



LoPro[®]Max OneZone[®]

installation manual





working with you
**before,
during
& after**
your project

**Nu-Heat
Know-How**

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Installation manual for Nu-Heat LoPro® Max OneZone® warm water underfloor heating

Congratulations on buying a Nu-Heat OneZone® underfloor heating system, which has been designed to make installation as simple as possible. Please read this manual fully before fitting. It assumes a basic knowledge of plumbing and electrical work, and of common terms used. If you are unsure you should consult Nu-Heat's Technical Support team or a qualified tradesperson.

Attention to the advice given in this manual will help to ensure a trouble-free and effective installation.

The requirements of the relevant British Standards, Water By-laws and other Regulations should always be met.

In line with the company policy of product development, Nu-Heat reserves the right to supply different components to those shown.

Please ensure that this manual remains with the homeowner when installation is complete.

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TAKING DELIVERY

Please check your delivery contents against the delivery note and report any discrepancies within 7 days of receipt.

AVOIDING DAMAGE TO THE PIPE

If it is necessary to store the pipe, keep it dry, out of direct sunlight and away from sharp objects or possible chemical spillage. Avoid any soldering near Fastflo® pipe as overheating may result in failure. Pipe that may become frozen before or during installation or whilst the screed dries should have anti-freeze added and be thoroughly flushed afterwards. Do not kink the pipe by over-bending.

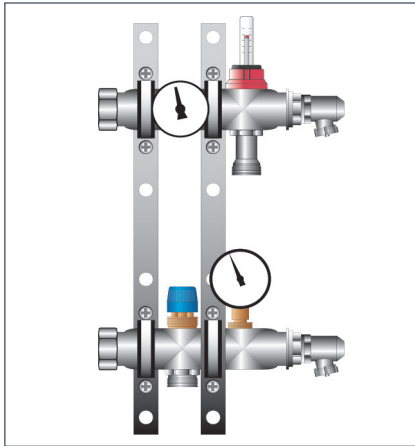
TOOLS REQUIRED

- Stanley knife
- Drill plus paddle/whisk attachment
- Bucket
- General plumbing tools
- Roller for floor primer
- Hosepipe for filling/pressure testing
- Screwdrivers
- Adjustable wrench
- Pipe cutters

Additional items

- Expanding foam
- Cartridge flexible mastic
- Builders' tape

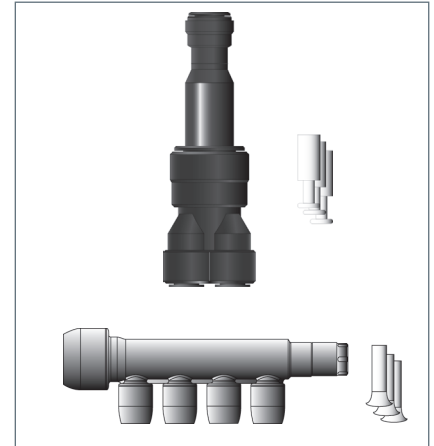
System components



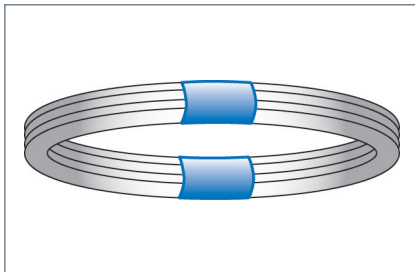
OneZone® manifold



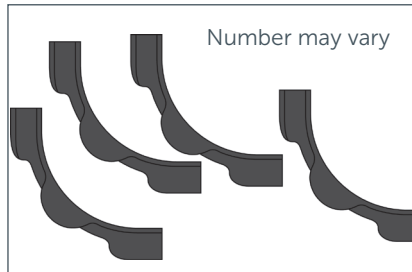
Pump and blending valve assembly



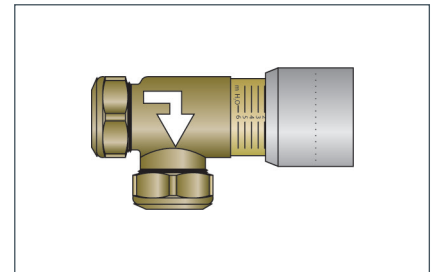
Distributors and blanking plugs



10mm Fastflo® floor heating pipe



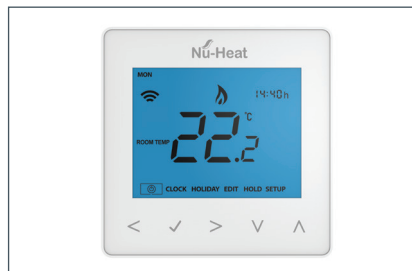
Pipe guide curves (<35m² kits only)



Automatic bypass valve



OneZone® wiring centre



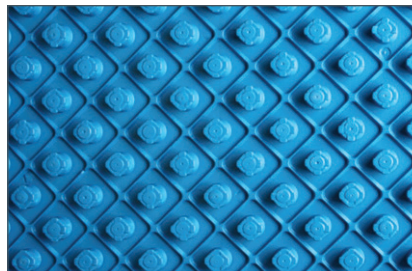
Programmable thermostat or wireless programmable thermostat



Floor temperature sensor



Perimeter tanking & expansion strip



LoPro®Max castellated panel



LoPro®QuickSet self-levelling compound



EcoPrim T floor primer

Optional items



Optional latex floor leveller

Can be used to adjust the floor height from 1 to 10mm to match that of floor finishes in adjoining areas and for vinyl floor finishes such as Amtico and Karn-dean where the floor requires a flawless surface finish.

Size: Supplied in 25kg bags with separate 5kg container of liquid latex.



Optional de-coupling membrane

For use with ceramic tiles and natural stone products. See also datasheet *LoPro®Max De-coupling Membrane*.



Optional 5mm IsoRubber-UFH-NH

5mm acoustic IsoRubber for use below castellated panel where height build-up allows.

Size: 1000mm x 10m x 5mm (10m²).



F Ball 44

Adhesive used to secure IsoRubber.

Size: Supplied in 5, 2.5 and 1-litre tubs.

Optional items can be purchased from the webstore at www.nu-heat.co.uk

Preparation

Some preparation works are required before starting, to ensure a successful installation

BOILER SIZING

A LoPro®Max OneZone® system produces a heat output up to 160W/m². You must ensure your boiler has enough spare capacity for the additional heating load.

It is likely that the existing domestic heating boiler will have sufficient capacity to cover the extra load the floor heating zone requires. As a general rule-of-thumb the maximum heat input equates to 100 watts per m² of floor area; for example, a 20m² room would require 2000 watts (2kW) of heat from the boiler. If in doubt, a heating engineer should be able to check heat losses for the property and calculate spare boiler capacity.

Before installation of the OneZone® it is the responsibility of the homeowner/ installer to check the heat loss of the room in order to confirm that the UFH will meet the heating requirement taking into account the chosen floor finish and flow temperature.

OneZone® LoPro®Max HEAT OUTPUT TABLE

Flow water temp.	Carpet & underlay	Engineered hardwood	Tiles on de-coupling layer	Vinyl
50 °C	65 W/m ²	65 W/m ²	130 W/m ² (limit to 100)	120 W/m ² (limit to 75)
55 °C	78 W/m ²	78 W/m ² (limit to 75)	155 W/m ² (limit to 100)	144 W/m ² (limit to 75)

Where necessary, the floor temperature is limited by either a floor sensing thermostat or an air sensing thermostat. For details, please see page 27.

ADDITIONAL CONSIDERATIONS FOR RETRO-FITTING

Whilst the height build-up is small, its impact must be properly considered.

- **Skirting:**

For best results remove skirting before laying LoPro®Max.

- **Doors:**

At door thresholds, the panel is likely to impact on door clearance. Doors normally need to be removed and trimmed.

- **Stairs/steps:**

On ground floors, some build up can normally be accommodated without affecting stairs, but at the top of a staircase it may be necessary to adjust the height of each tread.

GENERAL INSULATION RECOMMENDATIONS

Depending on the age of the property there may be some insulation below the floor structure: between the joists of a suspended timber floor or below the existing concrete slab. Traditional floating floors will always incorporate an insulation layer below the T&G chipboard deck. Where insulation is already in-situ, LoPro®Max can be laid directly on top of the existing floor.

SOLID GROUND FLOORS WITH NO EXISTING INSULATION

Due to the thermal characteristics of a solid sub floor downward heat loss is limited to between 6% and 10% of the total heat output, which represents a small percentage of the annual heating costs for the property. The energy-saving features of underfloor heating (which include being able to run the heating approximately 1 °C lower than with traditional radiators because radiant warmth is emitted where it is of most benefit rather than convection currents carrying it to the ceiling, as with radiators) and low flow temperatures that mean condensing boilers operate more efficiently, helping to cancel out the small amount of downward heat loss.

There is no economic justification for replacing an existing floor slab that is in good repair just to add a layer of insulation. However, where practical and sufficient height build-up is available, a layer of insulation plus an 18mm T&G deck can be fitted over the slab and below the LoPro®Max.

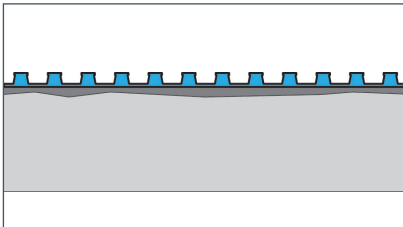
FLOOR PREPARATION

Solid concrete or screed sub-floors

Before installing the underfloor heating check the condition of the solid concrete or screed sub-floor. Any defects must be repaired and loose, dusty or friable material must be removed and the surface primed with an appropriate compound prior to fitting the underfloor heating.

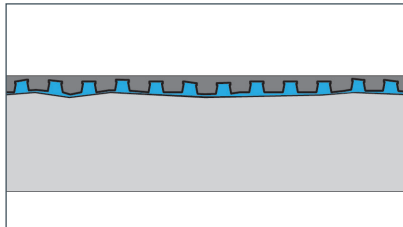
Sufficient compound is supplied to accommodate +/-2.5mm height variation across the floor surface. See chart on page 11.

There are two options for levelling the sub-floor:



EITHER:

Use self-levelling compound to level the floor before installing the LoPro®Max castellated panels, (sufficient compound for preliminary levelling is not included in the material supplied by Nu-Heat*)



OR:

Lay the LoPro®Max castellated panel on the uneven floor and use additional LoPro®QuickSet self-levelling compound to level the floor*.

***Additional LoPro®QuickSet can be purchased from Nu-Heat.**

Perimeter tanking

If skirting boards are removed the perimeter wall should be repaired and filled with an appropriate filler or expanding foam. All gaps must be filled to provide a flat surface for the perimeter expansion strip and prevent self-levelling compound from seeping out at the edges of the room.



Example of poorly sealed area – self-levelling compound has sunk.

Suspended timber floors

Before installing the underfloor heating it is crucial that the structural integrity of the existing floor is checked and any repairs made. This includes fixing down or replacing loose floorboards or chipboard decking and replacing areas of excessive movement in floating floors (e.g. through doorways).

Joists must be of a suitable load-bearing capacity; if in doubt always consult a structural engineer. At an average depth of 22mm, LoPro®Max uses 1.33 bags of LoPro®QuickSet self-levelling compound per square metre, which equates to additional weight of **39.3 kg/m²**.

Recommendations for suspended timber ground floors with no insulation

The heat loss characteristics of a suspended timber ground floor are very different to those of a solid floor. The low ambient temperature in the void below the floor plus air movement/draughts caused by air bricks means that the suspended timber sub-floor construction provides little resistance to downward heat transfer and must be insulated to prevent excessive heat loss. This can be achieved quite easily and economically using one of the following methods.



Option 1

Space Blanket can be used to insulate between joists. Access to the void below the floor can usually be made between the floor joists, and the crawl space below can be used to fit the insulation to the underside of the floor.



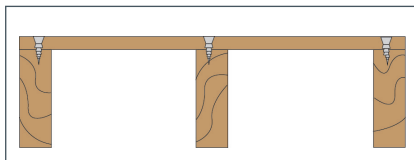
Option 2

Where floor deck is being removed or replaced use Netlon and mineral wool to insulate between floor joists.

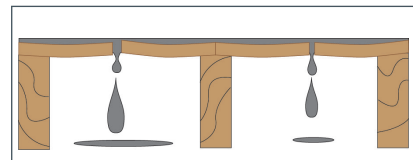


Option 3

Lay 80mm of rigid insulation over existing floor deck with an 18mm structural T&G deck over before fitting the LoPro®Max.



- 1 Loose floorboards/chipboard must be repaired and screwed down securely.



- 2 Gaps between floorboards should be repaired, or filled with waterproof mastic, to avoid possible seepage of the self-levelling compound.

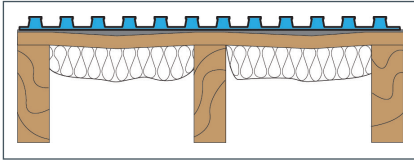
Note: If required a 10mm wood fibreboard acoustic layer, available from Nu-Heat, can be laid over the sub-floor and below the UFH layer to reduce noise between floors. This is particularly useful in loft conversions.

All floors must be clean and suitably flat and level before laying the self-adhesive castellated panels. Dusty floors should be primed with an appropriate compound to provide a good bond between the floor and the panel.

Sufficient compound is supplied to accommodate +/-2.5mm height variation across the floor surface. See chart on page 11.

