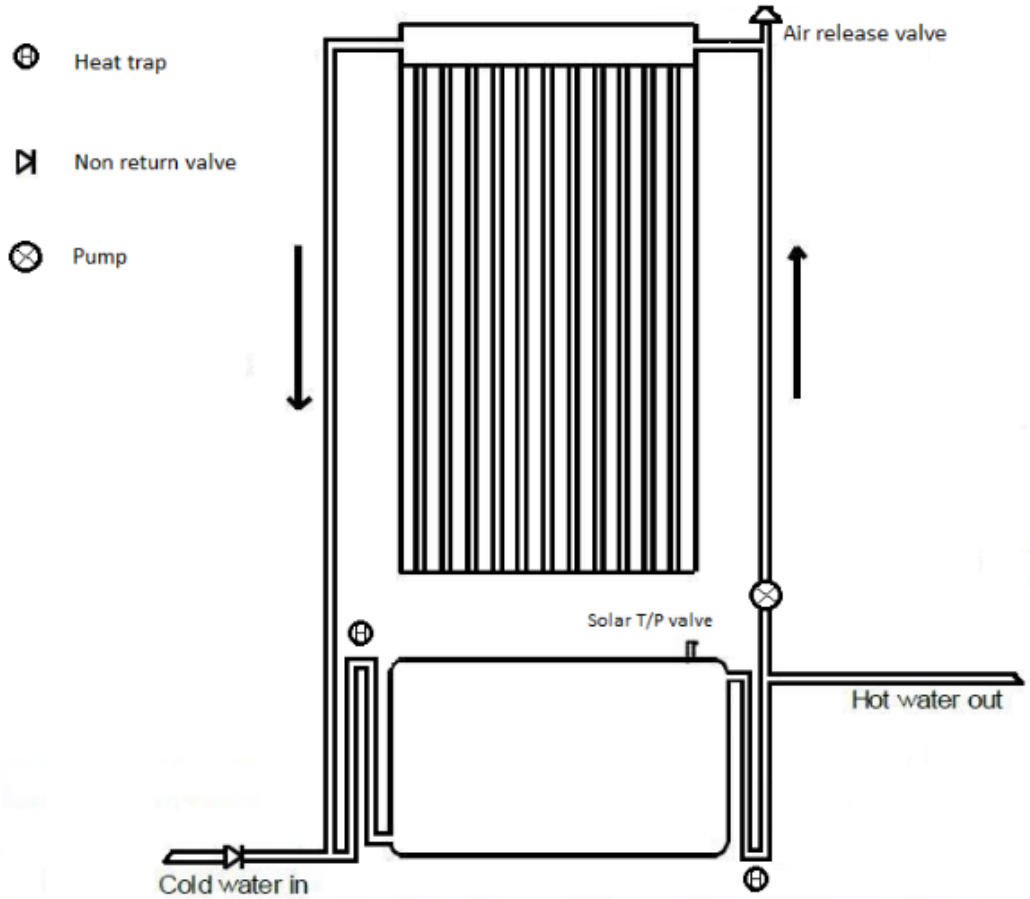
Notes on retrofitting electric geysers with solar manifold collectors:

INSTALLATION:

- On the cold water side, before the geyser inlet, a non return valve has to be installed.
- A T-piece is installed between the non return valve and the cold water inlet. The open end of the T-piece is connected to the hot side of the manifold on the roof.
- The cold side of the manifold gets connected to a T-piece on the hot water (outlet) side of the electric geyser.
- The pump is installed in the pipe between the hot (outlet) side of the geyser and the cold side of the manifold, as close as possible to the T-piece, to minimize the chances of getting air in the pump.
- The pump gets connected directly to the solar panel, red wire to red wire and black to black.
- Direction of flow is from the geyser hot side (outlet), through the manifold, to the geyser cold side. If the flow is reversed, the water will bypass the tank when the pump is on, and a little bit of warm water will be available before only cold water will run from the tap.
- If you use sponge lagging, paint it with water based acrylic roof paint. The sponge is usually not UV stabilised, and will perish quickly when exposed to open sunlight.

