ideal HEATING

INSTALLATION & SERVICING

HEAT PUMP DHW CYLINDER
PRE-PLUMBED LITE

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal Heating.

For the very latest copy of literature for specification and maintenance practices visit our website idealheating.com where you can download the relevant information in PDF format.

GPL015-IU-Iss01-04/25

These instructions should be read in conjunction with the installation/servicing instructions issued by the manufacturer of the heat source being used.

Any installation must be in accordance with the relevant requirements of the Gas Safety Regulations, Building Regulations, I.E.E. Wiring Regulations and the Water Fitting Regulations (England and Wales) or Water Byelaws (Scotland). It should be read in accordance with the relevant recommendations of the following:
BS 6798; BS EN 12828, BS EN 12831, BS EN 14336; BS 5546;
BS 5440:1; BS 5440:2; CP 331:3
BS EN 806-1 to 5, BS EN 8558:2011: BS EN 1458-1:2011 and BS 7593:2006

Heat Pump DHW Cylinder Pre-Plumbed Lite is covered by Section G3 of the Building Regulations (England and Wales) Technical Standard P3 (Scotland) and Building Regulation P5 (Northern Ireland). Compliance can be achieved via a Competent Person Self Certification Scheme or notificaton of installation to the Local Authority Building Control Department.

It must be installed by a competent person as defined by the relevant regulations. Manufacturers notes must NOT be taken as over-riding statutory obligations.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised at all times to ensure they do not play with the appliance.

This information is provided to assist generally in the selection of equipment. Responsibility for selection and specification of our equipment must however remain that of our customer and any experts or consultants concerned with the installation(s).

Please note: that we do not therefore accept any responsibility for matters of design selection or specification, for the effectiveness of an installation or system containing one of our products unless specifically requested to do so in writing.

All goods are sold subject to our Conditions of Sale which are set out at the rear of this specification. In the interest of continuously improving the Heat Pump DHW Cylinder Pre-Plumbed Lite range, Ideal Heating reserve the right to modify the product without notice, and in these circumstances this booklet, which is accurate at the time of printing, should be disregarded. An updated set of Instructions will be produced and supplied with new appliances and will be made available for other appliances on request.

Heat Pump DHW Cylinder Pre-Plumbed Lite is produced under an ISO 9001:2008 Quality Management System approved by BSI.

benchmark COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

hot water association
CHARTER MEMBER

Benchmark places responsibilities on both manufacturers and installers. The purpose is to ensure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturers instructions by competent persons and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference.

Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hot Water Industry Council who manage and promote the Scheme. Visit www.centralheating.co.uk for more information.

For further information on the HWA Charter Statement, please refer to the HWA website hotwater.org.uk.

Section **Page**

Manufacturer: Ideal Heating

Maximum inlet pressure to Pressure reducing valve	12 bar, 22 mm compression
Operating pressure (PRV setting)	3 bar
Expansion vessel charge pressure	3 bar, 3/4" BSPM
Expansion relief valve setting (maximum design pressure on the drinking water side)	4.5 bar, 15 mm compression
Opening pressure of P & T Relief Valve (SG019 (309463 GLD))	6 bar, 1/2" BSPM
Opening temperature of P & T Relief Valve (SG019 (309463 GLD))	90 °C
Energy cut-out thermostat setting	80 +/-5, or 82 +0,-5 °C
Max. working pressure - Heat pump heat exchanger	3 bar
Immersion heater rating	3kW, 240V AC

All cylinders are manufactured in accordance with the requirements of BS EN 12897 The tundish must be positioned so that it is visible to the occupant and is away from electrical devices.

Components supplied with the Heat Pump DHW Cylinder Pre-Plumbed Lite:

- Cold water inlet PRV combination valve/expansion relief
- Pressure and temperature relief valve
- Energy cut-out thermostat
- Energy cut-out motorised valve (indirects only)
- Tundish
- 3kW Immersion heater including control and cut out thermostats
- Drain elbow and 90 degree elbow
- Expansion vessel/mounting bracket
- Technical/user product literature
- Thermistor cable clamp

It is highly likely that the heat pump you are fitting with this cylinder will have a cylinder temperature sensor (Thermistor). This component will be function as the control thermostat. If your heat pump does not have a thermistor; a control thermostat can be purchased from Ideal Heating, part code 185474, Item 12 in the spare parts list on page 28.

In any situation where the volume of heated pipework (eg. secondary circulation pipes or manifold pipework for multiple units) exceeds 10 litres, then an additional expansion vessel must be fitted to accommodate the extra expansion volume.

Handling Before Installation

Heat Pump DHW Cylinder Pre-Plumbed Lite must be handled with care and stored the correct way up in a dry place. Any manual handling/lifting operations will need to comply with the requirements of the Manual Handling Operations Regulations issued by the H.S.E. The appliance can be moved using a sack truck on the rear face although care should be taken and the route should be even. In apartment buildings containing a number of storeys we would recommend that the appliances are moved vertically in a mechanical lift. If it is proposed to use a crane, expert advice should be obtained regarding the need for slings, lifting beams etc.

A specific manual handling assessment is shown in Appendix B at the rear of this manual.

The Environment

This product has been manufactured using many recyclable materials, including the approved HCFC/CFC free polyurethane foam insulation. At the end of its useful life, it should be disposed of at a Local Authority Recycling Centre, to maximise the products full environmental benefits.

Maintenance

Modifications should not be made to this product. Replacement parts, including immersion heaters, should be purchased from Ideal Heating, or agents approved by them. Unvented hot water storage vessels need regular routine checks, and these are detailed below. It is for this reason that this manual must always be left with the Heat Pump DHW Cylinder Pre-Plumbed Lites.

It is essential that these checks be carried out at the time of heat pump maintenance by a qualified installer:

1. Manually open the relief valves in turn, and check that water is discharged from the valves and runs freely through the tundish and out at the discharge point. Ensure that the valves re-seat satisfactorily. (Note - the water may be very hot).
2. It is important to check that the discharge pipework is carrying the water away adequately. Check for blockages etc. if it is not.
3. Isolate the cold supply to the cylinder. Remove the inlet control group valve. Inspect the gauze filter on the inlet side of the valve and remove the debris.
4. Check the charge pressure in the expansion vessel and repressurise if required
5. Re-fill the system and ensure that all relief valves have re-seated.
6. The Benchmark Service Record should be updated at each service.
7. Check the water pressure downstream of the combination valve is 3 bar in static condition.
8. Check and if necessary, descale the heat exchanger in hard water areas ie. above 200ppm (mg/l).

Note:

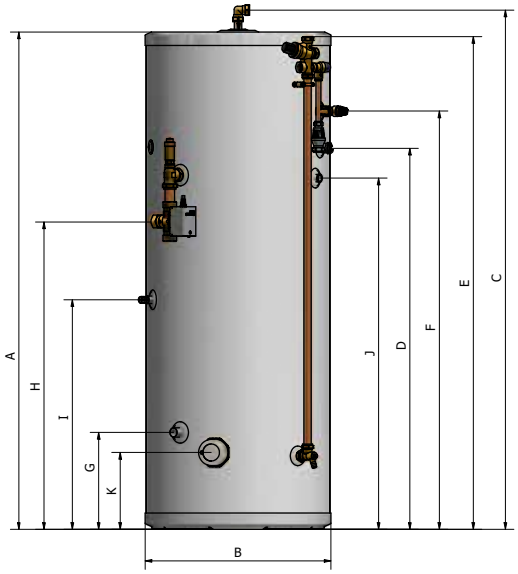
The cylinder is factory fitted with a temperature & pressure relief valve that must not be used for any other purpose or removed.

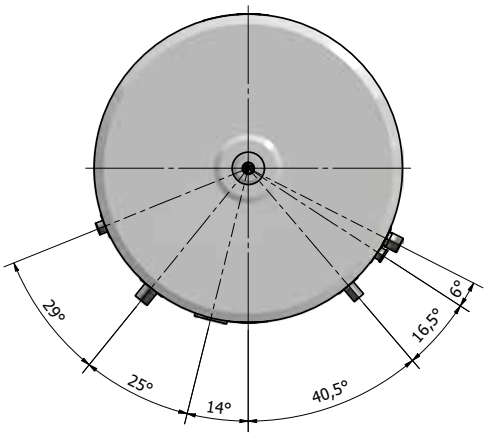
The cylinder is factory fitted with immersion heaters with thermal cut outs. Immersions without thermal cut outs must not be fitted.

DESIGN

Table 1			Ideal Heat Pump DHW Cylinder Pre-Plumbed Lite			
Assembly UIN	**-**		**246478**	**246479**	**246480**	**246481**
Description	**-**		**Heat pump DHW PP Lite Cylinder 180 1Z**	**Heat pump DHW PP Lite Cylinder 210 1Z**	**Heat pump DHW PP Lite Cylinder 250 1Z**	**Heat pump DHW PP Lite Cylinder 300 1Z**
Cylinder Model Code/Number			**IDEPLUHP180BPPSL**	**IDEPLUHP210BPP**	**IDEPLUHP250BPP**	**IDEPLUHP300BPP**
Energy efficiency class	-		B	B	B	C
Heat loss	-	watts	49	55	63	72
	-	kWh/24h	1.18	1.33	1.52	1.74
Capacity - total volume	-	litres	170	197	237	279
Volume heated by IH	-	litres	158	189	227	267
Weight - empty/full	-	kg	34/212	38/235	70/300	73/352
Pressure regulating valve setting	-	bar	3	3	3	3
Expansion relief valve setting	-	bar	4.5	4.5	4.5	4.5
Temperature setting (P&T valve)	-	°C	95	95	95	95
Pressure setting (P&T valve)	-	bar	6	6	6	6
Expansion vessel size (volume)	-	litres	18	24	24	35
Expansion vessel initial charge pressure	-	bar	3	3	3	3
Height	A	mm	1306	1494	1744	1990
Diameter	B	mm	550	550	550	550
Hot Supply	C	mm	1365	1553	1803	2049
22mm secondary return	D	mm	-	1141	1353	1562
22mm compression cold feed	E	mm	1288	1475	1726	1972
P & T valve	F	mm	1063	1251	1501	1747
28mm primary return	G	mm	290	290	290	290
28mm primary flow	H	mm	921	921	1121	1121
HP thermistor / control thermostat	I	mm	584	687	769	823
Overheat thermostat	J	mm	673	1051	1150	1150
3kW immersion heater	K	mm	230	230	230	230
Primary heat exchanger surface area	-	m^2	2.5	2.5	3.0	3
Primary heat exchanger capacity	-	litres	8.5	8.5	10.6	10.6
Primary heat exchanger thermal rating 1	-	kW	32.8 (17.8)	34.5 (16.1)	36.0 (18.0)	37.4 (19.0)
Primary heat exchanger pressure loss 1	-	bar	0.032	0.032	0.052	0.052
Heat up time from 15°C to 50°C 2	-	min	17.62 (22.56)	18.74 (30.6)	22.0 (27.3)	23.0 (35.1)
V40	-	litres	270 (186)	303 (227)	373 (276)	406 (317)

1. Measured at 0.25 (0.42) l/s primary flow rate
2. Measured at 0.25 (0.42) l/s primary flow rate and at 80 (55)°C flow temperature, tested to BS EN 12897, figures in brackets show figures for HWA 002:2020 heat pump test results.



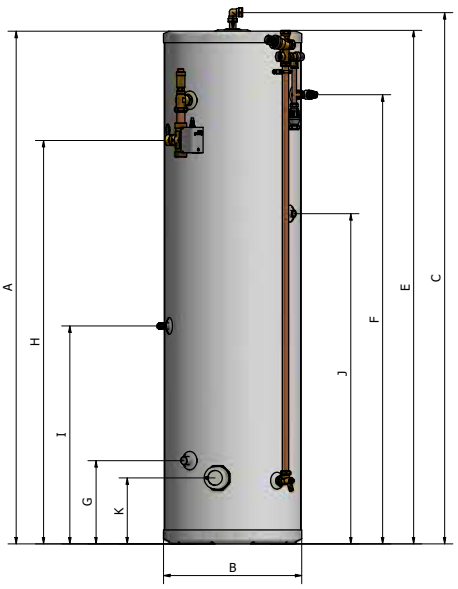


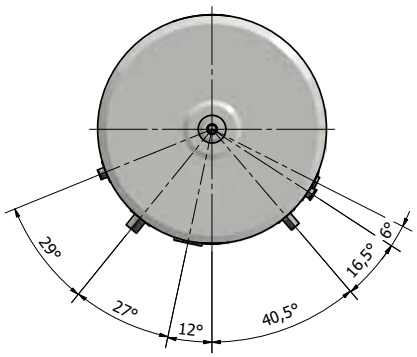
NOTES

1. Not all models - see table 1.
2. Recovery times based on Primary Coil/I.H. duty (ie. assumes the heat pump output is adequate).
3. All connections are supplied with compression fittings for direct connection to copper pipework.

