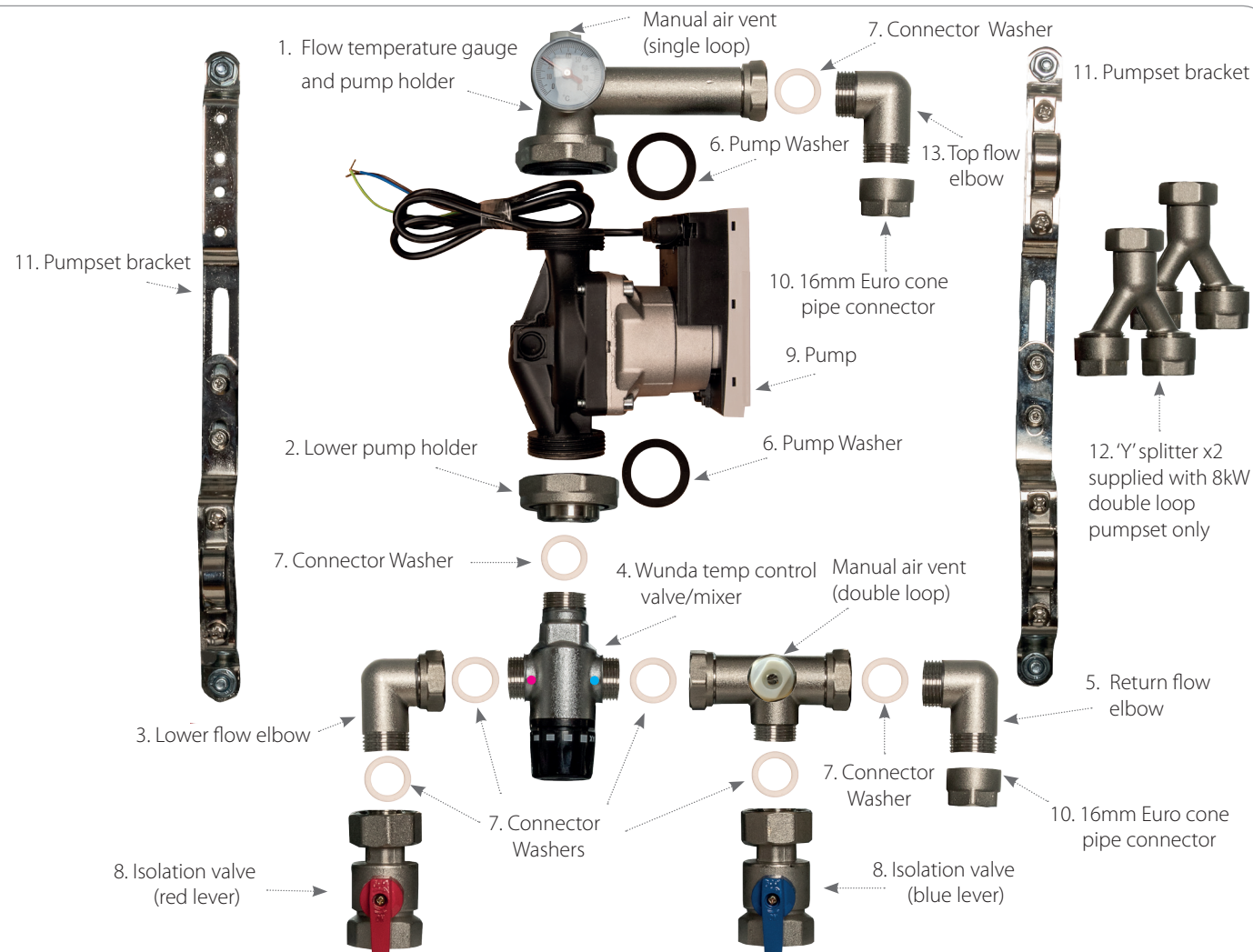
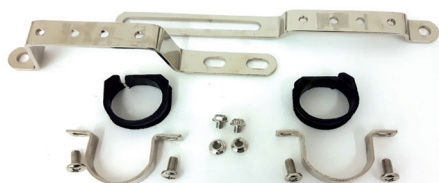


Before you start: Please check the manifold and pumpset box contents against the images and list below.

