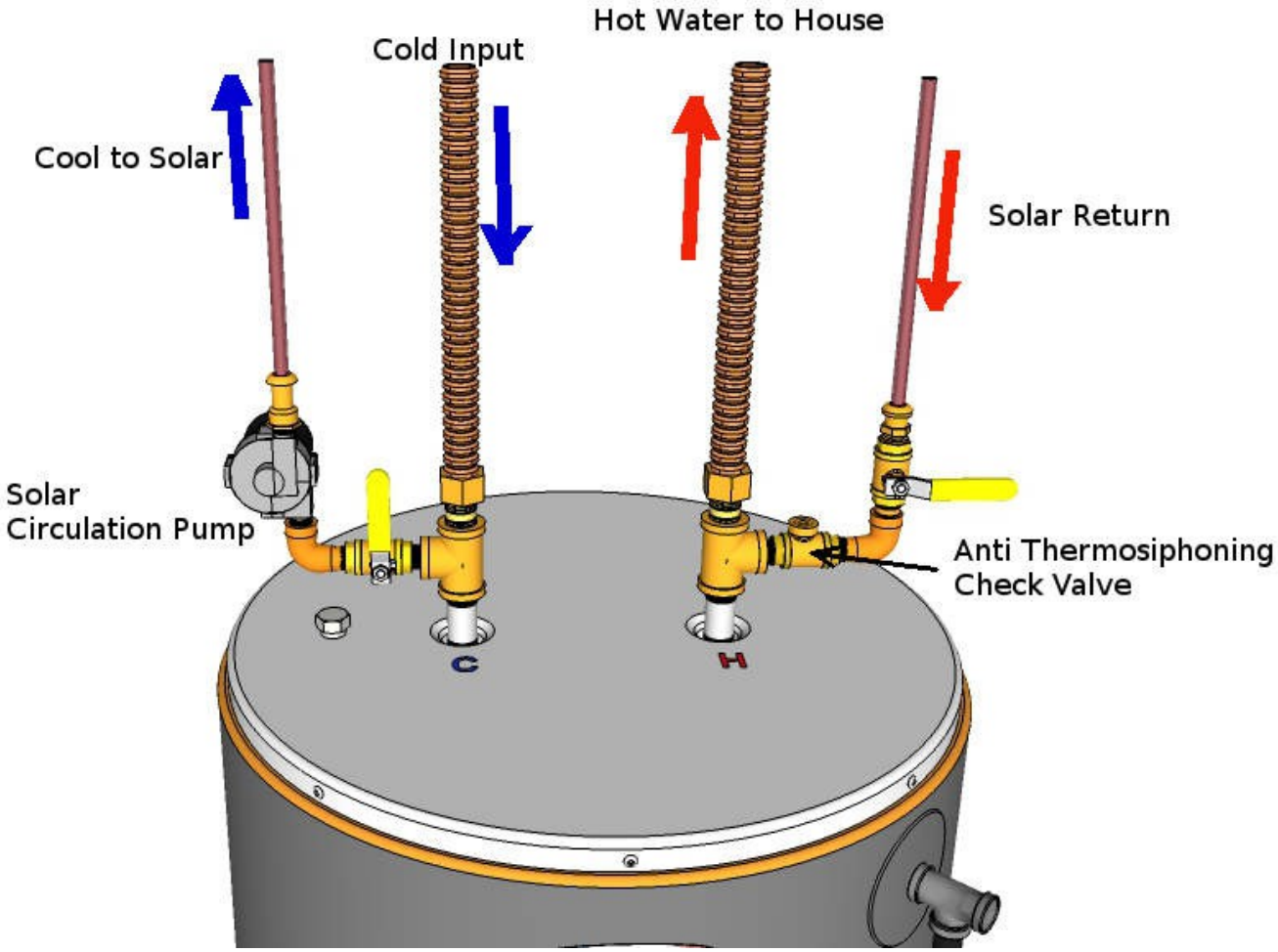
Solar Water Heater Top Connection Sketch



