

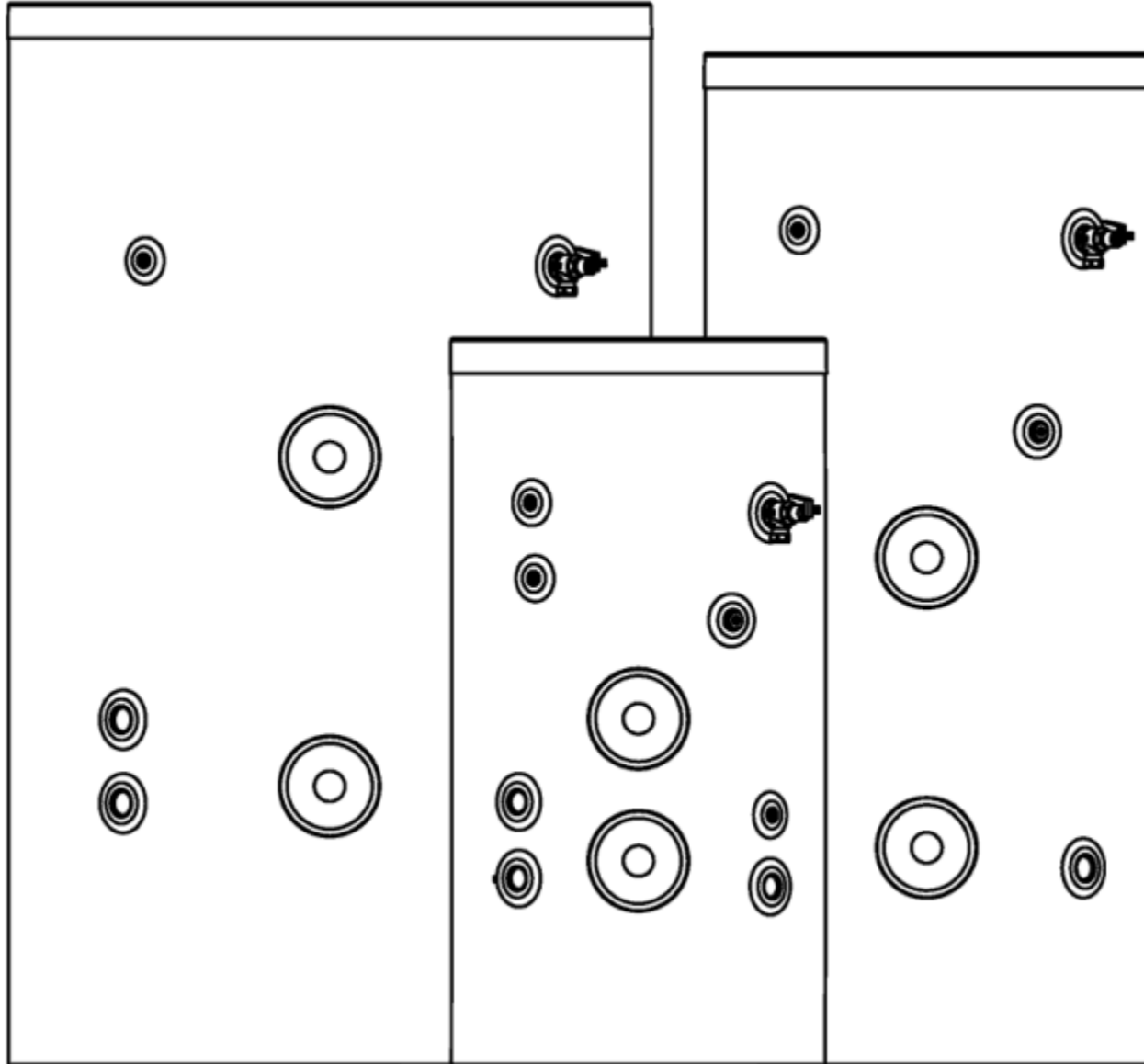
R36006247\_issue\_08



# **Installation Manual**

**Unvented Indirect Water Heaters**

**Installation & Servicing Instructions**



## **IMPORTANT**

**Please read & understand all these instructions before commencing installation.  
Please leave this manual with the customer for future reference.**

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# **1. Introduction**

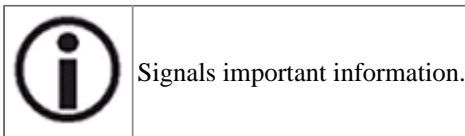
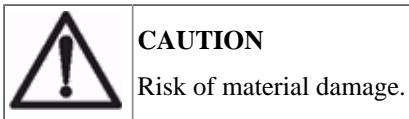
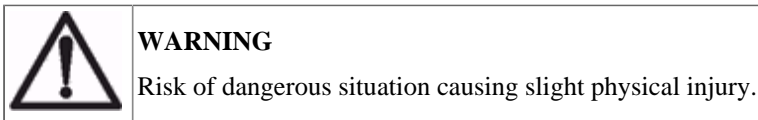
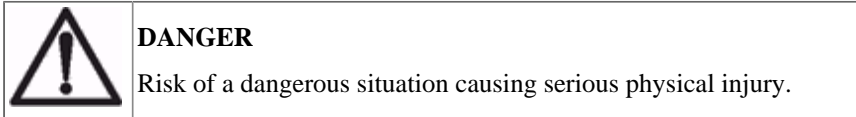
## **1.1 General**

The following instructions are offered as a guide to the user and installer.

The installation must be carried out by a competent plumbing and electrical installer in accordance with Building Regulation G3 (England and Wales), Technical Standard P3 (Scotland) or Building Regulation P5 (Northern Ireland) and the Water Fitting Regulations (England and Wales) or Water Byelaws (Scotland).

## 1.2 Symbols used

In these instructions, various risk levels are employed to draw the user's attention to particular information. In doing so we wish to safeguard the user, avoid hazards and guarantee the correct operation of the appliance.



## 1.3 Abbreviations

- # T&P - Temperature & Pressure relief valve
- # PRV - Pressure Reducing Valve
- # Prv - Pressure relief valve

## 1.4 Liabilities

### Manufacturers liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives.

This appliance complies with the requirements of the CE marking directive.

In the interest of UK customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

Our liability as the manufacturer may not be invoked in the following cases:

- # Failure to abide by the instructions on using the appliance.
- # Faulty or insufficient maintenance of the appliance.
- # Failure to abide by the instructions on installing the product.

### **Installer's liability**

The installer is responsible for the installation and the commissioning of the appliance. The installer must respect the following instructions:

- # Read and follow the instructions given in the manuals provided with the appliance.
- # Carry out installation in compliance with the prevailing legislation and standards.
- # Perform the initial start up and carry out any checks necessary.
- # Complete the commissioning checklist.
- # Explain the installation to the user.
- # If maintenance is necessary, warn the user of the obligation to check the appliance and maintain it in good working order.
- # Give all the instruction manuals to the user.

### **Users liability**

To guarantee optimum operation of the appliance, the user must respect the following instructions:

- # Read and follow the instructions given in the manuals provided with the appliance.
- # Call on qualified professionals to carry out installation and initial start up.
- # Get your fitter to explain your installation to you.
- # Have your required checks and services done.
- # Keep the instruction manuals in good condition and close to the appliance.



This appliance can be used by children aged from 8 years and above and persons with reduced physical sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance.

Cleaning and user maintenance shall not be made by children without supervision.

Children must be supervised to ensure they do not play with the appliance.

## 2. Safety

### 2.1 General safety warnings



#### **DANGER**

This cylinder is unvented and as such becomes pressurised when in operation.  
The combination of pressurisation and hot water could lead to serious physical injury if the safety instructions in this manual are not adhered to.



#### **WARNING**

- # Only competent persons having received adequate training are permitted to work on the appliance and the installation.
- # Do not tamper with any of the safety valves or controls supplied with the cylinder.
- # Before any work, switch off the mains supply to the appliance.
- # Do not switch on if there is a possibility that the water in the cylinder is frozen.



#### **CAUTION**

Do not operate immersion heaters until the cylinder has been filled with water.

### 2.2 Recommendations



#### **WARNING**

When handling the unit, take appropriate precautions for the weight of the unit.  
Weights can be found in [section 3](#), [table 2](#).



#### **CAUTION**

Annual maintenance is recommended by a competent person.

### 2.3 Specific safety instructions



**WARNING**

- # If water discharges from the temperature/pressure relief valve on the cylinder shut down the boiler. Do not turn off any water supply. Contact a competent installer for unvented water heaters to check the system.
- # Do not tamper with any of the safety valves fitted to the system. If a fault is suspected contact a competent installer.
- # **DO NOT** bypass the thermal cut-out(s) in any circumstances.

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### 3. Technical specifications

#### 3.1 Immersion allocation

**Table 1: Immersion allocation table**

Element	94110301		94110302		94110303		94110304		94110305		94110306		94110307		94110308		94110309	
Kw	6		9		12		18		24		30		36		45		54	
Location	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower
Indirect	400	#		#		#		#		#		#		#				
	500	#		#		#		#		#		#		#		#		
	800	#		#		#		#		#		#		#		#		
	1000	#		#		#		#		#		#		#		#		
	1250	#		#		#		#		#		#		#		#		#
	1450	#		#		#		#		#		#		#		#		#
	2000	#		#		#		#		#		#		#		#		#
2500	#		#		#		#		#		#		#		#		#	

**Note:** This table shows what immersion can be fitted to each cylinder size.

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#### 3.2 Technical data

**Table 2: Technical data - Indirect**

	400 Indirect	500 Indirect	800 Indirect	1000 Indirect	1250 Indirect	1450 Indirect	2000 Indirect	2500 Indirect
Max immersion kW rating	36	45	45	45	54	54	54	54



Coil surface area m2		2		3		5		7.5	
Coil rating (kW)	15 l/min	29.4	28.7	31.3	32.9	35.0	30.1	40.2	37.5
	30 l/min	43.6	41.8	52.7	51.4	63.6	61.2	98.4	86.4
	60l/miin	59.7	55.8	76.9	76.5	97.9	91.7	132.2	126.4
Indirect heat time (mins)	15 l/min	43	55	80	91	112	130	180	225
	30 l/min	29	38	48	59	62	72	99	124
	60l/miin	21	28	32	39	40	50	48	62
Pressure drop through primary coil (Mpa)	15 l/min	0.002		0.001					
	30 l/min	0.004		0.008		0.006		0.007	
	60l/miin	0.032		0.044		0.025		0.03	
Heat loss (kWh in 24h)		1.72	2.14	2.74	3.33	3.60	4.17	4.30	4.50
Hot water capacity (volume of water >40°C) drawn off		384	482	776	961	1206	1399	1930	2482
Weight full (kg)		505	610	964	1188	1569	1872	2445	2950
Weight empty (kg)		105	110	164	188	319	322	445	450
Max supply pressure		1.6 MPa (16 bar)							
Max design pressure		0.8 MPa (8 bar)							
Max operating pressure		0.6 MPa (6 bar)							
Max expansion vessel charge pressure		1.0 MPa (10 bar)							
Expansion relief valve setting		0.8 MPa (8 bar)							
T&P valve setting		1 Mpa (10 bar), 90-95°C							
Maximum primary pressure (indirect only)		0.3 MPa (3 bar)							

**Notes:**

1. Indirect cylinders tested in conformance with BS EN 12897:2006.
2. Indirect heat up times based on a 45°C temperature rise, based on a primary flow temperature of 80°C +/- 2°C

**Table 3: Inlet control kits and expansion vessel specification dependant on model**

Commercial Cylinder Volume (ltr)	Pressure Reducing Valve	Pressure Relief Valve	Single Check Valve
400 - 500	1" Integrated inlet control valve		

800	1.25" (1.5 - 6 bar) or (5 -10 bar)	1" x 1.25" (8 bar) or (13 bar)	1.25"
1000	1.25" (1.5 - 6 bar) or (5 -10 bar)	1" x 1.25" (8 bar) or (13 bar)	1.25"
1250 - 1450	1.5" (1.5 - 6 bar) or (5 -10 bar)	1" x 1.25" (8 bar) or (13 bar)	1.5"
2000 - 2500	2" (1.5 - 6 bar) or (5 -10 bar)	1.25" x 1.5" (8 bar) or (13 bar)	2"
<b>Commercial Cylinder Volume (ltr)</b>	<b>Expansion Vessel Size (ltr)</b>	<b>Mounting Kit</b>	<b>Weights</b>
400 - 500	60	Floor Mounted	12kg
800	100	Floor Mounted	17kg
1000 - 1250	150	Floor Mounted	24kg
1450	200	Floor Mounted	38.5kg
2000 - 2500	300	Floor Mounted	41kg

