



MULTIPIPE

UNDERFLOOR HEATING INSTALLATION GUIDE

V9 September 2026

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CHECKING YOUR ORDER

Upon delivery of your underfloor heating system, please check all products are correctly supplied against corresponding delivery note. Please contact us on **01245 227 630** within 24 hours of receipt if there are any problems with your delivery.

MultiPipe Ltd
Unit 12 Great Hayes Business Park
Lower Burnham Road, Stow Maries
Chelmsford
Essex
CM3 6SQ
Tel : 01245 227630
Email : info@multiPipe.co.uk
VAT Reg No: 135769973

MULTIPIPE

DELIVERY NOTE Page 1

Order No	
Order Date	
Your Order No	
Account Ref	

This is not a V.A.T Invoice

Qty Despatched	Product Code	Description	Qty Remaining
1.00	UNDERFLOORHEATING	Underfloor Heating Design / Install Guide - Q10625/1	0.00
3.00	10-16751	75m coil 16x2 MLCP Pipe	0.00
3.00	10-16101	100m coil 16x2 MLCP Pipe	0.00
3.00	10-16121	120m coil 16x2 MLCP Pipe	0.00
2.00	10-16050	50m Coil Black Conduit 25mm Ø (16mm pipe)	0.00
1,800.00	10-16306	60mm Pipe Staple for use with Tacker Gun / 300 per box	0.00
3.00	10-50150	50m Roll Edge Insulation 8mm x 150mm Inc Apron	0.00
1.00	35-16110	FMC 10-Port 1" Manifold with Flow Meters	0.00
1.00	35-14049	FMC Pair 1" UPH Manifold Ball Valve (Red/Blue)	0.00
1.00	35-53128	FMC Pair of Manifold 1" End Caps [ZL-2811A/ZL-2841B]	0.00
20.00	20-03161	FMC 16x2 (3/4"PT) Compression Eurocone [Use with FMC M/fold]	0.00
1.00	28-06151	FMP/B/C 15kw Pump Control Pack with A rated pump [W/E]	0.00
1.00	TEXT	***** CONTROLS *****	0.00
10.00	10-23023	230volt 2 Wire Actuator Normally Closed	0.00
1.00	29-23042	Honeywell 2 Port Motorised Zone Valve [22mm]	0.00
5.00	15-23001	230v Dial Thermostat NSB (no remote sensor)	0.00
1.00	15-23013	230v 8 Zone Master Wiring Centre	0.00
1.00	15-23015	230v LCD Programmable Single Channel Time Clock	0.00

Deliver To :

Please take time to check delivery for any shortages. All claims must be made within 48 hours upon receipt of goods.

If you need to return any items please request a copy of our returns procedure and Goods Return Form (GR01).

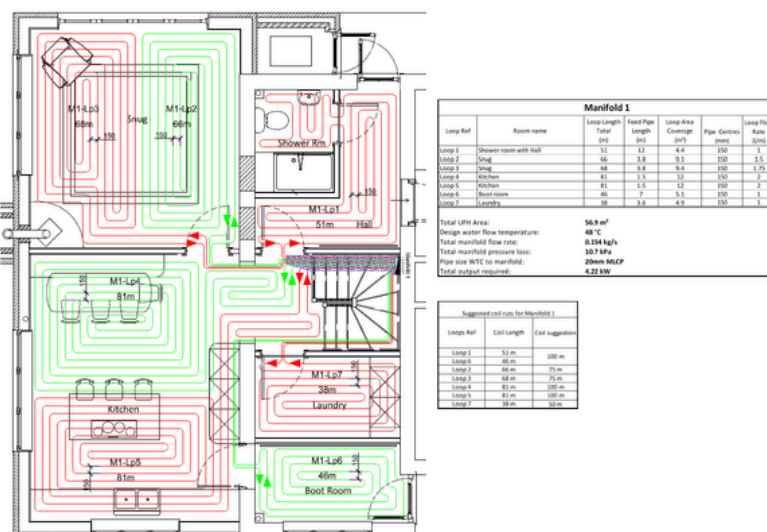
All goods supplied correctly and as ordered are subject to a 35% re-stocking fee. Your signature confirms that all goods received are as ordered, and in good condition. Please take time to ensure all goods are not damaged before you sign for receipt of delivery.

LINE DRAWINGS

(if applicable to your order)

If you have requested a line drawing with your order, please check thoroughly before commencing installation of the UFH to ensure it meets with your requirements. Please pay particular attention to the following:

- The manifold is indicated in the correct position
- That all loop lengths match the supplied pipework
- That all the room areas to be heated are indicated correctly
- That all unheated room areas are indicated i.e. understairs
- That the floor constructions are correct



Line Drawing showing completed UFH pipe layouts

PROJECT TOOLING

Before installation of the underfloor heating system, please ensure you have the following tools:
(depending on the type of installation additional tools may be required)

- Tape measure
- Masonry drill & bits
- Adjustable spanners/wrench
- Pipe cutter & bevelling tool
- Hose pipe
- Pressure tester
- Screw drivers
- Stanley knife
- Spirit level
- Tacker gun
- Anti-freeze protection
- Fine toothed hand saw
- Suitable wall fixings (for manifold)
- Marking pen

SITE REQUIREMENTS

Before installation of the underfloor heating system please ensure the following site requirements are met:

- The working area must be weather tight
- The working area must be clean and swept of any debris or rubbish
- Access to mains pressure water for filling and testing
- Task lighting & power
- Any site specific safety & access equipment/scaffolding PPE etc



TOOLING

The following items are available to buy from Multipipe Ltd, please contact our office for price and availability.

Pipe Bevelling tool

11-30281



Pipe Cutter

11-30020



Pipe Staple Tacker Gun

Compatible with
Multipipe Staples only
10-50000E



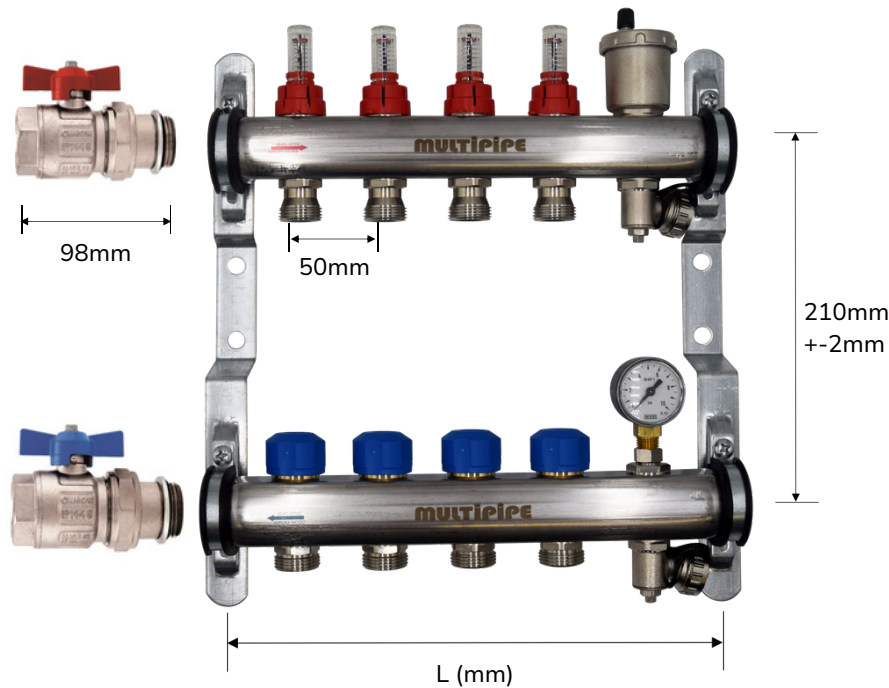
Pipe Decoiler

Recommended for use with 200m+ pipe coils
10-50003



MAXIMA UFH FLOWMETER MANIFOLD

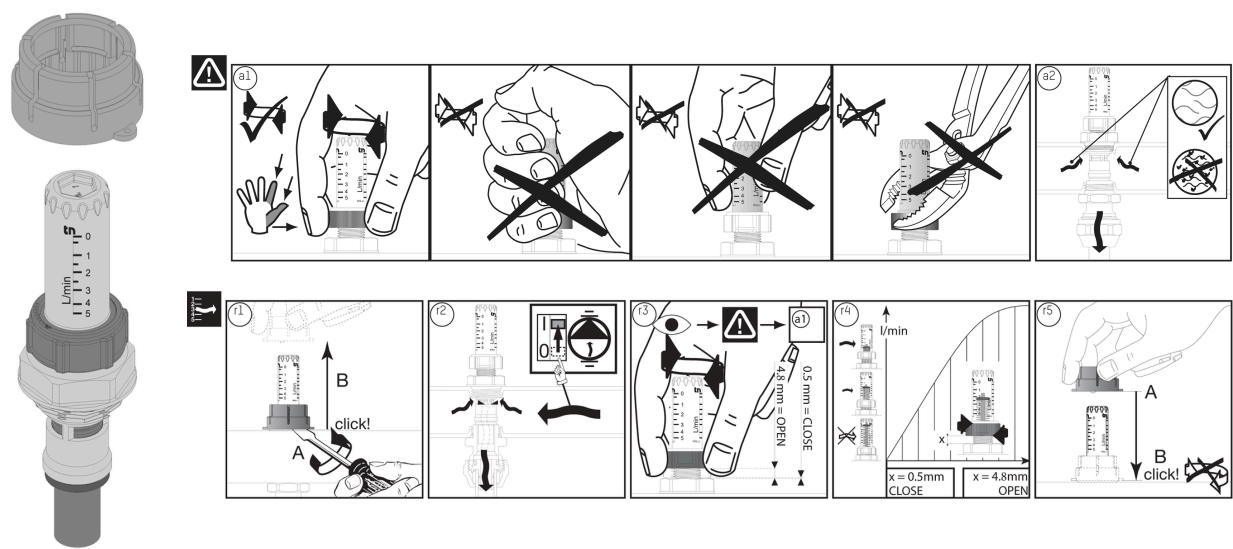
Multipipe stainless steel manifolds are pre-assembled and supplied with flow meters, fill and drain points, air vents, and blanking plugs. The manifolds are constructed from high-grade stainless steel. Each return rail features a capped integrated electrothermal body (ready for actuator head) per circuit. Flow meters provide a visual indication of the flow rate through each circuit. Pipes are connected to the manifold using 3/4" Eurocone pipe connectors.



Manifold Ports	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L (mm)	205	255	305	355	405	455	505	555	605	655	705	755	805	855	915

FLOW METER ADJUSTMENT

The Manifold Flow Meters are supplied in an open position. You can adjust the flow rate of each circuit by following the instructions below, in accordance with the chart on Page 6 or the design flow rates from your pack.



MAXIMA UFH FLOWMETER MANIFOLD

INSTALLATION OF ELECTROTHERMAL ACTUATOR



Remove the plastic cap from the valve installed on the manifold bottom return bar.



Ensure the actuator is wired to the correct zone, then set the actuator to manual.

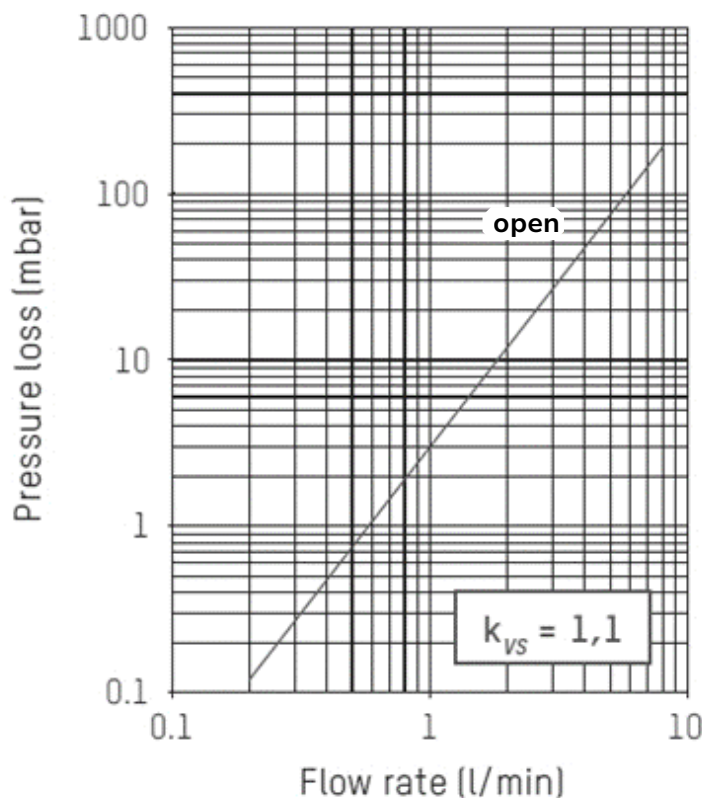


Screw the actuator into place and wire into the control box.
NOTE: Mark the port number on the actuator.