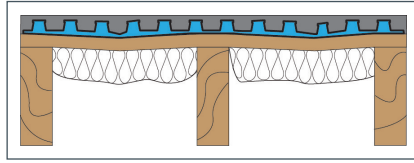
FLOOR PREPARATION – continued

There are two options for levelling the sub-floor:



EITHER:

Use self-levelling compound to level the floor before installing the LoPro® Max castellated panels, (sufficient compound for preliminary levelling is not included in the material supplied by Nu-Heat*)



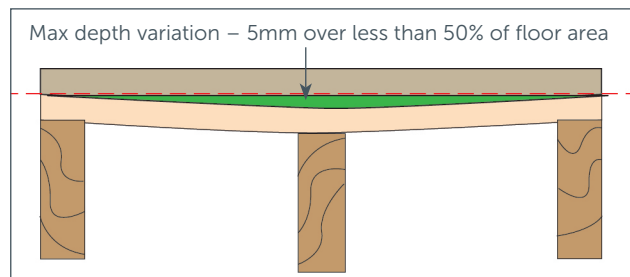
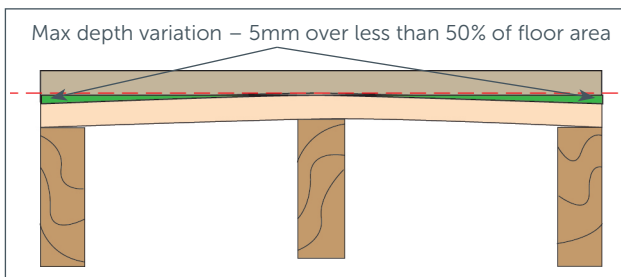
OR:

Lay the LoPro® Max castellated panels on the uneven floor and use additional LoPro® QuickSet self-levelling compound to level the floor*.

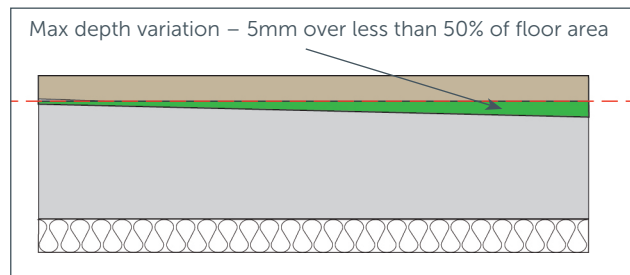
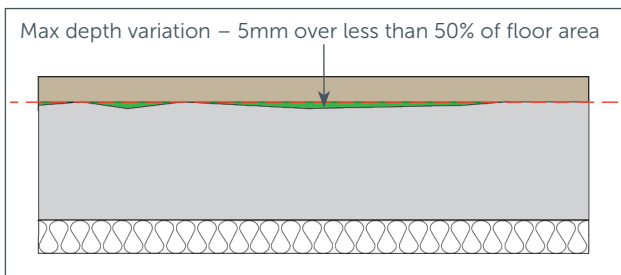
***Additional LoPro® QuickSet can be purchased from Nu-Heat.**

Checking the level of the floor

Sufficient LoPro® QuickSet self leveling compound will always be supplied with the system to accommodate a floor height variation of 5mm, over no more than 50% of the area. However, kits below 30m² can accommodate a greater variation and where the actual floor area is less than the kit size ordered, the amount of LoPro® QuickSet supplied will also allow a greater floor height variation.



Areas shown in green denote additional requirement but are within the +/-2.5mm tolerance.



Floors that are outside the tolerance given in the table below will either require levelling before the LoPro®Max OneZone® is fitted or additional self-levelling compound will be required as detailed in the last column in the table below.

The following table is for guidance only.

Additional LoPro®QuickSet can be purchased from Nu-Heat.

Kit code	Kit area max	Room area shortfall compared to kit size, m						QuickSet Bags supplied	Order bags per EXTRA 5mm variation
		0	1	2	3	4	5		
		Permitted floor height variation (mm) over less than 50% of floor area							
OZ04M	4m²	10	20					6	1
OZ05M	5m²	7	15					7	1
OZ06M	6m²	10	16					9	1
OZ07M	7m²	8	13					10	1
OZ08M	8m²	6	11					11	1
OZ10M	10m²	7	10	15				14	2
OZ12M	12.5m²	5	8	11				17	2
OZ15M	15m²	7	9	12				21	3
OZ17M	17.5m²	6	8	10				24	3
OZ20M	20m²	5	7	9				27	3
OZ25M	25m²	5	7	8	10	11	13	34	4
OZ30M	30m²	5	6	7	8	9	11	41	5
OZ35M	35m²	6	7	6	9	10	11	48	6
OZ40M	40m²	5	6	7	8	9	10	54	7
OZ45M	45m²	5	6	7	8	8	9	61	8
OZ50M	50m²	5	6	7	8	8	9	68	9
OZ55M	55m²	6	6	7	7	8	9	75	9
OZ60M	60m²	5	5	6	6	7	8	81	10
OZ65M	65m²	5	5	6	6	7	7	88	11
OZ70M	70m²	5	5	6	6	7	7	95	12

First fix system configuration

There are different ways to connect OneZone® to your existing heating system. Decide which is right for your installation before commencing work.

A – Connection to the radiator circuit

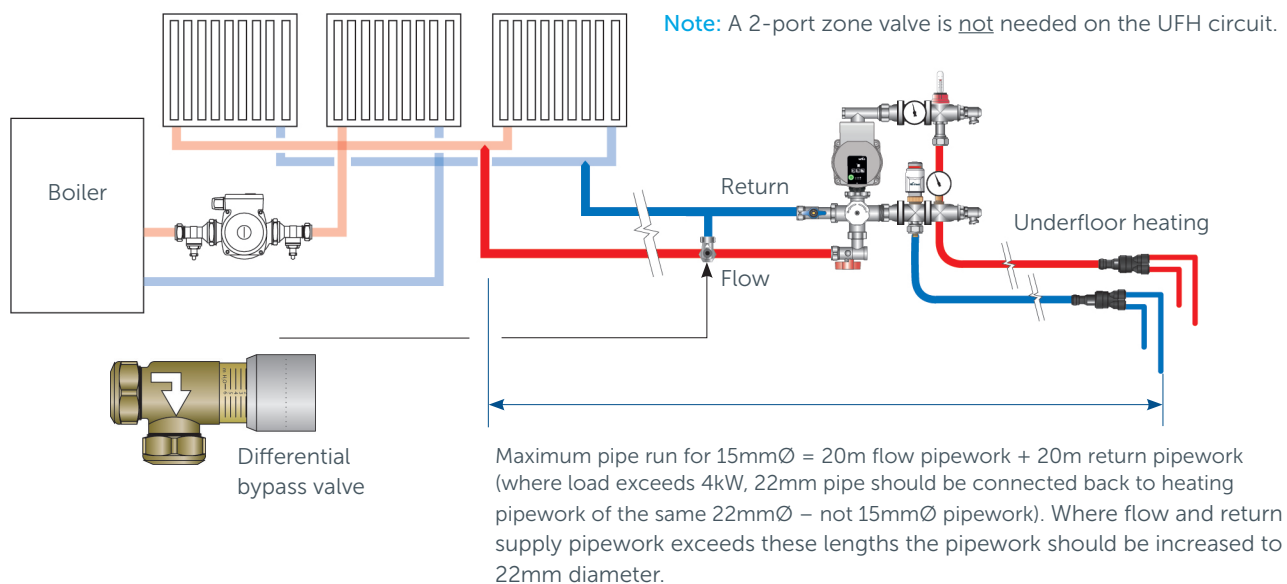
New pipework to OneZone® is connected at a convenient point in the radiator circuit. This means that heating times for OneZone® must correspond to those for the radiator circuit. Heating times for the whole system may have to be altered to allow for the longer warm-up time of underfloor heating compared to radiators and set-back operation will not be possible.



Refer below for plumbing connections.

No direct control of the boiler

A – RADIATOR CIRCUIT CONNECTION – NO DIRECT CONTROL OF THE BOILER



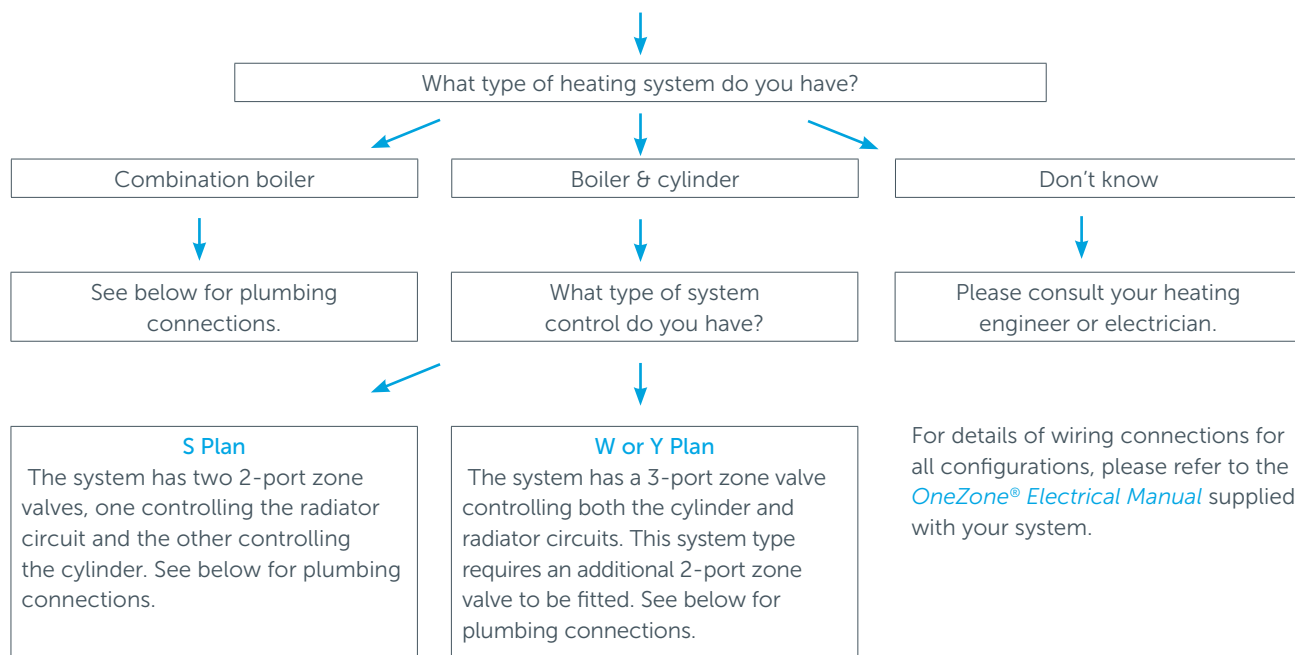
DIFFERENTIAL BYPASS VALVE

The differential bypass valve should be fitted between the flow and return supply pipes, before the pump and blending valve assembly and as close as possible to it. It should be set to 0.5 bar (marked 5 on valve).

Note: The direction arrow must point from flow to return.

B – Connection at the boiler

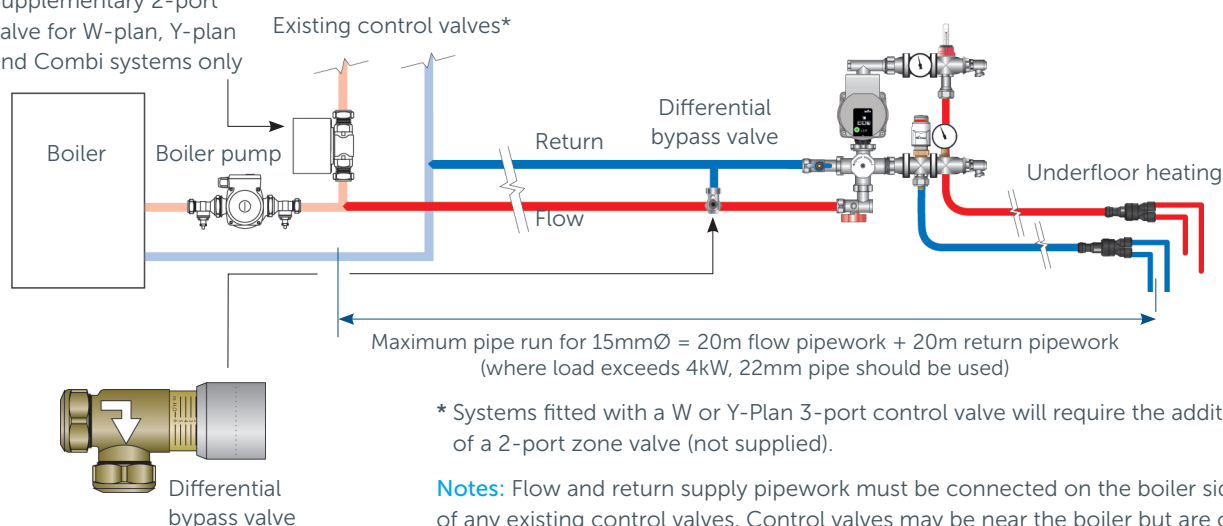
This arrangement gives optimum performance. It allows time and temperature settings for OneZone® to be independent of other areas of the home. It also enables use of a set-back temperature to reduce warm-up times. Pipework is connected on the boiler side of any control valves.