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### 3.3 Dimensions

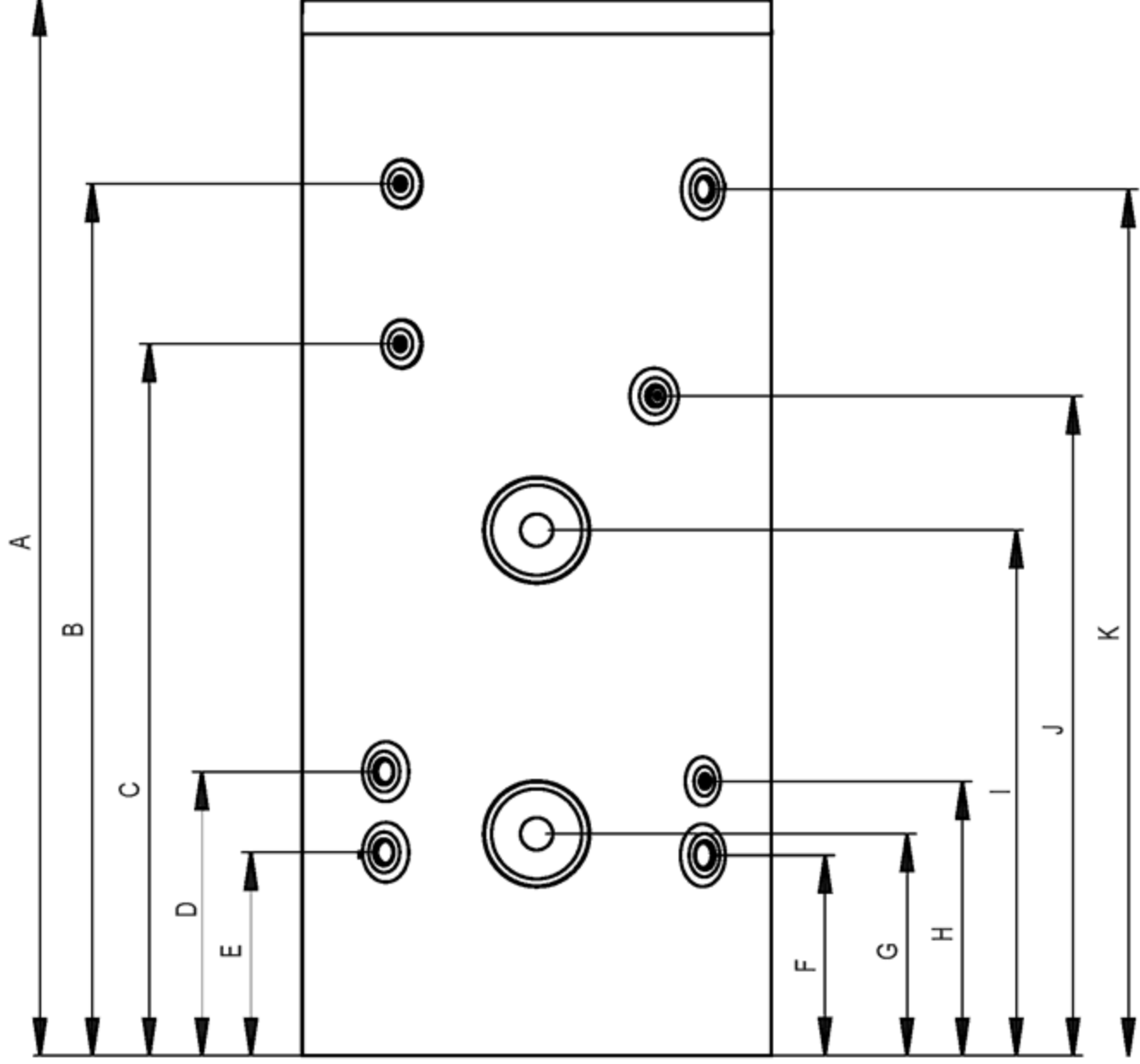



Figure 2: General dimensions

**Table 4: General dimensions table - Indirect**

Item	Connection	400I	500I	Connection	800I	1000I	Connection	1250I	1450I	Connection	2000I	2500I
A	NA	1500	1800	N/A	1906	2301	N/A	1937	2253	N/A	2011	2416
B	N/A			½" BSP	1499	1897	½" BSP	1411	1719	½" BSP	1422	1827
C	½" BSP	669	669	½" BSP	1217	1467	½" BSP	1211	1211	½" BSP	1260	1510
D	1" BSP	499	499	1 ¼" BSP	618	618	1 ½" BSP	707	707	1 ½" BSP	779	779
E	1" BSP	324	324	1 ¼" BSP	443	443	1 ½" BSP	527	527	1 ½" BSP	599	599
F	1" BSP	309	309	1 ½" BSP	437	437	1 ½" BSP	526	526	2" BSP	606	606
G	N/A			N/A	487	487	N/A	526	526	N/A	575	575
H	N/A			½" BSP	657	657	½" BSP	751	751	½" BSP	815	815
I	N/A	774	859	N/A	952	952	N/A	966	966	N/A	1004	1004
J	1" BSP	869	1135	1" BSP	1187	1437	1" BSP	1176	1376	1" BSP	1225	1475
K	N/A	1119	1419	N/A	1502	1897	N/A	1411	1686	N/A	1425	1815
L	N/A	956	956	N/A	1107	1107	N/A	1308	1308	N/A	1560	1560
M	N/A	872	872	N/A	1024	1024	N/A	1224	1224	N/A	1476	1476

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### 3.4 Electrical Diagrams

	<p><b>WARNING</b></p> <p>The high limit thermostat must always operate the zone valve in case of overtemperature.</p>
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#### Thermostat Option 1

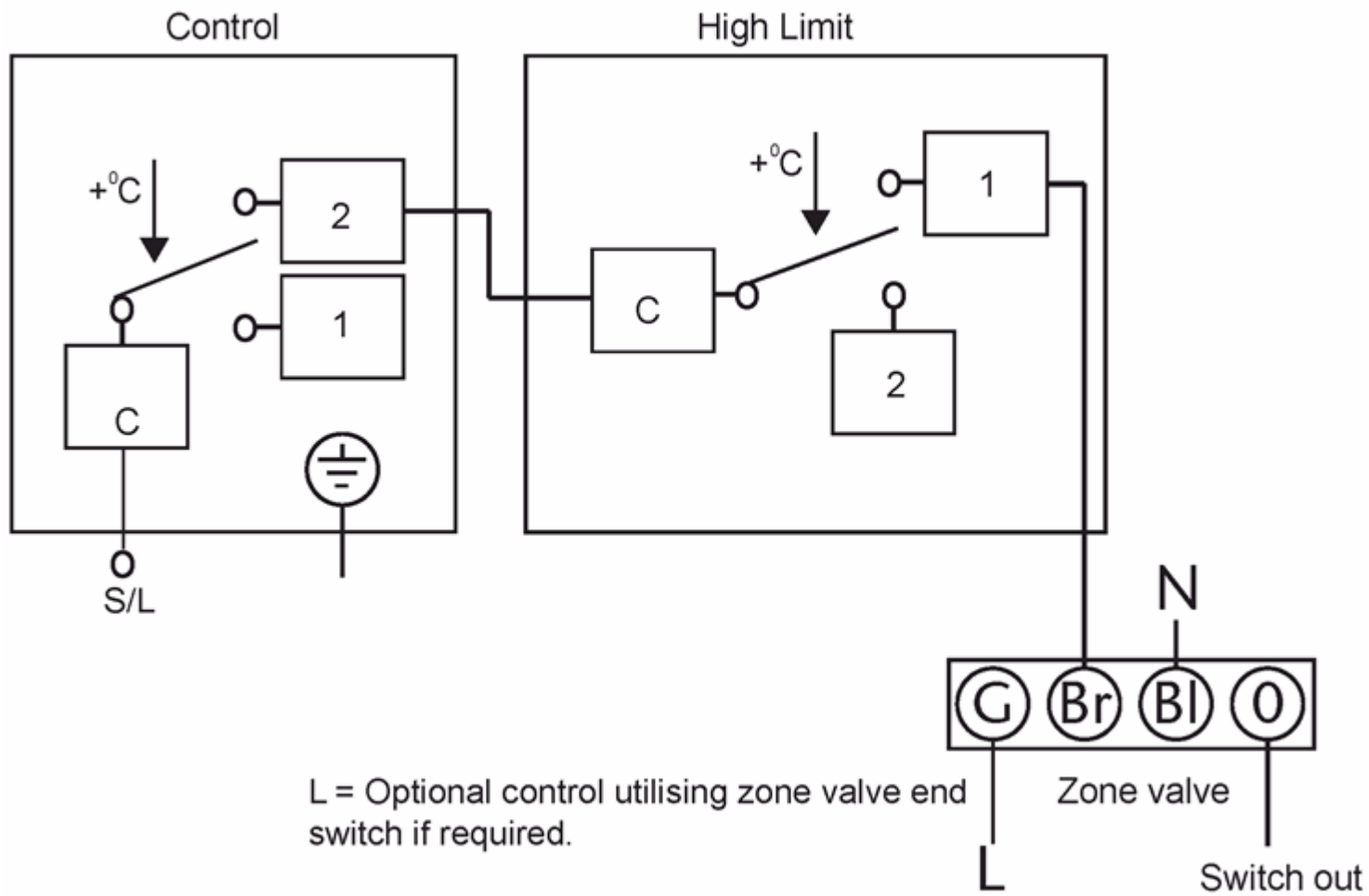
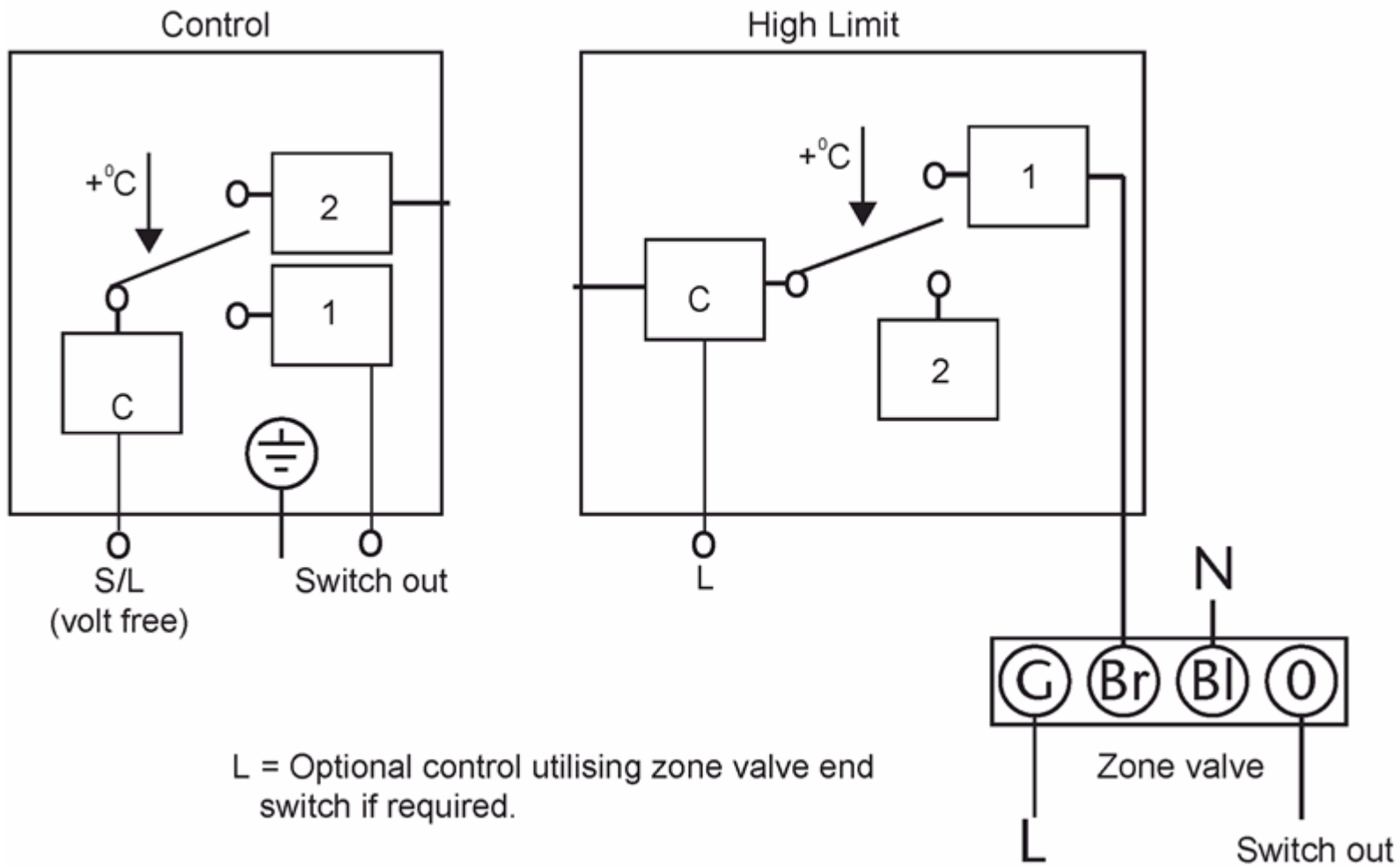
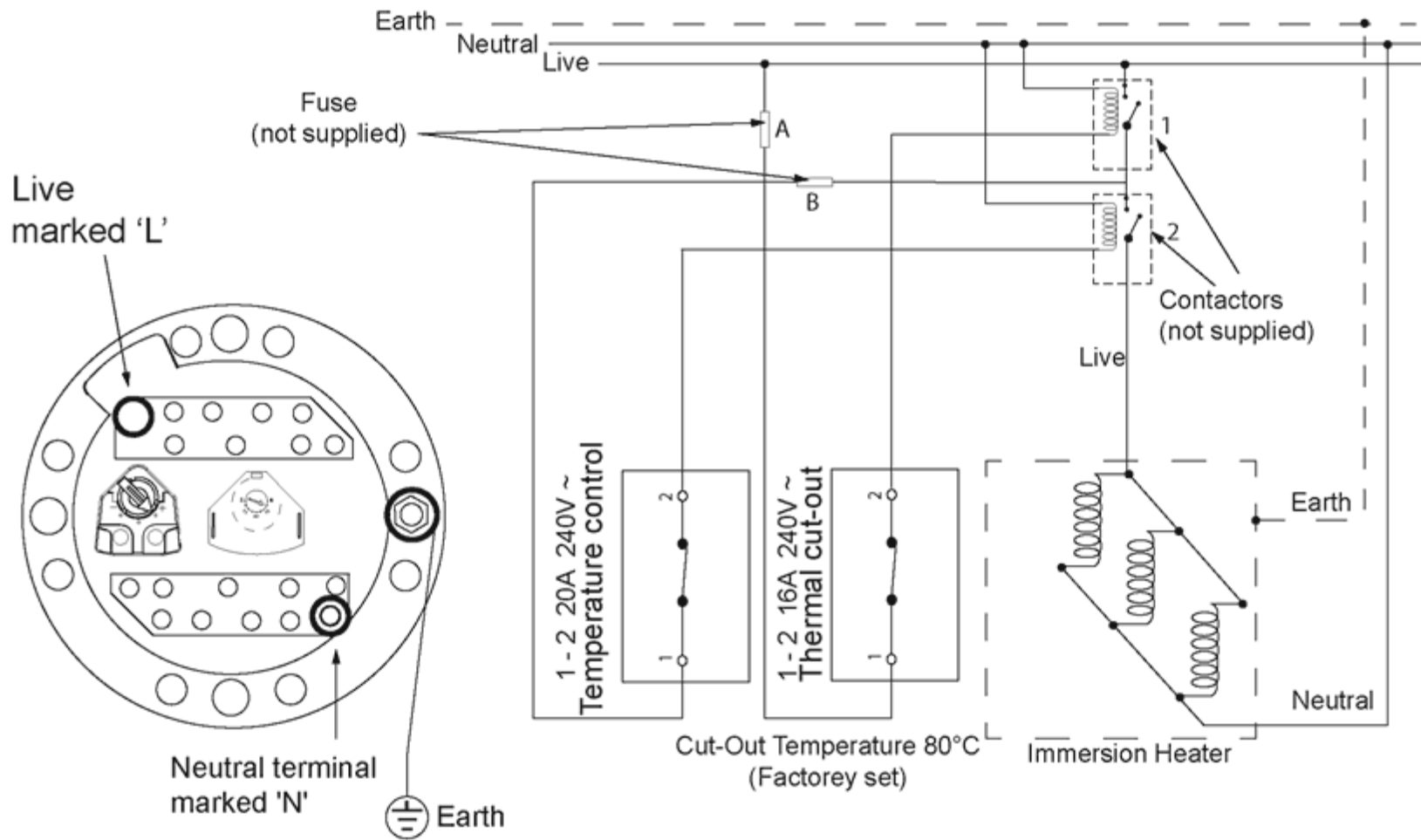