Lastly, ensure you move the actuator back to Auto, or the system will not operate correctly.

FLOWMETER MANIFOLD



Manifold Technical Data: Available Sizes 1"

Maximum operating pressure with installed flow meters:

6-bar (10-bar for installation test @ 20°C)

Suitable fluids:

Water, glycol solutions (max. 30%)

Maximum working temperature:

70°C (with flowmeters), 80°C (with lockshields)

Outlets:

2-16 ports

Pipe Connection:

3/4" male thread (Eurocone)

Threads:

ISO 228 (equivalent to DIN EN ISO 228 and BS EN ISO 228)

Outlet Centre distance:

50mm

Flowmeter Scale:

0-5 L/min (preset to fully open)

Accuracy:

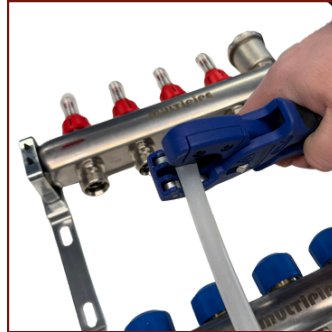
±10%

INSTALLATION OF EUROCONE ADAPTERS

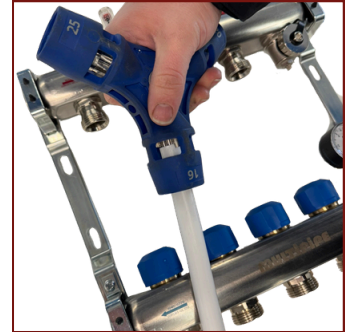
All Multipipe manifolds use a compression style fitting, which allows for connection from the 3/4" Eurocone thread on the manifold to the various pipes we supply. Ensuring the correct fitting procedure is followed is key to a leak-free and trouble-free system.



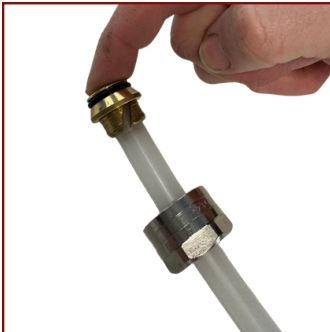
Mark the pipe to the depth set out below.



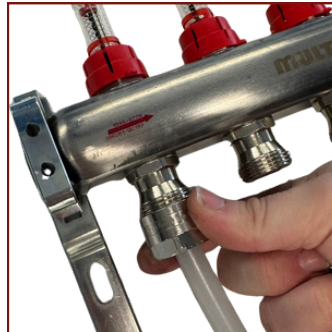
Mark the pipe directly under the thread of the manifold and cut down.



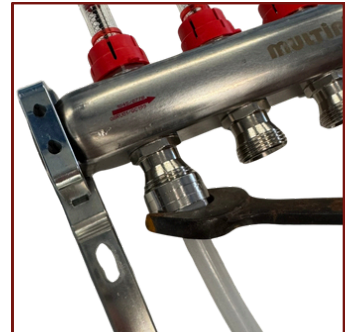
On MLC pipework it is required to bevel the pipework (for PE-RT and PEX pipe no bevel is required).



Slide the nut on, then the split-ring olive over the pipe. Lastly, insert the adapter.



Hand tighten onto the manifold.



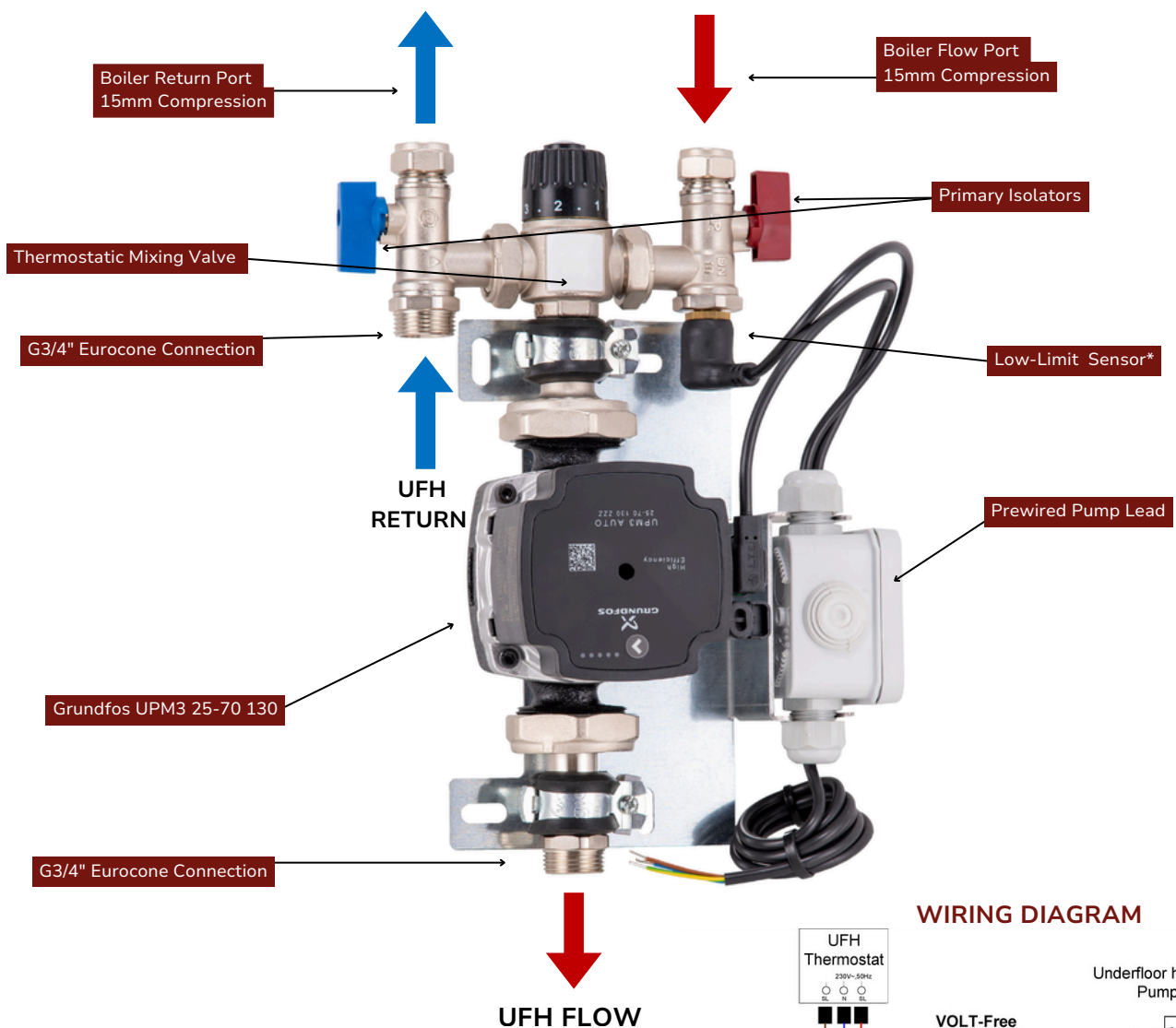
Using a spanner, tighten the nut to the table below, also ensure after tightening the pipe mark appears.

PIPE SIZE	PIPE WALL THICKNESS	PIPE MATERIAL	NUMBER OF TURNS FROM HAND TIGHT	INSERTATION MARK (MM)	EUROCONE PART NUMBER	SPECIFIC TORQUE RATING
12mm	1.4mm	PE/PB	1	11	20-03124	35nm
12mm	1.6mm	PE/PB/MLC	0.75	10	20-03123	30nm
12mm	2.0mm	PE/PB	1	10	20-03122	30nm
14mm	2.0mm	PE/PB	1	9	20-03141	30nm
15mm	2.0mm	PE/PB	1	9	20-03151	30nm
16mm	2.0mm	PE/PB/MLC	0.75	9	20-03161	30nm
17mm	2.0mm	PE/PB	1	9	20-03171	30nm
20mm	2.0mm	PE/PB	1	9	20-03203	30nm
20mm	2.25mm	PE/PB/MLC	0.75	10	20-03201	30nm

SINGLE ZONE CONTROL PACK

MODEL: 40-04157

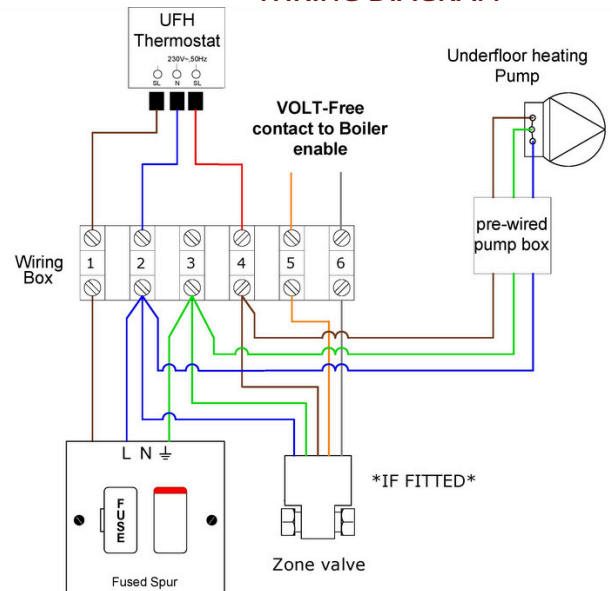
The Multipipe Single Zone Pump Set is an easy way to add up to 2 new pipework loops to a high-temperature system. This compact unit mixes, pumps, and distributes UFH throughout your system. Made from high-quality components, it is the best way to easily add a small single UFH zone. You can set a fixed temperature between 30-65°C, and the unit will blend to that temperature. Where two loops are required, these should be of equal length and will require a Y splitter.



FULL INSTALLATION GUIDE:



