

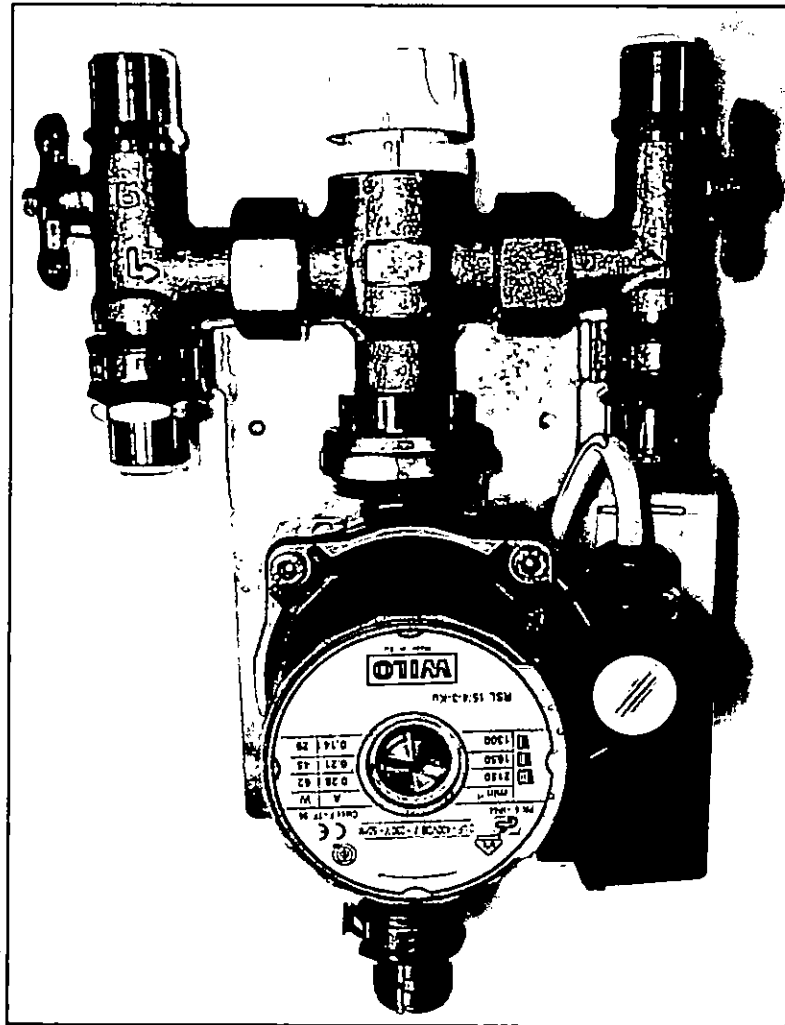
QU26412

54118

**JG Speedfit**

*Underfloor Heating*

**JG SPEEDFIT ONE ROOM CONTROL UNIT  
INSTALLATION INSTRUCTIONS  
FOR SOLID FLOORS ONLY**



# Contents

- Section 1 Introduction**
- Section 2 Design**
- Section 3 Installation Requirements**
- Section 4 Installation of unit and pipework**
- Section 5 Screeding**
- Section 6 Connection to Primary / Existing circuit**
- Section 7 Wiring**
- Section 8 Operating Principles**
- Section 9 Settings**

## **Section 1 – Introduction & Pre-Installation Checks**

The Speedfit Single Room UFH Control unit is pre-assembled and pre-wired to allow speedy and simple installation and comes complete with wall fixing kit.

The pump is pre-wired in conjunction with a flow temperature thermostat and the mains connection lead. There is also a removable link for the connection of a room stat if desired (not supplied by Speedfit).

The control unit has integral ball valves for connecting and isolating the primary heating system, an adjustable thermostatic blending valve and Wilo 4 metre head-circulating pump, all secured to a fixing bracket with anti-vibration mountings for silent operation.

Speedfit push fit connections on the unit make for easy and fast connection to pipework.

### **Section 1 - Pre-Installation Checks**

The following checks should be carried out to ensure the Speedfit Single Room UFH Control is suitable for the installation.

