

S3 Manifold

WHS-M-S3-Series

Installation manual



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Your Warmup® manifold has been designed to be as efficient as possible when installed correctly, regardless of the heat source being used. Installation will be quick, straight forward and trouble free providing that the guidance within this manual is followed. We require that even experienced installers read this manual through at least once to prevent undue mistakes.

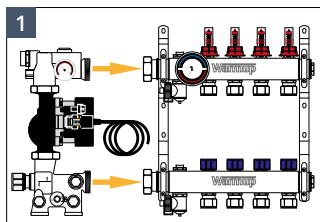
Warmup plc, accepts no liability, expressed or implied, for any loss or consequential damage suffered as a result of installations which in any way contravene the instructions that follow.

It is important that before, during and after installation that all requirements are met and understood. If the instructions are followed, you should have no problems. If you require help at any stage, please contact our helpline or visit our website:

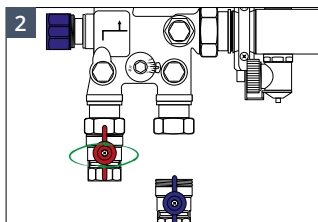
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Installation summary

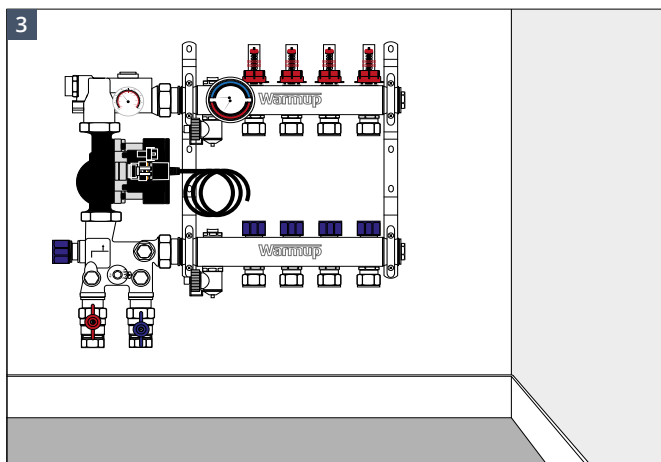
Please read the full installation instructions before proceeding.



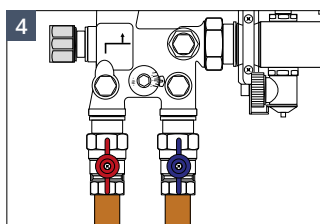
- Assemble and connect the S3 mixing unit (WHS-M-S3-MIX) (if used).



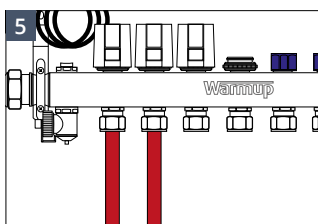
- Connect the WHS-M-S3-VALVES, isolation valve kit.



- Identify a suitable location, and mount the manifold.

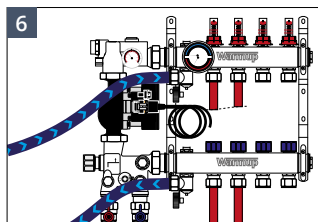


- Connect the primary supply pipes to the manifold, ensuring that only valves operated by the UFH can interrupt the supply.

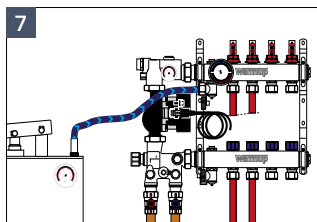


- Connect the secondary pipework, ensuring to record circuit lengths.

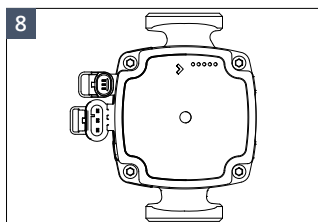
Installation summary



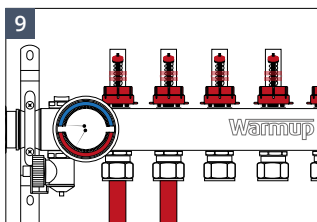
- Purge and fill the circuits.



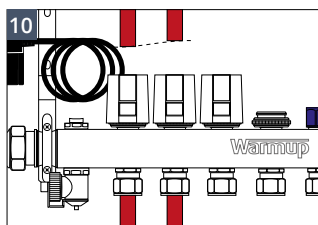
- Pressure test the system.



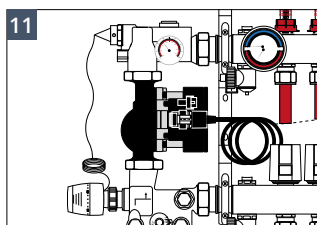
- Make the electrical connections to the circulator, setting it to operate on Constant Pressure Curve 3.



- Balance the secondary circuits.



- Install actuators.













- Install the thermostatic actuator, its capillary sensor and set the secondary flow temperature (if used).



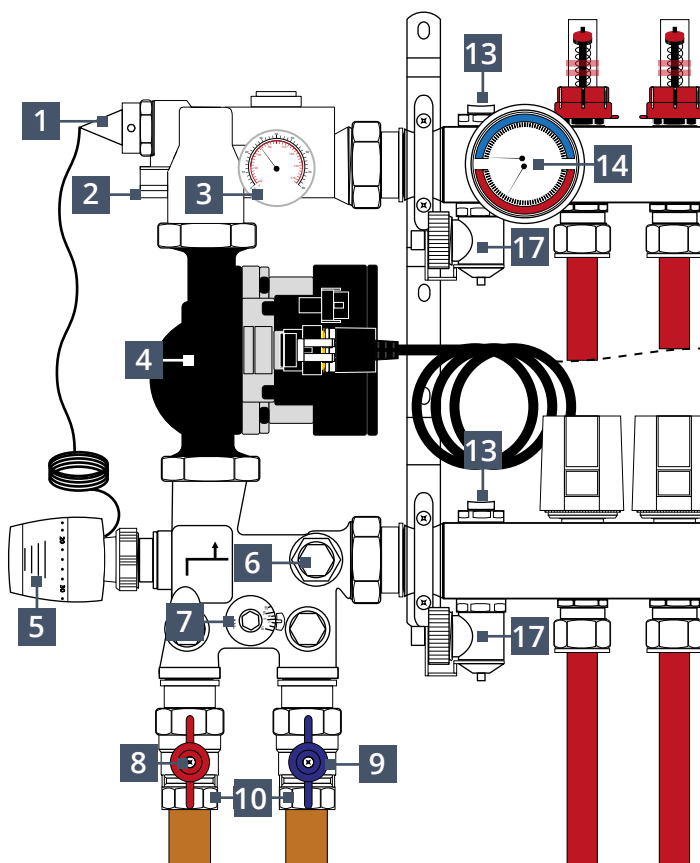
Record all install information in the commissioning log found towards the back of this manual.