WIRING DIAGRAM



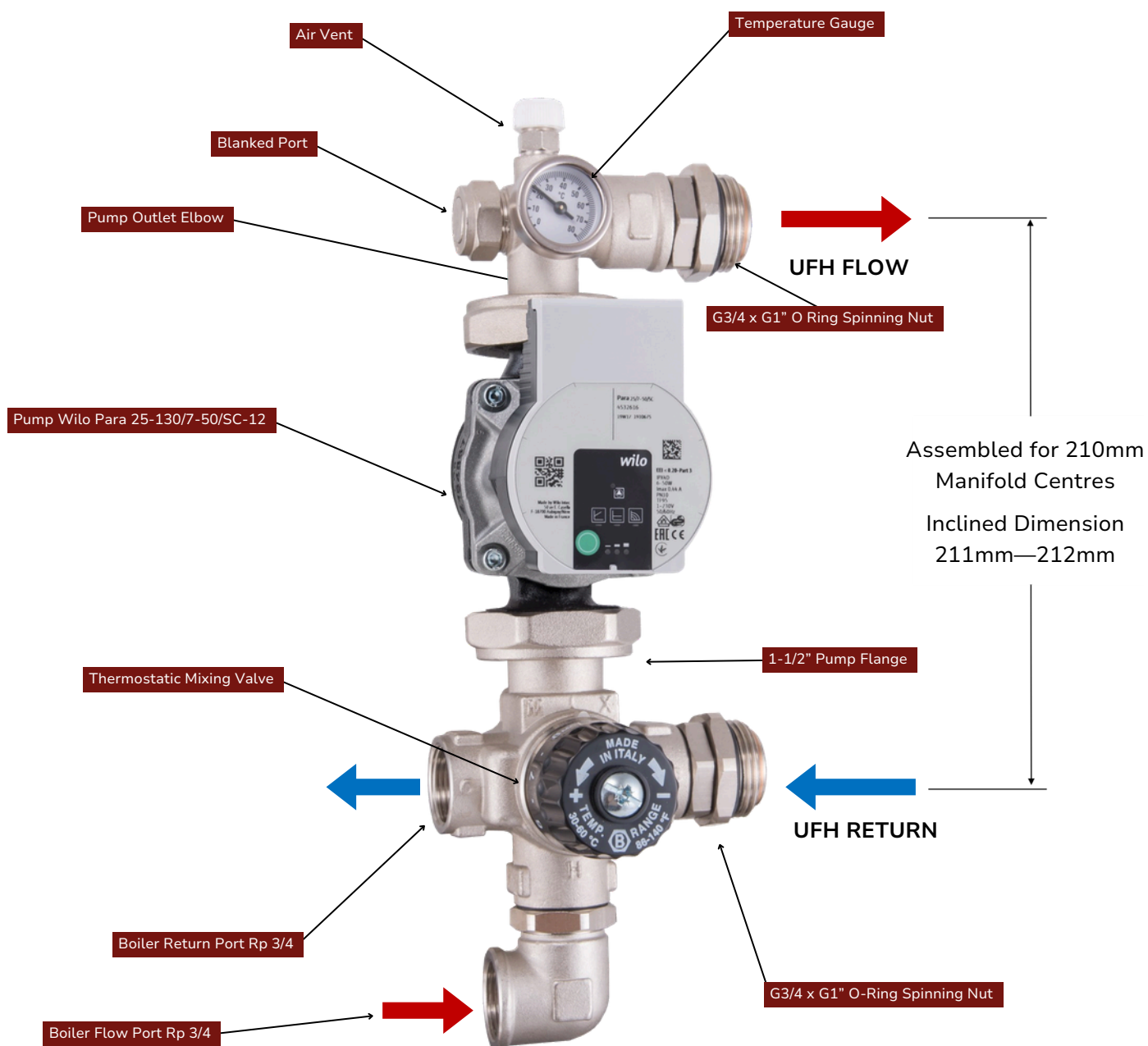
MIXED PUMP CONTROL PACK

MODEL: 40-06151-W

Suitable for up to 20kW heating load, this compact underfloor thermostatic mixing control, complete with Pump Wilo Para 25-130/7-50/SC-12, has been designed for direct connection to heating manifolds with 210mm centres and is supplied with G1 male O-ring-sealed connections as standard.

Its versatile design and O-ring connection system provide for simple and quick conversion from left to right-hand format if required.

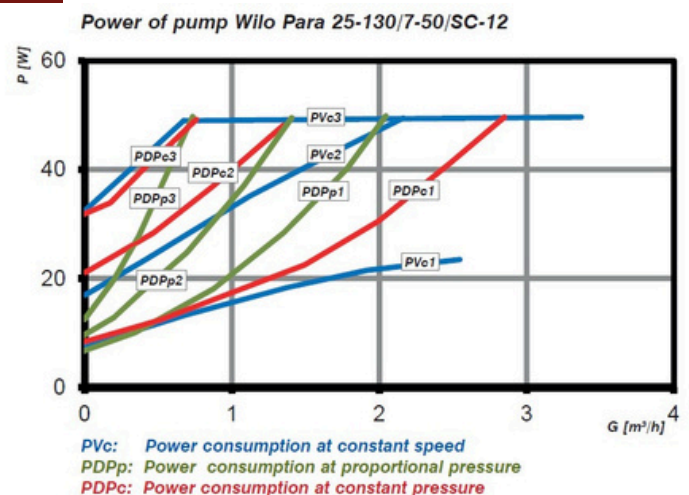
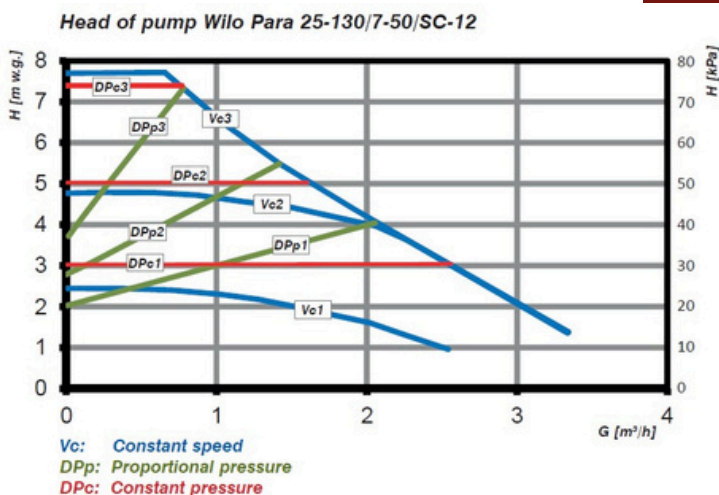
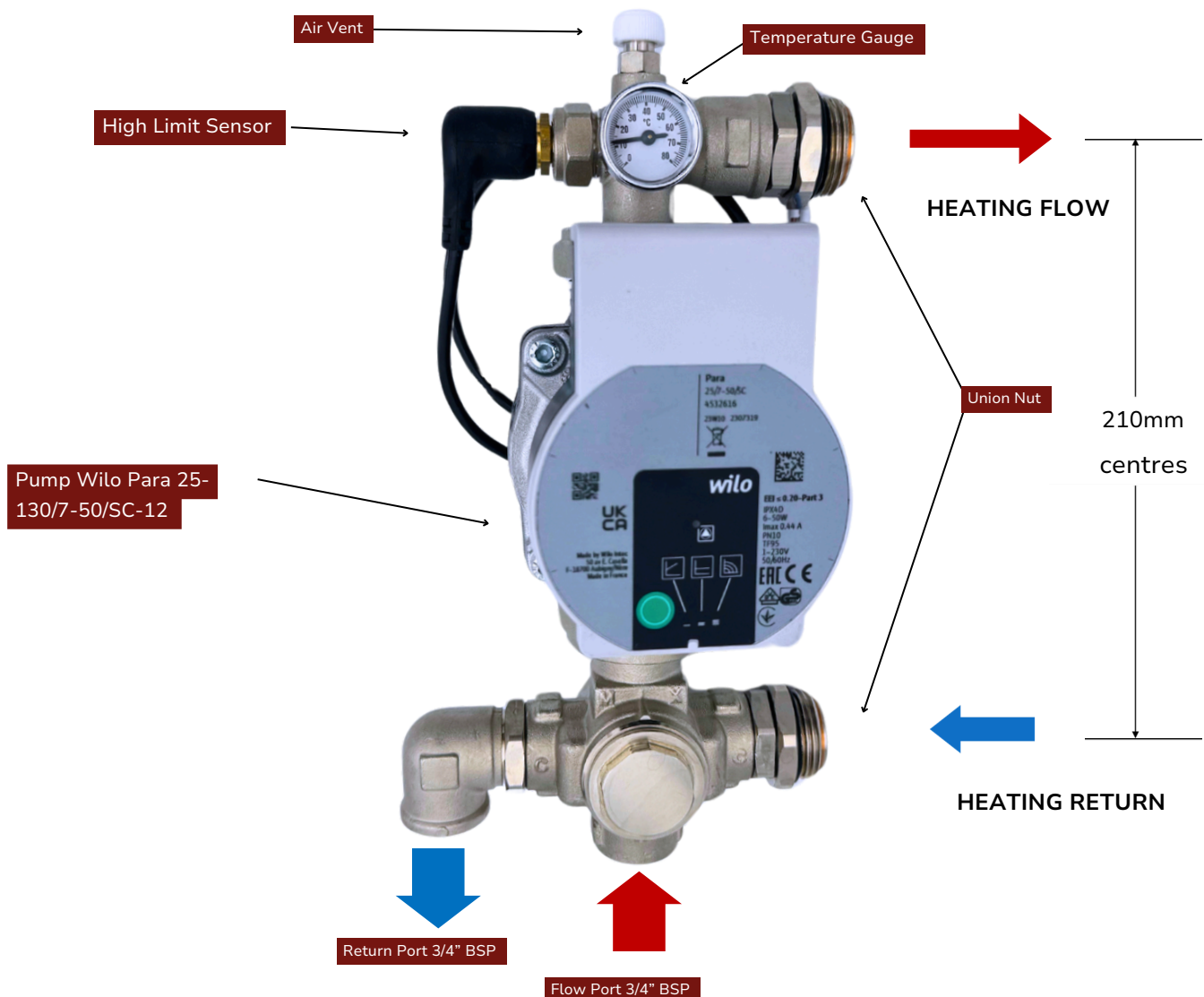
Installing the control pack on the manifold is simple and quick, requires no additional supporting bracket, and thus eliminates the need for time-consuming drilling and fixing.



DIRECT FLOW PUMP PACK

MODEL: 40-06156

Suitable for up to 20kW of heating load, this compact pump set is designed to boost the primary pump in low-temperature water systems. Designed with no mixing control, this allows for maximum flow temperature to the manifold. Coupled with a height-limit thermostat, this ensures that if a problem were to occur, it would not damage the floor. **Please note: this should be wired in line with the zone valve, with the pump separate. This ensures that, in the event of a failure, the heat does not remain at the manifold bar and quickly dissipates.**

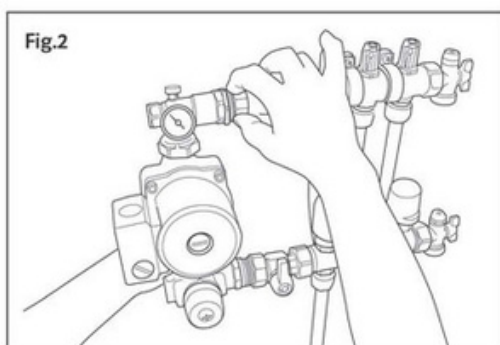


PUMP CONTROL PACKS

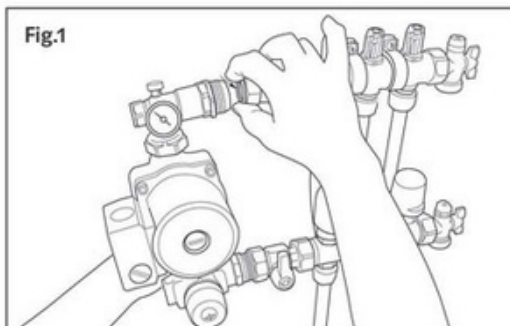
MODEL: 40-06151-W & 40-06156

INSTALLATION

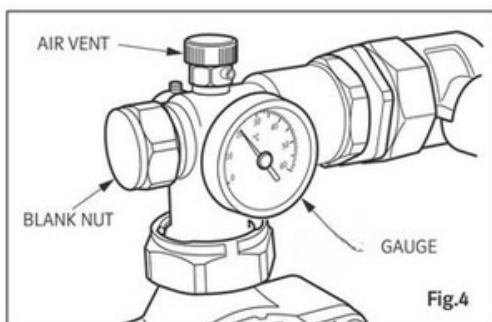
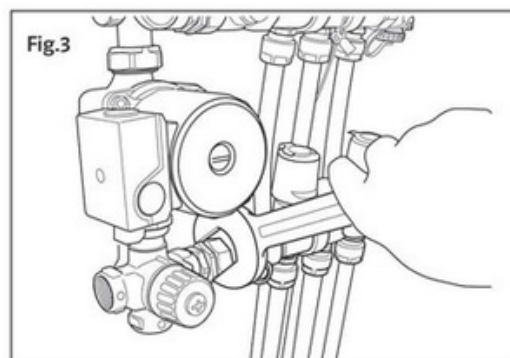
Insert the G1 spinning nut into the female sockets of the isolating ball valves on the manifold. Offer the control unit to the sockets, locating the bottom (TMV) connection first (Fig. 1) then swing the top (mixed flow) connection, aligning the assembly, then push forward until G1 male threads mate with female connections.



Screw top and bottom G1 connection spinning nuts alternately a few turns at a time to maintain alignment (Fig. 2) until fully engaged.



Tighten spinning nuts (Fig. 3) using appropriate tools, ensuring both ends of spinning nut are tightened at the same time in order to seal both O ring connections.