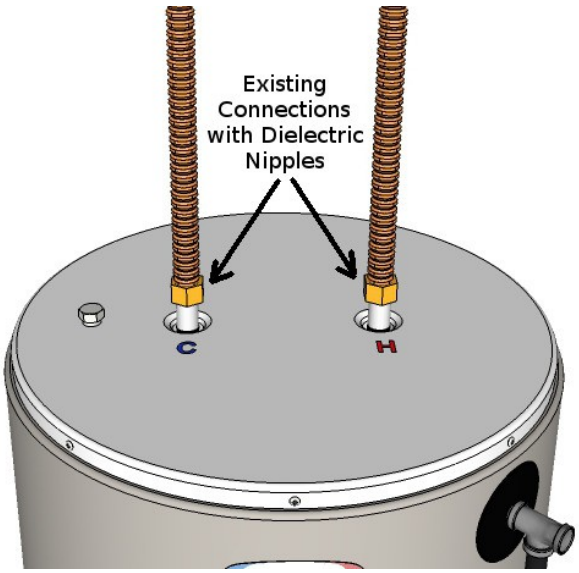
Top Connection Kit Installation Instructions

Introduction

When connecting a solar water heater through the drain port using the Heliatos Bottom Feed connector is not possible, the connection can be made through the main input and output ports located at the top of the water heater. Connecting this way does not require draining of the water heater.
The Top Connection Kit includes all the parts needed to make the connection. It assumes that your existing water heater has standard 3/4” threaded NPT ports on top and that the installation already has two 3/4” dielectric nipples currently between the water heater and the connections to the input and output
It is the installer's responsibility to assure that the installation be performed according to all locally applicable rules and regulations.

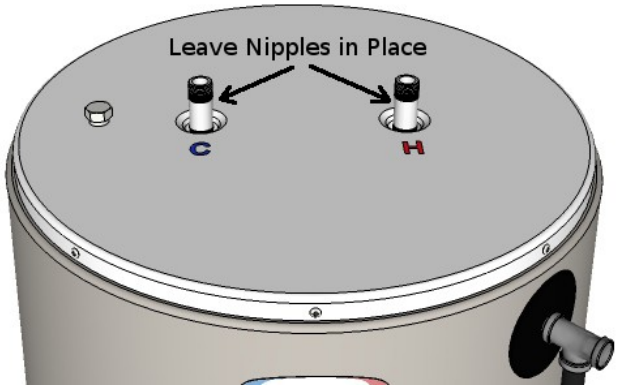
Preparing the Water Heater

Before you start working on the water heater it is important to disconnect the electricity at the main breaker box (for electric units) or shut off the gas supply (for gas water heaters) and to shut off the water supply. There will be residual pressure in the tank so to prevent a lot of hot water spraying out it is helpful to open a hot water tap in the house.
There are two pipes connected to the water heater. Both have to be disconnected leaving the dielectric nipples in place.



Top Connection Kit Installation Instructions

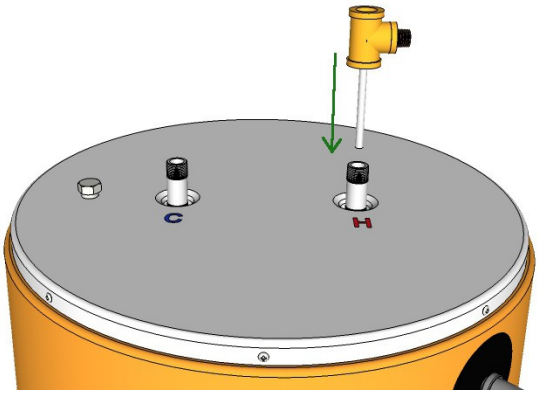
The dielectric nipples are part of a standard installation however if yours does not have any nipples they would have to be added.

