

TECHNICAL BULLETIN

PRODUCT: GREENSKIES SOLAR SYSTEMS

PRESSURE RELIEF VALVE DISCHARGE:

Under high solar gain periods, there have been a few instances where the pressure relief valve (PRV) has opened and discharged solar fluid from the system. This bulletin aims to provide guidance on the likely causes and remedial action.

If you visit an existing installation because of loss of system pressure and PRV discharge, you may need to check the expansion vessel and system pressures are correctly set.

EXTREME CAUTION MUST BE USED WHEN DE-PRESSURISING A HOT SOLAR CIRCUIT!

Where the Worcester solar expansion vessel has been installed using the Worcester connector kit it is not required to de-pressurize the solar circuit to check the expansion vessel charge pressure.

If a third party expansion vessel and or connector kit has been fitted, the solar circuit may need to be depressurised to check the expansion vessel charge pressure.

To depressurise the solar circuit please follow the following steps;

- ▶ It is advisable that the solar panels are covered during high levels of solar radiation.
- ▶ Observe the temperature of the solar panels, and if above 60°C, run a hot water tap to reduce the temperature of the storage cylinder and remove any heat from the solar panels / solar circuit. The solar panel temperature can be monitored on the solar controller.
- ▶ Turn off any solar controllers and turn off any hot water demand from any other energy source connected to the cylinder
- ▶ When cool enough depressurize the solar circuit via the pumping station fill and drain valve (Fig 1, Item 6) or a suitable drain-off point on the solar circuit. **NEVER** use the PRV to depressurize or drain the solar circuit.
- ▶ NOTE: only use high pressure / high temperature piping connected to the pumping station fill and drain point.

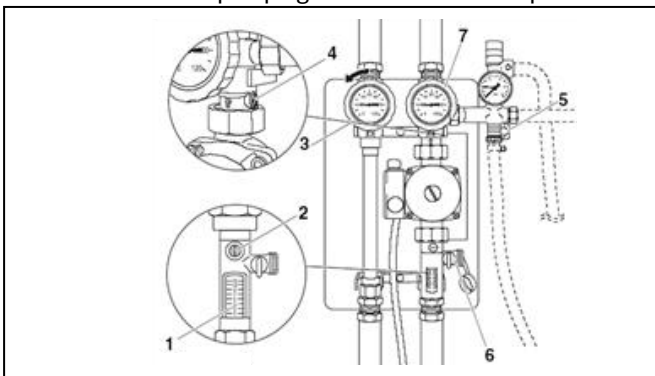


Fig. 1: Solar pump station

With the expansion vessel disconnected, the charge pressure for the expansion vessel and the system pressure can be set.

You will need to calculate the following;

Static Head

- ▶ This is done by measuring the system from the highest point of the solar panels to the expansion vessel. **1 metre = 0.1bar e.g. using Fig 2: 9 metres = 0.9bar.**

Be aware that over a 15m head there is a requirement to replace the supplied 3 bar pressure relief valve with a 6 bar pressure relief valve – part number 8 718 221 470 0

Expansion vessel charge pressure (Pv)

- ▶ This is done by adding 0.4 bar to the static head measurement of the system that has been calculated however note that the minimum expansion vessel charge pressure must not be less than 1.2 bar.

System fill pressure (Po)

- ▶ This is done by adding 0.7 bar to the static head measurement of the system that has been calculated, however note that the system pressure must not be less than 1.5 bar and no greater than 2.2 bar.

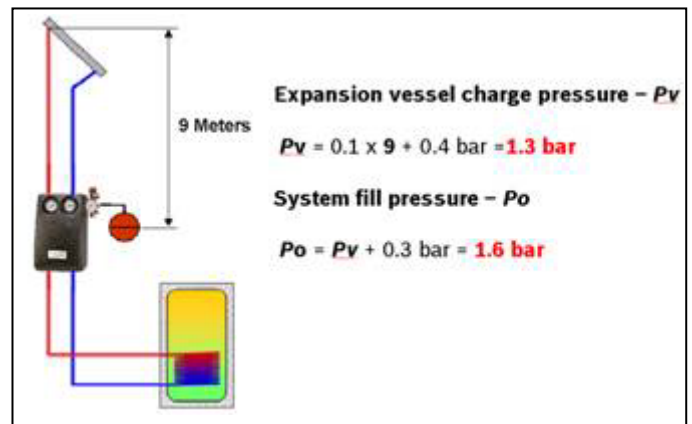


Fig. 2: Solar system pressures

Please refer to the installation & maintenance manual for re-commissioning or commissioning of the system. If the solar panels are below the solar pumping station then the following pressures should be applied;

Expansion vessel charge pressure (Pv) : **1.2 bar.**
 System fill pressure (Po) : **1.5 bar.**

Attention

The charge in the expansion vessel must be correctly set prior to filling & commissioning any installation.

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