



New England's #1 Residential Geothermal Installer

## Geothermal Desuperheaters

### Assisting in the domestic hot water load

A desuperheater is able to assist in providing up to 40-60 percent of a home's domestic hot water. It's really just a second condenser located in the cabinet and connected to a standard electric water heater via a coaxial fitting. It delivers more heat in summer, but can also help in the winter too. Once the geothermal heat pump has satisfied the home's heating load there is excess heat that needs to be relieved from the heat exchanger. This is done by passing the domestic hot water over the exchanger to extract any excess heat. The easiest way to make a comparison is when you open the oven door to release the heat into your home once you are done cooking. There is no point in wasting the heat and letting it go out the vent, instead open the door and use it in the home. This is essentially what the desuperheater does in the geothermal heat pump. The only way this can be done is if there is a hot water storage area, such as an electric water heater or a preheat tank for other water needs. The desuperheater will not be of any assistance on domestic systems that use an on demand tankless water heater since there is no excess water that can be passed over. On the picture below you will see the black piping going into the bottom of the water tank, which is putting water into the tank once it has gone through the circuit. There is another black pipe on the top (which is harder to see and it crosses over the top near the ducting) and this is where the water is pulled from the domestic water tank to pass over the heat exchanger.



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