Figure 3: Indirect wiring diagram 1  
**Thermostat Option 2**



**Figure 3a: Indirect wiring diagram 2 - volt free option**

**NOTE:** Option 2 utilises control thermostat to provide volt free control circuit.



Typical head layout for a single phase heater

Figure 4: Single phase wiring schematic

**Note:** The 2 external contactors must be approved components certified for 10,000 cycles of operation for the contactor controlled by the thermostat and at least 30 for the contactor controlled by the non-self-resetting thermal cut-out.

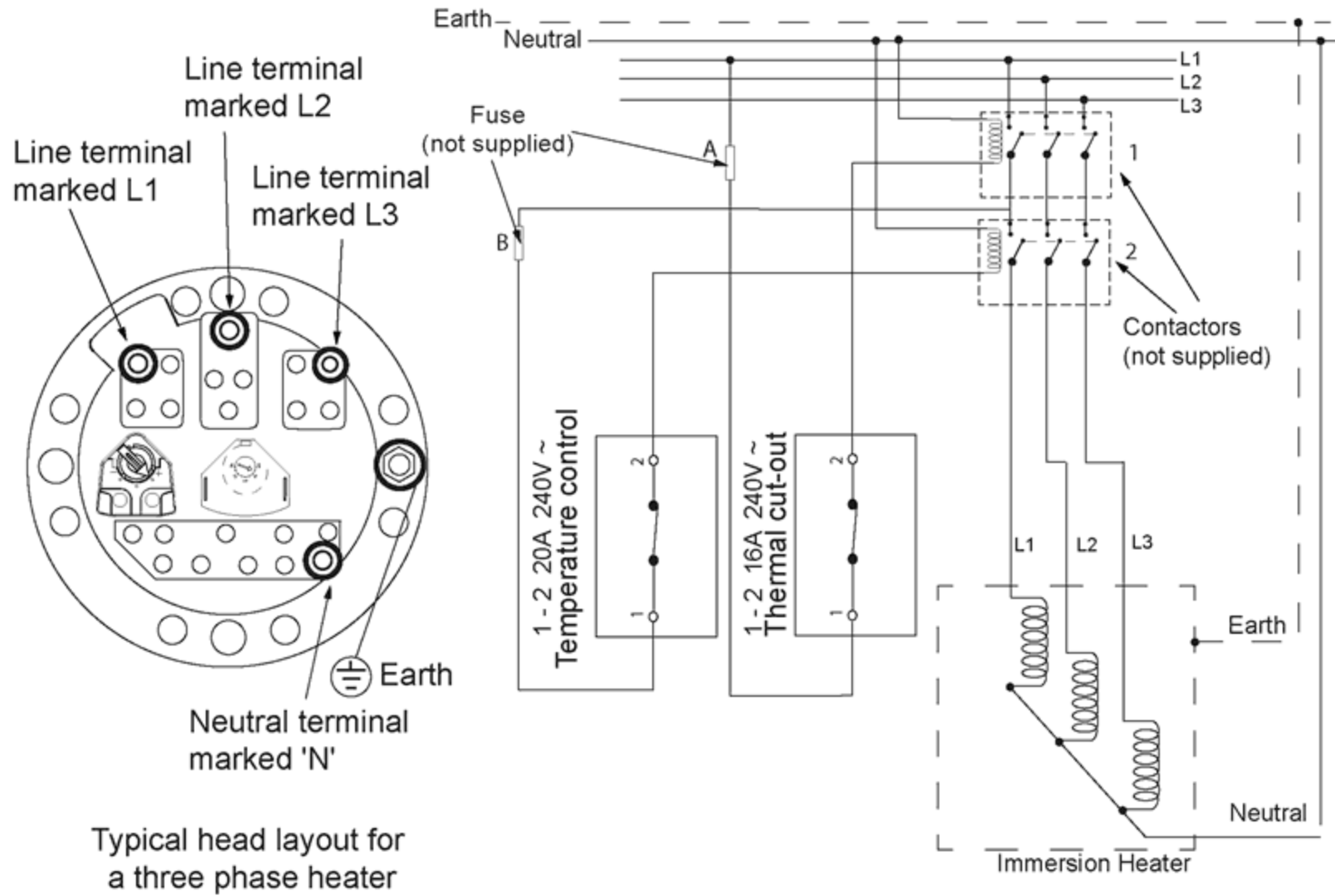




Figure 5: 3 phase wiring schematic

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## **4. Description of the product**

### **4.1 General description**

This product is a purpose designed unvented water heater. The unit has a stainless steel inner vessel, which ensures an excellent standard of corrosion resistance.

The outer casing is a combination of resilient thermoplastic mouldings and soft jacket. All products are insulated with CFC free polyurethane foam to give good heat loss protection.

The unit is supplied complete with all the necessary safety and control devices needed to allow connection to the cold water mains. All these components are preset and should not be tampered with.

### **4.2 Operation principle**

The unvented cylinder is used to heat and store hot water for use in commercial applications.

The water is heated indirectly through a coil in the unit using an indirect heat source. It can also be heated using Auxiliary immersion heaters

To provide pressure to the tap or shower an unvented unit uses the incoming mains water pressure. To do this the cylinder is sealed and not vented. However, when the volume of water is heated it expands and without any room for expansion could cause the cylinder to rupture and fail. To allow expansion of this heated water it is important that an expansion vessel is used. This vessel is pressurised and gives the heated water room to expand.

### **4.3 Main components**

See [Figure 6](#): Main components

### **4.4 Standard delivery**

The delivery includes:

- # Cylinder
- # Literature pack
  - # Instructions (inc benchmark commissioning checklist & service record)
- # Cold water control pack (see [table 3](#))
  - # Expansion vessel (see [table 3](#))
  - # Combination valve (inc pressure reducing valve, pressure relief valve and check valve)
  - # Tundish

# 2 port zone valve

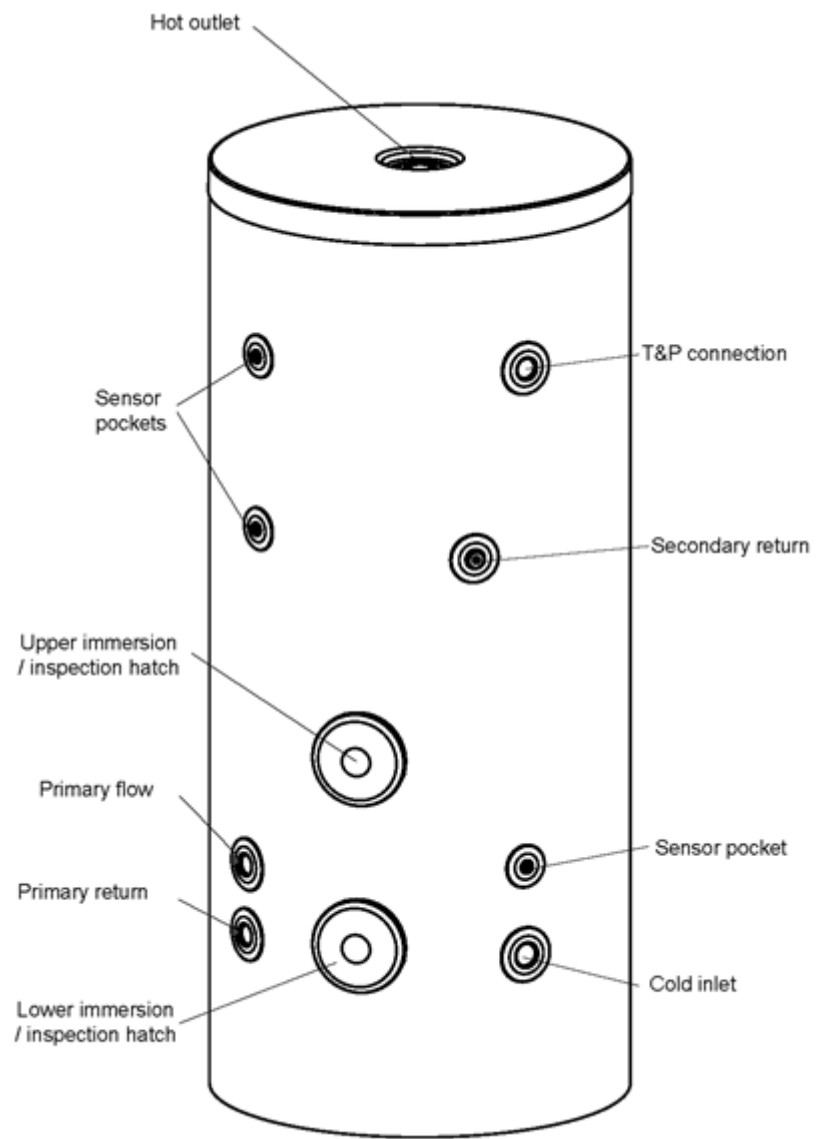



Figure 6: Main connections

**Note:** This is an indirect unit and shows the general position of components but these will change depending on the model.

## 5. Before installation

### 5.1 Installation regulations

	<p><b>WARNING</b></p> <p>Installation of the appliance must be carried out by a qualified engineer in accordance with prevailing and national regulations as listed below.</p> <ul style="list-style-type: none"><li># Building Regulations</li><li># The Building Standards (Scotland)</li><li># The Building Regulations (Northern Ireland)</li><li># I.E.E Electrical Regs</li><li># UK Water Regulations</li></ul>
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### 5.2 Installation requirements

#### Water supply

In an unvented system the pressure and flowrate is directly related to the incoming water supply. For this reason it is recommended that the maximum water demand is assessed and the water supply checked to ensure this demand can be satisfactorily met.

- # The minimum supply requirements should be 0.15MPa (1.5 bar) pressure and 100 litres per minute flow rate.
- # A 28mm cold water supply is recommended as a minimum. However, if a smaller supply exists, which provides sufficient flow, this may be used (although more flow noise may be experienced).
- # The higher the available pressure and flow rate the better the system performance.
- # See [table 2](#) for cylinder operating pressures. This is controlled by the cold water combination valve assembly.

#### Outlet/terminal fittings (taps, etc.)

- # The cylinder can be used with most types of terminal fittings.
- # Outlets situated higher than the cylinder will give outlet pressures lower than that at the heater, a 10m height difference will result in a 1 bar pressure reduction at the outlet.
- # All fittings, pipework and connections must have a rated pressure of at least 8 bar at 80°C.