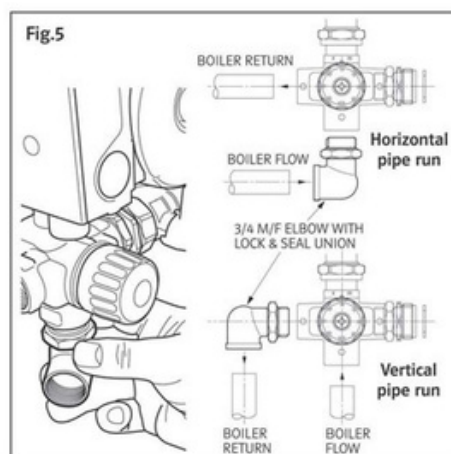


PUMP OUTLET ELBOW

The pump outlet elbow (Fig. 4) is fitted with air vent, a blanked port for optional bypass kit and two temperature gauge sockets with fixing screw. A temperature gauge (optional extra) can be fitted to either socket so allowing for left or right handing of manifold connections.

BOILER CONNECTIONS

The 3/4" elbow provides for the option of vertical or horizontal connection of the primary pipe work with the boiler. For vertical pipe runs connect the elbow to the return port and for horizontal pipe runs connect the control valve flow port (Fig. 5). Screw in the male thread until the O-ring contacts the valve port face then continue to turn clockwise within 1 turn until aligned suitably for the connecting pipe run. Tighten the locknut to secure and seal. *Do not over tighten.*



WATER TEMPERATURE PUMP CONTROL PACK

MODEL: 40-06151-W & 40-06156

ELECTRICAL CONNECTION

Connect the pump and zone valves (if fitted) to the electrical control circuit serving the system.

COMMISSIONING

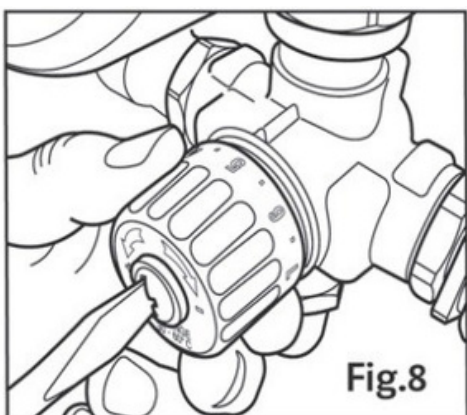
To protect and prevent damage to the mixing control and other devices in the heating circuits, it is recommended that the pipework connecting to the boiler be thoroughly flushed of flux and debris before final connection, filling, and venting of the heating control and system.

With the manifold isolated but filled and pressurised, open the supply connecting the mixing control to the boiler. Purge the primary pipework until free of air. Then vent the control unit through the outlet elbow. Check that the primary pipework and controls are filled and at system pressure, then check all joints for leaks. Open the isolating valves on the manifold to integrate the primary circuit and mixing control and heating circuits. Check again that the system pressure is correct and that all connections are good. Finally check that the integrated system is free of air via the pump outlet elbow vent and the manifold vents.

MIXING CONTROL ADJUSTMENT (TEMPERATURE SETTING)

The thermostatic mixing valve (TMV) is factory set to provide 45°C mixed water to the heating manifold. The mixed water flow temperature can be adjusted and locked very simply to suit the designed flow requirements within the temperature range of 30-60°C.

With the boiler on and the heating circuits balanced the mixed temperature is easily adjusted by the following method.



1. Unscrew the central screw (Fig 8) approximately ½ turn anti clockwise to release the clutch locking mechanism.

2. Turn the knob clockwise to decrease and anti clockwise to increase the temperature.

3. The numbers on the control knob indicate the approximate mixed flow temperature when aligned with the indicator rib on the valve body. Refer to Table 1.

4. Select on the dial the temperature required as shown in Table 1. **Please note if using on a screed floor please see pre-heating on page 16 first!** Once pre-heating is complete this should be set to the temperature given on the commissioning sheet alternatively:

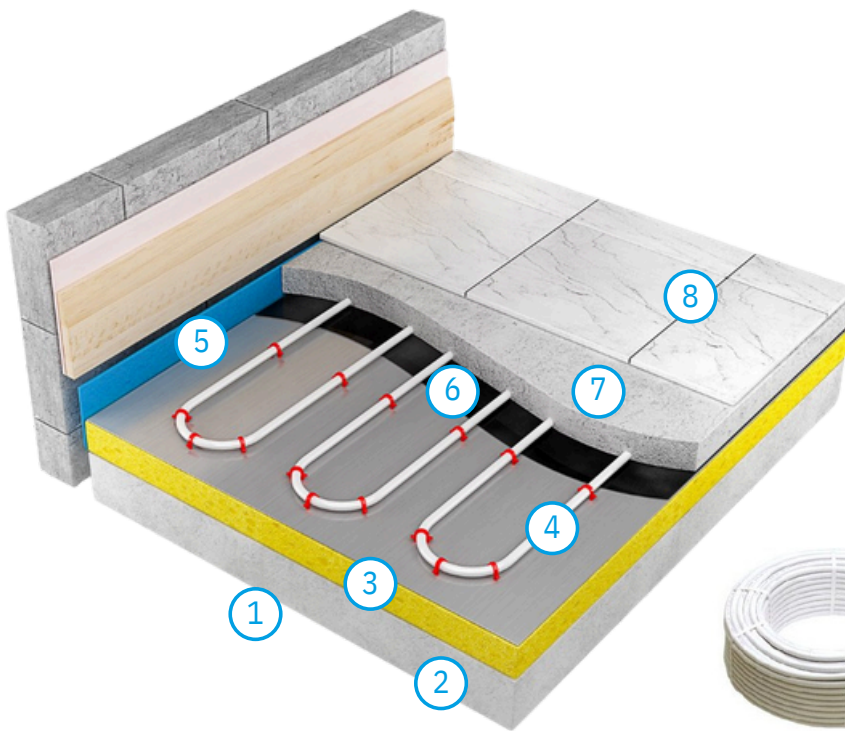
Altis Flow & Fortis PRO/LITE (direct tiled)	40°C
Altis Dry, Screed systems Fortis PRO/LITE	45°C
All Fortis systems and HEPs	50°C

Min	=	30 °C
1	=	34 °C
2	=	38 °C
3	=	41 °C
4	=	43 °C
5	=	45 °C
6	=	47 °C
7	=	50 °C
8	=	54 °C
Max	=	60 °C

Table 1

5. Tighten the central screw (Fig. 8) approximately ½ turn clockwise to engage the clutch mechanism and lock the temperature setting.

SCREED: STAPLE UFH SYSTEM



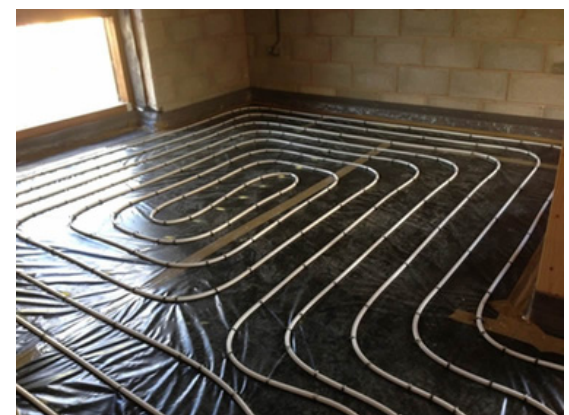
1. Structural Subfloor
2. Damp Proof Membrane
3. Insulation board to Part L
4. UFH Pipe secured with Pipe Staples
5. Edge Insulation*
6. Membrane
7. Screed
8. Finished Floor



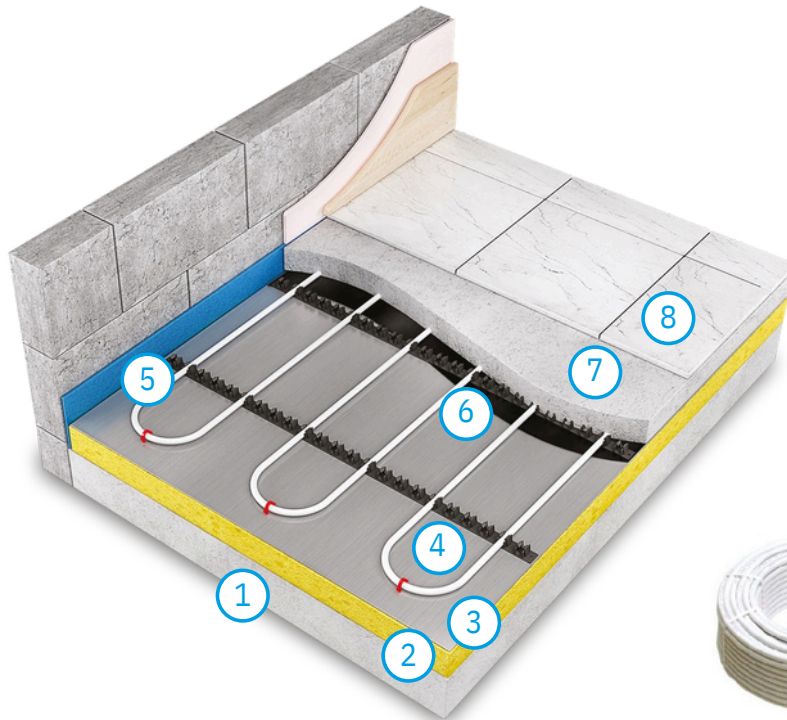
INSTALLATION

Before installation can begin, the subfloor must be cleared of all debris and rubbish.

- Pipe Staples are available in 40mm or 60mm depth for stapling to insulation.
- Edge insulation is to be installed on all walls. ***Where external wall insulation is fitted, edge insulation is required in addition to this to reduce cracking.**
- Floor insulation must be laid above any DPM sheet to ensure the UFH system staples do not damage it.
- Board U-values must comply with Part L Building regulations to reduce downward heat losses. *Insulation boards should be butted up against the perimeter strip and laid in a staggered formation, and joints taped if the slip membrane is not installed.*
- We recommend using a minimum 500 gauge polythene layer on top of the insulation to form a slip membrane and prevent ingress of screed into the insulation zone, which will cause damage to the foil on PIR boards. Ensure joints are taped and lapped by 100mm minimum.
- Ensure the apron on the edge insulation is taped to the top of the membrane to provide a sealed floor area.
- Depending on your pipe layout, lay the pipe a minimum of 100mm from the walls. Follow the pipe pattern as provided on your UFH layout drawing (if provided) using the pipe staples offered to help secure the pipe to the insulation board below. We recommend Staples to be spaced evenly every 500mm. A tackler gun is recommended. See page 4.
- Connect the pipework to the manifold and label it with the room name and loop number. This helps to identify when commissioning the system later.



SCREED: CLIP RAIL UFH SYSTEM



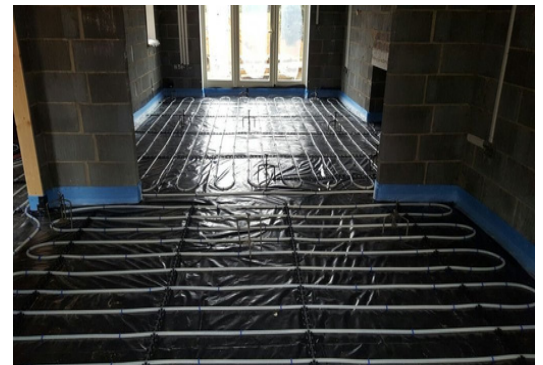
1. Structural Subfloor
2. Damp Proof Membrane
3. Insulation board to Part L
4. UFH Pipe Staples/Clip Rail
5. Edge Insulation
6. Membrane
7. Screed
8. Finished Floor



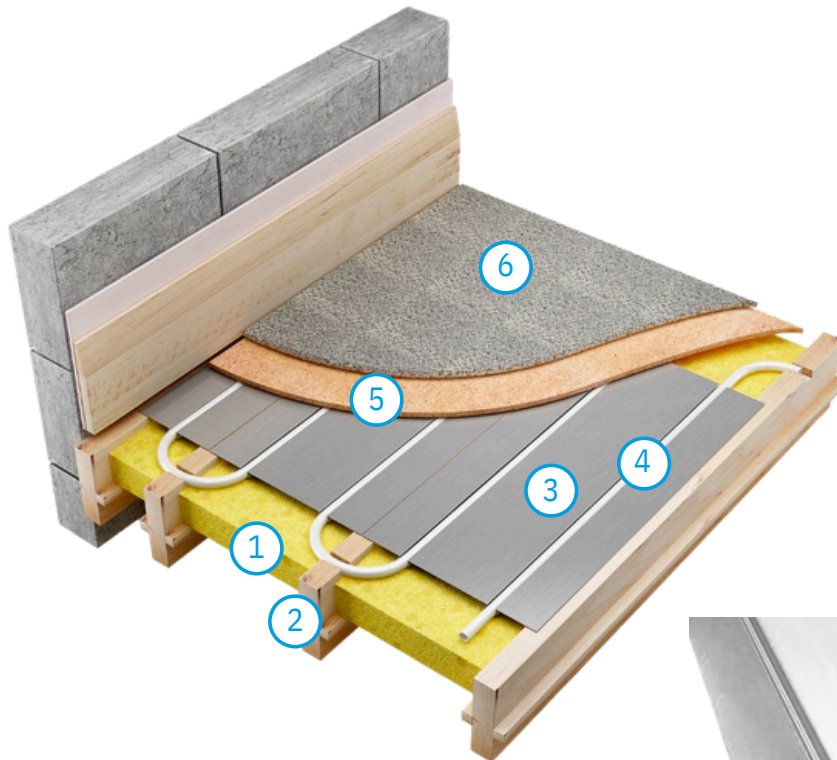
INSTALLATION

Before installation can begin, the subfloor must be cleared of all debris and rubbish.

