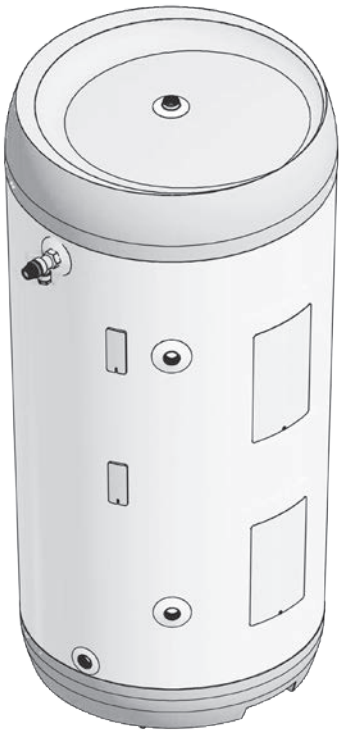
Delta Geocoil - DGC VIP

200-300 l.

UK



SAFETY INFORMATION
O&M INFORMATION
INSTALLATION MANUAL
TDS - TECHNICAL DATA SHEET

hot water association
CHARTER MEMBER

OSO HOTWATER

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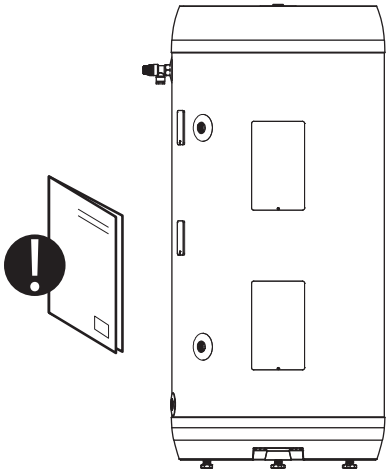
CONTENTS

❗	This document should be kept in a suitable place where it is accessible for future reference.

1. SAFETY INSTRUCTIONS

1.1 General information

- Read the following safety instructions carefully before installing, maintaining or adjusting the water heater.
- Personal injury or material damage may result if the product is not installed or used in the intended manner.
- Keep this manual and other relevant documents where they are accessible for future reference.
- The manufacturer assumes compliance (by the end-user) with the safety, operating and maintenance instructions supplied and (by the installer) with the fitting manual and relevant standards and regulations in effect at the date of installation.



Symbols used in this manual:

⚠ WARNING	Could cause serious injury or death
⚠ CAUTION	Could cause minor or moderate injury or damage to property
⊘	DO NOT
❗	DO

1.1.2 Aknowledgement of purchase

Thank-you for purchasing the DELTA Geocoil VIP unvented hot water cylinder.

DELTA Geocoil VIP is an unvented hot water cylinder for use with heat pump installations, available in capacities 200 and 300 litres. Its energy efficiency as defined by standing heat losses is the best in its class due to the use of vacuum insulated Panels (VIP) and will save the householder significant energy costs over the lifetime of the cylinder.

This manual gives detailed advice for installation and should be read carefully prior to fitting any unvented unit. OSO DELTA Geocoil VIP cylinders are not suitable for gravity fed primary systems. In known hard water regions, precautions should be taken to prevent limescale formation in hot water cylinders, in accordance with Building Regulation Part L, Domestic Heating Compliance Guide.

This OSO cylinder must be installed by a competent person and be installed in compliance with the OSO Installation and Maintenance Instructions, all current legislation, codes of practice and regulations governing the installation of unvented hot water cylinders in force at the date of installation.

❗ NOTE
Please read this manual before installation and leave with the cylinder. The manual and attached logbook serve as the cylinder guarantee.

1.2 Safety instructions for users

⚠ WARNING	
⊘	Safety valve overflows shall NOT be sealed or plugged (safety valve not included).
⊘	The product shall NOT be covered over the cover on the front.
⊘	The product shall NOT be modified or changed from its original state.
⊘	Children shallt NOT play with the product or go near it without supervision.
❗	The product shall be filled with water before the power is switched on.
❗	Maintenance/settings shall only be carried out by persons over 18 years of age, with sufficient understanding

⚠ CAUTION	
⊘	The product must not be exposed to frost, over-pressure, over-voltage or chlorine treatment. See warranty provisions.
⊘	Maintenance/settings shall not be carried out by persons of diminished physical or mental capacity, unless they have been instructed in the correct use by someone responsible for their safety.

1.3 Safety instructions for installers

⚠ WARNING	
⊘	Safety valve overflows must NOT be sealed or plugged (safety valve not included)
❗	The discharge pipe from any safety device shall be at least one pipe size larger than the nominal outlet size of the safety device (< 9m length). The discharge pipe shall have continuous fall to drain, be uninterruptible and frost-free at all times.
❗	Fixed electric fittings shall be used for installation in new homes or when changing an existing electrical setup in accordance with regulations. A mains cable with plug for wall socket can be used when replacing the product without changing the electrical setup.
❗	The mains cable shall withstand 90°C. A strain reliever must be fitted.
❗	The product should be filled with water before the power is switched on.
❗	The relevant regulations and standards, and this installation manual, must be followed.

