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SOLAR GEYSERS

LOW PRESSURE SYSTEM

Installation guide

Important:

- 1. The VENT pipe must be OPEN,** else the tank will burst when water boils.
- 2. Fill tubes with water before inserting.** Cold water in hot tubes will shatter tubes.
- 3. Lubricate glass tubes with soapy water before inserting.** Grease, Vaseline, oil, etc. will dissolve the silicon seals
- 4. The vent must be upright, at the top of the tank.** Else it will blow out water when it boils.

Do not use any valve or restriction on the vent pipe. This will void any guarantee.

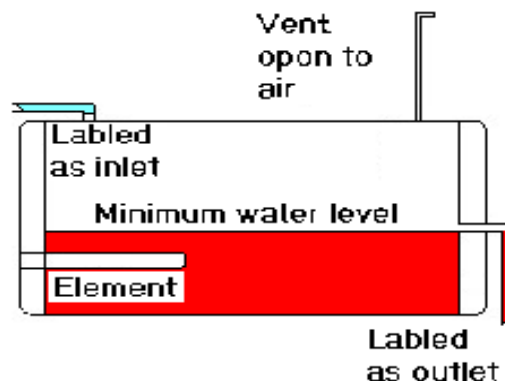
When connecting inlets and outlets, remember that the stainless steel tank is only 0,41mm (Green series 0.31mm) thick. Do not over tighten.

Tips when installing the stand:

- Facing north is optimal.
- Install the system as high as you can.
- When installing on a 26o pitch roof: Do not install the rear upright leg.
- Make sure the vent is **open** and at the **top** of the tank.
- Tiled roofs: Do not install the rear upright foot. Put it horizontally under the rear of the stand to spread the weight. A wire or strapping through one of the three holes, under the tile and fastened to the brandering will prevent sliding.
- Put a metal bar (or the rear upright, which will be free when installed on a 26o roof) under the feet of the stand to prevent dents into the corrugated iron. If there is any danger of sliding, the feet can be fastened to the roof with a bolt and nut.

Electric heating element:

- A standard 38mm boss element, also available from local hardware stores, is used.
- Can be controlled with a standard thermostat or programmable SR609C controller.



Glass tubes:

- Take care not to break the small nipple at the blunt end of the tube. Put it on your foot: the risk is less.
- Fill the glass tubes with water after taking them out of the box.
- To insert the glass tubes, wet the open side of the glass tube with water and dishwasher liquid.
- Insert the tube in to the hole, using a screw in motion. Take care not to make the angle between the stand and the tube too big, as it may cause the tube to break. Pull the tube back to fit into the hole in the stand.

Anode:

- Scale and rust will first deposit on the magnesium anode.
- Yearly inspection of the anode, and replacement when necessary, will make the geyser last longer.
- The anode has a green plastic connector which fits into a glass tube, and is inserted into the tank together with the glass tube. Make a mark to remember on which tube the anode is fitted.

Vent:

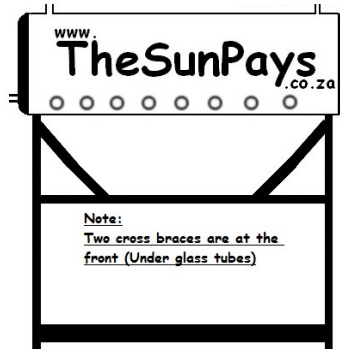
- The vent pipe is connected to the inner tank with a silicon washer.
- Use a spanner or pliers to hold the pipe in place.
- Be careful not to force the vent pipe into or out of the tank, or not to turn the pipe axially. If this happens, it will feel as if the pipe breaks loose, and you will be able to turn the pipe axially. It will not leak, because only the bond between the metal pipe and the poly urethane insulating foam breaks.



