

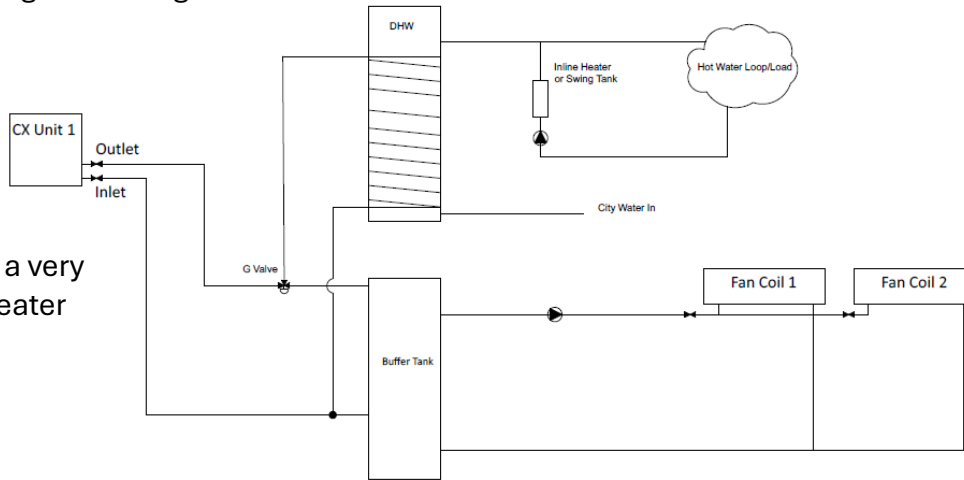
Using Re-Circulating Domestic Water Heating with an Air to Water Heat Pump



Generally, efficiency-minded customers don't use re-circulation systems due to wasted electrical energy. They do save water, but the economic balance is generally unfavorable. More concerning, re-circ leaks heat and can cause performance problems with the heat pump as it must operate continuously under unfavorable conditions, continuously replacing very small amounts of lost heat on an ongoing basis.

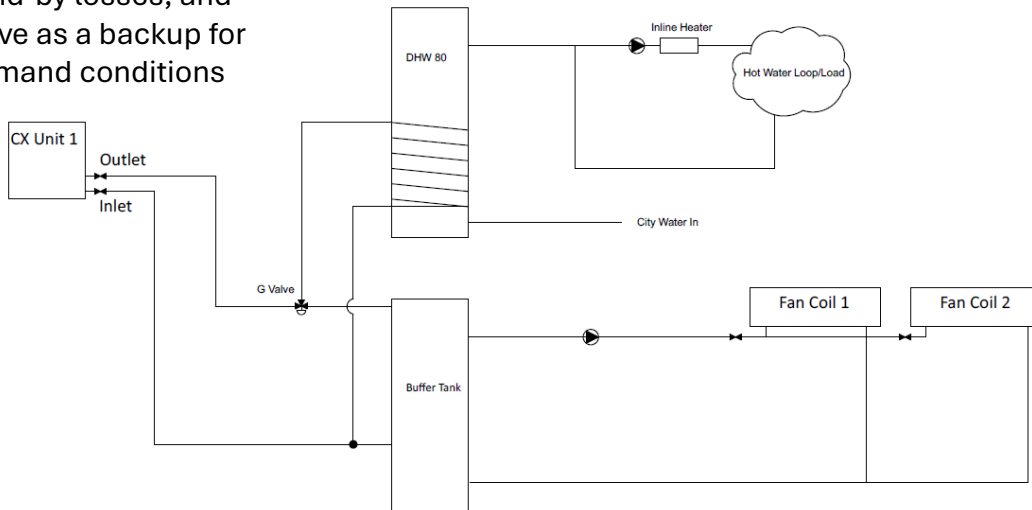
If you want to use re-circ with Chiltrix, below are several time-tested ways to do it. In the first example below, using a DHW80, all of the hot water used by the customer is heated by the heat pump, however the small parasitic loss that occurs in the recirculation piping is handled by a modulating tankless heater (or a "swing tank").

