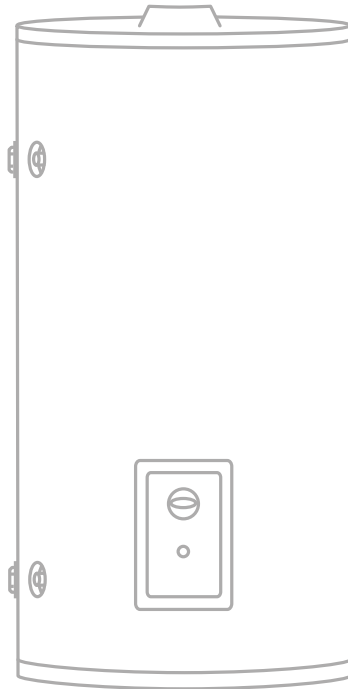




Product Instruction Manual

Superflow



SR90, SR140

Unvented Multipoint Water Heater

Overview

Thank you for purchasing a Superflow series unvented electric water heater. The Superflow is suitable for hand washing and dishwashing where a number of hot outlets are required such as kitchens, schools, restaurants, washrooms and offices. The Superflow is the ideal solution for industrial, commercial and light domestic hot water requirements. Please read and understand these instructions before commencing installation and leave them with the user when installation is complete.

Please fully read these instructions before commencing installation and follow to ensure that installation and operation are simple and safe.

Component Checklist

Component	QTY
Storage heater 90/140Litre	1
3 in 1 manifold (22mm/15mm water in&out) incorporating: - 6 bar pressure relief valve (15mm water out) - 3.5 bar pressure reducing valve - single check valve - expansion vessel off-take (¾" FBSP) - balanced off-take (22m/15mm)	1
Expansion vessel 5/8Litre ½" MBSP	1
Expansion vessel bracket with fixings	1
Tundish 15mm to 22mm	2
Factory fitted pressure and temperature relief valve 7.0bar & 90 ° C (½" MBSP to 15mm)	1



1. Important Safety Points



Installation must be undertaken by a competent installer of unvented water heating systems in accordance with building regulations G3.



Building regulations G3 require a temperature and pressure relief valve to be factory fitted. This must not be removed or blocked in any way.



Installation must comply with the latest edition of the IET wiring regulations.

2. Installation



The unit must be installed vertically with the temperature and pressure relief valve at the top.



The heater is not suitable for installation outside.



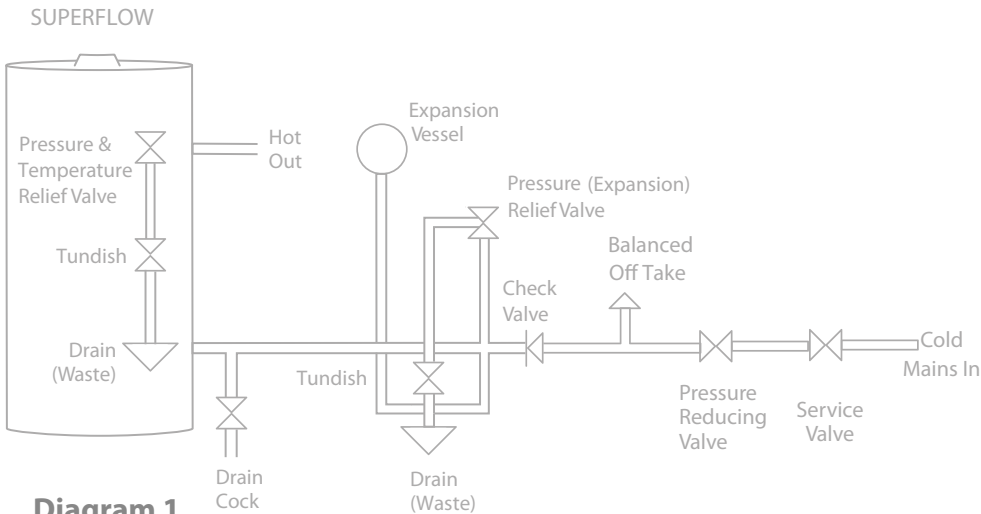
Do not install the heater where there is any risk of freezing.