⚠ CAUTION	
❗	The product shall be placed in a room with a floor drain. The manufacturer assumes no responsibility whatsoever if this provision is not followed.
❗	The product shall be properly aligned vertically and horizontally, on a floor or wall suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 40 cm in front of the electric junction box cover / 10 cm over the highest point.

2. PRODUCT DESCRIPTION

2.1 Product identification

Identification details for your product can be found on the type plate fixed to the product. The type plate contains details of the product in accordance with EN 12897:2016 and EN 60335-2-21, as well as other useful data. See Declaration of Conformity at www.osohotwater.com for more information.

OSO products are designed and manufactured in accordance with:

- Pressure vessel standard EN 12897:2016
- Safety standard EN 60335-2-21
- Welding standard EN ISO 3834-2

OSO Hotwater AS is certified for

- Quality ISO 9001
- Environment ISO 14001
- Work environment ISO 45001

2.2 Intended use

Delta Geocoil is designed to supply homes with hot running water. The product is intended for use with an alternative energy source such as a heat pump.

2.3 UKCA marking

UK
CA

The UKCA mark shows that the product complies with the relevant Directives. See Declaration of Conformity at www.osohotwater.com for more information.

The product complies with Directives for:

- Low voltage LVD 2014/35/EU
- Electromagnetic compatibility EMC 2014/30/EU
- Pressurised equipment PED 2014/68/EU

Any safety valve(s) used should be CE-marked and comply with the PED 2014/68/EU.

2.4 ErP product fiche - Technical Data Sheet

Trade mark	M T item No.	Model / identifier	ErP Rating	Standing heat loss W	Capacity L
OSO Hotwater AS	11009121	DGC 200 - 2.8kW / 1x230V + HX 2.6m²	A	43	191
OSO Hotwater AS	11009123	DGC 300 - 2.8kW / 1x230V + HX 3.1m²	A	49	284
Regulation: 2017/1369/EU - Regulation: EU 812/2013		Directive: 2009/125/EC - Regulation: EU 814/2013			
Heat loss tested according to standard: EN 12897					

3. INSTALLATION INSTRUCTIONS

3.1 Products covered by these instructions

11009121 Delta Geocoil - DGC 200
11009123 Delta Geocoil - DGC 300

3.1.1 Health and safety regulations

Handling Operations Regulations 1992 defines manual handling as: “any transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving thereof) by hand or bodily force” The Regulations set no specific requirements such as weight limits. However common sense still has to be used based on an ergonomic approach for each individual.

The DELTA Geocoil VIP shall be transported and stored in a vertical position.

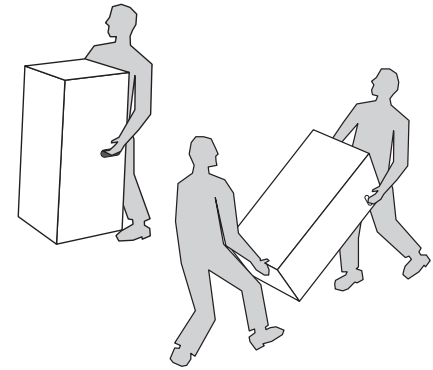
3.3.2 Delivery

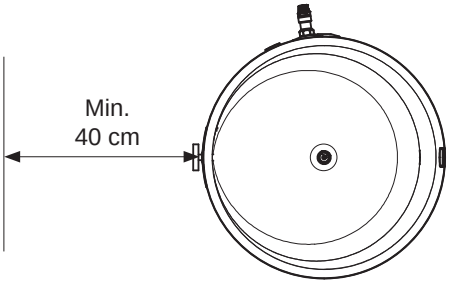
The product shall be transported carefully as shown, with packaging. Use the handles in the box.

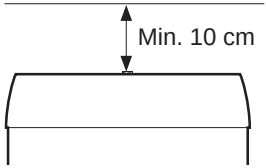
3.3.3 Siting the DELTA Geocoil VIP

There are few restrictions on the siting of the OSO DELTA Geocoil VIP, however it should not be sited anywhere open to frost attack. The unit shall be placed on a stable flat surface capable of withstanding the weight of the cylinder when full (see data plate) and access must be allowed for maintenance purposes. Provision should also be allowed for the routing of the discharge pipe away from the cylinder to an outside point according to building regulation G3.

⚠ CAUTION
Pipe stubs, valves etc. should not be used to lift the product as this could cause malfunctions.







