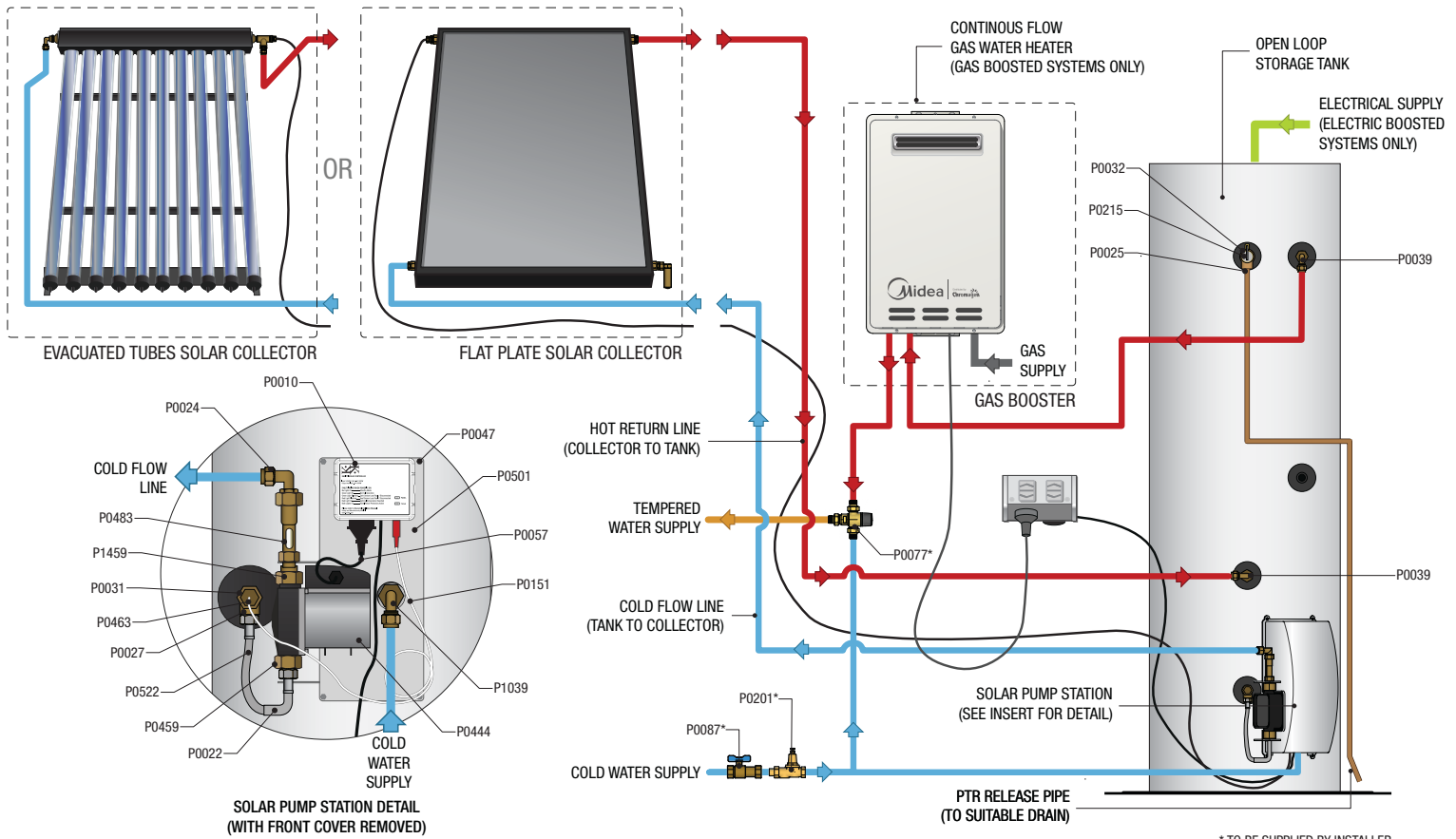


# Pumped (Split) Systems: 150/200/300L Gas/Electric - Open Loop System

## Tank & System Overview



\* TO BE SUPPLIED BY INSTALLER

## Part Kits & Components

Parts not included in standard kits:

Part#	Qty	Component Name
P0087	-	Duo valve (to be supplied by installer)
P0201	-	Pressure limiting valve (to be supplied by installer)
P0077	-	Tempering valve (to be supplied by installer)

NOTE: System schematic is indicative only

Standard components / kits included with the solar thermal collector systems:

150L Gas - Open Loop System	200L Gas - Open Loop System	300L Gas - Open Loop System	300L Electric - Open Loop System
1 x 150L Tank	1 x 200L Tank	1 x 300L Tank	1 x 300L Tank
1 x Tank Connecting Kit (K0020)	1 x Tank Connecting Kit (K0020)	1 x Tank Connecting Kit (K0020)	1 x Tank Connecting Kit (K0020)
1 x Gas Booster	1 x Gas Booster	1 x Gas Booster	-

## Tank Connecting Kit (K0020)

Part#	Qty	Component Name
P0010	1	Solar Controller Open Loop
P0022	1	Elbow 15mm M&F Brass
P0024	1	Elbow 15mm MI-Conetite
P0025	1	Union 15mm MI-Conetite
P0027	1	15mm Brass Tee
P0031	1	Adaptor 20-15mm Brass Bush
P0032	1	Reducer 20-15mm Brass Bush
P0039	2	Elbow 20mm MI-15mm Conetite
P0047	6	Self Tapping Screw
P0057	1	240 V Lead for use with Grundfos Pump

## Tank Connecting Kit (Continued)

P0151	1	Tank Sensor (Cold)
P0215	1	PTR valve
P0444	1	Pump Grundfos 15-20CIL Solar
P0459	1	Pump Union 25mm Suit 15-20CIL
P0463	1	15mm Tank Sensor Probe
P0483	1	Valve Flow Control AW
P0501	1	Pump Station Housing
P0522	1	Pump Station Connection Hose
P1039	1	Elbow 20mm MI-15mm Conetite Non-Return#
P1459	1	Pump Union 25mm Suit 15-20CIL Non-Return

# May be supplied as separate Elbows and Non Return Valves

## Solar Hot Water Storage Tank Positioning

To obtain maximum performance the solar storage tank should be positioned as close as possible to the most commonly used outlets. The solar storage tank may be installed:

- Externally on a level concrete / suitable plinth, such as a concrete ripple slab or a Polyslab (Fig 1)
- Internally, provided the following is adhered to:
  - Must not be installed in the roof space and must be accessible without the use of a ladder or scaffold
  - Must not be installed where property damage could occur as a result of water leakage
  - Must be installed with an approved safe tray, drained in accordance with AS3500.4 and must adhere to any additional local regulations

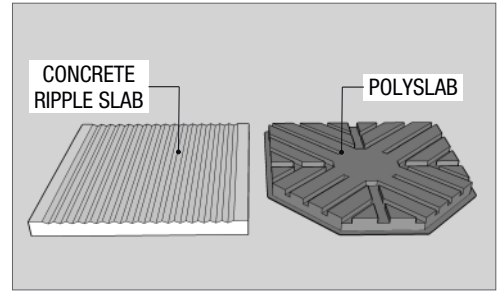


Fig 1

## Solar Pump Station Installation (Open Loop)

1. Position the base plate including the pre-assembled solar pump station which includes the solar controller, pump and flow control valve onto the tank over the cold inlet tank connection (Fig 2)
2. Ensuring the controller is located at the top and the base plate is plumb, fix the base plate to the tank using 4 x tek screws provided (Fig 3)
3. Fit the brass tee followed by the brass plug of the tank sensor lead (Fig 4) into the solar cold flow tank connection and plug it into the "Tank" socket under the controller (Fig 7)
4. Connect the flexihose from the pump assembly to the brass tee at the cold flow tank connection (Fig 5)
5. Connect the incoming cold water line to the cold water tank connection (Fig 6) ensuring that the connecting pipe is directed downward with sufficient allowance for the pump station cover to be fitted
6. Connect the collector sensor wire to the "Panel" socket under the controller (Fig 7)
7. Once tank is filled with water plug the pump power lead into GPO outlet on the base of the controller (Fig 7)
8. Plug the controller power lead into the mains GPO and turn ON
9. If the temperature at the collector is 7°C or greater, the "Tank" LED light on the controller will illuminate "green" (Fig 7)
10. If the temperature of the collector and tank is equal, no lights will be ON but the system is connected
11. Fit pump station cover.

