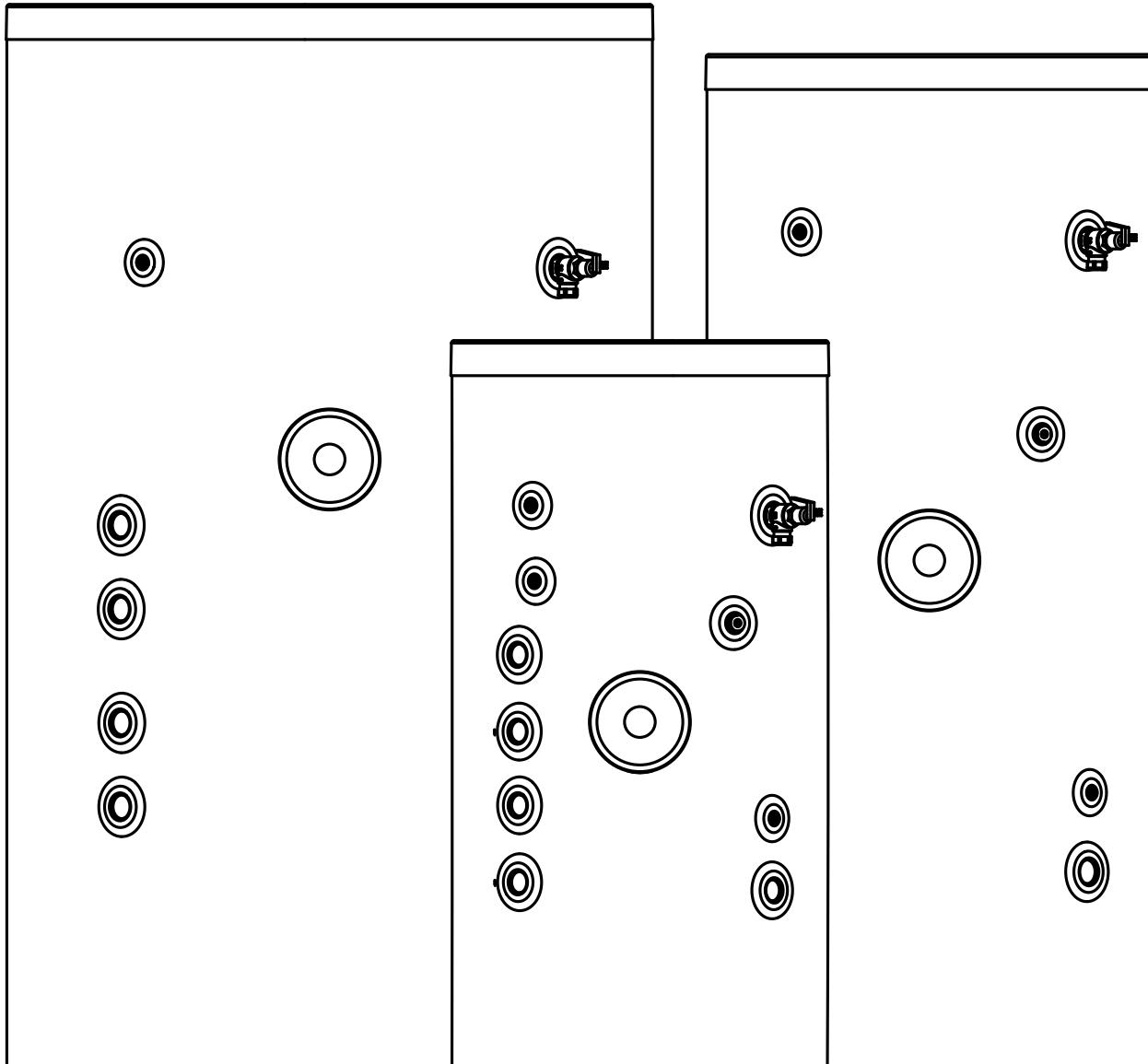




Installation Manual

**Unvented Solar 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.

Contents

1. Introduction	3
1.1 General.....	3
1.2 Symbols used.....	3
1.3 Abbreviations.....	3
1.4 Liabilities.....	3
2. Safety.....	4
2.1 General safety warnings.....	4
2.2 Recommendations	4
2.3 Specific safety instructions	4
3. Technical specifications	5
3.1 Technical data	5
3.2 ErP data	6
3.3 Dimensions and connections	7
3.4 Electrical diagram(s).....	8
4. Description of the product	10
4.1 General description	10
4.2 Operation principle	10
4.3 Main components	10
4.4 Standard delivery	10
5. Before installation	12
5.1 Installation regulations.....	12
5.2 Installation requirements	12
5.3 Choice of location.....	12
5.4 Transport	13
6. Installation	13
6.1 General.....	13
6.2 Water connections.....	13
6.3 Electrical connections.....	18
6.4 Filling the installation.....	18
7. Commissioning	19
7.1 General.....	19
7.2 Checklist before commissioning.....	19
7.3 Commissioning procedure.....	19
8. Operation	20
8.1 General.....	20
9. Maintenance.....	21
9.1 General.....	21
9.2 Standard inspection & maintenance operations.....	21
10. Troubleshooting	23
10.1 Fault finding.....	23
11. Decommissioning.....	24
11.1 Decommissioning procedure	24
12. Spare parts.....	24
12.1 Spare parts list	24
12.2 Accessories	25
Benchmark checklist	30
Service records	31
Guarantee.....	32

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.



DANGER

Risk of a dangerous situation causing serious physical injury.



WARNING

Risk of dangerous situation causing slight physical injury.



CAUTION

Risk of material damage.



Signals important information.

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 1 , page 5.



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.

3. Technical specifications

3.1 Technical data

		400 solar	500 solar	800 solar	1000 solar	1250 solar	1450 solar	2000 solar	2500 solar
Max direct kW rating	24	24	45	45	54	54	54	54	54
Direct heat time (based on max kW rating in mins)	52	66	56	70	73	84	117	146	
Solar coil surface area m2		2		3		5		7.5	
Auxiliary coil surface area m2		1		1.5		2.5		5	
Solar 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/muin	59.7	55.8	76.9	76.5	97.9	91.7	132.2	126.4
Auxiliary coil rating (kW)	15 l/min	28.4	27.2	30.5	33.2	48.6	46.4	97.9	91.7
Solar coil 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/muin	21	28	32	39	40	50	48	62
Pressure drop through solar coil (Mpa)	15 l/min	0.002		0.001					
	30 l/min	0.004		0.008		0.006		0.007	
	60l/muin	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 drawn off >40°C)	384	482	776	961	1206	1399	1930	2482	
Weight full (kg) Weight empty (kg)	505	610	964	1188	1569	1872	2445	2950	
	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	0.3 MPa (3 bar)								

Table 1: Technical data

Notes:

1. Cylinders tested in conformance with BS EN 12897:2006.
2. Heat up time from cold through 45°C, based on a flow temperature of 80°C +/- 2°C & normal volume.

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"

Table 2: Inlet control specification dependant on model

Commercial Cylinder Volume (ltr)	Expansion Vessel Size (ltr)	Mounting Kit	Weights
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

Table 3: Expansion vessel specification dependant on model

Immersion allocation table

	6kW		9kW		12kW		18kW		24kW		30kW		36kW		45kW		54kW	
	94110301		94110302		94110303		94110304		94110305		94110306		94110307		94110308		94110309	
	Upper	Lower																
400L	✓		✓		✓		✓		✓									
500L	✓		✓		✓		✓		✓									
800L	✓		✓		✓		✓		✓		✓		✓		✓			
1000L	✓		✓		✓		✓		✓		✓		✓		✓			
1250L	✓		✓		✓		✓		✓		✓		✓		✓			
1450L	✓		✓		✓		✓		✓		✓		✓		✓			
2000L	✓		✓		✓		✓		✓		✓		✓		✓			
2500L	✓		✓		✓		✓		✓		✓		✓		✓			

Table 4: Immersion allocation table

3.2 ErP data

Solar	Remeha Commercial						
Supplier's name or trade mark	Remeha Commercial						
Model(s)	400 500 800 1000 1250 1450 2000						
Storage volume V in litres	400.0 500.0 800.0 1000.0 1250.0 1450.0 2000.0						
Standing loss in W	72.0 89.0 114.0 139.0 150.0 163.0 179.0						
The water heating energy	B C C C C C C						

Table 5: ErP data

Technical parameters in accordance with European Commission regulations 814/2013 and 812/2013