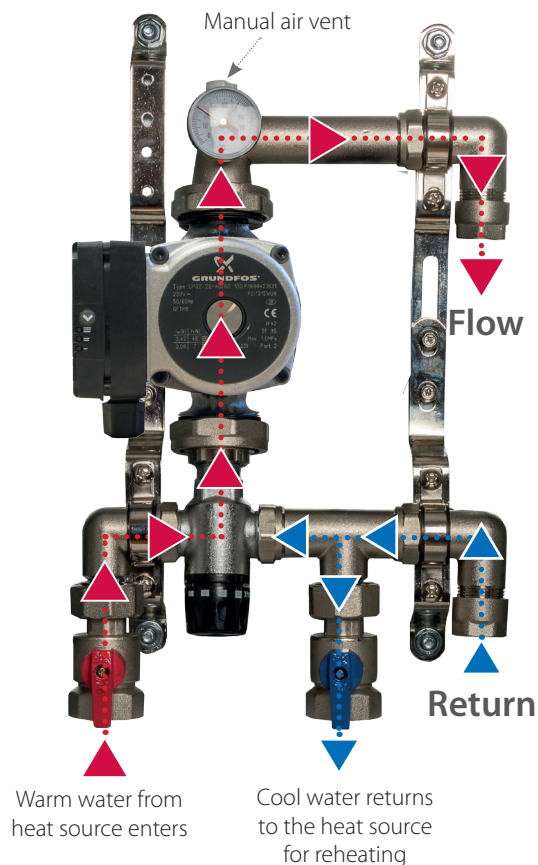
Check the contents

1. Flow temperature gauge and pump holder
2. Lower pump holder
3. Lower flow elbow
4. Wunda temperature control valve/mixer
5. Return flow elbow
6. Pump washers x 2
7. Connector washers x 5
8. Isolation valves – pair (optional extra) with connector washers x 2
9. Pump
10. 16mm Euro cone pipe connectors x 2
11. Pumpset support brackets x2
12. 'Y' splitter x2 supplied with 8kW double loop pumpset only
13. Top flow elbow

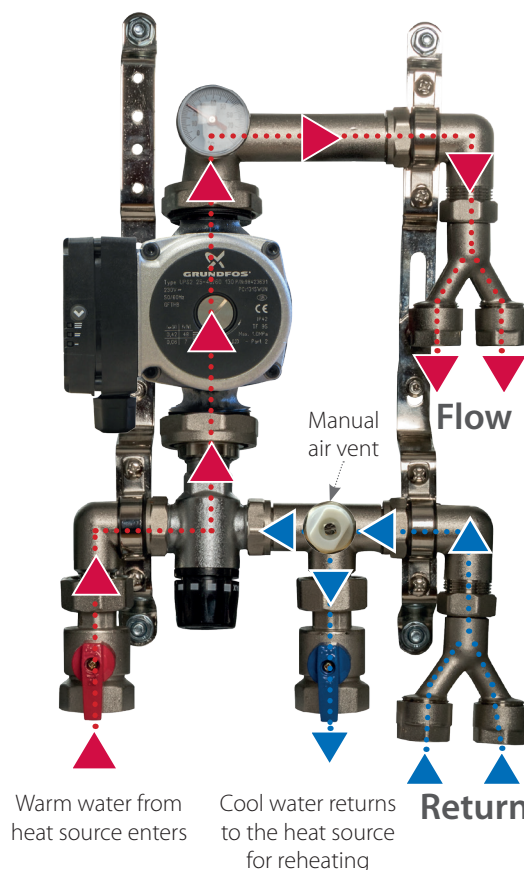
11. Pumpset bracket



Single Loop 3k/W pumpset



Double Loop 8k/W pumpset



IMPORTANT: When using two circuits of floor heating pipe both circuits **MUST** be identical length.

Understanding how the manifold & Pumpset work

Warm water is pumped from the heat source to the pumpset assembly. If the floor heating system requires a top up of heated water, the temperature control valve will allow heated water into the floor heating system* via a one way valve and release cooled water back to the heat source for re-heating.

*Temperature input is easily increased or decreased by turning the mixer valve control head. Clockwise closes the valve and decreases the flow temperature, anti-clockwise opens the valve and increases flow temperature (see page 6).

From the upper flow bar warm water is distributed to the floor heating circuit or circuits if using the double circuit 8k/W pumpset and 'Y' splitters. When using two circuits of floor heating pipe both circuits **MUST** be identical length.

The water returns from the floor heating to the pumpset via the return fittings, where the water is released for re-heating or blended back into the floor heating system for re-circulation. There are several ways in which to control room temperatures either with the addition of a thermostat, pipe stat and independent controls or simply connecting to the existing heating system and use the temperature control mixer to regulate the temperature.

In all cases consideration to the final floor finish and regulation of floor surface temperatures must be considered to prevent any damage to the final floor finish through overheating.

Before assembly of the pumpset, pressure testing and connection to the heating system familiarise yourself with the various stages of assembly and all relevant fact sheets. We advise watching our online tutorials and technical support videos. Never leave a system full of water that has not been treated with a suitable inhibitor and anti-freeze.

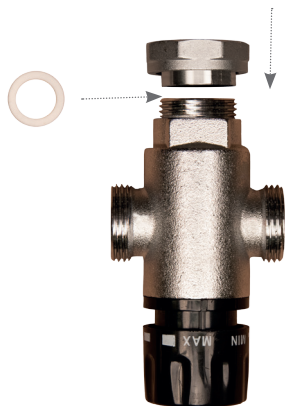
All plumbing and electrical installations/connections must be carried out by a qualified professional.