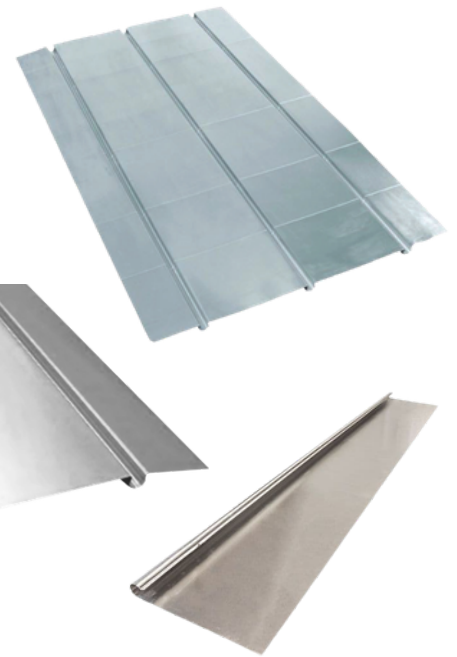
- Clip-Rail is available in 1m lengths that can be snapped every 200mm. Also, clip rail tracks can be clipped together into one continuous length.
- Edge insulation is to be installed on all walls. **Where external wall insulation is fitted, edge insulation is required in addition to this to reduce cracking.**
- Floor insulation must be laid into the floor (either above or below the subfloor).
- Board U-values must comply with Part L Building regulations to reduce downward heat losses. *Insulation boards should be butted up against the perimeter strip and laid in a staggered formation, and joints taped if the slip membrane is not installed.*
- We recommend using a minimum 500 gauge polythene layer on top of the insulation to form a slip membrane and prevent ingress of screed into the insulation zone, which will cause damage to the foil on PIR boards. Ensure joints are taped and Lapped by 100mm minimum.
- Ensure the apron on the edge insulation is taped to the top of the membrane to provide a sealed floor area.
- Ensure the clip rails are laid every 1m if using pipe staples or 500mm if you are just using clip rail.
- Depending on your pipe layout, lay the pipe a minimum of 100mm from the walls. Follow the pipe pattern on your UFH layout drawing (if provided). If using staples these can be used in-between rails and on the bends.
- Connect the pipework to the manifold and label it with the room name and loop number. This helps to identify when commissioning the system later.



TIMBER: JOIST PLATE UFH SYSTEM



1. Supported Insulation
2. Structural joists
3. HEPs saddling joist
4. Pipework
5. Structural floorboards
6. Finished Floor



INSTALLATION

A minimum of 100mm quilt insulation is required with a ridged floor/insulation underneath that is supported by a minimum 2x2" batten.

It is essential that insulation zones above ventilated spaces (i.e. ground floors) are airtight. Use suitable foil tapes where required.

- Aluminium plates have extremely sharp edges; please handle them with care and wear appropriate PPE.
- Allow a 200mm gap at the end of runs for pipe returns. Also, maintain a gap of 5mm between plates to allow for expansion.
- Simply fix the plates to the top of joists using a staple gun or tacks. **You need to ensure the plate is sitting proud of the floor joist so when the structural board is added the plate pushes onto the underside of the board.**
- The plates are grooved with an omega shape ensuring a snug fit. **If the plate has sagged this make the pipe hard to clip in.**
- Connect the flow pipe to the required circuit on the flow manifold and begin to lay the pipe in accordance with your design.
- You may need to support the plate from below whilst inserting the pipe.
- When adding the floor deck back ensure that the Heat Emission Plate is touching the underside. Failure to do so drastically reduces the system output.



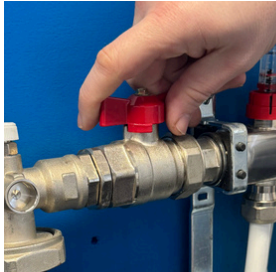
FOR OTHER INSTALLATION TYPES & GUIDES VISIT OUR WEBSITE:

WWW.MULTIPIPE.CO.UK

PRESSURISE / TESTING SYSTEM

FILLING THE SYSTEM

Watch our video on how to fill your system.
Just scan this QR code with your phones camera:



Shut the ball valves on the primary's (isolating the UFH manifold from the system).



Remove **ALL** caps or actuators from the lower manifold (ID actuators so you know which order to replace them).



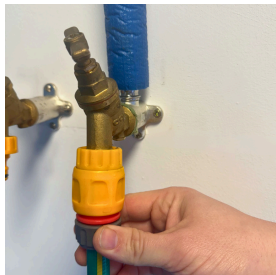
Remove the red caps from the flowmeters on the top and close them all.



Connect the lower "drain point" with a pipe into a bucket and turn the key (under) fully on.



Connect the upper "fill point" with a pipe to a tap and turn the key (under) fully on.



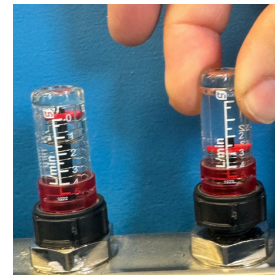
Connect the fill pipe to an outside tap and turn on to pressurise the manifold.



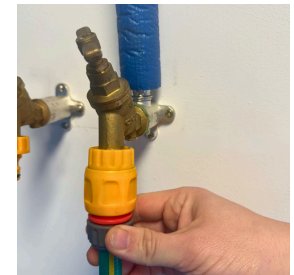
Slowly open the first flow meter and you should notice the plunger drop.



Check the pipe in the bucket for bubbles, once clear of bubbles the pipe is filled (times will vary).



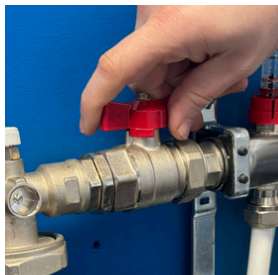
Shut off the first flowmeter and then repeat for the next flowmeter (only ever fill one loop at a time).



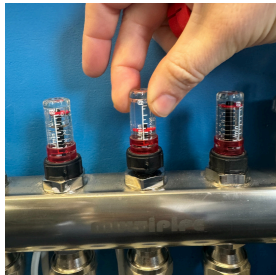
Once all loops are filled open all flowmeters to vent air from the bar. Then shut off the drain then the fill point and disconnect.

WATER TESTING

Watch our video on how to pressure test your system.
Just scan this QR code with your phones camera:



Shut the isolation valves to the rest of the system.



Open all ports at the bottom and flowmeters at the top.



Connect the pressure tester to the flow bar and open the fill point



Pressurise to 4-6 bar. Once at pressure, isolate the fill point and disconnected the tester.



After 1 hour and with no significant change in pressure, reduce to 1.1 times system pressure (min 2 bar).

PLEASE ENSURE THE TEST CERTIFICATE IS FILLED OUT ON PAGE 29.

PRESSURISE / TESTING SYSTEM

AIR TESTING

Air testing can be carried out on all our pipes and manifolds and the procedure is the same as above. However, please only pressure test to **Max 1 bar**. This is more than adequate for a leak test as air is more searching for leaks would soon show a drop in pressure. More importantly air compresses far more than water and can be very dangerous if something was to fail. **Air testing is only recommended where there is a risk of freezing, or the system is being left for a long period time.**

PLEASE ENSURE THE TEST CERTIFICATE IS FILLED OUT ON PAGE 29.

PROTECTION FROM FREEZING

You should protect a UFH heating system against the risk of freezing in winter. If you are not ready to use the system, apply a glycol-based antifreeze fluid to no higher than 30% glycol mix, or pressure test using air. If you use antifreeze, we highly recommend removing this from the system before commissioning the boiler, as this reduces the water's effectual output and can cause issues with other parts of the heating system.

Caution: Under no circumstances should you drain the system that was previously filled with water, as this could cause corrosion in other parts of the system.

Caution: Antifreeze fluid must be disposed of safely.

OTHER SYSTEM INFORMATION

DRYING TIMES

Underfloor heating systems that require drying out times (e.g. floor screed systems) require sufficient drying time before switching on your underfloor heating. This can be as much as 1mm per day but check with your screeder for the fully cured time.

PRE-HEATING FLOORS

Initial heating of the floor should be done in steps to ensure no damage to the screed or surfaces. You need to set your mixing control (**see page 11**) or heat source to no higher than 30°C and no lower than 20°C for a period of 3 days. After this, you need to raise the temperature 3-4°C per day until you reach the temperature set out in your design. This allows the system to settle and stops thermal shock, which can lead to delamination of the surface and cracking.

FLOOR COVERING

Natural timber floor finishes need to be climatized in situ before switching on. In the following, we have provided very general information as each floor manufacturer is unique. We advise direct information is sought from your supplier, manufacturer or installer regarding the correct procedure for system start-up on their floor type.

If carpet is fitted we highly recommend the use of a UFH approved underlay and that the total carpet Tog rating does not exceed 2.5Tog, and the lower the tog rating the better the thermal performance of the system.

SWITCHING ON

Remember that actuators take some time to operate, and there will be a 3 to 5-minute wait before anything happens. Check that the heat source is operating in accordance with the manufacturer's instructions and set to run with a flow temperature of 55°C+ (if mixing is fitted). Or, if the heat source is directly controlling the flow of water temperature to the maximum mixed manifold temperature given, you need to ensure you follow the "pre-heating floors" above before starting for the first time.

COMMISSIONING YOUR SYSTEM

Once you have completed all steps of the system installation it is important to carry out the commissioning of your system. This ensure that all the loops are balanced to the system duty to ensure they all heat up at the same time and you don't get issues with starvation of larger loops. This is also very important for system efficiency.