3.3 Dimensions and connections

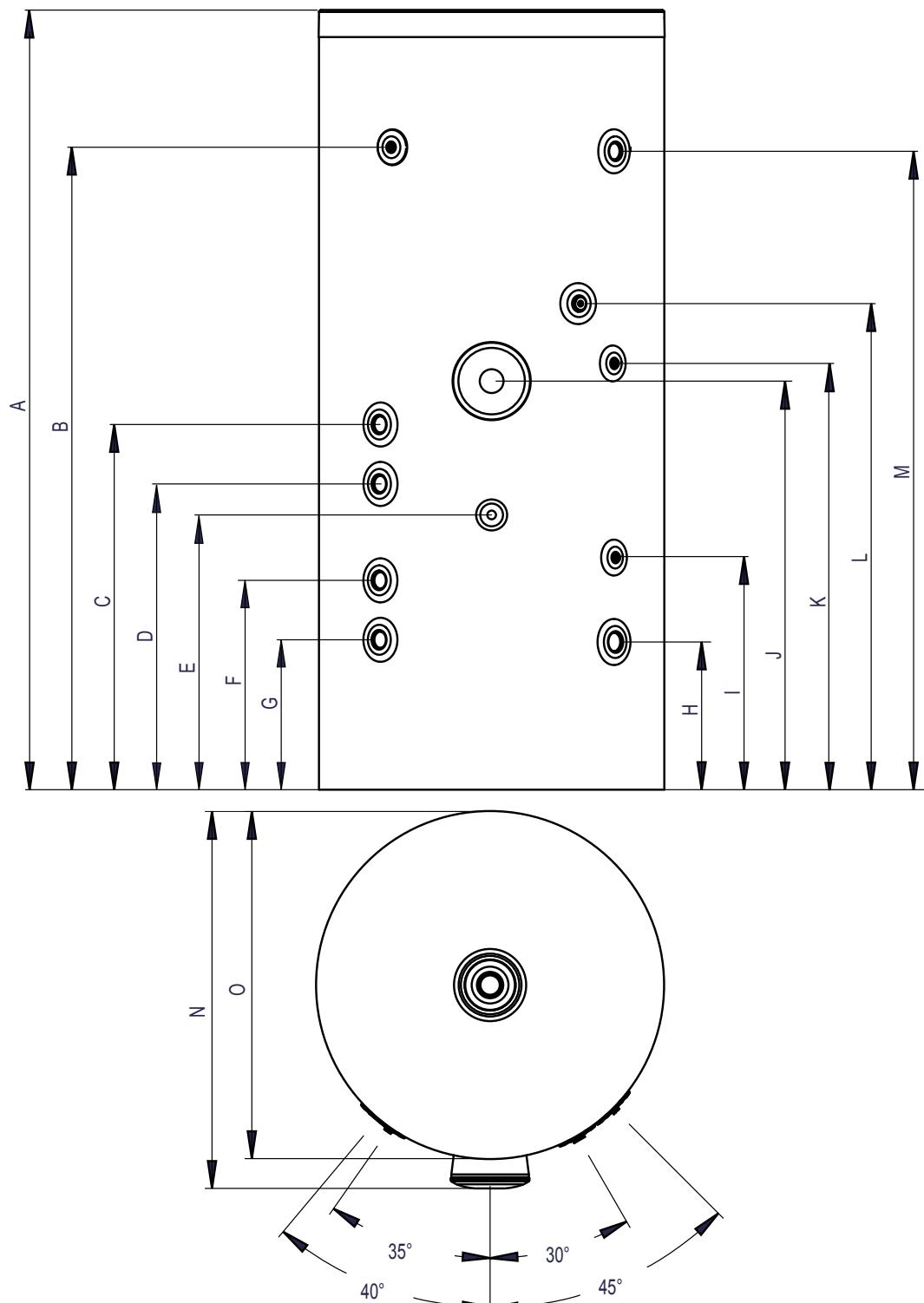


Figure 1: General dimensions - Solar

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	1/2"BSP	1090	1390	1/2" BSP	1502	1897	1/2" BSP	1419	1735	1/2" BSP	1423	1829
C	1" BSP	870	898	1 1/4" BSP	997	997	1 1/2" BSP	1140	1137	1 1/2" BSP	1230	1230
D	1" BSP	670	698	1 1/4" BSP	797	797	1 1/2" BSP	910	907	1 1/2" BSP	990	990
E	1/2" BSP	630	650	1/2" BSP	774	747	1/2" BSP	835	835	1/2" BSP	905	733
F	1" BSP	498	498	1 1/4" BSP	622	622	1 1/2" BSP	710	710	1 1/2" BSP	780	780
G	1" BSP	323	323	1 1/4" BSP	447	447	N/A	530	530	1 1/2" BSP	600	601
H	1" BSP	309	309	1 1/4" BSP	440	440	1 1/2" BSP	530	530	2" BSP	607	607
I	1/2" BSP	524	524	1/2" BSP	601	601	1/2" BSP	695	695	1/2" BSP	778	778
J	NA	950	1004	N/A	1428	1811	N/A	1371	1371	N/A	1376	1780
K	1/2" BSP	894	959				N/A					
L	1" BSP	980	1070	1" BSP	1187	1437	1" BSP	1176	1376	1" BSP	1226	1476
M	N/A	1083	1383	N/A	1490	1885	N/A	1407	1723	N/A	1412	1817
N	N/A	956	956	N/A	1107	1107	N/A	1308	1308	N/A	1560	1560
O	N/A	872	872	N/A	1024	1024	N/A	1224	1224	N/A	1476	1476

Table 6: General dimensions table - Solar



WARNING

The high limit stat must always operate the zone valve in case of overtemperature.