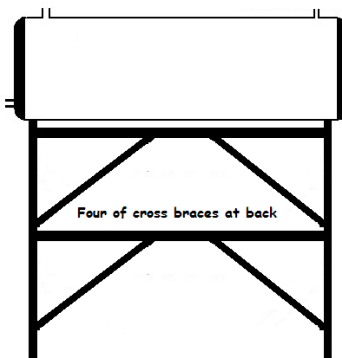
Stand:

- 1) North is optimal.**
- 2) OPEN vent pipe (low pressure) must be upright, at top of tank.**

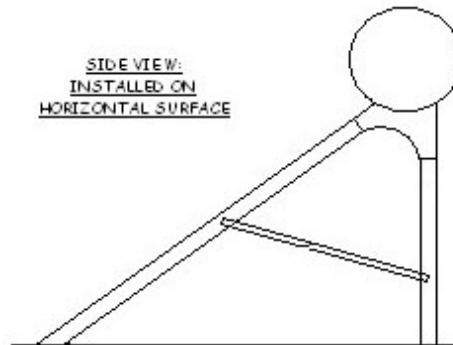
FRONT VIEW
WITHOUT GLASS TUBES



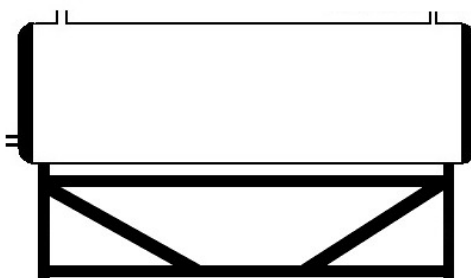
REAR VIEW:
INSTALLATION ON FLAT ROOF



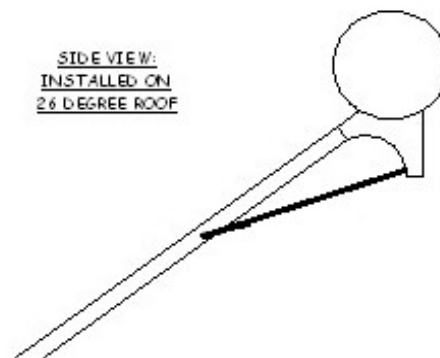
SIDE VIEW:
INSTALLED ON
HORIZONTAL SURFACE



REAR VIEW:
INSTALLATION ON PITCHED ROOF



SIDE VIEW:
INSTALLED ON
26 DEGREE ROOF



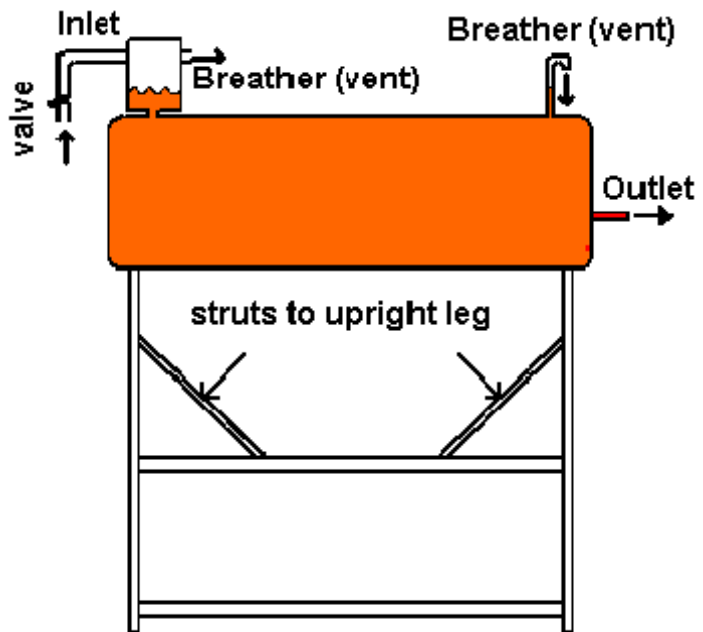
Connection options:

3 Litre ball valve tank:

When used:

- Jo Jo type tank less than 15m above geyser tank.
- Incoming pressure lower than 15 metres (1.5 bar or 150kPa)

Advantages:	Disadvantages:
Automatic filling	Cold water enters geyser tank when hot water is used.
Very easy installation	Cannot balance pressures at mixer if cold water pressure is much higher than the pressure from the geyser.