Important information

-  Ensure the S3 manifold (WHS-M-S3-XX) is mounted to a structurally sound wall capable of bearing the load imposed by the manifold.
-  Precautions should be taken to reduce the risk of damaging any services within the walls when drilling.
-  Keep the area clean and clear, reducing the risk of foreign bodies entering the system.
-  Use suitable pipe cutters to ensure a square, clean cut is made to the pipework.
-  Ensure all data is fully recorded on the commissioning log.
-  Ensure, where the system is subject to the risk of freezing, the system is purged or a suitable antifreeze, such as glycol (up to 30% by volume) is used.
-  Do not exceed specification - failure to do so will void the warranty.
-  The manifold can serve floors up to 3m above its installed location, no more.
-  Do not use excessive force when adjusting flow gauges.
-  Do not guess the flow rates or temperature settings, as this will waste energy, and potentially incur higher running costs compared to a correctly designed and commissioned system.

Components available from Warmup

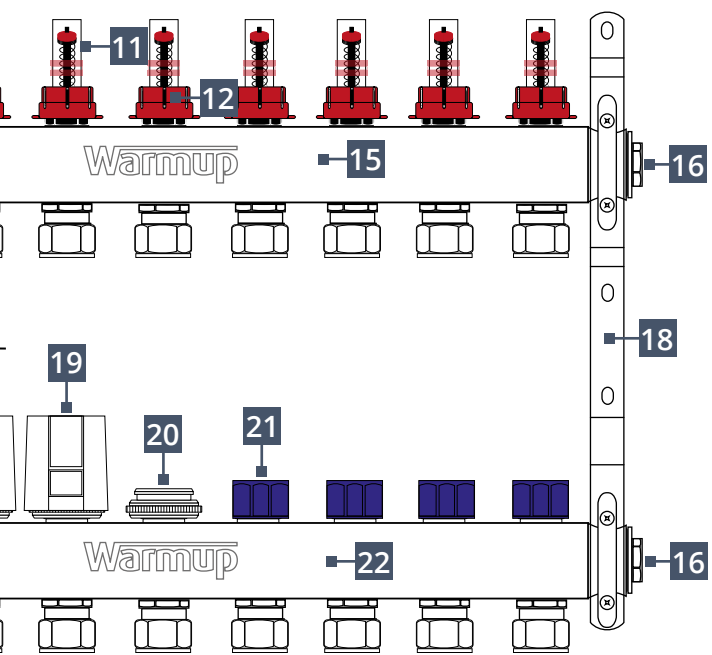
| Product Code | Description |
|--|---|
| WHS-M-S3-XX | Warmup S3 Manifold <i>XX = No. of ports; 2-12</i> |
| WHS-M-S3-MIX | Mixing Unit - For S3 Manifold with 3 port valve - Capillary thermostat - Grundfos UPM3 circulator |
| WHS-M-S3-VALVES | 1" Isolation valves (pair) - For S3 Manifold - 1" M Union to 22mm compression |
| WHS-M-S3-ACT230 | 230V Electrothermic actuator |
| WHS-M-S3-ACT24V | 24V Electrothermic actuator |
| Wired controls | |
| WHS-C-B-MASTER01 | S-Series - 4 Zone control centre |
| WHS-S-SLV4Z | S-Series - 4 Zone control centre extension |
| 6IE-01-OB-DC 6IE-01-BP-LC | Warmup 6iE |
| RSW-01-WH-RG (ELM-01-WH-RG) RSW-01-OB-DC (ELM-01-OB-DC) | Warmup Element |
| ELT PW (ELT-01-PW-01) ELT PB (ELT-01-PB-01) | Warmup tempo |
| Wireless controls | |
| KW-UKHUB | Smart hub |
| KW-BLR2CH | 2 Channel interlock relay |
| KW-WC10CH | 10 Channel manifold control centre |
| KW-STATH | Wireless thermostat with humidity sensor |
| KW-UKETRV | Wireless eTRV |



S3 Mixing unit - WHS-M-S3-MIX

- | | |
|----|--------------------------------------|
| 1 | Capillary thermostat - Sensor |
| 2 | Circulator isolation valve |
| 3 | Thermometer - Secondary flow |
| 4 | Grundfos UPM3 25/70 - 130 circulator |
| 5 | Capillary thermostat - actuator |
| 6 | Secondary by-pass |
| 7 | Primary by-pass |
| 8 | Primary isolation valve - Flow |
| 9 | Primary isolation valve - Return |
| 10 | Primary supply adaptors; 1"G to 22mm |

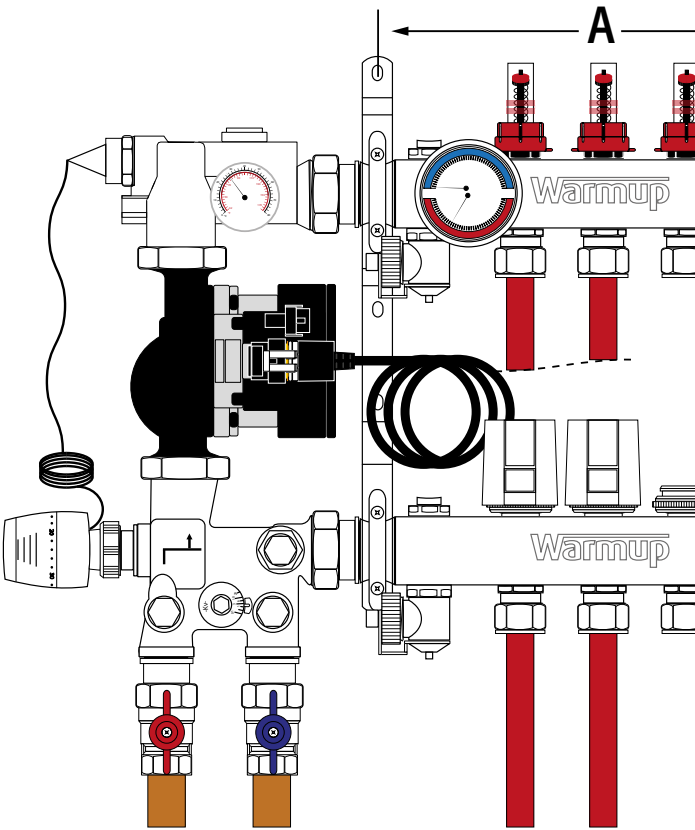
Manifold overview



S3 Manifold assembly - WHS-M-S3-08

- 11 1 - 5 l/min Flowmeter
- 12 Flowmeter locking cap
- 13 Manual air vent
- 14 Thermomanometer
- 15 Flow arm
- 16 End caps
- 17 Fill/Drain valve
- 18 Mounting brackets
- 19 Electrothermic actuator
- 20 Electrothermic actuator collar
- 21 Commissioning cap
- 22 Return arm