Table 2			Ideal Heat Pump DHW Cylinder Pre-Plumbed Lite Slimline	
Assembly UIN	**-**		**246476**	**246478**
Description	**-**		**Heat pump DHW PP Lite Cylinder 150 SL 1Z**	**Heat pump DHW PP Lite Cylinder 180 SL 1Z**
Cylinder Model Code/Number	**-**		**IDEPLUHP150BPPSL**	**IDEPLUHP180BPP**
Energy efficiency class	-		B	B
Heat loss	-	watts	50	58
	-	kWh/24h	1.21	1.4
Capacity - total volume	-	litres	145	169
Volume heated by IH	-	litres	134	166
Weight - empty/full	-	kg	30/174	38/207
Pressure regulating valve setting	-	bar	3	3
Expansion relief valve setting	-	bar	4.5	4.5
Temperature setting (P&T valve)	-	°C	95	95
Pressure setting (P&T valve)	-	bar	6	6
Expansion vessel size (volume)	-	litres	18	18
Expansion vessel initial charge pressure	-	bar	3	3
Height	A	mm	1519	1791
Diameter	B	mm	475	475
Hot Supply	C	mm	1579	1851
22mm secondary return	D	mm	-	-
22mm compression cold feed	E	mm	1571	1789
P & T valve	F	mm	1292	1564
28mm primary return	G	mm	290	290
28mm primary flow	H	mm	946	1406
HP thermistor / control thermostat	I	mm	668	759
Overheat thermostat	J	mm	1051	1051
3kW immersion heater	K	mm	230	230
Primary heat exchanger surface area	-	m^2	1.8	3.0
Primary heat exchanger capacity	-	litres	6.4	10.6
Primary heat exchanger thermal rating 1	-	kW	33.2 (15.2)	39.3 (20.7)
Primary heat exchanger pressure loss 1	-	bar	0.028	0.052
Heat up time from 15°C to 50°C 2	-	min	13.88 (22.26)	15.75 (21.81)
V40	-	litres	215.7 (158.9)	291 (205)

1. Measured at 0.25 (0.42) l/s primary flow rate
2. Measured at 0.25 (0.42) l/s primary flow rate and at 80 (55)°C flow temperature, tested to BS EN 12897, figures in brackets show figures for HWA 002:2020 heat pump test results.

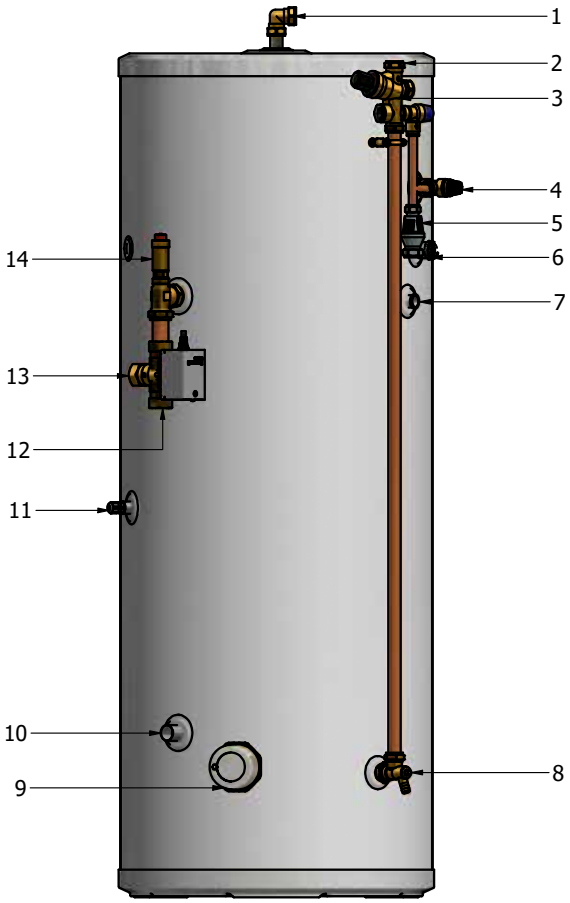




NOTES

1. Not all models - see table 2.
2. Recovery times based on Primary Coil/I.H. duty (ie. assumes the heat pump output is adequate).
3. All connections are supplied with compression fittings for direct connection to copper pipework.

DESIGN

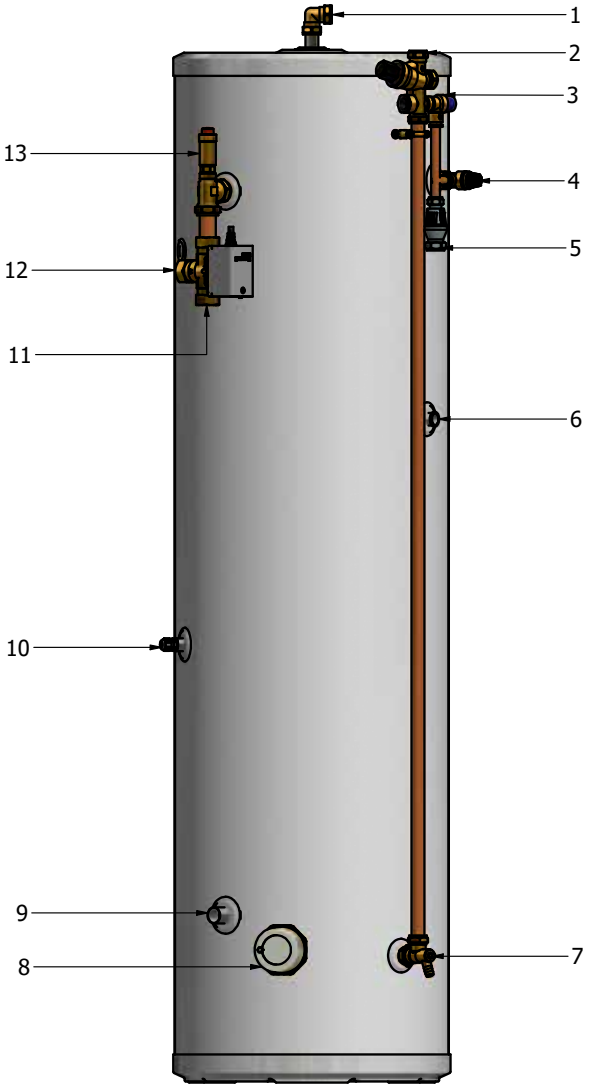


Heat Pump DHW Cylinder Pre-Plumbed Lite Basic Appliance

1. Hot water draw off (22mm) compression
2. Cold feed (22mm plain pipe)
3. Balanced cold feed
4. Lift up temperature & pressure relief valve 95°/6 bar
5. Tundish
6. Hot water secondary return (22mm compression, not fitted to smaller sizes, see table 1)
7. Overheat stat
8. Drain valve
9. Immersion heater 1¾" BSP 3kW
10. Primary return (28mm plain pipe)
11. HP control thermostat
12. Central heating flow (28mm compression)
13. Primary flow (28mm compression)
14. Auto air vent

Part G3 loose components supplied in the base of the packaging

A. Potable expansion vessels c/w integral wall bracket
B. Compression fittings
C. Overheat thermostat



Heat Pump DHW Cylinder Pre-Plumbed Lite Slimline
Basic Appliance

1. Hot water draw off (22mm) compression
2. Cold feed (22mm plain pipe)
3. Balanced cold feed
4. Lift up temperature & pressure relief valve 95°/6 bar
5. Tundish
6. Overheat stat
7. Drain valve
8. Immersion heater 1¾" BSP 3kW
9. Primary return (28mm plain pipe)
10. HP control thermostat
11. Central heating flow (28mm compression)
12. Primary flow (28mm compression)
13. Auto air vent

Part G3 loose components supplied in the base of the packaging

A. Potable expansion vessels c/w integral wall bracket
B. Compression fittings
C. Overheat thermostat

DESIGN

Heat Pump DHW Cylinder Pre-Plumbed Lites are a range of unvented hot water storage cylinders, manufactured in the latest high quality duplex stainless steel. They are designed to provide mains pressure hot water and are supplied as a package which complies with Section G3 of the Building Regulations. The appliance is extremely well insulated using high density HCFC free foam insulation with an ozone depleting potential (ODP) of zero and a global warming potential (GWP) of 2. It is fitted with all necessary safety devices and supplied with all the necessary control devices to make installation on site as easy as possible.

Heat Pump DHW Cylinder Pre-Plumbed Lite 550 mm and 475 mm Diameters:

The Heat Pump DHW Cylinder Pre-Plumbed Lite unvented hot water storage cylinders fitted with a high efficiency coil. The coil has a low pressure loss due to it being a multiple pass coil which enable high flow rates to be achieved through it. In addition due to the coil being corrugated the heat transfer rate is higher than that of plain tube coil.
The 475 mm diameter has been specifically designed for heat pump applications. It incorporates an immersion heater at the base of the unit which enables pasteurisation of the water. This should be done on a regular basis in line with HWA guidance..

The slimline has been designed to enable it to fit into tighter locations.

Important notes:

1. Heat Pump DHW Cylinder Pre-Plumbed Lite models are suitable for both open vented and sealed primary systems. Minimum of 5m H_2O working pressure.
2. When used with a sealed primary heating system, the heat pump must incorporate its own over heat thermostat.
3. Heat Pump DHW Cylinder Pre-Plumbed Lite models must not be used with uncontrolled heat source or steam as the heat source.
4. Some heat pumps can only heat the domestic hot water to between 45 – 50°C, therefore provision should be made to periodically heat the cylinder to above 60°C to prevent growth of legionella.
5. The cold supply elbow c/w drain tapping must be fitted as shown on pages 6 and 7. A flexible hose can then be connected to the drain tapping and providing the hose runs below the lowest level of the cylinder, then all the water content can be drained out by the syphonic action.

General Design Considerations

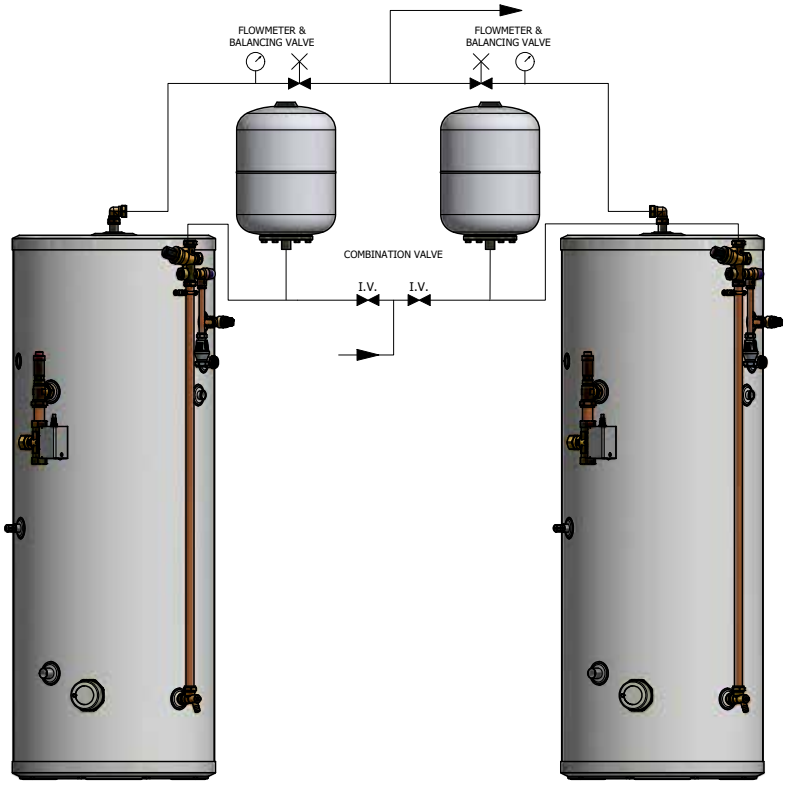
The cupboard foot print for a 475mm diameter product is a minimum of 600mm by 600mm, for a 550mm product it is a minimum of 650mm by 650mm.

The base chosen for the cylinder should be level and capable of supporting the weight of the unit when full of water as shown in General Data. The discharge pipework for the safety valves must have a minimum fall of 1 : 200 from the unit to a safe discharge point. All exposed pipework and fittings on the cylinder should be insulated, and the unit should NOT be fixed in a location where the contents could freeze.

In new systems, pipes should be insulated to comply with building regs, the maximum permissible heat loss is indicated in the table opposite, and labelled accordingly as follows:

i. Primary circulation pipes for domestic hot water circuits should be insulated through their length, subject only to practical constraints imposed by the need to penetrate joists and other structural elements.
ii. All pipes connected to hot water storage vessels, including the vent pipe, should be insulated for at least 1 metre from their points of connection to the cylinder (or they should be insulated up to the point where they become concealed).

In replacement systems, whenever a boiler, heat pump or hot water storage vessel is replaced in an existing system, any pipes that are exposed as part of the work or are otherwise accessible should be insulated as recommended for new systems, or to some lesser standard where practical constraints dictate.



If two Heat Pump DHW Cylinder Pre-Plumbed Lites are coupled together the secondary inlet and outlet pipes must be balanced. The units must be fitted on the same level.

Note: No valves must be fitted between the expansion vessel and the storage cylinder(s).

The pipe connecting the heat pump flow to the appliance must not be less than 22mm copper or equivalent.

