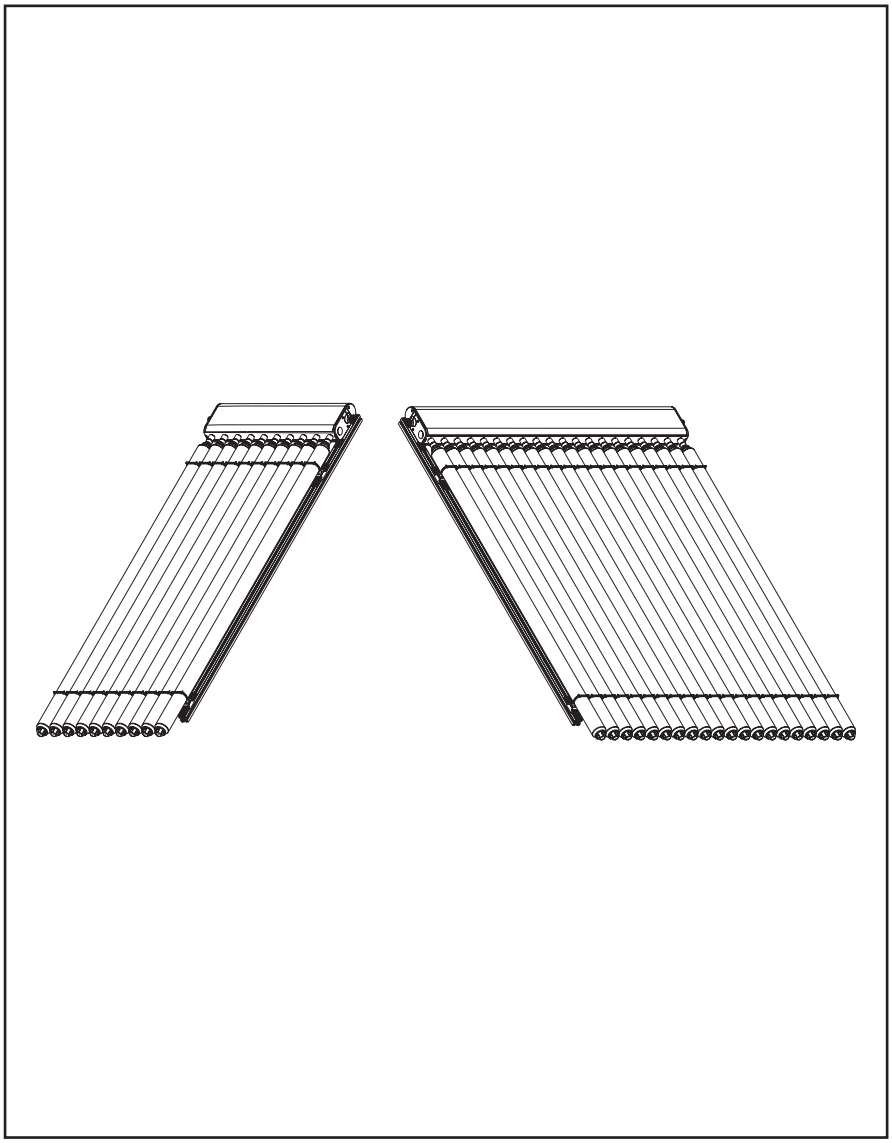
MULTIFIT

INSTALLATION & COMMISSIONING
GUIDANCE NOTES

Evacuated Tube Collector
East West Array

THESE INSTRUCTIONS SHOULD BE READ IN CONJUNCTION WITH THE
Baxi Solarflo™ Installation Guide (Part No. 5130226) and Commissioning Guide (Part No. 5130227).



The User Guide (Part No. 5130229) covers the controller functionality of this kit.

External fixing methods for Pitched Roof, 'A' Frame or Facade Floor are covered in the instructions (Part No. 5130229, 5130330, 5130331)

Please leave these instructions with the User for Safe Keeping

Content

The East West Array options are only for use with the existing collector sets.

If correct system sizing demands that 30 tubes are necessary, then 20 tubes must be fitted to the west facing roof aspect and 10 tubes to the east roof aspect.

