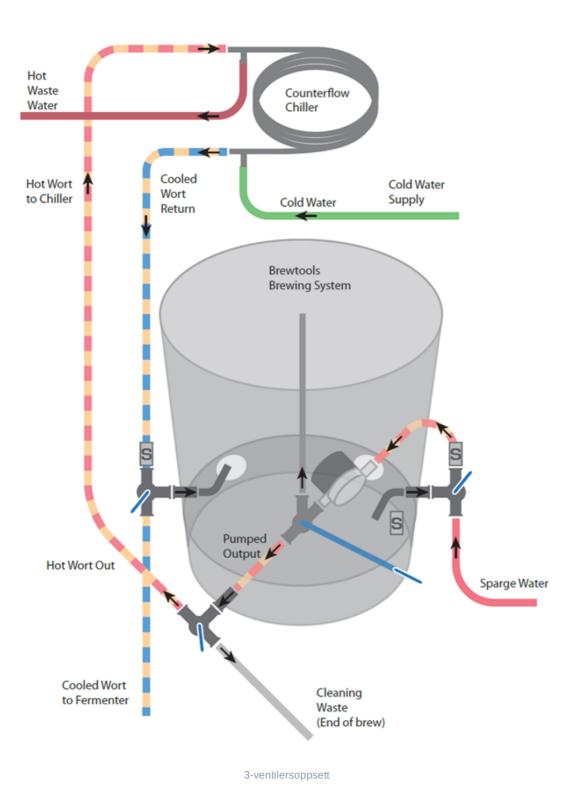
## **Brewtools Docs**

## Setup: 3 valves

The 3-valve setup is based on using a valve on each of the side ports as shown below. You also add a dip tube inside the left port. This allows the wort to be pumped out from the lower port, through the counterflow chiller and back into the left side port through the valve.

With this setup you can take advantage of a whirlpool during cooling. Proteins and hops will form a cone in the middle of the tank thus decreasing your losses to trub. We also recommend circulating outside the malt pipe during mashing to improve temperature stability. By using the bottom 3-way valve in a middle position, you can split the flow around the malt pipe and over the grain bed. We recommend running the pump on 80-100% power and circulating both ways at the same time. More on this is found in the user manual.

You also add an extra 3-way valve on the lower port. This makes you able to also clean the system without disconnecting any tubes. As an option you can use the third valve to bypass the cooler.



S = Temperature sensor