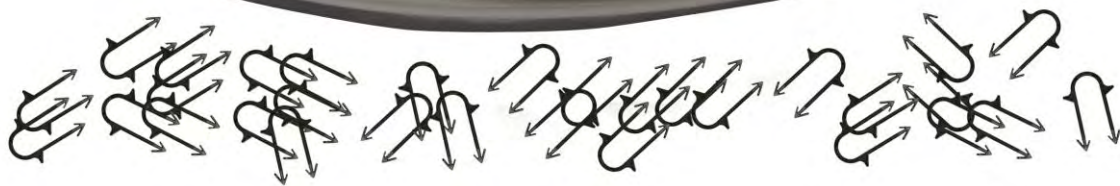


Tel. 0800 2321501



UK
UNDERFLOOR
HEATING

INSTALLATION INSTRUCTIONS



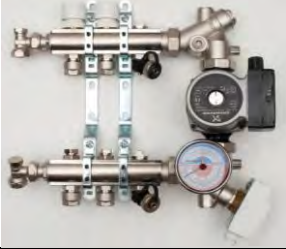




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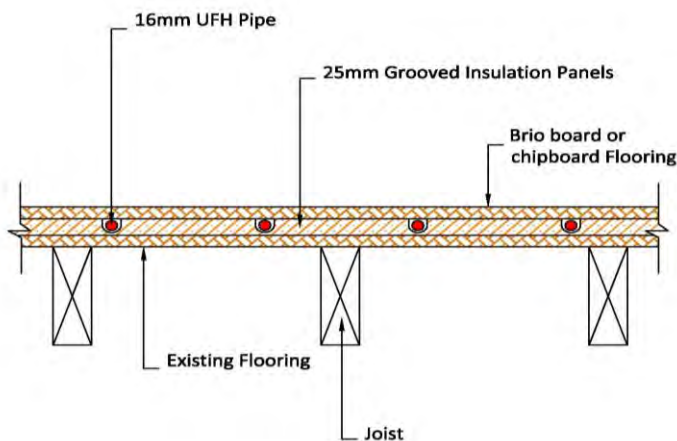
INCLUDED IN THE PACK

<p>2 Port Preassembled Manifold</p>	
<p>1 x 2 Port Zone Valve</p>	
<p>1 x Electronic water Sensor</p>	
<p>1 x Danfoss FH-CWP</p>	
<p>Alpert Pipe 10sqm Pack = 50m 15sqm Pack = 75m 20sqm Pack =100m 24sqm Pack =120m 30sqm Pack =2 x 75m 40sqm Pack =200m* 48sqm Pack =2 x 120m</p> <p>*1x200m coil or 2x100m coils</p>	
<p><u>25mm Grooved Boards</u></p> <p>10sqm Pack = 8 Boards 15sqm Pack = 12 Boards 20sqm Pack =15 Boards 24sqm Pack =18 Boards 30sqm Pack =23 Boards 40sqm Pack =30 Boards 48sqm Pack =36 Boards</p>	

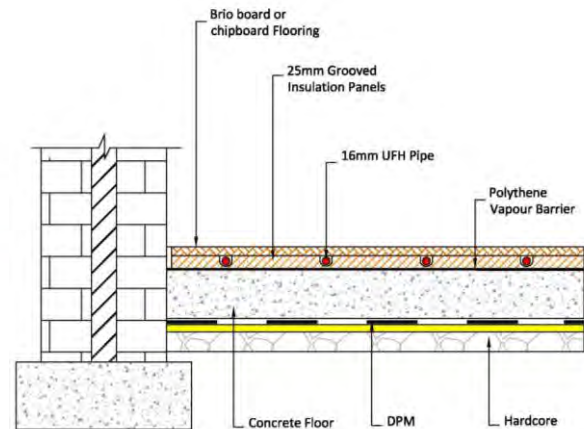
FLOOR CONSTRUCTION

The Pre grooved insulation panels are lightweight with a high compressive strength intended for use with light weight floor coverings like laminate, engineered wood and carpet. This method is particular used when retro fitting or cannot raise the floor to allow a screed. Please see diagrams below

DO NOT EXCEED A TOTAL of 22mm of timber over the UFH.



Floating Floor over existing Timber Floor



Floating Floor over existing Concrete Floor

IMPORTANT POINTS

Please remember that it is very important that the pipe is laid with due care and is not kinked when being installed.

Divide the area into two sections and lay two equal circuits.

