SYSTEM OVERVIEW

Enviro Save Water System, when installed in a dwelling, will save all the water which has cooled in the hot water lines which otherwise would flow out of the hot tap prior to the hot water arriving at the spout or shower.

The saved water can be stored within the system or piped to a rainwater tank for reuse.

To save the water within the system requires a thermal switching valve (TSV) at a hot outlet, a pressure diaphragm tank to store the saved water, plus a pressure reducing valve to lower the pressure of the cold water line to 150kpa less than the hot water line.

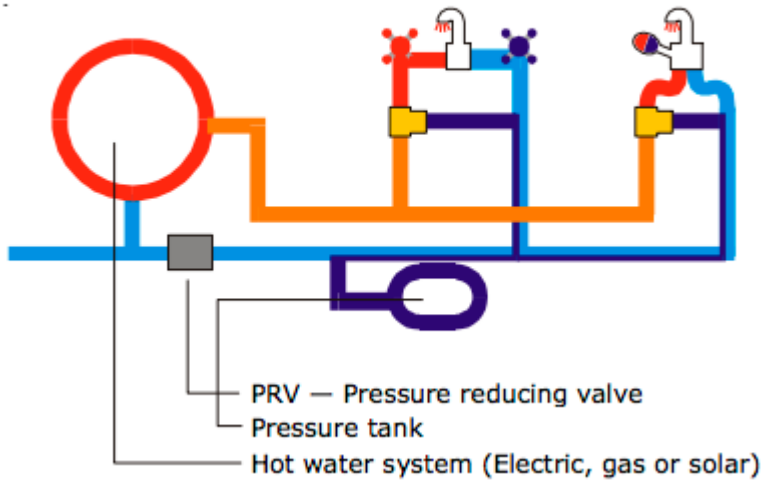
High pressure will flow into low pressure when the lines are connected via the TSV. The saved water is stored in the diaphragm tank in the cold line until a cold tap is turned on (or flushed toilet). The stored cold water in the tank is used before any new cold water is drawn from the main supply.

If the saved water is piped to a rain water tank, a pipe is connected to the TSV, and the saved cold water piped direct to the rain water tank or a downpipe to the tank. In this case, the pressure tank and pressure reducing valve are not required.

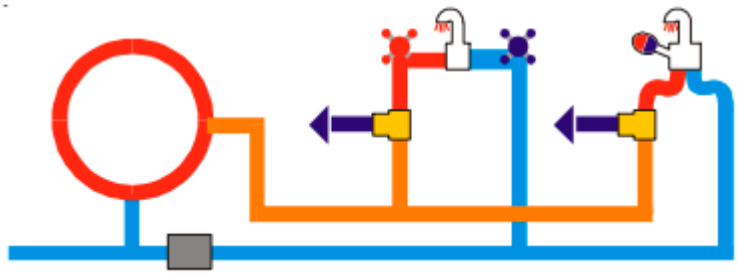
INSTALLATION INSTRUCTIONS

Enviro Save Water System Thermal Switching Valve TSV – 2A
Enviro Save Water System INSTALLATION INSTRUCTIONS

System A:
Save cold water within system.



System B:
Save cold water to a rainwater tank or other suitable container.



Thermal switching valves are installed under a sink or basin. One valve per wet area (bathroom, ensuite or kitchen) is all that is required. Thermal switching valve TSV- 2A can be used in a hotline before connecting two wet areas. All the cold water in the hotline between the heater unit and the TSV will be intercepted and saved for reuse.

See installation instructions below for further information.

WARRANTY

The valve as supplied by Enviro Manufacturing Co is warranted for a period of 12 months to be free from defects in material and/or workmanship. Defective items must be returned to the factory for inspection and replacement.

Valves must be installed as per supplied instructions and by licensed plumbers. Installation must comply with Plumbing Code AS 3500.

Failures due to scale formation or debris are not warranted. Claims are limited to factory replacement of defective parts or the complete valve.

MAINTENANCE

The valve is protected by a screen washer located at the inlet to the valve. Cleaning may be necessary if the line's debris reduces or stops the flow.

Inspect the non-return valve located in the valve cold water bypass outlet.

Trouble shooting:

Problem	Cause	Solution
Dribble or no hot water flow for short period when hot tap is turned on	Normal function	Wait for hot water to arrive
Dribble or no hot water flow for long period when hot tap is turned on	No hot water available	Check hot water supply
	Debris in valve inlet strainer	Remove inlet pipe and clean strainer
	Storage tank full	Turn on hot tap, turn on cold tap until hot water flows
	Valve thermal element faulty	Service thermal valve, element is replaceable
Note: When the thermal element is functioning correctly, only hot water will flow from the hot tap. If cold water flows from the hot tap the thermal element has failed. Service valve.		