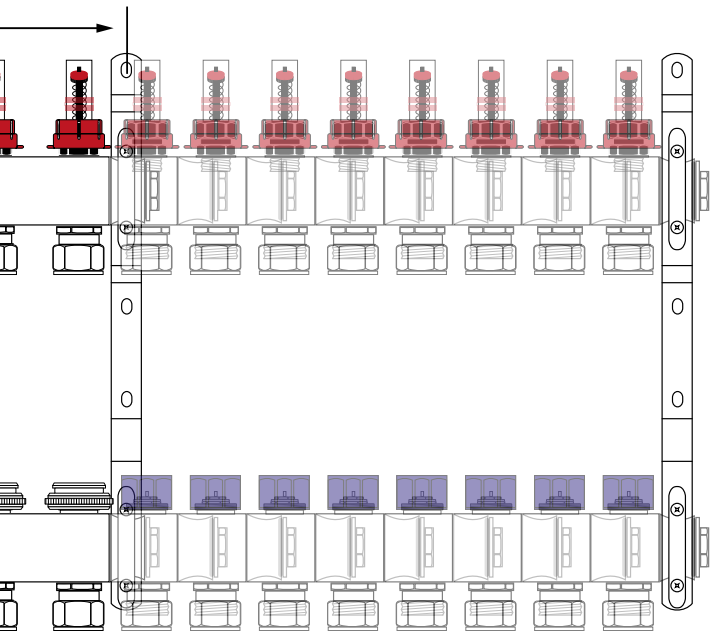
Dimensions



| Type | Height (mm) | Depth (mm) | | | |
|-----------------------|----------------|---------------|-----|-----|--|
| | | | 2 | 3 | |
| Excluding mixing unit | 340 | 95 | 290 | 340 | |
| Including mixing unit | 440 | 125 | 410 | 460 | |
| Bracket Spacing (A) | | | 165 | 215 | |

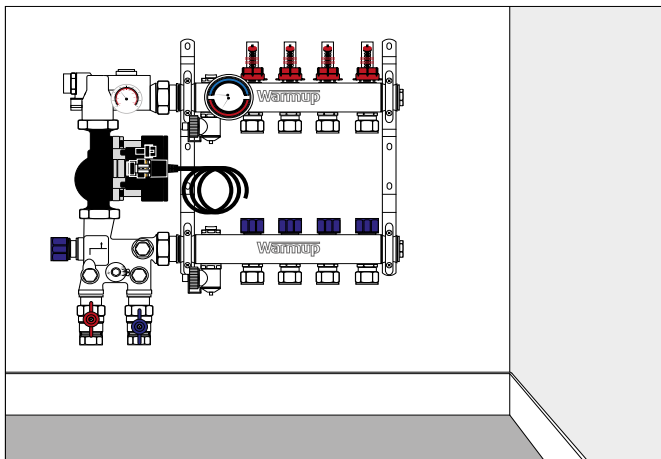
- The Warmup S3 manifolds (WHS-M-S3-XX) are available in various configurations ranging from 2 ports through to 12 ports.
- The manifolds are delivered pre-assembled in the mounting brackets with flow gauges, drain/fill valves, air vents, end caps and thermomanometer.
- The manifold can either be used as a standalone setup, or can be adapted with a Warmup S3 mixing unit (WHS-M-S3-MIX) providing regulated temperature control enabling tailored system performance.

Dimensions



| No. of Ports; Width | | | | | | | | | |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 390 | 440 | 490 | 540 | 590 | 640 | 690 | 740 | 790 | |
| 510 | 560 | 610 | 660 | 710 | 760 | 810 | 860 | 910 | |
| 265 | 315 | 365 | 415 | 465 | 515 | 565 | 615 | 665 | |

Step 1 - Location considerations



Identify a suitable mounting location for the Warmup S3 manifold. The location should meet the following requirements;

The surface on to which it is to be mounted should be:

- i** Structurally sound and capable of bearing the load imposed by the manifold.
- i** Vertical - The flow gauges accuracy is impaired and the manual air vents will be ineffective if the manifold is mounted on a horizontal surface.

The surface on to which it is to be mounted should be:

- i** Be within the heated envelope of the building.
- i** Never drop below 2°C or rise above 60°C.
- i** In a dry location with non-condensing humidity levels.

It is recommended that:

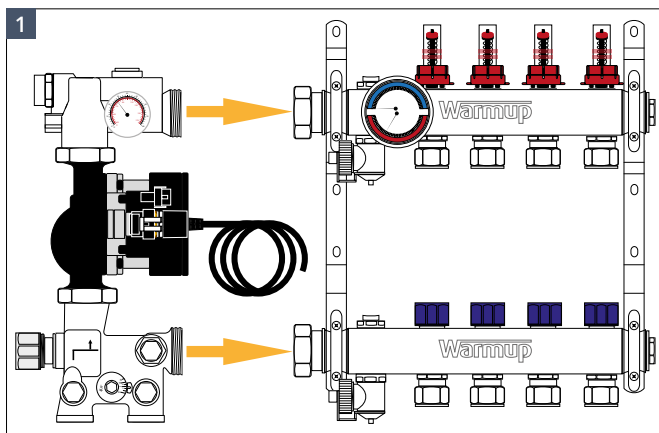
- i** The manifold is mounted no less than 300mm above finished floor level, to allow for easier installation and maintenance of the manifold.
- i** A clearance of no less than 50mm is maintained on all sides for future access.
- i** Any obstructions placed in front of it are removable to permit future access.
- i** 1/4" rubber gaskets and penny washers are used when fixing the brackets to the wall to reduce noise caused by circulator vibration.

Step 2 - Assembly - S3 Mixing unit

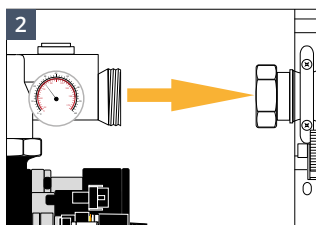
The Warmup S3 Mixing unit (WHS-M-S3-MIX) is required for all installations where the temperature of the water provided by the heat source could exceed the design water temperature of the floor heating system.

This includes all heat sources which intermittently 'over heat' due to sterilisation cycles or uncontrolled heating.

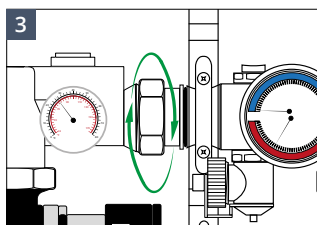
The mixing unit, enables the manifold to regulate the secondary flow water temperature to between 20°C and 60°C, for tailored system performance.



- Remove the S3 mixing unit from packaging. Keep the thermostatic capillary actuator and sensor to one side, these will be fitted during system commissioning.
- Connect the 1¼" F to 1" M union fittings to the manifold arms.



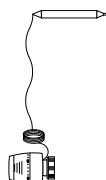
- Align the mixing unit with the manifold.



- Hand tighten the fittings on to the manifold before fully tightening using a 46mm wrench, being careful not to over tighten.



Keep the thermostatic head and sensor in a safe place. Take care with the capillary tube, as it can be easily kinked.