Insulation of pipework	
Pipe outside diameter	**Maximum heat loss**
15mm	7.89W/m
22mm	9.12W/m
28mm	10.07W/m
35mm	11.08W/m

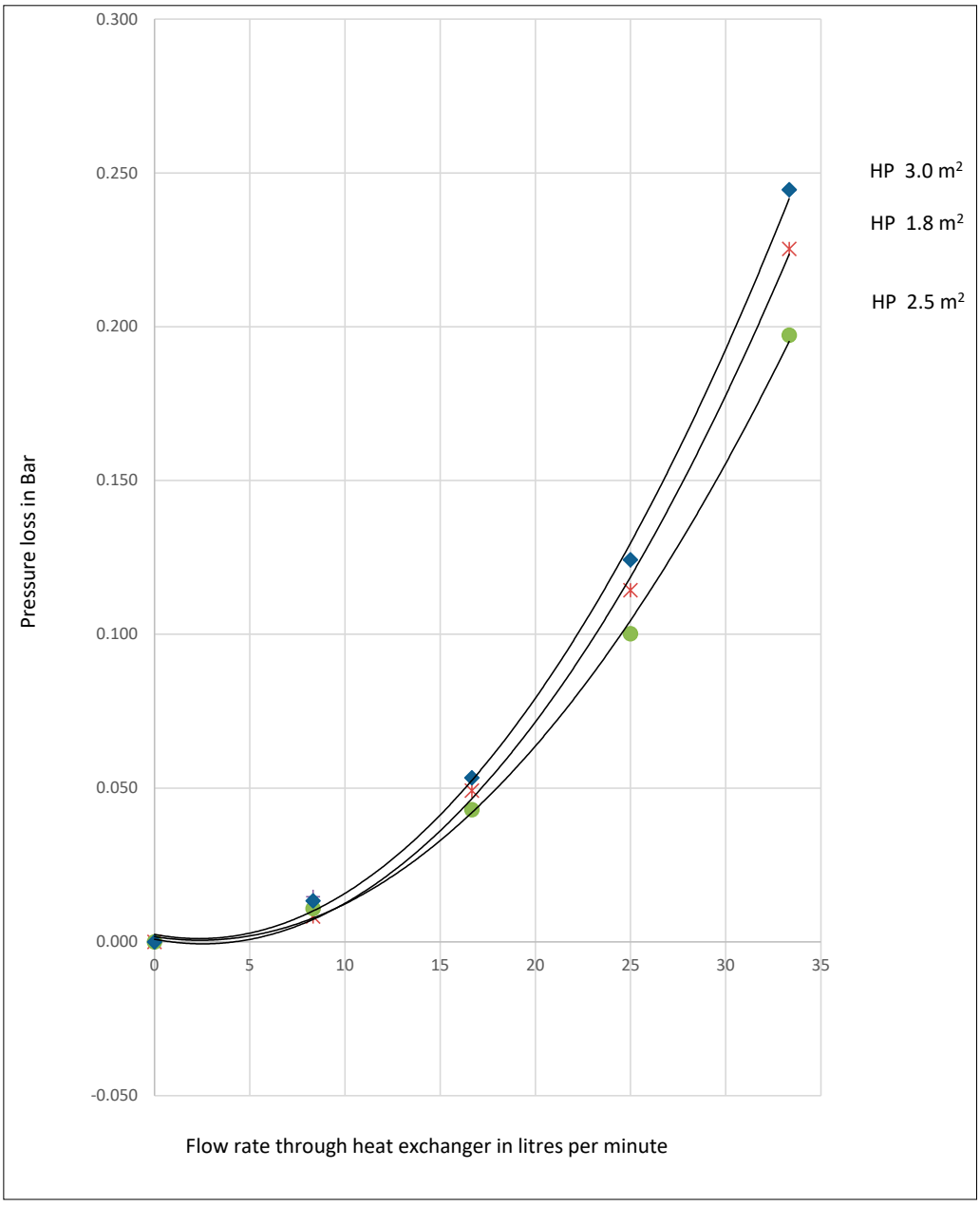
Further guidance on converting heat loss limits to insulation thickness for specific thermal conductivities is available in TIMSA "HVAC guidance for achieving compliance with Part L of the Building Regulations".

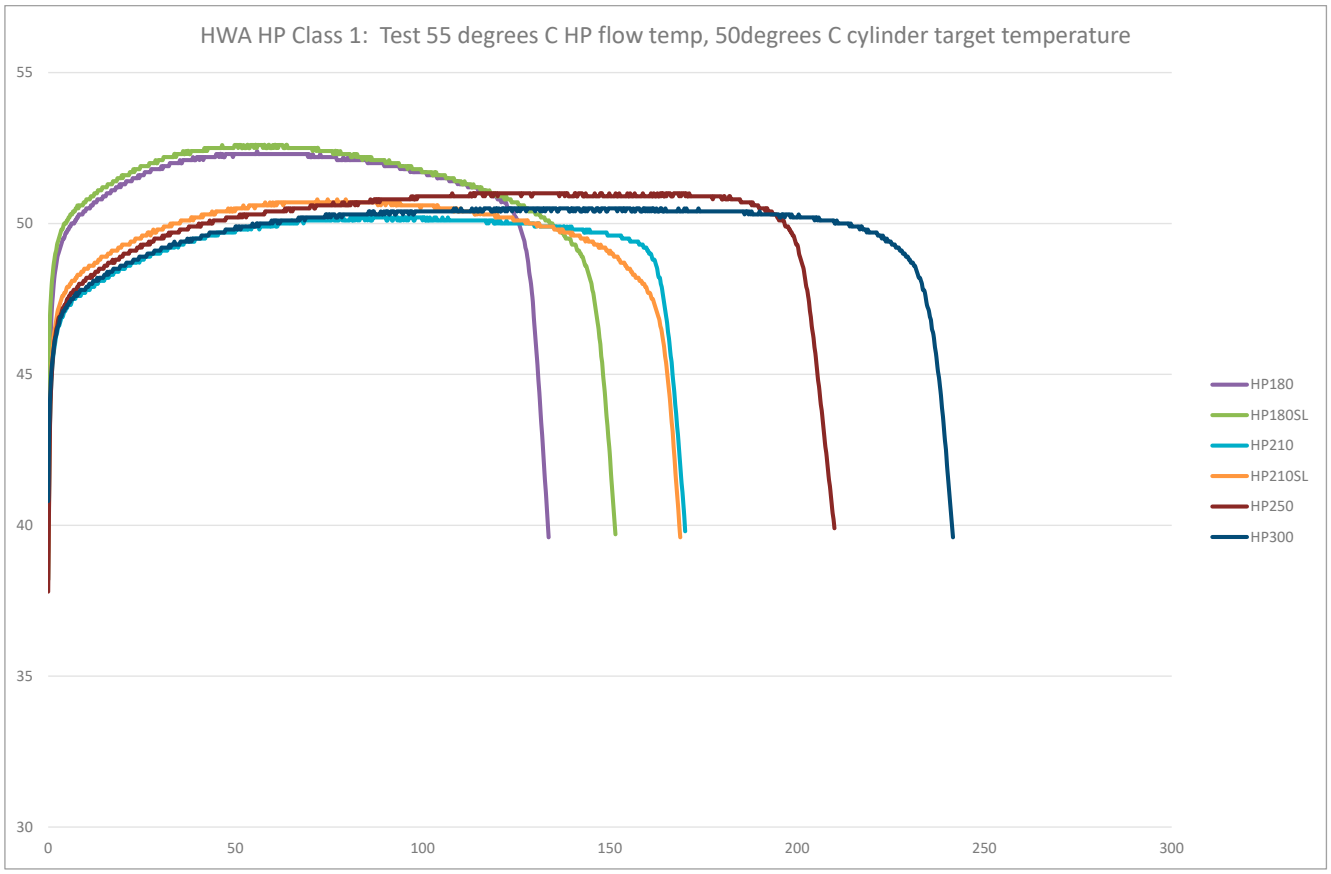
Mains Water Supply

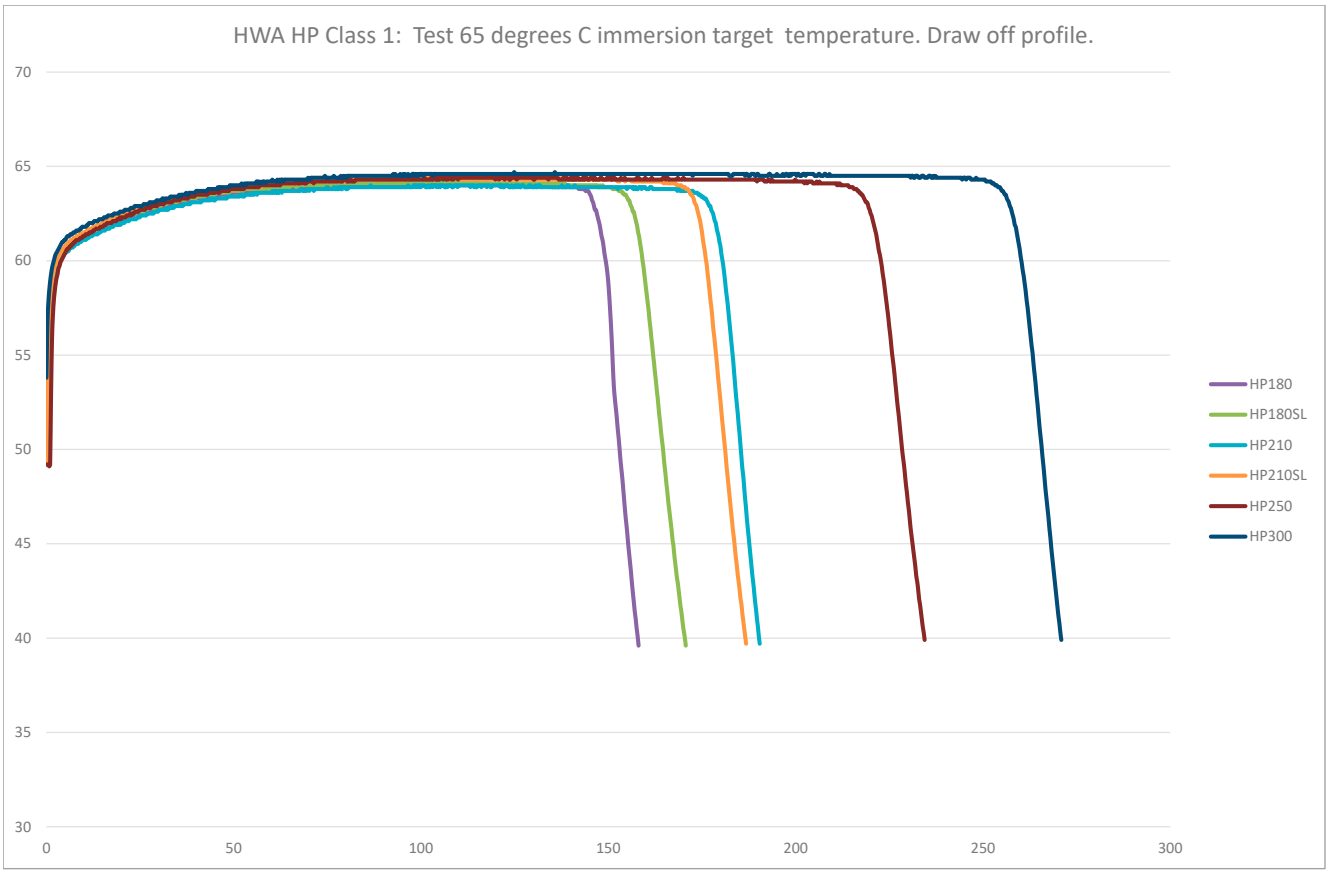
Existing properties with a 15mm supply will be satisfactory provided the local mains pressure is good, but should be confined to single bathroom properties. For new properties where simultaneous demand is required to more than one bathroom or a bathroom and one or more en-suites, the communication and service pipe into the dwelling should be a minimum of 22 mm (usually in the form of a 25 mm MDPE supply). The optimum performance is achieved if the inlet pressure is 3 bar dynamic. However, the Heat Pump DHW Cylinder Pre-Plumbed Lite will function with lower inlet pressures, but this will reduce the performance. There should be a flow of at least 30 litres per minute or above available into the property. Normally Heat Pump DHW Cylinder Pre-Plumbed Lite provides well in excess of 40 litres/min in most conditions. Flow rates for ALL mains pressure systems are subject to district pressures and system dynamic loss. Particularly on larger properties with more than one bathroom, the pipe sizes should be calculated in accordance with BS EN 806-3:2006 and BS 8558:2011.