Collectors West Facing 20 Tubes 5130214 (20ETC on roof tile)	+	Collectors East Facing 10 Tubes 5129980 (East/West kit)

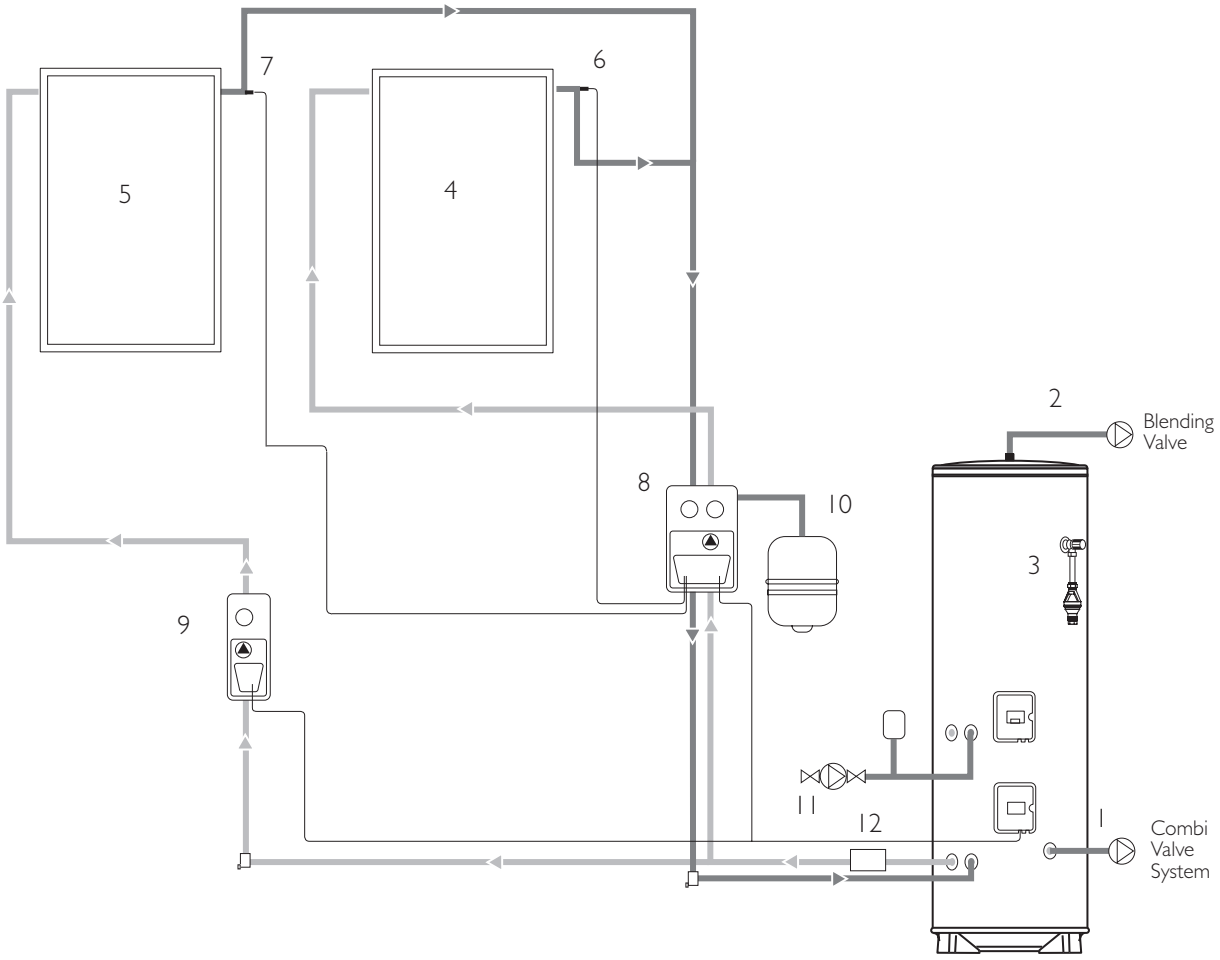
Where the roof orientation is not ideal ie; 10 degrees west of south, a performance close to that of such an orientation can be obtained by placing one solar collector on a opposite roof aspects (one facing east, the other facing west). In this manner the suns energy can be utilised throughout the day. The standard solar kit will assume collector mounting on a single roof aspect so the additional parts in the new kits will be necessary to mount the collector panels on a separate roof aspects and provide a additional pumped primary solar circuit. The solar controller supplied with the main hydraulic station (see Installation Guide) already has the facility built in, to control such a system.