Direct control of the boiler

B – DIRECT BOILER CONNECTION – DIRECT CONTROL OF THE BOILER

Supplementary 2-port valve for W-plan, Y-plan and Combi systems only



DIFFERENTIAL BYPASS VALVE

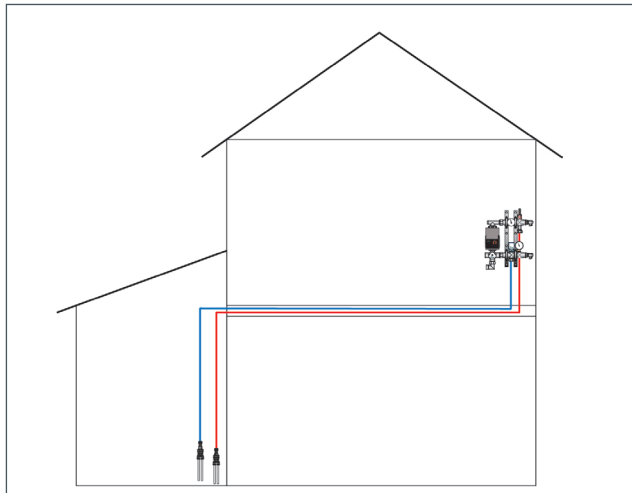
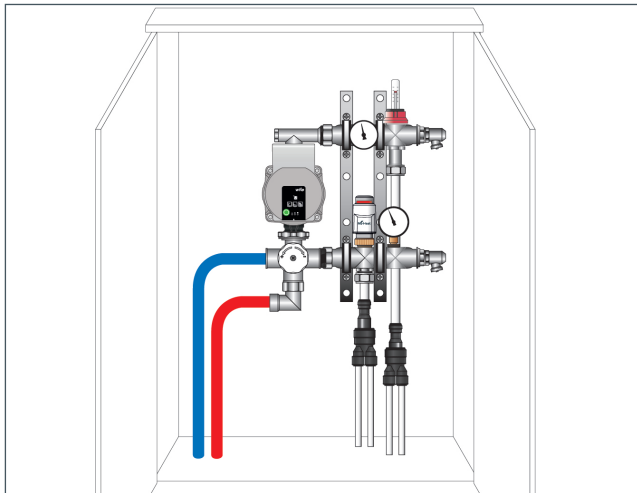
The differential bypass valve should be fitted between the flow and return supply pipes, before the pump and blending valve assembly and as close as possible to it. It should be set to 0.5 bar (marked 5 on valve).

Note: The direction arrow must point from flow to return.

The manifold

POSITIONING

The manifold assembly can be installed in or near the room in which you are installing the underfloor heating, or remotely in a position that suits your property. The pump and manifold assembly have been designed to be low in profile and as small and compact as possible, this enables installation into tight spaces.



Internal cupboard dimensions (mm) should be no less than 450 wide x 600 high x 150 deep.

The OneZone® Pump Module will need to be connected to the flow and return central heating pipes, either off an existing radiator system or directly from the boiler prior to the existing control valves and this should be taken into account when considering position. The electrical control box should preferably be positioned near existing heating control equipment for 'direct boiler control' setup or next to the pump for the 'no direct boiler control' option.

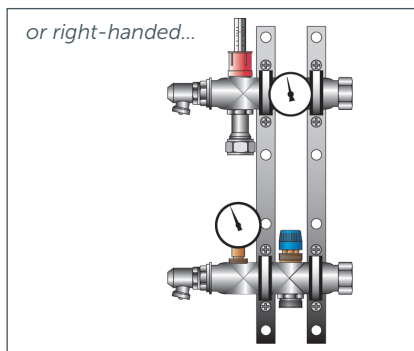
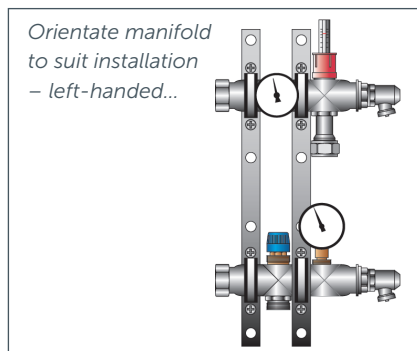
When fitted vertically the manifold assembly should be fixed a minimum of 500mm off the floor. The assembly can be placed in an adjacent room if more convenient, and tube passed through the wall or floor; however the distance should not exceed 1 metre from the distributors to the room to ensure you have sufficient 10mm Fastflo® tube to complete the installation.

Notes: The manifold brackets are designed such that one rail is offset for the pipes to pass behind it – the brackets should be orientated to take account of the direction of the pipes. The supply (flow) manifold must be the rail with the flow gauges.

The manifold is fed from the pump module and is connected to the captive nuts using the washers supplied to give a watertight seal. A proprietary sealing compound can be used in addition.

MANIFOLD ORIENTATION

OneZone® manifolds are supplied boxed and ready assembled, except for the temperature gauge, which must be pushed into the pocket on the flow manifold. However you may require to change the handing of the manifold.

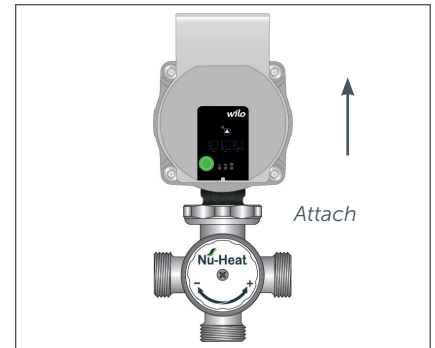


- 1 Unscrew the manifold-rail mounting clamps, turn the manifold to the correct orientation and re-fit the mounting clamps.
- 2 Remove the temperature gauge (this is a press fit), unscrew the boss, and the blanking screw on the reverse.
- 3 Refit the boss on the front of the rail, and the blanking screw on the back. Refit the temperature gauge.

Assembling the pump module

The pump module can be assembled left- or right-handed to suit the project.

The pump module is supplied unassembled, however the packaging has been designed such that components are in their relative positions for connection to the left hand side of the manifold, in an exploded view style.

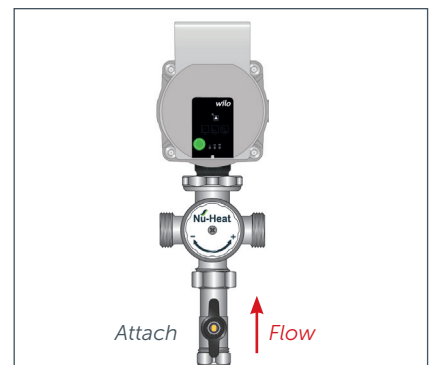
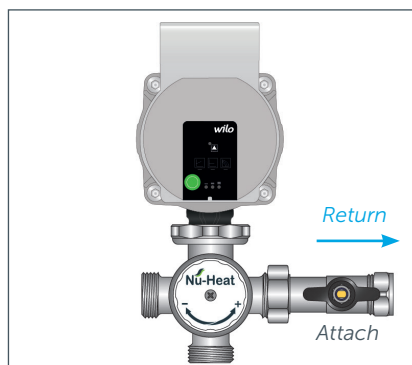
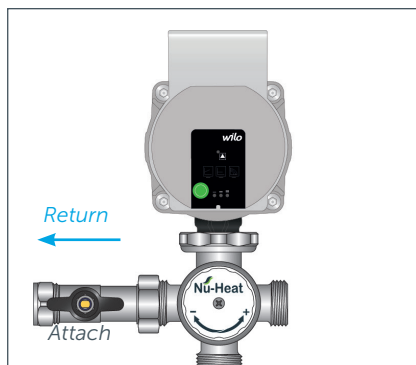


The first steps in the assembly of the pump module are independent of manifold orientation.

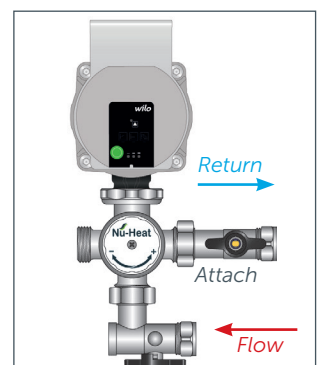
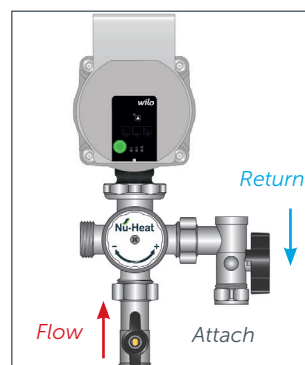
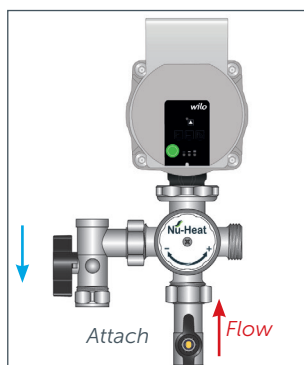
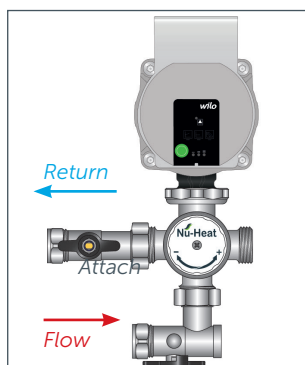
- 1 Note the direction of flow on the pump, indicated by an arrow on the cast body.

- 2 Attach the temperature blending valve to the input of the circulation pump using the valve's integral captive nut and the rubber washer.

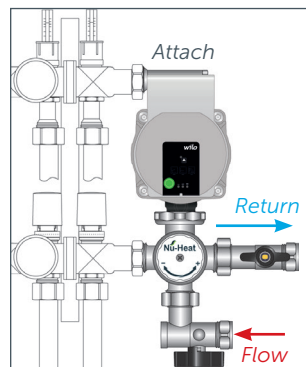
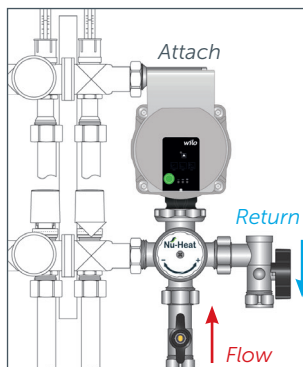
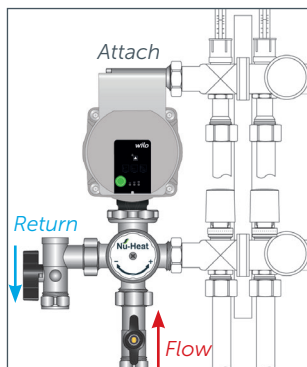
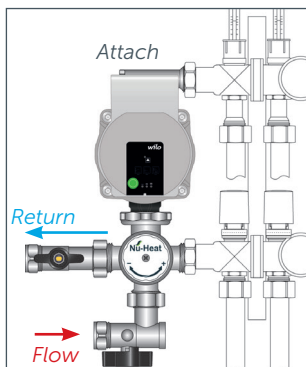
Alternative connection options for pipework



- 3 Take the straight isolating valve and attach to the left-, right-hand side or bottom of the blending valve as required.

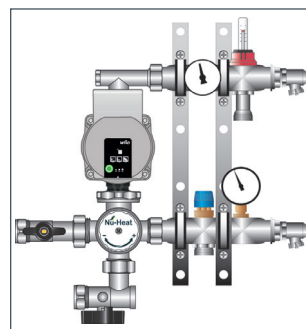


- 4 To the bottom of the temperature blending valve attach the elbowed isolating valve, using the attached captive nut and rubber washer provided. Note that the final position must be pointing the same direction as the previous straight valve.



- 5 Take the elbowed pump connector and attach this to the top of the pump with the free end pointing towards the opposite direction of the isolating valves.
- 6 Attach the manifold to the pump module making sure that the supplied washers are fitted. A proprietary sealant may be used in addition to this.

The isolation valves terminate in 22mm compression fittings to connect the flow and return pipes from the heat source.



Distributors

POSITIONING

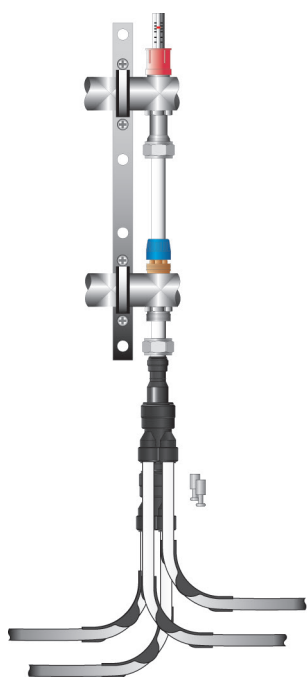
Distributors can be fitted directly to the manifold assembly or positioned in, or very near to, the room being heated. The distance from the distributors to the room should not exceed 1 metre to ensure there is sufficient 10mm Fastflo® pipe to complete the installation.

DISTRIBUTORS CONNECTED DIRECTLY ONTO THE PUMP MODULE

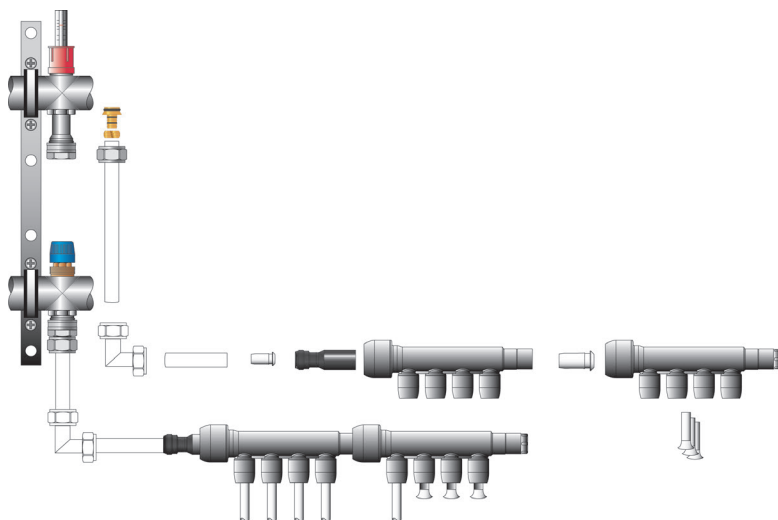
There are two ways of connecting Fastflo® to the Optiflo manifold.

- For OneZones® less than 35m², 4-port 'rocket' distributors are supplied for the 10mm pipe. Assembly instructions are in the following section.
- OneZones® of 35m² or over are supplied with 4-port 'in-line' distributors that join to make an 8-port assembly, as shown. Use either 15mm or 22mm plastic pipe and elbows instead (not supplied). In very large areas, positioning distributors centrally on a wall will make pipe connections easier.