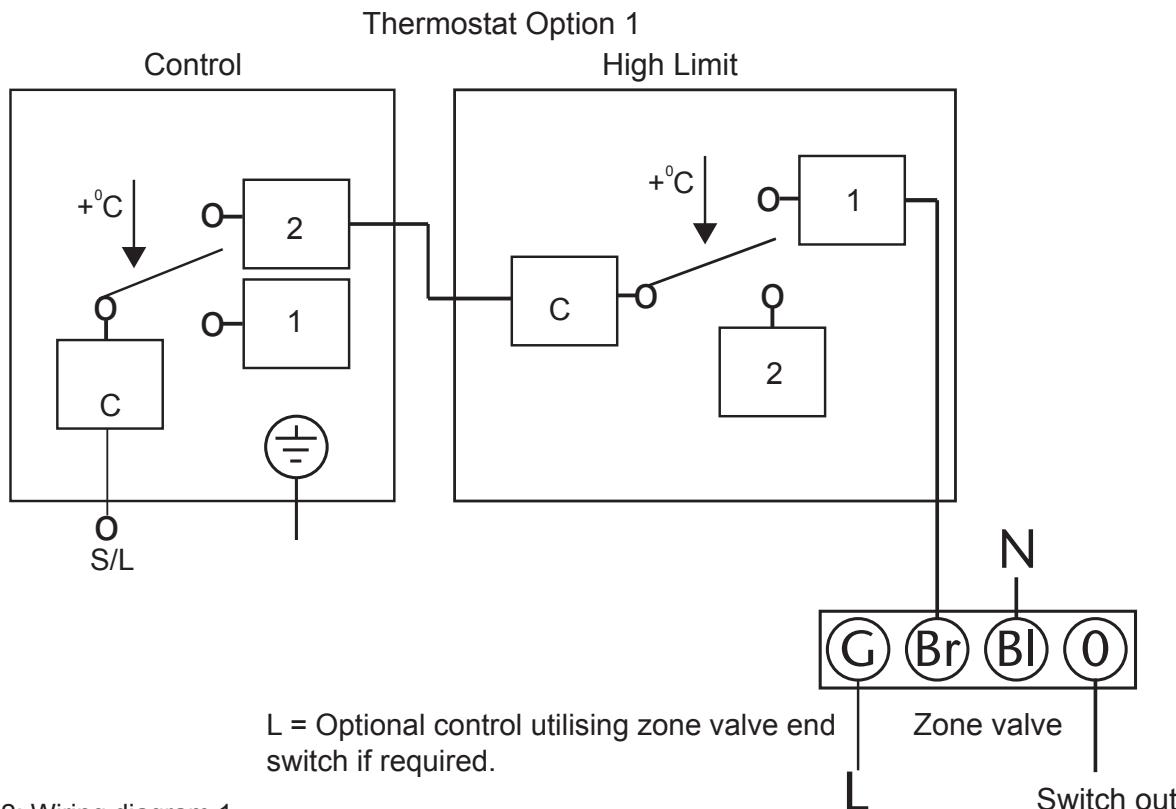


Figure 2: Wiring diagram 1

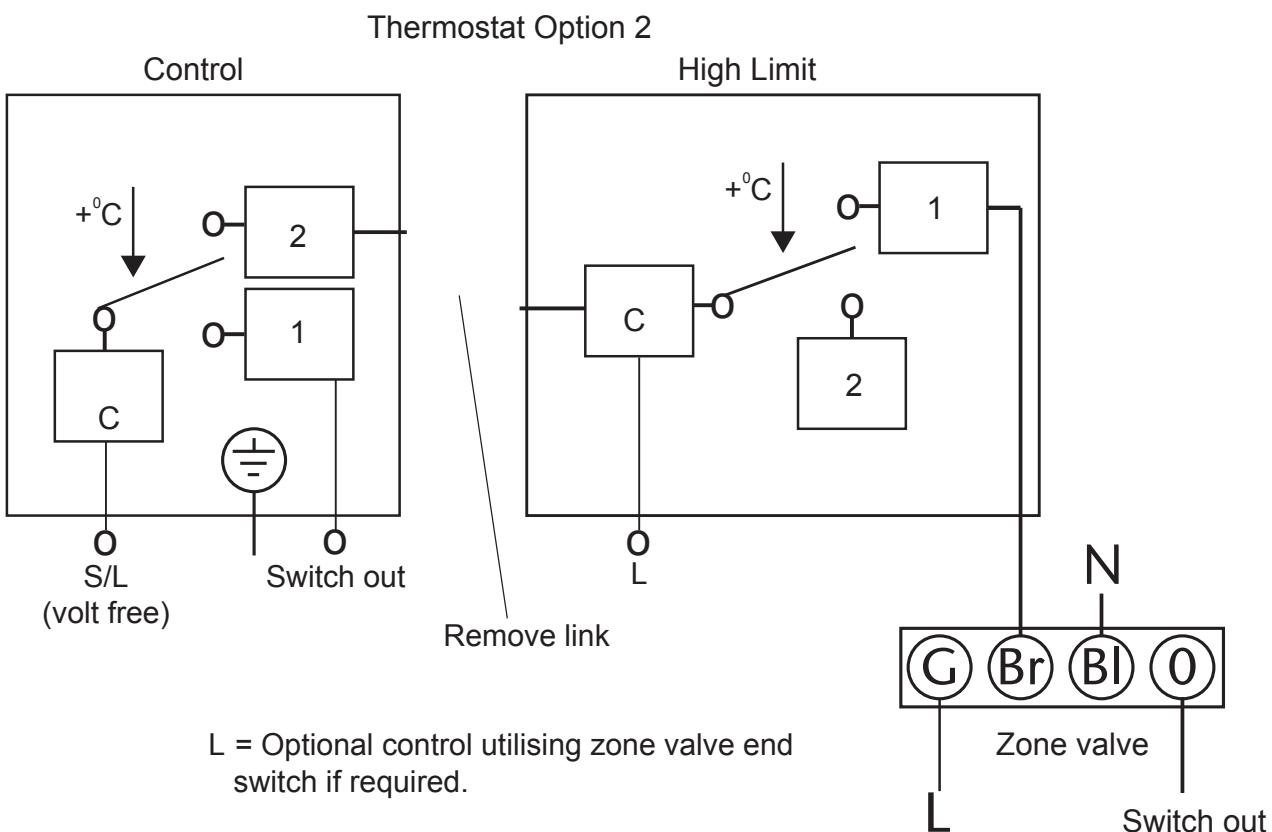
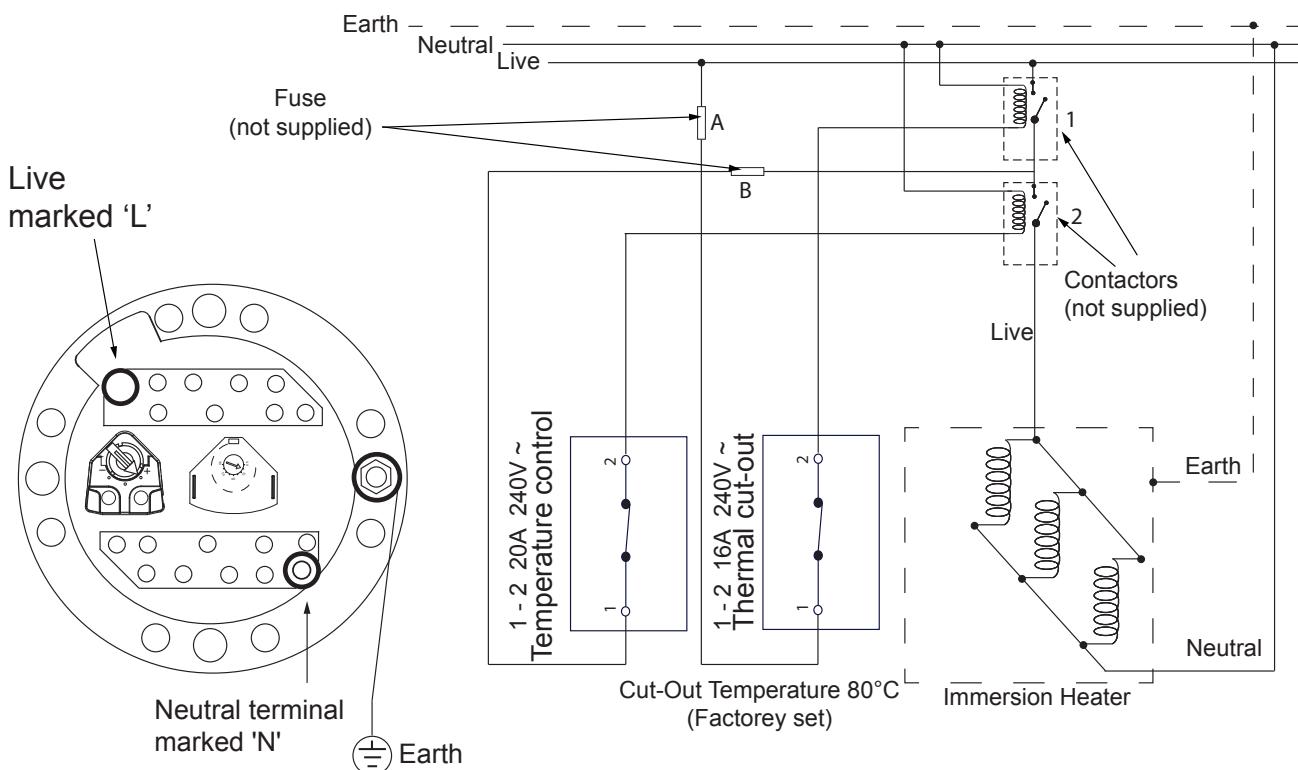


Figure 2a: Wiring diagram 2 - volt free option

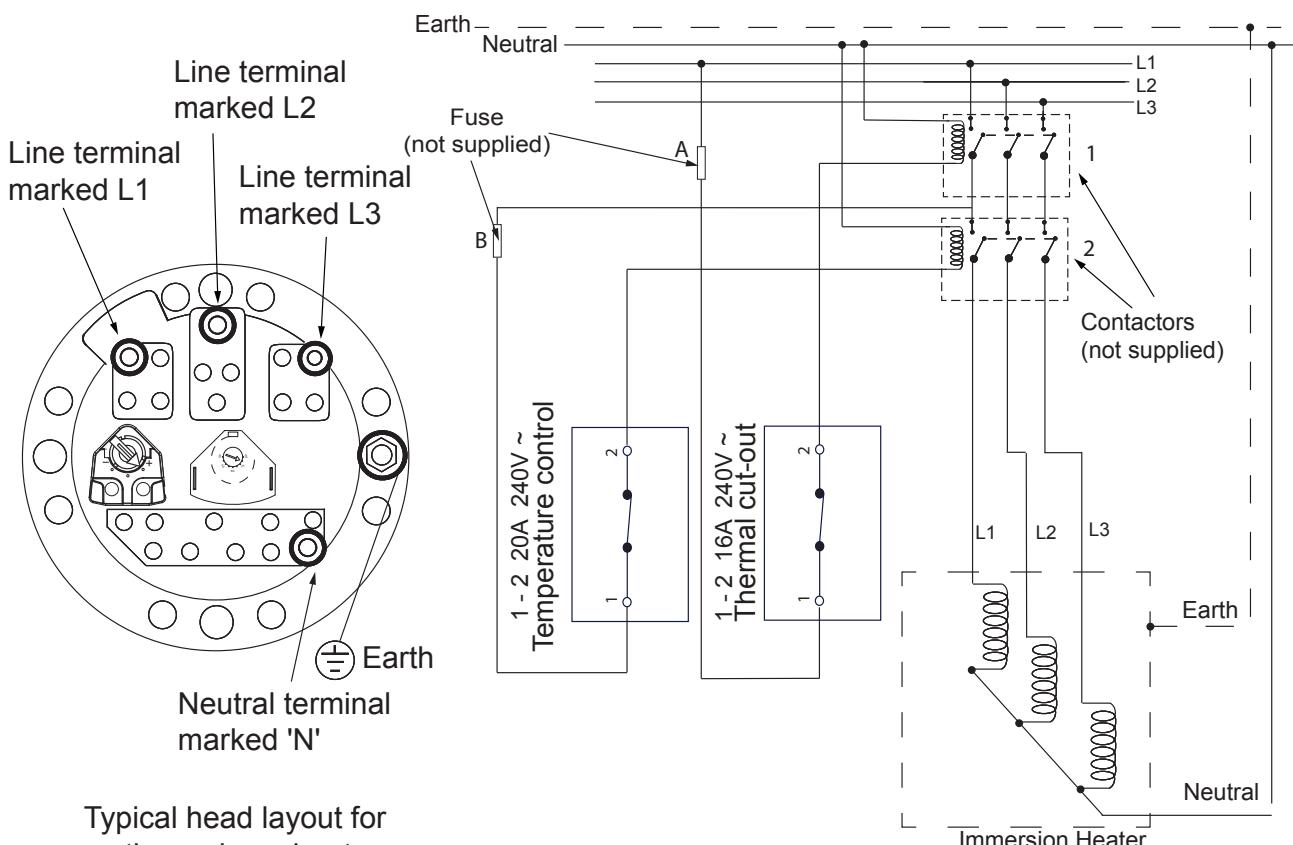
NOTE: Option 2 utilises control thermostat to provide volt free control circuit.



Typical head layout for
a single phase heater

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.



Typical head layout for
a three phase heater

Figure 3: 3 phase wiring schematic

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.

Depending on the model the water can be heated directly using an element (supplied separately) or indirectly through a coil in the unit using an indirect heat source.

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 4: 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 2 page 5)
- ▶ Expansion vessel (see table 3 page 6)
- ▶ Combination valve (inc pressure reducing valve, pressure relief valve and check valve)
- ▶ Tundish
- ▶ 2 port zone valve.

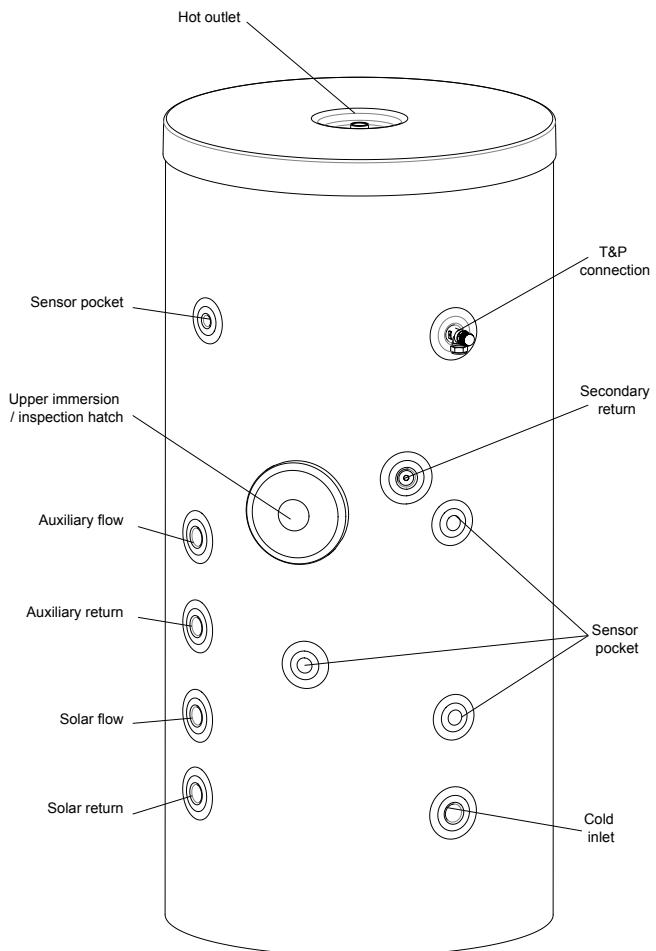


Figure 4: Main components

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



WARNING

Installation of the appliance must be carried out by a qualified engineer in accordance with prevailing and national regulations as listed below.