INSTALLATION

Heat exchanger Pressure loss table		Pressure loss [Bar] at 15 l/min	Pressure loss [Bar] at various flow rate l/min				
Heat pump heat exchangers							
Surface area	**Product Stock Code**	***15***	***0***	***8.33***	***16.67***	***25.00***	***33.33***
1.8 m^2	IDEPLUHP150BPPSL	**0.028**	0.000	0.008	0.049	0.114	0.225
2.5 m^2	IDEPLUHP180BPP	**0.032**	0.000	0.011	0.043	0.100	0.197
	IDEPLUHP210BPP						
3.0 m^2 (Slimline)	IDEPLUHP180BPPSL	**0.052**	0.000	0.015	0.053	0.124	0.244
3.0 m^2 (Standard)	IDEPLUHP250BPP	**0.052**	0.000	0.013	0.053	0.124	0.245
	IDEPLUHP300BPP						




HWA HP Class 1: Test 55 degrees C HP flow temp, 50degrees C cylinder target temperature
55
50
45
40
35
30
0
50
100
150
200
250
300
HP180
HP180SL
HP210
HP210SL
HP250
HP300


HWA HP Class 1: Test 65 degrees C immersion target temperature. Draw off profile.
70
65
60
55
50
45
40
35
30
0
50
100
150
200
250
300
HP180
HP180SL
HP210
HP210SL
HP250
HP300

INSTALLATION

General Restrictions

a. The highest hot or cold water draw off point should not exceed 10 metres above the Pressure Reducing Valve.
b. An ascending spray type bidet or any other appliance with a Class 1 back-syphonage risk requiring a type A air gap should not be used.
c. Heat Pump DHW Cylinder Pre-Plumbed Lite should not be used where steam is the primary heating medium, or in a situation where maintenance is likely to be neglected.
d. Unvented cylinders are not suitable for use with solid fuel boilers.
e. If the supply to the mixer fittings (other than a dual outlet type) is not taken from the balanced supply the system will become over pressurized and cause the pressure relief valve to discharge. Over time this could also cause the premature failure of the appliance itself which will not be covered by the warranty.
f. In larger properties with a number of bathrooms/en-suites and long pipe runs we would recommend that the balance cold supply is provided with its own pressure reducing valve and is not taken from the balanced cold connection on the combination valve. In this case it will also be necessary to fit a small expansion vessel on the balanced cold water system to accommodate the pressure rise caused by the increase in temperature of the balanced cold water.
g. Check the performance requirements of the terminal fittings with regard to flow/pressure are suitable.

Shower Fittings

Aerated taps are recommended to prevent splashing. Any type of shower mixing valve can be used as long as both the hot and cold supplies are mains fed. However, all mains pressure systems are subject to dynamic changes particularly when other hot and cold taps/showers are opened and closed, which will cause changes in the water temperature at mixed water outlets such as showers. For this reason and because these are now no more expensive than a manual shower we strongly recommend the use of thermostatic showers with this appliance. These must be used in 3 storey properties where the impact on pressure/temperature of opening another tap in the system is greater than normal. The shower head provided must also be suitable for mains pressure supplies.

Pipe Layout

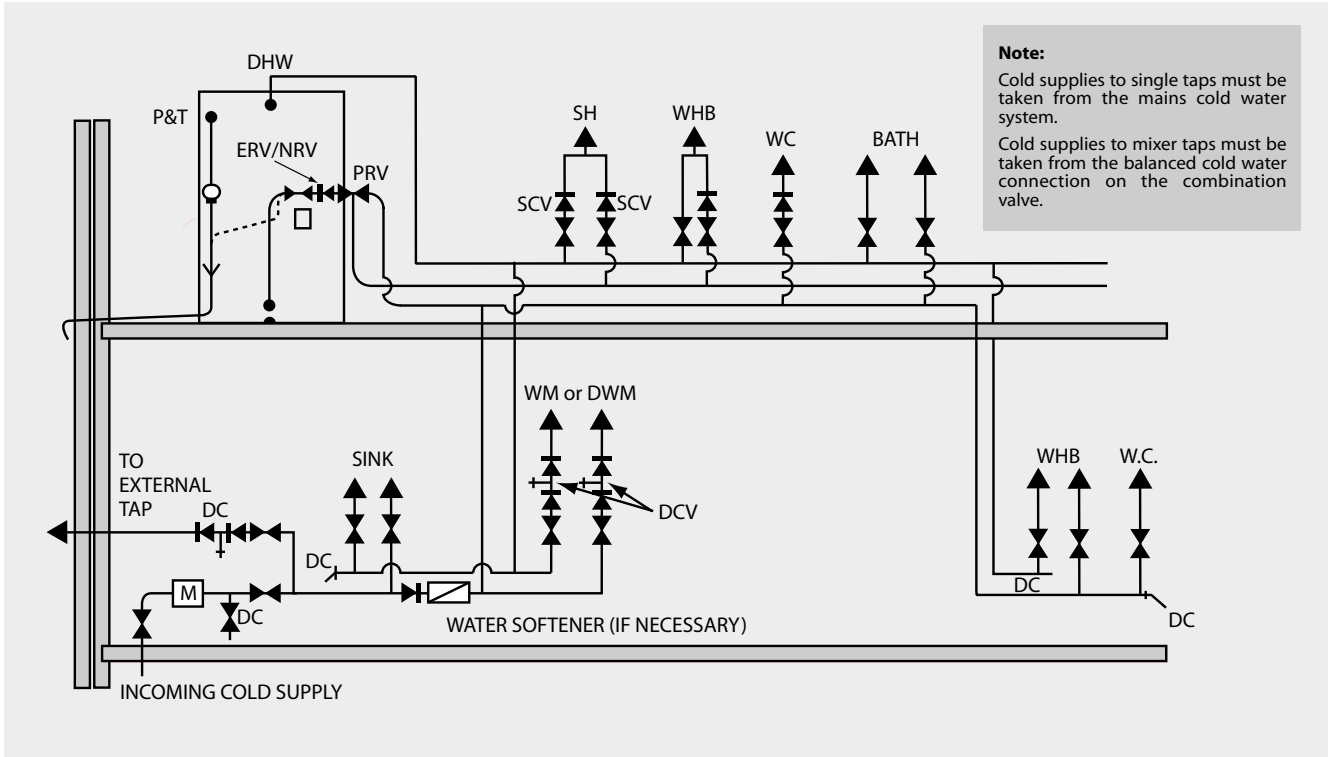
In all mains pressure installations it is important to remember that the incoming cold supply must be shared between all terminal fittings. It is important that a 22mm supply is brought to the appliance and a 22mm take-off is continued at least to the bath. If there are two baths, 28mm pipework should be considered. One metre of smaller diameter pipework, or flow restrictors, should be provided on the final connection to all outlets so as to balance the water available. In any event the distribution pipework should generally be in accordance with BS EN 806-1 to 5.

Plastic Pipework

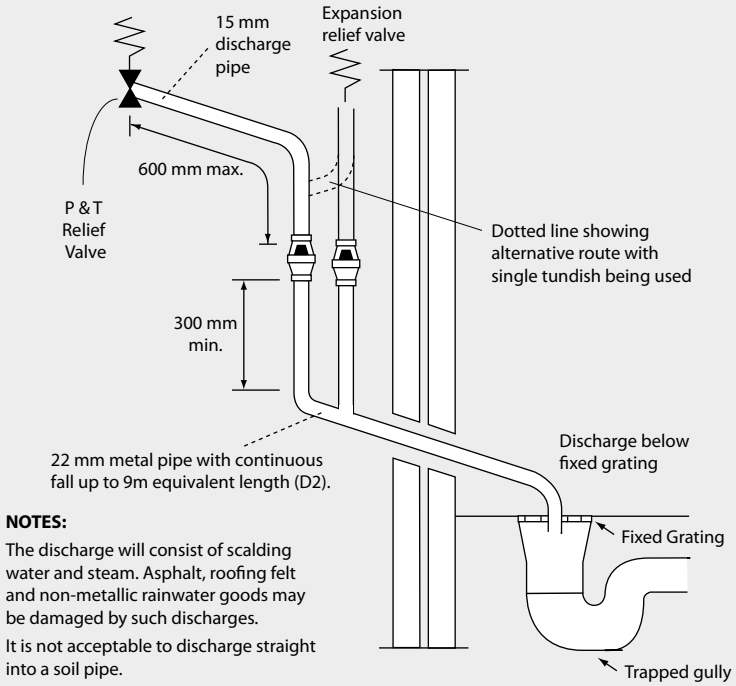
This appliance is suitable for use with plastic pipework as long as the material is recommended for the purpose by the manufacturer and is installed fully in accordance with their recommendations.

Secondary Hot Water Circulation

All models 210 and above are fitted with a secondary return tapping as standard (see table 1 for details). If fitted, an extra expansion vessel may be necessary. A non-return valve MUST be FITTED near the return connection. No valve or terminal fitting should be installed between the non return valve and the cylinder. All pipes kept hot by the secondary circulation should be insulated.



Typical Discharge Pipe Arrangement



NOTES:

The discharge will consist of scalding water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

It is not acceptable to discharge straight into a soil pipe.

Worked Example

The example below is for G1/2 temperature relief valve with a discharge pipe (D2) having 4 elbows and length of 7m from the tundish to the point of discharge.

From Table 1:

Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G1/2 temperature relief valve is: 9m subtract the resistance for 4 x 22mm elbows at 0.8m each = 3.2m.

Therefore the maximum permitted length equates to: 5.8m.

5.8m is less than the actual length of 7m therefore calculate the next largest size.

Maximum resistance allowed for a straight length of 28mm pipe (D2) from a G1/2 temperature relief valve equates to: 14m.

As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

Table 1: Sizing of copper discharge pipe 'D2' for a temperature relief valve with a G1/2 outlet size (as supplied)

Size of discharge pipework	Maximum length of straight pipe (no bends or elbows)	Deduct the figure below from the maximum length for each bend or elbow in the discharge pipe
22mm	Up to 9m	0.8m
28mm	Up to 18m	1m
35mm	Up to 27m	1.4m

Pressure & Temperature/expansion Relief Valve Pipework

The relief valve should be installed to discharge in accordance with G3 of the Approved Document of the Building Regulations and should be piped to where it is visible, but will not cause danger to persons or damage to materials.

The following information is taken from Approved Document G3 of the Building Regulations and is provided to assist with the design and installation of the discharge pipework. However, the information is not exhaustive and reference should always be made to Approved Document G3 of the Building Regulations. The final decision regarding any arrangements rests with Building Control and it is recommended that their advice is sought if you have any concerns regarding this aspect of the installation.

The two safety valves will only discharge water under fault conditions. When operating normally water will not be discharged.

The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible and within 600mm of the safety device e.g. the temperature relief valve.

The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge, be of metal and:

a) Be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long i.e. discharge pipes between 9m and 18m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device, between 18 and 27m at least 3 sizes larger, and so on. Bends must be taken into account in calculating the flow resistance. Refer to the table and the worked example.

   An alternative approach for sizing discharge pipes would be to follow BS EN 806-2:2005 Specification for design installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

b) Have a vertical section of pipe at least 300mm long, below the tundish before any elbows or bends in the pipe work.

c) Be installed with a continuous fall.

d) It is preferable for the discharge to be visible at both the tundish and the final point of discharge but where this is not possible or practically difficult there should be clear visibility at one or other of these locations. Examples of acceptable discharge arrangements are:
   1. Ideally below the fixed grating and above the water seal in a trapped gulley.
   2. Downward discharges at a low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc are acceptable providing that where children play or otherwise come into contact with discharges, a wire cage or similar guard is positioned to prevent contact whilst maintaining visibility.
   3. Discharges at a high level; e.g. into metal hopper and metal down pipe with the end of the discharge pipe clearly visible (tundish visible or not) or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastic guttering systems that would collect such discharges.
   4. Where a single common discharge pipe serves more than one system, it should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected.
   5. If unvented hot water storage systems are installed where discharges form safety devices may not be apparent i.e. in dwellings occupied by blind, infirm or disabled people, consideration should be given to the installation of an electronically operated device to warn when discharge takes place.

Safety

The safety devices supplied or fitted on an Heat Pump DHW Cylinder Pre-Plumbed Lite are selected for their suitability for the temperatures and pressures involved. They must not be changed, removed or by-passed and it is essential that only genuine replacement parts supplied or approved by Ideal Heating are used. Spare parts information is available from Ideal Heating, National Avenue, Hull (Telephone 01482 498665).

Combination Inlet Group

Combines elements 1, 2 and 3 below.
1. *Pressure Reducing Valve* - The cold water supply to any mixer taps/showers must be taken from the cold water tapping of this valve to ensure balanced hot and cold pressures. This valve is factory set to ensure the correct operating pressure for the Heat Pump DHW Cylinder Pre-Plumbed Lite.
2. *Non Return Valve* - This is integral with the pressure reducing valve to prevent backflow of hot water towards cold water draw off points.
3. *Cold Water Expansion Relief Valve* - This safety device is preset at the factory and will relieve excess cold water pressure resulting from a fault condition.

Line Strainer

This is integral within the combination inlet group to reduce the likelihood of contaminants fouling the valve seat. Following installation this line strainer must be cleaned and replaced. This needs to be carried out on a regular basis. as part of the annual maintenance/service check.

Tundish

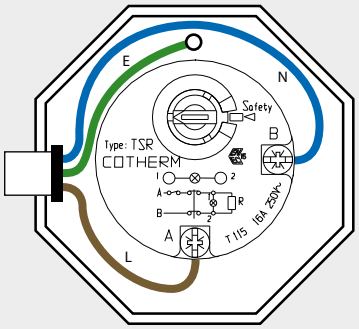
This is to allow the discharge from any Relief Valve to be seen. It must be fitted away from any electrical devices. See page 6 for discharge pipework details.

Expansion Vessels Installation

To prevent water stagnation and particulate accumulation affecting water quality, it is recommended that the expansion vessel be installed in the vertical orientation so that the fitting accommodating thermal expansion or a pressure surge is:-
1. bottom fed and upright; and
2. that the connecting pipework to the fitting:-
   - rises continuously; and
   - is kept to a minimum;

Temperature/pressure Relief Valve

This safety device is also pre-set at the factory and relieves before the temperature reaches 100°C. It is also a Pressure Relief Valve, and is pre-set to 6 bar.