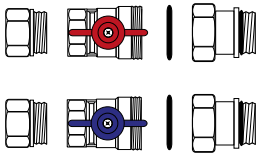


Step 2 - Assembly - Valves

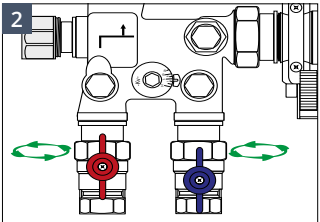
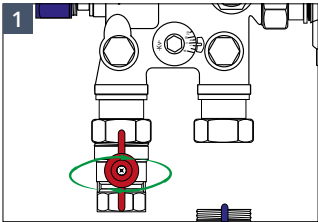
Adding the Warmup WHS-M-S3-VALVES kit allows for the manifold system to be easily isolated from the primary pipework/heat source.

Warmup recommends a minimum of 22mm for the primary pipework.

Remove WHS-M-S3-VALVES from their packaging.



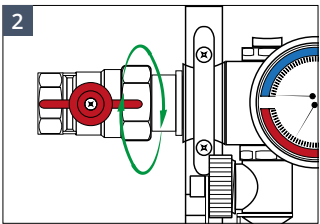
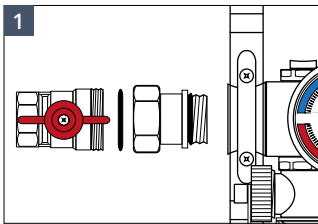
Configuration with S3 mixing unit (WHS-M-S3-MIX)



- Hand tighten isolation valves onto mixing unit. The 1" M to 1" F unions supplied with the isolation valves are not required.

- Fully tighten using an 36mm wrench.

Configuration without mixing unit



- Connect the 1" M to 1" F unions supplied with the isolation valves to the manifold arms and fully tighten.
- Insert the 1" gasket and assemble the isolation valves.

- Fully tighten using an 38mm wrench.

Step 2 - Assembly - Primary pipework

It is recommended the supply connections to the manifold are direct from the primary heating circuit, prior to any zone valves or control by other emitters or devices. Interlock should be established between the underfloor heating and the heat source. Failure to do so can lead to instances where the primary supply is not active when it is when required by the underfloor heating.

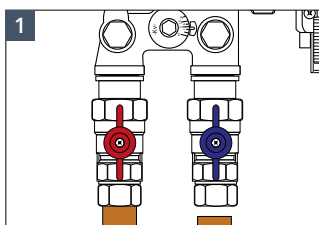
The sizing of the primary supply should always be calculated, properly accounting for the design primary flow rate.

The WHS-M-S3-VALVES have Female 1" G connections to the primary supply. The pack also includes a pair of 22mm compression fittings, allowing 22mm pipe to be connected directly to the manifold where applicable.

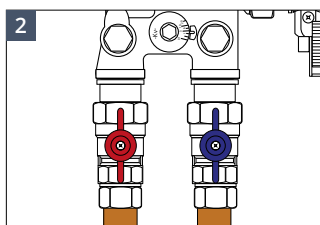


Liquid PTFE or similar should be used to connect the 22mm compression fittings to the 1" isolation valve if used.

Configuration with S3 mixing unit (WHS-M-S3-MIX)

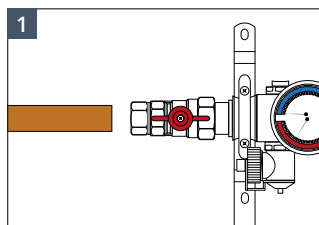


- Ensure pipe is fully inserted into fitting. Hand tighten.

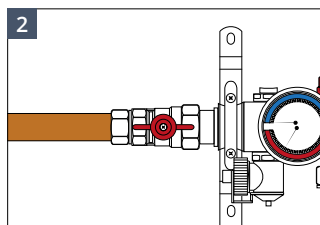


- Fully tighten using an 32mm wrench.

Configuration without mixing unit



- Ensure pipe is fully inserted into fitting. Hand tighten.



- Fully tighten using an 32mm wrench.

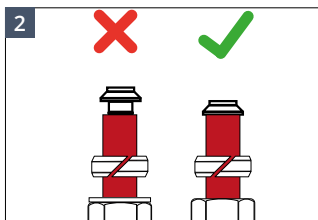
Step 2 - Assembly - Secondary pipework

When preparing the pipework for connection to the manifold, the end of the pipe must be cut clean and square with a suitable pipe cutter, this is to ensure a tight seal against the spigot is maintained.

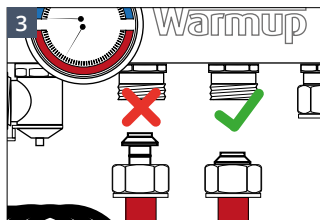
All circuit lengths should be recorded accurately in the commissioning log to ensure correct commissioning and maintenance of the system.



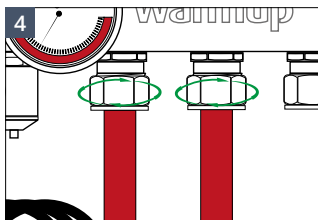
- Cut pipe cleanly leaving a clean and square cut using a suitable pipe cutter.



- Slide pipe adaptor nut onto pipe with thread facing up, followed by the split olive. Insert the spigot into the pipe.



- Hand tighten the nut, ensuring the spigot remains fully inserted in the pipe.



- Fully tighten the nut using an open ended wrench.

Warmup



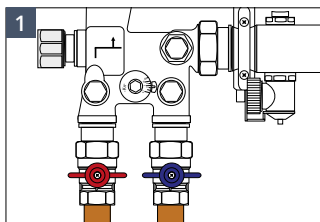
ElementTM WiFi Thermostat

Smart Heating. Simplified.

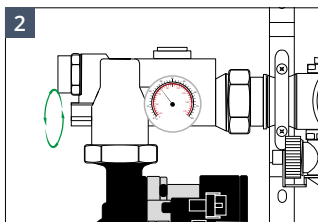
Step 3 - Circuit purging & filling

It is important that the manifold and connected circuits are purged prior to calibrating the system to remove any air left in the pipework following install.

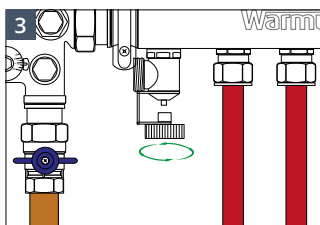
The caps fitted to the fill/drain valves functions as a key to open and close both the valves and the manual air vents.



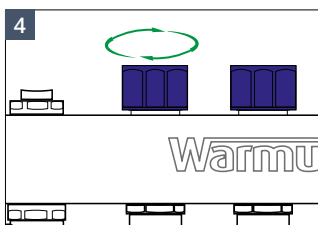
- Ensure both primary isolation valves are closed.



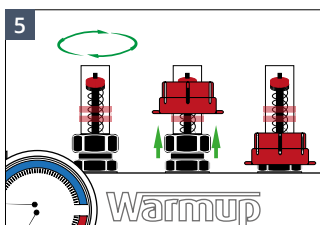
- If fitted, close the mixing units circulator isolation valve, indicated by the slot being horizontal, to prevent water bypassing the secondary circuits.