6 Litre ball valve tank:

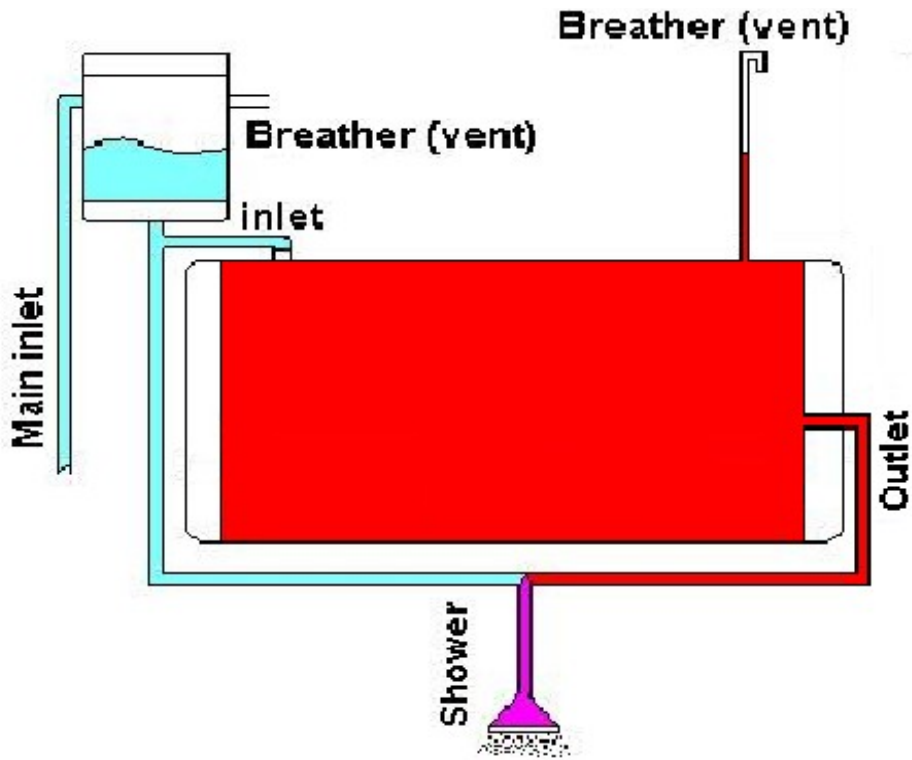
When used:

- pump or municipal pressure less than 4 bar (400kPa)
- Incoming pressure: Lower than 40 metres (4 bar or 400kPa)

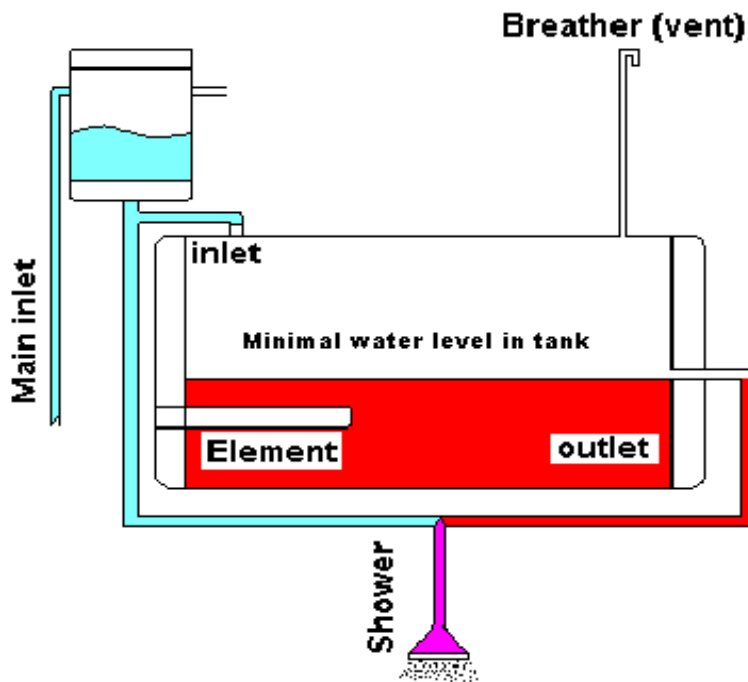
Follow diagram to balance pressures at mixer if cold water pressure is substantially higher than the hot water pressure.