3.4 Requirements for installation, location and positioning

⚠ CAUTION	
❗	The product shall be placed in a room with a floor drain. The manufacturer assumes no responsibility whatsoever if this provision is not followed.
❗	The product shall be placed in a dry and permanently frost-free position.
❗	The product shall be placed on a floor or wall suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 40 cm in front of the electric junction box cover / 10 cm over the highest point.
❗	The product shall be easily accessible in the home for servicing and maintenance.

3.5 Component check list

Components supplied with the unit in a separate accessory kit for site fitting:

- Multibloc valve, includes pressure reducing valve, line strainer, balanced cold water take off (for shower or bidet only), check and expansion valve.
- Tundish
- 3/4" x 22mm Elbow / Drain Cock
- Motorized valve
- Expansion vessel.

3.5.1 Components factory fitted

- Immersion heater(s)
- Thermostats / thermal cut-out
- Temperature and pressure relief valve.

3.5.2 Documentation supplied

- Installation manual & log book

3.6 Supply requirements

An uninterrupted 22mm cold water mains supply is recommended, a minimum standing pressure of 2.5 bar and a flow rate of 20 litres per minute with a 1 bar dynamic pressure is recommended. The cylinder will operate at lower pressures and flow rates however the performance will be compromised. The OSO unvented unit is designed for use with supply pressure up to 10 bar. For pressures over 10 bar an additional pressure reducing valve must be fitted in the supply pipe to the unit.

3.6.1 Expansion vessels

The vessel accommodates expanded water when the cylinder is heated and prevents the cylinder reaching its maximum working pressure.

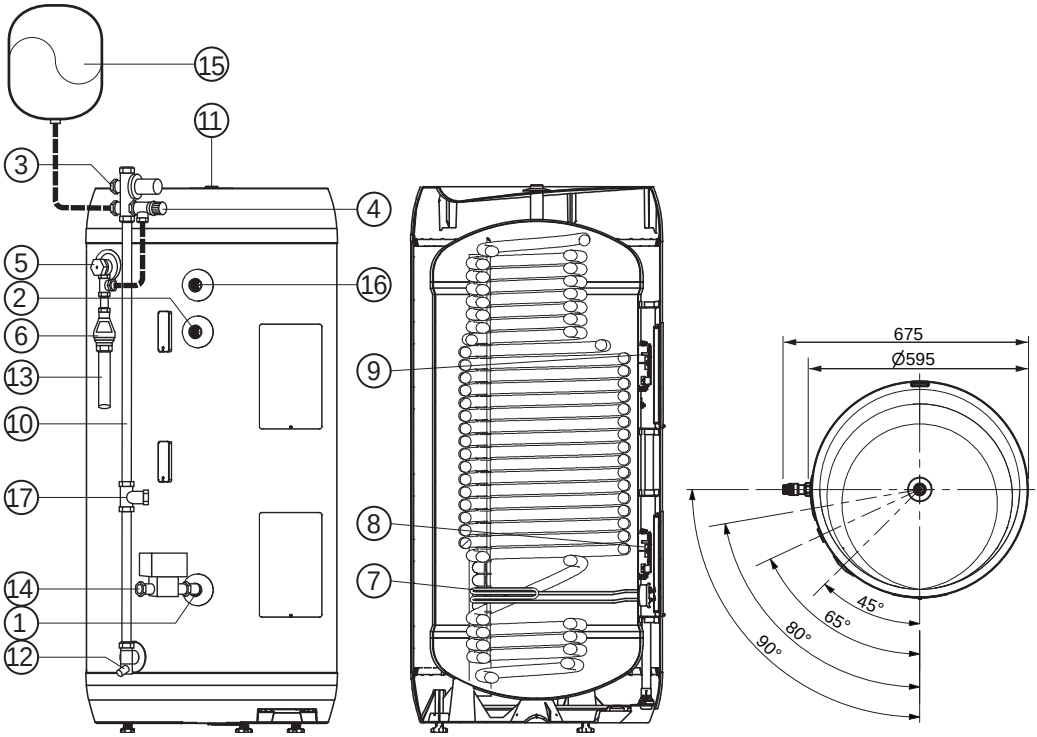
3.6.2 Compatible fittings and components

All thermostatically controlled heat pumps are compatible with indirect OSO cylinders.

3.6.3 Non-compatible products.

Solid fuel heat sources, wood burning stoves and other non-thermostatically controlled heat sources must not be used with unvented cylinders.