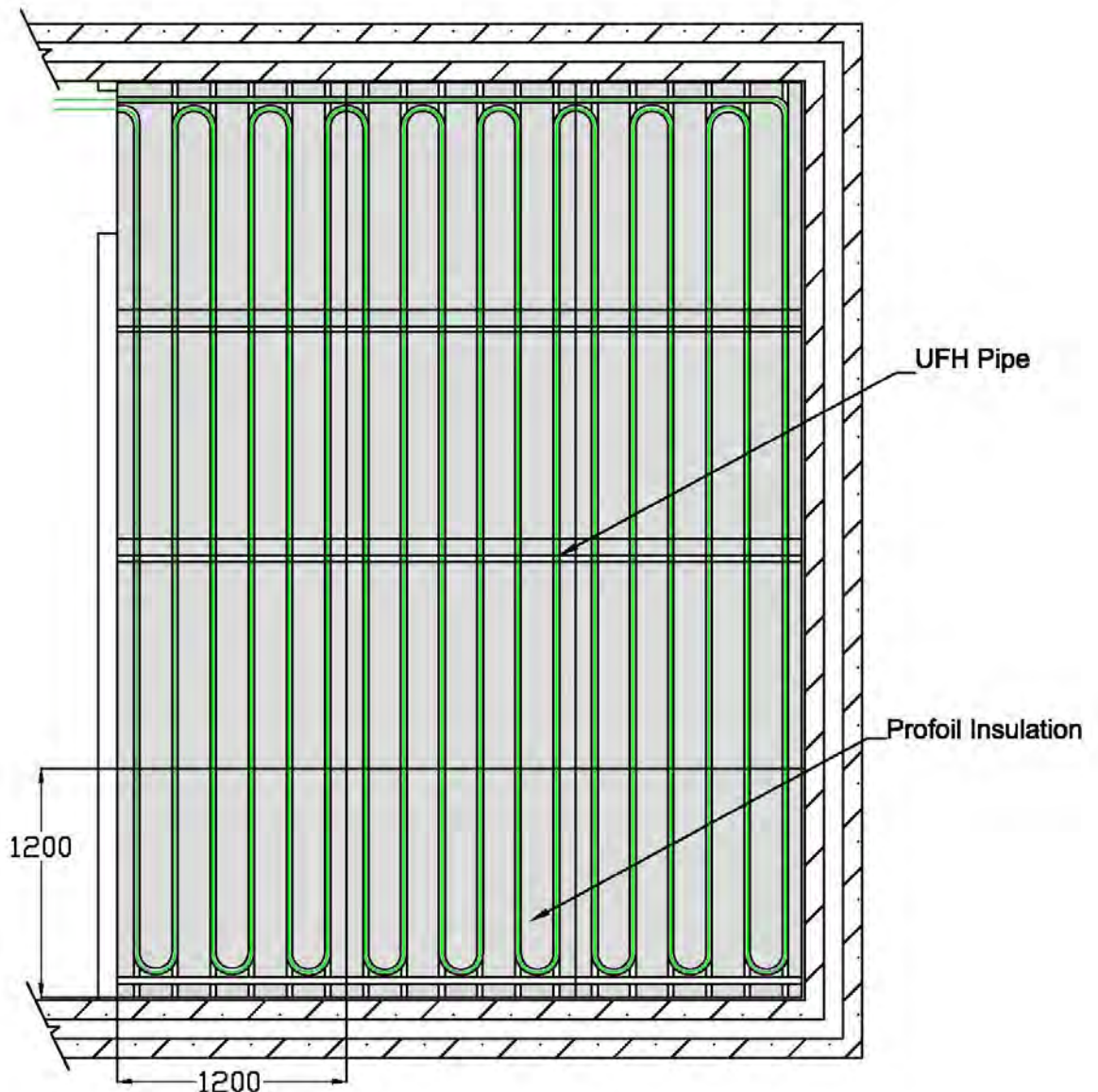
Electrical control wiring is required, ensure that this is in place prior to finishing work is carried out. (Please see drawings at the back of this manual)

Flow and return pipework is required. (Please see drawings at the back of this manual)

The control motorized valve is directional, i.e. flow must be in direction of arrow on the valve body.

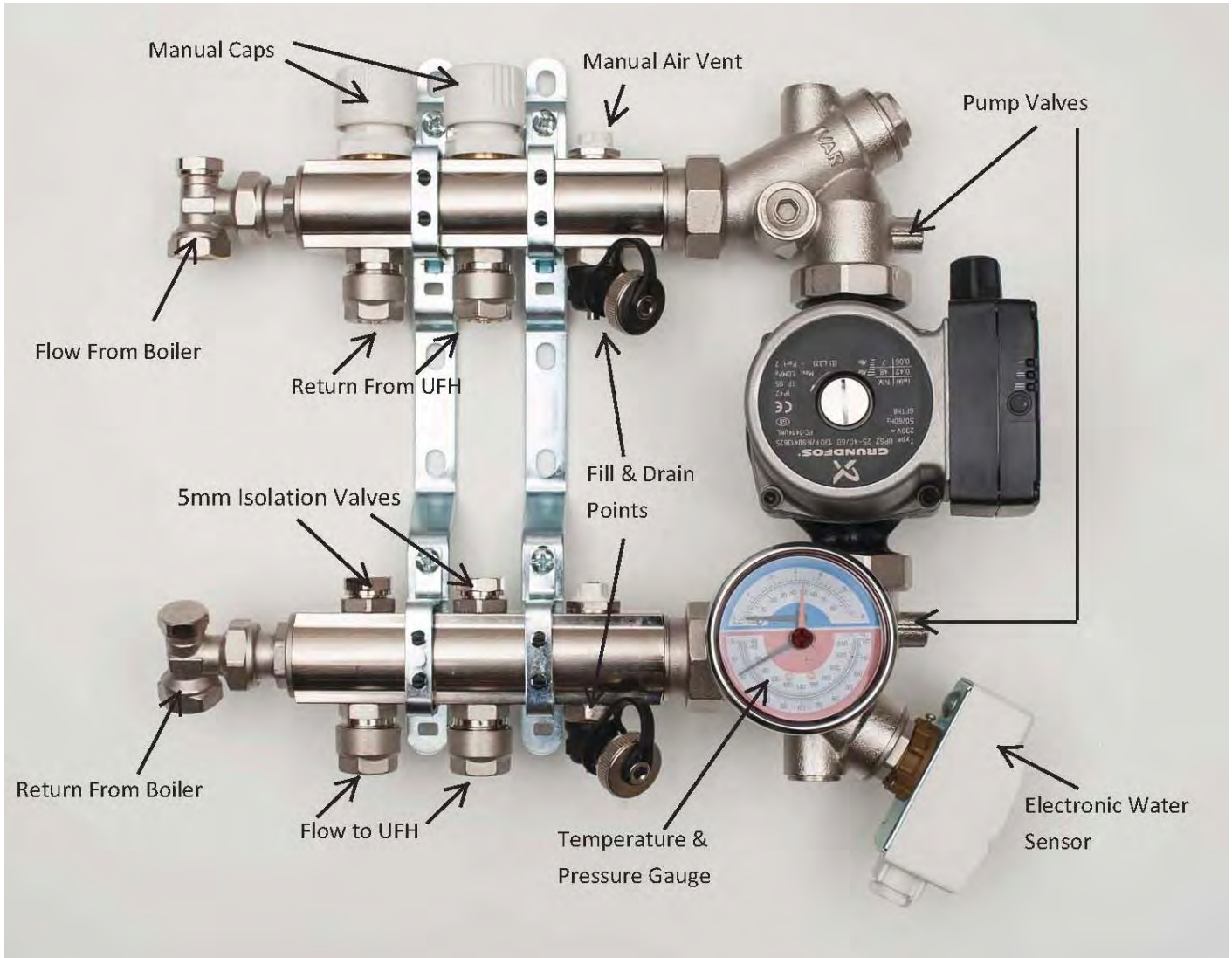
Laying the Pipe Profoil Panels

- The Main consideration when installing the panels are the amount of runs and the route those pipes take from the manifold.
- If more transit grooves are needed then the grooves at the opposite ends can be cut off and used.
- The boards need to be laid so they are level, this will ensure good contact with the floor laid over the boards which is essential for maximum heat transfer.
- When lining up the panel use a short length of pipe into the grooves to align them correctly.
- The boards need to be laid so they are level, this will ensure good contact with the floor laid over the boards which is essential for maximum heat transfer.