1	Cold Supply for Domestic Hot Water
2	Domestic Hot Water Outlet
3	Auxiliary Discharge Arrangement
4	Solar Collector 1 (West facing)
5	Solar Collector 2 (East facing)
6	Collector Sensor 1 (PT 1000)
7	Collector Sensor 2 (PT 1000)
8	Solar Pumping Station with Controller
9	Solar Pumping Station East Facing Collector
10	Solar Expansion Vessel
11	Auxiliary Heat Source (Central Heating Boiler)
12	Flow Meter on a 'COMMON' Return

Solar Transfer Fluid is not supplied with the East West array kit. Where additional transfer fluid is required, it is available under the part no. 5130225 (20 litres) as a accessory. Only this approved Baxi fluid should be used on system and must not be used with other types of fluid or diluted. Failure to observe these requirements will invalidate the product warranty.

Where possible all pipe runs between collectors should be as short as possible.

For system controller wiring of the east west array, refer to the back page.



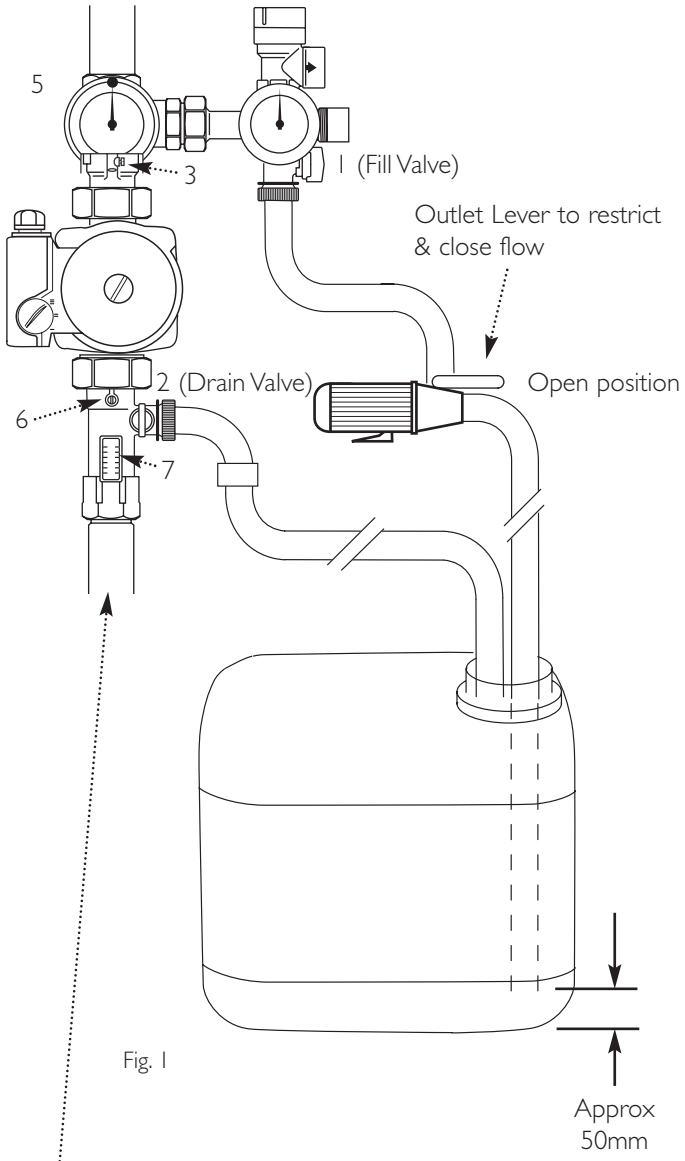


Fig. 1

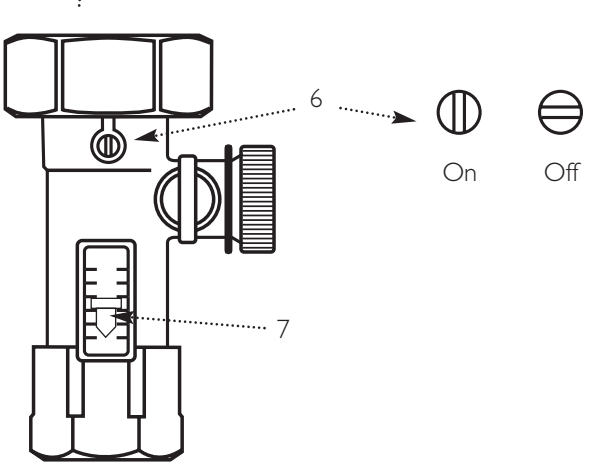


Fig. 1a

Key - Item Identification

1 Safety Group incorporating Pressure Relief
2 Drain with Isolation Connection Point
3 Non Return Valve Screw
5 Right Hand Isolation Valve with Integral Thermometer
6 Flow Meter Adjustment Screw (shown in open position)
7 Flow Meter

2.0 Flushing & Filling the System

2.1 Filling the East/West pump station

When using the Multifit Electric Filling Pump (Part No 5130234) or the Multifit Manual Filling Pump (Part No 5122761).