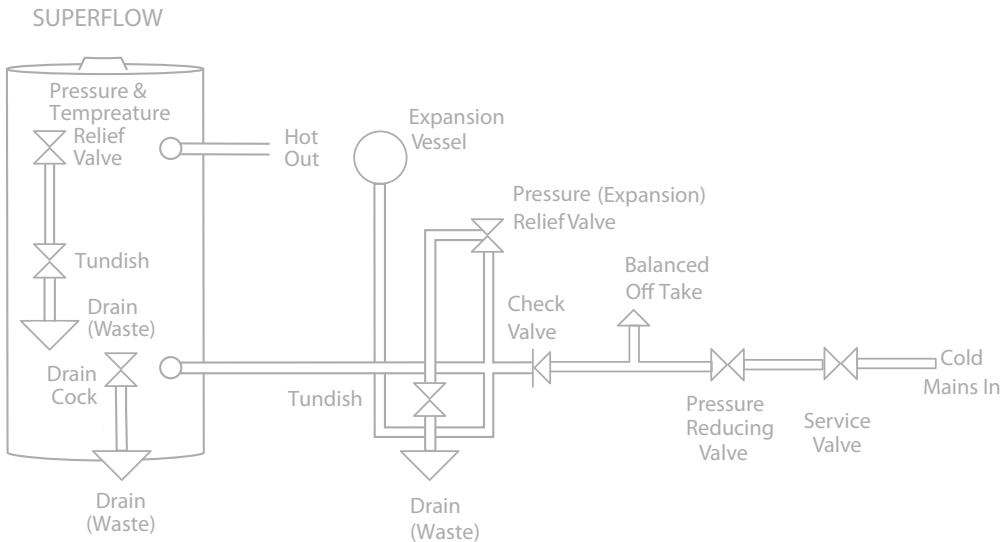
The heater is large and heavy, do not attempt to lift alone.

- Plan your installation carefully in advance, allowing suitable space for installation and future access to all fittings as shown in diagram 1 or 1a, depending on unit capacity.

Installation Diagram 90 L Model



Installation Diagram 140 L Model



Plumbing Connection



Observe the flow direction arrows on fittings.



It is important that the ordering of the fittings is correct as per the diagram 1 and 2.



Do not remove the factory fitted pressure and temperature relief valve.



Do not insert any other valves between the main manifold and heater inlet as it may prevent the safe expansion and discharge of water during heating cycles.

- Make the necessary connections, as per diagram 2 on page 6, to the inlet side of the heater (as indicated by the blue collar).
- It is recommended a service valve (not supplied) is fitted upstream of the installation in order to facilitate future maintenance.
- It is recommended that the “balanced off take” is used to supply any cold outlet that is paired to a mixer style tap supplied by the hot feed of the unit.
- The orientation of the expansion vessel is important, it should be fixed firmly to the supplied bracket in a vertical orientation with the water connection at the bottom and located so that the length of the connecting pipework is kept to a minimum.
- A drain cock (not supplied) should be fitted to a branch of the incoming supply pipe at a point that is lower than both the unit and the expansion vessel (see diagram 1 or 1a) in order to allow full drain down for any future maintenance work.
- Make the connection to any hot tap/thermostatic mixing valve from the outlet side of the heater (as indicated by the red collar).

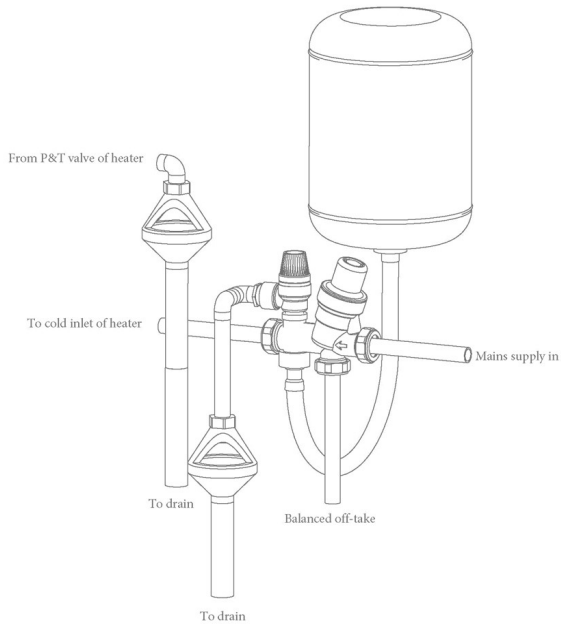


Diagram 2

Discharge Pipe Connection

This product falls within the scope of Building Regulation G3 which stipulates certain conditions relating to the way any water discharge from relief valves is transported away.