For example wiring diagrams, please refer to Factsheet E09, pages 4, 7 & 9

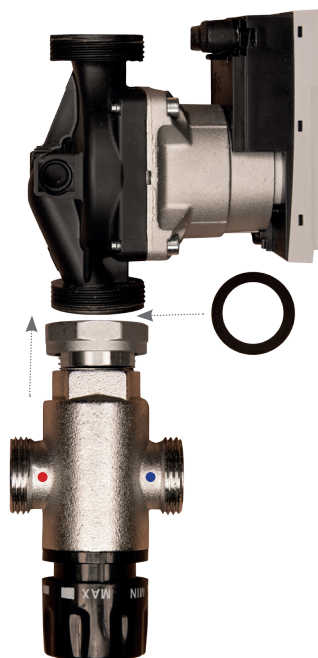
Free technical support call 0800 083 2677
or visit: www.wundatrade.co.uk

Identify and familiarise yourself with each individual component. Assembly of the pump set and pump is recommended on the bench prior to fitting the complete unit to the manifold. The use of PTFE tape is not required when the supplied washers are fitted correctly, however if you wish we recommend the use of a liquid PTFE.

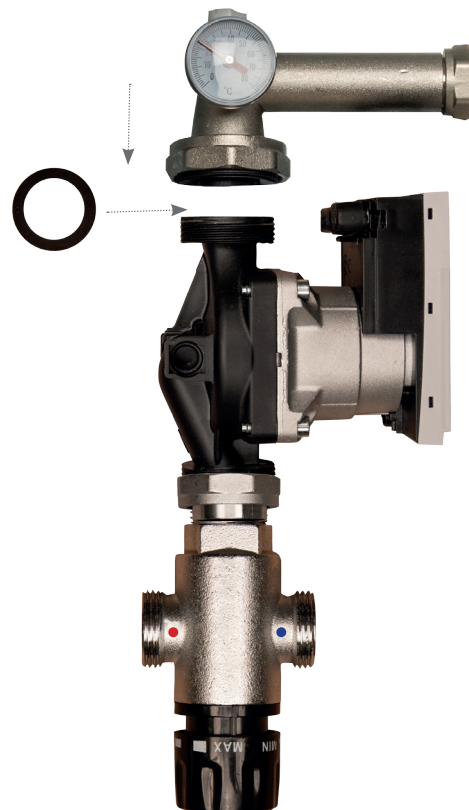
- 1** First connect the lower pump holder onto the temperature control mixer ensuring the correct washer is located between the two components.



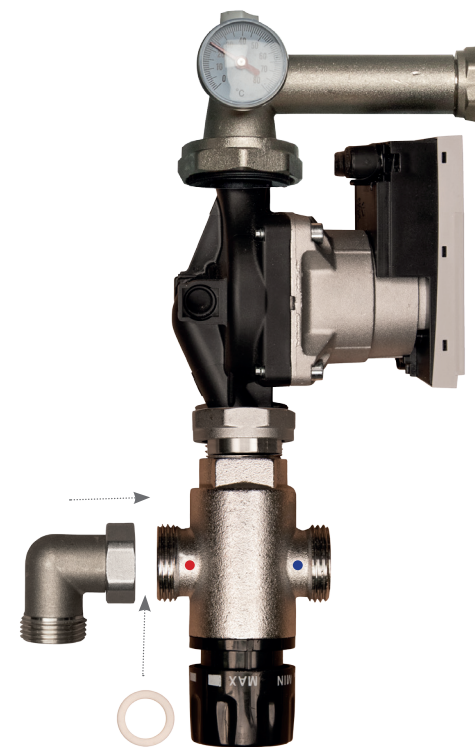
- 2** Select a pump washer (large black washer) and locate into the lower pump holder/ Wunda temperature control mixer. Again tighten by hand taking care not to cross the pump thread.



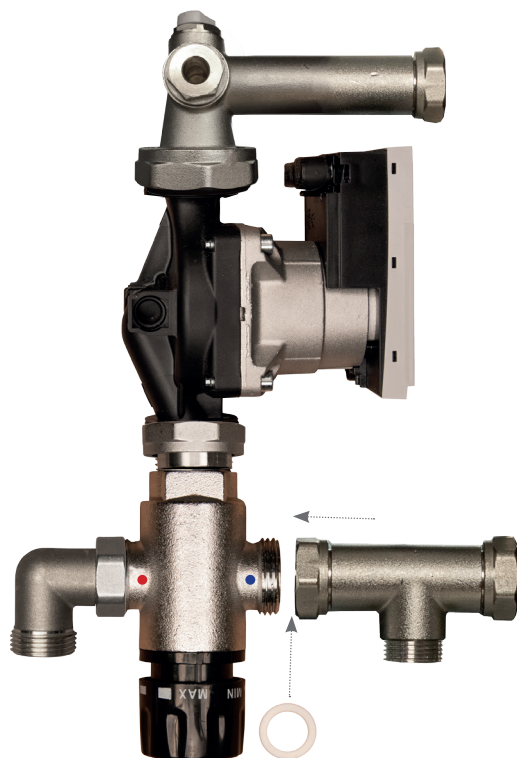
- 3** Select a pump washer (large black washer) and locate into the top flow elbow & pump holder. Tighten the pump holder onto the pump by hand, be careful not to cross the pump thread.