VALVE BALANCING TABLE (DRAWING)

Manifold 1								
Loop Ref	Room name	Loop Length Total (m)	Feed Pipe Length (m)	Loop Area Coverage (m ²)	Pipe Centres (mm)	Loop Output (W/m ²)	Floor Temperature (°C)	Loop Flow Rate (l/m)
Loop 1	Bathroom	38	3	5.1	150	60	26	0.75
Loop 2	Bed 3	75	4	10.4	150	60	26	1.5
Loop 3	Bed 4	77	5.5	10.2	150	60	26	1.5
Loop 4	Landing	46	1.5	6.8	150	60	26	1
Loop 5	Master En-suite	51	11.5	4.5	150	60	26	0.75
Loop 6	Master Bed	65	7	8	150	60	26	1.25
Loop 7	Master Bed	66	7	8.1	150	60	26	1.25
Loop 8	Bed 2/En-suite	57	2	8.3	150	60	26	1.25
Loop 9	Bed 2/En-suite	58	2	8.4	150	60	26	1.25

Total UFH Area: 69.8 m²
 Design water flow temperature: 46 °C
 Total manifold flow rate: 0.144 kg/s
 Pipe size WTC to manifold: 25mm MLCP
 Total output required: 3.86 kW

VALVE BALANCING SHEET (HOMEPACK ONLY)

Manifold 1

Manifold Location: Flow Temperature: 31 °C
 Manifold Serving: Return temperature: 26 °C
 System Type: Solid

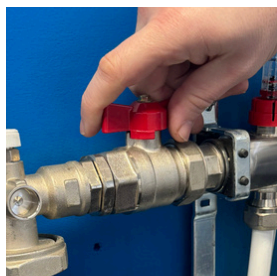
Loop No.	Room name	Pipe Centres (mm)	Loop Length (m)	Room Temp. (°C)	Output Achieved (W/m ²)	Max. Surface Temp. (°C)	Flowrate Required (l/m)
Loop 1	Laundry	150	80	20	20	25.1	0.75
Loop 2	WC	150	40	20	52	25.1	0.75
Loop 3	Prep Kitchen	150	113	20	50	25.1	2.5
Loop 4	Kitchen/b/fast Area	150	97	20	22	25.1	1
Loop 5	Kitchen/b/fast Area	150	109	20	22	25.1	1.25
Loop 6	Kitchen/b/fast Area	150	97	20	22	25.1	1
Loop 7	Kitchen/b/fast Area	150	100	20	22	25.1	1
Loop 8	Kitchen/b/fast Area	150	103	20	22	25.1	1
Loop 9	Kitchen/b/fast Area	150	100	20	22	25.1	1

Req'd Manifold Flow Rate: 0.155 kg/s Manifold Water Content: 95.24 Litres
 Manifold Pressure Loss: 20.6 kPa Total pipework on manifold: 839 m
 Pipe size to manifold: 25mm MLC or 22mm CU
 Total output required: 3.00 kW

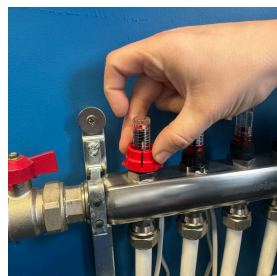
Using one of the above-provided system balancing sheets from the drawing (or homepack if provided), you use the loop flowrate figure to balance your loop flow meters. Ensure you follow the procedure below to ensure this is done correctly.



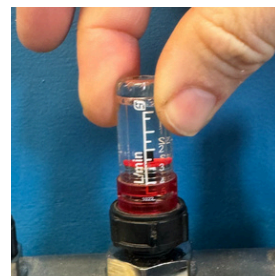
Set the system pump to a high fixed speed for commissioning.



Ensure all valves are open, actuators are open, and there is free flow around the system, i.e. the heat source is firing and the zone valve is open.



Remove all red caps from the flow bar and open all flowmeter (fully open).



Working from the nearest port to the pump/system. Restrict the flow down to the flowrate given in to commissioning sheet i.e. 3l/m.



Once all flowrates are balanced set the gauge red slider to the value you just set and you can now turn the system off.



Set the system pump to the correct speed ideally a variable flow, fixed head.



Reinstall all actuators and ensure the tab is pulled out.



We highly recommend turn up thermostats and ensure the correct actuator opens.

Underfloor Heating Control

We provide a range of room temperature controls (thermostats) to optimize the operating efficiency of your underfloor heating (UFH) system and provide the flexibility to independently control each room or heating zone. These thermostats can be either:

- 230-volt hard wired
- 24-volt hard-wired
- Wireless radio-controlled
- Smart Home

Installation guides are available to download from our website. For more information, please visit www.multipipe.co.uk

230V RIO PRODUCTS



22-23006

230V Quantum Smart Thermostat



22-23006B

230V Programmable Thermostat



22-23023

230V Electro Thermal Actuators



22-06230

230V 6-Zone Wiring Centre



22-10230

230V 10-Zone Wiring Centre



22-23020

Remote Sensor Probe 3-metre 10K ohm

22-06230/22-10230 MASTER 8-ZONE WIRING CENTRE 230V

Meets the following EC Directives

- Electro-Magnetic Compatibility directive 2014/30/EU
- Low-voltage Directive 2014/35/EU directive 2011/65/EU
- Restriction of Hazardous Substances

These instructions apply to the model stated above.

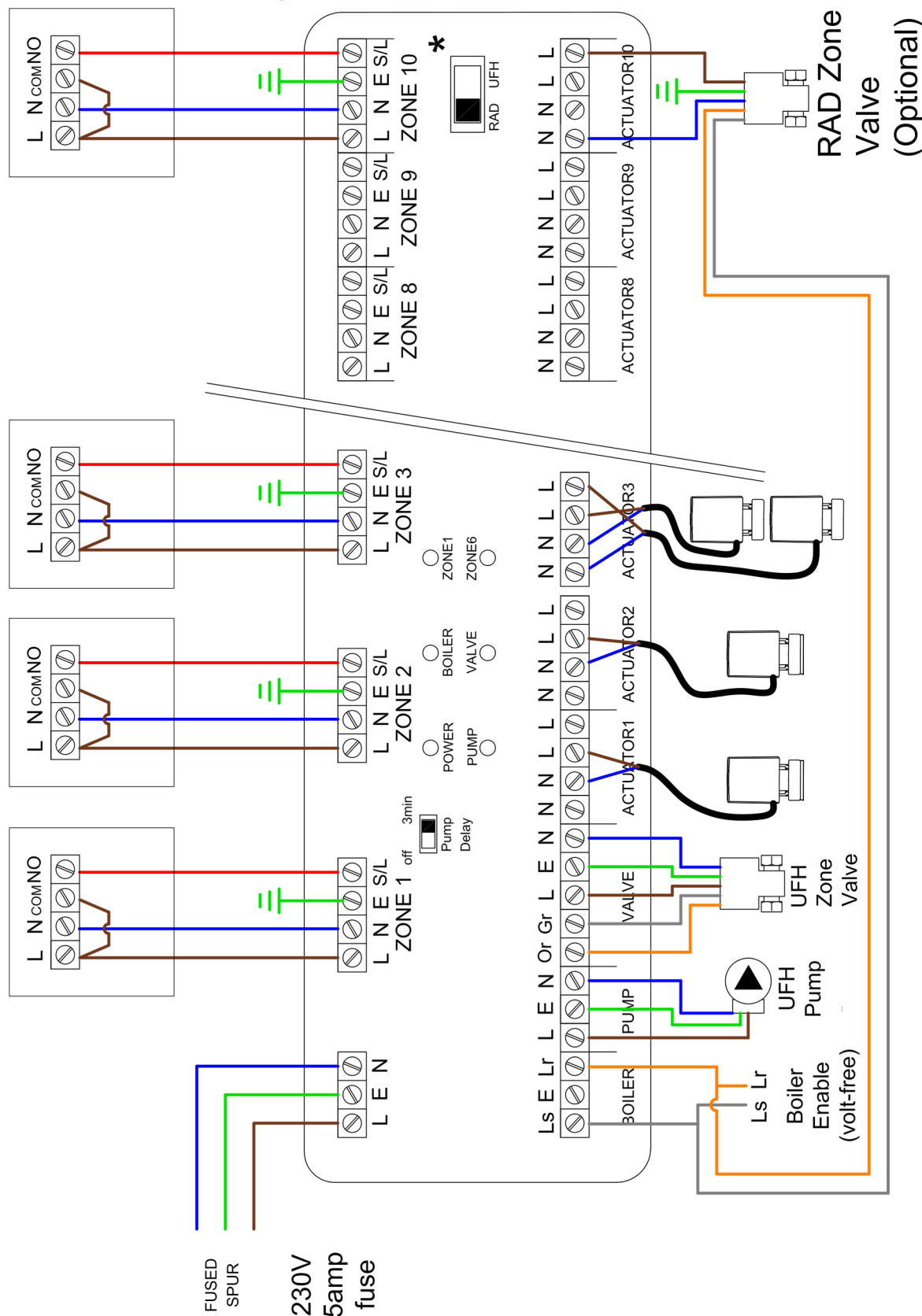
WARNINGS



This product must be fitted by a competent person, and installation must comply with the guidance, standards and regulations applicable to the country or state where the product is installed. Failure to comply with the requirements of the relevant guidance, standards and regulations could lead to injury, death or prosecution.

Always isolate the AC mains supply before installing or working on any components that require 230 V AC 50Hz supply.

The earth terminals on the Wiring Centre for 230V are for earth only. These terminals provide no earth protection.



Underfloor Heating Control

We provide a range of room temperature controls (thermostats) to optimize the operating efficiency of your underfloor heating (UFH) system and provide the flexibility to independently control each room or heating zone. These thermostats can be either:

- 230-volt hard wired
- 24-volt hard-wired
- Wireless radio-controlled
- Smart Home



Installation guides are available to download from our website. For more information, please visit www.multipipe.co.uk

WIRELESS RIO PRODUCTS



22-00006

Wireless Quantum Smart Thermostat



22-00006B

Wireless Programmable Thermostat



22-00007

Wireless Appstat



22-00012

Wireless 12-Zone Controller



22-23023

Electro Thermal Actuators

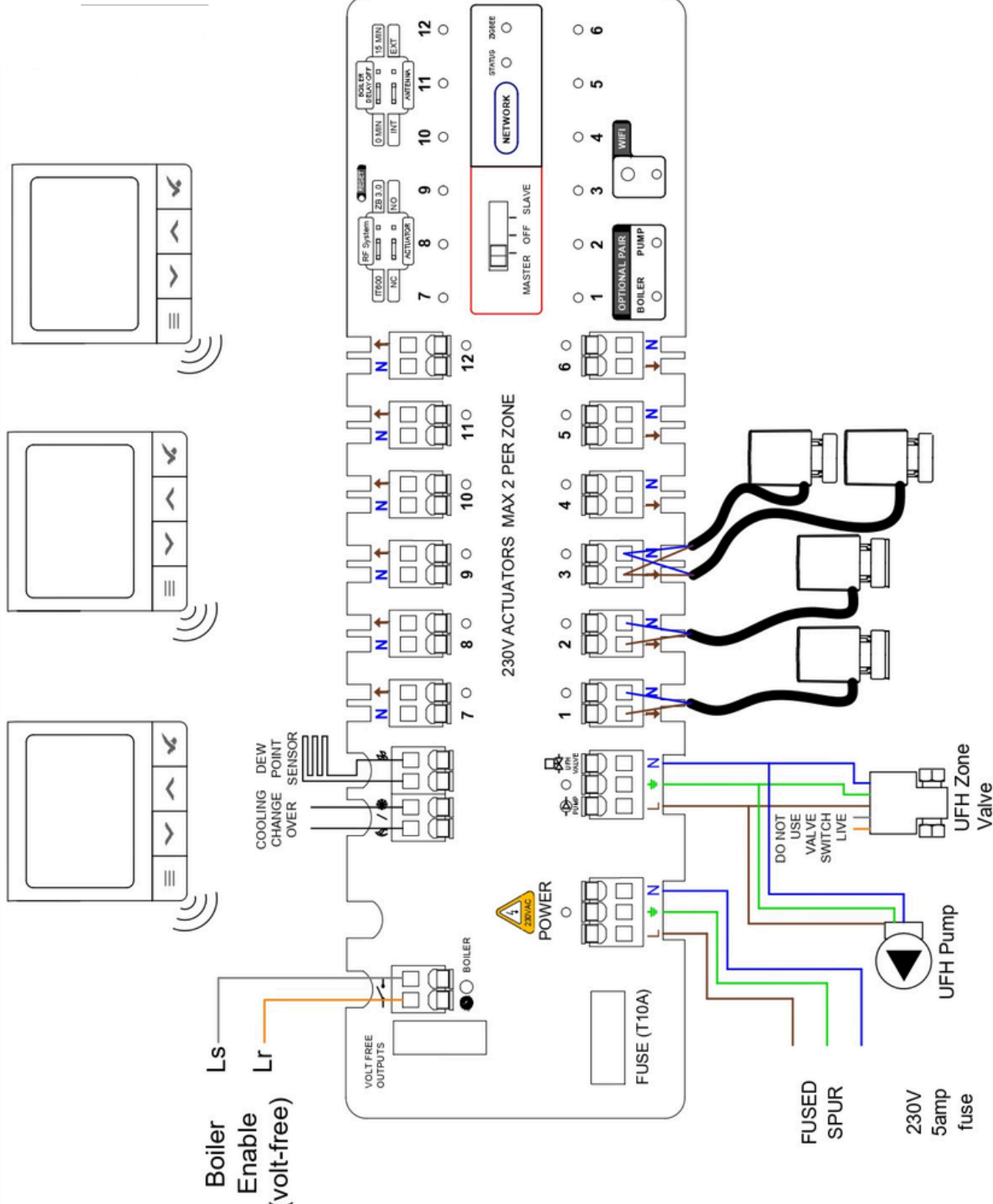


22-00009

Elypso Smart Dial Thermostat

22-00012 - RIO 12-ZONE SMART WIRELESS WIRING CENTRE

INSTALLATION AND WIRING GUIDE



- Meets the following EC Directives
- Electro-Magnetic Compatibility directive 2014/30/EU
 - Low-voltage Directive 2014/35/EU
 - Restriction of Hazardous Substances directive 2011/65/EU

These instructions apply to the model stated above.