- a) IF CONNECTING TO EXISTING RADIATOR PIPEWORK, ENSURE THE PIPEWORK IS 15mm MIN AND HAS ENOUGH SPARE CAPACITY TO FEED THE UFH SYSTEM.
- b) CHECK THE BOILER SERVING THE UFH WILL HAVE THE CAPACITY TO TAKE THE EXTRA OUTPUT OF THE UNIT, WHICH IS 2KW MAX.
- c) CHECK THE BOILER SERVING THE UFH IS COMPATIBLE WITH ADDITIONAL PUMPS ON THE SYSTEM.
- d) THE SPEEDFIT Single Room UFH Control Unit ONLY OPERATES WHEN THE EXISTING HEATING IS ON.
- e) THE SPEEDFIT Single Room UFH Control Unit WILL SERVE A MAXIMUM AREA OF 20m<sup>2</sup>.
- f) IN AREAS OF HIGH HEAT LOSS SUCH AS CONSERVATORIES, ADDITIONAL HEATING MAYBE REQUIRED TO OBTAIN COMFORT CONDITIONS.

**WITH FLOOR AREAS GREATER THAN 20m<sup>2</sup>, SPEEDFIT MARKET A RANGE OF UFH PRODUCTS TO COVER ALL SIZES OF ROOMS, AS LONG AS THEY ARE SOLID FLOOR CONSTRUCTION.**

**Section 2 - Design**

The table below shows the Speedfit coil size required depending on the area of the room. However, you must remember to allow for the flow & return distance from the room to the Control unit, if the unit is not installed in the same room.

The shape of the room will determine the pipe layout to use. The counter flow pattern is recommended, although other options are shown below.

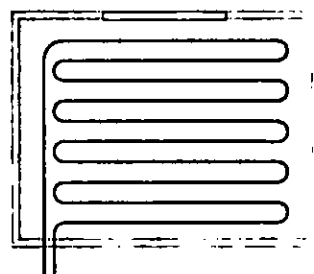
Whichever design you use the pipes must have 150mm pipe centres, allowing a distance of 100mm from the walls to prevent damage from fixtures & fittings.

The temperature of the UFH system is controlled by a mixer valve on the control unit and is adjusted depending on the resistance of the floor finish to heat transfer. The table below shows example of a low resistance finish (Tiles) and a high resistance finish (carpet/underlay)

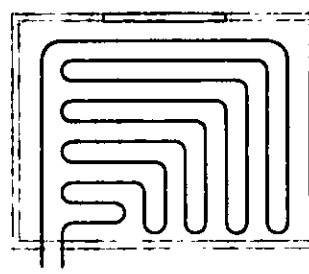
**TABLE 1**

COIL SIZE (m)	MAX AREA (m <sup>2</sup> )	TEMP/TILES (°C)	TEMP/CARPET (°C)	MAX OUTPUT (KW)
150	20	44	58	1.8
120	17	44	58	1.5
100	14	44	58	1.2
50	7	44	58	0.6

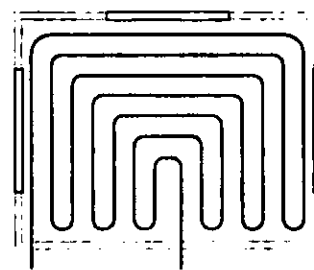
**DIAGRAMS SHOWING ALTERNATIVE PIPE LAYOUTS**