OneZone® with 1-4 pipes



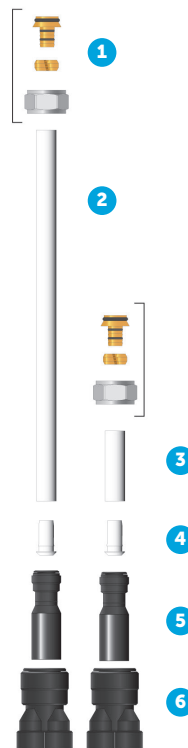
OneZone® with 5 or more pipes



ASSEMBLY

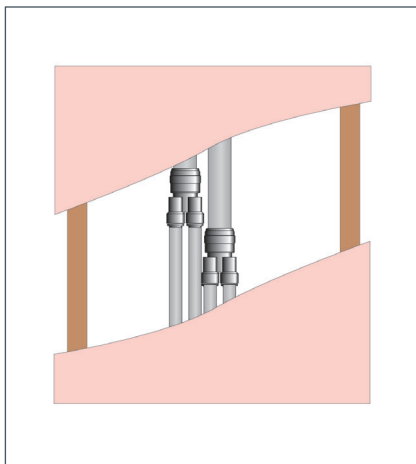
Distributors are 4-port as standard. The number of ports can be reduced with the blanking plugs supplied. To remove blanking plugs, push the surrounding collar into the distributor and pull the plug out. In large zones requiring more than 4 ports the system will be supplied with distributors that can be fitted in-line using an insert as on following page.

- 1 15mm eurokonus fitting
- 2 15mm pipe 280mm long
- 3 15mm pipe 53mm long
- 4 15mm pipe insert
- 5 22mm x 15mm adaptor
- 6 Port splitter (4-way) 22mm x 10mm

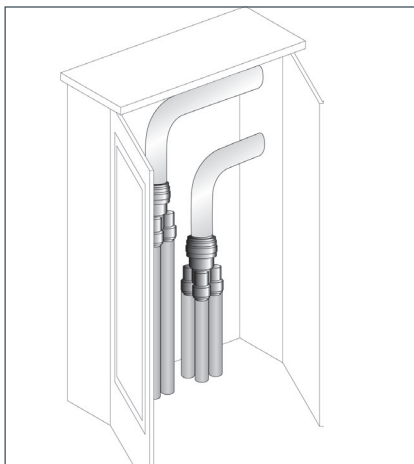


Distributors may be positioned in a variety of places such as:

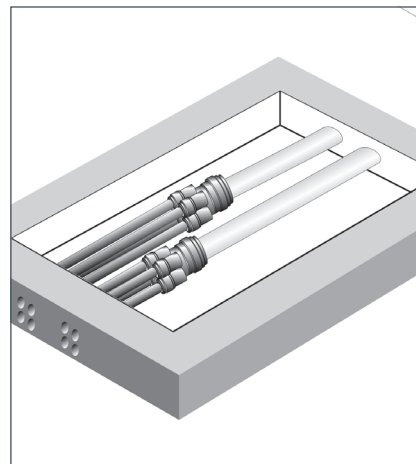
- In a studwork wall or other void such as a floor cavity,
- In an adjacent room, (in a cupboard, wall, or joisted floor cavity),
- In a cupboard.



Distributors can be placed in a studwork wall or other void with an access panel, ...

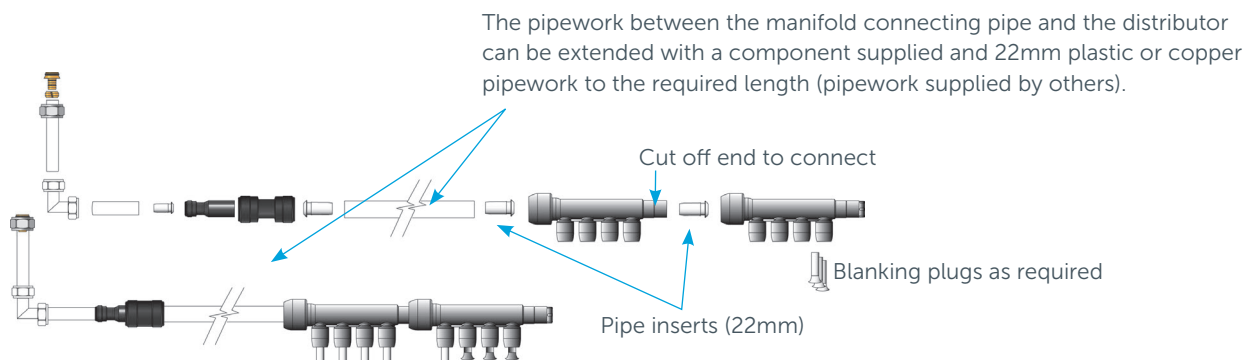


... in a cupboard ...



... or in a cavity constructed in the floor.

Note: The maximum distances and pipe sizing is given on pages 12 and 13.

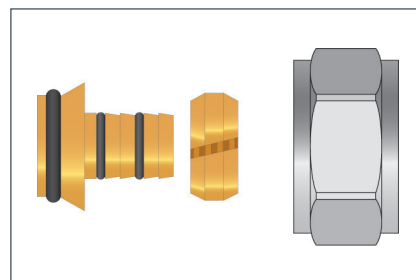


When mounting the distributors remotely and extending with 15 x 2mm pipe*, this is connected using the Eurokonus fitting supplied (see opposite).

If extending with 22mm pipe*, there is a fitting supplied with kits of 35m² and over to connect from the 15mm pipe stubs supplied to 22mm.

*Supplied by others

Note: In very large areas, positioning in-line distributors centrally on a wall will make pipe connections easier.



Eurokonus fitting supplied

Installation of the LoPro[®]Max floor elements

Before starting to lay the castellated panel the 1st fix mechanical and electrical work should be completed, including:

- Pump and wiring centre
- Room thermostat cabling (if required)
- All general building work/plastering, etc.

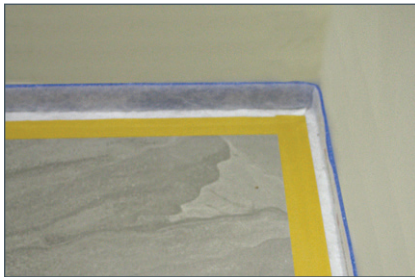
Thoroughly clean floor to remove debris – a heavy duty vacuum cleaner is ideal.

Fitting the perimeter expansion strip

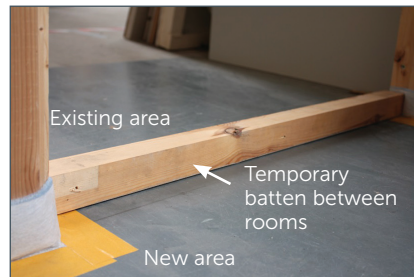
The floor must be flat and clean before fitting the perimeter expansion strip.

The floor must be primed using the EcoPrim T supplied.

Any gaps or tears must be sealed using flexible cartridge filler. Failure to provide a well-sealed perimeter between wall, floor and castellated panel could result in seepage of the self-levelling compound. Should this happen, the area can be filled retrospectively using LoPro[®]QuickSet self-levelling compound, but careful preparation will avoid this.



- 1 Fix the perimeter expansion strip in place using the self-adhesive footer plus a line of double-sided tape (supplied).



- 2 Fix temporary battens more than 22.5mm deep in doorways to retain the self-levelling compound.

INSTALLATION OF THE LOPRO®MAX FLOOR ELEMENTS

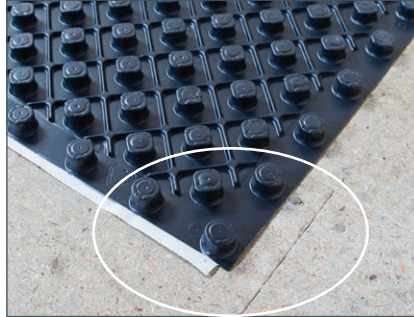
Fitting the castellated panel

Care should be taken to avoid damaging the castellated panel during installation by wearing flat-soled shoes and keeping foot traffic to a minimum. Do not kneel directly on the panel – use a kneeling board.

Lay the castellated panels in the following sequence:



- 1 The first row is joined together and then rolled up to be laid as one strip to aid alignment. With the backing left in place and starting in the farthest corner of the room, lay the



panel out and cut to fit as necessary. The panel moulding requires it to be laid with the edge pictured above facing towards the centre of the room.



- 2 Continue along one wall overlapping each panel by one castellation. Cut off any excess panel at the end of the run.



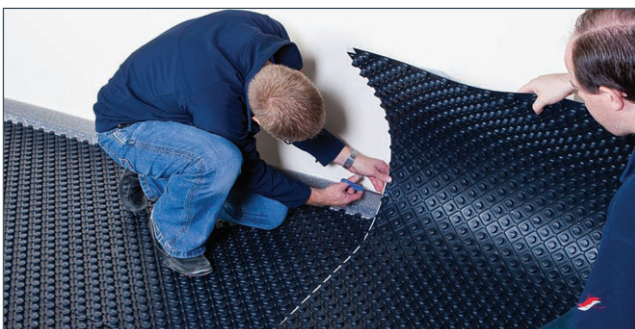
- 3 Remove the self adhesive backing on the outside edge of the first panel and stick that corner to the floor pressing down firmly.



- 4 Roll the rest of the panels back towards the corner. Slowly unroll the panel pulling off the self adhesive backing as you go.



- 5 Remove the cover strip on the double-sided tape at the edge of the room and secure the castellated panel firmly on top.



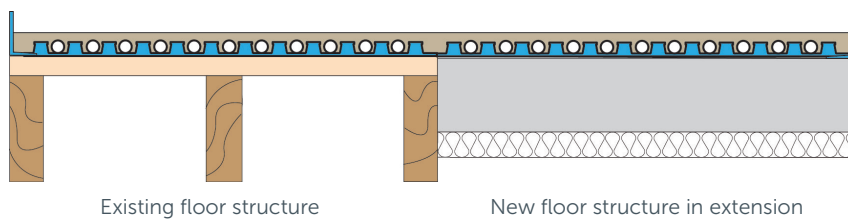
- 6 Use the castellated panel that was cut off to start the next row back at the top of the room. Repeat steps 3-4 overlapping the side of the panel with the first row to create a brick-bond pattern. After the first row, panels can either be joined before laying or laid individually.



- 7 Fill the entire room with castellated panel. Areas that are not securely stuck down can be stapled, this is especially important around the perimeter of the room.

Note: Leaving a 400mm gap below the manifold/distributors will make pipe connections easier, especially in large rooms. This area must be carefully primed and then sealed with the perimeter tanking strip.

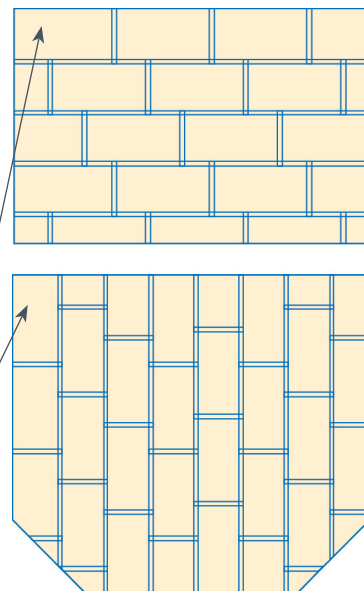
Example room layouts:



Different sub-floors can be aligned using LoPro®QuickSet self-levelling compound.

Additional LoPro®QuickSet can be purchased from Nu-Heat.

Start laying panel here



Fastflo® – tube trimming chart

Installation of the pipe is done a coil at a time and it must be done with the length of pipe in mind. We have supplied lengths of pipe at pre-cut lengths, your system may require less pipe to cover your specific room area.

Please work out your actual room area in m² and refer to the table below for the required trim length for each coil.

Actual room area/kit size (m ²)		Amount of tube required (m)	Number of coils supplied	Trim each coil to: (m)	Actual room area/kit size (m ²)		Amount of tube required (m)	Number of coils supplied	Trim each coil to: (m)
1	4	6.7	1 x 30m	6.7	36	40	240.0	7 x 40m	34.3
2	4	13.4	1 x 30m	13.4	37	40	246.7	7 x 40m	35.3
3	4	20.0	1 x 30m	20.0	38	40	253.4	7 x 40m	36.2
4	4	26.7	1 x 30m	26.7	39	40	260.0	7 x 40m	37.2
5	5	33.4	1 x 35m	33.4	40	40	266.7	7 x 40m	38.1
6	6	40.0	1 x 45m	20.0	41	45	273.4	6 x 50m	45.6
7	7	46.7	1 x 50m	23.4	42	45	280.0	6 x 50m	46.7
8	8	53.4	2 x 30m	26.7	43	45	286.7	6 x 50m	47.8
9	10	60.0	2 x 35m	30.0	44	45	293.4	6 x 50m	48.9
10	10	66.7	2 x 35m	33.4	45	45	300.0	6 x 50m	50.0
11	12	73.4	2 x 45m	36.7	46	50	306.7	7 x 50m	43.9
12	12	80.0	2 x 45m	40.0	47	50	313.4	7 x 50m	44.8
13	15	86.7	4 x 30m	21.7	48	50	320.0	7 x 50m	45.8
14	15	93.4	4 x 30m	23.4	49	50	326.7	7 x 50m	46.7
15	15	100.0	4 x 30m	25.0	50	50	333.4	7 x 50m	47.7
16	17	106.7	3 x 40m	35.6	51	55	340.0	8 x 50m	42.5
17	17	113.4	3 x 40m	37.8	52	55	346.7	8 x 50m	43.4
18	20	120.0	4 x 35m	30.0	53	55	353.4	8 x 50m	44.2
19	20	126.7	4 x 35m	31.7	54	55	360.0	8 x 50m	45.0
20	20	133.4	4 x 35m	33.4	55	55	366.7	8 x 50m	45.9
21	25	140.0	4 x 45m	35.0	56	60	373.4	8 x 50m	46.7
22	25	146.7	4 x 45m	36.7	57	60	380.0	8 x 50m	47.5
23	25	153.4	4 x 45m	38.4	58	60	386.7	8 x 50m	48.4
24	25	160.0	4 x 45m	40.0	59	60	393.4	8 x 50m	49.2
25	25	166.7	4 x 45m	41.7	60	60	400.0	8 x 50m	50.0
26	30	173.4	4 x 50m	43.4	61	65	406.7	8 x 55m	50.9
27	30	180.0	4 x 50m	45.0	62	65	413.4	8 x 55m	51.7
28	30	186.7	4 x 50m	46.7	63	65	420.0	8 x 55m	52.5
29	30	193.4	4 x 50m	48.4	64	65	426.7	8 x 55m	53.4
30	30	200.0	4 x 50m	50.0	65	65	433.4	8 x 55m	54.2
31	35	206.7	6 x 40m	34.5	66	70	440.0	8 x 60m	55.0
32	35	213.4	6 x 40m	35.6	67	70	446.7	8 x 60m	55.9
33	35	220.0	6 x 40m	36.7	68	70	453.4	8 x 60m	56.7
34	35	226.7	6 x 40m	37.8	69	70	460.0	8 x 60m	57.5
35	35	233.4	6 x 40m	38.9	70	70	466.7	8 x 60m	58.4

Example: a 3m wide by 4m length room has area of 12m². The table above shows a cut length of 40m per coil, but the 2 coils of pipe supplied in your 12m² kit are 45m in length. In this case you would have 5m excess per pipe run that will need to be cut off following the installation.