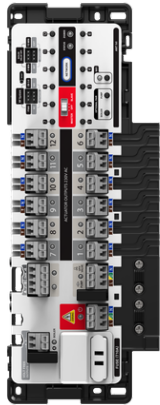


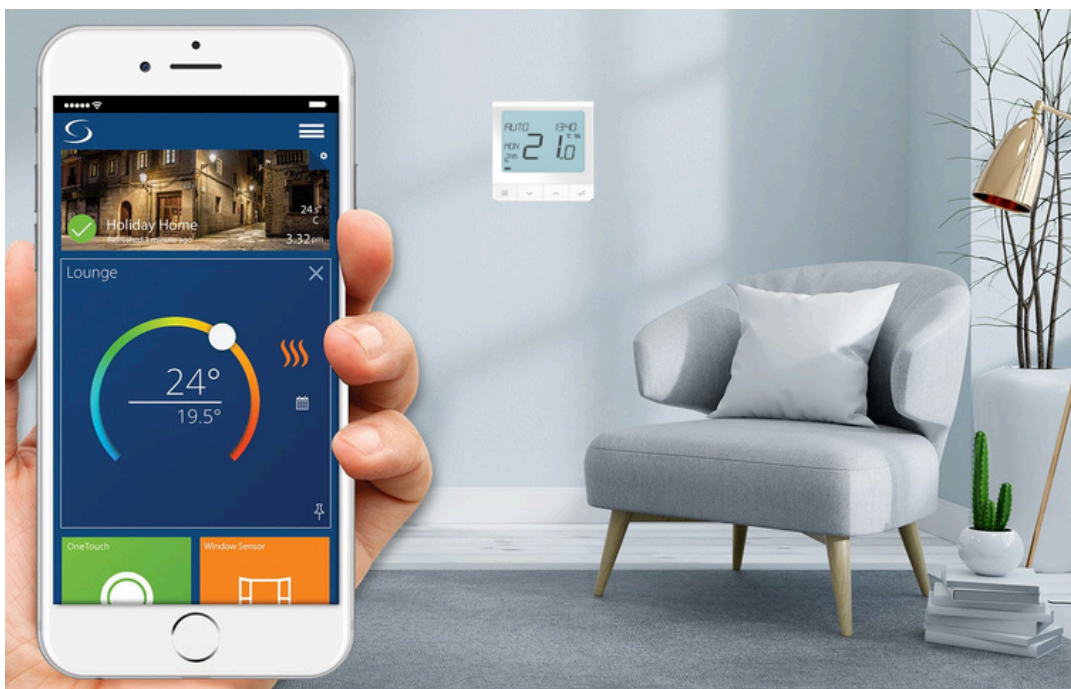
WARNINGS

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Always isolate the AC mains supply before installing or working on any components that require 230 V AC 50Hz supply.

The earth terminals on the Wiring Centre for 230V are for earth only. These terminals provide no earth protection.





OTHER SMART RIO PRODUCTS



22-99998
SMART Universal Gateway



22-99912
Window/Door Sensor



22-99911
Pipe Sensor



22-99913
PIR sensor



22-99996
Smart Button



22-99993
Smart Plug



22-99991
Smart Control Relay



22-99994
Smart Wireless TRV



22-23023
Roller Shutter Relay



22-99995
Boiler Receiver



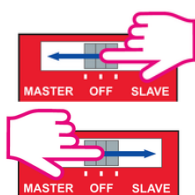
22-99915
Water Leak sensor

SYSTEM REGISTRATION

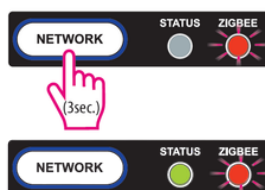
All Multipipe controls utilise a Zigbee network for reliable wireless connection throughout your home. It allows for connection to the Salus Smart Home app, opening huge possibilities in home automation. When registering your system you can choose a standalone offline system or use the smart home system by the addition of a UG800 internet gateway. Note: if purchasing the gateway it changes how the system registers and it is important to register using the gateway if you have one (even if you do not have internet yet). Failure to register using the gateways will mean a system reset to add the gateway in the future.



NO INTERNET GATEWAY



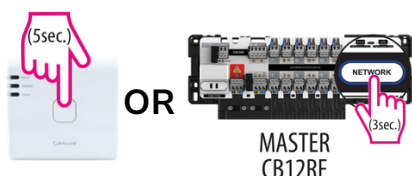
For a single box or first box registration, ensure the control switch is set to master (for 2nd boxes + set to slave)



Press and hold the network button for 5 seconds until the status light turns green

Your system is now ready to register your thermostats you will have 10 minutes to do this before the network shuts

WITH INTERNET GATEWAY OR ADDITIONAL CONTROL BOXES



Open up the network. In offline systems open up the master controller by pressing 3 seconds. On gateway systems press and hold the gateway button for 5 seconds



Ensure the control switch is set to slave on control box to be registered



Press and hold the network button on the controller for 3 seconds. This will open the network; after a few seconds, the ZIGBEE light should turn solid red. This indicates successful joining

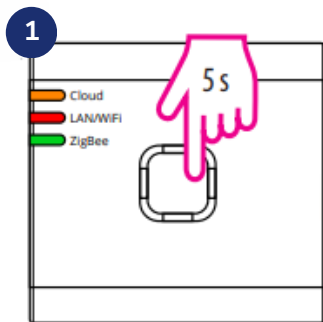
FULL SYSTEM GUIDANCE

For full system guides please use your phone camera to scan and download the documents.

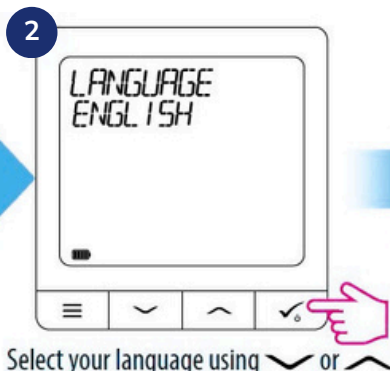


12-Zone Wiring Centre
(22-00012)
Full Guide

THERMOSTAT REGISTRATION -OFFLINE



Open the Zigbee network.



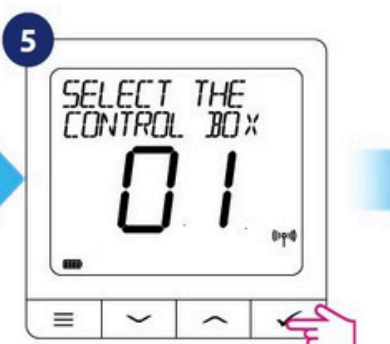
Select your language using or buttons and confirm by button.



Now thermostat is looking for the signal from the coordinator...



Select system type: UNDERFLOOR, press button to confirm.



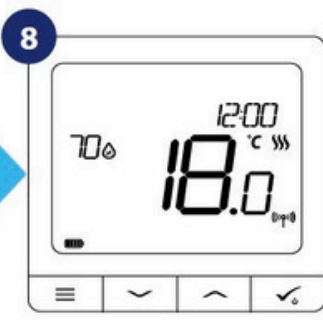
Using and buttons select the Control Box number. Press button to confirm.



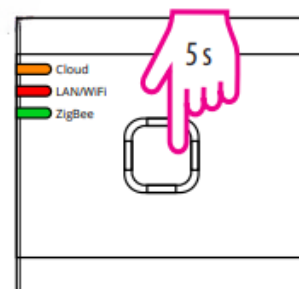
Use or buttons to select the zone number and press button to confirm.



You can pair your thermostat with more than one zone. Select additional zones or finish the pairing process by button.



When thermostat is successfully paired main screen will be displayed.



Close the Zigbee network.

FULL SYSTEM GUIDANCE

For full system guides please use your phone camera to scan and download the documents.



Quantum Thermostat
(22-00006)
User Guide



Quantum Thermostat
(22-00006)
Full Guide

SPARES & ACCESSORIES

SPARES FOR MAXIMA MANIFOLD RANGE:



44-14049

1" Manifold Ball Valve
(Red/ Blue)



44-14050

3/4" Manifold Ball Valve
(Red/ Blue)



44-14051

1" Manifold Ball Valve
Angled (Red/ Blue)



44-53115

Single manifold
ext. kit



44-53117

Flow Meter



44-53118

Flow Meter Seat



44-53116

Pin Assembly for
Actuator



44-53114

Pin Assembly Seat



44-53120

1/2" Adjustable
Drain Valve



44-53135

1" Manifold End
Cap (with o ring)



44-53119

1/2" Automatic
Air Vent



21-53127

1/2" pressure
gauge

SPARES FOR MANIFOLD PUMPSET:



40-06080

Thermometer



40-53119

Bleed Valve



40-06158

Spare Mixing Valve
3.4kW



40-06152

Auto Bypass Set
(40-06151-W only)



40-06155

Grundfos 25/70 Auto
replacement pump



40-06155-W

Wilo 25/7 Para
replacement pump



40-06160

Plated 3/4"x1"
Spinning Nut



40-06157

High Limit Sensor
for 40-06156



40-06170

Bottom Elbow

ALL SPARES CAN BE ORDERED VIA YOUR LOCAL STOCKIST OR VIA OUR WEBSITE:

WWW.MULTIPIPE.CO.UK

FAQS / TROUBLE SHOOTING

As described in earlier sections, the UFH system operation is relatively straightforward. Hot water from the primary heat source (boiler) is blended with the return water from the UFH secondary circuit at the mixing valve and distributed, via the secondary UFH pump, to the distribution manifold and into a series of UFH loops/ circuits of pipe embedded in the floor. Normally, there is a room temperature control that will open and close a single actuator or a series of actuators mounted on the manifold, or, prior to the manifold (single zone), depending on the room requirement. If one or more thermostats are calling for heat, a boiler interlock switch energises the boiler.

The major simple installation issues relate to wiring or plumbing, or design issues regarding the limitations of UFH and its suitability for the intended purpose.

In all cases where an electrical fault is reported, it is always prudent to check the obvious before replacing components:

- Is there an electrical supply?
- Is it switched on?
- Are there any fuses that may have blown and need replacing? Are any components overloaded?
- Is everything wired correctly?

Under no circumstances replace a fuse with a higher rating than stated for the piece of equipment.

If the water arriving at the manifold (prior to entering the mixing valve) is either cold or below the design temperature, check:

- The boiler is firing
- The primary pump is fitted
- The primary pump is working
- The boiler is of adequate size
- The primary pipework is sufficiently sized
- The primary pumps are large enough

OPERATING PROBLEMS

If a loop or loops fail to warm, when other zones are working correctly.

General things to look for:

- Check that the corresponding manifold valves are open.
- Check that there is a demand from the corresponding room thermostat and/or the thermal actuator is open on demand.
- There may be an air lock in the loop, which will require purging, either shut down all other loops by closing the valves at the manifold or turn down all other room thermostats. This will concentrate all pump pressure to the problem loop and may shift the air blockage.
- If all else fails the loop can be flushed through with high-pressure water following the instructions details in Filling, Venting and Pressure testing. If circulation is apparent but poor, it may be that the regulating control valve on the manifold required adjustment.
- Check that all pump isolating valves are fully open.

THE UFH / ROOM IS NOT GETTING WARM

General things to look for:

- That the room thermostat fitted is calling for heat and that the valve has opened using the visual window on the actuator.
- That the room thermostat is connected to and communicating to the correct actuator(s).
- That the room thermostats are not operating in temperate set-back mode.
- That the floor temperature is correct as it enters the floor loops. Although typical design water temperatures are suggested through this guide, there is some element of a learning curve with UFH, as on some occasions the design water temperature may need to be raised after commissioning and once the system has been in operation during a heating season.
- That any fitted zone valves are opening and that the boiler fires when the thermostat calls.
- That the primary flow and return connections are installed correctly and not crossed over at the UFH manifold.
- That the primary water temperature is not too low. This needs to be at least 10°C higher than the UFH system water temperature.
- Thermal resistance of floor covering is not too high, as this could reduce the floor heat output.