Immersion Heater Wiring

The immersion heater supplied with Heat pump products is fixed at 68°C ± 3°C.

Check this manual's spares list for the correct immersion heater spares item. And the thermostat is fixed at 68°C ± 3°C.

Immersion Heater

The immersion heaters fitted to our units are 3kW 240V ~AC. Check that the mains supply conforms to this, and all external wiring conforms to the most recent revision of the IEE wiring regulations. An Incoloy element is used on this product for standard domestic use and water conditions, use our Titanium elements in all other circumstances, part number SH002, (Check the thermostat is set to position 5).

The immersion heater is fitted into the hot water cylinder using an O-ring. After the unit is filled with water check for leaks to determine if the O-ring has sealed and tighten carefully using the appropriate tool. To prevent damage to the O ring do not use excessive force to tighten the immersion heater.

The immersion heater is supplied with a thermostat which has been tested for operation in the cylinder and complies with the European directives for Electromagnetic compatibility and radio interference. It is Rated at 16 Amp 250V ~AC. The immersion thermostat has two terminals A and B. The Live (brown) wire should be connected to terminal A and the Neutral (blue) wire should be connected to terminal B. It has been our experience that Crimp terminals make better connections. The immersion heater must be fully earthed (earth post) and connected via a double pole isolator switch having a contact separation at least 3mm, see diagram above.

Danger of electrocution: before making any adjustments to the thermostat isolate the immersion heater from the mains electricity supply at the fuse spur unit.

The immersion heater thermostats incorporate a manual reset safety/overheat cut out thermostat. Should this operate, investigate the cause for the operation cut out before pressing the red reset button labelled safety. If there is no apparent fault adjust the control setting down slightly to prevent nuisance tripping.

If another heat source is used to heat the cylinder and this is allowed to raise the water temperature excessively then the overheat thermostat will trip.

All Heat Pump DHW Cylinder Pre-Plumbed Lites are fitted with a 3 kW immersion heater so that the store temperature can be raised above that which the heat pump provides, to boost the hot water performance if necessary and to protect against legionella eg. following the time parameters set on the Heat Pump remote control.

Control/overheat Thermostats

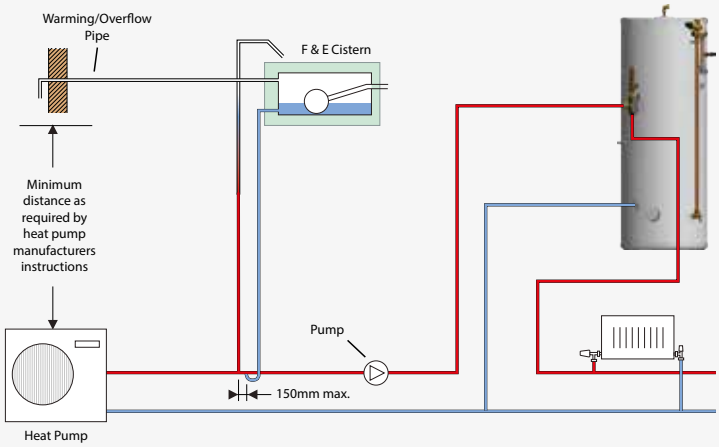
Care must be taken to ensure that the probes are fully inserted into the pockets provided.

The Heat Pump DHW Cylinder Pre-Plumbed Lites are supplied with a thermistor pocket which includes a clamp. The clamp is supplied as part of the kit located in the packaging, and enables the thermistor to be securely clamped into the pocket. If the heat pump being fitted alongside this cylinder does not have a thermistor then a control thermostat will need to be purchased from Ideal Heating. The control thermostats part code is 185474. It can be fitted into the thermistor pocket when the cable clamp is removed.

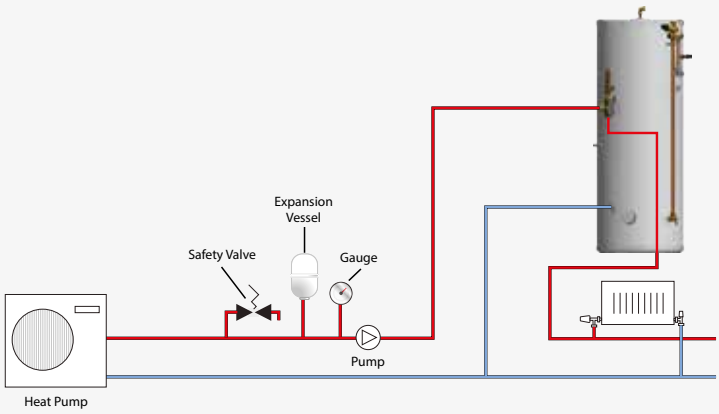
When fitting control or overheat thermostats. If a copper/brass pocked is attached, then loosen the screws on the overheat thermostat body and remove the copper / brass pocket. The overheat thermostat is now suitable for installation and securing into the indicated overheat thermostat pocket on the cylinder.

INSTALLATION

Schematic Open Vented Primary System (HP & Slimline)



Schematic Sealed Primary System (HP & Slimline)



Heating And Primary Systems

Although the heat pump and the primary heating system should be sized and installed in accordance with BS EN 12828:2003, BS EN 12831:2003 & BS EN 14336:2004 the following should also be taken into account during the design and installation phase.

The heat pumps normally operate at lower flow temperatures; typically 45 – 55°C compared with 75 – 80°C for the boilers. Therefore if traditional radiators are used then, these should be oversized in accordance with the heat pump manufacturers recommendations.

For optimum efficiency (i.e. COP of a heat pump), low temperature under floor heating system should be considered.

The heat pumps normally operate at lower temperature difference between flow and return compared with the traditional boilers and therefore when sizing the pipework heat pump manufacturers recommendations should be taken into account.

Safety

Ideal Heat Pump DHW Cylinder Pre-Plumbed Lites are fitted with a combined temperature and pressure relief valve to cope with any increase in temperature and pressure in the cylinder above the design limits, when used with heat sources up to 45kW total output. This is the maximum heat input to the cylinder allowed by section G3 of the 'Approved Document G' of the Building Regulations.

The heat supply to the cylinder and hence the temperature of the stored water should be controlled as outlined below: -

- Heat supply from the primary heat source i.e. heat pump

  The 3 port motorised valve is supplied fitted to the cylinders.

  Refer to pages 18 and 19 for the wiring options.

  It is important to follow the wiring diagrams in the wiring section of these instructions.

- Sealed heating system

  A heat pump selected must be suitable for use in a sealed heating system which may have working pressure of up to 3.0bar and it must be fitted with an overheat temperature cut-out device.

  Unvented (i.e. sealed primary circuits may be filled or replenished by means of a temporary connection between the circuit and a water supply pipe provided a WRC 'Listed' double check valve and filling loop or some other no less effective backflow prevention device is permanently connected at the inlet to the circuit and the temporary connection is removed after use.

  Alternatively, a CA device can be used which will allow the system to be permanently connected to the cold mains supply. The primary system can then be topped up, when required, in the same way as an open vented system fitted with an F&E cistern.

- Open vented heating system

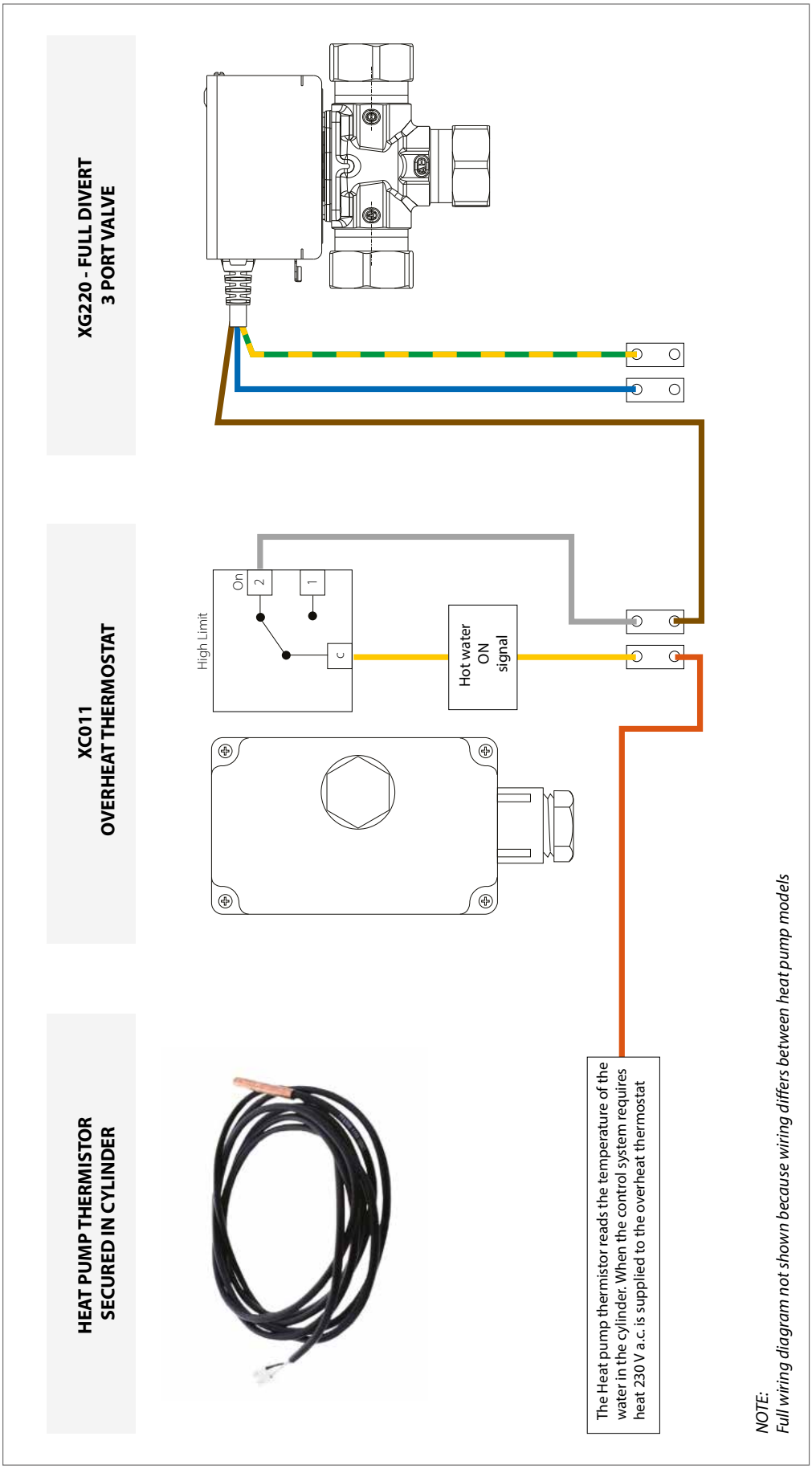
  It is essential that the primary circuit between the heat pump and the Heat Pump DHW Cylinder Pre-Plumbed Lite is pumped and that the cold feed and open vent connections are positioned to prevent pump over into the feed and expansion cistern and to ensure that the open vent is correctly sized. A typical arrangement of the open vented system is shown in diagram opposite.

If there is any posiblity that the hot water temperature in the cylinder will become excessivly high above 65 °C; then a tempering valve must be fitted. This product can be supplied from Ideal Heating. Part number XC007. Care must be taken to ensure that the valve is installed in the correct orientation.

Heat Pump Input to the Cylinder Heat Exchanger Coil - Option A

1. The heat pump thermistor.
2. XC011 Overheat thermostat cuts the power to the XG220 - 3 port valve.
3. SG019 Altecnic TPRV supplied fitted to the unit.

