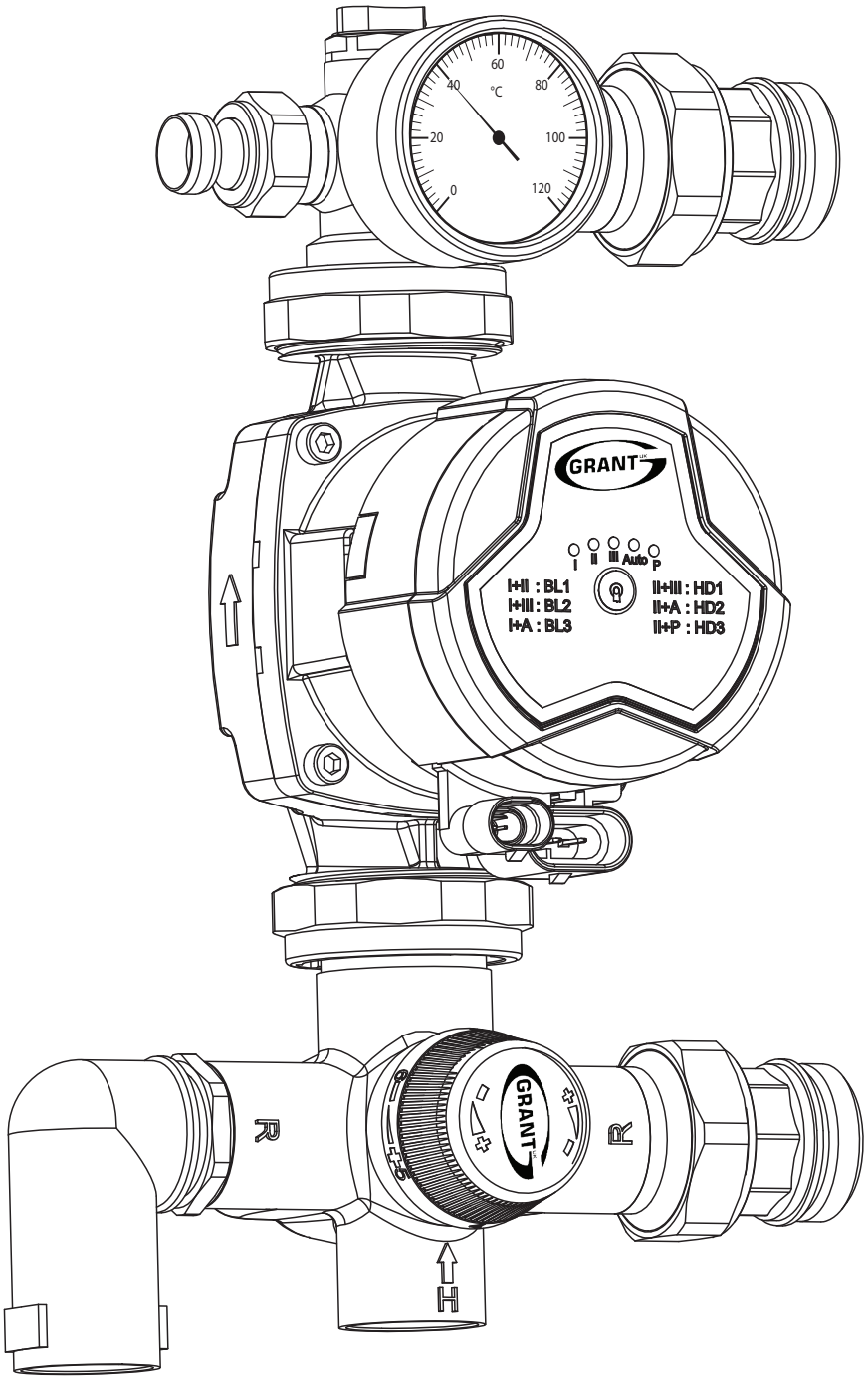
Grant UFLEX

Pump Control Set with Thermostatic mixing valve

Installation & Operating Instructions



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IMPORTANT NOTE FOR INSTALLERS

These instructions are intended to guide installers on the installation and commissioning of the Grant Uflex pump control set as part of a Grant Underfloor heating system. After installing the unit, leave these instructions with the user.

SPECIAL TEXT FORMATS

The following special text formats are used in these instructions for the purposes listed below:

! WARNING !

Warning of possible human injury as a consequence of not following this instruction.

! CAUTION !

Caution concerning likely damage to equipment or tools as a consequence of not following this instruction.

! NOTE !

Used for emphasis or information not directly concerned with the surrounding text but of importance to the reader.

PRODUCT CODES COVERED

These instructions cover the following product codes:

Product Code	Product Name
UFLEX109X	UFLEX Pump Control Set

! CAUTION !

Electric device under voltage!

Before any action related to the power supply (cables connection, device installation etc.) Check to ensure the controller is not connected to the mains power. Installation should be done by a person with appropriate electrical qualifications. Improper cable connection could result in controller damage. The controller must not be installed in steamy conditions or exposed to water, such as bath or shower room

CUSTOMER SUPPORT CENTRE

Grant UK provides an online support centre for Heating Professionals and Homeowners to access post-installation care, advice and maintenance support for Grant products. Follow the QR codes below to access your relevant Customer Support Centre.

SUPPORT HUB

Homeowner

SUPPORT HUB

Professional

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CONTENTS

1 INTRODUCTION

1.1 GENERAL

The Grant Uflex pump control set is a pre-assembled temperature control and circulation pump designed for connection to the Grant Uflex manifold.

The pump set ensures mixed flow temperature control and circulation of heated water through UFH circuits to multiple zones. The precise temperature control has a stability range of ± 3°C and low flow temperature operation to comply with BS EN 1264 warm-up procedure.