*NOTE: The solar controller is rated IP20 and must be protected from environmental exposure with a cover*

**NOTE: If the power cable is damaged the controller should be replaced, not repaired.**

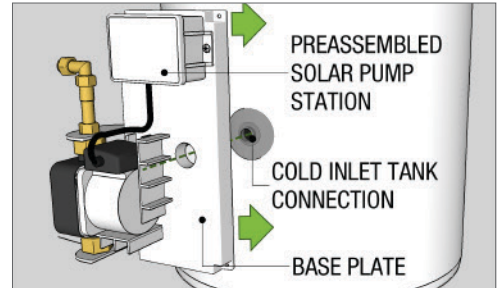


Fig 2

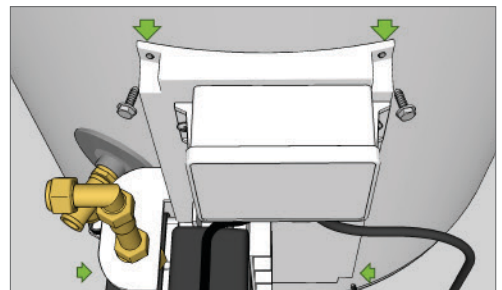


Fig 3

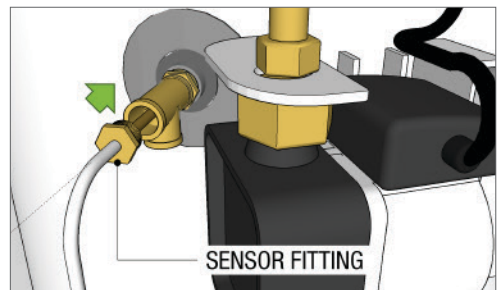


Fig 4

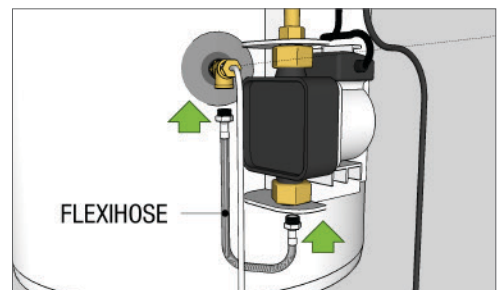


Fig 5

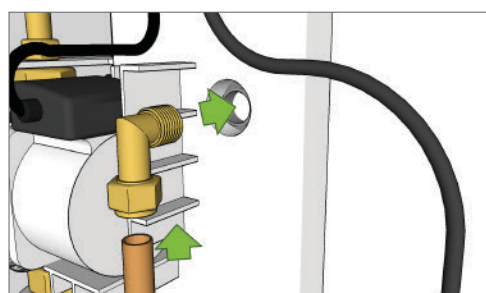


Fig 6

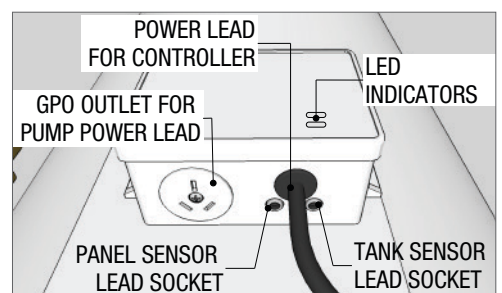


Fig 7

## Filling and Commissioning an Open Loop system

Do not turn on the gas booster / electrical element until system is full

### Filling the storage tank cylinder & purging air (Fig 8)

1. Ensure the tank has been positioned properly and the plumbing connections are completed as per the relevant instructions
2. OPEN the mains cold water valve (1) to the tank making sure the pressure / temperature relief (PTR) valve (2) is OPEN
3. When water flows from the PTR valve, CLOSE the PTR valve
4. Draw water through the tank by OPENING a hot water tap in the house and OPENING the cold water supply valve (1) to the tank
5. Wait until water comes out of the hot water tap
6. Leave water running until air is bled (i.e. no more bubbles or spitting) then turn OFF the hot water tap in the house
7. Plug pump power lead into the bottom of the solar controller (3)
8. Plug the solar controller lead into the GPO (4), and switch ON