#### Limitations

The cylinder should not be used in association with any of the following:

- # Solid fuel boilers or any other boiler in which the energy input is not under effective thermostatic control, unless additional and appropriate safety measures are installed.
- # Ascending spray type bidets or any other class 1 back syphonage risk requiring that a type A air gap be employed.
- # Steam heating plants unless additional and appropriate safety devices are installed.
- # Situations where maintenance is likely to be neglected or safety devices tampered with.
- # Water supplies that have either inadequate pressure or where the supply may be intermittent.
- # Situations where it is not possible to safely pipe away any discharge from the safety valves.
- # In areas where the water consistently contains a high proportion of solids, e.g. suspended matter that could block the strainer, unless adequate filtration can be ensured.
- # In areas where the water supply contains chloride levels that exceed 250mg/l.

### 5.3 Choice of location

The cylinder must be vertically floor mounted. Although location is not critical, the following points should be considered:

- # The cylinder should be sited to ensure minimum dead leg distances, particularly to the point of most frequent use.
- # Avoid siting where extreme cold temperatures will be experienced. All exposed pipe work should be insulated.
- # The discharge pipework from the safety valves must have minimum fall of 1:200 from the unit and terminate in a safe and visible position.

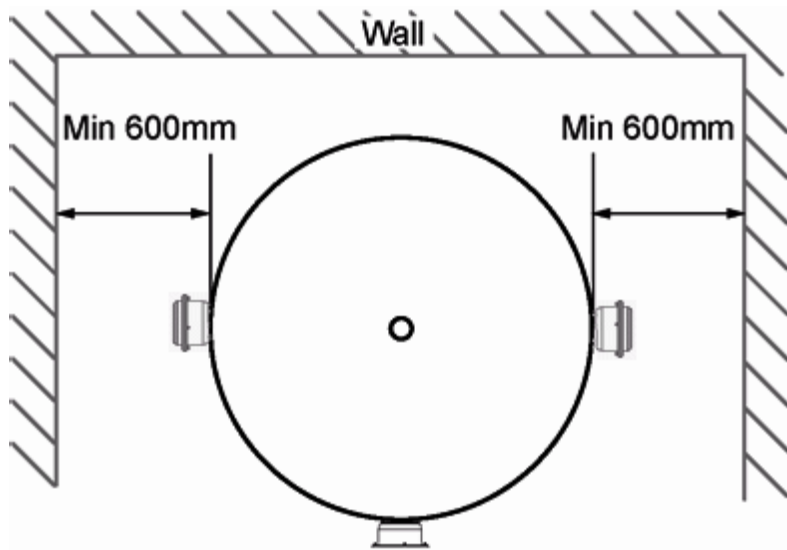


Figure 7: Siting the unit

- # Access to associated controls and immersion heaters must be available for the servicing and maintenance of the system. Where these controls are installed against a wall a minimum distance of 600mm must be left.
- # Ensure that the floor area for the cylinder is level and capable of permanently supporting the weight when full of water (see [table 2](#) for weights).

## 5.4 Transport

Prior to installation the unit should be stored and transported in an area free from excessive damp or humidity.

To aid installation, the water heater (800ltr upwards) is provided with lifting points located at the top of the unit. To access the lifting eyes please remove the "hot outlet" grommet followed by the cylinder lid.

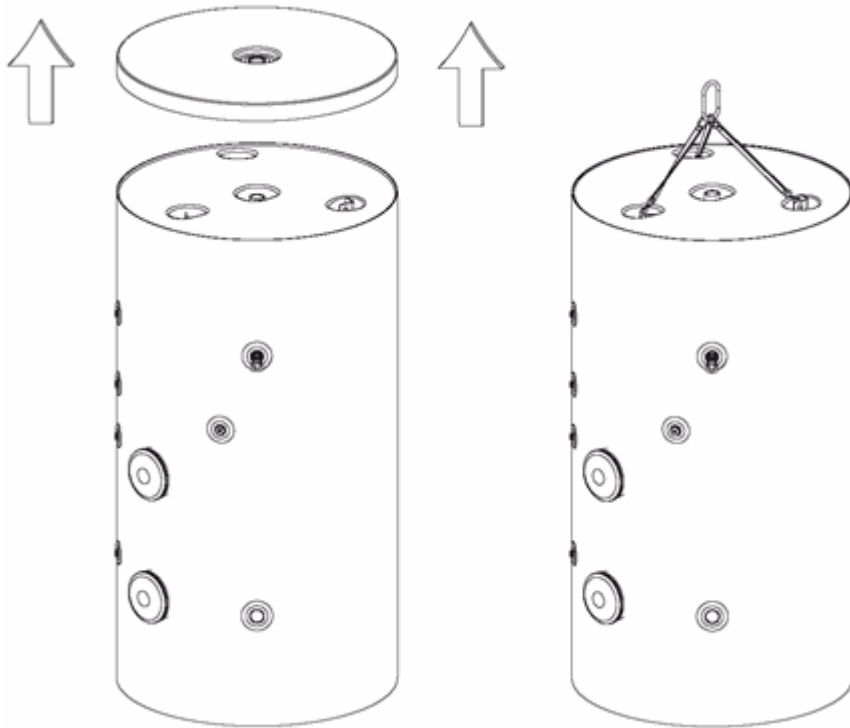


Figure 8: Lifting the unit

## 6. Installation


### 6.1 General

After reading the previous sections in this booklet and choosing a good location for the unit please install, paying attention to the following hydraulic, electrical and commissioning sections.

#### Boiler selection

- # The boiler should have a control thermostat and non self-resetting thermal cut-out and be compatible with unvented storage water heaters.
- # Where use of a boiler without a thermal cut-out is unavoidable a "low head" open vented primary circuit should be used. The feed and expansion cistern head above the cylinder should not exceed 2.5m.
- # Can be a sealed system or open vented type - maximum primary pressure 3 bar.
- # The boiler cannot be vented through the cylinder.

### 6.2 Water connections

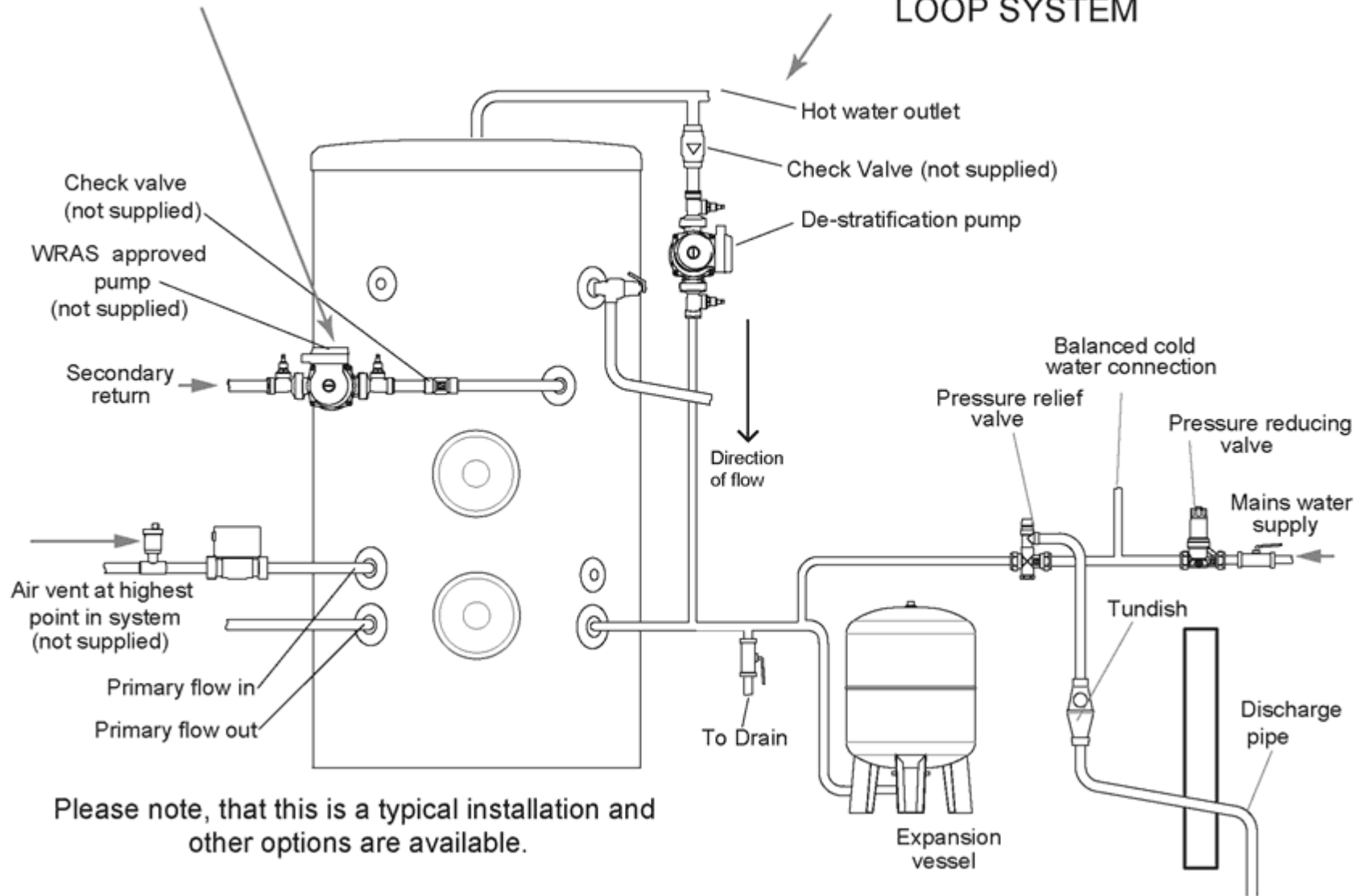
	<p><b>WARNING</b></p> <ul style="list-style-type: none"><li># Under no circumstances should the factory fitted temperature/pressure relief valve be removed other than by a competent person. To do so will invalidate any guarantee or claim.</li><li># The cold water combination valve assembly must be fitted on the mains water supply to the cylinder.</li><li># No control or safety valves should be tampered with or used for any other purpose.</li><li># The discharge pipe should not be blocked or used for any other purpose.</li><li># The tundish should not be located adjacent to any electrical components.</li></ul>
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Refer to the installation schematic, fig 9 for details on the pipework layout. Specific details for the discharge pipework layout is also provided in figure 11.

- # All pipe fittings are made via BSP female pipe connections directly to the unit.
- # A stopcock or servicing valve should be incorporated into the cold water supply to enable the cylinder and its associated controls to be isolated and serviced (not supplied).
- # The expansion vessel must be connected between the cold water combination valve and the cylinder.

# SECONDARY CIRCULATION

# TYPICAL DE-STRATIFICATION LOOP SYSTEM



Please note, that this is a typical installation and other options are available.




Figure 9: Installation schematic

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- # The location of the expansion vessel should allow access to recharge the pressure as and when necessary.
- # A suitable draining tap should be installed in the cold water supply to the cylinder between the expansion valve and the heater at as low a level as possible.
- # It is recommended that the outlet point of the drain pipework be at least 1 metre below the level of the heater (this can be achieved by attaching a hose to the drain tap outlet spigot).

### Cold water control pack

	<p><b>CAUTION</b></p> <ul style="list-style-type: none"><li># The expansion vessel pressure must be set in accordance with the inlet pressure set on the pressure reducing valve.</li><li># Flush supply pipework before connection to remove all flux and debris prior to fitting the inlet controls. Failure to do this may result in irreparable damage to the controls and will invalidate any warranty.</li></ul>
---	--

- # The cold water control pack can be connected anywhere on the cold water cylinder supply prior to the expansion vessel.
- # The control pack incorporates the strainer, check valve, core unit and expansion relief valve.
- # The pressure settings are adjustable and should be set between 1.5 & 6 bar.
- # The valve can be fitted in any orientation to suit the installation as long as the valve is installed with the direction of flow arrows pointing in the correct direction.
- # The expansion relief valve should be installed with the discharge pipework in either the horizontal position or facing downwards.
- # No other valves should be placed between the cold water combination valve and the cylinder.
- # The blank plastic plugs in the body of the pressure relief valve are pressure gauge connections to enable pressure monitoring to be carried out, should the system develop a fault. It is recommended that these be accessible (the pressure reducing valve has two - only one need be accessible).

### Primary circuit control

- # The 2 port motorised valve supplied with the cylinder **MUST** be fitted on the primary flow to the cylinder heat exchanger and wired such that in the event of the cylinder overheating it will close the primary circuit.
- # Primary circulation to the cylinder heat exchanger must be pumped; gravity circulation **WILL NOT WORK**.
- # It is recommended that an air bleed or automatic air vent is incorporated in the primary return pipe work close to the unit.
- # Boiler flow temperature should be set to 82° (maximum flow temperature to primary heat exchanger 89°C).