Integrated standard features include:

- Temperature gauge on mixed secondary flow.
- Quick manifold attachment via integral spinning nuts.
- Built-in check valve for rapid manifold filling.
- Self-sealing connections to minimise leaks.
- Fully reversible for left or right-handed installation with top or side entry connections.

This product may only be used for constant temperature control of underfloor heating systems in buildings and in conjunction with the following media:

- Heating circuit water
- Water/glycol mixtures with a maximum mixture of 20 %

Any use other than the application explicitly permitted in these operating instructions is not permitted and could be hazardous.

These instructions must be left with the product for future reference.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

1.2 KEY COMPONENTS

The main components of the pump set consist of:

- 4-Port thermostatic blending valve
- Circulation pump
- 1½" Female to 1" Flow connector with Non-return valve
- 1½" Female to 1" Return connector

! NOTE !

Ensure to check laser etching on the flow and return connectors for correct placement on the manifold.

- 90° Elbow fitting
- Temperature gauge
- Spinning nuts
- ¾" Female to ¾" Male Flow (Red) & Return (Blue) Ball isolation valves
- Temperature gauge

The below optional components can be fitted depending on the installation requirements:

- High limit sensor

1.3 REGULATIONS & STANDARDS

The installation of the Grant UFLEX underfloor heating system must be in accordance with the following recommendations, as applicable:

- National Building Regulations, e.g. Approved Documents L & G
- Local Bylaws (Check with the Local Authority for the area)
- Water Supply (Water Fittings) Regulations 1999
- MCS Installers Standards (when required, e.g. for installations for the Boiler Upgrade Scheme).
- BS EN 1264
- BS EN 14336

The installation should also be in accordance with the latest edition of the following standards and codes of practice:

- BS 7671 and Amendments. Requirements for Electrical Installations. IET Wiring Regulations.
- BS EN 12831. Energy performance of buildings. Method for calculation of the design heat load. Space heating load.
- BS 7593. Code of practice for the preparation, commissioning and maintenance of domestic central heating and cooling water systems.

1.4 INFORMATION ABOUT DOCUMENTATION

This manual contains safety related important information for both user and installer. The user should read both parts of the manual to familiarise themselves.

Grant UK are not responsible for any damages caused by failure to follow these instructions.

1.5 STORAGE OF DOCUMENTATION

These installation and operating instructions, as well as any other applicable documentation, should be stored in a safe place for future reference.

1.6 STORAGE AND TRANSPORT

This product may be damaged as a result if improper transport or storage. It should be stored in a clean and dry environment and not be exposed to direct effects of weather, i.e., rain and sunlight.

During transport, the pump control set cannot be exposed to vibrations greater than typical for normal road transport.

1.7 INSPECTION & MAINTENANCE

The heating system should be inspected monthly by the homeowner and annually by a heating engineer to:

- maintain efficiency.
- ensure safe operation.
- check for leaks

Grant UK recommend that maintenance be carried out annually on the complete heating system.