- ▶ Building Regulations
- ▶ The Building Standards (Scotland)
- ▶ The Building Regulations (Northern Ireland)
- ▶ I.E.E Electrical Regs
- ▶ UK Water Regulations

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.

- ▶ We suggest 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, 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 1 on page 5 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 siphonage 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.



The solar cylinder must be incorporated into a fully pumped solar primary circuit. Control of the solar primary is achieved by the use of external controls not supplied with the unit. Control must be via a purpose designed solar hydraulic station and solar differential temperature controller.

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.
- ▶ 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 250mm 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 1, page 5 for weights).

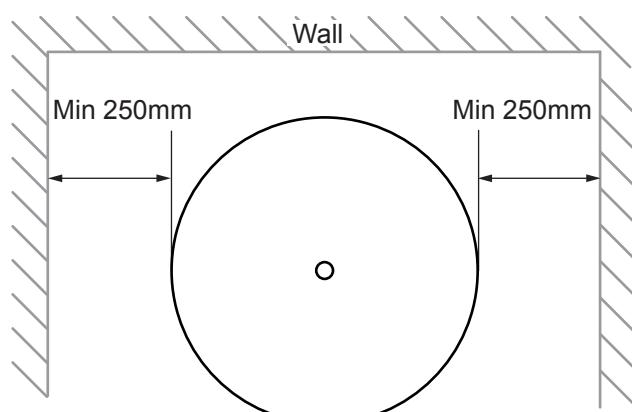


Figure 5: Siting the unit

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 top outlet grommet followed by the cylinder lid.

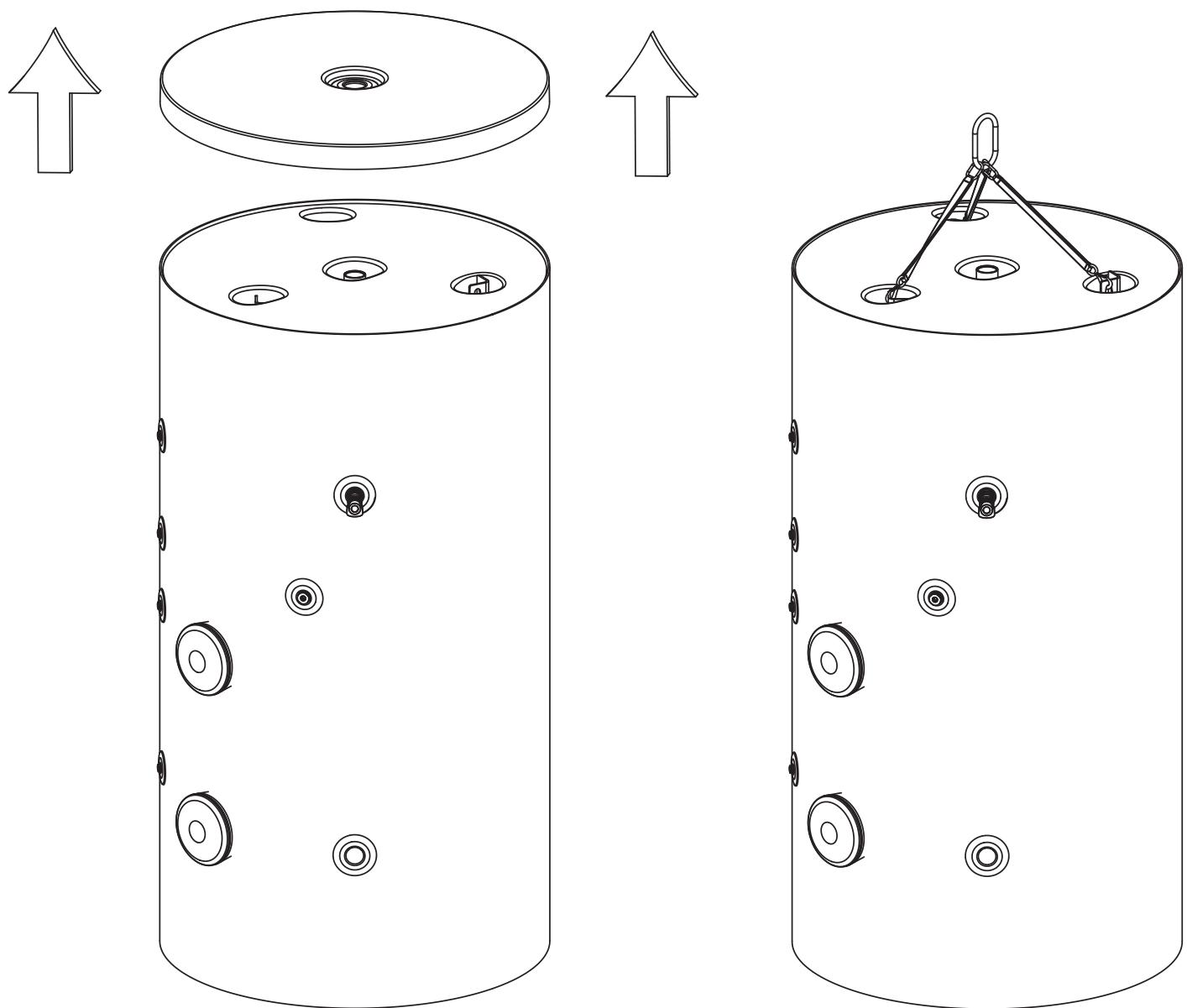


Figure 8: Lifting the unit

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



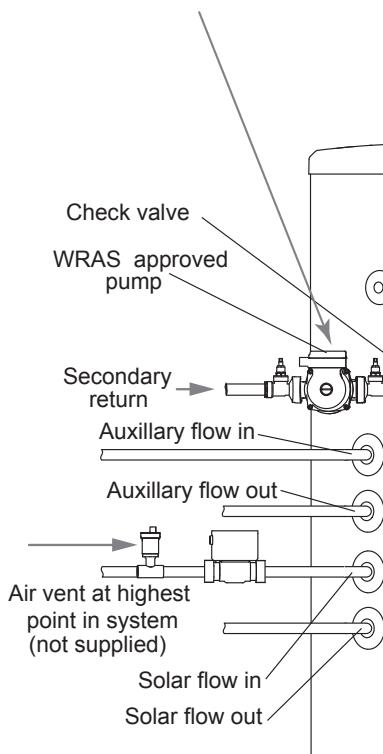
WARNING

- ▶ 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.
- ▶ The cold water combination valve assembly must be fitted on the mains water supply to the cylinder.
- ▶ No control or safety valves should be tampered with or used for any other purpose.
- ▶ The discharge pipe should not be blocked or used for any other purpose.
- ▶ The tundish should not be located adjacent to any electrical components.

Refer to the installation schematic (fig 6) for details on the pipework layout. Specific details for the discharge pipework layout is also provided in figure 8.

- ▶ 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

SECONDARY CIRCULATION



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

TYPICAL DE-STRATIFICATION LOOP SYSTEM

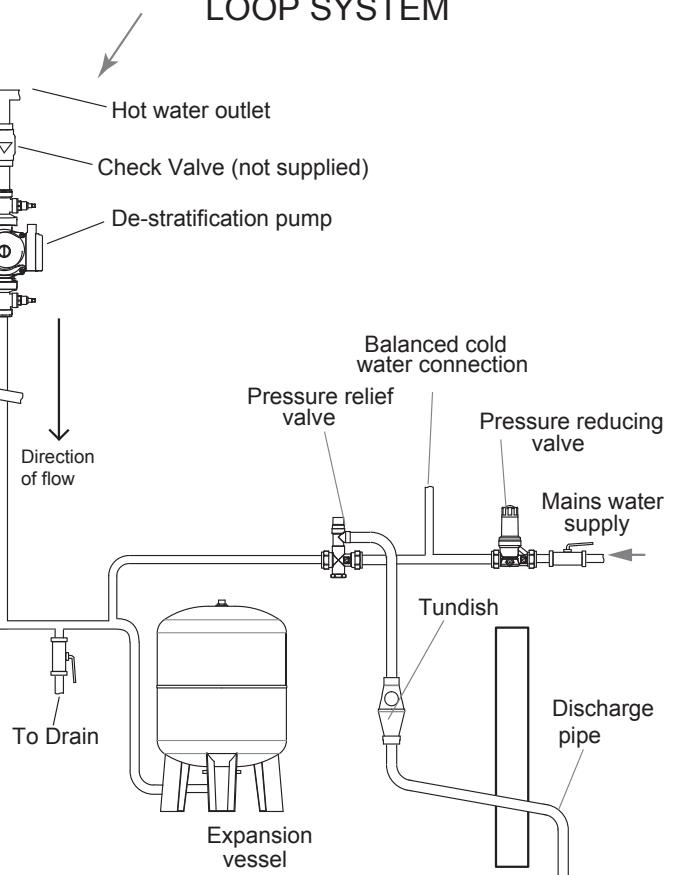
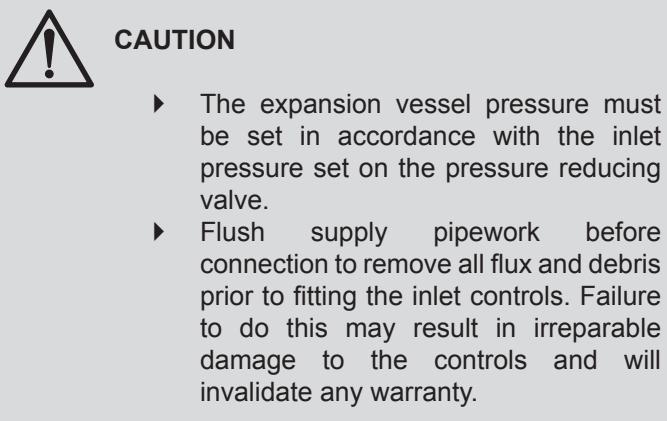


Figure 6: Typical installation schematic (not to scale)

- the cold water combination valve and the cylinder.
- 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



- 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 & 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).