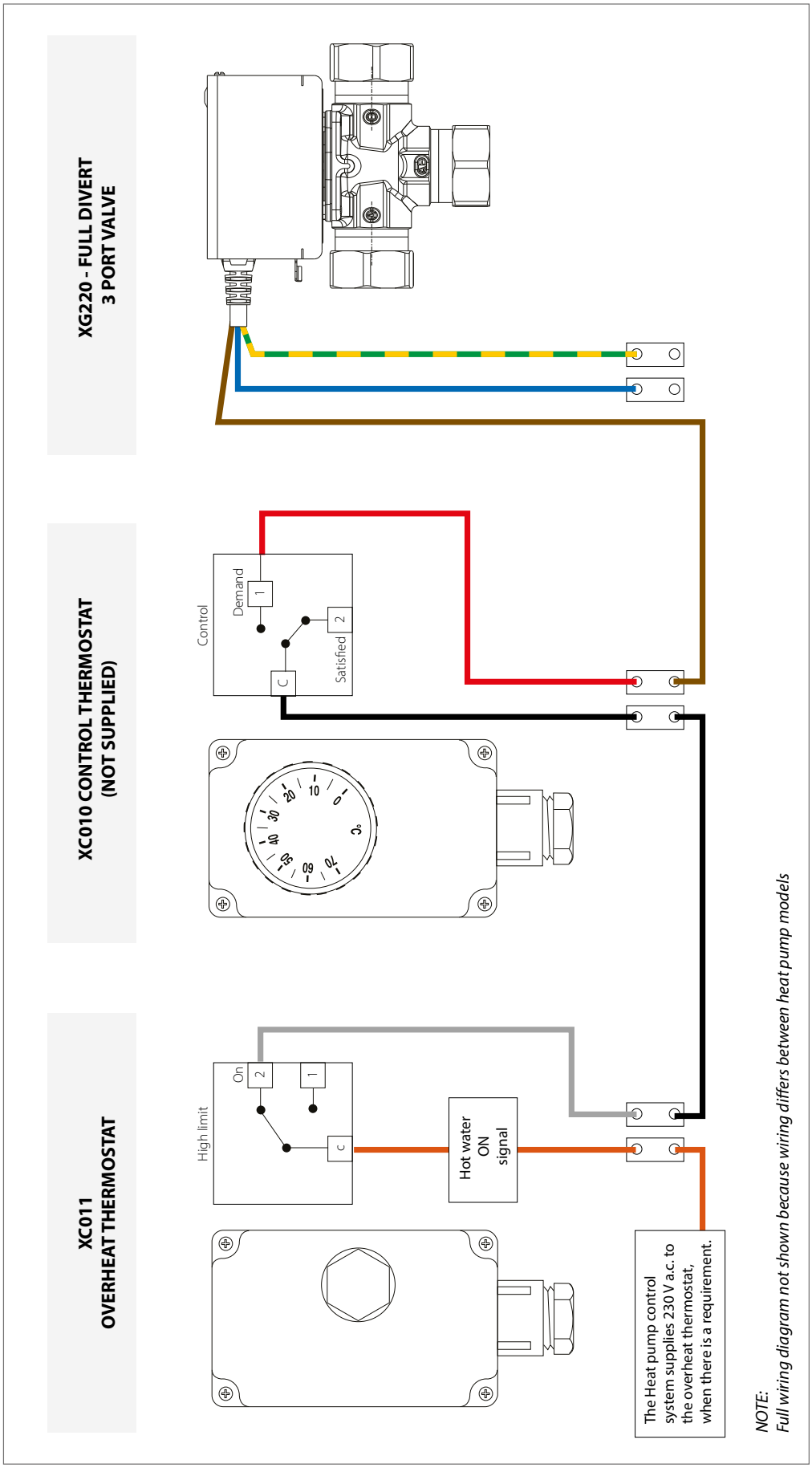
Key:
Green / yellow - Earth
Blue - Neutral
Brown - Motor open
Yellow - Hot water on signal to overheat thermostat
Orange - Hot water on signal from Heat pump control system
Grey - Hot water signal from overheat thermostat



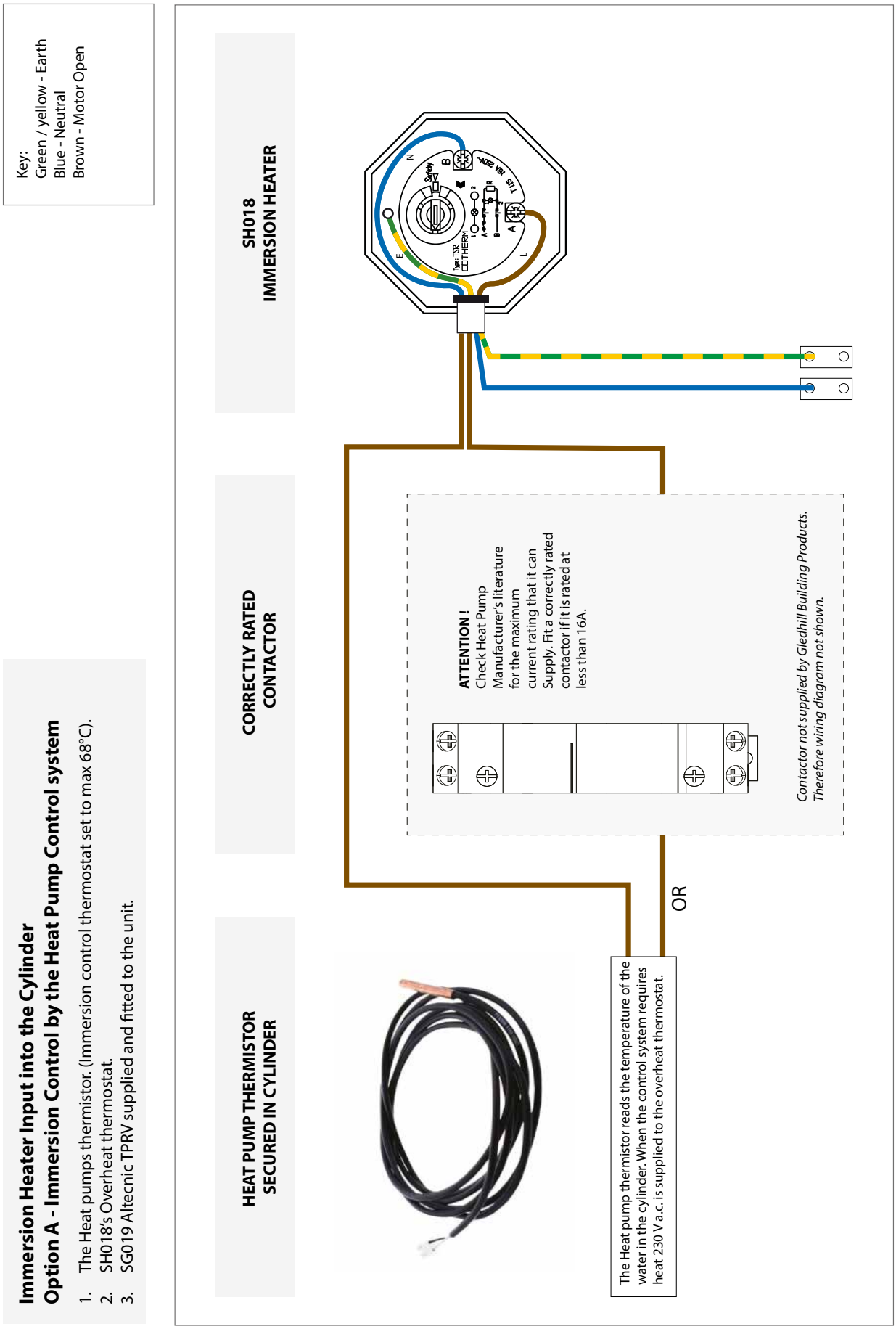
Heat Pump Input to the Cylinder Heat Exchanger Coil - Option B

1. XC010 Control thermostat.
2. XC011 Overheat thermostat cuts the power to the XG220 – 3 port valve.
3. SG019 Altecnic TPRV supplied and fitted to the unit.

Key:
Green / yellow - Earth
Blue - Neutral
Brown - Motor open
Yellow - Hot water on signal to overheat thermostat
Orange - Hot water on signal from Heat pump control system
Grey - Hot water signal from overheat thermostat
Black - Hot water on signal to control thermostat
Red - Hot water on signal from control thermostat



INSTALLATION



Immersion Heater Input into the Cylinder
Option B - Independent Control via an Immersion Timer / Boost Switch

1. SH018's control thermostat (will need to be replaced with a variable control thermostat.
2. SH018's Overheat thermostat.
3. SG019 Altecnic TPRV supplied and fitted to the unit.

Key:
Green / yellow - Earth
Blue - Neutral
Brown - Motor Open

INDEPENDENT CONTROL VIA AN IMMERSION TIMER / BOOST SWITCH

SH018 IMMERSION HEATER WITH TSR000014 THERMOSTAT ASSEMBLY FITTED

Thermostat Type TSR fitted in the Direct Cylinders; is supplied set at 62° ± 3°C. Position 4 is 55°C ± 3°C and position 5 is 68°C ± 3°C

The control of the immersion heater is independent of the heat pump control system. It may be programmed for sterilization of the cylinder at regular intervals independent of the heat pump controller.

Timer / boost switch not supplied by Gledhill Building Products.
Therefore wiring diagram not shown.

INSTALLATION

COMMISSIONING

Connections can come loose in transit, and all should be checked before installation.

Ensure that the immersion heater achieves a temperature of at least 60°C in the store and that the wiring is in accordance with the diagram.

Check the pressure on the air side of the expansion vessel = 3 bar. This must be done when the water in the cylinder is free to expand in atmospheric pressure or the cylinder and relevant pipe work is empty.

Check that the drain cock is closed, and open all the cold and hot water taps and other terminal fittings. Allow the system to fill with water, and to run until there is no air left in the system. Close the taps and inspect the system closely for leaks.

Manually open the Relief Valves one by one and check that water is discharged and run freely through the tundish and out at the discharge point. The pipework should accept full bore discharge without overflowing at the tundish, and the valve should seat satisfactorily.

In line with good plumbing practice, use with excessive flux should be avoided. When soldering above the cylinder, ensure flux/solder does not contaminate the cylinder below, since this can cause corrosion, Flushing should be done performed as per BS EN 806:4 2010 section 6.2

Allow the cylinder to heat to normal working temperature, then thoroughly flush the domestic hot and cold water pipework through each tap.

NOTE: If this appliance is to be installed in other than a single domestic dwelling ie. in an apartment block or student flats etc., the hot and cold water system will need to be disinfected in accordance with BS EB 806:4 2010 section 6.3 and the Water Regulations.

Because the Heat Pump DHW Cylinder Pre-Plumbed Lite is stainless steel, the use of chlorine as the disinfection agent can cause damage unless the appliance is adequately flushed and refilled with the mains water immediately on completion of the disinfection procedure. Damage caused through a failure to do this adequately will not be covered by the warranty.

For the above reasons we recommend the use of a non chlorine based disinfectant such as Fernox LP Sterox when carrying out disinfection of systems incorporating these appliances.

IMPORTANT - DRAIN DOWN PROCEDURE

1 Switch off both the heat pump and the immersion heater

2 Open the nearest hot tap and run all hot water until cold

3 Close the incoming cold main at the stop tap

4 **Hold open the pressure and temperature relief valve until water stops discharging into the tundish**

5 Open all the taps in the property

6 Open the drain cock and immediately hold open the pressure and temperature relief valve again until the cylinder is empty

Allow the cylinder to heat to normal working temperature with whatever heat source is to be used, and check again for leaks. The Pressure Relief Valve should not operate during the heating cycle. If the P&T valve operates before the pressure relief valve due to high pressure, check that the inlet control group is fitted correctly, and no valve is between the inlet control group and the cylinder.

The heat pump/heating systems should be filled and commissioned in accordance with good practice following the guidance in BS 7593:2006/ the heat pump manufacturers instructions. This includes adequately flushing the system to remove any debris that may have been introduced during installation/maintenance.

The combination inlet control group service is as follows; Isolate the cold supply to the cylinder. Remove the inlet control group valve. Inspect the guaze filter on the inlet side of the valve and remove the debris.

NOTE

At the time of commissioning, complete all relevant sections of the Benchmark Checklist located on the inside back pages of this document.

This must be completed during commissioning and left with the product to meet the Warranty conditions offered by Ideal Heating.

Your Heat Pump DHW Cylinder Pre-Plumbed Lite requires routine maintenance which is normally carried out at least annually along with the heat pump service. The maintenance must be carried out by a suitably competent tradesperson who is qualified to work on unvented cylinders. The checks/work needed are listed in the maintenance part of these Instructions.

The heat pump control thermostat should switch to the hot water zone valve before the heat pump starts to cycle on its internal thermostats. For example if the maximum primary flow temperature available from the heat pump is 55°C, then the control thermostat should be set to 48°C. (This setting should be set by the installation engineer during commissioning.)

When initially opening the taps, a small surge in flow may be experienced, which disappears as the pressure in the system stabilises. This is quite normal with these types of systems and does not indicate a fault.

In some areas the water will initially appear cloudy, but will quickly clear when left to stand. This is nothing to be concerned about and is due to aeration of the water.

WARNING - If water is seen flowing through the tundish, this indicates a fault condition which needs action.

If the discharge is hot and continuous, turn the heat pump and/or the immersion heaters off, but do not turn off the cold water to the appliance until the discharge is cold.

Note: The discharge may stop by itself as the discharge cools.

If the discharge is cold and intermittent, no immediate action is needed but this indicates a problem with the expansion vessel.

However, in both cases you must call the registered installer / a suitably qualified, competent tradesperson, advise them that you have an unvented cylinder and request a maintenance visit.

DO NOT, at any time, tamper in any way with the safety valves or overheat thermostats/ wiring.

SERVICING AND MAINTENANCE

The Registered Installer is responsible for the safe installation and operation of the system. The installer must also make his customer aware that periodic maintenance of the equipment is essential for safety.

Maintenance periods will vary for many reasons. Ideal Heating recommend a maximum of 12 months to coincide with heat pump maintenance. Experience of local water conditions may indicate that more frequent maintenance is desirable, eg, when water is particularly hard, scale-forming or where the water supply contains a high proportion of solids, eg, sand. Maintenance must include the following:

1. Isolate the cold supply to the cylinder. Remove the inlet control group valve. Inspect the gauze filter on the inlet side of the valve and remove the debris.
2. Manually check the operation of the temperature relief valve.
3. Manually check the operation of the expansion relief valve.
4. Check discharge pipes from temperature and expansion relief valves are free from obstruction and blockage and are not passing any water.
5. Check the condition and if necessary descale the heat exchangers in hard water areas.
6. Check that water pressure downstream of pressure reducing valve is within the manufacturers limits.
7. Check operation of motorised valve.
8. Check the pressure on the air side of the expansion vessel. This must be done with the pressure on the water side at zero (gauge pressure).
9. Check and advise the householder not to place any clothing or other combustible materials against or on top of this appliance.
10. On completion of the work, fill in the Benchmark Service Record at towards the back of this manual.