These conditions are designed to ensure that any discharge will not present a hazard to people or to property and that any discharge is clearly visible so that the underlying cause is likely to be rectified promptly.

The essential requirement of G3 in relation to water discharge is that the discharge pipe **MUST** terminate in a safe, visible position.

In achieving this aim the G3 regulations strongly recommended that:

- The tundish is located within 500mm of the pressure and temperature relief valve and it is wherever possible oriented vertically. It must be visible to occupants and positioned away from electrical devices.
- The discharge pipe has a vertical fall of at least 300mm immediately below the tundish.

- The discharge pipe below the tundish is at least 22mm diameter (i.e. one size larger than the pressure and temperature relief valve outlet).
- The discharge pipe should be as straight and as short as is possible and positioned away from electrical components.

Diagram 3 illustrates an acceptable discharge pipe arrangement. The table below the diagram specifies how the maximum acceptable pipe length from the tundish to the final outlet depends on the pipe diameter and the number of bends.

For example, in 22mm copper with no bends the pipe could be up to 9m long. With two bends present the maximum length drops to $9.0\text{m} - (2 \times 0.80\text{m}) = 7.4\text{m}$.

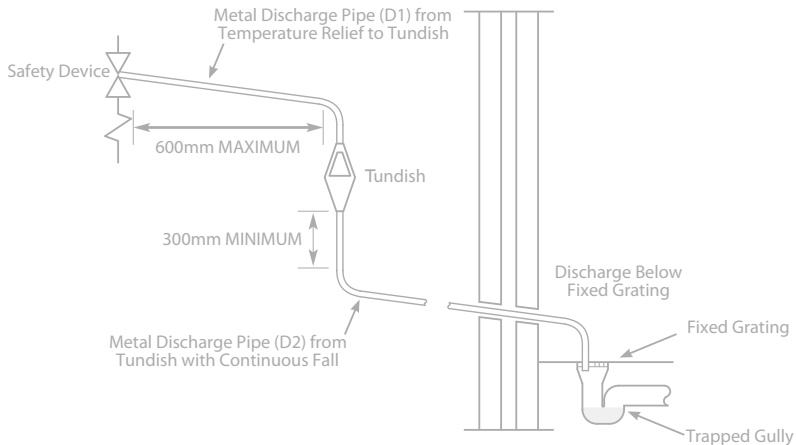


Diagram 3

Sizing of D2 copper discharge pipe for common temperature relief valve outlet size.

Valve outlet size	Minimum size of discharge pipe (D1)	Minimum size of discharge pipe (D2) from tundish	Maximum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G1/2	15 mm	22 mm 28 mm 35 mm	up to 9 m up to 18 m up to 27 m	0.8 m 1.0 m 1.4 m



Electrical Connection

- The heater is supplied pre-wired with the appropriate cable.
- The electrical installation should conform to the latest edition of the IET wiring regulations.
- Electrical supply should be capable of isolation via a user-accessible double isolation switch rated for 13A supply.