Auxiliary circuit control

- The 2 port motorised valve supplied with the cylinder MUST be fitted on the auxiliary flow to the cylinder heat exchanger and wired such that in the event of the cylinder overheating it will close the auxiliary circuit.
- Auxiliary 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 auxiliary heat exchanger 89°C).

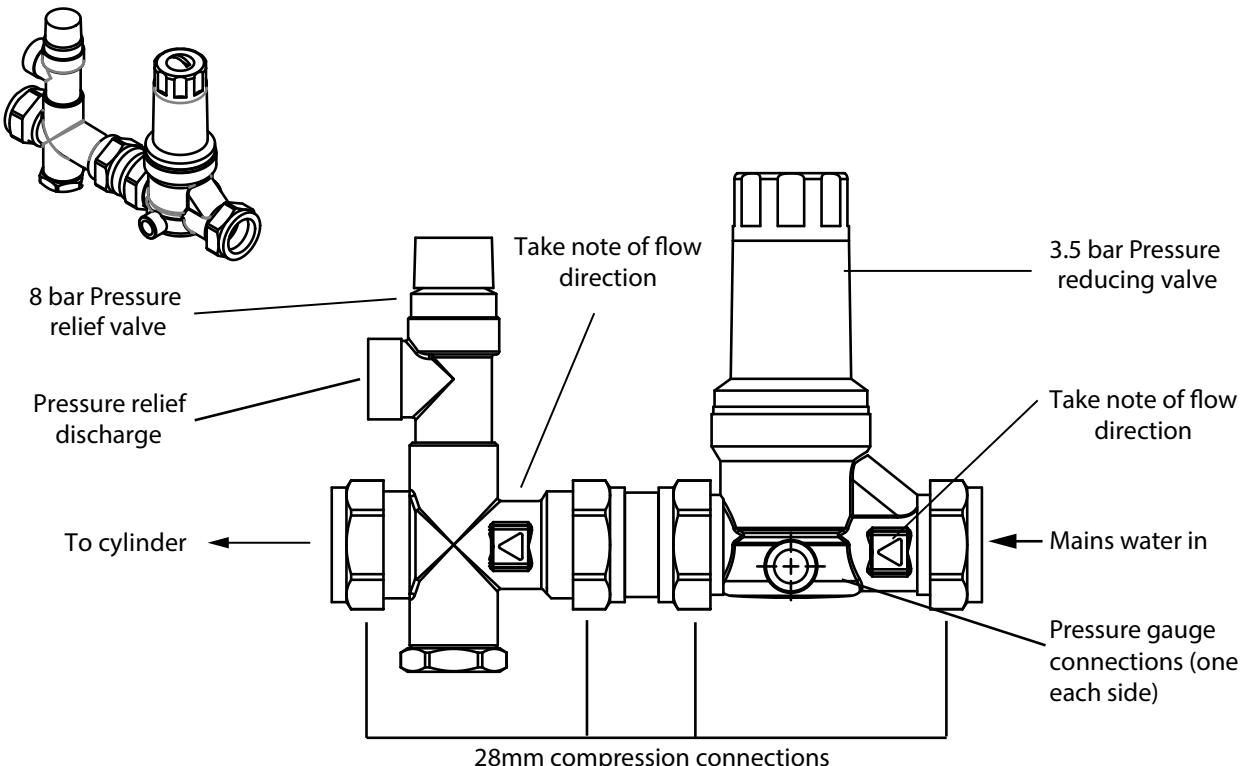


Figure 7: Cold water combination valve (400 & 500ltr)

Solar connections

- ▶ The lower (solar) coil must be connected to a fully pumped solar primary circuit with its own safety control which must be installed as per the manufacturers instructions.
- ▶ There must be suitable check valves installed in the solar primary flow and return to prevent the possibility of any thermo-syphoning if the solar circulation is stopped.

Secondary circulation

If secondary circulation is required it is recommended that it be connected to the cylinder as shown (see fig. 6).

- ▶ 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.

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 6.

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 8).

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

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. 8); 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 11, Table 4 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 4:

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.

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

Table 7: Sizing of copper discharge pipe (D2) for common temperature relief valve outlet sizes

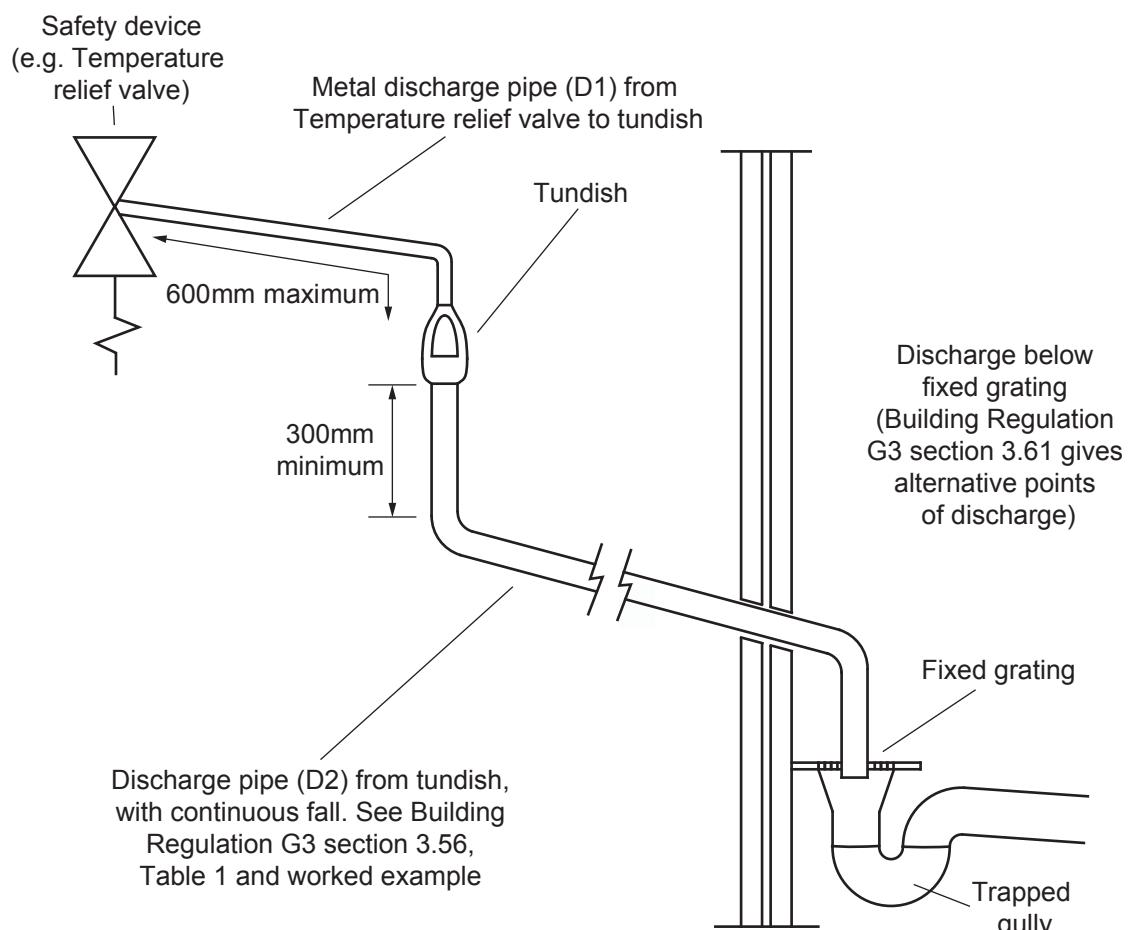


Figure 8: Typical discharge pipe arrangement (extract from Building Regulation G3 Guidance Section 3.50)

6.3 Electrical connections

In case of difficulty contact service support; contact details are available on page 32 of this booklet.



WARNING

- ▶ Disconnect from the mains electrical supply before removing any covers.
- ▶ Never attempt to replace the immersion heater(s) other than with the recommended immersion heater(s).
- ▶ DO NOT 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.
- ▶ 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.
- ▶ DO NOT operate the immersion heaters until the cylinder has been filled with water.