**Typical Profoil 1200 x
1200mm Grooved Insulation
Boards**

ABOUT THE MANIFOLD



MANUAL AIR VENTS: - Removes unwanted air from the system.

FILL & DRAIN POINTS: - Used for filling and testing.

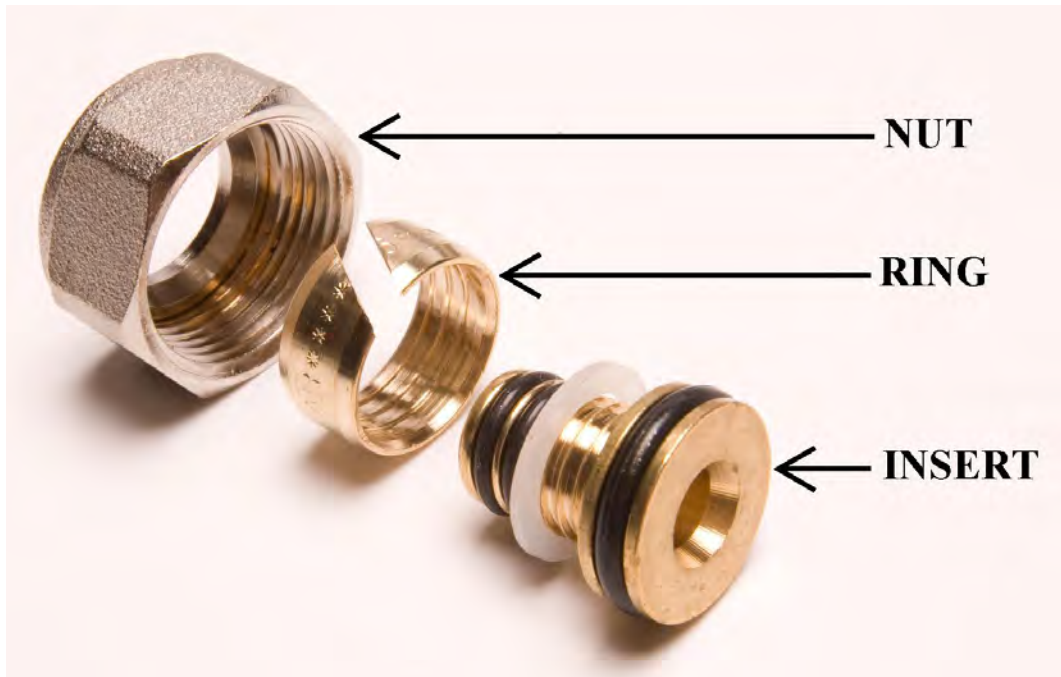
Electronic Water Sensor: - Used to Sense the mixed water temperature around the manifold.

PUMP VALVES: - Used when filling the system and isolating the pump.

FITTING THE MANIFOLD

The manifold should be sited as near to the circuits as possible and fixed vertically to the wall with the bottom section approximately 400mm above floor level. It is a simple job to enclose the manifold on completion of the installation.

CONNECTING THE PIPE TO THE MANIFOLD



The nuts, ring and inserts come attached to the manifold.

TO FIT PIPE

- 1) Remove nut, ring and insert from manifold
- 2) Place nut then ring over pipe
- 3) Push insert into pipe
- 4) Push made up pipe end tightly into top manifold fitting
- 5) Slip ring up pipe until it touches the fitting
- 6) Tighten nut
- 7) Lay pipe onto floor as shown in pipe lay out
- 8) Connect back into bottom manifold, repeat for next circuit

IMPORTANT

Ensure pipe end has been cut square.

When tightening pipe onto manifold fittings, hold fitting with spanner whilst tightening pipe nut.

Once the pipe has been connected to the return manifold, laid according to pipe layout drawing and connected back into the corresponding flow manifold connection, it is now a complete circuit.

When all circuits are fitted and secured, take time to check over pipework and ensure the spacings are correct and there are no kinks in the pipe.

FILLING THE SYSTEM

Once both circuits are installed the system must be filled and pressure tested.

For this you will need mains water supply and a garden hose, follow the step by step instructions below.

- Open the fill + drain points on the flow and return manifolds (turn clockwise with cap provided).
- Shut flow connection by turning white cap clockwise on the angle valve.
- Shut return connection by turning allen key clockwise (located under chrome cap).
- Close bottom pump valve (turn slot to run horizontal).
- Connect mains water supply to the bottom fill + drain point and another piece of hose to the top fill + drain point, the top hose pipe should be put into a bucket.
- Close 1 white cap and leave one open.
- Close the corresponding bottom loop using a 5mm allen key (Located under a chrome nut) and leave one open.
- Turn on the water it will now enter the manifold and flow through the circuit until it exits the hosepipe connected to the top manifold body.
- Let the water flow until all air has been purged from the first loop of pipe.
- At this point the first loop is full. Shut off the white cap on the top body and move on to the next loop opening the 5mm allen key fitting and the corresponding white cap, water should now flow through the next loop. Once full water will exit the hosepipe connected to the top manifold.
- Now both loops are full open bottom pump valve to completely fill manifold and open the manual bleeders momentarily.
- Close fill + drain point on the top manifold body, allow pressure to rise to 3 bar and close fill + drain point.
- System is now filled and under pressure.
- Check for leaks and note pressure, pressure may fall slightly due to stabilization and temperature changes if pressure falls to zero there is a leak.
- Carry out a final check to make sure there are no kinks in the pipe circuit.
- Check pressure after 24 hours.

Study the boiler connection and wiring diagrams, make sure that relevant trades are given the required information.

Please note that consideration should be given to adding antifreeze to the floor warming system - especially during the winter months. This can be supplied by us or others - please contact us for a list of approved manufacturers

Commissioning

Once you have laid underfloor heating, filled & pressure tested, connected the flow and return pipework to the manifold.