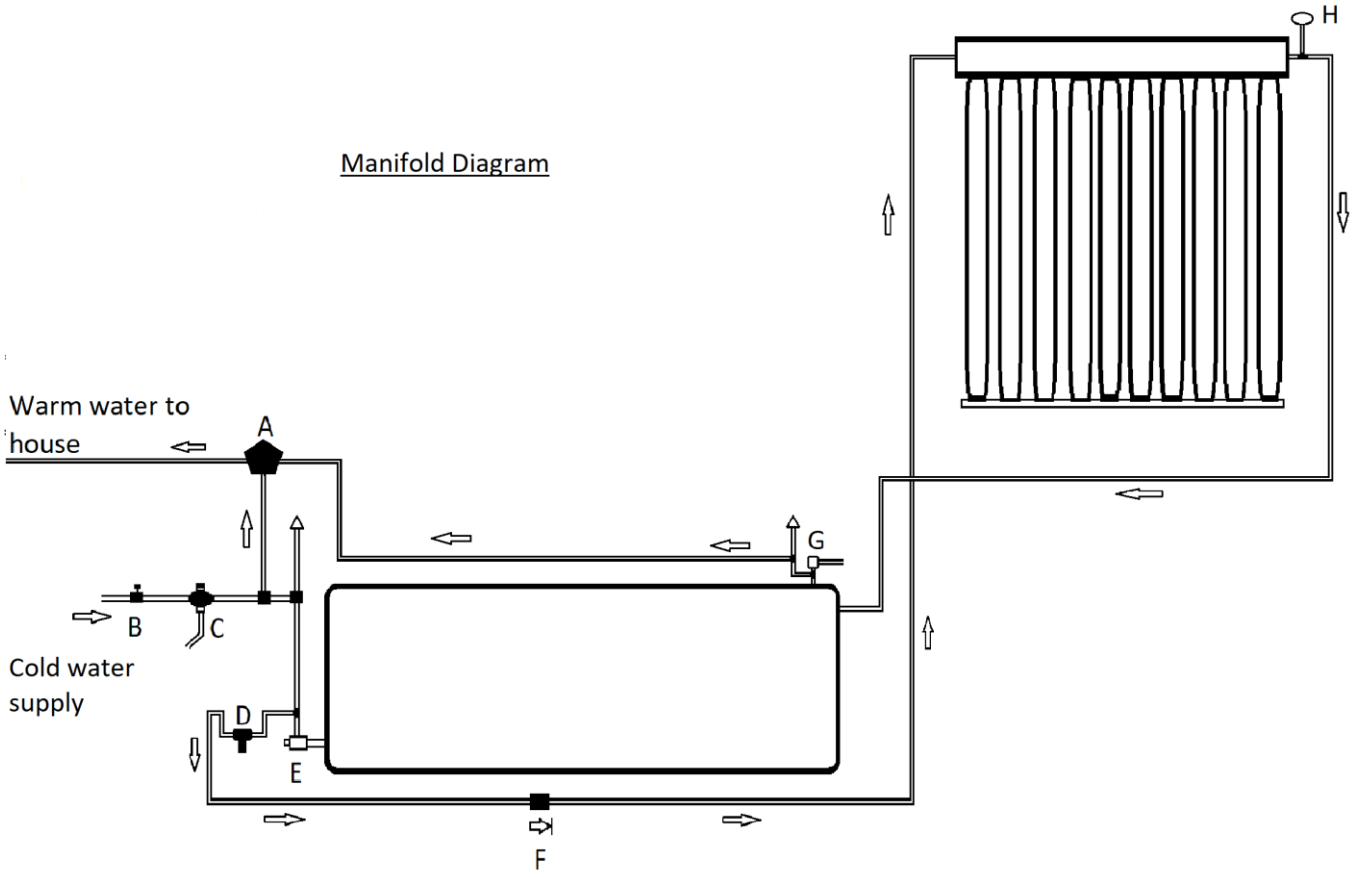
- **PUMP:**
- The pump has built in protection against air and overheating. If there is air or steam in the pump, it will either make a noise, or more probably, stop altogether.
- When connecting the pump, use tools to hold the brass thread. Do not hold the black body, as the plastic will break.

- **SAFETY VALVES:**
- A high temperature air release valve, to be fitted as high as possible on the manifold, is necessary to prevent airlocks or steam build up.
- Make sure that the geyser's T/P valve (Temperature and Pressure valve) is of a kind that will open repeatedly, and not once only. If this valve does not work correctly, you will probably have water on the ceiling from burst pipes or tanks in the not too distant future.



ALTERNATIVE INSTALLATION (SANS)

Manifold Diagram



A = Mixing valve
B = Stop cock
C = PR valve
D = Pump
E = Drain cock
F = Non return valve
G = TP Banjo valve
H = Air relief valve