- ▶ The immersion heater(s) should be wired in accordance with fig's 2 and 3, page 9.
- ▶ 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

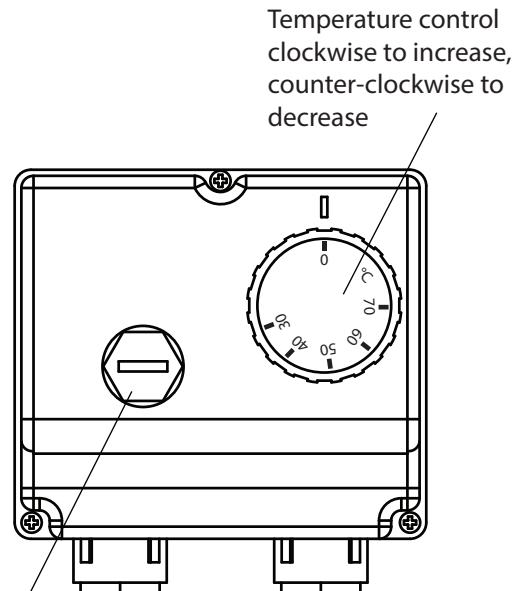
DO NOT operate the immersion heaters or primary circuit until the cylinder has been filled with water.

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

- ▶ Fill the solar primary circuit following the instructions provided with the solar hydraulic controls.
- ▶ Heating of the solar coil is controlled by the solar controller; refer to the manufacturer's instructions for details.
- ▶ The solar controller should be programmed to give a cylinder temperature of approximately 65°C.
- ▶ Fill the auxiliary circuit following the boiler manufacturer's commissioning instructions.
- ▶ To ensure the cylinder auxiliary 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.
- ▶ If necessary the temperature can be adjusted as shown in Figure 9. The minimum thermostat setting is 10°C.
- ▶ Check the operation of the thermostat and 2 port motorised valve, and that no water has issued from the expansion relief valve or temperature/pressure relief valve during the heating cycle.



Thermal cut-out
reset under cap

Figure 9: Indirect controls (auxiliary coil)

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.

Please ensure that the installer has fully completed the Benchmark Checklist (page 30 & 31) of this manual 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.

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

The cylinder units are fitted with a 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.

i The solar cylinder must be incorporated into a fully pumped solar primary circuit. Control of the solar primary is achieved by the use of external controls not supplied with the unit. Control must be via a purpose designed solar hydraulic station and solar differential temperature controller.

Operational faults

Operational faults and their possible causes are detailed in the Fault Finding section (p.23) of this book. 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 cleaning of the strainer element and 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 on page 35 of this document.

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



CAUTION

Water discharged may be very hot!

- ▶ 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.

Strainer

- ▶ Turn off the isolating valve prior to the Pressure Reducing Valve or the main stop cock to the system.
- ▶ Open the lowest hot tap in the system to relieve the system pressure.
- ▶ Using a spanner unscrew the pressure reducing cartridge and remove the moulded housing. The strainer will be removed with the cartridge.
- ▶ Wash any particulate matter from the strainer under clean running water.
- ▶ Replace the strainer and screw the Pressure Reducing Valve cartridge into the moulded housing.
- ▶ Close hot tap, turn on isolating valve or main stop cock to the system. Check for leaks.

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 element(s).



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.
- ▶ When water flows from the hot tap allow 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 located on pages 30 and 31 of this document.
- ▶ 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 8, below) 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 9, page 24). 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.

Fault	Possible Cause	Remedy
No hot water flow	Mains supply off	Check and open stop cock
	Strainer blocked	Turn off water supply. Remove strainer and clean
	Cold water combination valve incorrectly fitted	Check and refit as required
Water from hot tap is cold	Direct immersion heater not switched on	Check and switch on
	Direct immersion heater thermal cut-out has operated	Check, reset by pushing button on thermostat
	Programmer set to central heating only	Check, set to domestic hot water programme
	Indirect heat source is not working	Check solar/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
Water discharges from expansion valve	Intermittently Expansion vessel charge pressure has reduced below 3.5 bar, or set too high	See Maintenance section (p.19) for re-charging of expansion vessel procedure
	Continually 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
Water discharges from T&P relief valve	Thermal control failure CAUTION: Water will be very hot!	Switch off power to immersion heater(s) and shut down boiler. DO NOT turn off water supply. When discharge stops check all thermal controls, replace if faulty
Milky water	Oxygenated water	Water from a pressurised system releases oxygen bubbles when flowing. The milkiness will disappear after a short while

Table 8: Fault finding chart

11. Decommissioning

11.1 Decommissioning procedure

- ▶ Isolate electrical supplies and make safe
- ▶ Isolate the water supply
- ▶ Drain the cylinder
- ▶ Drain the solar & auxiliary circuits
- ▶ 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.

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.

KEY	DESCRIPTION	SPARES NUMBER
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 1/4"	95605179
11	ISOLATING BALL VALVE 1 1/2"	95605180
12	ISOLATING BALL VALVE 2"	95605181
13	ISOLATING DRAIN VALVE 1"	95605182
14	TUNDISH (22mm - 28MM)	95607367
15	TUNDISH 1 1/2" X 2"	7716580
16	PRV 1 1/4" SET PRESSURE 1.5 TO 6 BAR MAX IP 16 BAR	95605183
17	PRV 1 1/2" 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 1/4"	95605189
20	SINGLE CHECK VALVE 1 1/2"	95605190
21	SINGLE CHECK VALVE 2"	95605191
22	EXPANSION RELIEF VALVE 1" X 1 1/4" SET PRESSURE 8 BAR	95605192
23	EXPANSION RELIEF VALVE 1 1/4" X 1 1/2" SET PRESSURE 8 BAR	95605194
24	TEMPERATURE AND PRESSURE RELIEF VALVE - 3/4"	95605103

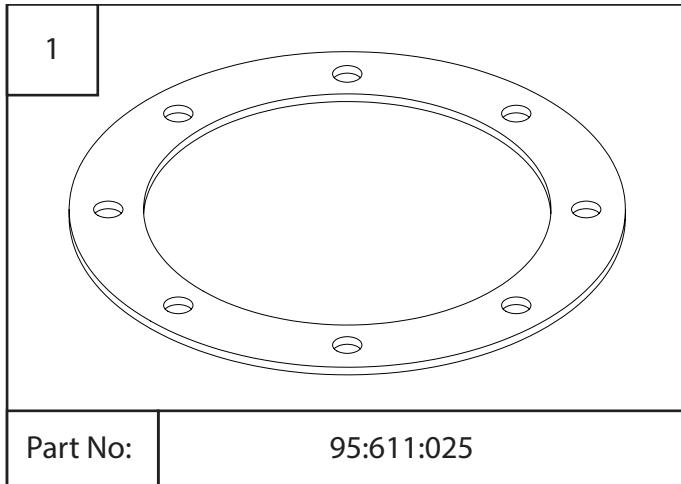
25	TEMPERATURE AND PRESSURE RELIEF VALVE - 1 1/4"	95605196
26	DUAL CONTROL THERMOSTAT	95612650
27	CUT-OUT THERMOSTAT	95612652
28	2 PORT MOTORISED VALVE (28mm)	95605884
29	2 PORT MOTORISED VALVE (DN 32)	95605198
30	2 PORT MOTORISED VALVE (DN 40)	95605199
31	1/2" BLANKING STAT POCKET	95607690
32	1" BLANKING STAT POCKET	95607691
ACCESSORY SPARES		
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	7031588
41	32 CONNECTION	7031595
42	40 CONNECTION	7031596

Table 9: Spares

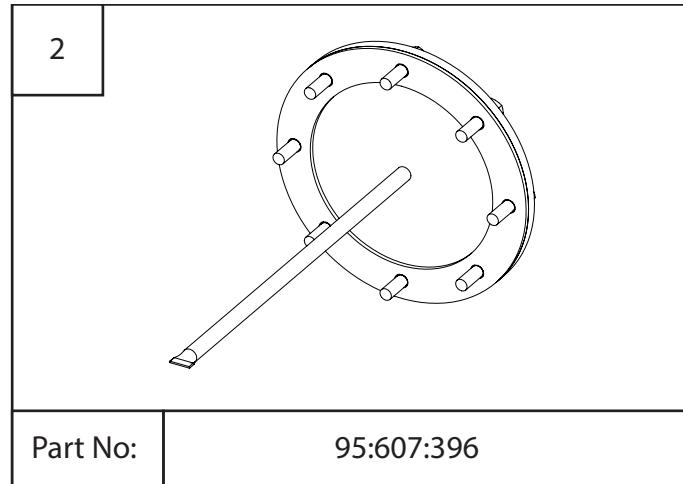
12.2 Accessories

Accessory	Part number
6kW Element Assembly	94110301
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