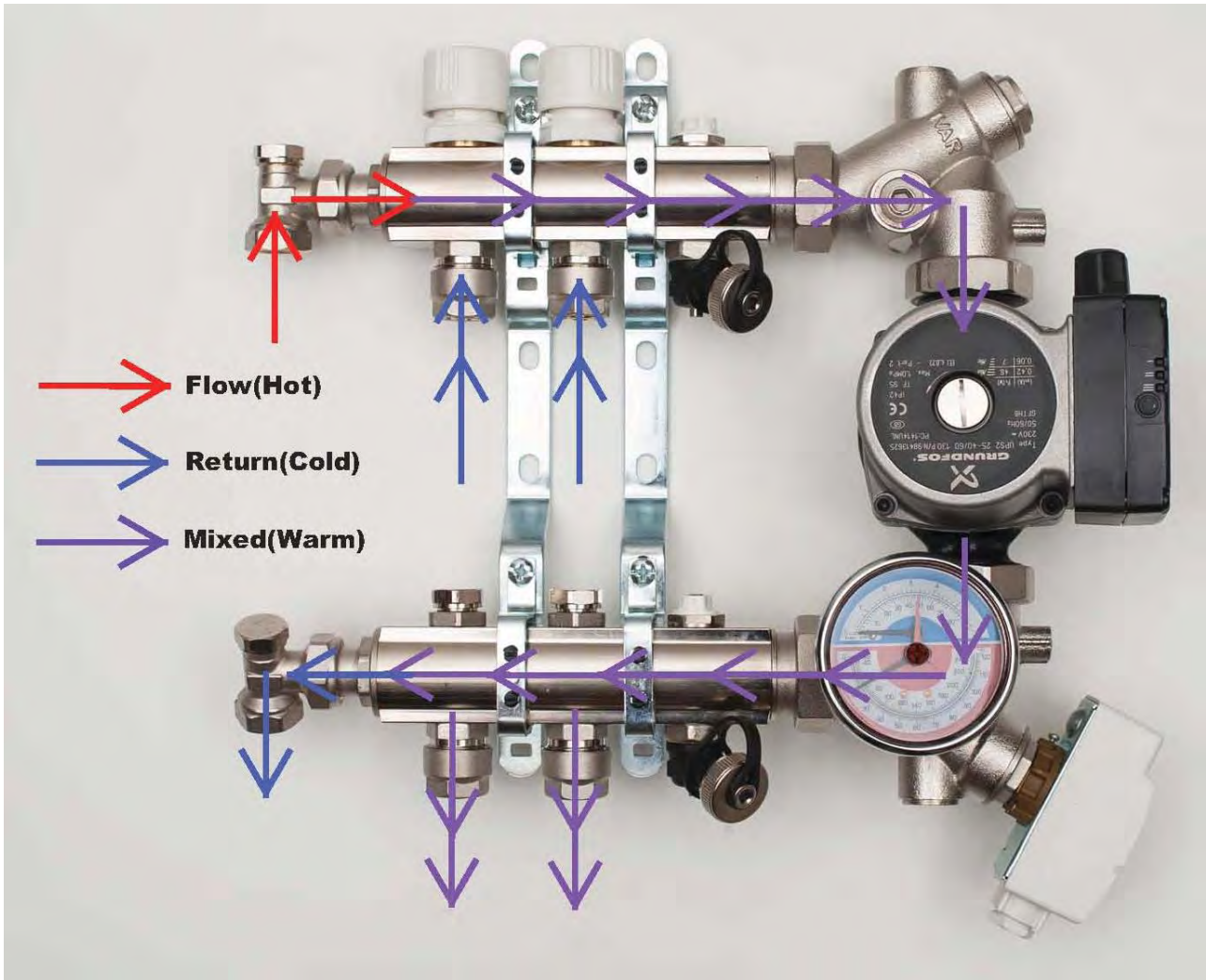
- Open flow to the manifold by turning the white cap anti clockwise.
 - Place the Electronic water sensor into its dry pocket located at the bottom right corner of the Manifold.
 - Set water temperature to low (23°C) on the Electronic Temperature Sensor.
 - Slowly raise the temperature over a few days.
 - Open return to the manifold by using 6mm allen key located under a chrome nut(bottom left hand side of manifold)
 - Bleed any air out of the manifold that may have entered when you opened flow and return. Bleed air using air key or small slotted screwdriver.
 - Turn on the programmable room thermostat (make sure the thermostat is calling for heat).
 - Check the 2 port motorized valve for the UFH has opened. (metal lever should be loose)
 - Check the pump is running & pump valves are open the slot on the pump valves should be vertical.
 - Check boiler has fired up.
 - Check the 2 white heads on top of manifold are fully open. (turn anti clockwise)
 - Check the allen key valves located on the bottom manifold body under the chrome nuts. Use a slotted screwdriver to unwined the locking screw (located inside allen key fitting), then use 5mm allen key to open valves (turn anti clockwise).
 - Hot water should now enter the top manifold body mixing with the cooler water being drawn from the pipework connected to the top manifold body. The pump then pumps the mixed water into the bottom manifold pipework.
 - Once electronic water sensor reaches temperature it will close the 2 port motorized valve and stop taking water from the boiler. The underfloor heating pump will still circulate while ever the room thermostat is calling for heat.
- Note** the electronic sensing element is set at 45°C and can be adjusted up to a **MAX of 65°C**
- Check any other zones i.e. radiators/hot water and make sure they still work correctly.
 - Check bypass is working correctly.
 - Turn off thermostat and check the 2 port valve pump & boiler have turned off. Boiler may still run if other zones are calling for heat or boiler has a pump over run.

Note

The initial warm up period will take a long time as the floor is cold and will remove all the heat from the pipework. This will result in the water entering the floor (bottom body) will be warm as stated by temp gauge & the water coming up to the top body will be cold.

The floor temperature should be gradually increased over a number of days as not to damage the concrete/screed floor.

How the Manifold Works



Hot water from the boiler flows into the manifold, water then runs through the top body of the manifold also pulling water from the underfloor heating pipe work. This is where the mixing of the hot water from the boiler and the cool water that has been in your floor heating pipe work mixes together. This mixed water then runs down through the pump and passes over the Electronic Temperature Sensor. If the water passing over the sensor is warmer than the temperature set on the Electronic Temperature Sensor (anywhere between 20 -65°C) the zone valve will close and not take any more hot water into the manifold and turns off your boiler.