1. Ensure the pump is primed with Solar fluid prior to commencing filling procedure.

2. Connect the filling pump as shown to the connection on the safety group of the East / West pump station (Fig. 1 item1). **Electric Filling Pump** - Place the suction tube into the transfer fluid container with the hose approximately 50mm from the bottom of the container, connect the drain hose to the drain valve connection on the flow meter (Fig. 1 item 2). Place the drain tube into the transfer fluid container. Check at this stage that both valves are closed, the valves are closed when the isolation levers are in the horizontal plane.

NOTE: Isolate the main pump station when filling the East/West.

3. Turn the combined isolation valve to 45° (Fig. 2 item 4).

4. Turn the flow meter adjusting screw off (Fig. 1a item 6). 'Off' is when the screw is in the 9 O'clock position.

5. The lever on the pump outlet should be turned to the closed position (Electric Filling Pump).

6. Switch on the pump (Electric Filling Pump) and pressurise the pump prior to opening the fill valve. Open fully the east west pump station fill valve (Fig. 1 item1), and open the drain valve (Fig. 1 item 2).

7. **Electric Filling Pump** - Turn the pump outlet lever slowly and only open the pump outlet sufficiently to ensure the system can be filled, and that over pressurisation of the circuit does not occur.

8. The transfer fluid level should be monitored during the fill procedure. If the fluid level gets near to the bottom of the suction hose, approximately 1 litre is left in the container, it will be necessary to stop the fill procedure, close valves 1 and 2 (Fig. 1), switch off the pump and replenish the transfer fluid before repeating from step 1 again. (If the level gets below this, the pump is liable to damage and air will be introduced into the system.)

9. During the flushing process air bubbles may be seen behind the glass window of the flow meter, the air should gradually reduce until there is a clear flow of fluid. The flushing process should be run for several minutes to ensure the system is flushed of debris and all air is removed. The debris will be caught within the inline filter of the drain tube on the multifit electric pump. Debris accumulation can be cleaned out from the filter when required.

10. Once the east west leg of the system is filled and a pressure of 2 bar achieved, (Electrical Filling Pump - Close the valves (Fig. 1 items 1 & 2). Turn the combined isolation valve (Fig. 2 item 4) back from 45°. Switch off the pump, disconnect the pump hoses carefully releasing the pressure, and screw on the brass sealing caps securely. Check for leaks.

11. Turn the flow meter adjusting screw back to 12 O'clock to open, (Fig. 1a item 6). For flow rate adjustment see section 3.0.