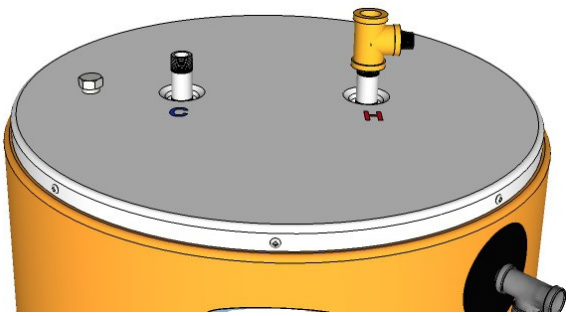


The remainder of the installation is simply adding the various parts, however it is important to adhere to the sequence described here. If you complete the installation of the hot side before starting on the cold side for instance it is possible that you will not be able to tighten all the parts properly (depending on the spacing of the two ports on your water heater).

Installation of the Parts

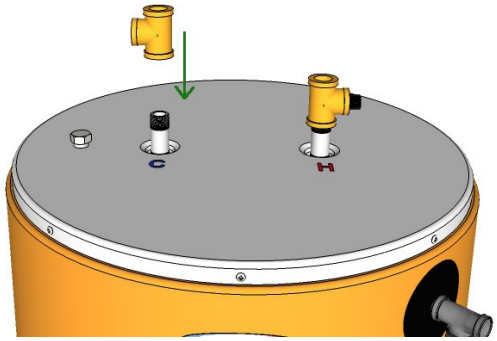
Each part has to be installed with sealant and a generous amount of Teflon tape and tightened to prevent leaks.
There are two tees included with this kit. One has an inner tube installed while the other is just a plain tee. The tee with the tube has to be installed on the hot side. Many modern water heaters have various types of heat traps installed at the base of the two ports. If the tube is too long so that it will interfere with the heat trap it can be trimmed until you can thread the tee in all the way without the tube interfering with whatever type of heat trap you have.



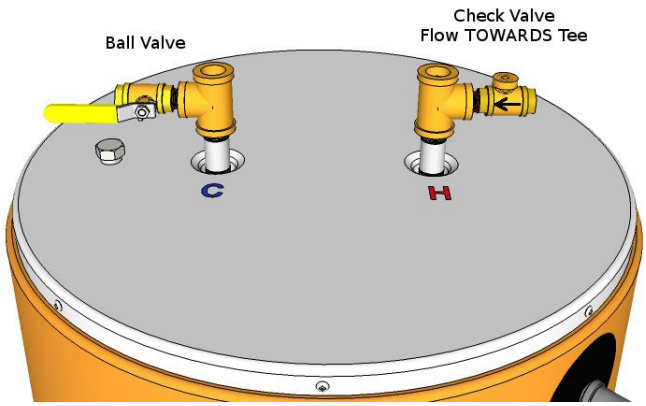


Top Connection Kit Installation Instructions

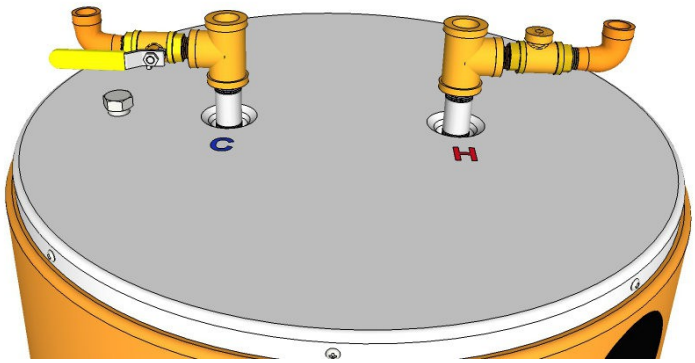
The plain tee is threaded onto the nipple on the cold side.



On the cold side add a nipple and ball valve paying attention to the way the valve handle is pointed. On the hot side the tee already has a nipple so only the check valve has to be added. The flow direction is marked on the check valve and must be TOWARDS the tee.