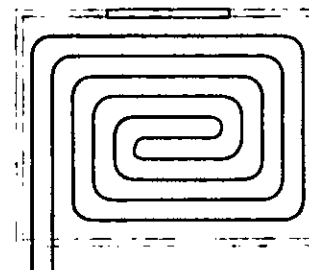
**Single Serpentine**



**Double Serpentine**



**Triple Serpentine**

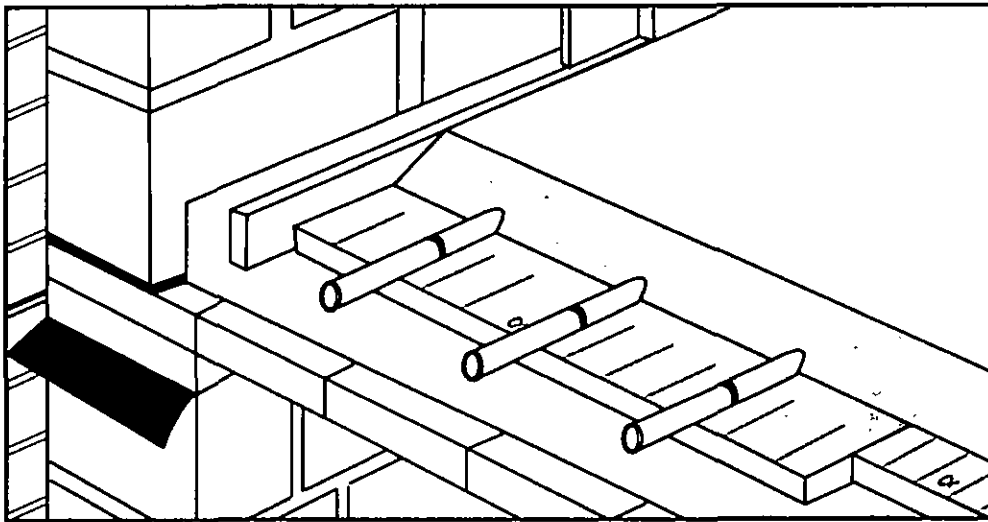


**Counterflow**

### Section 3 – Installation requirements

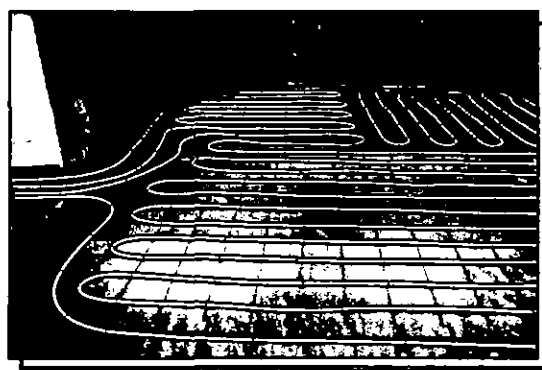
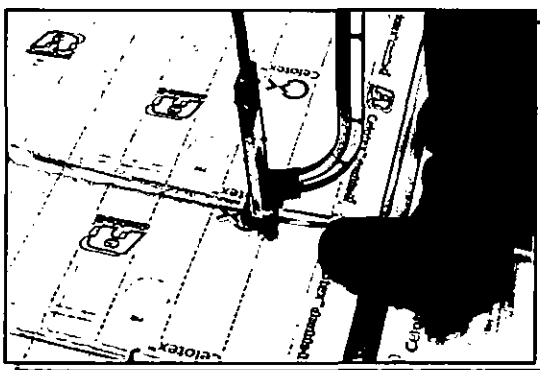
The Speedfit one room UFH control unit is designed for solid floor applications only. The sub base must be clean and level. Fit the floor insulation, (supplied by others) normally 50mm high density and edge stripping (supplied by others) and tape up all joints, this prevents screed getting beneath the insulation and also prevents cold bridges forming.

Diagram of cross section of floor construction.



If staples are not to be used to fix pipework, then A142 mesh can be laid on top of the insulation and the pipework cabled tied to the mesh.

Diagrams showings staple and mesh fixing methods.



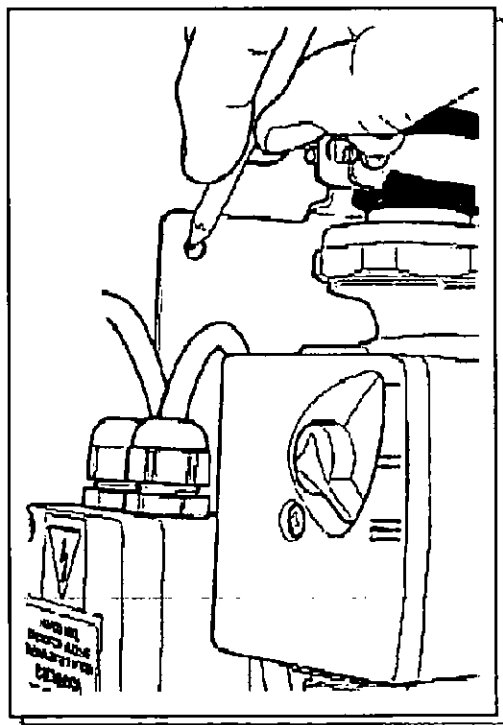
**Section 4 - Installation of unit and pipework**

The Speedfit UFH Control unit is designed for wall fixing and ideally should be mounted in a horizontal position with the electrical connection box uppermost.

However, it can also be mounted vertical to pump up or down if desired. Provision should be made to vent air to protect pump from cavitation.