- 4** Fit a washer into the lower flow inlet elbow and screw the elbow onto the left-hand inlet (red dot) side of the temperature control mixer.



- 5 Locate washer into the lower return temperature gauge holder and screw onto the right-hand return (blue dot) side of the temperature control mixer.



- 6 Fit the two isolation valves onto the flow and return feeds ensuring washers are fitted correctly, blue tap is fitted to the return (right) and red tap is fitted to the flow (left)

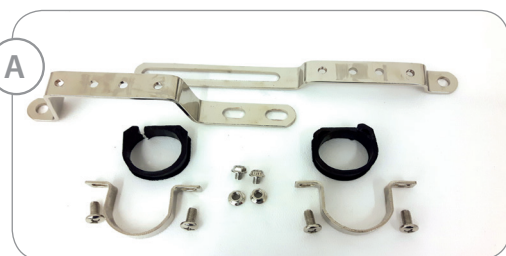


- 7 This pumpset is supplied with a flow temperature gauge which must be fitted into the flow temperature gauge housing.



Mounting the pumpset onto wall brackets

This pumpset is supplied with two mounting brackets for support of the heavy pumpset and must be mounted vertically. The brackets are adjustable and supplied with rubber mounts, brackets, nuts and bolts required (Pic A). (wall fixings are not supplied)

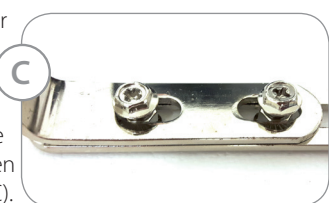


5

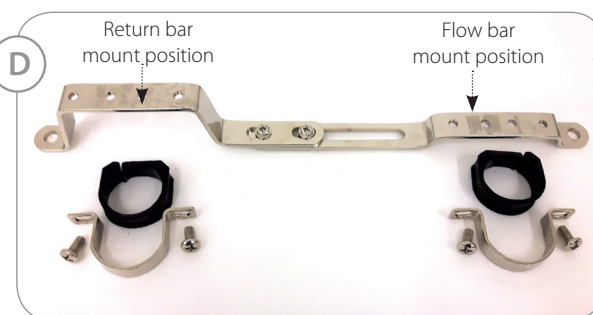
Insert the adjuster nuts into the long slot from below into the lower bracket. Place the upper section of bracket over the adjuster nuts ensuring the nuts line up with the 2 holes in the upper bracket. The long slot will secure and keep the nuts captive (Pic B).



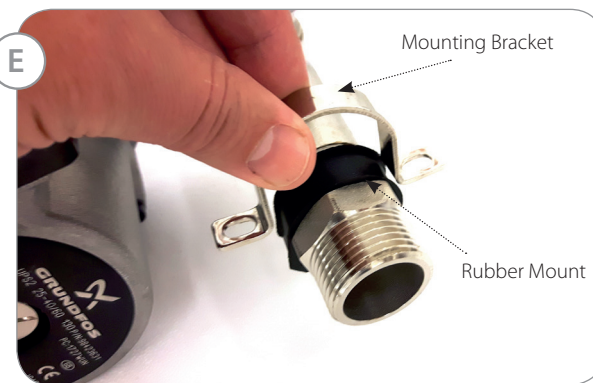
Screw the adjuster bolts into the captive nuts, ensuring the nuts are retained in the slot. Do not tighten at this stage (Pic C).



The pumpset bracket is now ready to accept the pumpset assembly, the flow bar is mounted to the lower section of bracket and the return bar is mounted to the higher section of bracket. Locate the 2 mounting rubbers, brackets & 4 securing bolts (Pic D).