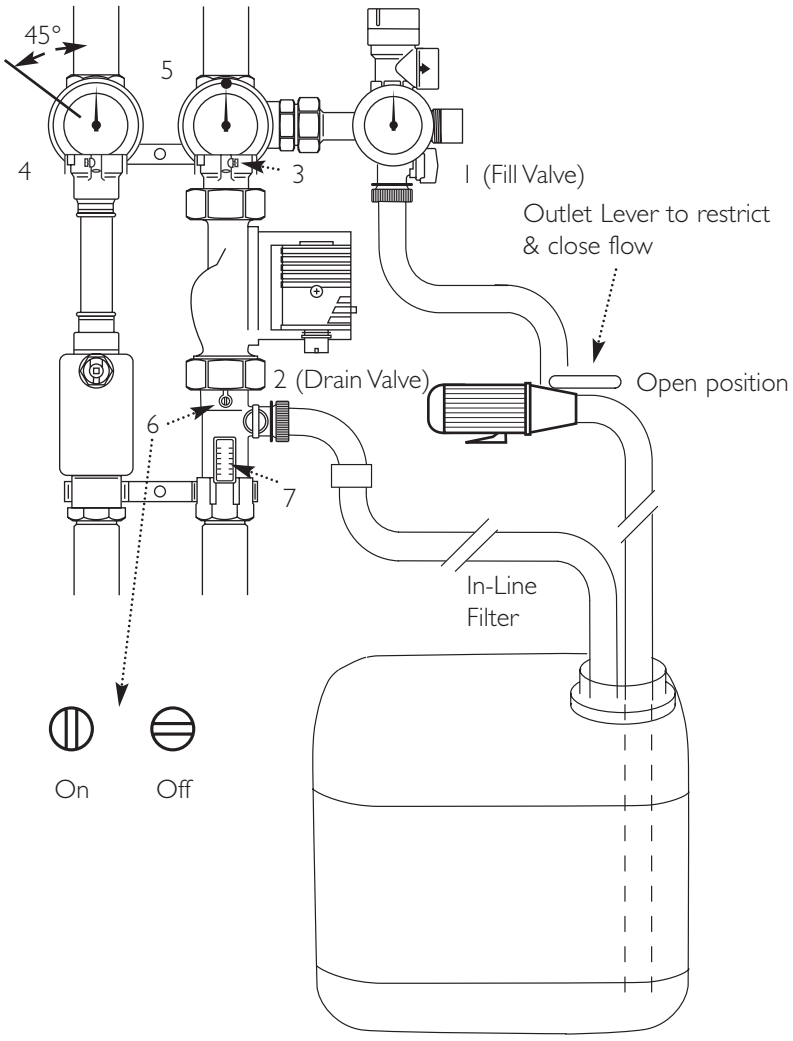


Fig. 2

Key - Item Identification

1 Safety Group incorporating Pressure Relief
2 Drain with Isolation Connection Point
3 Non Return Valve Screw
4 Combined Isolation Valve with Integral Thermometer
5 Right Hand Isolation Valve with Integral Thermometer
6 Flow Meter Adjustment Screw
7 Flow Meter

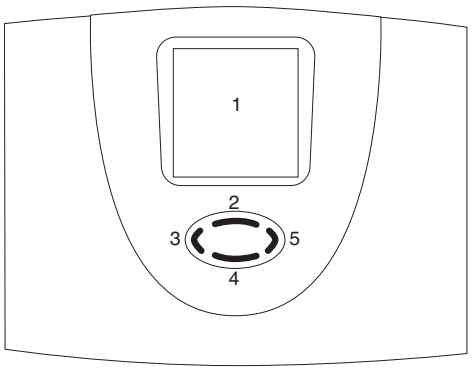


Fig. 2a

2.0 Flushing & Filling the System

2.2 Completing the System fill of the Solar Pump Station with Controller

1. Connect the filling pump to the solar pump station with controller, on the fill and drain valve on the safety group (Fig. 2 item1) and connect the drain hose to the fill and drain valve on the flow meter, (Fig. 2 item 2) and check that the valves are closed. Ensure the drain hose is installed as prescribed earlier.

2. Turn the left hand isolating valve (Fig. 2, item 4) to 45° anticlockwise and the flow meter adjusting screw (Fig. 2, item 6) to off.

3. Fully open the fill and drain valves on the safety group (Fig. 2, item 1 & 2)

4. Turn the slot of the adjusting screw (Fig. 2, item 3) in the return so the slot is vertical to open the non return valve

5. The handle on the Multifit Electric Pump outlet should be turned to the closed position.

6. Switch on the pump, and open the pump outlet lever slowly. Only open the pump outlet sufficiently to ensure the system can be filled, and that over pressurisation of the circuit does not occur.

7. The transfer fluid level should be monitored during the fill procedure. If the fluid level gets near the bottom of the suction hose, approximately 1 litre is left in the container, it will be necessary to stop the fill procedure, close items 1 and 2 (Fig. 2), switch off the pump and replenish the transfer fluid before repeating from step 1 again. (If the level gets below this, the pump is liable to damage and air will be introduced into the system.)

8. During the fill process air bubbles may be seen behind the glass window of the flow meter (Fig. 2 item 7), the air should gradually reduce until there is a clear flow of fluid. The fill process should be run for several minutes to ensure the system is flushed of debris and all air is removed. The debris should be caught within the inline filter of the drain tube. Debris accumulation can be cleaned out from the filter at a later date on the Multifit Electric Pump.

9. Continue filling at the fill valve on the safety group (Fig. 2, item 1) until the system pressure reaches 2 bar.

10. Once the master pump station leg of the system is filled and a pressure of 2 bar achieved, close the drain valve (Fig. 2 item 2), switch off the pump, close the valves (Fig. 2 items 1 & 2). Check for leaks.