Notes:

- Do not cut off the excess pipe until the floor installation is complete, instead mark the pipe with tape or a pen and adjust and cut the pipes once all coils have been laid.
- It is not always possible to get the pipe runs equal. The final length of cut pipes may vary by up to 25% without compromising the heat output.

Connecting 10mm Fastflo® to the distributors

If the distributors are to be remote from the pump module, then it does not matter whether the supply pipework or the 10mm Fastflo® tube is connected to the distributors first.

1 At the distributors, take one end of the floor heating tube and blow down it to make sure you have identified its other end correctly.

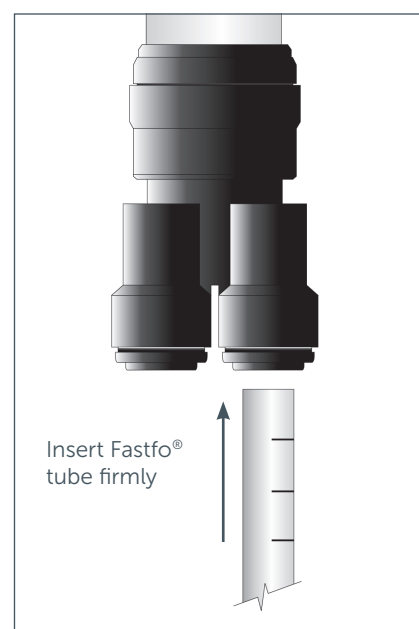
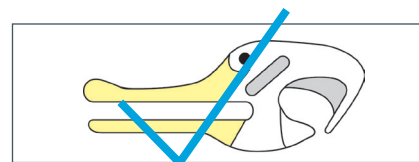
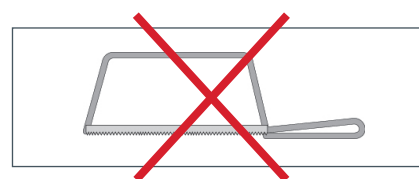
2 The Fastflo® tube should be cut squarely using pipe cutters and ensuring the tube is free from score marks.

Note: If the tube has to be re-fitted for any reason, cut back the pipe to a clean, smooth surface. Never use a hacksaw to cut the tube.

3 Push the Fastflo® tube firmly into the distributor connection. The pipe is marked every 25mm – if it is cut at one of the marks it should push into the distributor as far as the next mark.

4 Repeat steps 2 – 3 for the other end of the tube and connect to the return distributor.

Note: Only flow or return pipes can be fitted to a single distributor, not both.



Installing 10mm Fastflo® tube

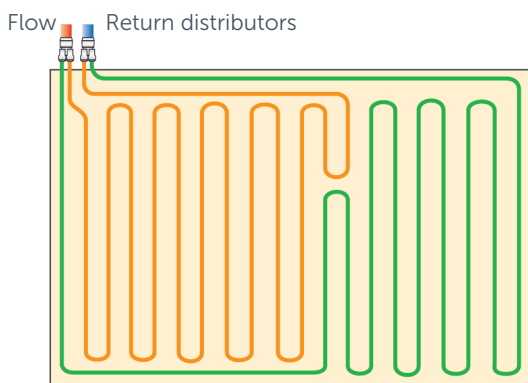
TYPICAL TUBE LAYOUTS

The principles of laying pipe in the floor are simple as long as these guidelines are followed:

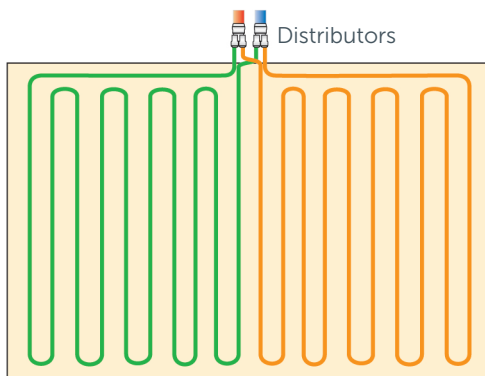
- The spacing between coil runs should be constant and as specified by Nu-Heat for the floor construction, (150mm unless otherwise stated).
- Start the tube laying at the distributor position.
- To avoid kinking, the minimum bend radius of the tube is 50mm.
- Only flow **or** return tube can be connected to a single distributor, not both.

The following are examples of typical tube layouts:

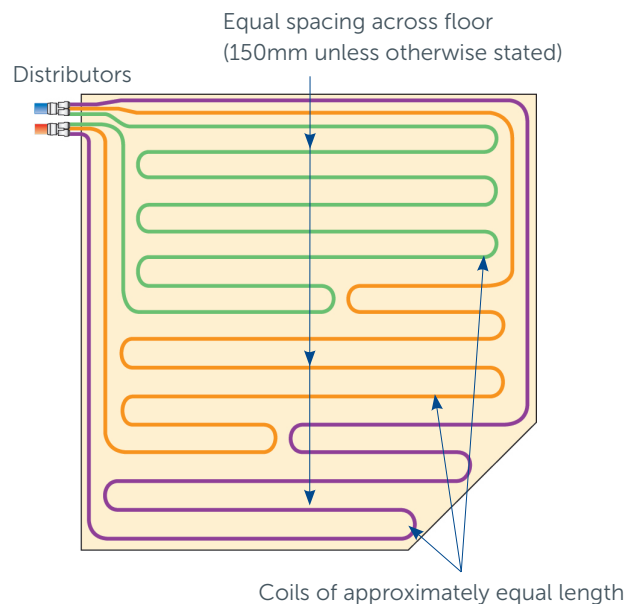
Examples of two-coil installations



Start pipe laying at a distributor position

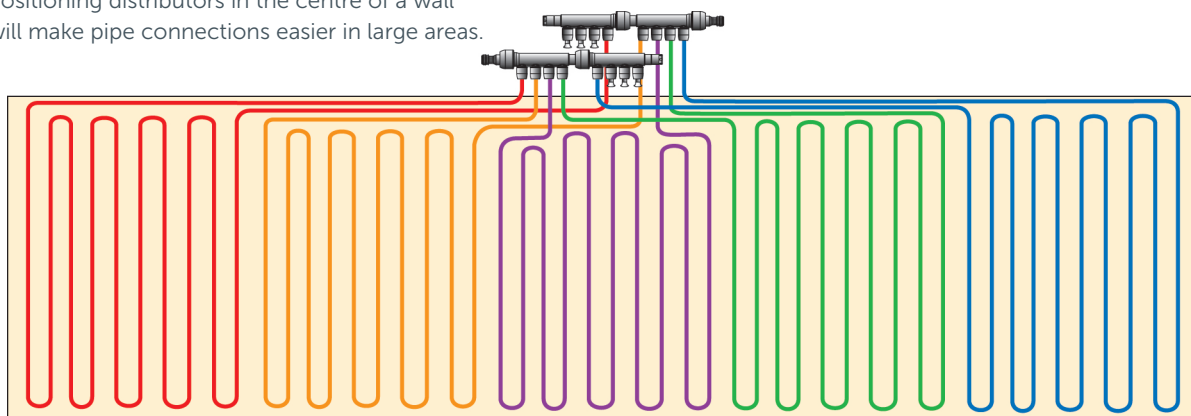


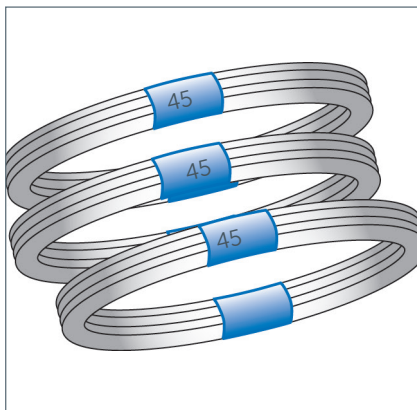
Example of three-coil installation



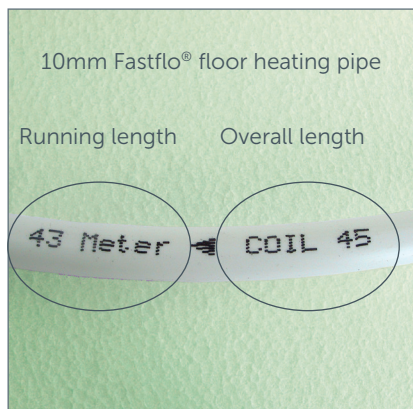
Example of five-coil installation with in-line distributors

Positioning distributors in the centre of a wall will make pipe connections easier in large areas.

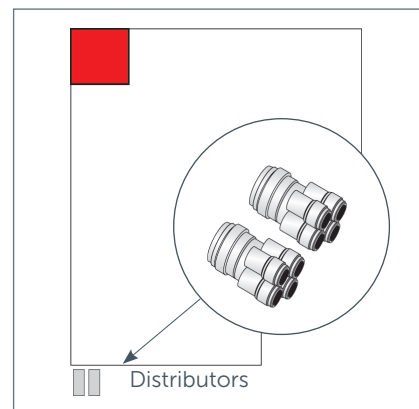




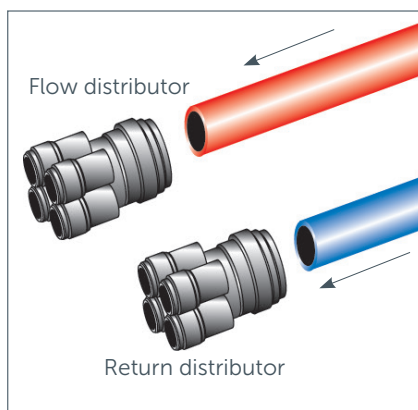
1 Check the [Delivery Note](#) to establish the correct number and lengths of the Fastflo® tube coils for the room.



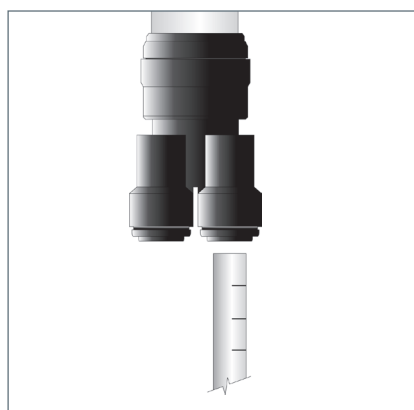
2 Each coil is marked every metre with its overall length and actual running length counting down to 0m. **Note:** The [Tube Trimming Chart](#) on page 22 gives the correct coil lengths for your room.



3 Place the distributors in a convenient position by the pump or in the wall as described on pages 17–18. **Note:** the insulation can be channelled to recess the distributor if they are placed in the floor.

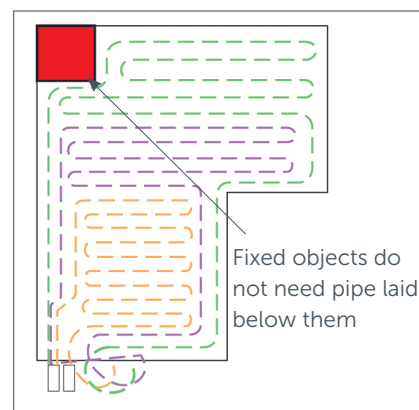


4 If the distributors are mounted remotely from the pump module then the flow and return pipe should be connected to the distributors. It is important to remember which distributor is flow and which return.



5 Insert one end of the 10mm UHF pipe firmly into the flow distributor.

6 Plan the best layout for the floor heating pipe before starting. The pipe should exit the distributor and run around the wall to the furthest point.

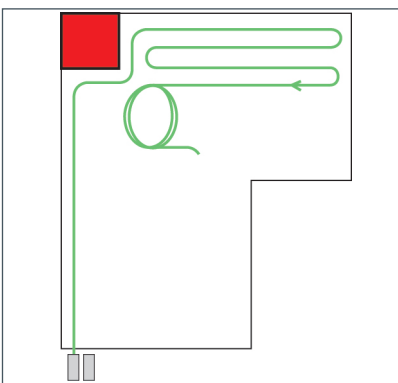


It should then be doubled back on itself in a serpentine pattern to fill the space. Areas such as kitchen units, WCs, hearths etc, should not be filled with pipe.