Wrap the rubber mount around the flow bar and return bar and place a bracket over each of the rubber mounts (Pic E)

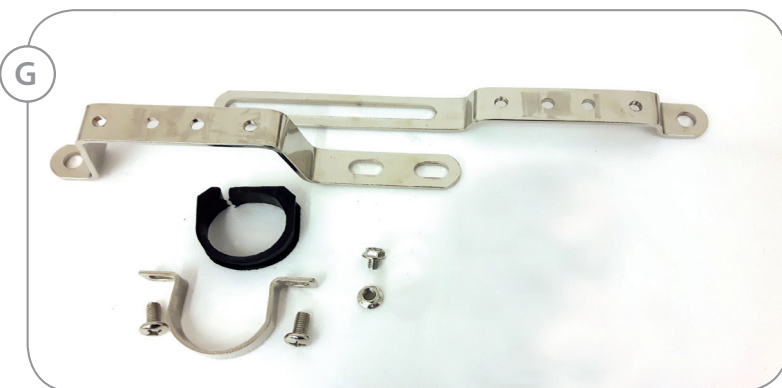


Using two bolts tighten and secure the brackets, securing the pumpset to the adjustable support bracket. The pumpset will have a small amount of movement within the brackets which will allow for easier connection (Pic F).



Mounting the pumpset onto wall brackets

The second adjustable support bracket only requires 1 mounting bracket to the lower flow elbow (Pic G)



Repeat the steps on page 5 to assemble the adjustable bracket and single mount bracket. The pumpset lower flow elbow must be clamped to the adjustable bracket higher section (Pic H)



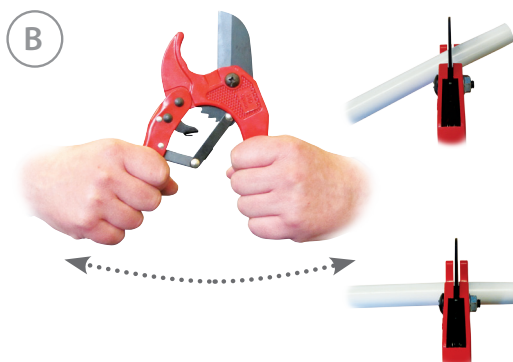
The assembled pumpset and support brackets should look like the photo below (Pic I). Ensure all joints, brackets and unions are tightened and that all washers have been installed correctly.



(Isolation valves - optional extra)

3k/W Single Loop - connecting floor heating pipe

Open Wunda pipe cutters by pulling the handles fully open (Pic B), ensure all pipes are cut cleanly and squarely being careful not to cut the pipe short or it will not reach the pumpset connection.



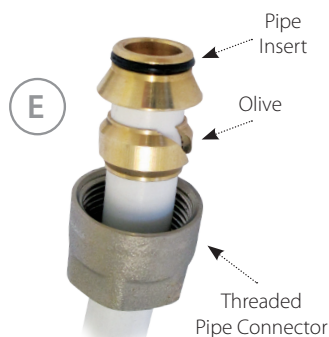
The freshly cut end of pipe must now be reamed using a Wunda 16mm reamer (Pic C) insert the reamer fully into the end of the pipe so that the pipe is in contact with the 3 cutting teeth (Pic D) push and turn the reamer clockwise 2-3 turns, this will give a chamfered finish to the pipe.



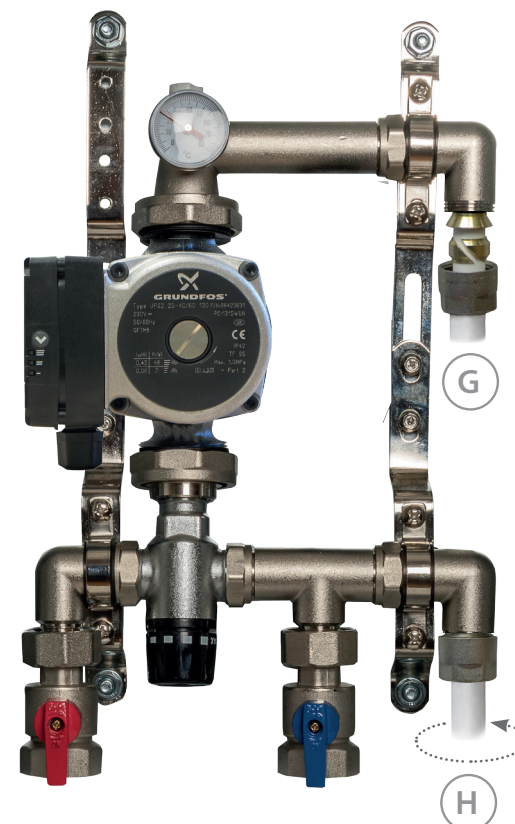
A good tip is to grip the pipe wearing a rubber glove, this will stop the pipe twisting in your hand when reaming.



Place the threaded pipe connector over the reamed pipe end, followed by the split olive, push (Pic E) the pipe insert into the end of the pipe ensuring it is fully seated against the end of the pipe (Pic F).