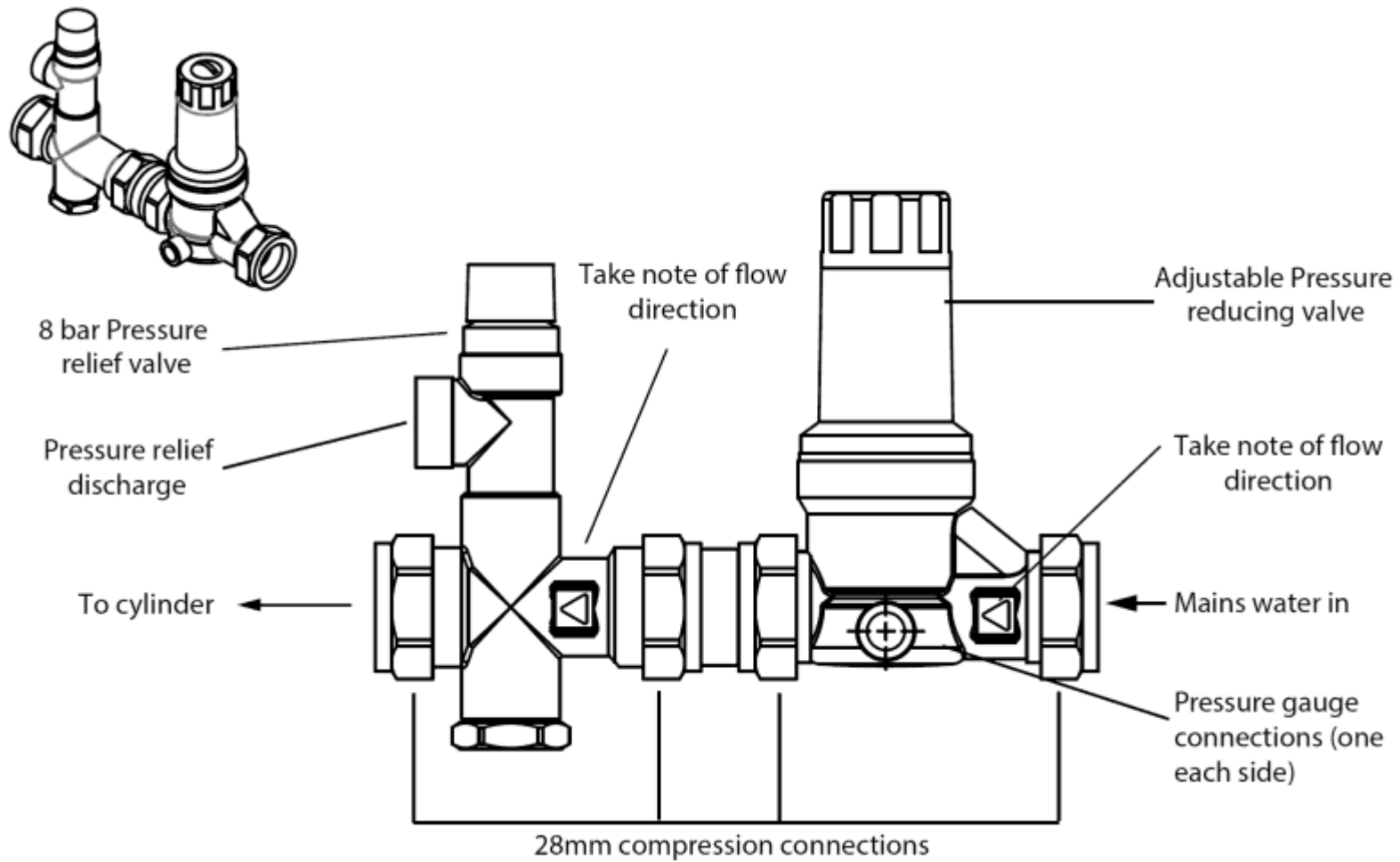


Figure 10: Cold water combination valve (400 & 500ltr)

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### Secondary circulation

If secondary circulation is required it is recommended that it be connected to the cylinder as shown (see [fig 11](#), below).

- # The secondary return pipe should be in 28mm pipe and incorporate a check valve to prevent backflow.
- # A suitable WRAS approved bronze circulation pump will be required.
- # On large systems, due to the increase in system water content, it may be necessary to fit an additional expansion vessel to the secondary circuit. This should be done if the capacity of the secondary circuit exceeds 10 litres.

Pipe capacity (copper):

15mm O.D. = 0.13 l/m (10 litres = 77m)

22mm O.D. = 0.38 l/m (10 litres = 26m)

28mm O.D. = 0.55 l/m (10 litres = 18m)

**Note:** Plastic pipe capacities may be reduced due to thicker wall sections.



In installations where a secondary circulation is required particular attention should be paid by the installer to maintain the returning water temperature (guidelines state that a minimum of 55°C return temperature is advisable).

Factors such as, but not limited to, secondary circulation flow rates, minimising heat loss of all secondary circuit pipework and timed operation during periods of high demand are critical to the correct operation and longevity of the heating element(s) and thermostats.



Secondary circulation is not recommended when using auxiliary immersions on off-peak tariffs where the secondary circulation is not controlled in conjunction with the heat source as performance can be affected.

### **De-stratification kits**

The correct size of de-stratification kit must be used with your cylinder to ensure the volume can be circulated in 1 hour. The pump instructions will need to be reviewed for information on the correct setting. Please follow the installation schematic below for guidance. When the system circulates needs to be specified by the installer to ensure water is not drawn off during the de-stratification process. If a hot water demand is required during this period cold water may be discharged from the hot outlet. It is recommended that a check valve be installed before the pump to stop any risk of cold water draw off through the pump when it is not in use.

For guidance on installation please refer to [figure 9](#).

### **Discharge**

It is a requirement of Building Regulation G3 that any discharge from an unvented system is conveyed to where it is visible, but will not cause danger to persons in or about the building. The tundish and discharge pipes should be fitted in accordance with the requirements and guidance notes of Building Regulation G3. The G3 Requirements and Guidance section 3.50 - 3.63 are reproduced in the following sections of this manual. For discharge pipe arrangements not covered by G3 Guidance advice should be sought from your local Building Control Officer. Any discharge pipe connected to the pressure relief devices (expansion valve and temperature/pressure relief valve) must be installed in a continuously downward direction and in a frost free environment.

Water may drip from the discharge pipe of the pressure relief device. This pipe must be left open to the atmosphere. The pressure relief device is to be operated regularly to remove lime deposits and to verify that it is not blocked.

### **G3 REQUIREMENT**

"...there shall be precautions... to ensure that the hot water discharged from safety devices is safely conveyed to where it is visible but will not cause danger to persons in or about the building."

The following extract is taken from the latest G3 Regulations

#### **Discharge pipes from safety devices**

##### **Discharge pipe D1**

3.50 Each of the temperature relief valves or combined temperature and pressure relief valves specified in 3.13 or 3.17 should discharge either directly or by way of a manifold via a short length of metal pipe (D1) to a tundish.

3.51 The diameter of discharge pipe (D1) should be not less than the nominal outlet size of the temperature relief valve.

3.52 Where a manifold is used it should be sized to accept and discharge the total discharge from the discharge pipes connected to it.

3.53 Where valves other than the temperature and pressure relief valve from a single unvented hot water system discharge by way of the same manifold that is used by the safety devices, the manifold should be factory fitted as part of the hot water storage system unit or package.

##### **Tundish**

3.54 The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the valve, with no more than 600mm of pipe between the valve outlet and the tundish (see [fig 11](#)).

**Note:** To comply with the Water Supply (Water Fittings) Regulations, the tundish should incorporate a suitable air gap.

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3.55 Any discharge should be visible at the tundish. In addition, where discharges from safety devices may not be apparent, e.g. in dwellings occupied by people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place, e.g. electronically operated.

##### **Discharge pipe D2**

3.56 The discharge pipe (D2) from the tundish should:

- (a) have a vertical section of pipe at least 300mm long below the tundish before any elbows or bends in the pipework (see [fig. 11](#)); and
- (b) be installed with a continuous fall thereafter of at least 1 in 200.

3.57 The discharge pipe (D2) should be made of:

- (a) metal; or

(b) other material that has been demonstrated to be capable of safely withstanding temperatures of the water discharged and is clearly and permanently marked to identify the product and performance standard (e.g. as specified in the relevant part of BS 7291).

3.58 The discharge pipe (D2) should 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. for discharge pipes between 9m and 18m the 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. See [Fig 12](#), [Table 8](#) and the worked example.

**Note:** An alternative approach for sizing discharge pipes would be to follow Annex D, section D.2 of BS 6700:2006 Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

3.59 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.

3.60 The discharge pipe should not be connected to a soil discharge stack unless it can be demonstrated that the soil discharge stack is capable of safely withstanding temperatures of the water discharged, in which case, it should:

- (a) contain a mechanical seal, not incorporating a water trap, which allows water into the branch pipe without allowing foul air from the drain to be ventilated through the tundish;
- (b) be a separate branch pipe with no sanitary appliances connected to it;
- (c) if plastic pipes are used as branch pipes carrying discharge from a safety device they should be either polybutylene (PB) to Class S of BS 7291-2:2006 or cross linked polyethylene (PE-X) to Class S of BS 7291-3:2006; and
- (d) be continuously marked with a warning that no sanitary appliances should be connected to the pipe.

**Note:**

1. Plastic pipes should be joined and assembled with fittings appropriate to the circumstances in which they are used as set out in BS EN ISO 1043-1.
2. Where pipes cannot be connected to the stack it may be possible to route a dedicated pipe alongside or in close proximity to the discharge stack.

### **Termination of discharge pipe**

3.61 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.

3.62 Examples of acceptable discharge arrangements are:

- (a) to a trapped gully with the end of the pipe below a fixed grating and above the water seal;
- (b) downward discharges at low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility; and
- (c) discharges at high level: e.g. into a metal hopper and metal downpipe with the end of the discharge pipe clearly visible or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastic guttering system that would collect such discharges.

3.63 The discharge would consist of high temperature water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

**Worked example of discharge pipe sizing**

Fig 11: shows a G1/2 temperature relief valve with a discharge pipe (D2) having 4 No. elbows and length of 7m from the tundish to the point of discharge.

From Table 5:

Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G1/2 temperature relief valve is 9.0m.

Subtract the resistance for 4 No. 22mm elbows at 0.8m each = 3.2m

Therefore the 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 valves equates to 18m.

Subtract the resistance of 4 No. 28mm elbows at 1.0m each = 4.0m

Therefore the maximum permitted length equates to: 14m

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

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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	15mm	22mm 28mm 35mm	up to 9m up to 18m up to 27m	0.8m 1.0m 1.4m
G3/4	22mm	28mm 35mm 42mm	up to 9m up to 18m up to 27m	1.0m 1.4m 1.7m
G1	28mm	35mm 42mm 54mm	up to 9m up to 18m up to 27m	1.4m 1.7m 2.3m

Table 5: Sizing of copper discharge pipe (D2) for common temperature relief valve outlet sizes

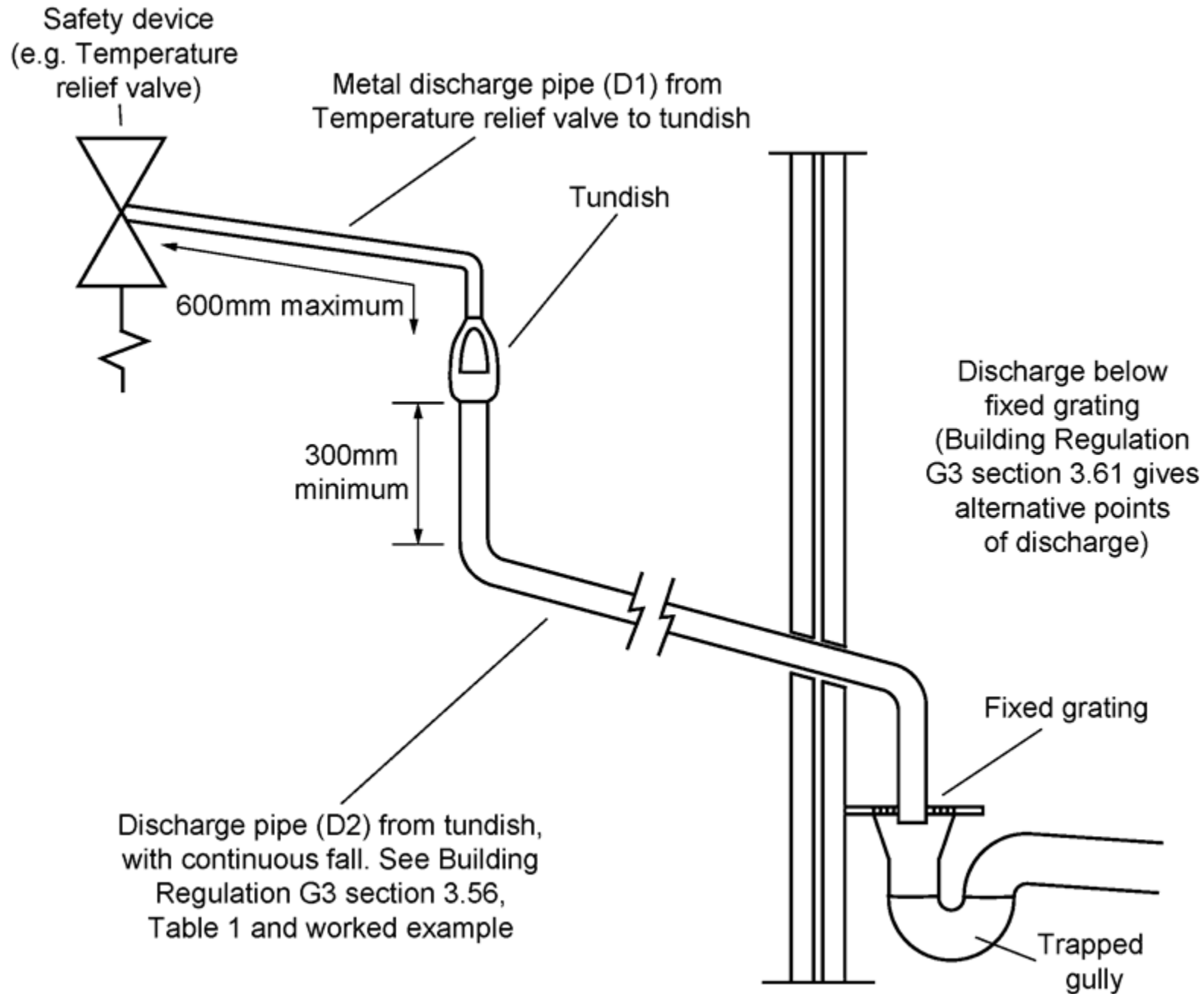



Figure 11: Typical discharge pipe arrangement (extract from Building Regulation G3 Guidance Section 3.50)

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### 6.3 Electrical connections

In case of difficulty contact service support.