The unit **must not** be floor mounted or in any position that inclines the pump shaft vertical. Refer to the pump installation leaflet enclosed.

Choose the location for the unit ensuring adequate clearance and accessibility for pipe work and any subsequent maintenance. This is particularly important if enclosed within a cupboard space for example.



- a) Locate the unit on the wall and mark the hole fixing positions through the bracket.
- b) Take care to protect any electrical equipment and cables during handling.
- c) Remove the unit and drill (8mm masonry drill) and plug the holes. Align and secure the unit to the wall with the screws provided.
- d) Connect the Speedfit 15mm pipe to the UFH flow connection on the unit (see diagram) and lay the pipe in accordance to the pipe layout design that suits your room, remembering the pipe centers of 150mm and the outer pipe to be 100mm from the wall, utilizing the Speedfit staples or cable ties to secure the pipe.
- e) At the end of the pipe layout return to the Control unit and cut and connect the other end of the pipe to the return UFH connection of the unit.

**\* REMEMBER TO CUT THE PIPE WITH THE CORRECT PIPE CUTTERS AND USE THE PIPE INSERTS.**

**Section 4 - Installation of unit and pipework (cont)**

Before connecting the primary pipework /circuit you must pressure test the UFH pipework.

This is done by connecting the pressure tester via a piece of pipe to the red ball valve connection and a hose connected to cold mains to the blue ball valve on the control unit.

Open both valves fully & fill the system to purge all traces of air from the system and water is entering the pressure tester.

Disconnect the hose from the unit and turn Red ball valve off, using the pressure tester pressurize the system to 2bar for 10 minutes and then 6bar(\*) for 10 minutes.

**Once completed the system should remain pressurized at 6bar throughout the screeding and curing process in accordance of BS EN1264 Pt4**

**(\*) The test is to 6bar only due to the fact that the pump is connected**

## Section 5 – Screeding

The screed should be laid as soon as possible after laying the pipe circuits and completion of a pressure test.

### **The system should be left pressurised throughout the screeding and curing process**

The screed must be placed so that it is in good contact with the pipes without any air pockets.

If standard sand & cement screed is to be used which is normally 65-75mm thick, this should be installed and allowed to dry naturally in accordance with the screed manufacturer's instructions and British Standard requirements.



Special low thickness screeds are available and contact should be made with screed manufacturer for information regarding their use with UFH.

**Manufacturers quoted screed drying times will vary, however, under no circumstances should the UFH system be used to speed this process along.**

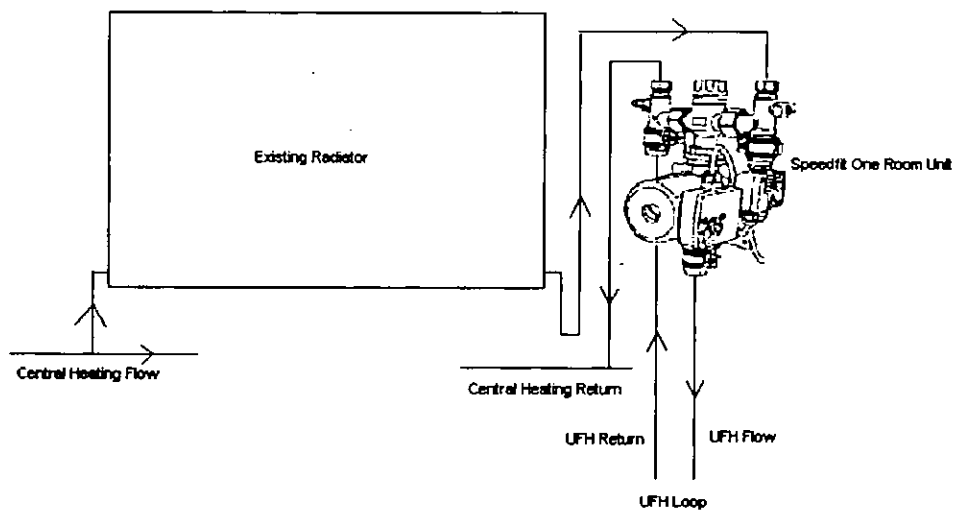


## Section 6 – Connection to Primary / Existing circuit

The Speedfit UFH Control unit can be connected to either the nearest radiator supply pipe work or preferably to the main Central Heating Flow and Return distribution pipework, which will prevent possible radiator starvation.