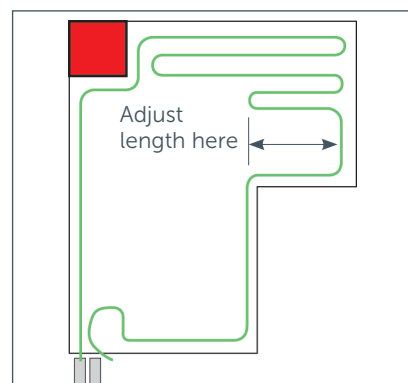
Pipes must not be crossed in the castellated panel.



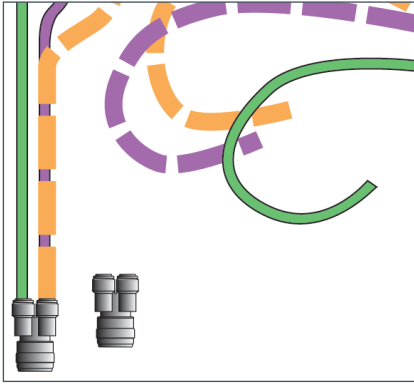
7 Roll out the pipe pushing it into the castellated panel. Do not kink the pipe by trying to make a very tight turn. Unroll the pipe hand-over-hand to avoid twisting and push into the panel. Maintain the correct pipe spacing of 150mm.



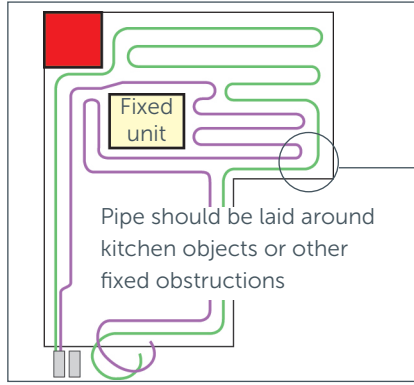
8 The pipe should then be doubled back on itself filling the area at the correct spacing.



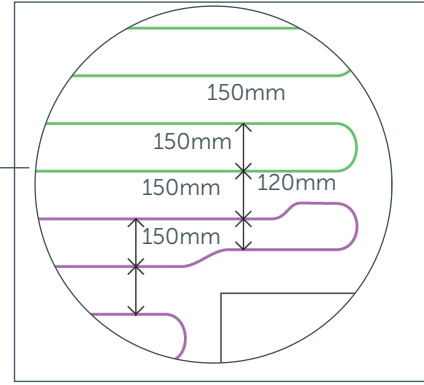
9 When there is just enough left, turn back and run the tube around the edge of the room to the return distributor. Any excess or shortfall can be adjusted at the turn-back point.



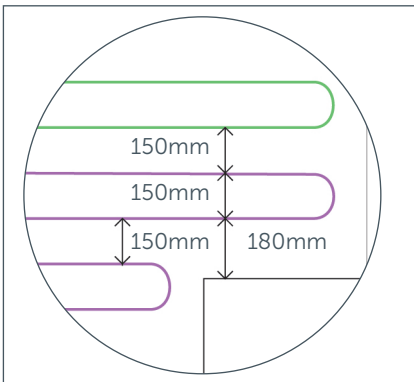
10 Exit the flow distributor with the second coil at a spacing to suit the connections. Resume the 150mm spacing as soon as possible.



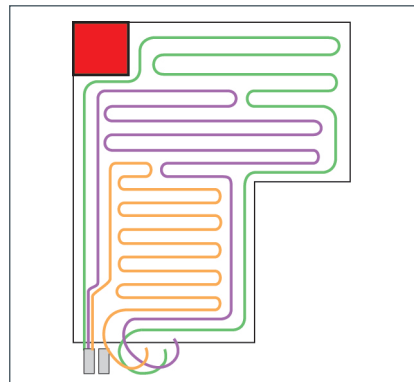
11 Use the same method as for the first coil of pipe.



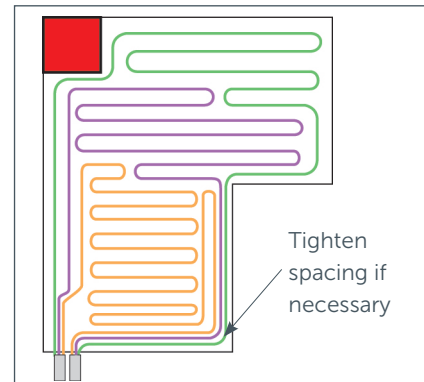
12 If the 150mm spacing cannot be maintained it is possible to make adjustments by reducing the spacing over small areas before resuming correct spacing.



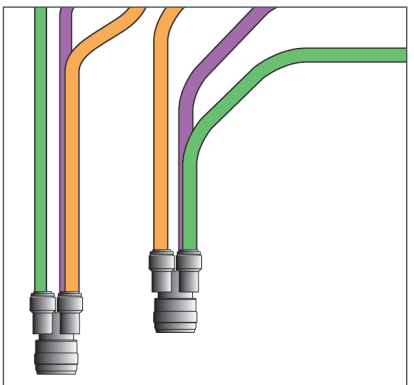
13 If the restricted area is too small to lay and turn the pipe, leave a small area with larger spacing, but resume 150mm spacing as soon as possible.



14 Complete the installation using the same method for the remaining coils of tube.



15 Use the correct length of tube as detailed in the [Tube Trimming Chart](#) on page 22. If there is an excess, the spacing of the final coil can be tightened and an extra loop fitted or a maximum of 25% of the coil length can be cut off, (eg.10m cut from a 40m coil).



16 With all the pipe laid, trim to the correct length and insert the ends of each pipe firmly into the return distributor as shown in step 5.



Use the guide curves supplied to ensure a smooth exit from the floor.

Continue with the [Filling, Flushing & Pressure Testing](#) section on page 28.

Floor temperature sensor

FOR USE WITH HEAT-SENSITIVE VINYL, LINOLEUM & ENGINEERED TIMBER FLOOR COVERINGS

Some suppliers recommend a maximum floor surface temperature for their floor coverings. Your pack includes a room thermostat that controls room temperature with a floor temperature sensor that top-limits the floor temperature.

A floor temperature sensor is recommended for some engineered timber floors, vinyls (including Amtico) and linoleum. Always follow the manufacturer's instructions and check that the floor covering is suitable for use with underfloor heating.

Positioning

The room thermostat should normally be fitted at light switch height, out of direct sunlight or draughts and not above heat sources.

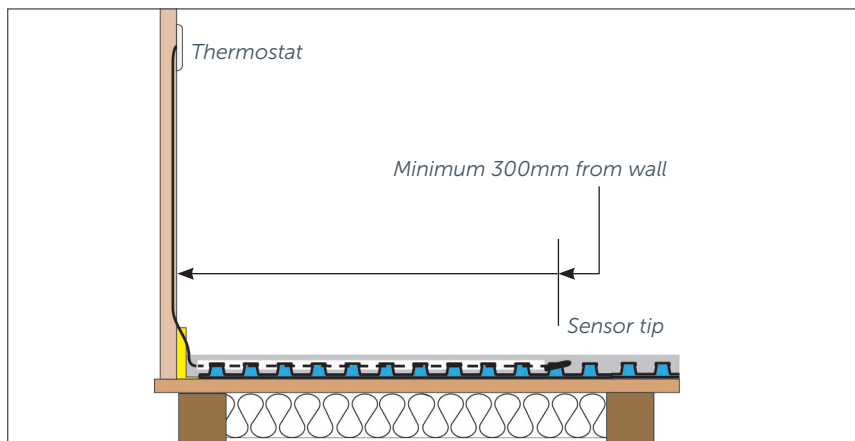
The thermostat's remote sensor also controls the heating. The remote sensor is fitted with approximately 3m of 2-core low voltage flex, extendable up to 20m.

The sensor should be fitted as close to the top of the QuickSet self-levelling compound as practical and more than 300mm from the wall.

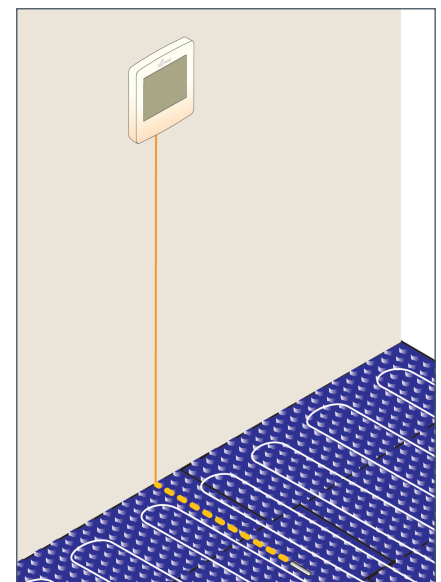
If the OneZone® is being fitted in a bathroom then the thermostat will need to be fitted outside (e.g. next to the door, at light-switch height). In this case the floor temperature sensor will control the room temperature.



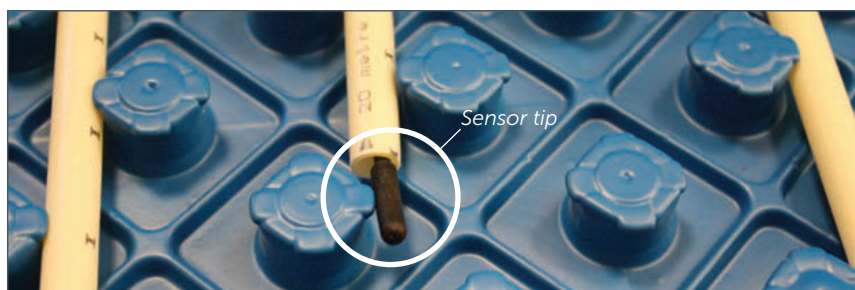
Thermostat & floor temperature sensor



- 1 Ensure the sensor is positioned at least 300mm away from the wall. It should be fitted approximately midway between underfloor heating pipe runs.



Run the sensor wire from the thermostat on the wall and across the castellated panel.



- 2 The sensor wire should be threaded through an offcut of floor heating pipe leaving the sensor tip just protruding. This will hold it in place whilst the QuickSet self-levelling compound is laid – the sensor tip must not protrude above the surface of the compound. Seal with a small dab of mastic.

Wiring the remote air or floor sensor

For wiring details please refer to the [OneZone® Electrical Installation Manual](#) supplied.

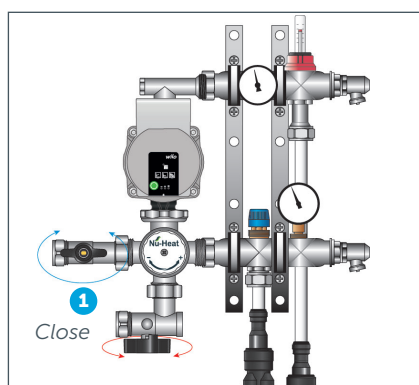
Filling, flushing & pressure testing floor heating tube

WHEN PUMP & BLENDING VALVE ASSEMBLY IS CONNECTED DIRECTLY TO THE DISTRIBUTOR ASSEMBLY

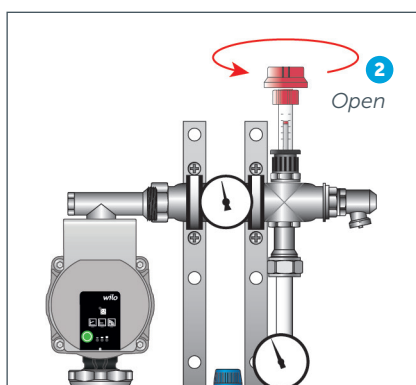
If the pump is not in the correct orientation then it must be changed now before filling the system with water, see pages 11 for details of how to change the pump orientation.

It is essential to remove all air from the pipework or the floor heating pump will not circulate water through the Fastflo® tube. This could take up to 2 hours. It must be flushed and pressure tested prior to laying the floor deck.

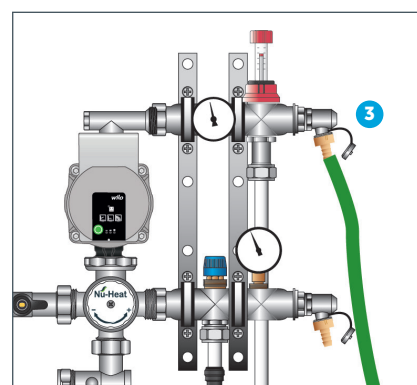
Note: Ensure all joints are tight before filling and flushing.



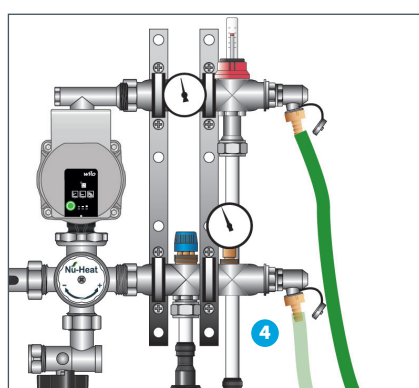
- 1 Close the isolating ball valves that are connected directly to the blending valve.



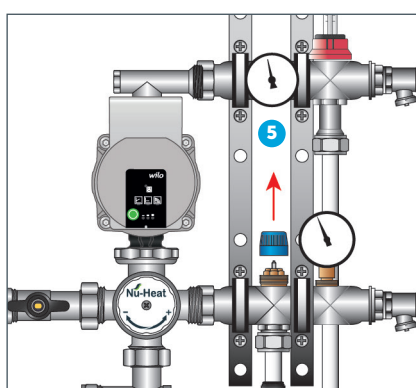
- 2 Open the flow adjuster fully on the supply (top) manifold by **a** lift the red collar, **b** undo the black locking nut **c** turn the red adjustment key fully anti-clockwise **d** tighten the black locking nut **e** replace the red collar.