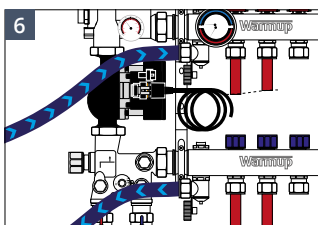
- Ensure fill/drain valves are closed, use the cover cap as shown.



- Close the return valves using the commissioning caps.



- Remove flow gauge locking cover and keep safe, close the flow valves.



- Attach suitable feed pipe to the flow arm fill valve and suitable drain pipe to the return arm drain valve.

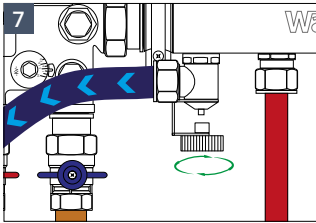


Maximum permissible pressure during purging and filling is 10 bar.

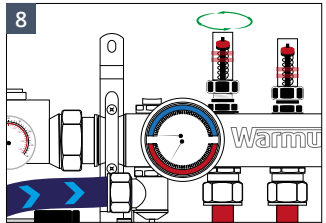


Standard 3/4" tap connectors can be used to connect the feed pipe to the fill/drain valves

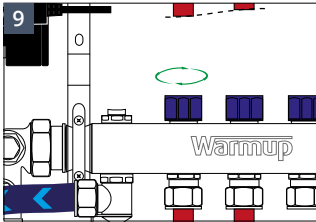
Step 3 - Circuit purging & filling



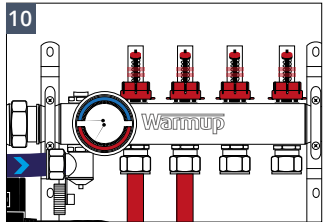
- Turn on the water supply and open the fill and drain valves.



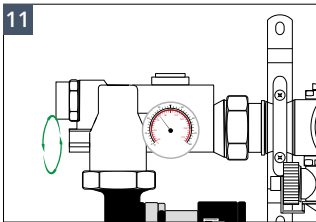
- Open first circuits flow valve followed by its return valve.



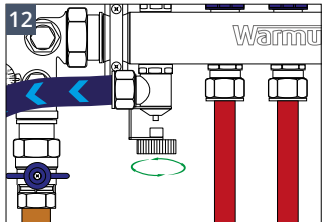
- Purge until discharge water is clear and free of air. Close the circuits return valve first followed by its flow valve.



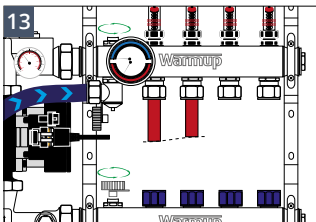
- Repeat steps 6 & 7 for all remaining circuits and replace the flow-meter locking rings.



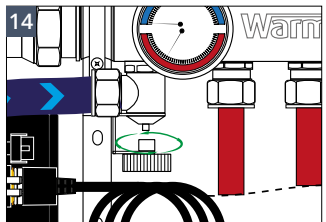
- If fitted, open the mixing units circulator isolation valve, indicated by the slot being vertical, to purge and fill it.



- Close the return arm drain valve.



- Open the air vents on the flow and return arms, until all air has been expelled and water is discharged.

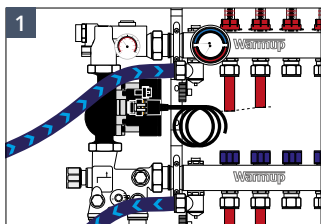


- Close the flow arm fill valve, turn off and disconnect the water supply.

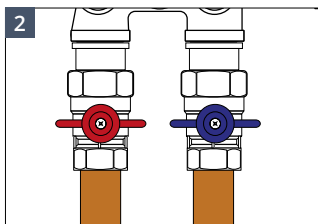
Step 4 - Pressure testing

The pressure test must be completed while the pipes are fully accessible and before any screed or floor deck has been laid.

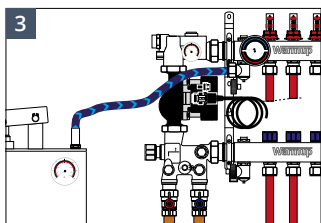
The pressure test is an important step to prove the integrity of the system, ensuring nothing has been damaged during the install.



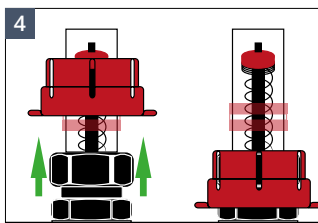
- Ensure the system is full and purged, see 'Step 3'.



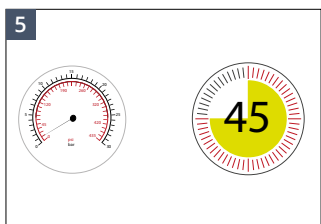
- Ensure both isolation valves are closed on the primary circuit.



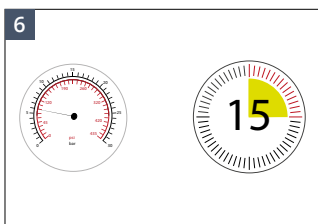
- Connect a hydraulic pressure tester to the flow arm fill valve and open it.



- Open the flow valves and the circulator isolation valve if a mixing unit is fitted.

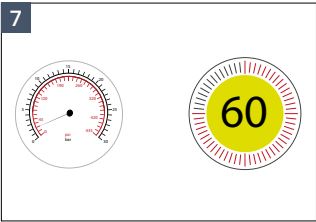


- Increase the pressure to 1 bar. Hold this pressure for 45 minutes, while inspecting the system for any leaks.

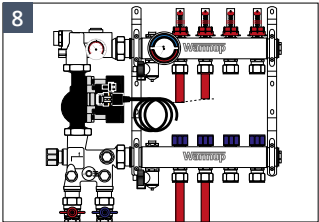


- Increase the pressure to 6 bar. Hold this pressure for 15 minutes and continue to inspect.


Step 4 - Pressure testing




- Reduce the pressure to 2 bar. Hold this pressure for 60 minutes and continue to inspect.




- Safely de-pressurise the system, record the results in the commissioning log.

- 

A small pressure loss may be apparent during Step 6, because at this pressure an oval pipe should inflate and become round again.
- 

If pressure loss is observed at any point during the pressure test, the test must be stopped and the system must be checked to establish the cause. Use the guide below to assist;

| | | |
|---|------------|--|
| <p>Pressurise the system to its previous test pressure and isolate all circuits using their flow and return valves.</p> <p>Is a pressure drop still persisting?</p> | YES | <p>There is a leak on the manifold assembly. Check all fittings, remake as necessary.</p> |
| | NO | <p>There may be a leak on one or more of the secondary circuits</p> <p>Open each circuits flow valve in turn.</p> <p>If the pressure drops as the valve is opened, then a leak is present on the associated circuit.</p> <p>If a leak is identified;</p> <ul style="list-style-type: none">• Safely de-pressurise the system• Isolate the leaking circuit• Locate and repair the leak• Repeat the pressure test |

- 

If a repair kit is used, ensure to record its location in the commissioning log.