2 TECHNICAL DATA

2.1 DIMENSIONS

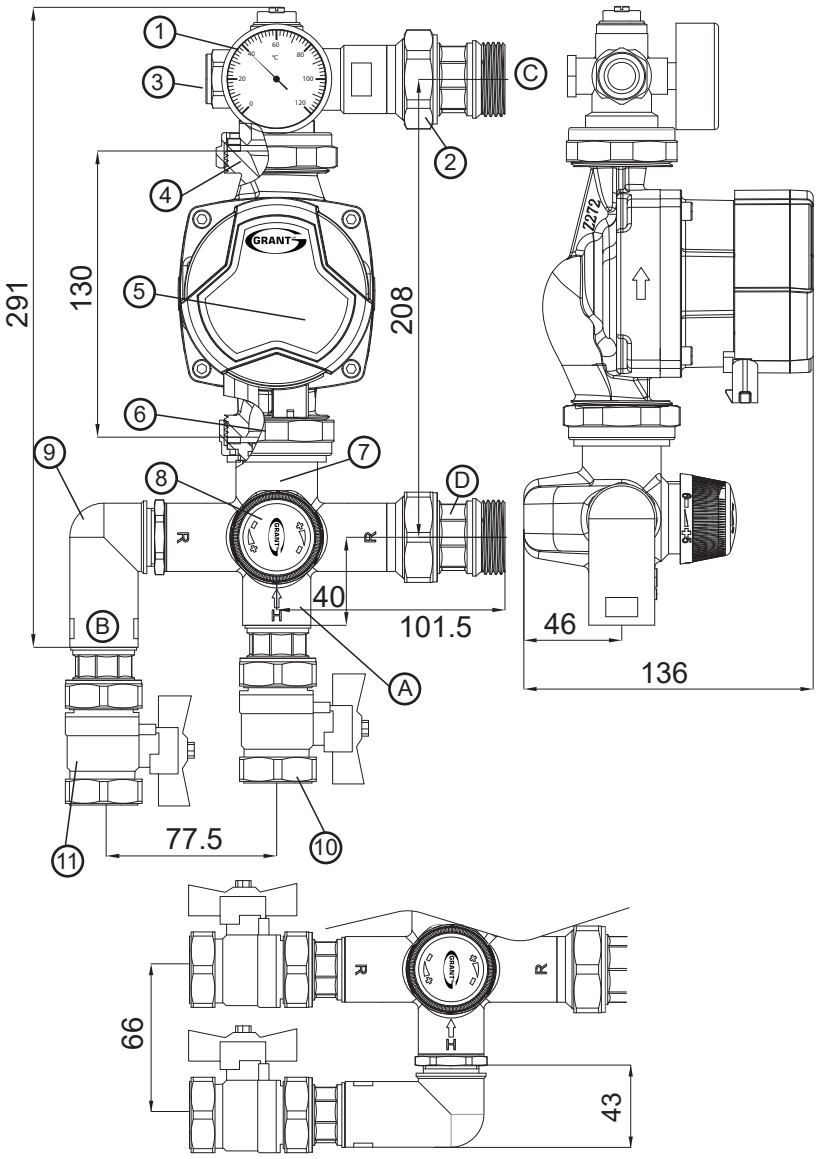

Figure 2-1: Pump set dimensions

Table 2-2: Pump set components

Item	Specification
1	Temperature gauge (supplied loose)
2	Nickel plated self-sealing spinning nut (Brass)
3	Flanged nickel plated brass T-piece (Brass)
4	Nut (Brass)
5	Circulation Pump
6	Nut (Brass)
7	4-port thermostatic mixing valve (Brass)
8	Thermostatic valve control
9	Brass elbow (Brass)
10	Flow ball isolation valve (Red)
11	Return ball isolation valve (Blue)

Item	Specification
A	Primary flow (¾" BSP female)
B	Primary return (¾" BSP female)
C	Mixed Manifold flow (1" BSP male) with Non-return valve
D	Manifold return (1" BSP male)

When attached to the Uflex manifold the Uflex pump control set will be angled by 10°.

2.2 TECHNICAL SPECIFICATIONS

2.2.1 CIRCULATING PUMP

Table 2-1: Grant UFLEX Circulating pump

Feature	Specification
Material of fittings	Plastic / Brass
Circulating pump	
Nominal supply voltage	EU: 1 x 230V +10% / -15%, 50/60 Hz
Energy efficiency	EEI≤0.20-Part 2
Motor protection	The motor is protected by the electronics in the control box and requires no external motor protection
Protection class	IP44
EMC Standards	EN 61000-6-1 EN 61000-6-3
Insulation class	H (EN 60335-1)
Temperature class	TF110
Maximum head (meters)	7.5
Maximum Flow (l/m)	56
Operational range	2 to +110°C
Ambient temperature Range	0 to +70°C
Maximum media temperature	+110°C
Minimum media temperature	2°C
Minimum inlet pressure at <75°C	0.005 MPa @ 0.5m head
Operating System pressure	0.3MPa (3 bar)
Maximum system pressure	1 MPa (10 bar)
Relative humidity	Maximum 95%, non-condensing environment
Acoustic sound pressure level (Lp)	≤ 42 dB(A)
Thermostatic mixing valve	
Medium	Heating water to VDI2035, glycol solutions
Maximum Glycol percentage	≤50%
Maximum working pressure	PN10
Maximum differential pressure	1bar
Maximum recommended pressure	3kPa
Working temperature range	0 to 85°C
Adjustable temperature range	20 to 55°C
Factory preset temperature	55°C
Temperature stability	±3°C
Minimum flow rate (for stability)	9 l/m (0.15l/s)
Recommended temperature differential	3 to 10°C

2.2.2 THERMOSTATIC VALVE CONTROL

The thermostatic mixing valve is supplied factory set to 55°C and should be adjusted based on the design temperature for the installed heating system.

The control knob should be turnt clockwise to decrease and anti-clockwise to increase the desired mixed water flow temperature. After adjusting the control knob, check the attached temperature gauge to confirm the mixed outlet temperature is correct.

Table 2-2: Mixed outlet temperatures

Setting	Water temperature (°C)
1	20
2	25
3	30
4	36
5	42
6	55

An error range of + 3°C should be observed.

3 INSTALLATION

3.1 PRE-INSTALLATION

3.1.1 SYSTEM PREPARATION

Prior to the installation of the Grant Uflex pump control set:

- Plastic pipework used in the central heating system must have a polymeric oxygen barrier, with at least 1 metre of copper or steel pipe connected to the appliance.
- Plastic pipework for the underfloor heating must be checked and should not exceed specifications provided by the underfloor heating manufacturer.
- The underfloor heating system flow and resistance must not exceed the hydraulic capacity of the circulation pump.
- Drain cocks should be installed at the systems lowest points.
- Air vents should be installed at the systems highest points.

! CAUTION !

Ensure the flow temperature does not exceed specified limits to avoid damage to the floor covering.

3.1.2 CLEANING THE PRIMARY SYSTEM

Before installation, the central heating system should be cleaned and thoroughly flushed according to local standards and guidelines, apart from the thermostatic control valve, which should be isolated.

! CAUTION !

Debris can damage the system and reduce it's efficiency. Failure to follow water treatment guidelines will void the appliance warranty.

3.1.3 CLEARANCES

Once the pump control set is attached to the manifold and the manifold is wall mounted, a minimum of 300mm clearance should be maintained from the finished floor to the bottom of the pump control set.

It is also recommended to leave 100mm clearance above and on either side of the manifold/pump pack for future maintenance.

3.1.4 LOCATION

UFH Manifolds are typically placed in utility rooms, airing cupboards, cloakrooms or under stairs cupboards and should be easily accessible for future maintenance and servicing.

They should also ideally be centrally located within the property to allow for easy pipework layout.

This pump control set is not suitable for installation externally.

3.2 PUMP ORIENTATION

When fitting the Grant Uflex manifold and pump control set, the following requirements must be met:

- The walls be structurally capable of supporting the system.
- All electrical cables, ducts or service pipes should be installed and tested before starting any heating work.

The pump control set is supplied with two isolation ball valves; one with a red lever for the flow from your heat source and the other with a blue lever for the return to your heat source. These will be connected either directly into the 4-port blending valve or the supplied brass elbow, depending on your installation preference

The pump control set can be adjusted to suit installation requirements, and Grant UK recommend making the change before it is fitted to the Uflex manifold.