OPERATING INSTRUCTIONS

There are 3 main elements of control for your underfloor heating:

The Programmable Clock Thermostat, 2 Port Valve & Electronic sensing element

Programmable Thermostat

This thermostat gives you the ability to set overall time control with two different temperature settings.

As with a more conventional heating system the first temperature setting is used to provide a comfortable living environment (typically 21°C) for the time you spend in the room.

The second setting can be used to provide a facility called NIGHT SETBACK.

Night setback is where the second temperature setting is at a much lower level (typically 16°C).

Setting the clock thermostat to the night setback temperature will turn the boiler and pumps off until the temperature (at the clock stat) drops to 16°C.

The night setback stops the room from cooling right down during the night so that the room can be brought up to a comfortable working temperature quicker and more efficiently in the morning. To set the time and temperature on the clock thermostat refer to the user instructions provided with the thermostat.

Electronic water sensor & 2 Port Valve

The electronic water sensor is situated at the manifold and its purpose is to blend down the high temperature water from the boiler to a lower temperature suitable for underfloor heating. The sensor will be set at 45°C this can be adjusted up to **65°C Maximum**. The electronic sensor controls the water temperature running around the underfloor heating system, when the set temperature has been achieved it will shut off the 2 port valve stopping anymore warm water entering the manifold and also stops the heat source producing anymore heat until required.

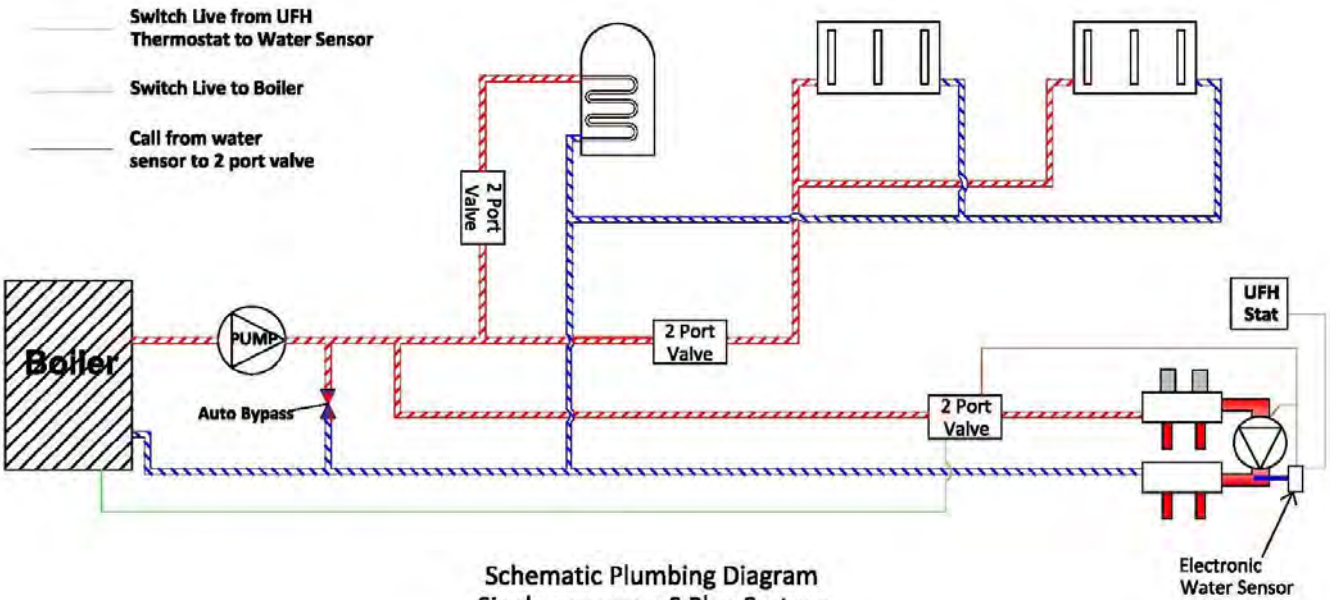
NOTE

Floor heating is not a quickly responsive form of heating (like a gas fire) and can take some time to reach the desired temperature. The opposite is also true in that it takes a while for the floor to cool down.

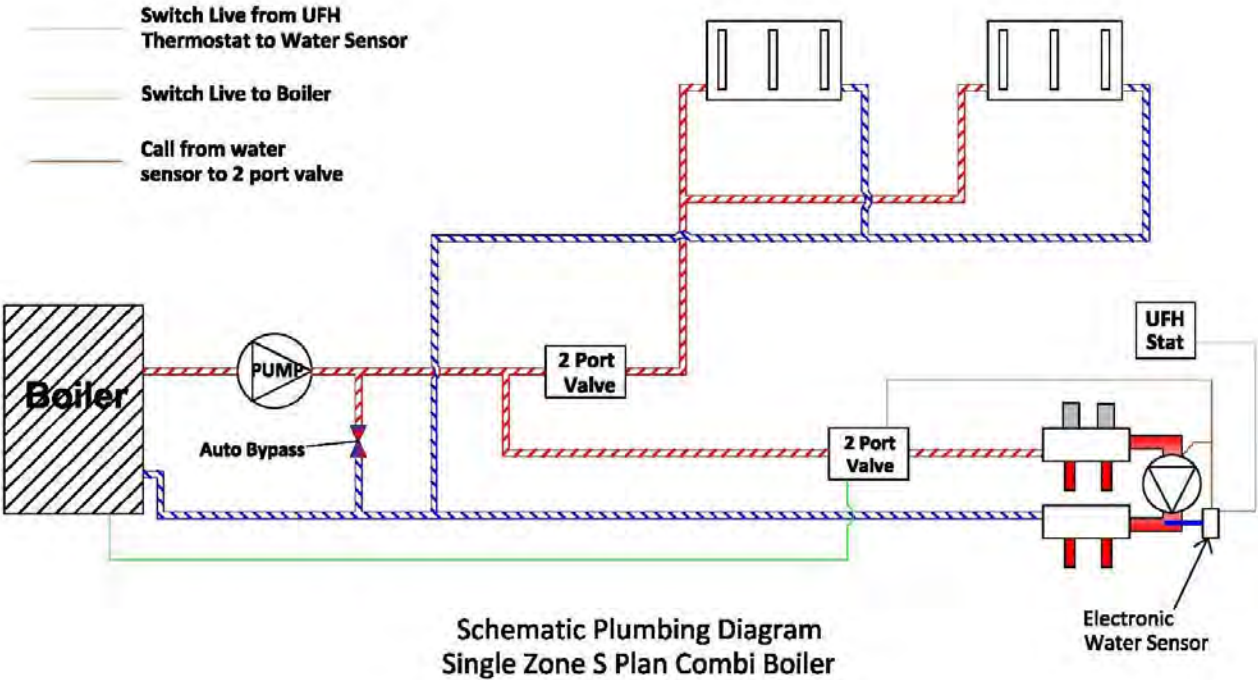
For example, if you want the room up to temperature by 8am set the higher temperature to 6am if you stop using at 11pm set the lower temperature setting to 9pm.