	<p><b>WARNING</b></p> <ul style="list-style-type: none"><li># Disconnect from the mains electrical supply before removing any covers.</li><li># Never attempt to replace the immersion heater(s) other than with the recommended immersion heater(s).</li><li># <b>DO NOT</b> bypass the thermal cut-out(s) in any circumstances. All electrical wiring should be carried out by a competent electrician and be in accordance with the latest I.E.E Wiring Regulations.</li><li># Each circuit must be protected by a suitable fuse and double pole isolating switch with a contact separation of at least 3mm in both poles.</li><li># <b>DO NOT</b> operate the immersion heaters until the cylinder has been filled with water.</li></ul>
---	--

- # The Auxiliary immersion heater(s) should be wired in accordance with fig's 4 and 5.
- # All immersion heaters are fitted with a thermostat which is fitted in the centre of the heater plate and a cut-out which is fitted to the side of the thermostat.  
These **MUST** be wired in series with the operating coil circuit of the contactor (not supplied).

### Space and heating systems controls

- # The controls provided with the cylinder will ensure the safe operation of the unit within the central heating system. Other controls will be necessary to control the space heating requirements and times that the system is required to function.
- # The cylinder is compatible with most heating controls. Please refer to the controls manufacturers instructions, supplied with the controls selected.

### 6.4 Filling the installation

- # Check expansion vessel pre-charge pressure. The expansion vessel pressure must be set in accordance with the inlet pressure set on the pressure reducing valve.
- # Ensure the drain cock is **CLOSED**.
- # Open a hot tap furthest from the cylinder.
- # Open the mains stop cock to fill the unit. When water flows from the tap, allow to run for a few minutes to thoroughly flush through any residue, dirt or swarf, then close the tap.
- # Open successive hot taps to purge the system of air.

## 7. Commissioning

### 7.1 General



After filling the installation with water in the previous section please follow the following steps to complete the installation of the unit.



**WARNING**

**DO NOT** operate the immersion heaters or primary circuit until the cylinder has been filled with water.

## 7.2 Checklist before commissioning

- # Check all water connections for leaks and rectify as necessary.
- # Turn off mains water supply.
- # Remove the pressure reducing valve head work to access the strainer mesh, clean and re-fit.
- # Turn the water supply back on.
- # Manually open, for a few seconds, each relief valve in turn, checking that water is discharged and runs freely through the tundish and out at the discharge point.
- # Ensure that the valve(s) reseat satisfactorily.

## 7.3 Commissioning procedure

### Auxiliary

- # Switch on electrical supply to the immersion heater(s) and allow the cylinder to heat up to normal working temperature (65°C recommended).
- # If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment spindle on front of the immersion heater thermostat and rotating.  
The adjustment represents a temperature range of 10°C to 80°C.
- # Check the operation of thermostat(s) and that no water has issued from the expansion relief valve or temperature/pressure relief valve during the heating cycle.

### Primary circuit

- # Fill the indirect (primary) circuit following the boiler manufacturer's commissioning instructions.
- # To ensure the cylinder primary heat exchanger is filled, the 2 port motorised valve (supplied) should be manually opened by moving the lever on the motor housing to the **MANUAL** setting. When the primary circuit is full return the lever to the **AUTOMATIC** position.
- # Switch on the boiler, ensure the programmer is set to Hot Water and allow the cylinder to heat up to a normal working temperature 65°C (recommended).

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### Benchmark

The cylinder is covered by the Benchmark Scheme which aims to improve the standards of installation and commissioning of domestic heating and hot water systems in the UK and to encourage regular servicing to optimise safety, efficiency and performance.

Benchmark is managed and promoted by the Heating and Hotwater Industry Council. For more information visit [www.centralheating.co.uk](http://www.centralheating.co.uk).

Please ensure that the installer has fully completed the Benchmark Checklist and that you have signed it to say that you have received a full and clear explanation of its operation. The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England & Wales).

All installations must be notified to Local Area Building Control either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the Benchmark Checklist.

This product should be serviced regularly to optimise its safety, efficiency and performance. The service engineer should complete the relevant Service Record on the Benchmark Checklist after each service.

The Benchmark Checklist may be required in the event of any warranty work.

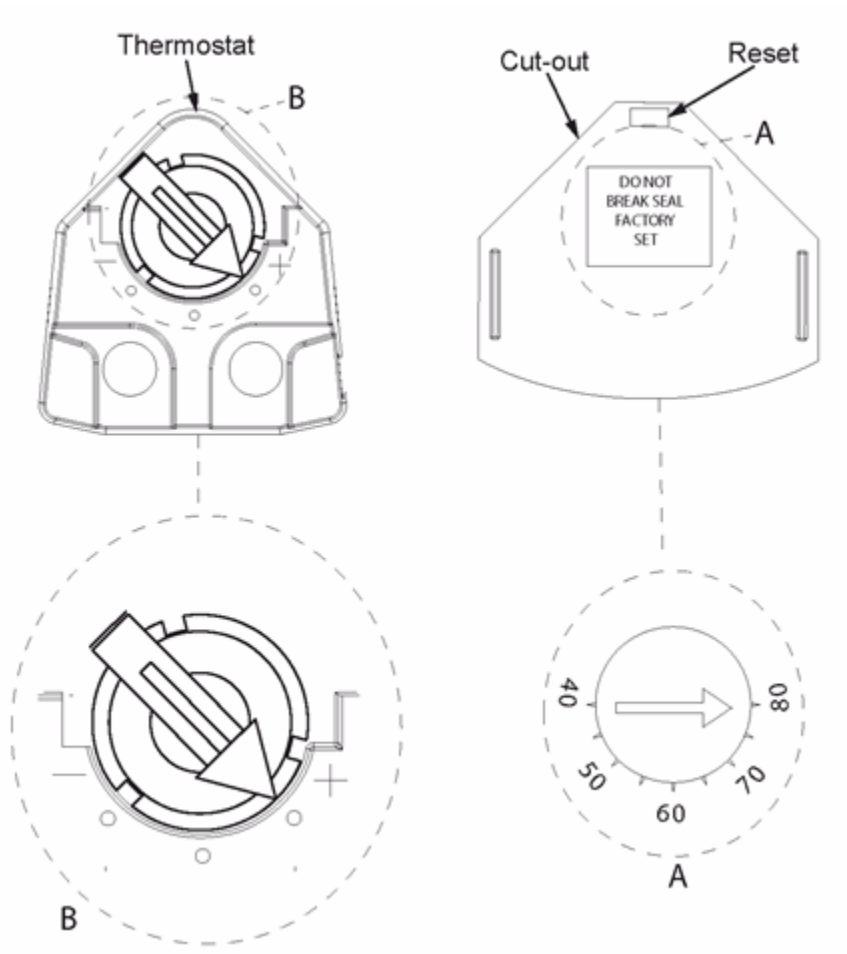


Figure 12: Auxiliary controls

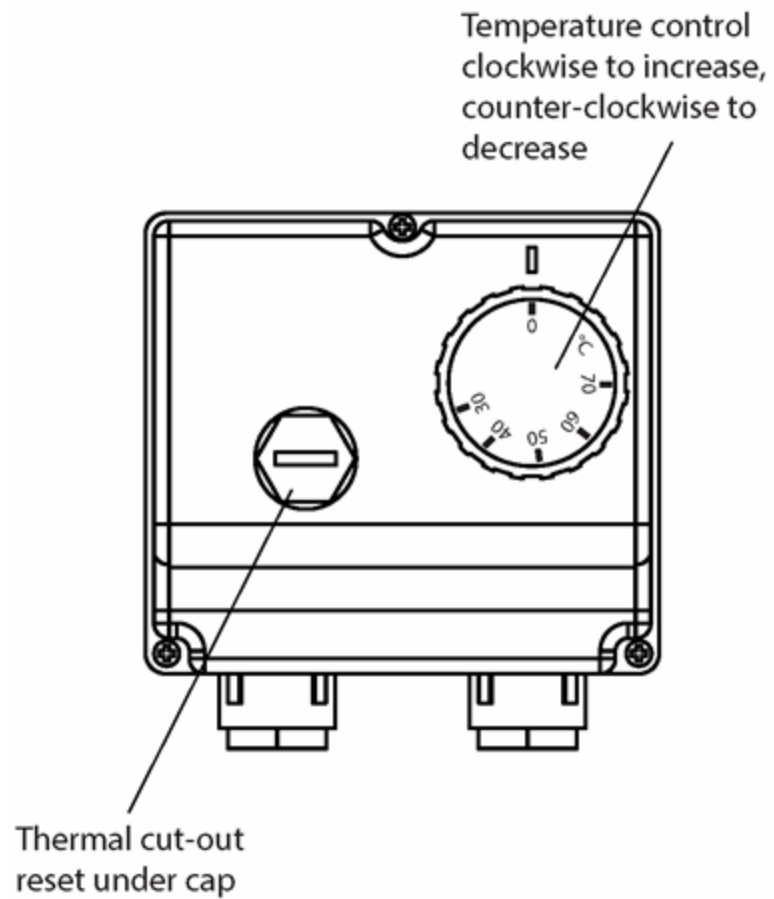


Figure 13: Indirect controls  
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## 8. Operation

### 8.1 General

**WARNING**

- # If water discharges from the temperature/pressure relief valve on the cylinder shut down the heat source. Do not turn off any water supply. Contact a competent installer for unvented water heaters to check the system.
- # Do not tamper with any of the safety valves fitted to the system. If a fault is suspected contact a competent installer.
- # **DO NOT** bypass the thermal cut-out(s) in any circumstances.

**Flow performance**

When initially opening hot outlets a small surge in flow may be noticed as pressures stabilise. This is quite normal with unvented systems. In some areas cloudiness may be noticed in the hot water. This is due to aeration of the water, is quite normal and will quickly clear.

**Temperature controls - Auxiliary**

- # All immersion heaters are fitted with a thermostat which is fitted in the heater plate and a cut-out which is fitted to the side of the thermostat.
- # Access to the thermostat can be made by opening the immersion heater cover - **DISCONNECT THE ELECTRICAL SUPPLY BEFORE OPENING THE COVER(S)**.
- # Temperature adjustment is made by rotating the adjustment knob on the top of the thermostat. The adjustment represents a temperature range of 10°C to 80°C.
- # Maximum working temperature is 80°C/176°F. In very hard water areas limit to 60/65°C (140/150°F).
- # For optimal working conditions the thermostat should be set to 70°C max. If the thermostat is set above 70°C there could be instances of nuisance tripping with the thermal cut-out.
- # The thermal cut out is factory set by the manufacturer and should not be tampered with. Any damage caused to the label may invalidate your warranty.

**DO NOT** bypass the thermal cut-out(s) in any circumstances.

**Temperature controls - Primary Circuit**

The cylinder units are fitted with an indirect thermostat and thermal cut-out. These controls must be wired in series with the 2 port motorised zone valve supplied to interrupt the flow of primary water around the heat exchanger coil when the control temperature has been reached.

**DO NOT** bypass the thermal cut-out(s) in any circumstances.

**Operational faults**

Operational faults and their possible causes are detailed in the Fault Finding section. It is recommended that faults should be checked by a competent installer.

The air volume within the expansion vessel will periodically require recharging to ensure expanded water is accommodated within the system. A discharge of water **INTERMITTENTLY** from the expansion valve will indicate the air volume has reduced to a point where it can no longer accommodate the expansion.

## 9. Maintenance

### 9.1 General

#### Maintenance requirements

Unvented hot water systems have a continuing maintenance requirement in order to ensure safe working and optimum performance. It is essential that the relief valve(s) are periodically inspected and manually opened to ensure no blockage has occurred in the valves or discharge pipework.

Similarly replacement of the air in the expansion vessel will help to prevent possible operational faults.

The maintenance checks described below should be performed by a competent person on a regular basis, e.g. annually to coincide with boiler maintenance.

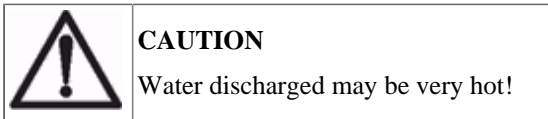
After any maintenance, please complete the relevant Service Interval Record section of the Benchmark Checklist.

### 9.2 Standard inspection & maintenance operations

#### Inspection

The immersion heater boss can be used as an access for inspecting the cylinder internally.

#### Safety valve operation



- # Manually operate the temperature/pressure relief valve for a few seconds.
- # Check water is discharged and that it flows freely through the tundish and discharge pipework.
- # Check valve reseats correctly when released.
- # Repeat the above procedure for the expansion relief valve.

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#### Descaling immersion heater(s)

- # Turn off the mains water supply, isolate the electrical supply and turn off boiler
- # Attach a hosepipe to the drain cock having sufficient length to take water to a suitable discharge point below the level of the unit.
- # Open a hot tap close to the unit and open drain cock to drain unit.
- # Open the cover(s) to the immersion heater housing(s) and disconnect wiring from immersion heater(s) thermostat(s).