3.2.1 LEFT HAND SIDE MOUNTING

The pump control set is supplied as standard in a left-handed orientation. i.e to fit into the left side of the Uflex manifold.

For primary connections at the bottom, the supplied brass elbow should be attached to the heat source return outlet. Refer to Figure 3-1.

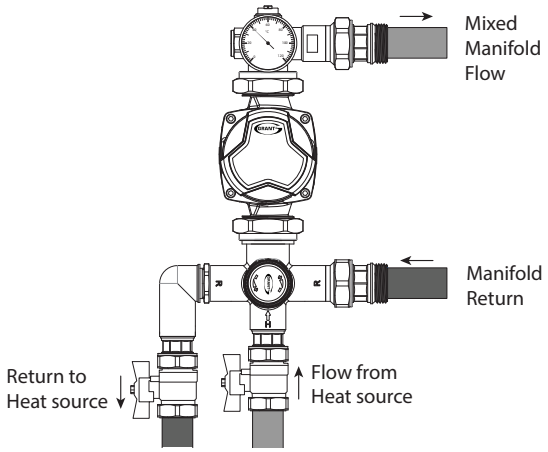

Figure 3-1: Left-handed bottom entry (Vertical connection)

Table 3-1: Vertical connection centres

Connection	Pipe centre from wall (mm)
Heating system - Flow	97
Heating system - Return	97 (following 10° angle)

For primary connections at the side, the supplied brass elbow should be attached to the heat source flow inlet. Refer to Figure 3-2.

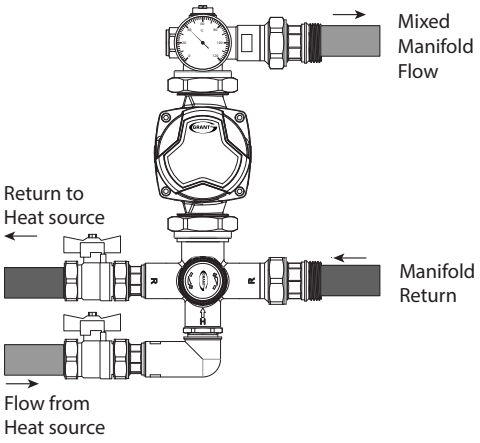

Figure 3-2: Left-handed side entry (Horizontal connection)

Table 3-2: Horizontal connection centres

Connection	Pipe centre from wall (mm)
Heating system - Flow	81
Heating system - Return	67

Refer to Table 3-1 & Table 3-2 for pipe centres from the wall when the Uflex pump control set is attached to the Uflex manifold.

3.2.2 RIGHT HAND SIDE MOUNTING

To change the manifold from left to right-side i.e to fit into the right hand side of the Uflex manifold.:

1. Remove any connectors for returns from both sides of the 4-port blending valve. Refer to Figure 3-3.

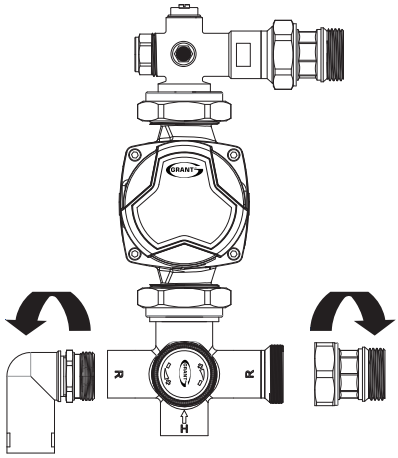

Figure 3-3: Remove flow/return connectors

2. Insert the supplied brass hexagonal key into the right side connector and rotate to remove from the 4-port blending valve. Refer to Figure 3-4.

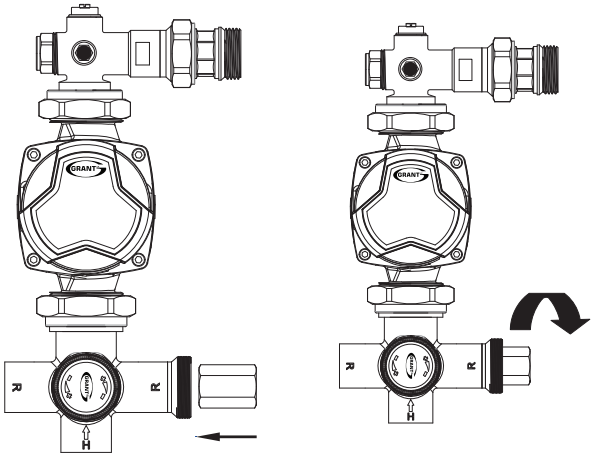

Figure 3-4: Remove threaded connector

3. Fit the threaded connector into the left side of the 4-port blending valve and ensure it is securely tightened using the supplied brass hexagonal key. Refer to Figure 3-5.

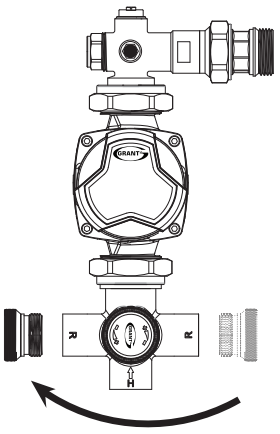

Figure 3-5: Re-fit threaded connector

4. Refit the connectors removed in step 1 appropriate for your intended system installation. Ensure that close attention is paid to the O-ring of the elbow to ensure it is not deformed when tightening. If the O-ring begins to deform slacken the elbow back to the required position and tighten the spinning nut to seal. Refer to Figure 3-6

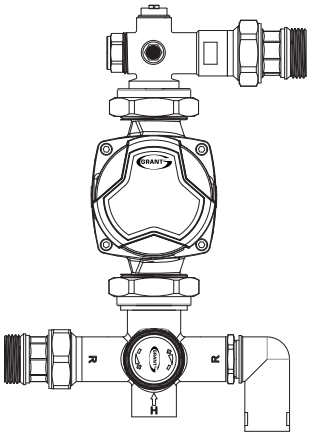

Figure 3-6: Re-fit flow/return connectors

5. Use a spanner to release the pump connecting nut at the top allowing the mixed manifold outlet to be rotated 180°, changing from right to left. Refer to Figure 3-7 The pressure gauge face will now be to the back. Once in place retighten the connecting nut. Refer to Figure 3-8.