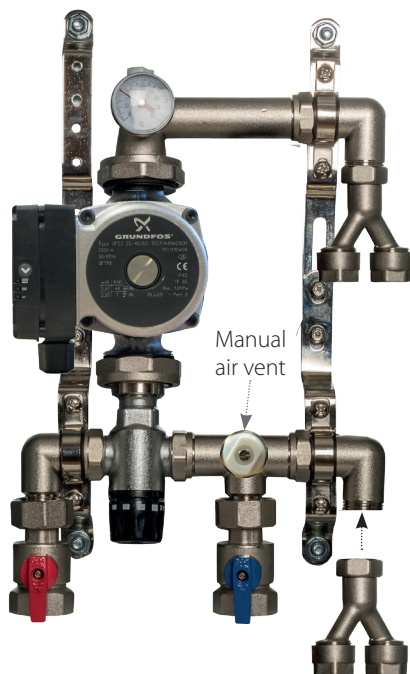
The floor heating pipe is now ready for connection to the pumpset, insert the connector into the pumpset fitting. Ensure the flow goes to the furthest/ outside walls of the room first, seat the euro cone connector up into the pumpset fitting. Tighten the cone connector using an adjustable spanner or open ended 27mm spanner (Pic G/H).



8k/W Double Loop - connecting floor heating pipe

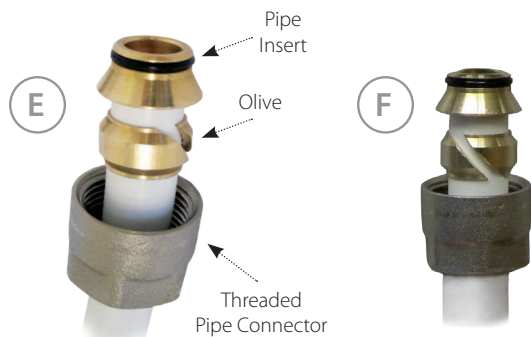
BOTH LOOPS OF FLOOR HEATING PIPE MUST BE OF SIMILAR LENGTH (up to 5% difference is acceptable)

Locate the two 'Y' shape splitters, fit 1 splitter to the pumpset flow union and 1 splitter to the return union. Ensure the black sealing washer is seated in place inside the splitter connector before fitting to the pumpset. Tighten the splitter using an adjustable spanner.



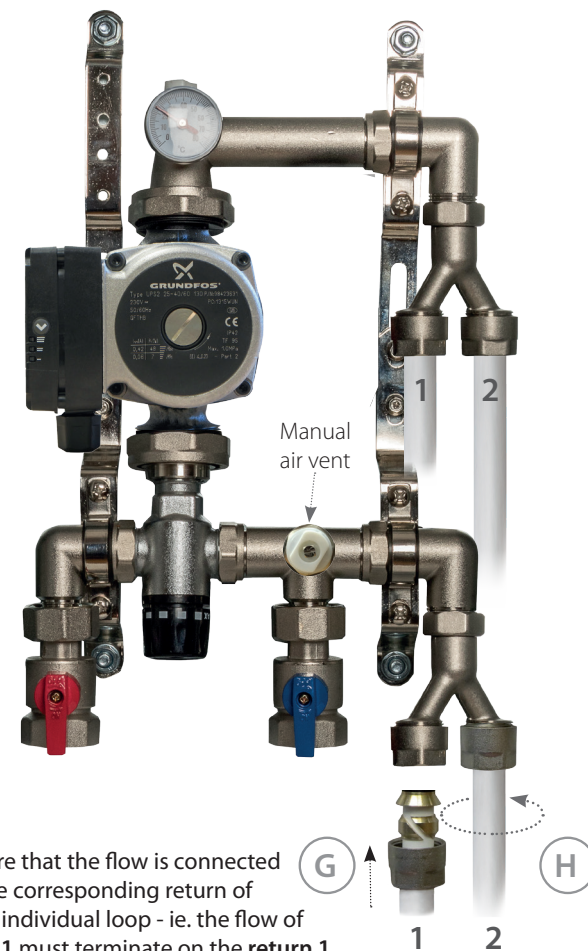
Using a pipe reamer, prepare the floor heating pipe following the instructions on page 7. Remove the pipe cone connectors, split olives and inserts from the splitters.

Place the threaded pipe connector over the reamed pipe end followed by the split olive, push the pipe insert into the end of the pipe (Pic E) ensuring it is fully seated against the end of the pipe (Pic F)



The floor heating pipes are now ready for connection to the pumpset, insert the connector into the 'Y' splitter (Pic G), ensure the pipe insert is seated fully and tighten using an adjustable spanner (Pic H).