Step 5 - Circuit balancing

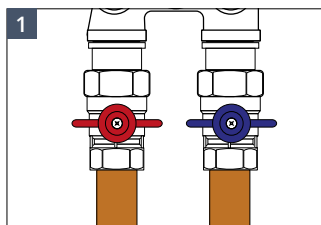
If the Warmup S3 mixing unit is installed, please follow the full guidance below. This will allow you to commission the manifold independently of the primary circuit supplying water from the heat source to the manifold.

With the Warmup S3 mixing unit installed, the primary circuit should be commissioned with the primary bypass on the mixing unit fully open and the secondary circuits supplying the floor closed.

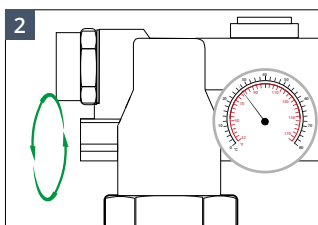
With condensing heat sources, the primary bypass on the mixing unit must be closed after commissioning the primary circuit, with all other heat sources it can be adjusted to provide the heat sources minimum flow rate in accordance with its manual.

The secondary bypass on the mixing unit should be fully closed. It should only be opened to increase the secondary flow rate when the primary circuit is unable to provide its design flow rate.

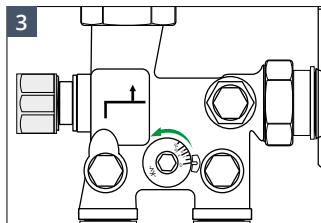
If the Warmup S3 mixing unit is not installed, please commission the primary circuit first and then balance the manifold in accordance with steps 7 and 8.



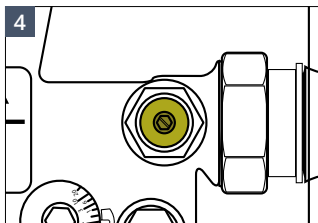
- Close the primary isolation valves.



- Open the circulator isolation valve, indicated by the slot being vertical.

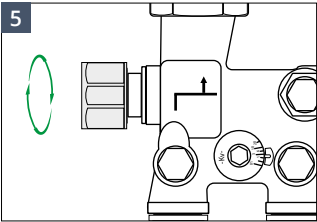


- Set the primary bypass to 01 to close, if supplied by a condensing boiler.
- For other heat sources this valve can be used to balance the primary circuit.

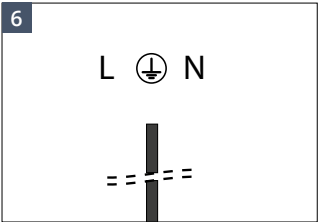


- Ensure the secondary bypass is closed.
- Remove the cap, loosen the central grub screw and then use a 6mm hex key to close the valve.
- Once closed, tighten the grub screw to lock the valve in place and replace the cap.

Step 5 - Circuit balancing



- Turn the isolating cap on the mixing unit clockwise until fully closed.

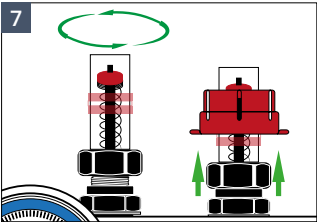


- Connect the mixing units circulator to a power supply and turn it on.

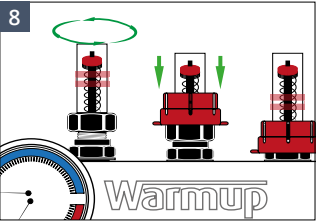
The S3 mixing unit (WHS-M-S3-MIX) incorporates a high efficiency Grundfos UPM3 circulator. The UPM3 has been designed with many applications in mind, so it must be correctly configured for use with our manifold.

Please refer to the Grundfos UPM3 manual packaged with the mixing unit to set into Constant Pressure Curve 3.

-
- Warmup recommends enabling the key lock on the Grundfos UPM3 circulator once the correct mode has been set to prevent tampering.



- Remove the flow-meter locking rings and fully open all circuit flow and return valves.



- Adjust the flow gauges for each circuit starting with the shortest circuit first. Replacing locking covers when all adjustments have been made.

Determining your flow-meter settings

- 1

If you have been provided with working drawings by Warmup, the required flow-rates will be specified on those drawings.
- 2

Alternatively, if you have a commissioning log from Warmup's online quote tool, the flow rates will be specified there.
- 3

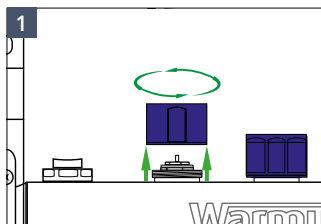
In the absence of point 1 or 2 above, the table below provides 'typical' flow rates, based on using a common floor construction with consistent loading throughout.
- 4

For guidance on calculating precise flow rates and water temperatures yourself, please contact Warmup.

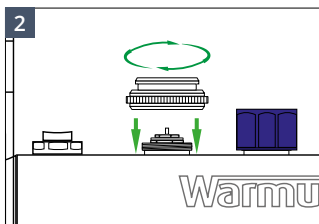
| Pipe Ø | Typical Flow Rate Setting, l/min | | | | | | | | | | | |
|-----------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | Pipe Length, m | | | | | | | | | | | |
| | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 12mm | 0.70 | 0.70 | 1.00 | 1.40 | 1.70 | 2.10 | 2.00 | - | - | - | - | - |
| 16mm | 1.00 | 1.00 | 1.00 | 1.20 | 1.50 | 1.80 | 2.10 | 2.50 | 2.80 | 3.10 | 3.00 | 2.80 |

Step 6 - Actuator mounting

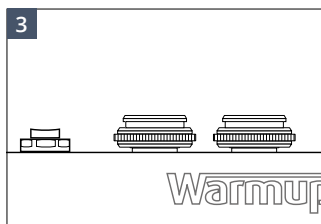
Adding Warmup actuators (WHS-M-S3-ACT230) to the manifold enables individual zone control of the heating system. The Warmup actuators are amongst the most energy efficient UFH actuators available, using just 1W of power.



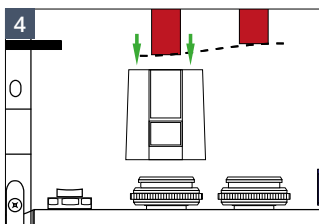
- Remove commissioning caps by turning anti-clockwise.



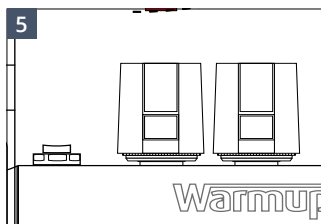
- Hand tighten the actuator collar onto the valve mounts, by turning clockwise.



- Repeat for all relevant circuits.



- Fit the actuator to the collar by pressing it down, until a 'CLICK' is heard.