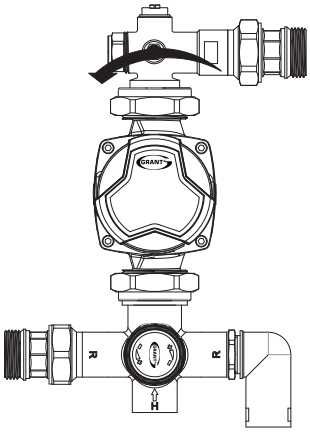

Figure 3-7: Rotate mixed manifold outlet

6. Remove the blanking plug on the front of the manifold and the temperature gauge dry pocket (with a 12mm open ended spanner), swap positions and re-fit ensuring tight connections to allow the temperature gauge to be viewed from the front when inserted. Refer to Figure 3-8.

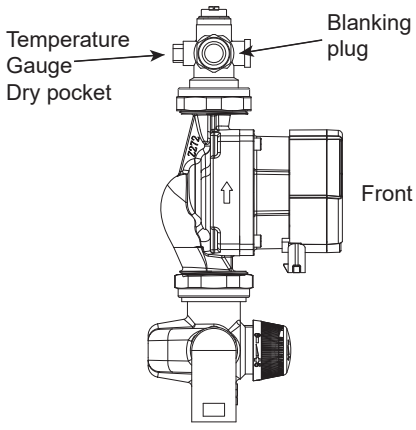

Figure 3-8: Blanking plug and Temperature Gauge

7. The Grant Uflex pump control set is now configured for a right-sided connection. Insert the supplied temperature gauge into the dry pocket as indicated in Figure 3-8. Refer to Figure 3-9 for fully assembled Grant Uflex Pump control set.

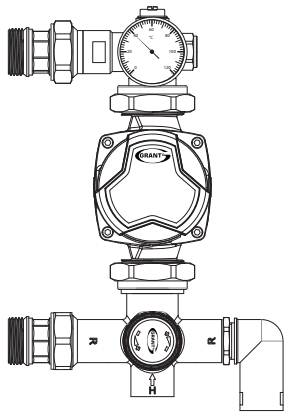

Figure 3-9: Right-side connection

3.3 MANIFOLD INSTALLATION

The Grant Uflex control pump set is designed to be mounted to the Grant Uflex manifold. The manifold must be securely fixed to a wall that is sufficiently load-bearing to support the weight of the manifold and pump control set without any risk of detachment from the surface to which it is secured.

! NOTE !

If using right sided flow/return connections, mount the pump set on the right side of the manifold.

To mount the Grant UFLEX pump control set to the manifold:

1. Insert 1" manifold connectors for mixed manifold flow and returns, ensuring they are sufficiently tightened. Refer to Figure 3-10.

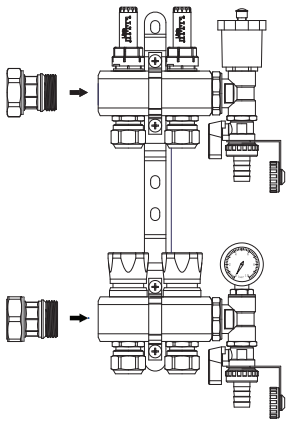

Figure 3-10: Manifold connectors

! NOTE !

Ensure to check laser etching on the flow and return connectors for correct placement on the manifold.

2. Insert pump set into the spinning nuts for mixed manifold flow and return and tighten. Refer to Figure 3-11.

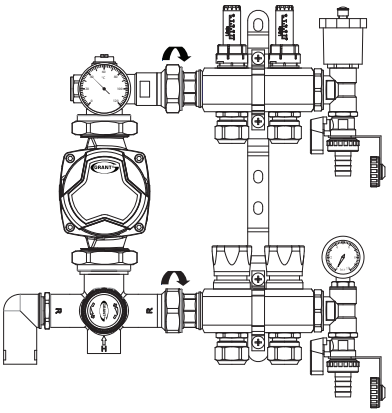

Figure 3-11: Connected pump set

! CAUTION !

Avoid over tightening the spinning nuts as this could damage the seals.

3.4 SETTING MIXING TEMPERATURE

The temperature from the Mixed manifold outlet can be adjusted at any time. However, to ensure the mixing valve is controller the temperature correctly, the system must be filled, electrical wiring completed, and a heating demand signal sent with the pump circulating.

To adjust the outlet temperature:

1. Turn the dial for the thermostatic mixing valve, located on the 4-port blending valve. Clockwise will decrease the temperature and anti-clockwise will increase it. Refer to Figure 3-12 and Table 3-1.