IF THE SYSTEM IS TOO NOISY

General things to look for:

- There is no air in the system.
- That all pipes are firmly clipped in place and that the manifold brackets are tight.
- That the UFH pump speed is not set too high.
- The excessive pressure from another circulator in the system is not interfering (hence the importance of having a primary bypass).

FAQS / TROUBLE SHOOTING

IF THE RUNNING COSTS ARE HIGH

General things to look for:

- Check that the UFH system is correctly electrically connected to the boiler to prevent short cycling and to ensure that the boiler is not running when it is not required.
- Check that the room temperatures and thermostat settings are not too high (typical comfort temperatures are 20°C in living areas and 18°C in bedrooms).
- Ensure there are no excessive drops from daytime to nighttime temperatures (no higher than 4°C). Ideally, UFH is best run at a consistent low temperature set by the thermostats.
- Check for any draughts; if you can, use a thermal imaging camera to ensure you have no excessive heat losses around ceiling, walls, doors, and windows.
- Check that the heat source is running correctly. Has it been serviced and/or commissioned by an approved engineer?
- Check that the floor downward losses are high due to an inadequate level of floor insulation.
- Check the floor coverings are approved for UFH and don't exceed 2.5 TOG total; excessively thick carpets can lead to heat being trapped.

THE SYSTEM IS LOSING PRESSURE

General things to look for:

- If the system is losing pressure either during testing and/or after the system has been filled, but the flooring has not been laid, simple visual manual checks around the manifold and along each loop of pipe should identify the problem area.
- If there are no clear visual signs, each loop circuit may require a separate pressure test to identify the exact location.
- If the floor has been laid, identification of the fault can be traced by letting the system cool completely, then running the system and using a thermal camera to go around the floor looking for a large heat patch. To make the repair, the floor will have to be raised; on screed floors, the centre of the wet patch will be excavated carefully.
- Any leaks on the manifold are generally due to a loose nut. If everything is tight, remove the joint and inspect the O-ring, as this may have been damaged and may need replacing.

REPAIRING THE PIPE

To make repairs to the pipe, follow the process below:

- Isolate the damaged pipe loop at the manifold.
- Cut out the damaged section of pipe.
- Prepare both ends of the pipe using pipe cutters. For MLC Pipe, use a bevelling tool.
- On panel systems, remove a small section of the floating panel or fixed tracked panel to accommodate the compression fittings.
- Slide the compression adapter nut over each end of pipe together with olive on PEX pipes, prior to inserting the insert sleeve into each end.
- Offer both ends of pipe/inserts to the compression coupler and tighten both nuts.
- Ideally, the joint will require an inspection chamber in case further maintenance is required. However, in practice this is often not feasible, and the fitting is wrapped in suitable tape before being buried in the screed (ensure approval from the building inspector is obtained prior to doing this).
- Pressure test the system again before laying the floor covering.

PRODUCT WARRANTY

We are proud to supply high-quality plumbing solutions to trade professionals. We have insurance-backed Professional Indemnity to £2m to cover the unlikely event of alleged failure to perform on the part of, financial loss caused by, and error or omission in the service or product sold by Multipipe.

PIPEWORK

10 year £2m insurance backed warranty for consequential loss, 25 year warranty limited to replacement of product.

ELECTRICAL CONTROLS

5 years - RIO Range of controls.

2 years - all other electrical components.

COMPONENTS

All remaining component parts not listed above. 2 years limited to replacement of product.

PRESSURE TEST CERTIFICATE

PROJECT NAME:

PROJECT NUMBER:

TEST TYPE

AIR TEST

☐

Air Test: System is to be tested to 1 bar max (min 100 mbar) for a minimum of 1 hour. It is mandatory during screeding to have the system under pressure.

WATER TEST

☐

Water Test: System is to be pressurised between 4-6 Bar for 1 hour a tightness test. Before reducing pressure to 1.1 times system working pressure until the system is commissioned. It is mandatory during screeding to have the system under pressure.

TEST DETAILS

START TEST PRESSURE [BAR/PSI]

START DATE

START TIME

FINISH DATE

FINISH TIME

FINISH TEST PRESSURE [BAR/PSI]

TEST SIGN OFF

PASS

☐

FAIL

☐

COMMENTS

INSTALLER

COMPANY

SIGNATURE

DATE

THANK YOU

Please submit completed form to info@multipipe.co.uk or scan the QR code to fill out the form online.



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industry experience.

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- Installation Principals ✓
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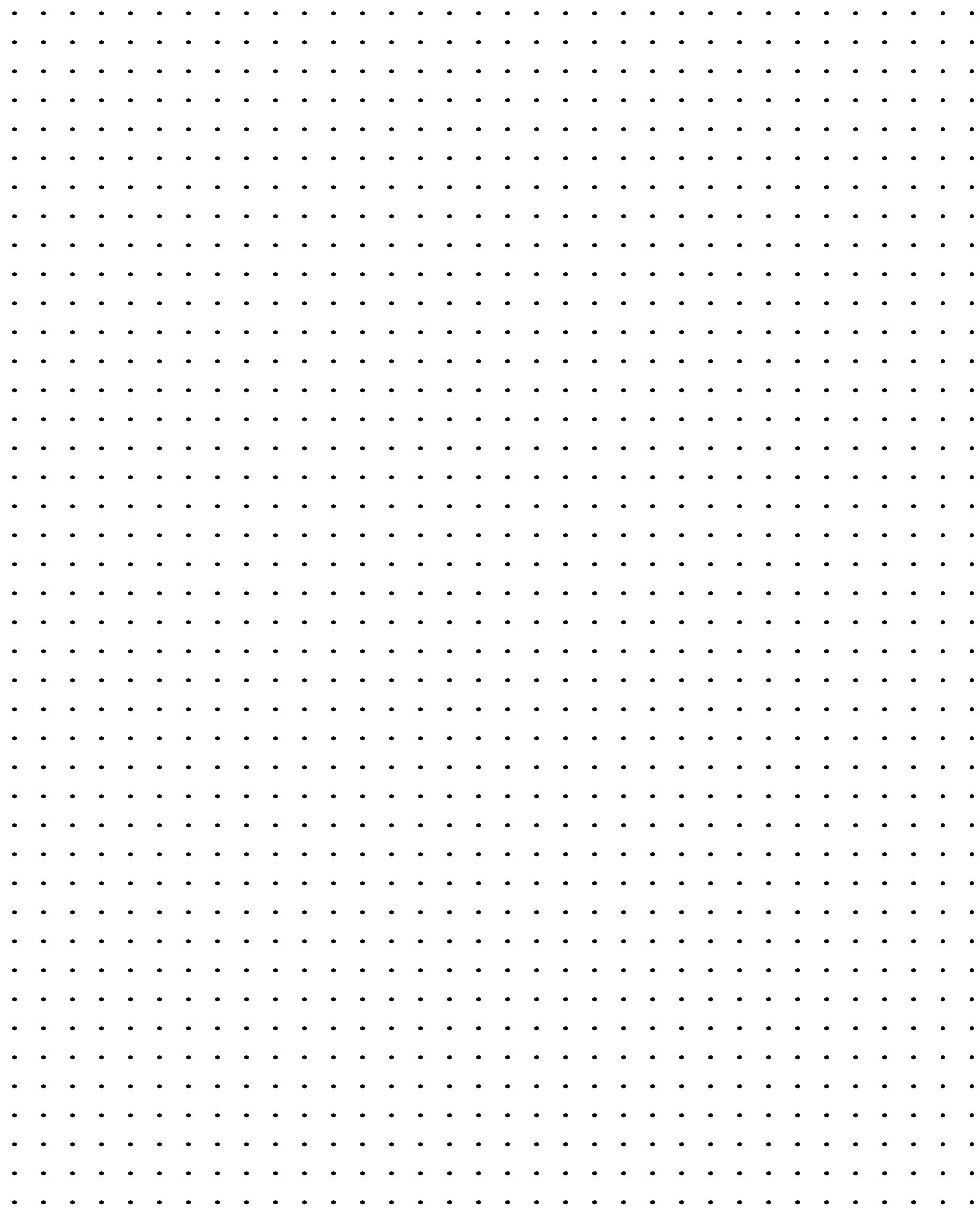
SCAN FOR DATES & INFO:

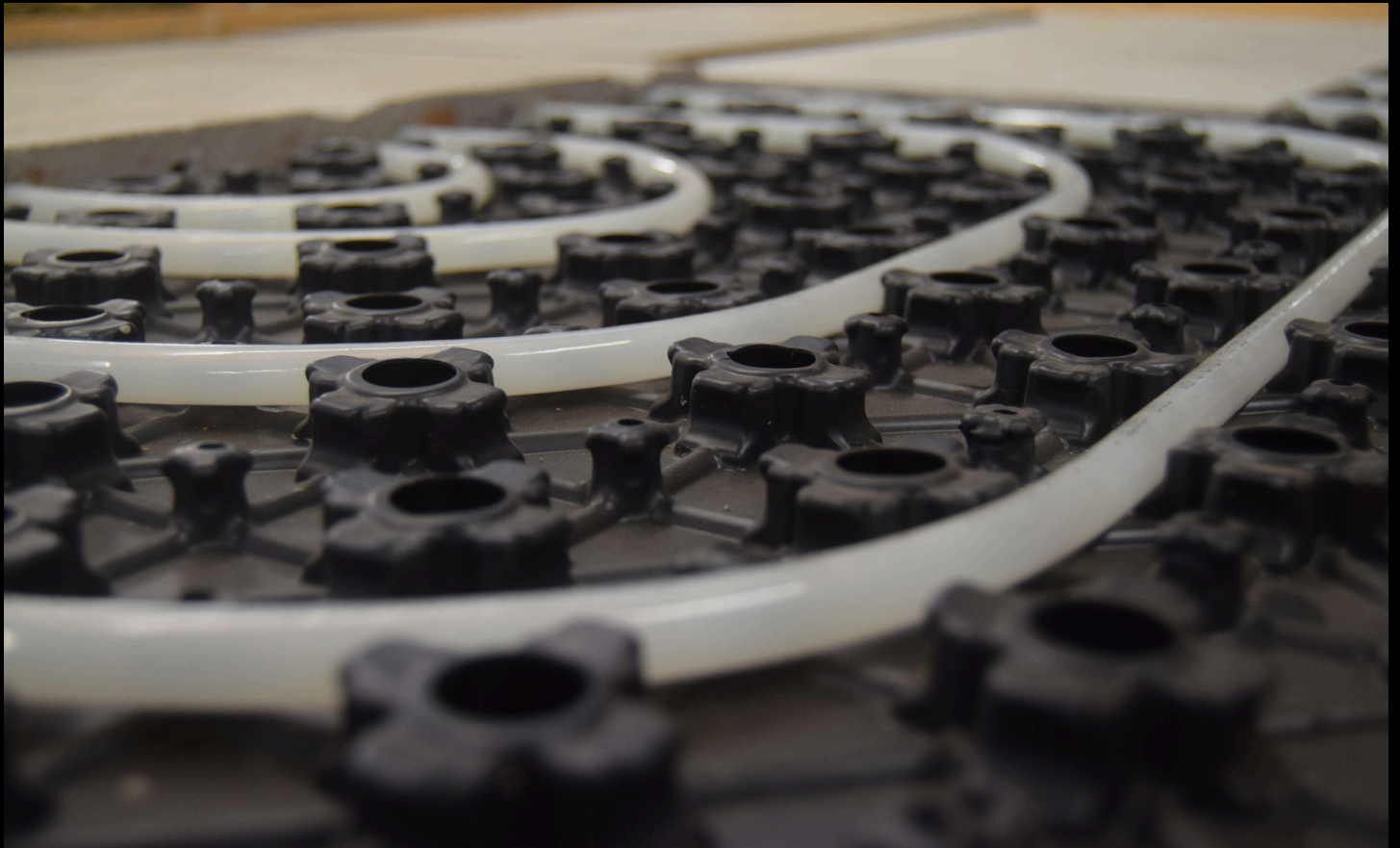


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NOTES





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