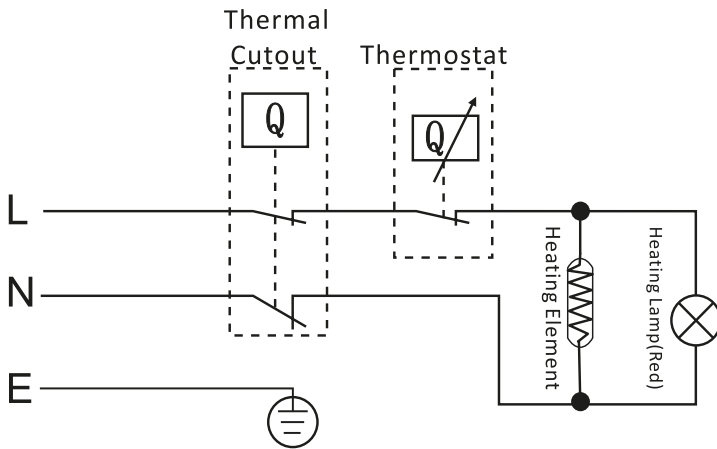


Diagram 4

3. Commissioning

- Visually confirm all plumbing and electrical connections look sound.
- Open any tap connected to the hot side of the unit and then turn on the incoming water supply to the heater.
- Allow the unit to fill until water flows smoothly from the open tap for around 1 min to ensure the tank is purged of air and any plumbing related debris.
- Close the tap and then inspect the system for any leaks.
- Check the pressure and temperature relief valve by twisting the cap to the open position and observing the flow at the tundish. Ensure the discharge pipe can cope with this flow continuously for several seconds.
- Release the cap and check that the valve reseals.
- Check the pressure (expansion) relief valve by twisting the cap to the open position and observing the flow at the tundish. Ensure the discharge pipe can cope with this flow continuously for several seconds. Release the cap and check that the valve reseals.
- Turn on the electrical power and turn thermostat knob to the desired setting to begin heating.
- Whilst the unit heats, the element lamp will illuminate. If it does not then check the power supply.
- Once the heater reaches the desired setting and the element lamp goes out, visually check all plumbing connections remained sound and no valves have discharged.



4. Operation



The maximum temperature setting of the heater is 65°C, this can be excessively hot for some users. In situations where very young children, the elderly or other vulnerable people are the likely users, then a suitably rated thermostatic mixing valve should be fitted to the hot water outlets as required.



Never interfere with any of the safety devices.



Beware that very hot water could discharge from the safety valves.



If there is risk of freezing the heater should be left on at least the minimum setting to prevent potential damage to the product or property from frozen pipes. If the heater is going to be left unused for a long period of time it should be drained.

- Turn the thermostat clockwise to increase the temperature setting.
- Turn the thermostat anticlockwise to decrease the temperature setting.
- The element lamp will illuminate whilst the unit is heating.
- The element lamp will go off once the temperature set point is reached.

5. Maintenance



Always disconnect the heater from the power supply before commencing any maintenance task.



Servicing of electrical components should only be undertaken by competent individuals.

Draining the unit

- To drain the unit, first isolate the power supply and close the nearest service valve on the upstream of the heater.
- Open the drain cock on the cold inlet and open a hot outlet to enable air to replace the draining water.

Resetting the thermal cut- out



If the earthing points are removed always ensure a firm reconnection before re-commissioning of the heater.

- If the unit stops heating and the element lamp does not illuminate, an over temperature event may have occurred. The unit is fitted with a manually resettable thermal cut-out.
- Open any outlet and flush through any remaining hot water in the tanks until it runs cool before closing it again.
- Ensure the unit is isolated from the power supply and then proceed to remove the component cover, this is the housing that contains the thermostat and element indicator.
- Once the cover is removed, locate the thermal cut-out, and press the button firmly until a click is heard.
- Replace the cover and turn on the power.
- If the thermostat setting was at maximum when the unit cut-out, consider turning it down (anticlockwise) to avoid any further cut-out events in the future.

Inspecting the anode

- The unit is fitted with a magnesium sacrificial anode; its purpose is to attract any corrosion which in turn helps to protect the tank. Over time the anode will break down and need replacing to ensure continued protection.
- It is recommended the anode is inspected at least annually and replaced as required. The anode can be inspected without the need for a full drain down of the unit.
- The power and water must be isolated and an outlet should be left open to allow the unit to expel any excess pressure in the system.
- The anode is located under a cover on the top of the unit, remove the cover and then in turn the anode retention ring via the 5 nuts.
- Once the retention ring is removed the anode boss should come free with a little encouragement. Inspect the anode for signs of excessive corrosion/pitting and replace if necessary.
- Reverse the steps to re-fit the anode and then refer to the commissioning section of this manual.

Safety valve inspection

- The pressure & temperature valve and the pressure (expansion) relief valves are important safety features of the heater and should be tested periodically to ensure correct functioning.
- To test the valves, twist the caps and check that water flows freely. The tundish will allow for visual confirmation that water is flowing during the test.