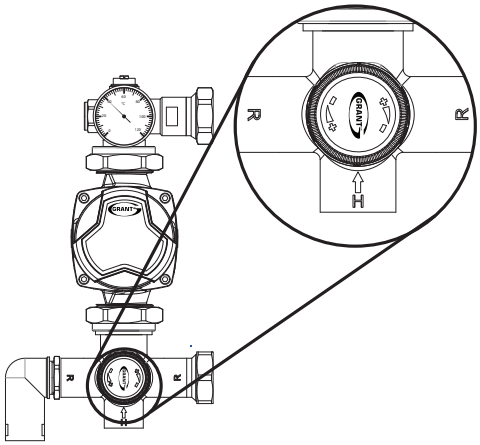

Figure 3-12: Mixed Flow temperature adjustment

2. Use the temperature gauge at the top of the pump control set to verify the mixed outlet temperature is achieved.

! CAUTION !

System flow temperature should always be higher than ambient temperature to avoid condensate on the pump.

4 ELECTRICAL

4.1 GENERAL

The Grant UFLEX pump control set will need to be operated by a 230V 50Hz single phase electrical supply from a timer or other controller.

The UFLEX system is compatible with both the Grant Aerona[3] and Grant Aerona 290 heat pumps and can be activated from:

- a UH8 wiring centre
- a Grant Aerona Smart controller

4.2 UH8

The UH8 allows for up to 8 zones to be individually controlled via installed 230V thermostats. When the zone receives a signal from the thermostat, the UH8 activates and the 'actuator' and 'UFH valve' (if installed) are activated.

After the valve has been activated, the UFLEX pump control set is energised from the 'UFH PUMP' terminals and begins the flow into the underfloor heating system.

The thermostatic mixing valve attached will deliver the heated water at the required temperature based on the system design.

Refer to Figure 4-1 for pump connection schematic.

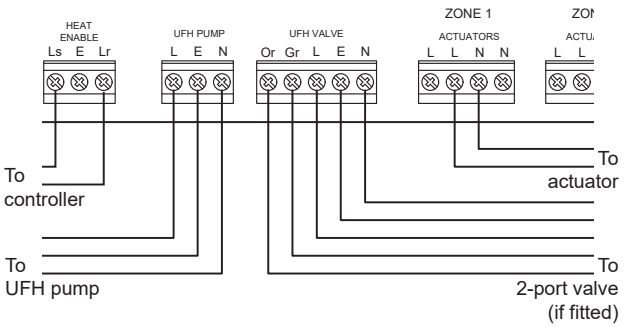

Figure 4-1: UH8 connection

! NOTE !

If a 2-port motorised valve is not being used, link the 'Gr' (Grey) and 'Or' (Orange) terminals to allow the 'UFH PUMP' & 'HEAT ENABLE' terminals to be activated.

4.3 SMART CONTROLLER

The Grant Aerona Smart controller can operate the UFLEX pump control set by:

- being connected to a UH8 (via 'T1' or 'T2' 12V terminals).
- being connected to an associated circuit 230V output (H1, H2 or H3-P).

When a heating demand is made from the Grant Aerona smart controller, a 230V output is enabled in the wiring centre which can be used to operate a device connected to it, commonly a 2-port motorised valve or a pump.

The terminals in the wiring centre numbered 13 to 22 (Refer to Figure 4-2 or Section 5 of the Grant Aerona Smart controller manual - DOC 0203) consist of live and neutral connections with an earth bar at the bottom of the wiring centre.

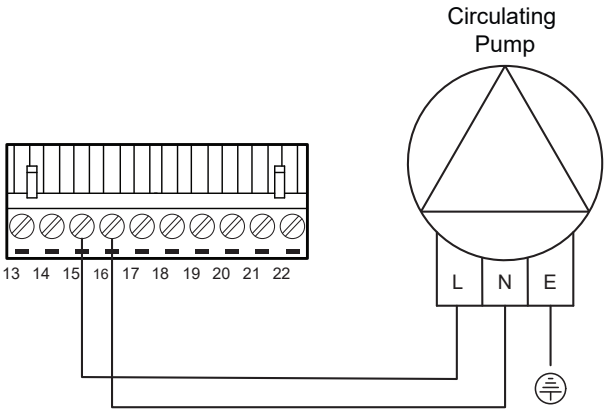

Figure 4-2: Smart controller connection

! NOTE !

The Grant Aerona smart controller system view indicates when a circuit output is active

4.4 ELECTRICAL SCHEMATICS

For concept electrical drawings, refer to the your supplied air source heat pump manual or follow the QR code in the online resources section of this manual to view the library of concept drawings available on the Grant UK website.

5 UFLEX CIRCULATING PUMP

5.1 GENERAL

The Grant Uflex pump control set comes fitted as standard suitable for home heating systems.

It is equipped with a permanent magnet motor and differential pressure controller which can adjust the performance of the electric pump automatically and continuously to meet the needs of the system.

It is supplied in auto adaptation mode (AUTO) by default and in most cases the pump can be started and it will automatically adjust itself to meet the needs of the system.

The front facing control panel provides convenient access for users.

5.2 PUMP CONTROL PANEL

The control panel indicates to operative state of the circulating pump and can also indicate faults for the pump.

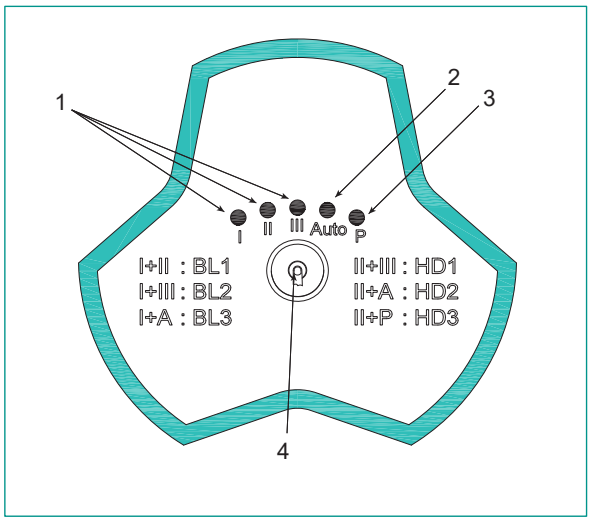

Figure 5-1: Pump control panel

Table 5-1: Pump control panel

Item	Icon	Description
1	I, II, III	Pump LED display (LED 1, 2 & 3)
2	Auto	Pump automatic gear shift display (LED 4)
3	P	PWM mode display (LED 5)
4		Pump mode button

5.3 PUMP OPERATION MODES

The Uflex circulating pump has 10 overall operation modes and can be changed by pressing down the Pump mode button for 2 seconds. This will alter the settings by 1 step (in descending order from the Table below) which will run from the default to 9. Refer to Table 5-2.