- # Remove the 8 nuts and withdraw the immersion heater. Take care when lifting the immersion heater out of the cylinder and work within safe working practices.
- # Carefully remove any scale from the surface of the immersion.



**CAUTION**

**DO NOT** use a sharp implement as damage to the element surface could be caused.

- # Ensure sealing surfaces are clean and seals are undamaged, if in doubt fit a new gasket. (spare part number 95611025)
- # Replace immersion heater(s) and make sure the 8 nuts are correctly torqued (20Nm or 14.75 ft/lbf)
- # Rewire, check, close and secure immersion heater housing cover(s).

### Expansion vessel charge pressure

- # Remove the dust cap on top of the vessel.
- # De-pressurise the system by turning the mains supply off and then opening a hot tap.
- # Check the charge pressure using a tyre pressure gauge. The pressure must be set in accordance with the inlet pressure set on the pressure reducing valve.
- # If it is lower than the required setting it should be recharged using a tyre pump (Schrader valve type).



**CAUTION**

**DO NOT OVER-CHARGE**

- # Re-check the pressure and when correct replace the dust cap.

### Re-commissioning

- # Check all electrical and plumbing connections are secure. Close the drain cock.
- # With a hot tap open, turn on the cold water supply and allow unit to refill.
- # **DO NOT** switch on the immersion heater(s) or boiler until the unit is full of water.
- # When water flows from the hot tap, allow it to flow for a short while to purge air and flush through any disturbed particles.
- # Close hot tap and then open successive hot taps in system to purge any air.
- # When completely full and purged check system for leaks.
- # The heating source (immersion heater(s) or boiler) can then be switched on.

## 10. Troubleshooting

**WARNING**

Do not tamper with any of the safety valves or controls supplied with the cylinder as this will invalidate any guarantee.

## 10.1 Fault finding

### Important

- # After servicing, complete the relevant Service Interval Record section of the Benchmark Checklist.
- # Servicing should only be carried out by competent persons in the installation and maintenance of unvented water heating systems.
- # Any spare parts used **MUST** be authorised parts.
- # Disconnect the electrical supply before removing any electrical equipment covers.
- # **NEVER** bypass any thermal controls or operate system without the necessary safety valves.
- # Water contained in the cylinder may be very hot, especially following a thermal control failure. Caution must be taken when drawing water from the unit.

The fault finding chart (table 6) will enable operational faults to be identified and their possible causes rectified. Any work carried out on the unvented water heater and its associated controls **MUST** be carried out by a competent installer for unvented water heating systems. In case of doubt contact service support.

### Spare Parts

A full range of spare parts are available for the cylinder range (table 7). Refer to the technical data label on the unit to identify the model installed and ensure the correct part is ordered. You will need to quote the serial number, which is printed on the data label.

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**Table 6: Fault finding chart**

<b>Fault</b>	<b>Possible Cause</b>	<b>Remedy</b>
<b>No hot water flow</b>	Mains supply off	Check and open stop cock
	Cold water combination valve incorrectly fitted	Check and refit as required
<b>Water from hot tap is cold</b>	Indirect programmer set to central heating only	Check, set to domestic hot water programme
	Indirect boiler not working	Check boiler operation. If fault is suspected consult boiler manufacturer's instructions
	Indirect thermal cut-out has operated	Check, reset by pushing button on thermostat. Check operation of indirect thermostat
	Indirect motorised valve not connected correctly	Check wiring and/or plumbing connections to motorised valve



<b>Water discharges from expansion valve</b>	<b>Intermittently</b> Expansion vessel charge pressure has reduced below 3.5 bar, or set too high	See <u>Maintenance section</u> for re-charging of expansion vessel procedure
	<b>Continually</b> Cold water combination valve pressure reducer not working correctly. Expansion valve seat damaged	Check pressure from cold water combination valve. If greater than 3.5 bar replace pressure reducing valve cartridge. Remove expansion valve cartridge, check condition of seat. If necessary fit new expansion valve
<b>Water discharges from T&amp;P relief valve</b>	Thermal control failure <b>CAUTION: Water will be very hot!</b>	Switch off power to immersion heater(s) and shut down boiler. <b>DO NOT</b> turn off water supply. When discharge stops check all thermal controls, replace if faulty
<b>Milky water</b>	Oxygenated water	Water from a pressurised system releases oxygen bubbles when flowing. The milkiness will disappear after a short while

## 11. Decommissioning

### 11.1 Decommissioning procedure

- # Isolate electrical supplies and make safe
- # Isolate the water supply
- # Drain the cylinder
- # Drain the primary circuit (indirect only)
- # Remove cylinder
- # Cap pipework

#### Environmental information

Products are manufactured from many recyclable materials. At the end of their useful life they should be disposed of at a Local Authority Recycling Centre in order to realise the full environmental benefits.

Insulation is by means of an approved CFC/HCFC free polyurethane foam with an ozone depletion factor of zero.

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## 12. Spare parts

### 12.1 Spare parts list

A full range of spare parts are available for the cylinder range. Refer to the Technical Data label on the unit to identify the model installed and ensure the correct part is ordered.

**Table 7: Spares**

<b>KEY</b>	<b>DESCRIPTION</b>	<b>SPARES NUMBER</b>
1	IMMERSION HEATER GASKET	95611025
2	BLANKING PLATE KIT	95607396
3	EXPANSION VESSEL 60L 6 BAR	95607445
4	EXPANSION VESSEL 100L 6 BAR	95607458
5	EXPANSION VESSEL 150L 6 BAR	95607461
6	EXPANSION VESSEL 200L 6 BAR	95612723
7	EXPANSION VESSEL 300L 6 BAR	95612724
8	1" INTEGRATED INLET CONTROL VALVE	95605176
9	ISOLATING BALL VALVE 1"	95605178
10	ISOLATING BALL VALVE 1 ¼"	95605179
11	ISOLATING BALL VALVE 1 ½"	95605180
12	ISOLATING BALL VALVE 2"	95605181
13	ISOLATING DRAIN VALVE 1"	95605182
14	TUNDISH (22mm - 28MM)	7716580
15	TUNDISH 1 1/2" X 2"	95607452
16	PRV 1 ¼" SET PRESSURE 1.5 TO 6 BAR MAX IP 16 BAR	95605183
17	PRV 1 ½" SET PRESSURE 1.5 TO 6 BAR MAX IP 16 BAR	95605185
18	PRV 2" SET PRESSURE 1.5 TO 6 BAR MAX IP 16 BAR	95605187
19	SINGLE CHECK VALVE 1 ¼"	95605189
20	SINGLE CHECK VALVE 1 ½"	95605190
21	SINGLE CHECK VALVE 2"	95605191
22	EXPANSION RELIEF VALVE 1" X 1 ¼" SET PRESSURE 8 BAR	95605192
23	EXPANSION RELIEF VALVE 1 ¼" X 1 ½" SET PRESSURE 8 BAR	95605194
24	TEMPERATURE AND PRESSURE RELIEF VALVE - ¾"	95605103
25	TEMPERATURE AND PRESSURE RELIEF VALVE - 1 ¼"	7033371
26	DUAL CONTROL THERMOSTAT	95612650

27	CUT-OUT THERMOSTAT	95612652
28	2 PORT MOTORISED VALVE (28mm)	95605884
29	2 PORT MOTORISED VALVE (DN 32)	7031564
30	2 PORT MOTORISED VALVE (DN 40)	7031565
31	½" BLANKING STAT POCKET	95607690
32	1" BLANKING STAT POCKET	95607691
<b>ACCESSORY SPARES</b>		
33	11 ROD THERMOSTAT	95980025
34	11 RESETTABLE CUT-OUT	95980009
35	PUMP 3 SPEED CIRCULATION UP 20-30N	95607366
36	PUMP 3 SPEED CIRCULATION UPS 15-50N 130	95607404
37	28MM PUMP ISOLATING VALVE	95605177
38	2 PORT MOTORISED VALVE BODY DN32	7031586
39	2 PORT MOTORISED VALVE BODY DN40	7031587
40	ACTUATOR 24V	7031588
40	ACTUATOR 240V	7035971
41	32 CONNECTION	7031595
42	40 CONNECTION	7031596

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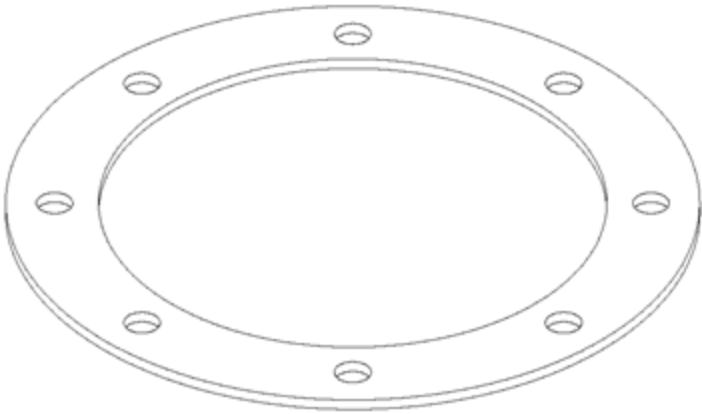
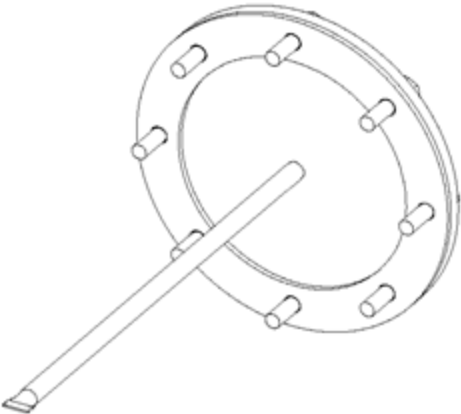
## 12.2 Accessories

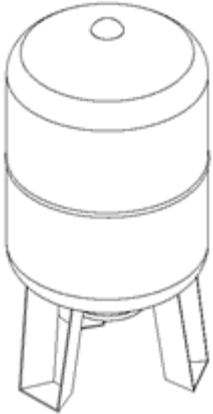
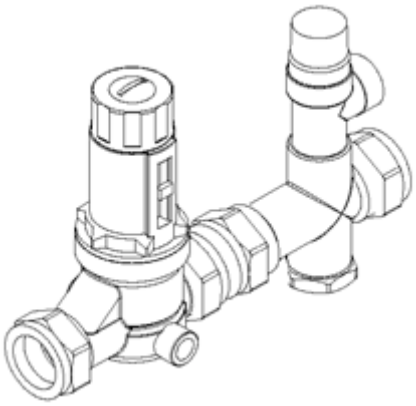
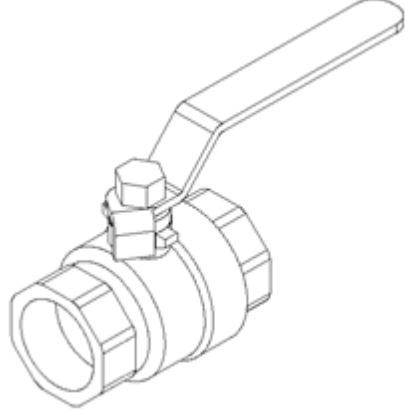
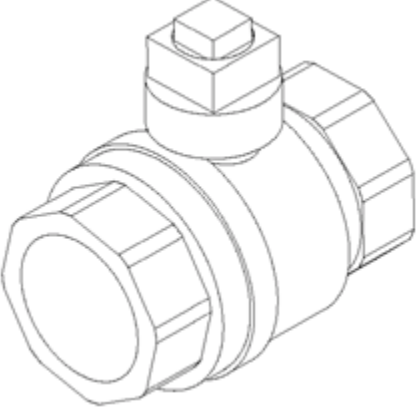
**Table 8: Accessories**

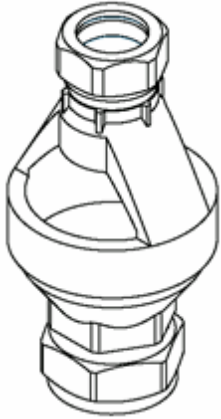
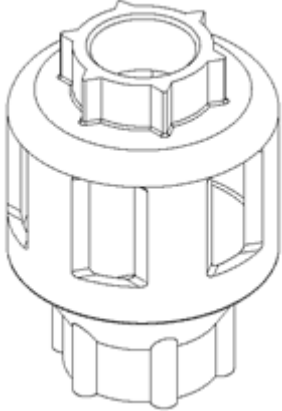
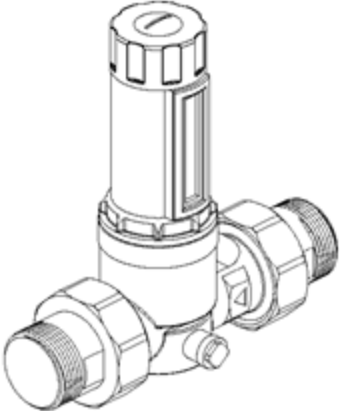
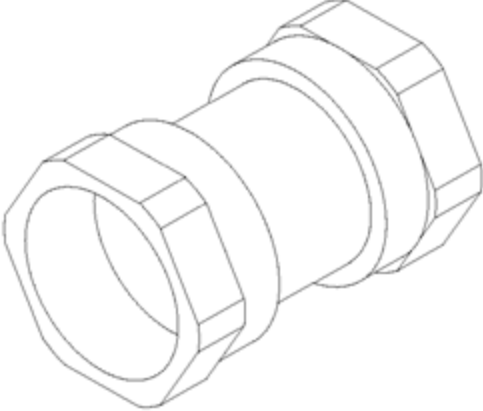
Accessory	Part number
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9kW Element Assembly	94110302
12kW Element Assembly	94110303
18kW Element Assembly	94110304
24kW Element Assembly	94110305