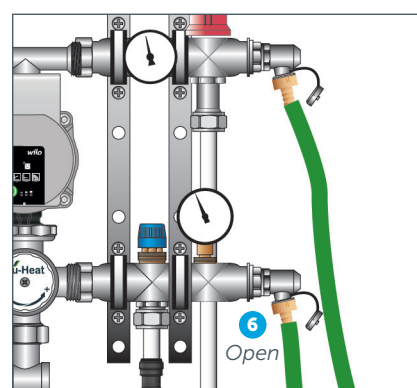
- 3 Remove the blanking cap from the filling valve on the flow (upper) manifold. Fit the connection nozzle and connect a suitable hose from the mains water supply. Open the filling valve using the key on the blanking cap.



- 4 Similarly fix a suitable hose to the drain valve on the return (lower) manifold.

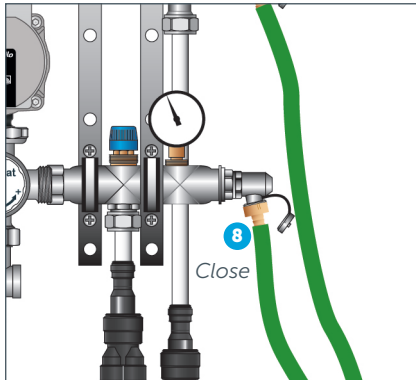


- 5 Fully loosen or remove the blue protection cap from the return (bottom) manifold.

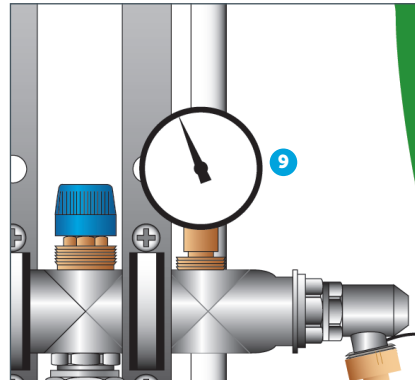


- 6 Open the tap on the mains water supply and open the drain valve on the return (lower) manifold using the key on the blanking cap.
- 7 Run the water until all air is expelled from the pipe.

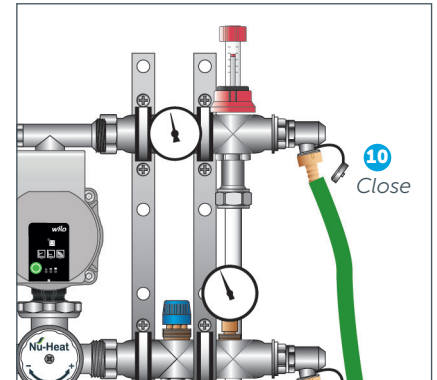
Tip: If the outflow is run into a bucket then air bubbles will be detectable.



- 8** Close the drain valve on the return (lower) manifold.

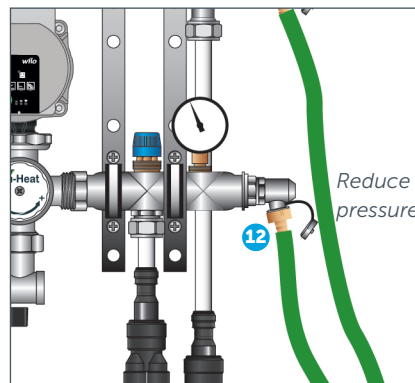


- 9** Allow the pressure to rise to a maximum of 6 bar.



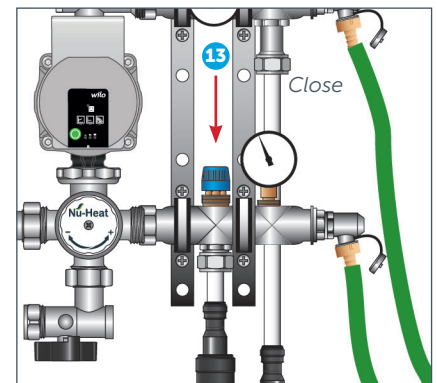
- 10** When the correct pressure is reached, close the filling valve.

- 11** All of the UFH pipework is now fully pressurised and should be left for at least 8 hours. Due to expansion and air temperature variations, a pressure drop of up to approx. 0.5 bar may occur. If greater pressure drops are experienced, thoroughly check all pipes and joints for evidence of water loss. If none is found, there may still be air in the system and the filling and flushing procedure should be repeated.



- 12** After testing, reduce the pressure to 1 bar-static by releasing the water from the drain valve on the return (lower) manifold.

Note: The floor heating tube must be left under pressure whilst floor deck is laid. 1 bar is sufficient.

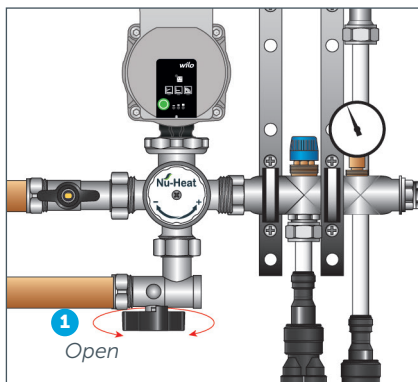


- 13** Close the blue protection cap and flow gauge to prevent air getting into the system.

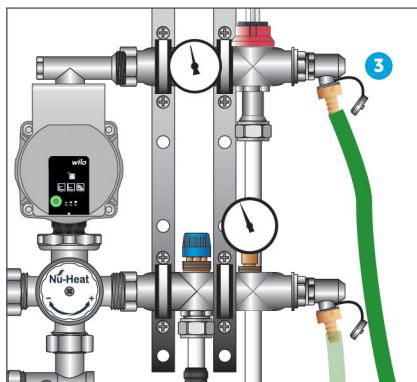
Filling the boiler and heating system pipework

FILLING THE BOILER

Fill the boiler via the boiler filling loop whilst venting the system and following the boiler manufacturer's instructions. The system should be cleansed and flushed in accordance with BS7593:1992 to remove all flux residue and other debris. If connecting to an existing heating system it is important that this is cleansed and flushed to the same standard. If there are ferrous components in the system, Nu-Heat recommends that a magnetic filter should be installed.

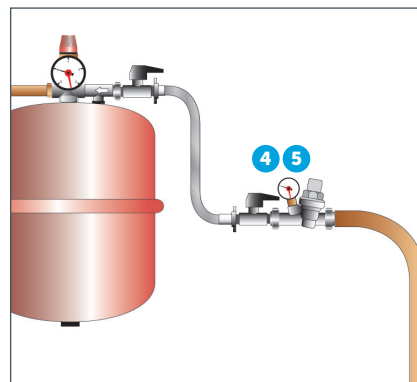


- 1** Open the flow isolation valve.

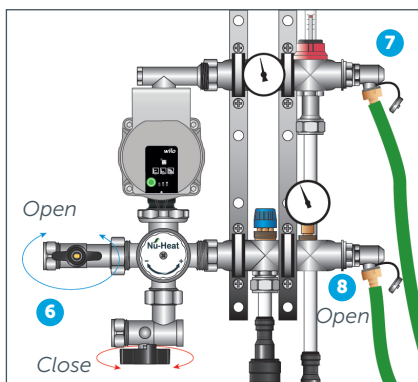


- 2** Find the hose tails from the tools and accessories pack and connect to the fill and flush hoses.

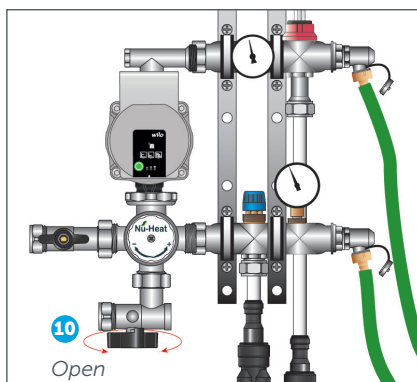
- 3** Use the cap end to open the drain cock on the flow (upper) manifold.



- 4** Fill the system via the boiler filling loop and run water through until the flow from the drain hose is free from air bubbles.
- 5** Close the boiler filling loop and drain cock.



- 6** Close the flow isolation valve and open the return valve.
- 7** Remove the hose from the upper drain cock and connect it to the return (lower) drain cock.
- 8** Use the cap end to open the drain cock on the return (lower) manifold.

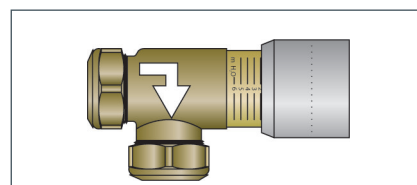


- 9** Repeat steps 4 and 5.
- 10** Open the flow isolation valve.
- 11** The temperature control valve on the pump module should be set to minimum.

Note: The system cold working pressure is 1.0 bar. When the system pressure has been set, isolate the filling loop and disconnect in accordance with water regulations.

AUTOMATIC BYPASS VALVE

Setting the bypass valve is a required to prevent the blending valve from being overloaded. The bypass is adjusted between 0.1–0.6 bar using the grey knob. 0.5 bar (marked 5 on valve) is the recommended setting. Check that the arrow on the valve points from flow to return.



LoPro®QuickSet self-levelling compound

At this stage it is well worth re-checking whether the floors are level to within the tolerances stated and if additional self-levelling compound will be required. The minimum coverage from the sub-floor should be 20mm of self-levelling compound. The quantity of self-levelling compound supplied will be sufficient for a thickness of 22.5+/- 2.5mm (see table on page 11). Also check that the perimeter of the room is sealed to prevent seepage and fill any damaged castles in the panel with expanding foam or mastic.

LoPro®QuickSet self-levelling compound has a very free-flowing consistency when mixed with water to the ratio specified; this aids its ability to provide a level finish but means it could sink in un-sealed areas and require further levelling.

MIXING THE SELF-LEVELLING COMPOUND



- 1 Using a slow speed drill and paddle mix one full 25kg bag of LoPro® QuickSet self levelling compound with 4.5–4.75 litres clean water in a suitable container for approximately 3–5 minutes until a homogenous, lump free mixture is obtained. After 2–3 minutes of resting the mix should be re-stirred before use.

Alternatively, a larger bucket can be used with 2 bags of LoPro® QuickSet self-levelling compound and double the amount of water. Do not mix more compound than can be used within the 20–30 minute working time, and do not re-wet. Using a different water volume than that specified on the packaging will alter the consistency, strength and set time of the self-levelling compound, and should be avoided.



- 2 Starting from the furthest corner of the room, pour the LoPro® QuickSet self-levelling compound over the floor until the whole room is covered.

The compound should be poured onto the castellated panel in a single coat and lightly agitated to achieve a smooth surface. Apply at a minimum floor temperature of +5°C.



- 3 If the floors are outside the maximum tolerances stated for the quantity of self-levelling compound supplied, or castles are still visible, additional product can be purchased from Nu-Heat. This can be successfully poured on top of the first layer, even after it has set.
- 4 All tools and mixing containers should be washed and cleaned with water immediately after use and before material hardens.

See also Nu-Heat datasheets:

LoPro®Max QuickSet

LoPro®Max Screed Mixers

DRYING THE SELF-LEVELLING COMPOUND

At normal temperatures LoPro®QuickSet® will take light foot traffic after 3 hours and accept bonded floor coverings from 24 to 72 hours. A room temperature of +13- +18°C should be maintained with a subfloor temperature of at least +5°C (a passage of air will considerably assist the drying times). For greater thickness and/or low temperature an extended waiting time could be required.

Switch on and commission the underfloor heating before fitting the final floor finish to dry out any residual moisture in the floor. When switching on the underfloor heating for the first time the water temperature control valve should be at its lowest setting; this can be increased by 5 °C each day until the required temperature is reached. The underfloor heating should be working for at least 48 hours before the final floor finish is fitted.

Do not set the control valve higher than mid-position; this is unnecessary because underfloor heating is designed to work at lower temperatures than radiators.

Floor finishes

Installation recommendations

Nu-Heat guidance on fixing, adhesives and primers for the most popular floor finishes as well as individual datasheets on tiles, engineered timber and carpet are available from the website at www.nu-heat.co.uk

Always follow the flooring manufacturer's instructions.

CERAMIC AND STONE FINISHES

The underfloor heating system should be turned off while tiling and remain off until adhesives and grouts have fully cured (see manufacturer's recommendations). Check before use that the colour of the adhesive does not cause staining or discolouration of light coloured or translucent tiles. When installing large format tiles, the tile association recommends using a category C2 FTE S1 or S2 (where applicable) adhesive and a suitable de-coupling membrane. If using soft or vulnerable natural stone products (e.g. travertine, marble, etc.) always follow any specific supplier recommendations.

Adhesives

To install the decoupling membrane and tiles a flexible tiling adhesive suitable for underfloor heating should be used. The tile association recommends using a category C2 adhesive when installing tiles on underfloor heating. Some suitable products include:

Brand	Category	Suitable products	Website
Mapei	Adhesives	Keraquick to bond tiles to decoupling membrane (add latex plus if tiles are greater than 60 x 60cm)	www.mapei.co.uk
Ultra Tile	Adhesive	ProFlex SP	www.ultratileadhesives.co.uk
Weber	Adhesives	Weber.set SPF / Weber.set (rapid) SPF for tiles up to 40x40cm. For larger tiles use Weber.set (rapid) plus and Weber AD50	www.netweber.co.uk

Note: In all cases manufacturer's instructions and recommendations should be followed.

De-coupling membrane

A de-coupling membrane (available from Nu-Heat) should always be used with ceramic tiles and natural stone floor finishes.

See also datasheet *LoPro® De-coupling Membrane*.

See also Nu-Heat datasheets:

LoPro®Max De-coupling membrane

LoPro®Max Screed Mixers

LoPro® Adhesives

LoPro®Insulation

Floor Primer

Latex floor leveller



ENGINEERED TIMBER

Engineered timber should be glued and butt-jointed and then free-floated on top of the LoPro®Max surface to allow for expansion and contraction. If installed below engineered timber, acoustic foam should be no more than 2–3mm thick.

Alternatively, engineered hardwood floors can be glued to the LoPro®Max using an adhesive recommended by the supplier. The surface of the QuickSet self-levelling compound should be primed using Eco Prim T (available from Nu-Heat) or equivalent before the hardwood is glued down.