Table 5-2: Pump settings

LED	Mode	Title
A	AUTO	Auto adaptive mode
I & II	BL1	Proportional pressure curve 1
I & III	BL2	Proportional pressure curve 2
I & A	BL3	Proportional pressure curve 3
II & III	HD1	Constant pressure curve 1
II & A	HD2	Constant pressure curve 2
II & P	HD3	Constant pressure curve 3
I	HS1	Constant speed curve 1
II	HS2	Constant speed curve 2
III	HS3	Constant speed curve 3

AUTO (auto adaptation) mode adjusts the pump performance automatically according to the heat demand of the system. The performance is adjusted gradually and we recommend it be left in this mode for at least a week before attempting to change the pump settings.

If the settings have been changed and you choose to go back to AUTO mode, the pump will remember the previous set points and continue to adjust itself from this.

Refer to Figure 5-2 for performance curves for the pump.

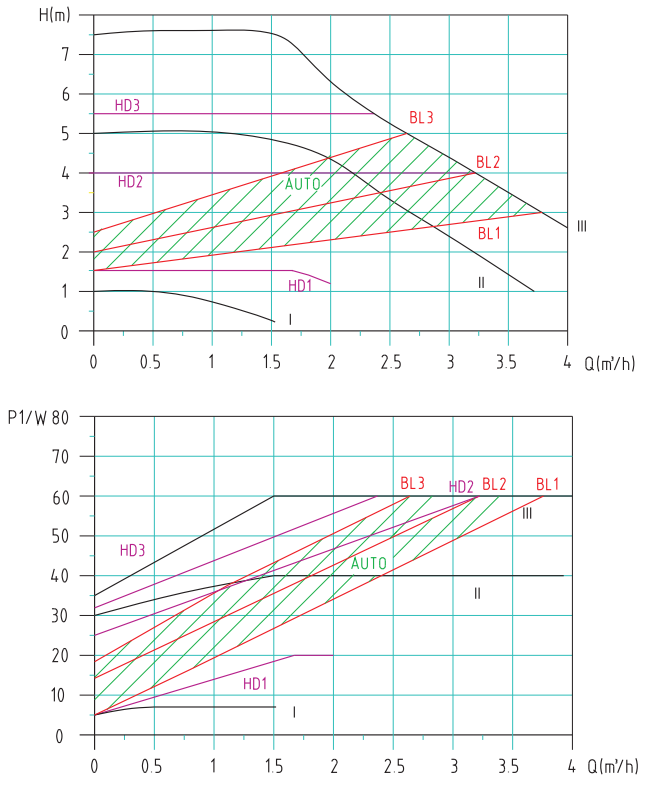

Figure 5-1: Pump performance curves

5.4 PUMP FAULT DISPLAY

During normal operation, the mode display LED for the appropriate operation mode will be lit (Refer to Section 5.3 and Table 5-1) and should a fault arise, the display LED will flash continuously. This will correspond to the faults shown in table 5-3.

Table 5-3: Fault code display

LED flashing	Fault description
LED 1	Over voltage protection, restart after voltage returns to normal (high voltage protection value 270 + 5V)
LED 2	Under voltage protection, restart after voltage returns to normal (low voltage protection value 165 + 5V)
LED 3	Over current protection, restart after 5 seconds
LED 4	Under load protection, restart after 5 seconds
LED 5	Over phase protection, restart after 5 seconds
LED 1 and 2	Locked rotor protection, restart after 5 seconds
LED 1 and 3	Start failure (asymmetric motor parameters), restart after 5 seconds
LED 1 and 4	Over heat protection, Output maximum reduced by half When ambient returns to safe operating range, Maximum output is restored
LED 1 and 5	Over temperature protection, restart after temperature is within safe operating range

When a fault is displayed, the power supply must be disconnected prior to any remedial work can be actioned.

Refer to Section 7 for further guidance on fault finding with your Uflex pump control set.

Restore power when work has been completed

6 COMMISSIONING & MAINTENANCE

Prior to commissioning, a tightness test must be performed as per BS EN 14336 (Annex A.2). This test may be independent or can be a combined test for water tightness and pressure verification.

"*For doing the water tightness test, the system shall be filled with filtered water starting from the lowest point (filling valve) up to the highest point and shall be vented. Having filled the system, the vents shall be shut and the system shall be checked for water tightness.*

In case of doing the water tightness test with inert gas, the safety requirements for each test shall be met and all connections to appliances and joints shall be checked for water tightness with soap water.

The heating system is tight if no water is escaping or, in case of testing by inert gas, no bubbles can be seen or heard."

Complete the supplied combined test report (Refer to DOC 0211 - UFLEX Underfloor systems manual).

