



SUN EARTH

OPERATIONS AND MAINTENANCE MANUAL Cascade Drainpack Hot Water Station

Welcome!

By utilizing a Solar Thermal water heating system you are helping to reduce your homes dependence on non-renewable energy. We hope you enjoy your pre-engineered Cascade System for many years to come. Thank you and welcome to the SunEarth family!

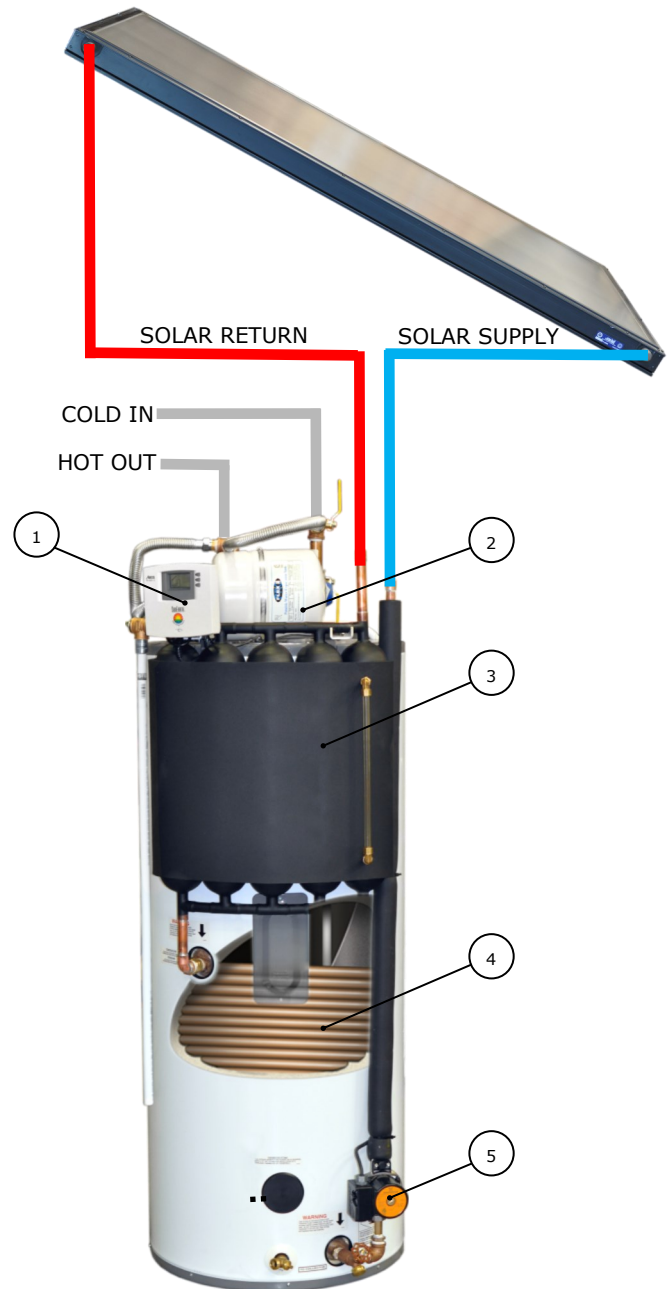
Components

The basic components in your pre-engineered Cascade Drainpack Hot Water Station include a (1) differential controller with temperature sensors, a (2) potable expansion tank (3) drainpack reservoir, a (4) solar storage tank with surrounding heat exchanger coil, and a (5) circulation pump.

System Principles

When the differential controller detects an adequate temperature difference between the collector temperature sensor "T1" and the bottom tank temperature sensor "T2" the pump begins circulating the heat transfer fluid (HTF) through the system. HTF moves through the collector and absorbs energy from the sun, increasing the HTF temperature. The heated HTF then moves through a heat exchanger coil that surrounds the solar tank transferring heat through the tank wall and to the potable water. Hot water is then available for delivery.

This system includes a drainpack reservoir which allows HTF from the panels to drain when the pump is not circulating. This occurs when the controller does not indicate an adequate temperature differential. This inherently protects the collectors from incurring any freeze damage during cold weather conditions.



Operations and Maintenance

Typically, the pump should be on when the sun is shining and there is an adequate temperature differential. The pump should be not be running at night or when the solar tank has reached its default maximum set point temperature of 140 degrees Fahrenheit. The top of tank temperature sensor T3 can be checked to ensure your system is functioning properly. For safety, every system includes a mixing valve to ensure hot water is always delivered at 120 degrees F.

Maintenance/Interval	Yearly	Action	Ref.
	5 years		
		Caution: Before any maintenance action, please unplug your controller from the wall.	
Inspect Plumbing for Leaks	X	If any leaks found, contact service person immediately.	1
Clean and Inspect Collector Glass	X	If collector glass is damaged, contact service person immediately.	1
Flush Solar Tank	X	Flush a few quarts of water from the solar tank to reduce sediment build up.	2
Cycle Through Controller Temperatures	X	Ensure there are valid temperatures for T1-T3.	3
Inspect Drainpack Reservoir Fluid Level	X	Ensure HTF in sightglass is within an inch from full.	1
Inspect Insulation Integrity	X	If any insulation is damaged or missing, replace with equivalent insulation.	1
Inspect Solar Tank Relief Valve	X	Lift T&P lever on top of Solar tank and discharge several quarts to drain.	2
Inspect Solar Tank Anode Rod	X	Shut off cold water supply and remove anode rod. Replace if more than 6 inches of core wire is exposed.	2
Inspect Potable Expansion Tank	X	Briefly press center pin on expansion tank schrader valve. If fluid expells, contact service person immediately.	1
Replace Solar Tank Anode Rod	X	Shut off cold water supply and replace anode rod.	2

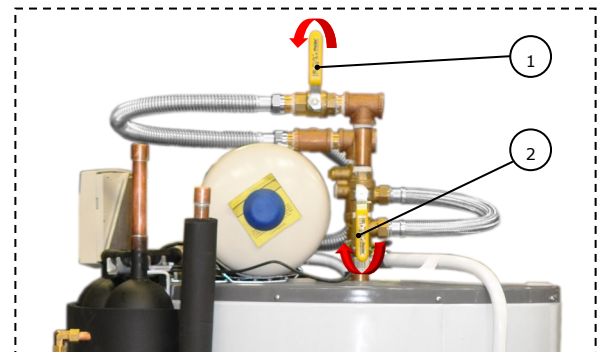


1. Please refer to the Cascade Installation manual for more detailed information.
2. Please refer to the Solar Tank Use and Care Manual for more detailed information
3. Please refer to the SETR301U manual for more detailed information.

If you are unsure how to perform routine maintenance or there are any critical problems found please unplug your controller from the wall, open bypass valve (1) by rotating counter clockwise, close bypass valve (2) by rotating clockwise, and contact your service provider immediately.

Service provider: _____

Telephone: _____



MANUFACTURED BY:



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