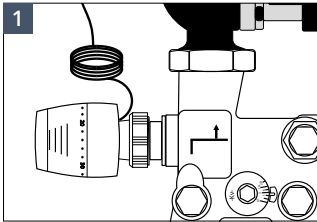
- Repeat for all relevant circuits, and wire actuators into the wiring centre.



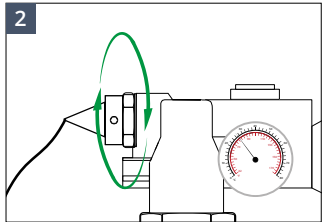
The actuators are supplied 'open' for easy mounting on the manifold. They will close the valve after being powered on and fully 'opened' for the first time.

Step 7 - Capillary thermostat mounting

With the system now filled, purged, pressure tested and balanced, the capillary thermostat actuator and sensor must now be mounted and set accordingly.



- Remove isolating cap from the mixing unit. Hand tighten the thermostatic head onto the mixing unit.



- Insert the capillary bulb into the mixing unit, secure with the grub screw. Ensure primary isolation valves are open.

The thermostatic head mounted to the S3 mixing unit (WHS-M-S3-MIX), enables the manifold to self regulate the water temperature to anywhere between 20°C and 60°C for tailored system performance.

It also provides the ability to lock the temperature control adjustment, creating a tamper-proof thermostatic head.

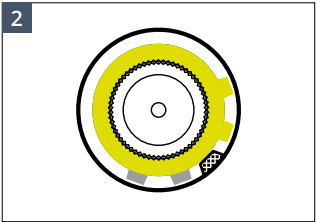
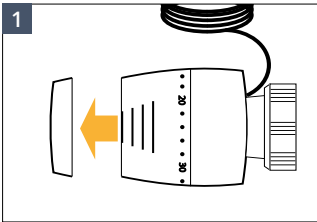
Step 8 - Temperature settings

Options for setting the temperature of the thermostatic head

- 1 If your system has been specified by Warmup, adjust the thermostatic head to produce the temperature specified on the working drawings used to install the system.
- 2 In the absence of a specification it is recommended that the water temperature is progressively increased until the required floor surface temperature is achieved without exceeding the flow water temperatures specified below.
- 3 For guidance on calculating flow rates and water temperatures, please contact Warmup.

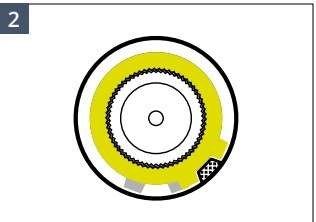
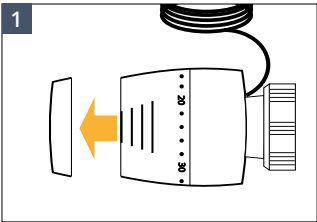
| Floor Construction | Maximum Recommended Temperature |
|--------------------|---------------------------------|
| Screed Floors | 55 °C |
| Timber Floors | 60 °C |
| All other Floors | See manufactures specifications |

Limiting temperature control adjustment



- Remove the cap from the thermostatic head using a flat blade screwdriver.
- Remove only the first adjustment wheel.
- Rotate the thermostatic head to the maximum permitted temperature. Place the adjustment back as shown.
- Replace cap.

Locking temperature control adjustment



- Remove the cap from the thermostatic head, using a flat blade screwdriver.
- Remove only the first adjustment wheel.
- Rotate the thermostatic head to the required temperature. Place the adjustment back as shown.
- Replace cap.

Step 9 - Initial heat cycle

To prevent damage to floors, BS EN1264 specifies the following commissioning procedures:

Screeds should not be heated until they have fully cured. The minimum curing periods proposed for various screed types are specified below.

| Screed type | Minimum length of time before initial heat cycle |
|----------------------------------|--|
| Standard sand and cement screeds | 21 Days |
| Calcium sulphate screeds | 7 Days |
| Proprietary screeds | See manufactures specifications |

The following table shows the initial flow water temperatures, which should be held for at least the specified length of time. Applies to all floor constructions:

| Temperature | Minimum length of time to maintain temperature |
|----------------------------|--|
| 20 °C - 25 °C | 3 Days |
| Maximum design temperature | 4 Days |



Under no circumstances should the underfloor heating system be used to speed up the curing process.

Commissioning log

| Installer details | | | | | |
|--|---------------------|---------------------------------|--------------------------|---------------------------|--------------------------|
| | Plumber | | Electrician | | |
| Name: | | | | | |
| Company: | | | | | |
| Address: | | | | | |
| Post code: | | | | | |
| Tel: | | | | | |
| Email: | | | | | |
| Project ref: | | | | | |
| Installation details | | | | | |
| Manifold Location | Temperature Setting | Purged and filled? | Pressure test completed? | Circuits balanced? | Fully operational? |
| | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Circuit Number | Room Served | Zone Number | Circuit Length | Circuit Flow Rate (l/min) | Pressure test passed? |
| 1 | | | | | <input type="checkbox"/> |
| 2 | | | | | <input type="checkbox"/> |
| 3 | | | | | <input type="checkbox"/> |
| 4 | | | | | <input type="checkbox"/> |
| 5 | | | | | <input type="checkbox"/> |
| 6 | | | | | <input type="checkbox"/> |
| 7 | | | | | <input type="checkbox"/> |
| 8 | | | | | <input type="checkbox"/> |
| 9 | | | | | <input type="checkbox"/> |
| 10 | | | | | <input type="checkbox"/> |
| 11 | | | | | <input type="checkbox"/> |
| 12 | | | | | <input type="checkbox"/> |
| Repair details (if any) | | | | | |
| Location of leak | Action taken | Location of fitting if repaired | | Pressure test passed? | |
| | | | | <input type="checkbox"/> | |
| | | | | <input type="checkbox"/> | |
| | | | | <input type="checkbox"/> | |
| Declaration | | | | | |
| I | name | of | company | | |
| hereby declare that the UFH system has been installed and fully commissioned in accordance with the guidelines set out within this installation manual | | | | | |
| Signed: | | | Date: | | |

Warmup plc T: 0345 345 2288 F: 0345 345 2299 www.warmup.co.uk
 704 Tudor Estate ■ Abbey Road ■ London ■ NW10 7UW ■ UK
Warmup GmbH ■ Ottostraße 3 ■ 27793 Wildeshausen ■ DE



Failure to present this commissioning log (accurately completed with declaration signed), upon request, will void system warranty.