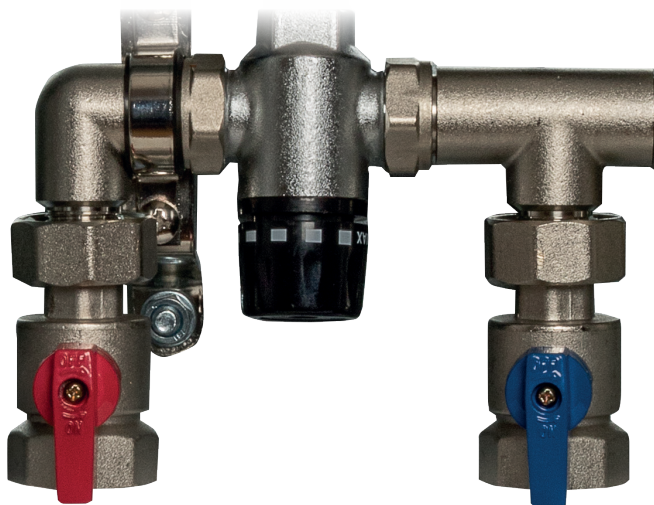
IMPORTANT:
BOTH LOOPS OF FLOOR HEATING PIPE MUST BE OF SIMILAR LENGTH (up to 5% difference is acceptable)
MAXIMUM LENGTH OF EACH INDIVIDUAL LOOP SHOULD IDEALLY BE LIMITED TO 100MTRS.



Ensure that the flow is connected to the corresponding return of each individual loop - ie. the flow of **loop 1** must terminate on the **return 1** connection directly below.

Flow temperature setting.

To protect final floor finish and have the correct settings for floor constructions, the mixer valve must be set correctly. Flow temperature input is adjusted by turning the black temperature control knob. Clockwise reduces flow temperature and anti clockwise increase flow temperature. **Temperature range 30 - 60° C**



Clockwise decreases flow temperature

Anti clockwise increases flow temperature

Guidelines for different types of floor heating

- Pipe in Overfloor panel systems 35°C*.
- Pipe in Solid screed construction (staples, cliptrack, multipanel) 45°C*.
- Pipe in Joisted floor construction (spreader plate) 60°C*.

Check with floor finish supplier BEFORE introducing warm water into the floor heating system as some flooring materials, in particular wood, require limiting the floor surface temperatures. Floor surface temperatures can be controlled with the installation of a floor probe and correct thermostatic programming.

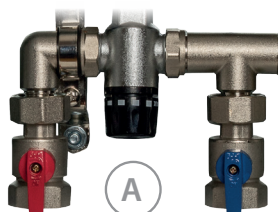
*System performance is influenced by many factors including insulation standard, double glazing etc. Flow input temperatures may need to be increased or decreased seasonally in extreme weather fluctuations to adjust system performance.

Adjust the flow temperature in small increments to suit the floor construction and floor finish. Flow temperature is indicated by the temperature gauge on the top flow elbow.

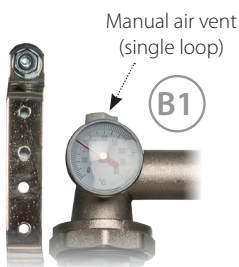


Pressure Test

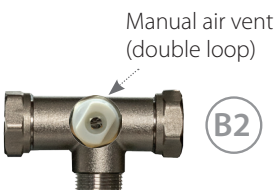
Before pressure testing ensure all floor heating pipe has been laid and all connections are tightened. Close both isolation valves (Pic A) isolation valves should be at 90° for shut position.



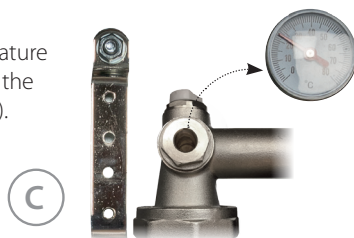
Close single loop manual air vent located above the temperature gauge (Pic B1).



Double loop air vent is located on lower return connector (Pic B2)



Remove the temperature gauge and unscrew the brass housing (Pic C).



Screw pressure gauge* into the exposed aperture, PTFE may be required to seal (Pic D).

**Optional pressure gauge available from Wunda*

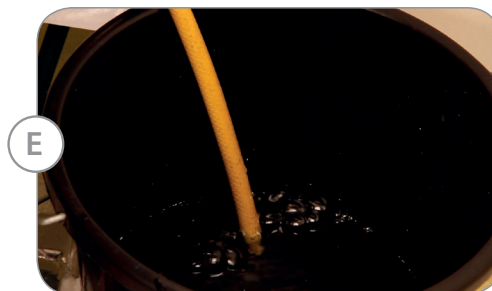


Connect the mains supply hose to the inlet (red) isolation valve and connect a drain off hose to the return (blue) isolation valve, place the drain off hose into a bucket. Open the isolation valves and turn on the main water supply to the fill hose (Pic E).

By placing the end of the hose in a bucket it is possible to see when all air has been purged from the floor heating pipes by the reduction in bubbles being passed.

When a steady flow has been achieved and ALL air has been passed, close the return (blue) isolation valve. Briefly opening the manual air vent will also allow any trapped air to be released, close the manual air vent when ALL air has been expelled.

On double loop systems ensure both loops have been fully purged of ALL air.