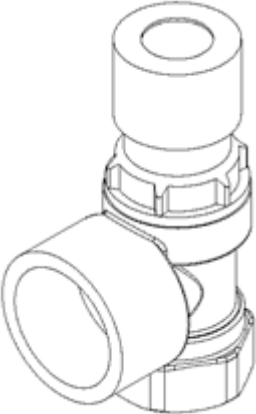
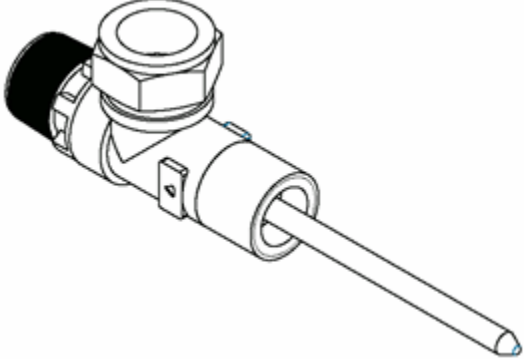
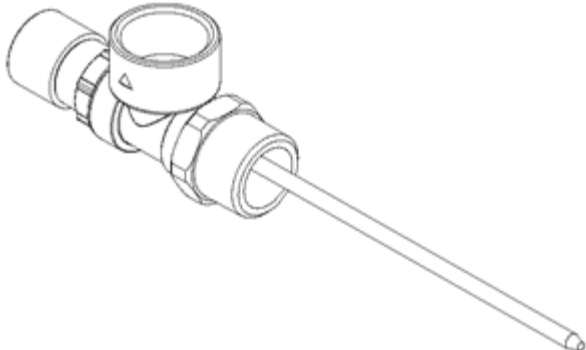
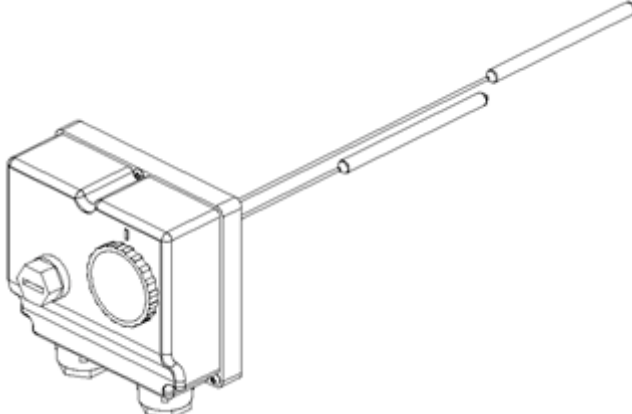
30kW Element Assembly	94110306
36kW Element Assembly	94110307
45kW Element Assembly	94110308
54kW Element Assembly	94110309
Destratification loop kit - 400-500 litre	95970140
Destratification loop kit - 800 - 1450 litre	95970157
Destratification loop kit - 2000 - 2500 litre	95970158
Temperature gauge	95970141
Pressure gauge	95970142

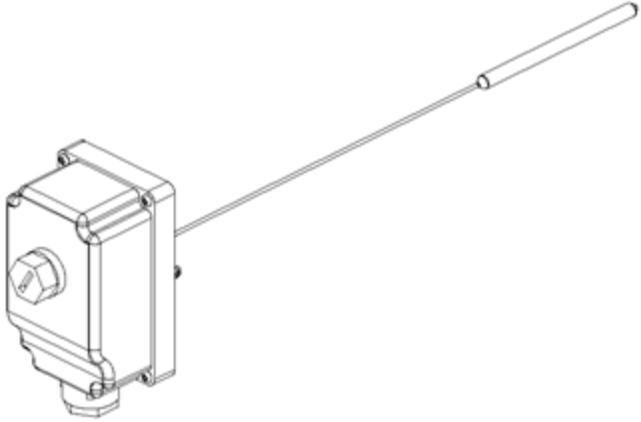
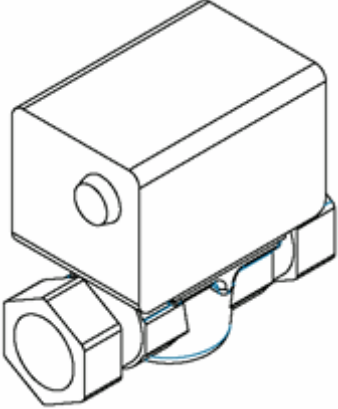
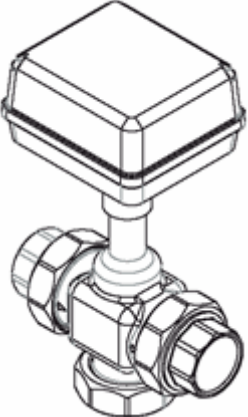
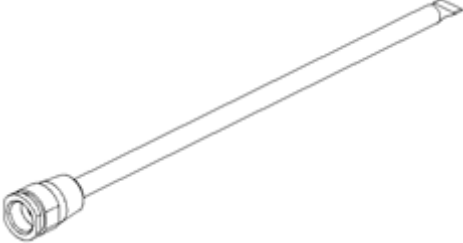
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1		2	
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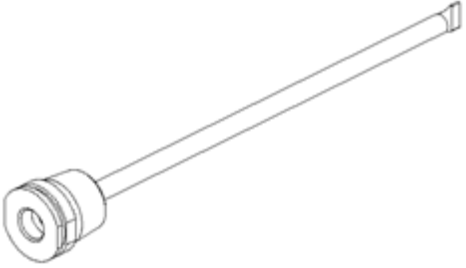
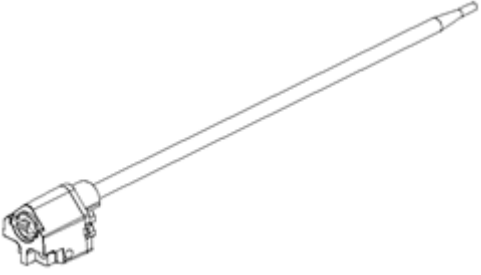
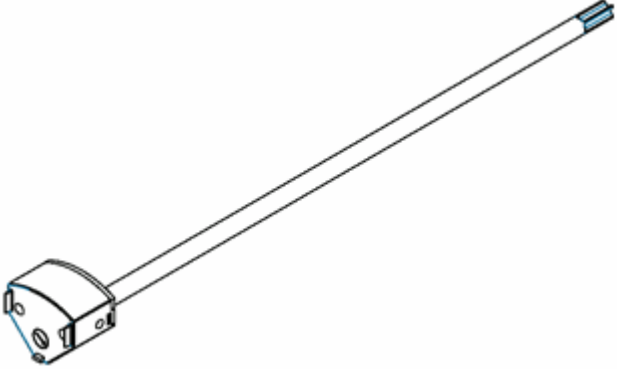
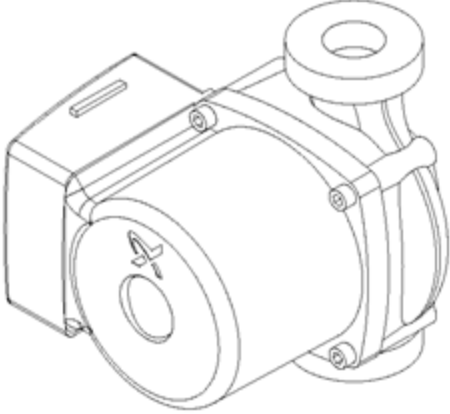
3-7		8	
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9-12		13	
Part No:	See <u>table</u>	Part No:	95:605:182

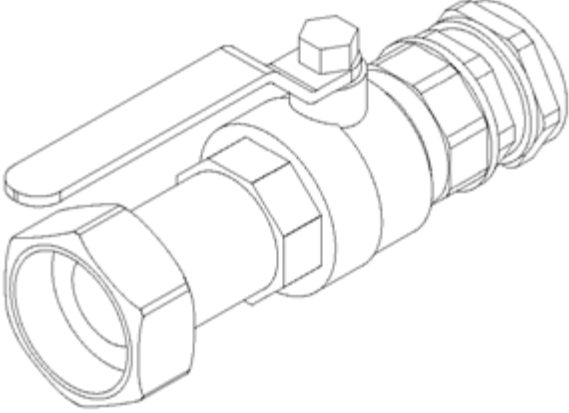
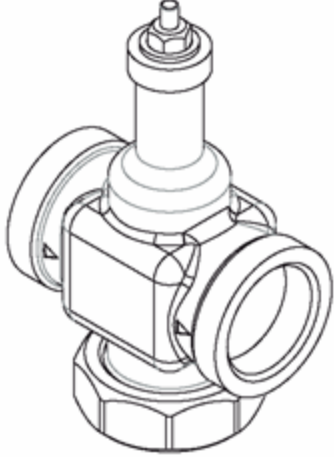
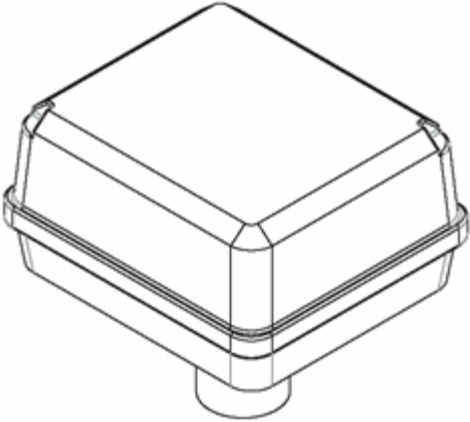
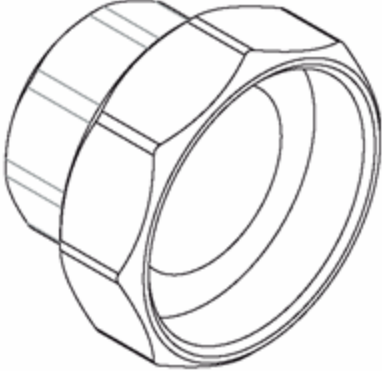
14		15	
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16-18		19-21	
Part No:	See <u>table</u>	Part No:	See <u>table</u>

22-23		24	
Part No:	95:605:192 & 95:605:194	Part No:	95:605:103
25		26	
Part No:	7033371	Part No:	95:612:650

27		28	
Part No:	95:612:652	Part No:	95:605:884
29-30		31	
Part No:	7031564 & 7031565	Part No:	95:607:690



32		33	
Part No:	95:607:691	Part No:	95:980:025
34		35-36	
Part No:	95:980:009	Part No:	95:607:366 & 95:607:404

37		38-39	
Part No:	95:605:177	Part No:	7031586 & 7031587
40		41-42	
Part No:	7031588 & 7035971	Part No:	7031595 & 7031596

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## **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)? \_\_\_\_\_

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## **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 1** Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

**SERVICE 2** Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

**SERVICE 3** Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

**SERVICE 4** Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

**SERVICE 5** Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

**SERVICE 6** Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

**SERVICE 7** Date

**SERVICE 8** Date

## **Guarantee**

### **Guarantee Terms**

Remeha guarantees the water heater cylinder against faulty manufacture or materials for a period of two years from the date of purchase including parts and labour. This two year guarantee is extended to five years for the cold water control valve and to 25 years (from the date of installation) for the stainless steel inner vessel.

#### **These guarantees are valid provided that:**

- # The water heater has been installed by a competent engineer and as per the instructions contained in the installation manual and all relevant Codes of Practice and Regulations in force at the time of installation.
- # Any disinfection has been carried out in accordance with BS EN 806
- # Should the factory fitted temperature and pressure relief valve be tampered with or removed your guarantee will be invalidated.
- # The water heater has not been modified in anyway other than by Remeha approved engineers.
- # The water heater has only been used for the storage of wholesome sanitary water (max 250mg/l chloride).
- # Only stainless steel dummy plugs are to be used.
- # The water heater has not been subjected to excessive pressure beyond the guidelines detailed in the installation instructions.
- # The water heater has not been subjected to frost, nor has it been tampered with or been subject to misuse or neglect.
- # No factory fitted parts have been removed for unauthorised repair or replacement
- # Regular maintenance has been carried out by a competent person in accordance with the requirements set in the maintenance section of the installation manual and any replacement parts used should be approved spare parts.
- # The guarantee is not valid outside of the United Kingdom.

#### **The warranty does NOT cover:**

Consequential damages or profit loss which may arise from a defect. Warranty claims have no delaying effect on the payment dates and other demands

Your Remeha warranty covers you for a equivalent replacement and labour in the event that the unit fails prematurely as a result of a proved manufacturing defect.

In order that this can be achieved, full access for removal and the replacement of the unit is essential. If it is found that access can not be achieved the warranty will be limited to the replacement of the unit only and subsequent labour charges would not be met under the warranty.

### **Remeha Commercial**

Tel: 0118 978 3434

Fax: 0118 978 6977

Email: boilers@remeha.co.uk

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Remeha Unvented Flexistor Water Heaters Installation (7038477\_issue\_01) Pre Serial No 1831  
Remeha Unvented Flexistor Water Heaters Installation (7038477\_issue\_01) Pre Serial No 1831