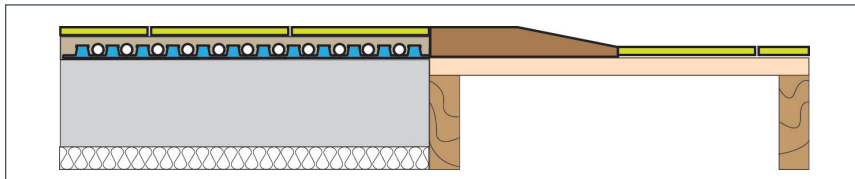
CARPET

Use nail-less gripper with gripfill when fitting carpets, do NOT use gripper with nails as this could damage the underfloor heating pipe and self-levelling compound.

VINYL, LINOLEUM, AMTICO, KARNDIAN, ETC.

If dusty, prime the surface of the LoPro®QuickSet self-levelling compound with Mapei Eco Prim T or equivalent. For a flawless surface finish under vinyl floors, prime the LoPro® QuickSet with Eco Prim T then use Mapei Latexplan Trade floor leveller.

THRESHOLDS



A chamfered threshold can be used in doorways to offset small changes in level between rooms.

Setting the pump mode

Press button to cycle to Constant Pressure 3. This corresponds to a 7m head.

Electrical connection

The pump is supplied with a separate, pre-terminated, 1-metre, 3-core lead ready for connection to the Optiflo UFH wiring centre. Ensure that the pump is filled and vented, use the controls to call for heat and then select the correct pump setting.

Setting the control mode

To select the control mode and set the desired delivery head/constant speed, press the button to cycle through the 9 options:

Variable differential pressure ($\Delta p-v$): **DO NOT USE**

Constant differential pressure ($\Delta p-c$): **USE THIS SETTING, CURVE III**

Constant speed (I, II, III): **DO NOT USE**

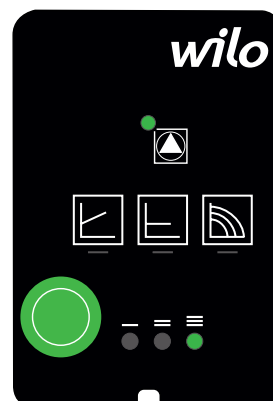
Reset to factory settings (Constant speed 3) by holding the button and removing power, release button and the next operation of the pump will be in factory default setting.

NOTE: All settings are retained if the mains supply is interrupted.

Venting

Press and hold the green button for 3 seconds to purge air from the pump, the pump returns to normal operation after 10 minutes and the purge program can be cancelled by pressing the button for 3 seconds.

The LED indicator light.



Variable pressure
DO NOT USE



Constant pressure
USE THIS SETTING



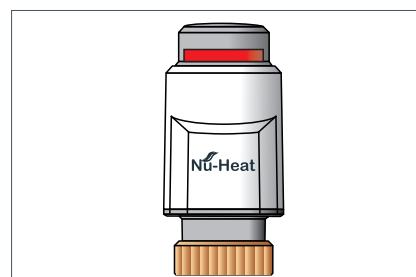
Constant speed III
DO NOT USE

LED	Fault	Cause	Remedy
Lights up red	Blocking	Rotor blocked	Activate manual restart or contact Nu-Heat Technical Support.
	Contacting/winding	Defective winding	
Flashes red	Under/over-voltage	Mains power supply too low/high	Check mains voltage and operating conditions and contact Nu-Heat Technical Support.
	Pump overheating	Pump interior too warm	
	Short-circuit	Motor current too high	
Flashes red/green	Generator operation	Water is flowing through the pump hydraulics but there is no mains voltage at the pump.	Check the mains voltage, water quantity/pressure and the ambient conditions.
	Dry run	Air in the pump	
	Overload	Sluggish motor, pump is operated outside of its specification (e.g. high pump temperature). The speed is lower than during normal operation.	

Fitting the actuator

The Nu-Heat supplied actuator comes as shown. The metal slip ring below the body of the actuator attaches the actuator to the manifold.

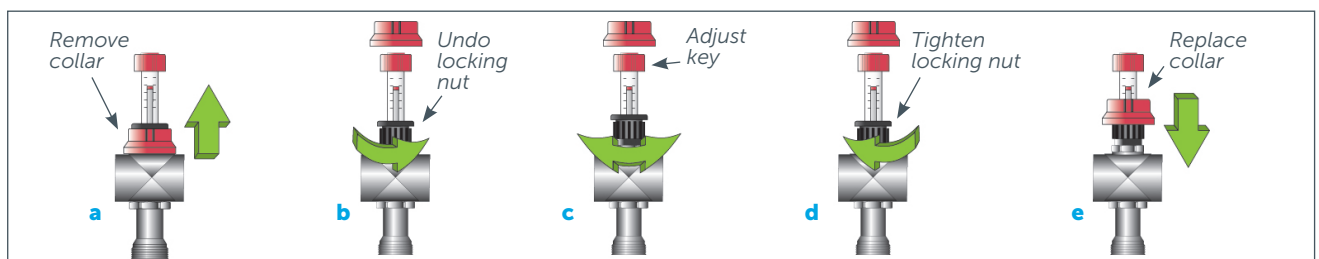
If the manifold is to be fitted upside down, and the actuator inverted, please contact Nu-Heat for details.



Flow and temperature settings

When all of the components have been set up the temperature of the water going into the floor heating tube can be set by adjusting the blending valve below the pump. Floor temperatures are linked directly to the temperature of the water flowing through the Fastflo® tube and controlled by the setting of the blending valve. Increasing the temperature setting will result in increased heat output from the floor. As a rule, the floor should feel no warmer than the palm of the hand and a maximum of 29 °C.

- 1** To adjust flow rates on the flow gauge (see diagrams below):
 - a** Remove red collar
 - b** Undo the black locking nut
 - c** Adjust the flow rate as required, by turning the gauge with the red 'key'
 - d** Re-tighten the black locking nut
 - e** Replace red collar
- 2** Adjust flow temperature as per the table below and as required to satisfy the demand of the room you are heating. The settings on the valve should be used as a guide and the thermostat and heating system should be working to allow the correct setting of the flow temperature.



OneZone® floating floor heat output table

Flow water temperature	Carpet & underlay – 2 tog	Engineered hardwood	Tiles
40 °C	35 W/m ²	39 W/m ²	42 W/m ²
45 °C	46 W/m ²	52 W/m ²	54 W/m ²
50 °C	58 W/m ²	65 W/m ²	69 W/m ²
55 °C	70 W/m ²	78 W/m ²	82 W/m ²

Example: A 3m wide by 4m length room has an area of 12m² and using a heat loss tool, it has been determined that the heat loss of the room is 738 Watts.

Divide the heat loss by room area to determine the required setting of the valve. 738/12=61.5 Watts/m². The room has engineered hardwood floors and so selecting 50°C would adequately heat the room with an output of 65 Watts/m².

FLOW BALANCING

For installation without boiler control (i.e. when connected connected onto the existing radiator circuit) it may be necessary to adjust the radiator lockshield valves to balance the system. The OneZone® pump speed may be reduced to prevent excess flow being drawn, or else the manifold flow gauge can be used to restrict the flow on the UFH.

SYSTEM INHIBITOR

Once the OneZone® installation and commissioning are complete the central heating inhibitor levels should be checked and fresh inhibitor added if necessary. This should be checked in line with the boiler manufacturer's advice.

Problem solving – UFH

Room thermostat calling for heat, but no response from the floor

- A** Check that the room thermostat is calling for heat; the flame symbol should be showing. See separate [Electrical Installation Manual & User Guide](#) for programming instructions.
- B** Check the zone valve actuator head is open with the blue button out; check wiring if necessary. Be aware that the actuator operates with a 1–3 minute time lag.
- C** Check that the floor heating pump is running and the boiler is on and producing heat; check wiring, bleed air from pump.
- D** Check the floor heating water temperature control valve is set appropriately (usually about 50 °C); adjust if necessary.
- E** Check that all the isolating valves are open to allow water flow through the floor and around the pump and blending valve assembly.
- F** Check that the flow gauge is fully open.

No heat to floor heating distributors

- A** Follow the sequence of checks on left; if they are unsuccessful, repeat the filling and flushing procedure on pages 28–29 of this manual to remove any airlocks which may prevent water circulating correctly through the floor heating pipework.
- B** If the problem persists, please telephone Nu-Heat Technical.

Room temperature low; poor heating performance

- A** Check the time and temperature settings on the room thermostat and adjust if necessary.
- B** Check that the flow gauge is fully open.
- C** Increase the temperature of the water in the floor heating tube by 5 °C increments until the room is comfortable. See section on System Commissioning on pages 34–35.
- D** The floor temperature limiting via the floor sensor (where fitted) could be set too low. Increase the floor temperature settings by 1 °C until desired temperature is reached. Leave at least 24 hours between each increase to allow time for the effects to be felt.

For sensitive floor coverings, always follow manufacturer's guidance.

Boiler noise/boiler lockout

- A** Check the system is free of air and warm water is flowing through all of the floor heating tube. If not, drain, re-fill and re-flush the system as described on pages 28–29.
- B** Check that the differential bypass valve is set to 0.5 bar with the arrow pointing from flow to return. This prevents a closed circuit between the boiler and floor heating controls.

Thermostat E0, E1 or E2 message flashing

- A** If a floor or remote sensor has been fitted then check wiring termination in the thermostat.
- B** If a floor or remote sensor is not required then the thermostat will need reprogramming. See separate [Electrical Installation Manual & User Guide](#) for programming instructions.
- C** E0 message means the thermostat is faulty and requires replacement, please telephone Nu-Heat Technical.

Problem solving – floor installation

Minor deviation in floor surface levels that will have fine tolerance floor finishes, e.g. vinyl, Amtico, Karndean, etc.

- A** Prime the surface of the LoPro® QuickSet self-levelling compound with Mapei Eco Prim T or equivalent.
- B** Level the floor using Mapei Latexplan Trade or equivalent to a maximum depth of 10mm.

Surface is not level due to floors being outside of Nu-Heat's stated tolerance (see page 32)

- A** Prime the surface of the LoPro® QuickSet self-levelling compound with Mapei Eco Prim T or equivalent.
- B** Where the floor requires no more than 10mm of filler to make it level Mapei Latexplan Trade can be used. Where the difference in levels is greater than 10mm a second coat of LoPro® QuickSet self-levelling compound should be used.

Sink holes caused by damage to the castellated panel or poorly aligned panel joints allowing the compound to seep away

OR

Loss of compound at junction of interior/exterior walls allowing castellated panel to show

(this problem is usually caused by poor installation of the foam perimeter expansion/sealing strip meaning that compound can escape through gaps into the floor below).

- A** The original hole might now be sealed but if not, repair or fill with expanding foam as necessary.
- B** Prime the affected area with Mapei Eco Prim T or equivalent.
- C** Fill the affected area using Mapei Latexplan Trade or equivalent to a maximum depth of 10mm.

Spider-web fractures caused by rapid drying

These small fractures are not structural and need no remedial action except where a floor finish with a fine surface tolerance is to be fitted (vinyl, etc.).

In this case:

- A** Prime the affected area with Mapei Eco Prim T or equivalent.
- B** Fill the fine fractures using Mapei Latexplan Trade or equivalent.

Please see individual information sheets for detailed product installation and specification data.

Nu-Heat recommends the following products for repair or further levelling of LoPro®QuickSet self-levelling compound:

- Mapei Latexplan Trade – latex floor leveller
- Mapei Eco Prim T – floor primer

These products can be purchased from Nu-Heat or obtained locally if more convenient.

Warranty Certificate - Nu-Heat Fastflo® tube

Nu-Heat Fastflo® tube (PE-Xc, PE-RT, and multi-layer composite tube) is manufactured to ISO9002 quality control standards.

- Fastflo® tube is guaranteed (third-party, insurance-backed for up to €1million per claim) against failure in Nu-Heat floor heating systems for full reinstatement for a period of ten (10) years from the date of delivery. The sum insured is combined for the General Third Party Liability Insurance and the Products Liability Insurance.
- Fastflo® tube is guaranteed for a further forty (40) years against defects in material and workmanship. This guarantee shall be limited to the replacement of the defective tube, at the sole discretion of Nu-Heat. It shall not extend to installation reinstatement or consequential loss of any kind.

APPLICATION

This warranty shall apply provided that the heating system in which the Fastflo® tube is used has been installed, pressure-tested and commissioned in compliance with the procedures set out in this Nu-Heat installation manual.

EXCLUSIONS AND LIMITATIONS

The warranty shall not apply where:

- A – The tube has not been installed and pressure-tested in accordance with the procedures set out in this installation manual.
- B – Damage has occurred due to slip or heave in the concrete slab.
- C – The material has been subjected to misuse, neglect, abnormal conditions or physical damage.
- D – The tube has been used to carry or been subject to contact with incompatible heat-transfer fluids such as petroleum-based oils.

CLAIMS

In the event of a problem arising with this product, the warranty holder should first notify Nu-Heat in writing within 30 days. After receiving such notification and after the verification of warranty cover, the warranty shall be effected (as stated above).

Please note that the initial 10-year insurance backed warranty of Fastflo® tubing is provided directly by the manufacturer (underwritten by their appointed insurers), and not by Nu-Heat itself.

Reduced statute of limitations: the period of limitations for any cause of action arising out of, based upon, or relating to defects in the product purchased hereunder is hereby reduced to and shall be for a period of ninety (90) days after such cause of action occurs.

This warranty does not affect the purchaser's statutory rights. This warranty remains valid irrespective of ownership of the property in which the Fastflo® tubing has been installed but may only be enforced by a subsequent owner if Nu-Heat has been notified of the change of ownership within three (3) months of the change.

WARRANTY ISSUED IN THE NAME OF:

DATE OF PURCHASE:





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