Allow the pressure to rise to 3-4 bar, (Pic F) close the red isolation valve. Turn off the mains water supply at source and leave the system under pressure for a minimum of 3 hours.



If the pressure drops investigate and remedy the source of pressure drop. The mains supply hose can now be removed, leave the drain hose in place as this will be required to release the pressure in the system at a later stage.

It is good practice to leave the system under pressure whilst laying of the final floor finish or screed to indicate any possible damage caused during floor laying.

When you are fully satisfied that the system is pressure tight the pressure can be released via the return (blue) isolation valve and drain off hose, into a bucket. Briefly open the valve then re-close once the pressure has been released.

The pumpset is now ready to be connected to the heat source by a QUALIFIED professional and a suitable amount of inhibitor added to the system.

IMPORTANT:

DO NOT leave the floor heating system filled with water and unprotected from freezing conditions – introduce and circulate a suitable inhibitor and anti-freeze or alternatively all water must be forced from the floor heating system and pipes using a compressor.

Free Technical support call 0800 083 2677

Supplementary information.

Floor surface temperatures

Before introducing heat into the floor heating system check with the final floor finish supplier about maximum floor surface temperatures.

Generally a maximum floor surface temperature of 29°C should not be exceeded however many wooden floor finishes have a maximum floor surface temperature of 27 °C and must be laid in conjunction with relevant underlay and moisture barriers.

We advise the use of floor probes in conjunction with room thermostats be used in order to limit floor surface temperatures and avoid damage to chosen floor finish.

In particularly large areas several probes and thermostats may be required.

Wooden floor coverings

When installing wooden floor coverings over floor heating the floor surface temperature must not exceed 27 °C. Floor probes in conjunction with room thermostats must be used in order to limit floor surface temperatures and avoid damage to wooden floors. Expansion gaps must be used to allow for expansion and contraction movement of the wooden flooring as specified by flooring suppliers. Birch and Maple are not suitable for use with floor heating due to excessive amounts of expansion. Laminates and engineered woods less than 25mm thick work well with floor heating. All wood flooring products must be acclimatised to the heating system and its operational temperatures by following suppliers guide lines.

Water Treatment (required to comply with product guarantee)

Specialist water treatment suppliers such as Sentinal or Fernox will be able to advise on all water treatment issues and dosage requirements. Flushing should be in accordance with BS:7593 to ensure awareness of the preparation of the water circuit for the wet heating systems prior to initial commissioning following major remedial work such as boiler replacement and the ongoing water

treatment to ensure continued efficiency. The water volume in a 16mm pipe Floor Heating system can be calculated by multiplying the total linear length of Floor Heating pipe by a factor of 0.113 this will give the volume of water in litres.

In order to minimise corrosion, treatment of the water with an inhibitor is essential, however, for a corrosion inhibitor to function effectively, the metal surfaces must be clean. The British Standard Code of Practice BS 7593: 1992 details the steps necessary to clean a domestic central heating system. The Code recognises that it is not possible to clean a system without the application of a cleanser. Different products may be used depending on the nature of the system involved.

The most effective corrosion inhibitors act by reacting with the surface of the metal to produce a protective film in the form of a stable complex. The effectiveness of a given corrosion inhibitor will depend on its concentration.

In a multi-metal system, the product selected should contain a blend of inhibitors such that each metal is afforded good protection. In addition to the usual metals and alloys, e.g., iron, copper, steel and brass, special consideration must be afforded to aluminium.

Normally this metal is protected by a film of aluminium oxide which prevents corrosion in water (or in air), but under acid or strongly alkaline conditions the oxide film dissolves exposing the metal. Some waters found in the UK will give rise to sufficiently alkaline conditions in a central heating system to promote corrosion of aluminium and the gassing associated.

An increasing number of central heating systems contain aluminium so it is advisable that a neutral (neither acid nor alkaline) corrosion inhibitor product is selected in every case.

Consideration should be given to adding antifreeze to the floor heating system especially during the winter months.

Important

"When mixed floor solutions are being served from the same manifold, a floor probe must be used in the floor solution with the lower maximum supply temperature. This is to limit the temperature in these floor areas and prevent damage to the floor solution and/or floor finish."

Wunda Group Plc operates a continuous product development programme to maintain our reputation for quality products and as such we do occasionally modify or amend the specification of our products in line with our strict quality control policy. Maintenance of the floor heating system is straightforward and the pump, manifold, gauges, valves and actuators are designed for continuous operation over many years. Wunda Group Plc recommends regular use of floor heating systems, this will ensure flow gauges, pumps and valves are kept in good working order.

All information in this publication is given in good faith, and believed to be correct at time of going to press. No responsibility can be accepted for any errors, omissions or incorrect assumptions. Users should satisfy themselves that products are suitable for the intended purpose and application.

Your Notes:

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Tech support opening hours are subject to change - please visit our website for the latest information