This page shows DHW80 options. On the next page we show examples of using a larger tank (DHW105) with a larger coil inside, to mitigate the negative effects.



This option can use a very small modulating heater or swing tank.

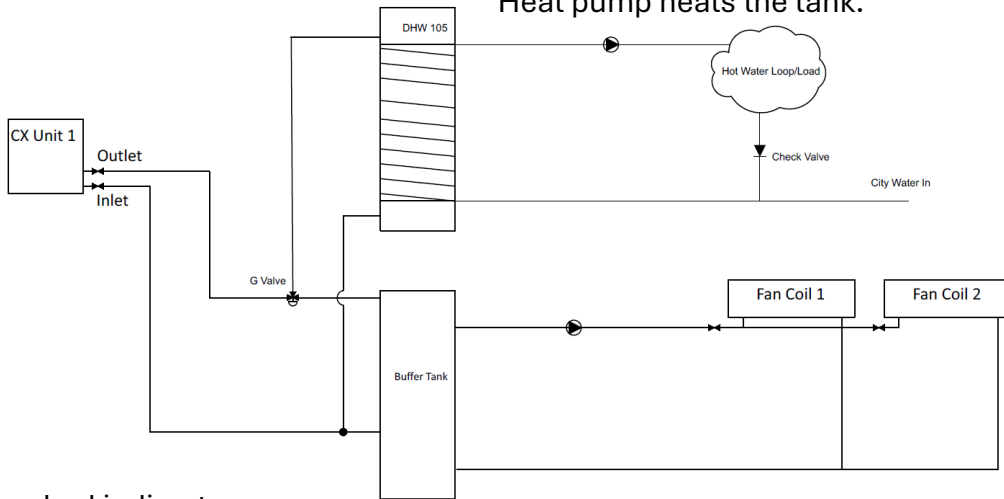
The second option, below, uses a larger modulating tankless heater to replace the stand-by losses, and the heater can serve as a backup for use in unusual demand conditions



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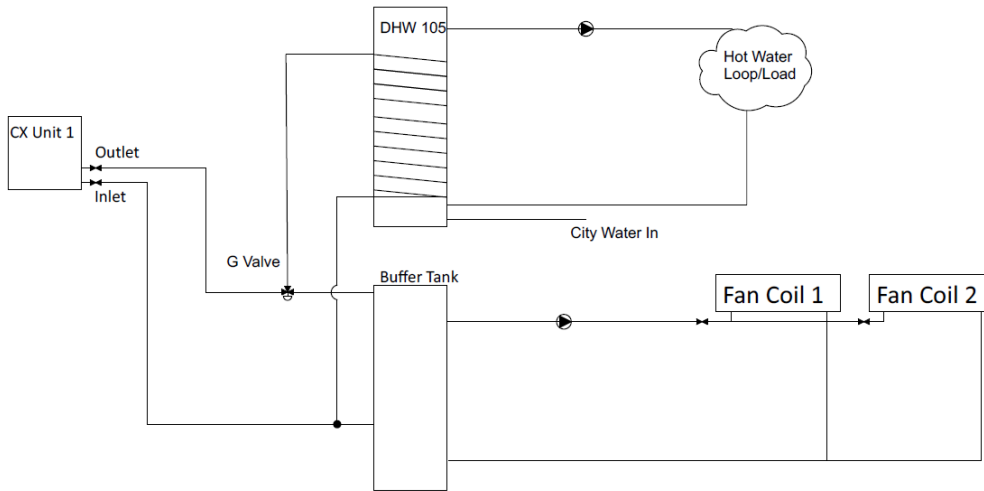
Reverse Indirect - Water flows through the coil.
Heat pump heats the tank.



DHW105

Uses either standard indirect or reverse-indirect design, the larger coil and tank volume mitigates the negative effects of continuous standby loss replacement.

Standard Indirect - Water flows through the tank.
Heat pump heats the coil.



The DHW105 has a very large coil, with 98 Ft² of surface area.