IMPORTANT NOTE

When draining down the appliance for any reason, the instructions provided in the Commissioning Section MUST be followed to prevent potential damage to the cylinder.

After servicing, complete the relevant Service Interval Record section of the Benchmark Checklist located on the inside back pages of this document.

Scale

In hard water areas it is recommended that an in-line scale inhibitor is fitted. Reducing the temperature of the stored water will reduce the rate at which scale forms. If the recovery rate is badly affected, this is an indication that scaling may have occurred. In this event, follow the procedures as recommended by a reputable Water Treatment Company.

General

No water at the tap. Check that the mains water supply is turned ON. Check the line strainer is not blocked. Check that the combination valve has been fitted so that water is flowing in the correct direction.
If the water at the tap is cold, ensure that the heat pump has been switched ON and is working correctly. Check that there are no air locks in the primary system. ISOLATE THE UNIT AT THE MAINS ELECTRIC SUPPLY AND THEN CHECK THE FOLLOWING:

i. The cylinder thermistor or thermostat is calling for heat.
ii. The cylinder overheat thermostat has not tripped. (This is reset by unscrewing the black cover and pressing the reset button in.)
iii. The motorised valve has operated and is open to the hot water cylinder port.

ANY ENERGY CUT-OUT MUST NEVER BE BY-PASSED UNDER ANY CIRCUMSTANCES.

If the unit is being heated by the immersion heater and not getting hot, ensure that the immersion heaters are isolated from the mains before re-setting the energy cut-out. Also check that the immersion control thermostat is set to maximum. If the immersion heater(s) need replacing this should be a genuine Ideal spare part.

Discharge From Relief Valves

If cold water is discharging from the expansion relief valve into the tundish check the pressure on the expansion vessel when cold and recharge if necessary.

If the fault continues and the problem cannot be stopped by operating the easing control a few times then either the Pressure Reducing Valve or the Relief Valve may be at fault. If the cold water pressure is too high, this would suggest that the Pressure Reducing Valve is at fault and the Ideal Heating approved replacement should be fitted. If the pressure is correct then the Relief Valve will require replacing with a Ideal Heating approved component.

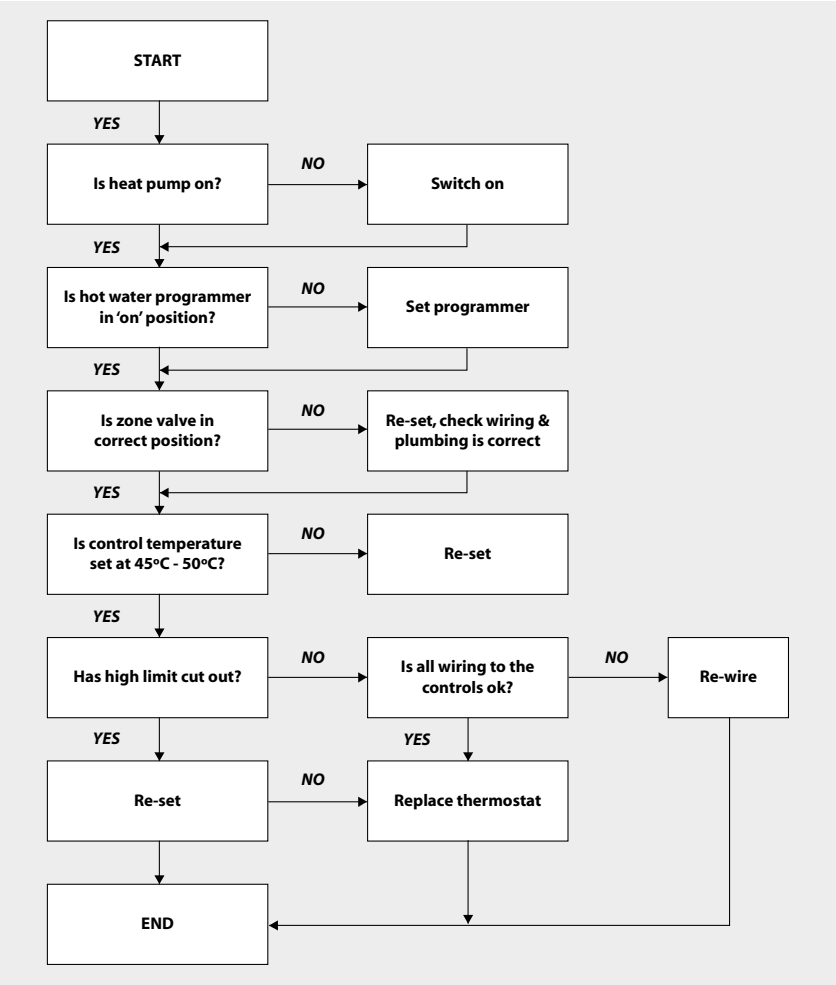
See Commissioning for drain down procedure.

If there is an overheat fault and very hot water is being discharged, turn off the heat source, **but not the water supply.**

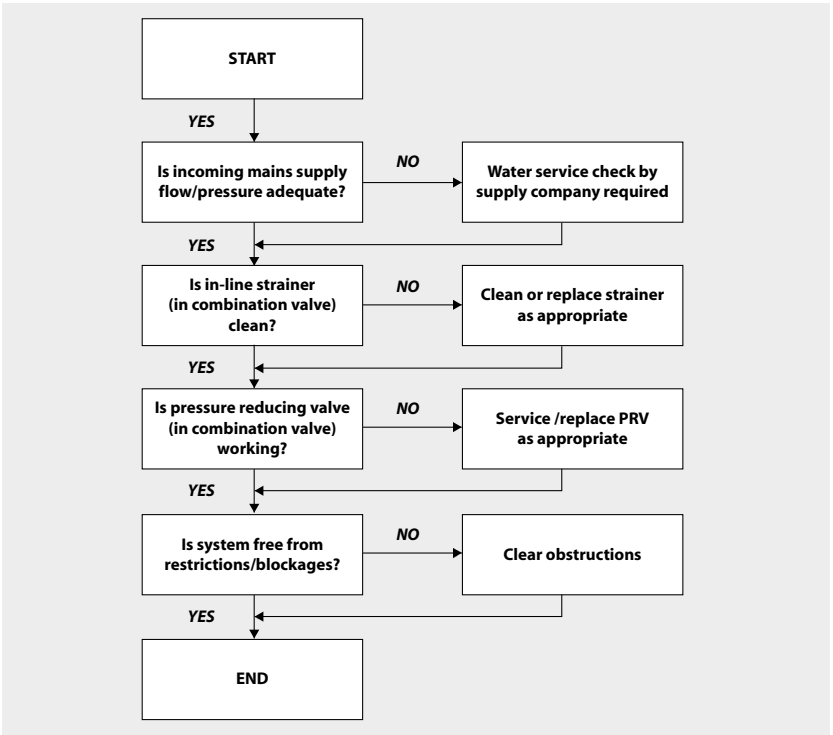
When the supply is cool, check thermostats and energy cut-outs in the heat pump and immersion heaters and replace the faulty component with one supplied by Ideal Heating and check that it works correctly before returning the system to full operation.

FAULT FINDING

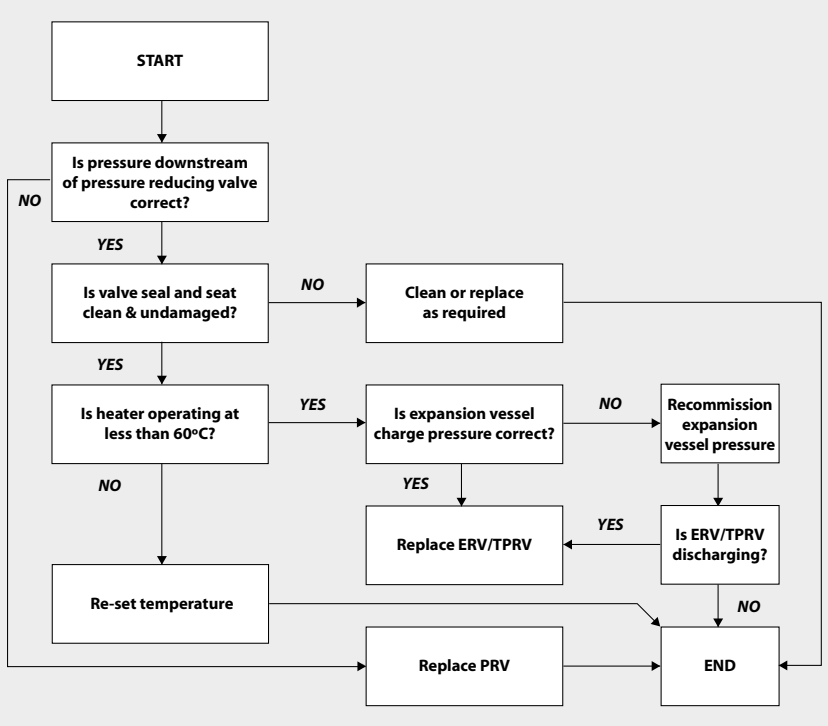
FAULT - No Hot Water



FAULT - Poor Water Flow at Hot Taps



FAULT - Water Discharge Into Tundish

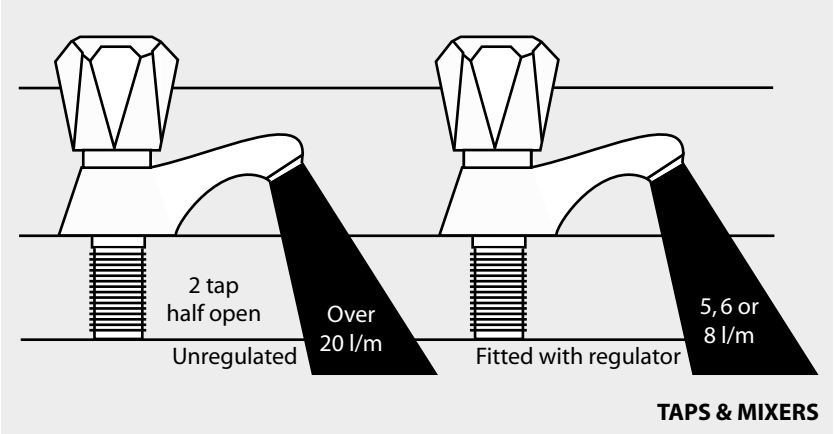


SHORT PARTS LIST

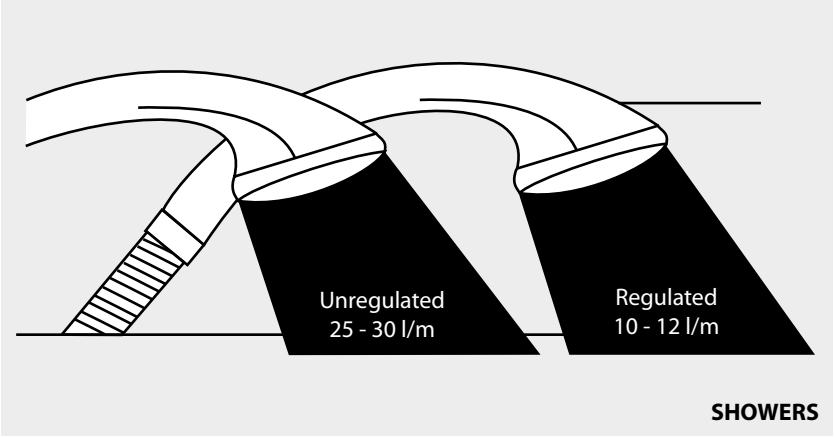
SPARE PARTS LIST			
	Description	**Quantity**	**Stock Code No.**
1	3kW immersion heater assembly supplied with a fixed thermostat 68°C, incorporates a manual reset overheat thermostat	1	176749
2	Immersion heater valiable thermostat compatible with SH018, incorporates a manual overheat thermostat, supplied set at 55°C (spec TSR00014)	1	176756
3	3kW Titanium immersion heater assembly	1	181002
4	22mm 90° compression elbow, for hot water outlet connection	1	177797
5	Pressure and temperature relief valve 6 bar 92-95° bar	1	176748
6	Inlet group set at 3 bar c/w expansion relief valve set at 4.5 bar	1	176750
7	18 litre expansion vessel	1	176752
8	24 litre expansion vessel	1	176753
9	15mm x 22mm tundish	1	176757
10	Full divert 3 port valve, with 28mm compression connections, (L-N-E)	1	AH181002
11	Cylinder Overheat/cut out thermostat, fixed temp, manual reset	1	181001
12	Control thermostat, variable setting, automatic reset	1	185474
13	Nylon cable gland M16 8mm grey	1	185475

Water Savings

Water Related Costs Can Be Reduced By Good Plumbing Practice



TAPS & MIXERS



SHOWERS

Vast quantities of water are needlessly run off to waste due to Taps, Mixers and Showers discharging flow rates far in excess of the rates required for them to perform their duties.

The contrasting flow rates shown on this leaflet clearly illustrate the savings that can be made whilst still providing a good performance.

British made Aquaflow Regulators provide constant flow rates by automatically compensating for supply pressure changes between 1 bar & 10 bars.