11. Turn the left hand isolating valve (Fig. 2, item 4) back 45° clockwise until the dot on the bezel is back at 12 o'clock

12. Turn the non return back to open (Fig. 2, item 3)(12 o'clock).

13. Turn the flow meter adjusting screw (Fig. 2, item 6) until it is fully open on both pump stations (12 o'clock).

For step by step guide to operating the controller, refer to commissioning instructions section 3 (Part No. 5130227). Ensure collectors temperatures are cool before this process.

14. Turn on the power to the solar controller. This should display the information screen.

15. Key the left button (Fig. 2a item 3) once to enter the main menu screen. The 'i' icon will flash (See section 3.0 of the commissioning booklet 5130227 for a description of the solar controller button functions)

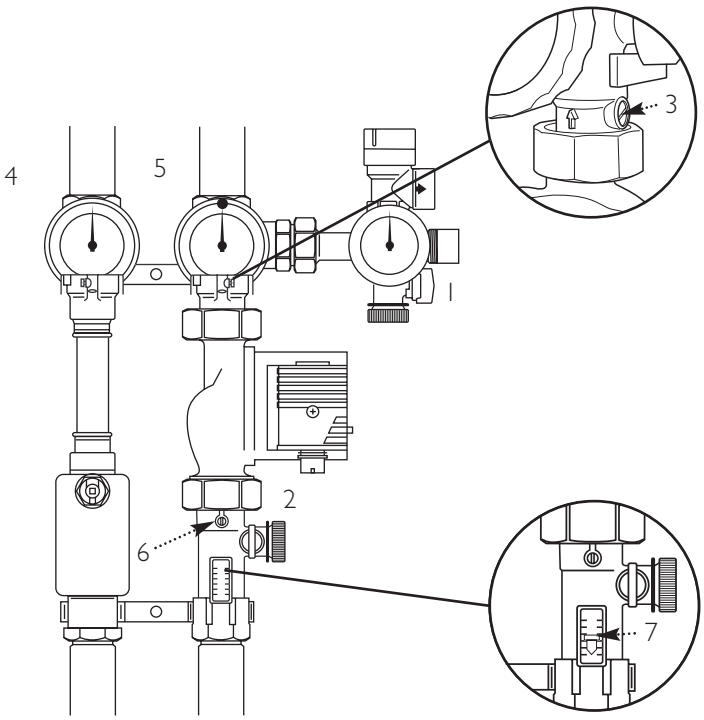


Fig. 3

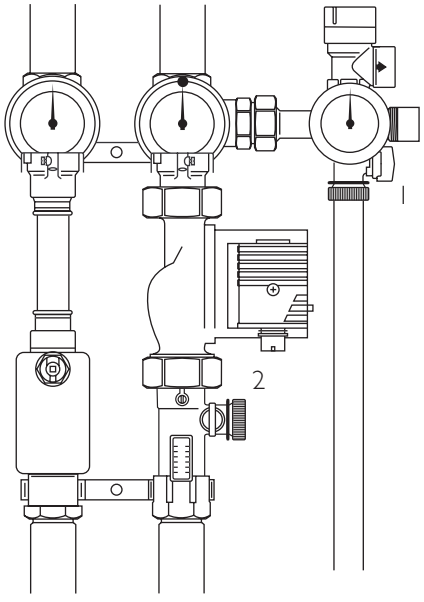


Fig. 4

Key - Item Identification

1 Safety Group incorporating Pressure Relief
2 Drain with Isolation Connection Point
3 Non Return Valve Screw
4 Combined Isolation Valve with Integral Thermometer
5 Right Hand Isolation Valve with Integral Thermometer
6 Flow Meter Adjustment Screw
7 Flow Meter

2.0 Flushing & Filling the System

2.2 Completing the System fill of the Solar Pump Station with Controller (cont)

16. Press the right button (Fig. 2a item 5) twice to select the manual operation menu ( ). Press the down button and the 'pump' symbol and the 'switch output 1 and 2 symbols should now be seen with a 'zero' displayed. Changing the 'zero' to a 'one' will operate the pump. To do this, press the right button and the 'zero' will flash.

WARNING: During this commissioning stage the safety temperature control is disabled. Ensure collectors are cool.

17. Each pump unit needs to be set up individually.

18. Press either the up or down button to manually activate pump 1, then key right to accept the setting. See commissioning section to follow controller settings.

19. Leave the pump running for sufficient time to allow any residual air to be purged from the system via the air separator and any bleed points fitted to the system. Use the flow meter window (Fig. 3, item 7) to as a visible indicator of the air bubbles. **NOTE:** During this time the joints may be checked for leaks.