Advantages:	Disadvantages:
Automatic filling	Cold water enters geyser tank when hot water is used.
Handles fluctuating pressures well. (Like with pressure pumps)	Installation more difficult

Without element



With element

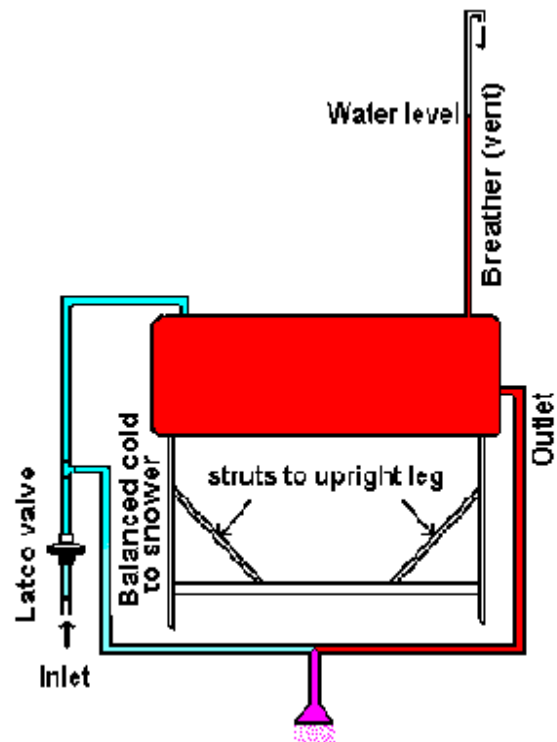


100kPa Latco Valve:

When used:

- High pressure water supply:
- Incoming pressure: More than 20 metres (2 bar or 200kPa)
- Vent pipe must not be longer than 1,5 metres.
- Adjust Latco valve until water runs out, then $\frac{1}{2}$ turn back.
- Results are best when Latco valve is 1 to 1.5 m under geyser tank.

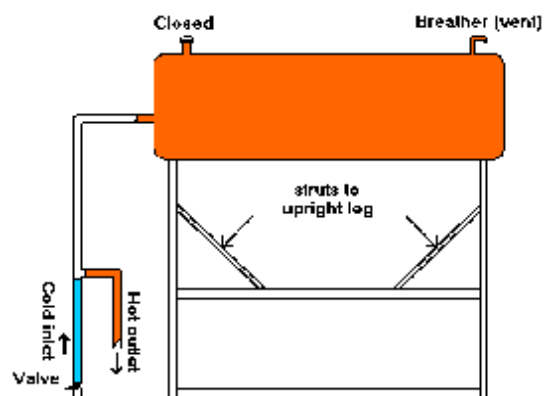
Advantages:	Disadvantages:
Automatic filling	Cold water enters geyser tank when hot water is used.
Good when incoming pressure is stable (like municipal pressure)	Valve is not UV stabilised. Use in ceiling or paint the valve with water based paint.
Easier to balance cold and hot water pressures.	