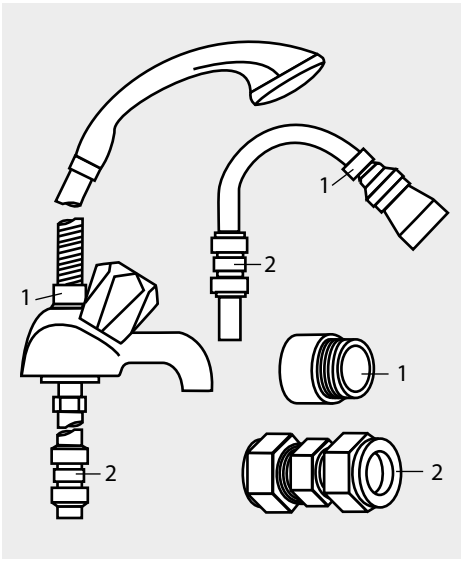
To facilitate installation into the wide range of plumbing equipment which is encountered in the U.K, Four Fixing Options are available:-

Options For Showers

1. MXF "DW" Range - For fitting behind Fixed Shower Heads or onto Flexible Hoses for Handshowers (preferably onto the inlet end when lightweight hoses are used).
2. Compression Fitting Range. "In Line" regulators as in Option 4 for Taps & Mixers.

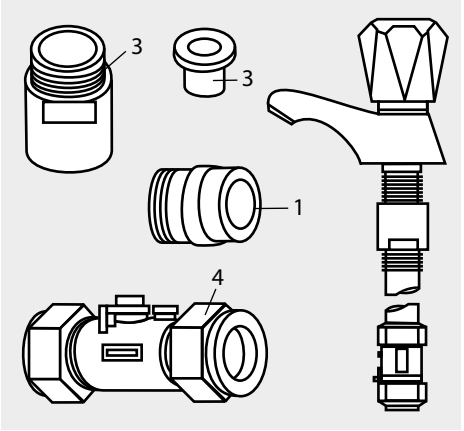
Information by courtesy of

AQUAFLOW REGULATORS LTD
Haywood House, 40 New Road, Stourbridge, West Midlands DY8 1PA
TELEPHONE (01384) 442611 FAX: (01384) 442612



4 Fixing Options For Taps & Mixers

1. MK Range - Combined Regulators & Aerator for screwing onto Taps & Mixers with internal or external threads on their noses. Anti Vandal models also available.
2. MR05-T Range - Internal Regulators. Push-fit into Tap or Mixer seats. Produced in three sizes - 12.5mm (BS1010), 12mm & 10mm, Flangeless models also available for Taps with Low Lift washers.
3. MXF Standard Range - Screw on tail models for Taps & Mixers. Fix onto the tails before fitting the tap connectors. Available in 3/8", 1/2", 3/4" and 1" BSP.
4. Compression Fitting Range - "In Line" regulators housed in 15mm & 22mm CXC Couplers & Isolating Valves. " "UK WFBS listed by the Water Research Centre. Isolation valves available for slotted screwdriver operation or with coloured plastic handles. Now available also in plastic bodied push-fit couplers & valves.



APPENDIX

Lifting and Handling

The Heat Pump Cylinder must be handled with care and stored the correct way up in a dry place.

Any manual handling/lifting operations will need to comply with the requirements of the Manual Handling Operations Regulations issued by the H.S.E.

The appliance is supplied attached to a small pallet, and can be moved around on smooth level surfaces using a pallet truck. In more confined spaces the appliance can be moved using a sack truck on the rear face although care should be taken and the route should be even. In apartment buildings containing a number of storeys we would recommend that the appliances are moved vertically in a mechanical lift.

If it is proposed to use a crane, expert advice should be obtained regarding the need for slings, lifting beams etc.

TERMS AND CONDITIONS OF YOUR IDEAL HEATING WARRANTY

Ideal Boilers ("We", "Ideal" or "Ideal Heating") only do business upon the Conditions which appear below and no other. Unless we so agree in writing these Conditions shall apply in full to any supply of goods by us to the exclusion of any Conditions or Terms sought to be imposed by any purchaser. These Conditions of Warranty Terms override those which are contained on the Invoice Forms and all Sales are now subject to these Conditions of Warranty terms only. The warranty is provided by Ideal Boilers Limited, National avenue, Hull, HU5 4JB.

Ideal Heating provide warranty to the components including controls, valves and electrical parts for two years from the date of purchase. IT SHOULD BE NOTED THAT THE FACTORY FITTED TEMPERATURE AND PRESSURE RELIEF VALVE MUST NOT BE REMOVED OR ALTERED IN ANY WAY OR THE WARRANTY WILL NOT BE VALID. IDEAL HEATING WILL NOT BE RESPONSIBLE FOR ANY CONSEQUENTIAL LOSS OR DAMAGE HOWEVER IT IS CAUSED.

The warranty for the stainless steel vessel is for twenty five years against material defect or manufacturing faults Provided that:

1. The Hot Water Cylinder must have been installed and commissioned within 12 months of the date of manufacture by a suitably qualified engineer, in accordance with the guidelines in the installation and servicing manual provided.
2. The Hot Water Cylinder installation must be registered with Ideal Heating within 30 days.
3. The Ideal Heating warranty will be activated on the date the Hot Water Cylinder is registered following commissioning.
4. At the end of each 12-month period after commissioning, the hot water cylinder must be serviced by a suitably competent person in accordance with the process in the manufacturer's instructions. Should this condition not be met the warranty will lapse. A record of this service must be made on the Benchmark Service Record.
5. All necessary inlet controls and safety valves have been fitted correctly.
6. The hot water cylinder has only been used for the storage of potable water supplied from the public mains. The water quality shall be in accordance with European Council Directive 98/83 EC, or revised version of the date of installation, and is not fed with water from a private supply. Particulor;
   - Chloride content: Mon 200 mg/l
   - Sulphate content: Mon 200 mg/l
   - Combination chloride/sulphote. Max. 300 mg/l (in total)
7. If the newly fitted water heater is not in regular use, then it must be flushed through with fresh water for at least 15 minutes. Open at least one hot water taps once per week, during a period of at least four weeks.
8. Any disinfection has been carried out strictly in accordance with BS6700.
9. If the Hot Water Cylinder suffers a mechanical or an electrical breakdown, please contact Ideal Heating Customer Care on 01482 498660.

Normal working times are: 8am -6pm Monday to Friday, Saturdays and bank holidays excluding Christmas day 8am -4pm, Sunday 8am -12 noon.

For Republic of Ireland please contact: Ideal Energy, Ascot House, Kinsealy Lane, Malahide, County Dublin, K36 HH42 on +35319 617700. Opening hours Monday - Friday 8am - 5pm. Registered in England. Company No. 652026.

Claim/Contact Procedure

We will arrange for an Ideal Heating Engineer or authorised contractor, to inspect and repair, or where in our sole opinion repair is not economic, arrange to replace the goods with the closest substitue in the case of any obsolete product.

Please note:

a. Engineers will only undertake work where it is considered by the engineer that the installation does not pose a risk to health and safety.

b. Clear access around the cylinders or ancillaries must be available, the external unit must be accessible from the ground.

c. A permanently fixed access ladder must be available to service installations in lofts or attics. Adequate lighting and permanently fixed flooring must also be available.

d. We will not accept responsibility for costs involved in gaining access to the unit, such as the removal of cupboards, kitchen units or trims in order to gain access for repairs.

e. In the event of the inner stainless-steel vessel cylinder failing within the warranty period, a full diagnosis into the cause of the failure is required and usually is only possible in a laboratory test environment, where the product can be fully assessed and tested. We will require the return of the cylinder which develops a leak for inspection. Proving our expert examination confirms a manufacturing fault or defect, this will be resolved under the cylinders warranty accordingly.

f. If the stainless-steel vessel proves to be defective either in materials or workmanship, we reserve the right to either repair or supply replacements or the closest possible substitute in the case of any obsolete product and will collect and deliver to any address in England, Scotland and Wales (excluding all islands). Our normal working hours (excluding bank holidays) are 8am – 6pm Monday to Friday, 8am – 4pm Saturday, 8am – 12 noon Sunday.

g. Evidence of purchase and date of supply, along with a copy of the completed annual service record and commissioning checklist should be submitted with any claim.

10. The warranty does not apply:
    a. If the registered product is removed from its place of installation without our prior consent.
    b. To any defect, damage or breakdown caused by inadequate servicing of the product or by deliberate action, accident, misuse or third-party interference including modification or an attempted repair which does not fully comply with industry standards.
    c. To any defect, damage or breakdown caused by the design, installation, and maintenance of the system.
    d. To de-scaling or other work required as a result of hard water scale deposits or from damage caused by aggressive water or sludge resulting from corrosion, including the cleaning of filters or strainers.
    e. To damage caused to the product by freezing.
    f. If the claim/contact procedure is not adhered to.
    g. To any other costs or expenses caused by or arising as a result of a breakdown of the product.
    h. To any defect resulting from the incorrect installation of the product.
    i. To any costs incurred during delays in fixing reported faults.
11. We reserve the right to charge a call-out fee where:
    a. A fault cannot be found or the fault is unrelated to the Ideal Heating product installed.
    b. The breakdown or fault has been caused by an event, which is excluded from the warranty – refer to section 10.
    c. Failure to cancel an agreed appointment prior to our engineer's visit.
    d. The product is outside the period of warranty, or the conditions of the warranty have not been met.
    11. If we fit replacement parts or replace a Hot Water Cylinder it will not extend the period of the warranty.
    12. The warranty applies only where the product has been installed in a domestic dwelling in mainland UK and ROI for its designed purpose.

This warranty is offered in addition to your statutory rights provided under consumer law. Details of these rights can be obtained from your local Trading Standards Authority or a Citizen Advice Bureau. Guarantor – Ideal Boilers Ltd, National Avenue, Hull, HU5 4JB.

MAINS PRESSURE HOT WATER STORAGE SYSTEM COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the storage system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer name:	Telephone number:
Address:	
Cylinder Make and Model	
Cylinder Serial Number	
Commissioned by (PRINT NAME):	Registered Operative ID Number
Company name:	Telephone number:
Company address:	
	Commissioning date:
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:	
Building Regulations Notification Number (if applicable)	

ALL SYSTEMS PRIMARY SETTINGS (indirect heating only)				
Is the primary circuit a sealed or open vented system?	Sealed		Open	
What is the maximum primary flow temperature?				°C

ALL SYSTEMS				
What is the incoming static cold water pressure at the inlet to the system?			bar	
Has a strainer been cleaned of installation debris (if fitted)?	Yes		No	
Is the installation in a hard water area (above 200ppm)?	Yes		No	
If yes, has a water scale reducer been fitted?	Yes		No	
What type of scale reducer has been fitted?				
What is the hot water thermostat set temperature?			°C	
What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet)?			l/min	
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?			Yes	
Type of control system (if applicable)	Y Plan	S Plan	Other	
Is the cylinder solar (or other renewable) compatible?	Yes		No	
What is the hot water temperature at the nearest outlet?			°C	
All appropriate pipes have been insulated up to 1 metre or the point where they become concealed			Yes	

UNVENTED SYSTEMS ONLY				
Where is the pressure reducing valve situated (if fitted)?				
What is the pressure reducing valve setting?			bar	
Has a combined temperature and pressure relief valve and expansion valve been fitted and discharge tested?	Yes		No	
The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations			Yes	
Are all energy sources fitted with a cut out device?	Yes		No	
Has the expansion vessel or internal air space been checked?	Yes		No	

THERMAL STORES ONLY		
What store temperature is achievable?		°C
What is the maximum hot water temperature?		°C

ALL INSTALLATIONS		
The hot water system complies with the appropriate Building Regulations	Yes	
The system has been installed and commissioned in accordance with the manufacturer's instructions	Yes	
The system controls have been demonstrated to and understood by the customer	Yes	
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer	Yes	

Commissioning Engineer's Signature
Customer's Signature
(To confirm satisfactory demonstration and receipt of manufacturer's literature)

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

benchmark COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

www.centralheating.co.uk

While this Checklist can be used for any installation covered by its description, only appliances manufactured by Scheme Members will be covered by the rules and requirements of the Benchmark Scheme.

SERVICE RECORD

It is recommended that your hot water system is serviced regularly and that the appropriate Service Record is completed.

Service Provider

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions.

SERVICE 01	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 02	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 03	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 04	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 05	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 06	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 07	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 08	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 09	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 10	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

NOTES

NOTES

At Ideal Heating we take our environmental impact seriously, therefore when installing any Ideal Heating product please make sure to dispose of any previous appliance in an environmentally conscious manner. Households can contact their local authority to find out how.
See https://www.gov.uk/managing-your-waste-an-overview for guidance on how to efficiently recycle your business waste.

TECHNICAL TRAINING

Our Expert Academy offer a range of training options designed and delivered by our experts in heating.
For details please visit: expert-academy.co.uk

Ideal Boilers Ltd., pursues a policy of continuing improvement in the design and performance of its products.
The right is therefore reserved to vary specification without notice.

Registered Office

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+33 (0)2 51 44 34 34

Ideal Technical Helpline: 01482 498663
Ideal Consumer Helpline: 01482 498660
Ideal Parts: 01482 498665

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