Pressure reducing valve maintenance

- Isolate the water supply to the pressure reducing valve and drain down the main heater (see "Draining the unit").
- Unscrew the plastic cap of the pressure reducing valve and remove the complete mechanism from the brass housing of the valve.
- Check there is no debris or grit build up in the wire mesh and remove by rinsing as required.
- Replace the mechanism into the brass housing and then recommission the heater (see section 3).
- Particular attention should be given to ensure the mechanism has been seated correctly into the brass housing and a sound seal has been made.

Expansion vessel maintenance

- The expansion vessel is supplied with a pre-charge of 3.5 bar, this pressure may be lost over time and should be checked periodically to keep the vessel functioning well and help prolong the lifespan of the tank.
- To check the pressure of the vessel, a reading should be taken while the unit is switched off and the content of the tank has been cooled.
- Turn off the power to the unit and run any water off from any hot outlet until it runs cool
- Check the pressure reading and increase/ decrease as required (a standard pump with built in pressure gauge is required).

Legionella risk advice

In order that Legionella risk is kept to a minimum the following advice is given;

- The heater should be run at its maximum temperature setting (65°C) and flushed through at regular planned intervals.
- The whole system should be drained if long periods of non-use are expected.
- The expansion vessel should be drained occasionally to ensure the water in it is recycled.



6. Specification

Model *1 kW available on request	SR90	SR140
Power	3.0 kW (*1.0 kW)	3.0 kW (*1.0 kW)
Supply voltage/ frequency	230V ~/50Hz	230V ~/50Hz
Current	13A (*5A)	13A (*5A)
Capacity	90 L	140 L
Maximum supply pressure (to pressure reducing valve)	1.2 MPa (12 bar)	1.2 MPa (12 bar)
Minimum supply pressure (to pressure reducing valve)	0.1 MPa (1 bar)	0.1 MPa (1 bar)
Operating pressure	0.3 MPa (3 bar)	0.3 MPa (3 bar)
Maximum tank pressure	0.55 MPa (5.5 bar)	0.55 MPa (5.5 bar)
Expansion vessel pre-charge	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)
Expansion vessel capacity	8 L	12 L
Pressure reducing valve pre-set	0.3 MPa (3 bar)	0.3 MPa (3 bar)
Pressure relief valve rating	0.6 MPa (6 bar)	0.6 MPa (6 bar)
Temperature and pressure safety valve rating	90°C/0.7MPa (7 bar)	90°C/0.7MPa (7 bar)
Manual reset cut out rating	85 °C	85 °C
Immersion heater specification	Part code: SR_EL3KW EN60335-2-21 x 1	Part code: SR_EL3KW EN60335-2-21 x 1
Weight empty	29 kg	48 kg
Weight full	118 kg	187 kg
Heat up time from 10°C to 60°C	121 mins	180 mins
Recovery time of 70% capacity to 60°C	86 mins	130 mins
Standing heat loss	1.67 kW/ 24h	1.91 kW/ 24h
Inlet/ outlet connections	½"MBSP	¾"MBSP

7. Dimensions

Product Code	Height (mm)	Diameter (mm)
SR90	1040	410
SR140	1040	530



9. Guarantee

This product is covered by a standard parts or replacement warranty for a period of 3 years from the date of purchase.

If there is a manufacturing defect within the warranty period we will send spare parts, repair and return the unit or, at our discretion, supply a replacement product. Incorrect installation, frost damage, the consequences of limescale deposits or failure to follow correct operating and maintenance instructions are excluded. Consequential costs such as labour charges or damage to fittings and surroundings are expressly excluded.

10. Contact Us

If you experience a problem with this product you should first contact our service department on 01924 225 200 before taking any further action. Experience has shown that issues can often be resolved without the need to return or uninstall the product.





INFORMATION FOR CORRECT DISPOSAL OF THE PRODUCT IN ACCORDANCE WITH THE EUROPEAN DIRECTIVE 2012/19/EU.

At the end of its working life this equipment must not be disposed of as household waste. It must be taken to a local authority waste collection centre or to a dealer providing this service. Disposing of electrical and electronic equipment separately enables its components to be recovered and recycled to obtain significant savings in energy and resources. In order to underline the duty to dispose of this equipment separately, the product is marked with a crossed out dustbin.

Hyco Manufacturing Ltd
Normandy Court
Express Way
Castleford, WF10 5NR

hyco.co.uk

T 01924 225 200
F 01924 225 210
E sales@hyco.co.uk