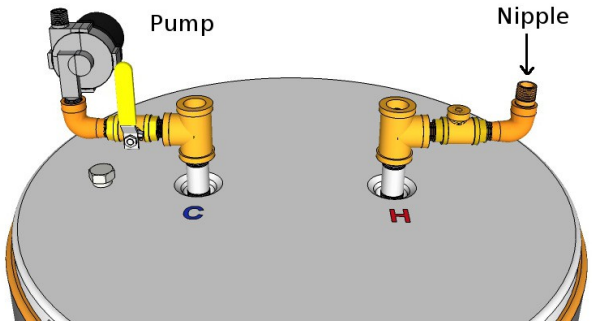


Next thread one elbow into the ball valve on the cold side ad another into the check valve on the hot side

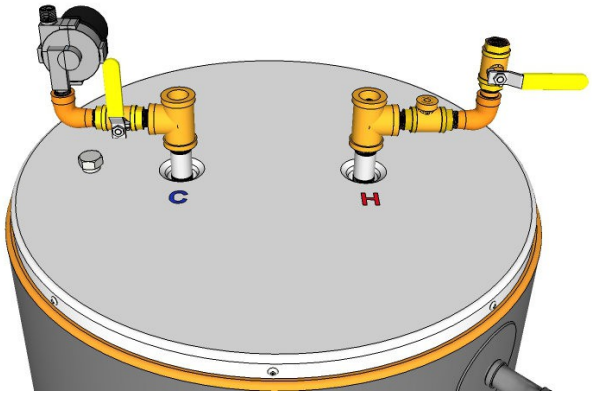


Top Connection Kit Installation Instructions

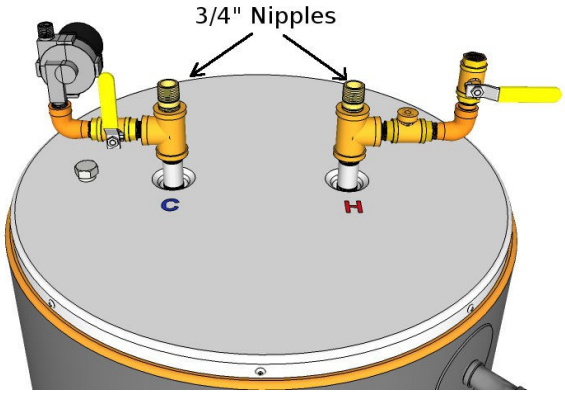
On the cold side you can now add the pump. The flow direction is marked with an arrow on the pump and it has to be AWAY from the elbow and tee. On the hot side thread a nipple into the elbow. It is not necessary to tighten the nipple right now as it will be tightened when the next part is added.



Next thread the second ball valve onto the nipple on the hot side

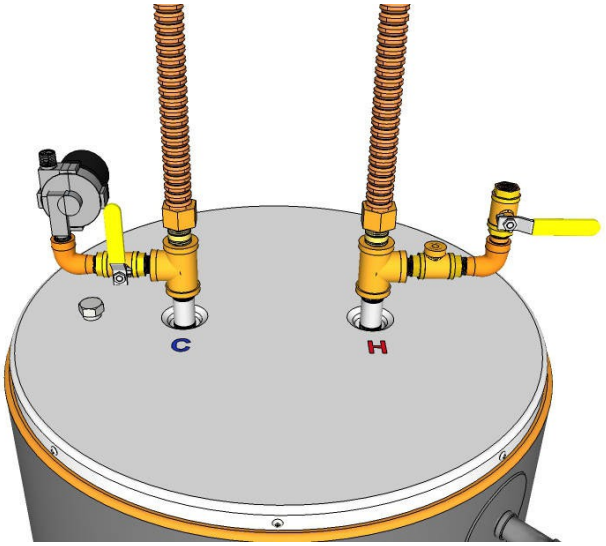


To connect the input and output back to the water heater thread the two 3/4” nipples into the tees. Again they just need to be hand tightened as they will be tightened during the next step.



Top Connection Kit Installation Instructions

Finally it is time to connect the original lines back up to the water heater



If you have one of our complete system kits they contain two push fit adapters. One is a push fit to female adapter which goes on the pump and the other is a push fit to male adapter which goes into the ball valve on the hot side. With these two adapters installed you are ready to connect the pipes going to the solar panel array by simply pushing the pipes into the push fit adapters. It is important to make sure the pipes are pushed all the way in and are firmly held by the adapter.