Performance troubleshooting

| ISSUE 1 - No heat in any zone | |
|---|---|
| PROBLEM | SOLUTION |
| UFH system not turning on | Ensure the UFH controls are programmed correctly, and the heat source is able to provide hot water for the programmed period |
| Heat source or UFH circulator not operating correctly | Ensure at least one thermostat is demanding heat and that the switched live to the heat source is livened according to demand |
| Valves closed | Ensure isolation valves are open (primary/circulator), the flow gauges are correctly balanced and the thermostatic actuators are opening on demand (a blue band will be visible as the actuator cap raises) |
| Circulator seized | Refer to Grundfos UPM3 manual and follow the Anti-Blocking Concept guidance |
| ISSUE 2 - Some zones do not become warm | |
| PROBLEM | SOLUTION |
| Air lock within the pipes | Refer to Step 3 - Circuit filling & purging |
| Manifold incorrectly balanced | Refer to Step 5 - Circuit balancing |
| Actuator faulty | Ensure the thermostat for this zone is demanding heat and that the signal to the actuator is livened according to demand. If signal voltage is present, replace actuator. |
| Crossed controls | Ensure the thermostats are controlling the correct circuits |
| ISSUE 3 - Zone takes a long time to heat up | |
| PROBLEM | SOLUTION |
| Manifold incorrectly balanced | Refer to Step 5 - Circuit balancing |
| Flow temperature set too low | Refer to Step 8 - Temperature Settings |
| High heat losses | Some rooms and combination of floor finishes will have higher heat losses than others. Which will take longer to heat. The effects can be compensated for by setting the heating to come on for longer in these zones |

| No heat in any zone | |
|-----------------------------------|--|
| SOLUTION | |
| 1. | Check thermostat/controls are set 'on' |
| 2. | Check the heat source is operating and supplying heat to UFH system |
| 3. | Check the primary isolation valves are open |
| 4. | Check the mixing unit secondary bypass is closed |
| 5. | Check circulator isolation valve is open |
| 6. | Check the circulator is operating, while there is demand for heat, and set to operate on constant pressure 3 |
| 7. | Ensure flow gauges are balanced correctly (Refer to Step 5 - Circuit balancing) |
| 8. | Check commissioning caps are open. If actuators are fitted, check operation and signal voltage |
| Some zones do not become warm | |
| SOLUTION | |
| 1. | Ensure any trapped air has been expelled from the system (Refer to Step 3 - Circuit filling & purging) |
| 2. | Check zone thermostat/controls are set to constant |
| 3. | Check zone flow gauge is balanced correctly (Refer to Step 5 - Circuit balancing) |
| 4. | Check the circulator is operating, while there is demand for heat, and set to operate on constant pressure 3 |
| 5. | Check circuit commissioning caps are open. If actuator fitted check operation and signal voltage. |
| 6. | Check circuit pipework and actuator wiring are correct |
| Zone takes a long time to heat up | |
| 1. | Check zone flow gauge is balanced correctly (Refer to Step 5 - Circuit balancing) |
| 2. | Check the circulator is operating, while there is demand for heat, and set to operate on constant pressure 3 |
| 3. | Check the zone isolating cap is fully open |
| 4. | Check zone actuator is fully opening (a blue band will be visible as the actuator cap rises) |

Technical specifications

S3 Manifold (WHS-M-S3-XX)

| | |
|--------------------------------|---------------------------------|
| Material | 304 Stainless Steel |
| Ports available | 2 - 12 |
| Temperature range | -5°C to +60°C |
| Max operating pressure | 6 Bar |
| Max test pressure | 10 Bar |
| Adjustment range | 0 - 5 l/min |
| Measuring accuracy | ±10% (of highest nominal value) |
| Manifold arm dimensions | 40 mm x 40 mm |
| Pipe fitting centres | 50 mm |
| Pipe fitting diameters | G-3/4" |

Grundfos UPM3 25-70 130

| | |
|-------------------------------|---|
| Operating voltage | 230 V AC: 50Hz |
| Connections | G1 1/2" |
| Weight | 1.9 (kg) |
| System pressure | Max. 1.0 MPa (10 bar) |
| Minimum inlet pressure | 0.05 MPa (0.50 bar) at 95°C liquid temperature |
| Liquid temperature | +2°C to +110°C (TF110) |
| Enclosure class | IP44 (non-condensing) K: IPx4D (condensing) |
| Motor protection | No external protection needed |
| Approval and marking | VDE, CE, UKCA |

S3 Actuators (WHS-M-S3-ACT230)

| | |
|------------------------------|----------------------|
| Operating voltage | 220-240 V AC 50/60Hz |
| Operating temperature | 0 to +60 °C |
| Power | 1 W |
| De-energized position | Normally closed |
| Inrush current | max. 550 mA |
| Stroke | 4 mm |
| IP rating | IP54 |
| Storage temperature | -25 to 60 °C |
| Approval and marking | CE, UKCA |

**Warmup plc limited warranty –
WHS-M-S3 Series Manifolds**



Registration can be completed online at www.warmup.co.uk.
In the event of a claim, proof of purchase is required in the form of an invoice or receipt.

THIS WARRANTY DOES NOT EXTEND TO ELECTRICAL COMPONENTS OR TO COMPONENTS WHICH ARE COVERED BY SEPARATE WARRANTIES.
THIS WARRANTY DOES NOT AFFECT YOUR STATUTORY RIGHTS.

Limited warranty:

Warmup® WHS-M-S3 Series Manifolds warranted by Warmup plc (“Warmup”) to be free from defects in manufacturing under normal use and maintenance, and is warranted to remain so subject to the limitations and conditions described below.

This warranty period begins on the date of purchase. The warranty only applies if the product is registered with Warmup within 30 days after purchase and registered online at www.warmup.co.uk. Registration is confirmed only when confirmation of receipt is forwarded by Warmup plc.

Warranty duration

- The S3 Series Manifold (WHS-M-S3-XX) is warranted for a period of 10 years from date of purchase, except as provided below; your attention is drawn to the exclusions listed at the end of this warranty.

Notification of a suspected failure must be received in writing by Warmup within thirty (30) days of the suspected failure. Products believed to be defective must be made available to Warmup for testing and determination of cause.

Upon acceptance of any warranty claim, Warmup shall have ninety (90) business days in which to investigate and determine whether it recognises responsibility for any believed defects in material or workmanship and determines the appropriate course of action to be taken.

It is expressly agreed that the sole remedies under this limited warranty shall be at the discretion of Warmup plc to either: issue a refund, repair or replace any article which is proven to be defective. Any and all allowances made to customers for transportation, labour, repairs or all other work, are at the exclusive discretion of Warmup and shall be authorised in writing, in advance, by Warmup. Such cost does not extend to any cost other than direct costs of repair or replacement by Warmup and does not extend to costs of relaying or repairing any floor covering or floor.

The warranty applies to the manifold(s) if they:

-
1. Are registered with Warmup within 30 days after purchase.
 2. Are selected, designed and installed by a qualified contractor according to installation instructions provided by Warmup which are current as of the applicable installation date.
 3. Are connected to appropriate power and water supplies.
 4. Are installed according to all applicable building code requirements.
 5. Are not exposed to pressures and/or temperatures that exceed any limitations printed on the warranted product or in the applicable Warmup product installation manual.
 6. Remain in their original installed location.
 7. Do not show evidence of accidental damage, misuse, lack of care, tampering, or repair or modification without the prior written approval of Warmup plc.
-



Warmup plc

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uk@warmup.com

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F: 0345 345 2299



**Please scan the QR code to provide
feedback on your installation**

Warmup

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5265707. E & OE.

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