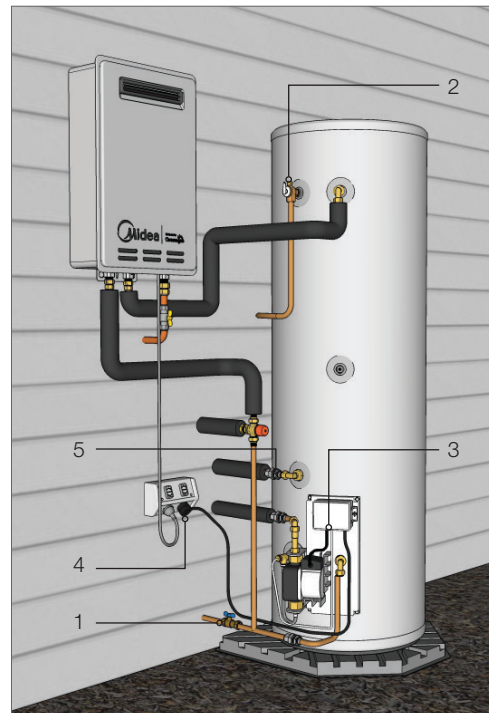


Fig 8

### Filling the solar loop & purging the remaining air (Fig 8)

9. Loosen the nut immediately before the elbow on the collector return line (5).
10. Allow water to drip until no further air is detected (i.e no bubbles)
11. Re-tighten the nut on the elbow (5)
12. Check the system for leakage by pressure testing all fittings to a minimum of 800 kPa. If any leaks are detected, rectify them immediately, and then the tank is prepared for use

At time of commissioning the flow meter should be set, when the pump is running, to 0.75 l/min for single panels and 1.75 l/min for 2 - 3 panel systems. The flow rate can be adjusted using the slotted screw at the top of the flow meter with a blade screwdriver (Fig 9)  
NOTE: Ball valve must be open to allow flow. Failure to do so may lead to pump failure.

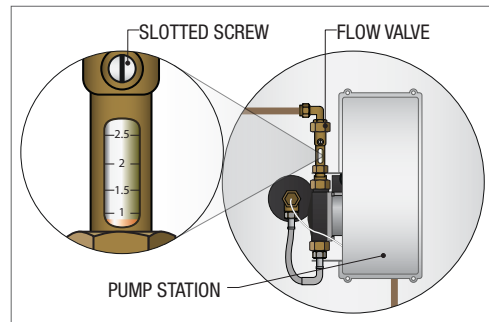


Fig 9

### Activating gas booster (Gas models only)

13. Plug in the power lead for the gas booster into the GPO and ensure it is switched ON (Fig 10)
14. OPEN the gas supply valve to the gas booster (Fig 10)
15. Turn ON the hot water tap inside the house to check if the booster is working
16. Test the water temperature to ensure temperature is rising
17. Set the tempering valve as per local authority / regulations

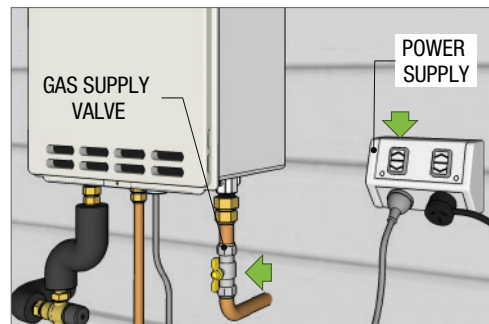


Fig 10

### Activating the electric element (Electric models only)

18. Ensure all electrical wiring is properly configured and thermostat is calibrated (refer to following page for instruction)
19. Locate the switchboard and check that the hot water electric isolating switch is set to the 'ON' position. (This is usually indicated by the label 'Hot water' or 'Water heater')
20. At the tank location turn the isolating switch to the ON position.