If connecting to a radiator supply ensure it is connected as shown in diagram below, connecting in series will prevent the radiator being robbed of heat.

The radiator valves on the radiator you connect to must be fully open and if fitted with a Thermostatic radiator valve this must be replaced with a standard radiator valve.



**Section 7 – Wiring**

All wiring should be undertaken by a qualified installer and conform to IEE regulations.

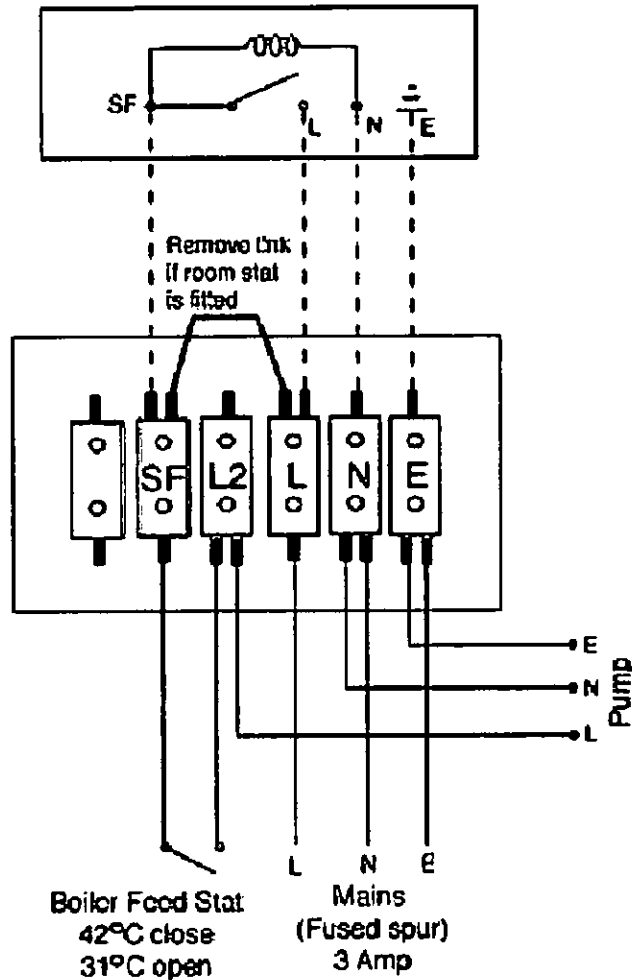
To comply with IEE regulations, the pump on the unit is provided with an earth connection via the connection box. Connect the Control Unit to a mains fed switched spur fused at 3 amps.

If fitting a room thermostat, fix in a position on the wall as recommended in the manufacturers instructions.

If a room thermostat is fitted, remove the link between the terminals as indicated on the wiring diagram below.

**Wiring diagram –Speedfit control unit**

**Room Stat (example) - Not Supplied**



## **Section 8 - Operating Principles**

The Speedfit one room unit will operate when the following conditions are met: -

- a) The primary heating circuit is on and the heating water temperature has reached approximately 43°C
- b) The room thermostat is calling for heat (if fitted).

The blending valve will maintain the temperature of the heating loop by continually blending the flow from the boiler with the cooler return flow from the Underfloor heating loop.

The heat output can be adjusted with the control knob on the blending valve to suit different floor finishes and comfort levels.

The room thermostat (if fitted) will switch the pump off when the selected room temperature is reached.

When the primary heating is off and the room stat (if fitted) is calling for heat, the pump will continue to run until the heating loop temperature falls to approximately 30°C, before switching off the pump.

## Section 9 – Settings

The thermostatic blending valve has a temperature setting range between 35°C and 60°C as shown below:

Min	35 °C
1	40 °C
2	44 °C
3	48 °C
4	50 °C
5	54 °C
6	58 °C
Max	60 °C

After the initial heat up/screed drying, the thermostatic blending valve should be adjusted to suit the floor covering used. For screeded floors this is normally within the range of 44-58°C.

These initial settings can then be adjusted to suit the user, however, if the floor surface temperature exceeds 29°C (35°C in wet areas such as bathrooms) this may lead to feelings of discomfort.

With timber floor finishes including strip laminate products, care should be taken when adjusting the temperature on the unit as these products may suffer from excessive material shrinkage if the floor surface temperature exceeds 27°C.