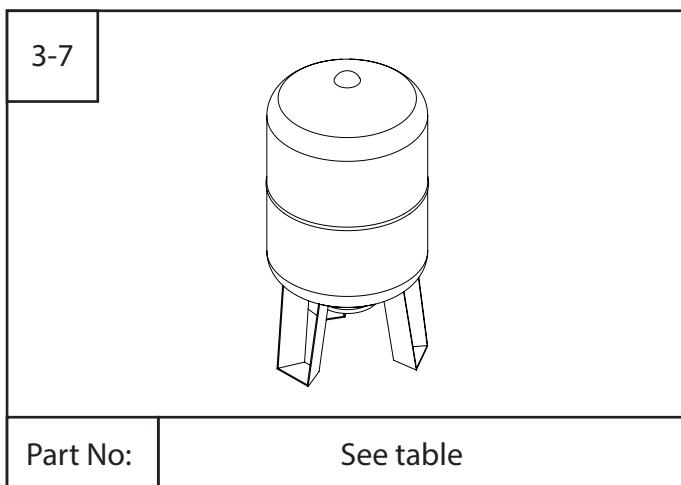
Table 10: Accessories



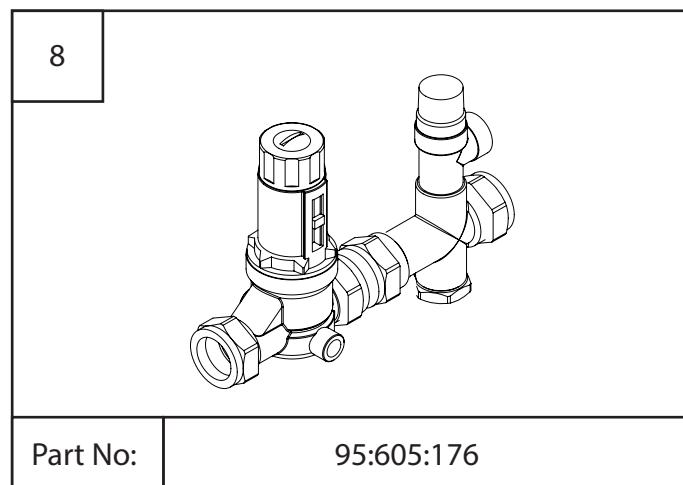
Part No: 95:611:025



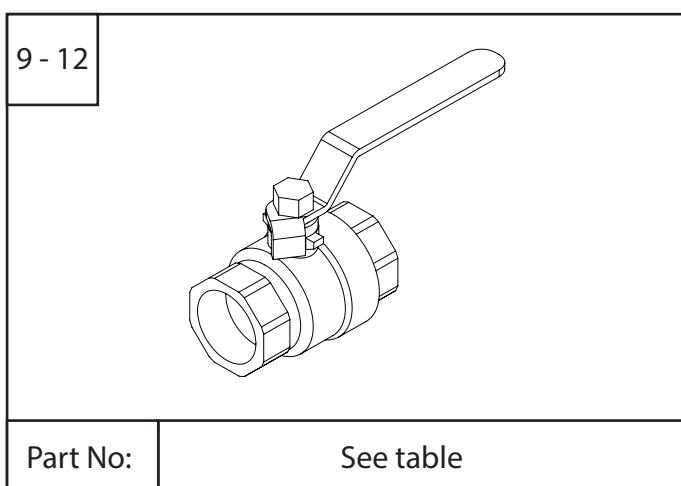
Part No: 95:607:396



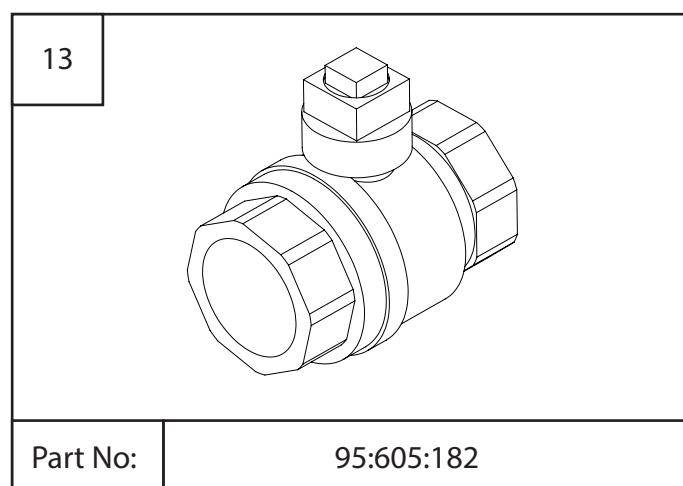
Part No: See table



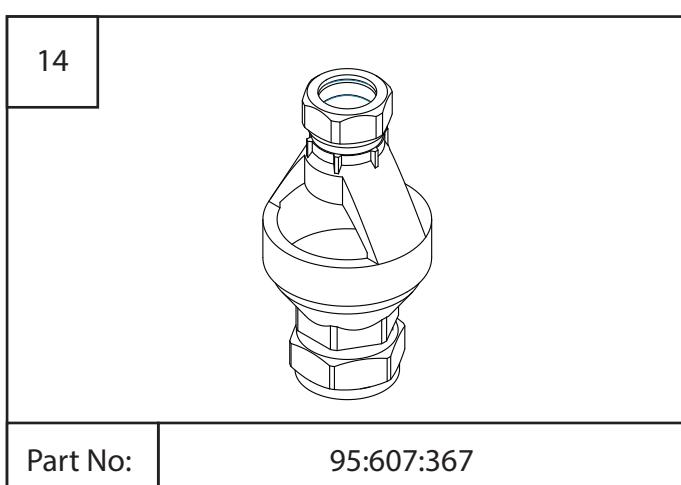
Part No: 95:605:176



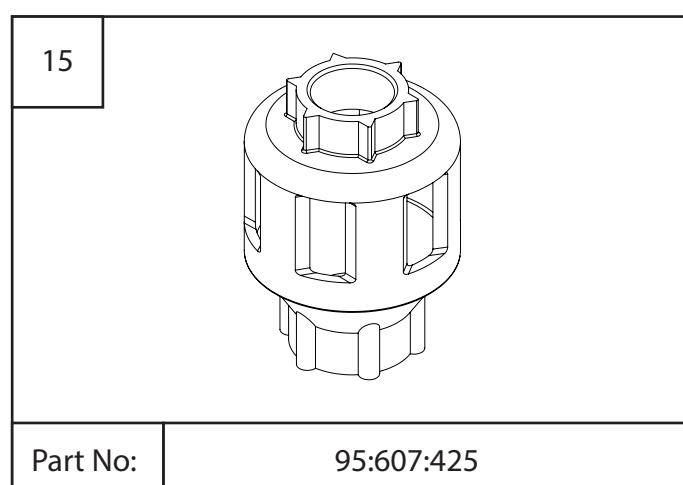
Part No: See table



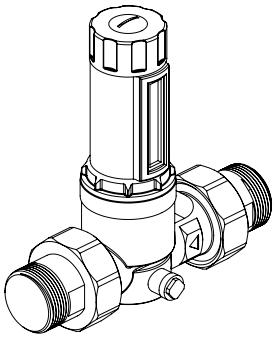
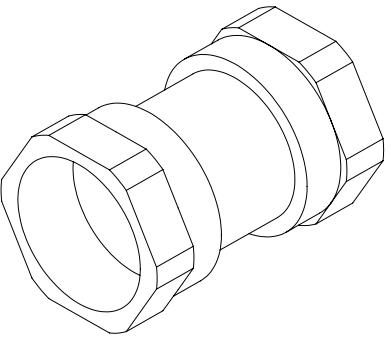
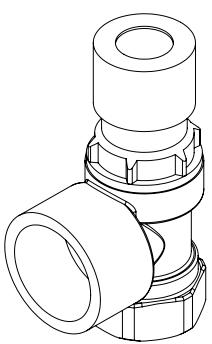
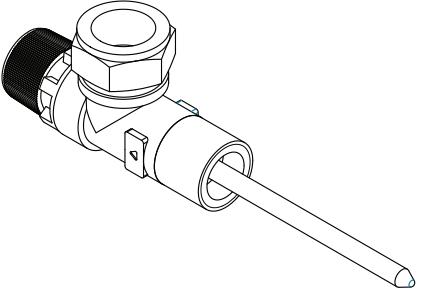
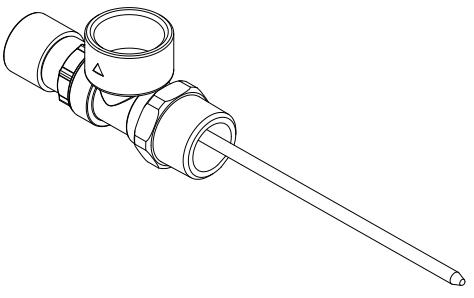
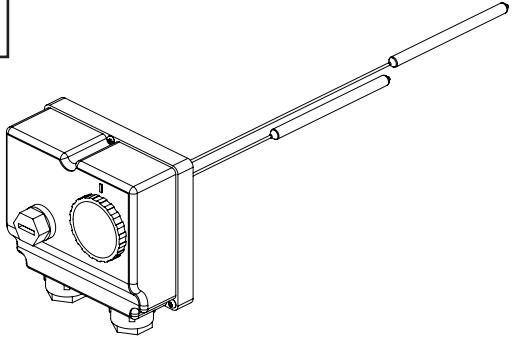
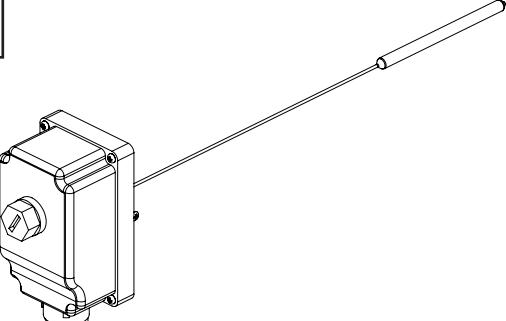
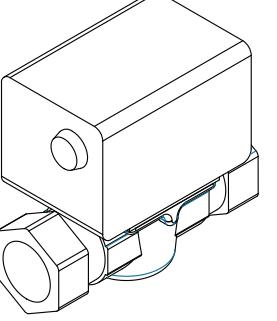
Part No: 95:605:182