6.1 COMMISSIONING

After filling and pressure testing the system (as described in DOC 0211), check that:

- all valves are fully open in their normal operative position.
- all thermostatically controlled valves are fully open and will not be affected either by ambient air or water temperature.
- (if used) a method of operating automatic control valves is available and that these are motored to normal operative conditions.
- the pump flow inlet and return valves are fully open.
- the pump casing is vented of air.
- the pump mixed manifold flow valve is partially closed to limit the initial start current.
- the pump has been installed correctly for direction of flow.
- the motor, pump and drive are free from vibration.
- all connections and fixings are leak free.

Ensure to complete all related commissioning and inspection forms to leave with the homeowner for future reference.

6.2 MAINTENANCE

The homeowner should be advised to periodically perform a visual check of the heating system to verify it is water tight. Any maintenance or repairs must only be performed by qualified and competent persons.

It is recommended for underfloor heating manifolds to be checked annually and as part of this check, the UFLEX pump control set should be checked:

- to verify correct operation of the circulation pump.
- to verify the correct control and operation of the thermostatic mixing valve to the mixed manifold flow temperature.

7 FAULT FINDING

7.1 FAULT FINDING

Should a fault arise with this underfloor heating system, use the table below to perform a preliminary check in diagnosing the issue.

Any repairs to components should only be performed by a qualified and competent person.

If you are unsure on any of the information provided, contact Grant UK Technical support for further assistance.

Verify thermostatic mixing valve is set correctly for the design of the underfloor heating system

Issue	Possible reason	Suggestion
Noise in the system	Air in the system	Vent the system
	Circulation pump not adjusted properly	Verify correct adjustment of the circulation pump
Insufficient heat through the underfloor heating system	Pump capacity is insufficient	Correct the pump capacity
	Thermostatic mixing valve is set to low	Verify thermostatic mixing valve is set correctly to design of the underfloor heating system
	An Isolation valve is closed	Check isolations valves for normal operation are open
	Flow temperature from primary circuit is too low.	Check heat source flow temperature
Excessive heat through the underfloor heating system	Thermostatic mixing valve is set too high	Verify thermostatic mixing valve is set correctly to design of the underfloor heating system
	Thermostatic mixing valve is faulty	Replace the faulty valve
Noise in the circulation pump	Air in the circulation pump	Manually vent the circulation pump
	Incorrect system pressure	Check and verify the system pressure is correct for the design of the underfloor heating system
Circulation pump does not run	Circulation pump is blocked	Remove obstructions from the motor
	Circulation pump is faulty	Check pump for fault indication (Refer to Section 5.4). Replace the circulation pump if faulty
	No supply voltage	Check power supply connections and voltage from the controller

7.2 REPLACING CIRCULATING PUMP

If the fault diagnosis leads to the need for the circulating pump to be replaced:

1. Disconnect the mains voltage.
2. Replace the circulation pump. Use new seals and tighten the screw connections with 60 Nm.
3. Fill and vent the system.
4. Connect the circulation pump to supply voltage.

! WARNING !

ELECTRIC SHOCK CAUSED BY LIVE PARTS

Disconnect the mains voltage supply before performing the work and ensure that it cannot be switched on.

8 HEALTH & SAFETY INFORMATION

8.1 GENERAL

Under the Consumer Protection Act 1987 and Section 6 of the Health and Safety at Work Act 1974, we are required to provide information on control of substances hazardous to health (COSHH Regulations 1988).

Adhesives, sealants and paints used in the manufacture of the product are cured and present no known hazards when used in the manner for which they are intended.

! WARNING !

Isolate the pump from the electricity supply before attempting any works.

8.2 INCORRECT APPLICATIONS

The product must never be used in the following cases and for the following purposes:

- Use with drinking water
- Use with adherent, corrosive or flammable fluids
- Operation in systems with temperatures exceeding 100°C (for example, Solar systems)
- Hazardous area (EX)
  - If the product is operated in hazardous areas, sparks may cause a fire or explosion.

8.3 QUALIFICATION OF PERSONNEL

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and other product documentation should install or work on the products in the Grant Uflex range.

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may occur when using products in the Grant Uflex range.

All persons working on and with the products in the Grant Uflex range must be fully familiar with all directives, standards and safety regulations that must be observed to carry out such work.

8.4 PERSONAL PROTECTIVE EQUIPMENT

Always wear the required personal protective equipment. When carrying out work on or with the product, take into account that hazards may be present at the installation site which do not directly result from the Grant Uflex product itself.

8.5 MODIFICATIONS TO THE PRODUCT

Only perform work on and with the product which is explicitly described in these instructions. Do not make any modifications to the product which are not described in these instructions.

9 DISPOSAL & RECYCLING

9.1 DISPOSAL

1. Switch off the heating system controller.
2. Isolate and drain the Underfloor system.
3. Disconnect the product from mains power supply.
4. Dismount the product from the manifold.
5. Disconnect pump from 4-port blending valve and Combined Pressure/Temperature gauge.
6. Dispose of the product.

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

Electronic components must not be disposed of together with the normal household waste.

9.2 DIRECTIVE WEEE 2012/19/EU

Purchased product is designed and made of materials of the highest quality.

The product meets the requirements of the Directive 2012/19/EU of 4 July 2012 on waste electrical and electronic equipment (WEEE), according to which it is marked by the symbol of crossed-out wheeled bin (like below), meaning that product is subjected to separate collection.

Responsibilities after finishing a period of using product:

- Dispose of the packaging and product at the end of their period of use in an appropriate recycling facility,
- Do not dispose of the product with other unsorted waste,
- Do not burn the product.
- By complying with the above obligations of controlled disposal of waste electrical and electronic equipment, you avoid harmful impact on the natural environment and threats to human health.

ONLINE RESOURCES

GRANT UK PRODUCT SUPPORT

QR CODE	Description
	Grant UK product support page. Follow the QR code for a link to the Grant UK product support page. For further information or queries please contact into@grantuk.com or your local sales representative.

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