Plumbing on a S Plan System

S PLAN

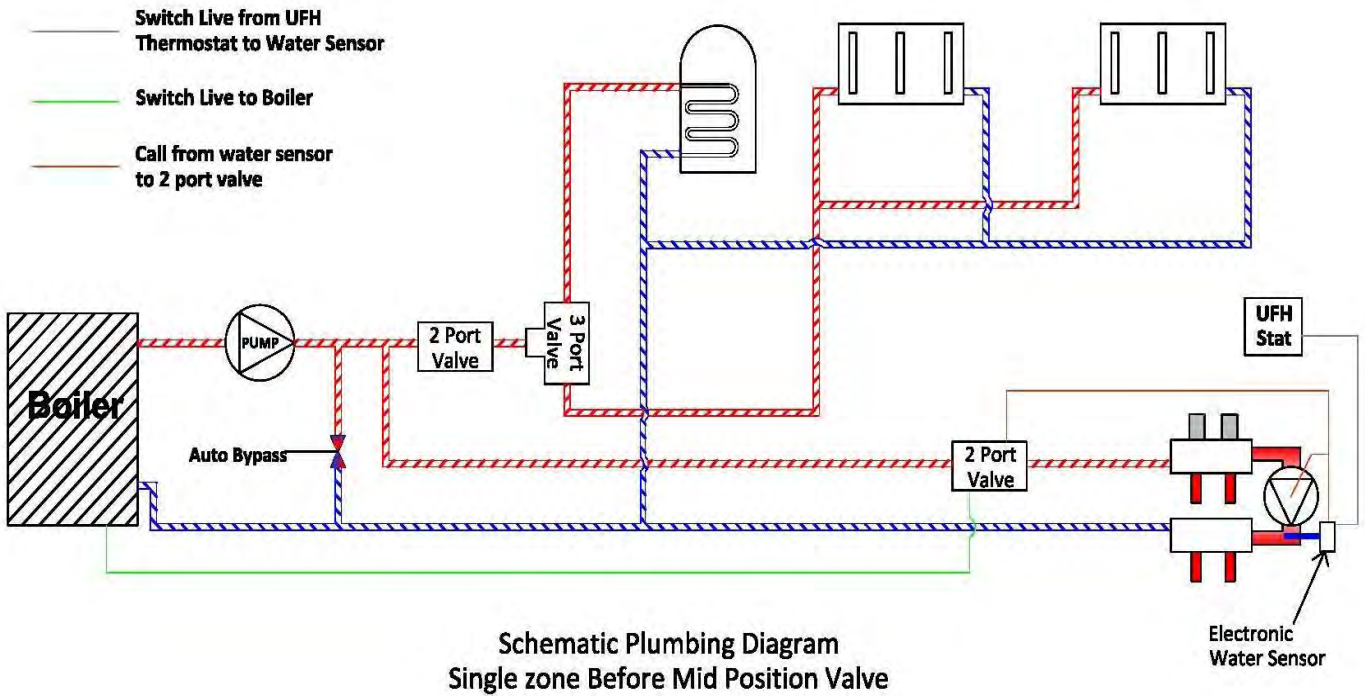


Combi Boiler

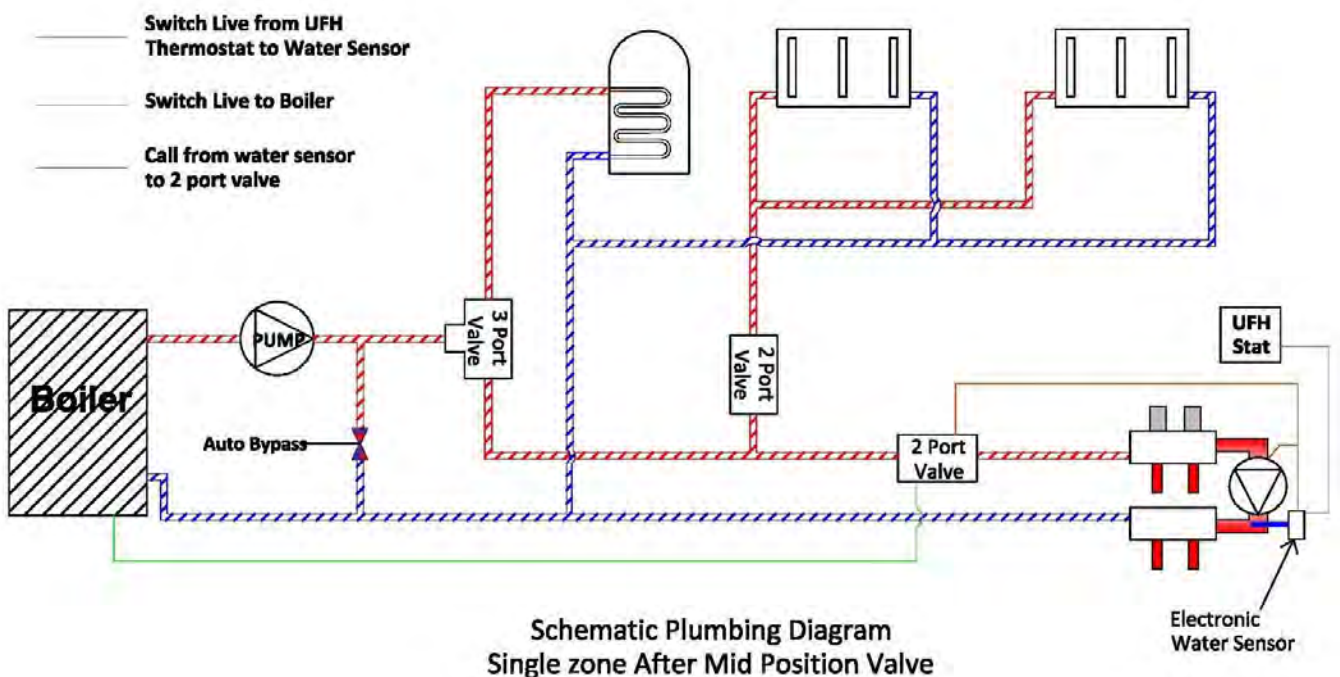


Plumbing on a Mid Position Valve (Y Plan System)