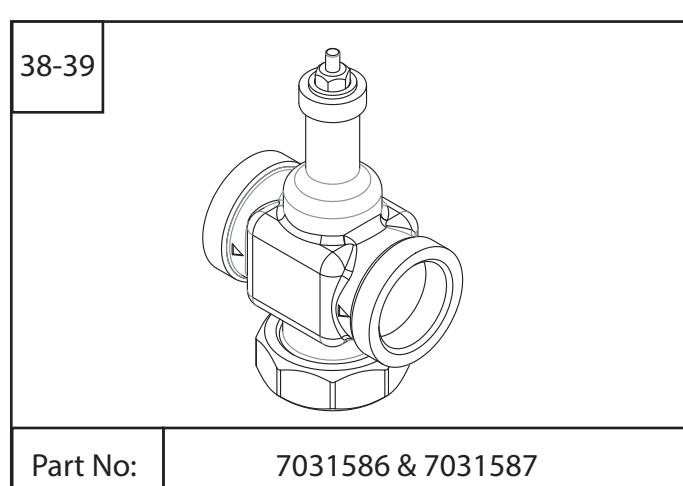
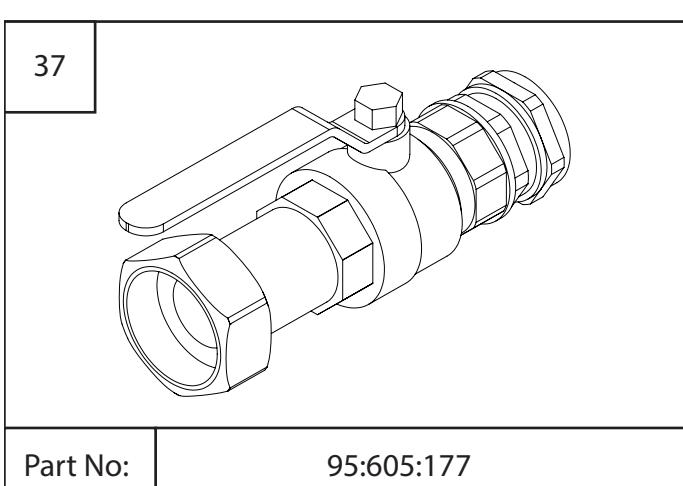
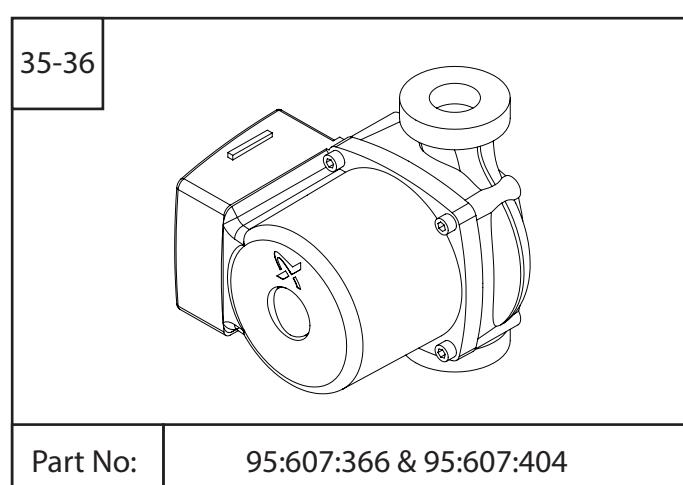
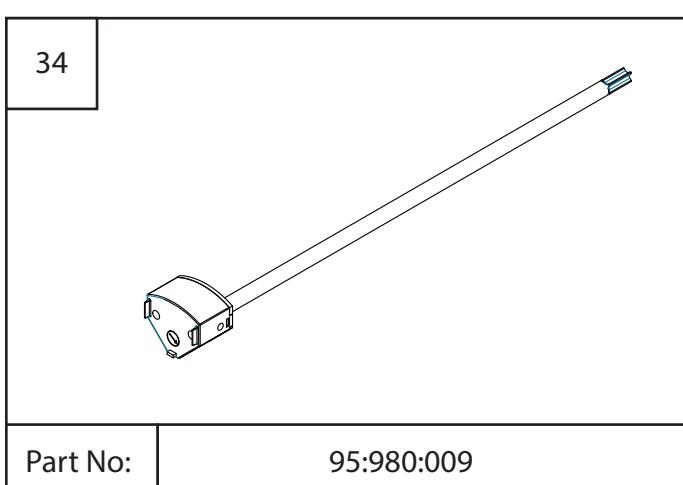
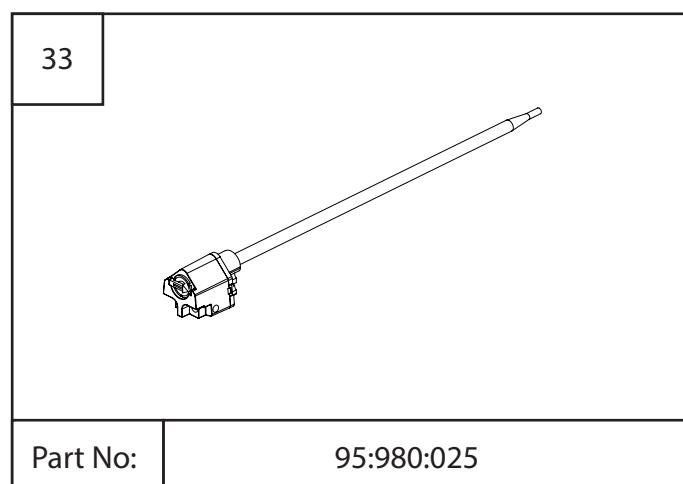
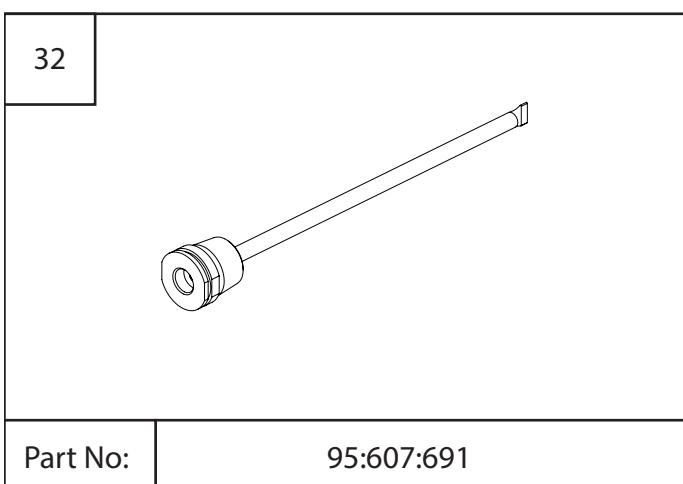
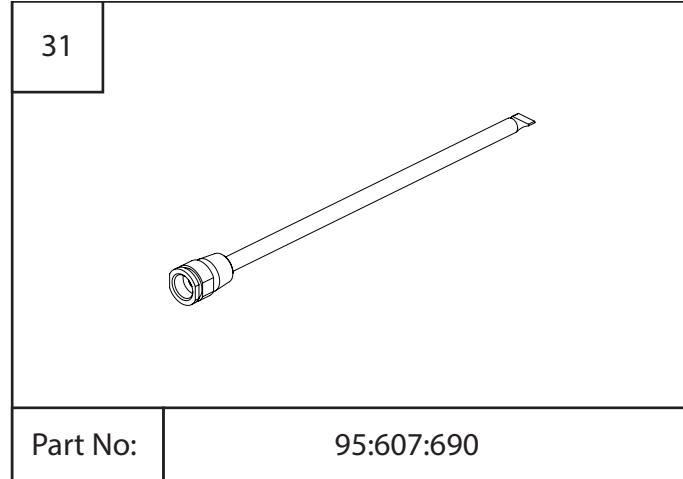
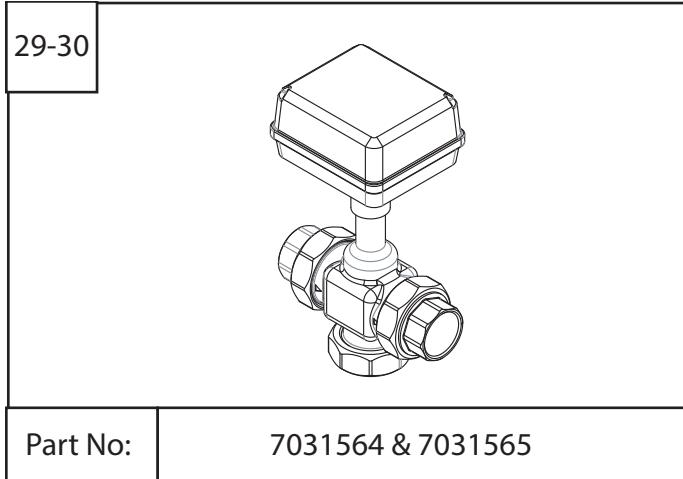


Part No: 95:607:367

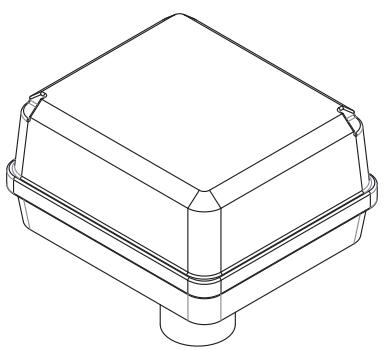


Part No: 95:607:425

16-18		Part No:	See table
19 -20		Part No:	See table
22-23		Part No:	95:605:192 & 95:605:194
24		Part No:	95:605:103
25		Part No:	95:605:196
26		Part No:	95:612:650
27		Part No:	95:612:652
28		Part No:	95:605:884



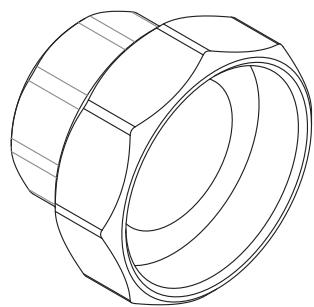
40



Part No:

7031588

41-42



Part No:

7031595 & 7031596

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 _____

Engineer Name _____

Company Name _____

Telephone Number _____

Comments _____

Signature _____

SERVICE 8 Date _____

Engineer Name _____

Company Name _____

Telephone Number _____

Comments _____

Signature _____

SERVICE 9 Date _____

Engineer Name _____

Company Name _____

Telephone Number _____

Comments _____

Signature _____

SERVICE 10 Date _____

Engineer Name _____

Company Name _____

Telephone Number _____

Comments _____

Signature _____

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.