20. Stop the pump using the button procedure described previously (paragraph 16). If pressure has been lost from the system during the air bleeding process, the top up procedure described earlier can be repeated to top up the system.

21. Repeat 18 to 20 for pump 2, and select pump 2.

Check pressure in the solar primary pipework

1. After flushing and filling the solar primary system with heat transfer fluid the pressure must be checked.

2. Pressure test the system to between 2 to 2.5 bar. Observe the maximum pressure ratings of all components concerned.

3. Check the solar heating system for leaks.

4. Close the fill and drain valve on the safety group.

Setting the System Pressure

a) During commissioning, the system pressure should be 0.7 bar above the static pressure (1 metre height differential equals 0.1 bar). However, it must be at least 1.5 bar and no higher than 2.2 bar.

b) Determine the system pressure when the system is cold (20°C). This should be recorded on the Commissioning Record Sheet (page 21) of the Commissioning Booklet Part No. 5130227.

c) If the pressure is too low you should pump additional heat transfer fluid into the system; the fill & drain valve on the safety group (Fig. 4 Item 1) needs to be opened for this purpose. When system pressure is correctly set, ensure the fill and drain valve is closed and remove filling hose from safety group.

d) Remove all tubing from the fill and drain valve on the safety group (Fig 3, item 1) and the drain valve on the flow meter. (Fig 3, item 2) and replace both the sealing caps securely, ensuring that the rubber seals are fitted. Check for leaks.

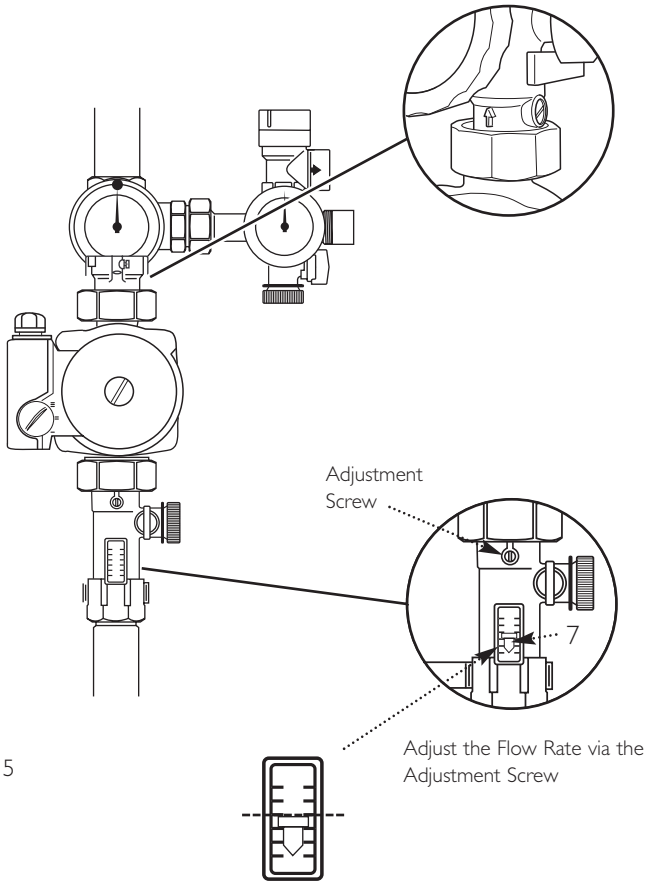


Fig. 5

3.0 Commissioning of hydraulic stations

3.1 Checking and adjusting the flow rate East / West

1. Adjust the flow rate when the system is cold (20°C) (see Fig. 5).

2. The flow rate should be adjusted to give the optimum flow.

3. Manually operate the solar pump (see section 2.2 paragraph 16).

Warning: The temperature control is disabled during this procedure.

4. Set the solar pump speed selector so that the required flow rate is achieved or exceeded with the lowest possible setting. The flow limiter adjusting screw (Fig. 5) can be used to fine-tune the flow rate.

5. Set the required flow rate of 2 litres for the 10 tube (East facing).

6. The float in the flow meter will indicate the circulation flow rate through the flow meter sight glass (Fig. 5 Item 7).

7. Adjust screw of the flow limiter with a screwdriver, until the upper edge of the float in the sight glass indicates the required flow rate. Turn the screw anticlockwise to increase the flow.