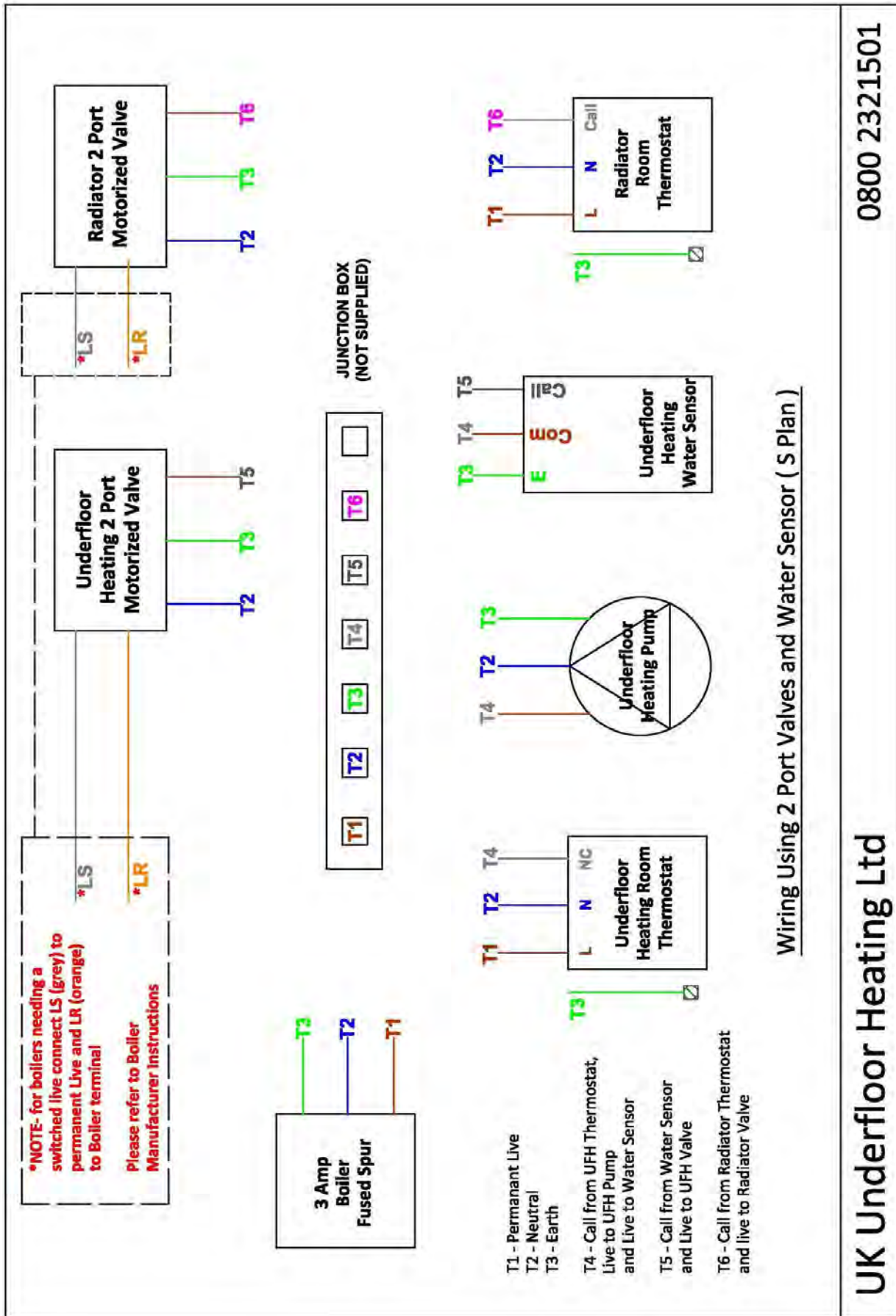
Connecting Before Mid Position Valve



Connecting After Mid Position Valve



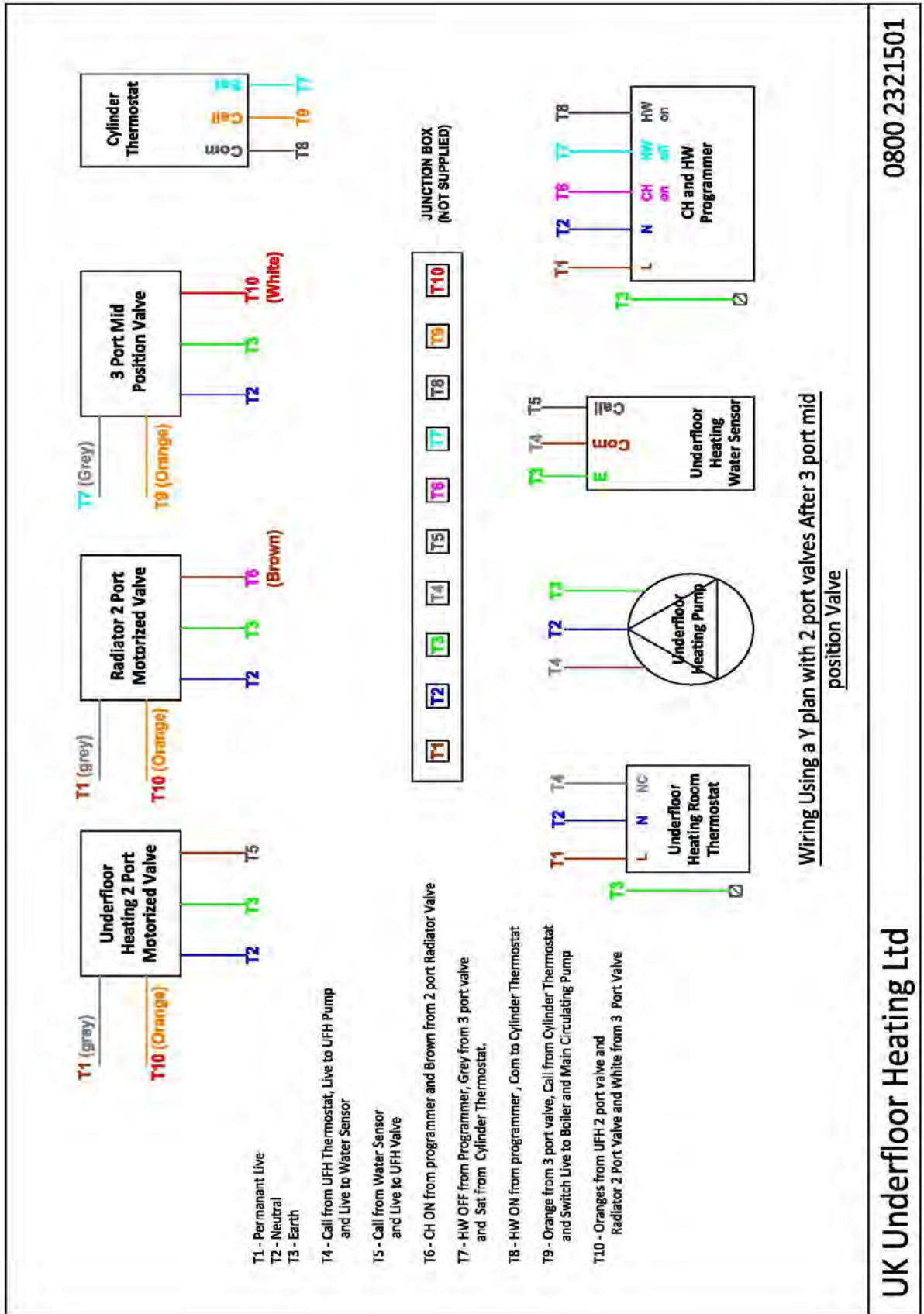
Wiring on a S Plan and Combi System



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