Manual filling: Manual valve and T-piece

- Incoming pressure: Any

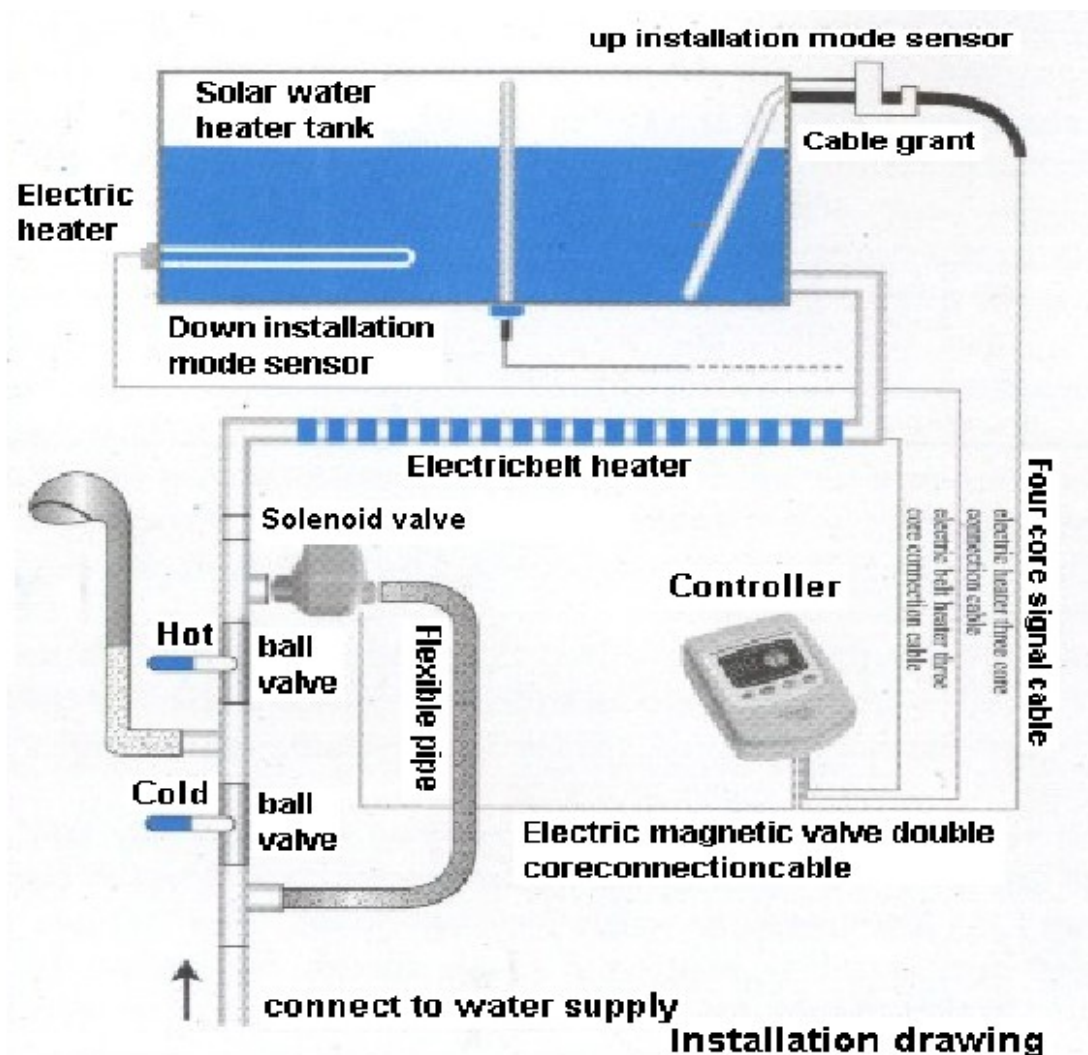
Advantages:	Disadvantages:
Cold water does not enter when hot water is used.	Cannot balance pressures at mixer if cold water pressure is high.
Good way to limit water usage.	Must be done by hand, every morning after water has been used.
Cheap.	In and out pipe is the same. Tank can run dry.



Electronic filling: TK-7 or SR500 solenoid valve controllers.

- Incoming pressure: Any

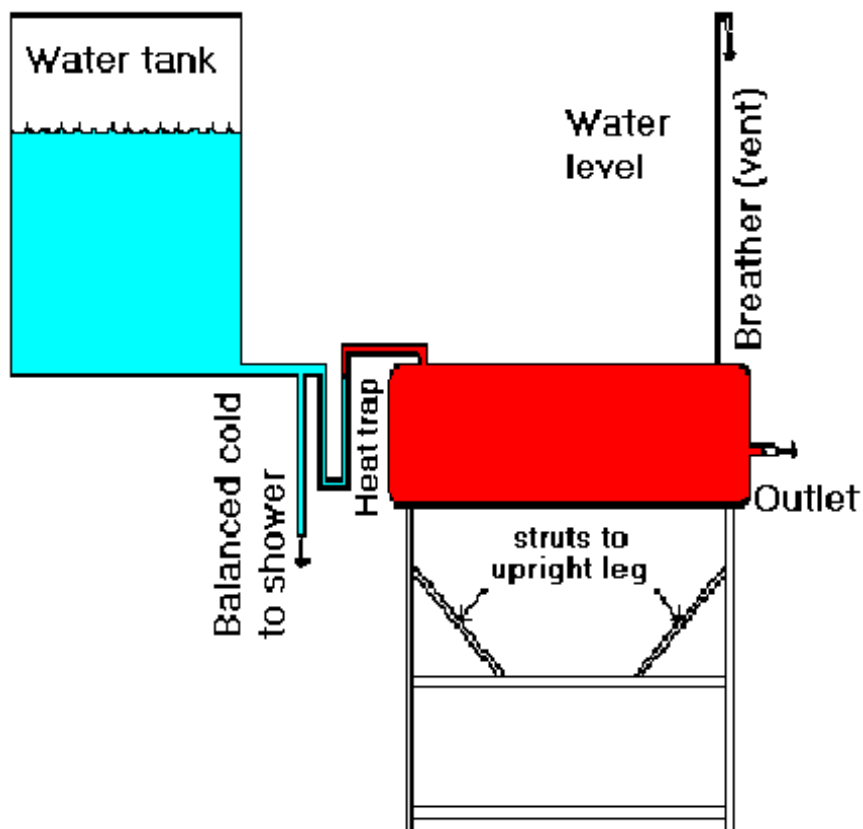
Advantages:	Disadvantages:
Can be programmed to fill in different ways.	Installers and users often do not read the manual properly, resulting in various complaints.
Can control the heating element and the solenoid valve	Cannot balance pressures at mixer if cold water pressure is high.
Fully automatic after programming.	