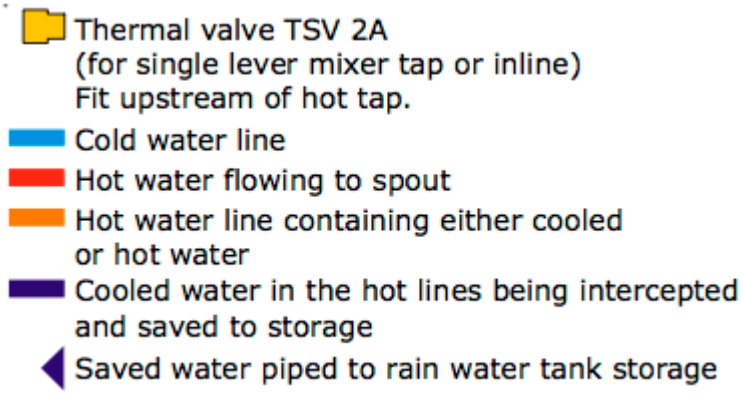


Table: Pressure tank capacity

(For System A: Storage within system)

Kpa Hot water pressure	Kpa Cold water pressure	Kpa Tank air pressure	Tank size (storage capacity in litres) 20	35	60	80
500	350	352	5	8	15	20
450	300	302	6	9	16	21
400	250	252	6	9	17	24
350	200	202	7	10	18	27
BEST PERFORMANCE PRESSURES						
450	250	252	7.5	10	22	29

NOTE: INCREASE IN DIFFERENTIAL WILL SAVE MORE WATER IN THE TANK.

INSTALLATION INSTRUCTIONS

SPECIAL NOTE

Enviro Save Water System is designed to save and store for reuse (within the sealed water circuit) any water which has cooled in the hot water lines that would otherwise flow out of the hot tap and down the drain prior to the hot water arriving at the spout or shower. For this to happen, cold water in the hotline must be detected and redirected to the cold line when connected. Therefore, the cold line needs to be lower than the hotline.

To reduce the cold line pressure, a Pressure Reducing Valve (PRV) must be installed in the cold line downstream of the hot water T-off point. The patented Thermal Switching Valve detects cold water and redirects it to the storage tank. Saved water is returned from the tank whenever a cold outlet (including the toilet) is used before any new cold water is drawn into the system from the main supply. The ideal differential between cold and hot line pressures is 150 Kpa.

INSTALLATION

Locate the mains-in supply to the heater unit, and check and note pressure. If the pressure exceeds, 500 Kpa consider fitting a PRV upstream of the heater T-off point and set it at 450 Kpa as this will save more water. Fit a PRV in the cold line downstream of the heater T-off point and set it at 300 Kpa (or 150 Kpa less than the pressure in the hot water line). Ideally, the hot water is now at 450 Kpa, and the cold water is at 300 Kpa, a difference of 150 Kpa.

Fit the pressure (storage) tank in the cold line anywhere downstream of the cold line PRV. Set the tank air pressure at 302 Kpa (or 2 Kpa more than the cold water pressure).

Set the tank air pressure with nil pressure at the water inlet (i.e. no water in the tank). Do not situate the pressure tank in sunlight.

Fit a Thermal Switching Valve under the sink or basin in the hotline, and connect the cold-out port to the cold water line. When detected in the hotline, cold water will flow into the cold line and then into the pressure tank.

The Thermal Switching Valve has an inlet strainer and the cold outlet a non-return valve. Valve TSV 2A suits two-taps-and-centre-spout tapware, single lever mixer tapware, a single hot tap, or a remote hotline. See valve fitting instructions diagram.

NOTE

The minimum differential is 70 Kpa. Cold water pressure can range from 140 Kpa to 450 Kpa, and hot from 210 Kpa to 600 Kpa. The greater the difference and the lower the pressure maximises the water quantity, which can be saved in the tank.

Check tank size table for capacities.

Refer to the troubleshooting section if necessary.

TEST

Turn on the hot tap. There may be a dribble or no water flow until hot water arrives. ONLY hot water will flow from the hot tap. If no water is available, the valve will bypass cold water until the pressure tank is full. If necessary, to empty the tank and restart the system, turn on a cold tap until a hot tap flows hot water.

NOTE

The saved water can be piped to a rainwater tank. In this case, the Pressure Reducing Valve and the Pressure Tank is not required.

This system complies with Australian Standards 5200-475, 485 and 481.