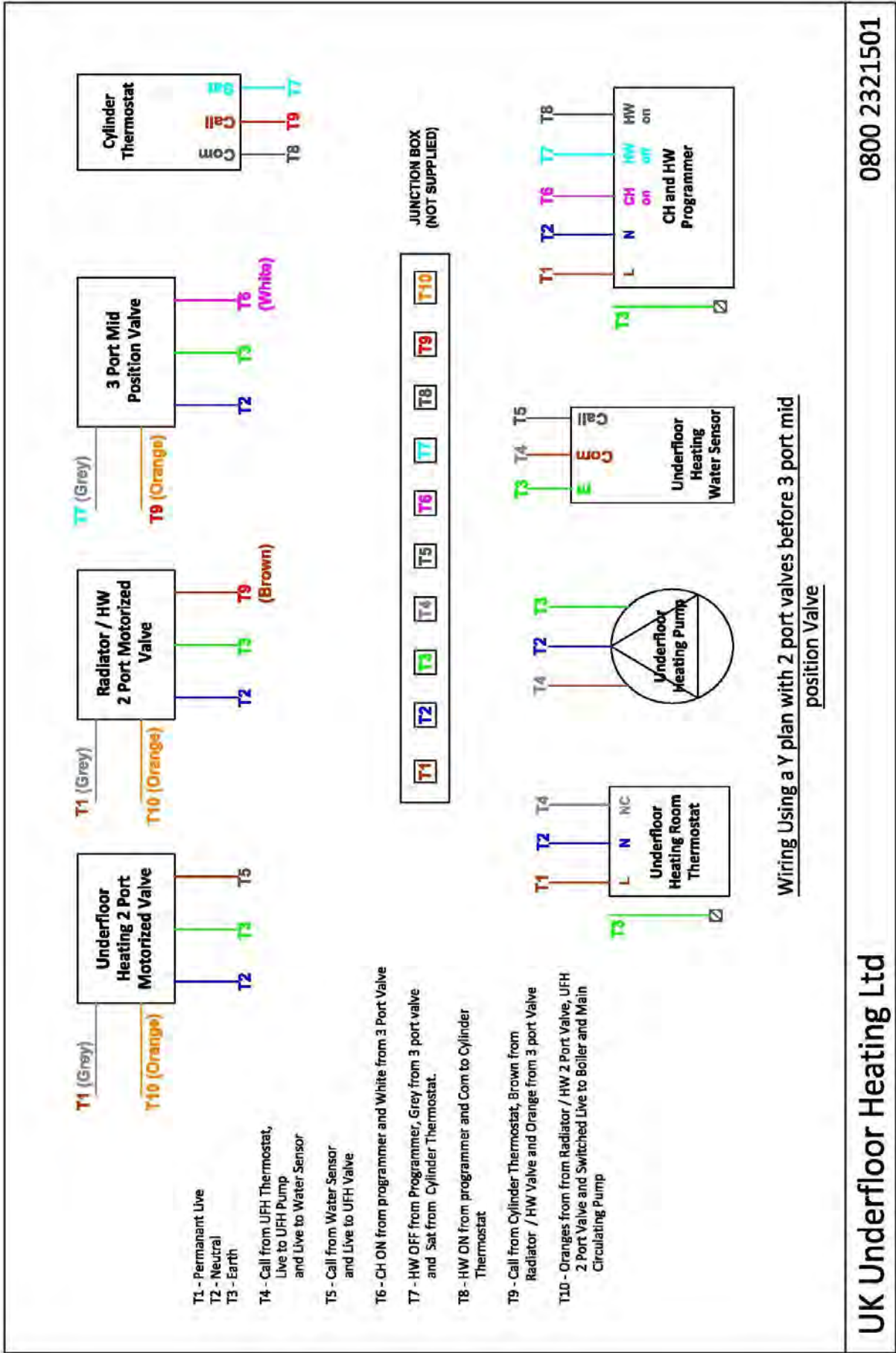
Wiring After Mid Position Valve (Y Plan System)



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Wiring Before Mid Position Valve (Y Plan System)



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