8. Ensure that the float is stable when the pump is running. No air bubbles should be observed during this procedure.

9. Set manual pump operation to off (reset to zero).

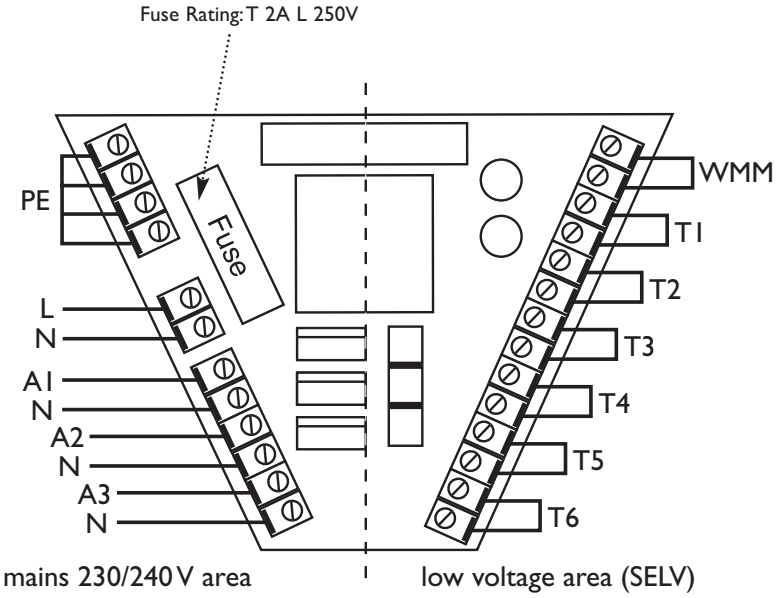
3.2 Installation of the thermal insulation

1. Refit the front facia moulding onto the rear moulding.

3.3 Check & Adjusting the Flow Rate Master Control

1. Follow section 3.1 paragraphs 1 to 4.

2. Set the flow rate to:
4 litres if 20 tubes facing West
or 6 litres if 30 tubes facing West



PE	Earthed connection	WMM	Flow meter
L	Mains supply live conductor	T1	Temp.- sensor collector 1 (West facing)
N	Mains supply neutral conductor		
A1	Switch output to solar pump	T2	Temp.- storage tank 1
N	Neutral wire to solar pump	T3	Temp.- sensor collector (East facing)
A2	Switch output 2 to second system pump if used (east/west)	T4	Temp.- sensor collector return
N	Neutral wire switch output 2	T5	Temp.- sensor thermostat or for 2nd temperature differential controller
A3	Switch output 3 to auxiliary heating control		
N	Neutral wire switch output 3	T6	Temp.- frost protection or for 2nd temperature differential controller

MULTIFIT
A Registered Trademark of Baxi Heating UK Ltd (3879156)
A Division of Baxi Group
Brooks House, Coventry Road, Warwick. CV34 4LL
After Sales Service and Technical Enquiries 08700 603261
Our contact centre is open Monday to Friday 8am to 6pm,
Weekends and Bank Holidays 8.30am to 2pm.
We are closed Christmas Day and New Years Day.
Website www.baxi.co.uk
e&oe

A BAXI GROUP company

Comp No 5132322 - Iss 2 - 6/09

4.0 Pump & Sensor Connections

4.1 Pump & Sensor Connections To Solar Controller

Collector 1 (West facing) temperature sensor connected to terminals marked T1 (polarity free)

Collector 2 (East facing) temperature sensor connected to terminals marked T3 (polarity free)

Cylinder temperature sensor connected to terminals marked T2 (polarity free)

Master Pump circuit to Collector 1 connected to terminals marked A1 and N (240V terminals – observe polarity)
East/West Pump circuit to Collector 2 connected to terminals marked A2 and N (240V terminals – observe polarity)

The collector temperature sensors must be installed in the relevant sensor pockets mounted on the collector.

Refer to the relevant Collector Mounting Installation Guide for details of the position of the sensor pockets. Only the BLACK sleeved sensors should be used in the collector.

4.2 Setting The Solar Controller System Parameter To East West Configuration

• Turn the power off to the solar controller (Master Pump Station).

• Turn the power back on to the solar controller (settings can only be adjusted in the first minute of powering up.

• Press the right button until the spanner symbol is displayed ().

• Press the down button until sub menu 16 is displayed.

• Now press the right button to access the icon will now be flashing.

• Press the up/down button until 4 is shown in the display.

• Press the right button so that the OK symbol appears.

• Press the right button again to set and confirm new parameter 4 (East/West Array).