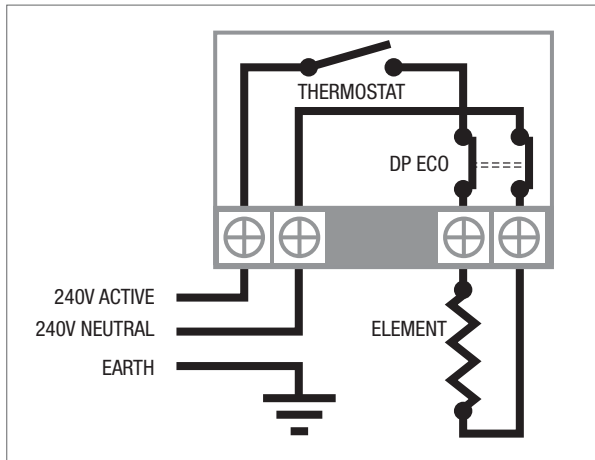
## Solar Hot Water Commissioning Check List

Please be advised that it is the responsibility of the plumber installing the tank (stage two) to fully commission the system as no water is supplied to roof top panels on collector (stage one) installation.

- Bleed all air from tank by opening hot tap inside house
- Bleed all air from panels by loosening nut on hot return line & turn on power to controller
- Check pump and control box for correct operation
- Turn on all power and gas (if applicable) and open tap inside house to check for operation
- Set the tempering valve as per local authority
- Check tank, panels and all pipe work for any leaks and repair if required
- Perform final check of overall system for operation and complete 'reference details' section of owners guide

**ELECTRICAL WARNING**

All Electrical Connections must be made by a licensed Electrician



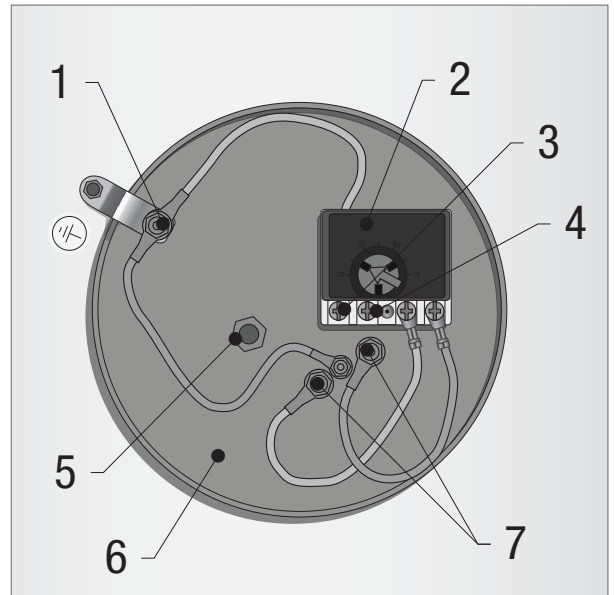
Wiring Schematic (240 VAC Single Phase)

**Thermostat Wiring**

- Electrically isolate thermostat from mains supply before disconnection. Failure to do so may result in an electric shock
- Wiring penetration should be made through the supplied grommet at the side of the thermostat cover
- All wiring must conform to AS3100 and must be performed by a licensed electrical contractor in accordance with all relevant standards
- Ensure all wiring is clear of element terminals to eliminate heat damage to wiring
- Temperature calibration should be tested at time of commissioning

**Troubleshooting Tips**

- No power to thermostat – check supply with multimeter, check off peak supply is operating correctly and time clock is set correctly
- No power to element – check reset button to right of dial, dial thermostat up until click is heard, measure voltage at element terminals. If no click is heard disconnect thermostat and remove from tank. Change temperature dial on thermostat, click should be heard at approximate air temperature. If not re-calibrate



Parts: 1-Earth / 2-Thermostat / 3-Active / 4-Neutral / 5-Anode / 6-Flange / 7-Element

**Tank Electrical Connections**  
300 Litre Tanks Only (Top of Tank)

**Calibration Instructions**

- Check temperature of probe – check as per sensor testing procedure chart using multimeter or take tank temperature from water released at PTR (ensure thermostat is situated in tank)
- Remove housing from thermostat – disconnect all power to thermostat and remove black housing cover from top of thermostat
- Calibrate thermostat – adjust thumbscrew to the middle of where thermostat clicks on and off
- Replace housing – Set temperature dial to temperature of probe and replace housing
- Check calibration – turn dial past position to ensure that thermostat clicks on and off
- Set temperature – set tank temperature to 60-65°C
- Reconnect power – Reconnect power supply to thermostat and reseal cover

**Note:** All thermostats should be calibrated at time of installation to avoid repeat service calls.

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