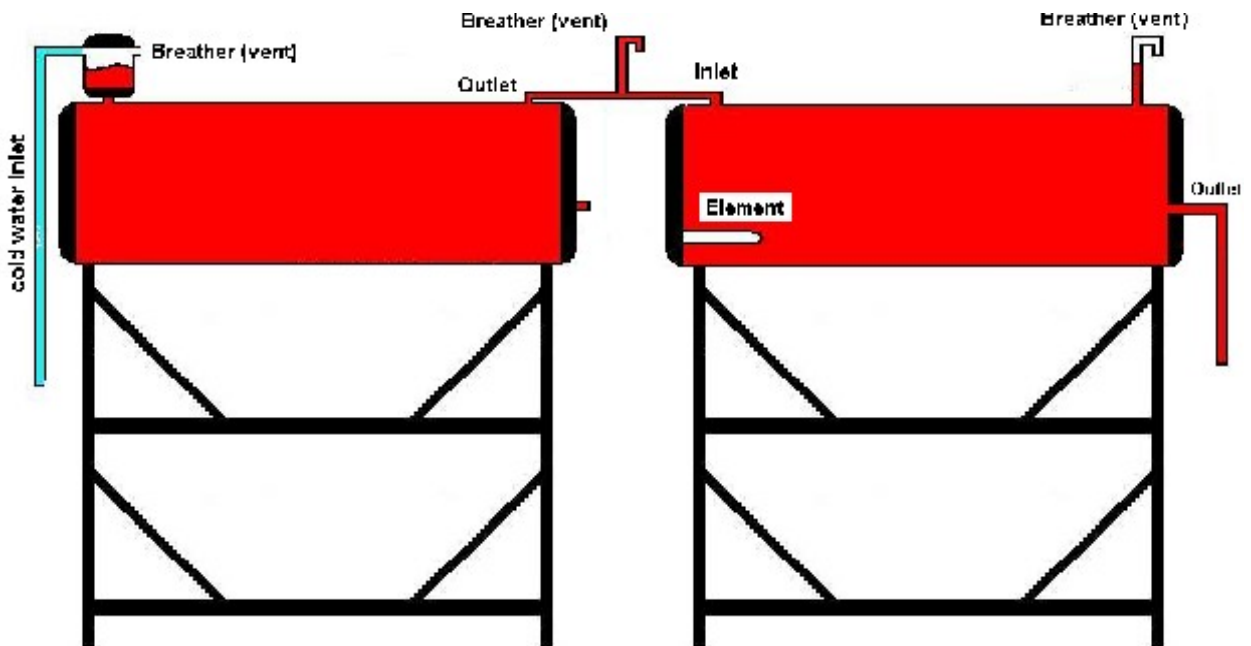
JoJo type tanks, water level less than 2m above geyser tank:

- Vent pipe must not be longer than 2 metres.

Advantages:	Disadvantages:
Hot water can be available water supply tank has run dry.	Installers who try to make the vent pipe longer than 2 metres, then the tank starts leaking from pressure.
Outlet can be put at top of tank as long as vent is open	
Hot and cold water pressure perfectly balanced.	



Series connection with electric element.



Series connection without electric element.