3.7 General layout



3.7.1 Reference chart

Ref no.	Key	Part No.
1	Return 3/4" BSP	
2	Flow 3/4" BSP	
3	Pressure Reducing Valve Multibloc (adjustable) includes Item 4	355030
4	Expansion relief valve (6 bar)	PREL355030
5	Temperature and Pressure Relief Valve	550853
6	Tundish	219005
7	Immersion Heater	71242
8	Immersion heater thermostat	80314
9	Thermostat	80345
10	Cold feed tube (not supplied, see pt. 3.7.2 Cold feed tube)	
11	Hot Water Outlet 3/4" BSP	
12	Elbow/Drain Cock	250445
13	Discharge Pipe (not supplied)	
14	Motorized valve (not factory fitted)	92000
15	Expansion vessel	AX18, AX24
16	Secondary Return (300 l.)	
17	T-piece (for 200 l., not included)	

3.7.2 Cold feed tube

Vessel size	Length of tube (ø28) mm	Expansion vessel pre charge / size
200	980	3 bar / 18 litre
300	1450	3 bar / 24 litre

3.8 Pipe installation

The product is designed to be permanently connected to the mains water supply.
Approved pipes of the correct size should be used for installation. The relevant standards and regulations must be followed.

3.8.1 Incoming water pressure
The efficiency of the product depends on the incoming cold water pressure. The water pressure should be min. 2 bar and max. 6 bar throughout the day. Excessive water pressure can be adjusted by installing a pressure reduction valve.

3.8.2 Connecting pipes
Pipes of suitable size and quality should be run to the connections on the product and fixed with a suitable sealant.

A safety valve of the approved type (see page 3) should be fitted in the heating circuit (not supplied). The safety valve should not be plugged or blocked. Any overflow pipe from the safety valve must be uninterruptable, undamaged and frost-free with a fall to the drain.

3.9 Positioning the unit

The water heater shall be fitted level on a hard surface with sufficient load strength to take the full weight of the cylinder (see technical data table page 12). There are no limitations regarding the fitting distance from walls etc., but it is strongly recommended to ensure easy access to all pipe fittings etc. The Temperature and Pressure relief valve and immersion heater are positioned at 90° apart. The DELTA Geocoil VIP cylinder must be positioned to ensure that the tundish is visible and there is easy access to the thermostat and to remove the immersion heater if required.

3.9.1 Protection from frost
If the water heater is in danger of being exposed to frost while not operating under electric power, the unit must be drained to avoid damage. Make sure the electric power is turned off before draining, otherwise the heating elements can be damaged and the warranty is void. Draining instructions, see “Draining ” on page 5.

3.9.2 Cold water supply
1. To obtain the best performance from your OSO unvented system it is advisable to feed the unit with an uninterrupted supply.
2. Before connecting to the multibloc, flush the cold supply pipework of all flux and debris.
3. Locate the water heater in a suitable position to facilitate the installation of the cold water supply, discharge fittings and pipework. Also take into account access to the immersion heater.
4. Fit the combined male elbow drain cock to cold supply point (14), so that the compression fitting is vertical.
5. Fit the length of copper tube 22 mm specified in Table 1 to the cold feed elbow (see pt. 4 above).
6. Fit the Multibloc (5) to the top of the copper tube (see pt. 5 above).
7. Connect 15 mm copper tube from the expansion relief valve (4) and also from the T&P valve (5) and join together in a Tee as shown on page 8.
8. Fit the tundish (8) to the bottom connection of this tee.
9. Connect the cold supply to the multibloc (5).
10. Fit the expansion vessel to the wall close to the water heater using the enclosed mounting bracket. Connect the expansion vessel to the multibloc, as shown on page 8.

3.9.3 Hot water supply
Connect the hot water supply pipe to the outlet (13). Ensure connection is water tight.

3.9.4 Balanced cold water supply (optional)
If no balanced cold supply is required, tighten the supplied blanking cap. If a balanced mains pressure cold water supply is required to a shower or bidet (over rim type only, ascending spray type requires type AA,AB or AD air gap), remove blanking cap and connect to the shower or bidet cold supply on the multibloc valve (5). (Major shower manufacturers advise fitting a mini expansion vessel in the balanced cold supply pipework to accommodate thermal expansion and prevent tightening of shower controls) Using the balanced cold connection to feed bath taps can reduce the flow available to the unvented cylinder.

3.9.5 Secondary return (optional)
Connect secondary return if required to fitting (18) page 8, see technical data table on page 26.

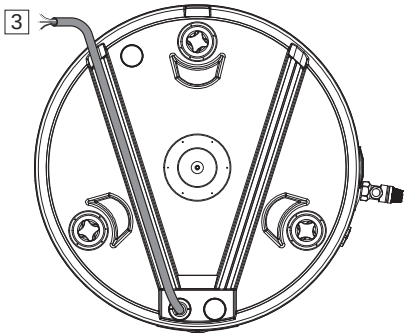
3.9.6 Discharge pipe

Connect the tundish outlet to the discharge pipe. Install the Tundish in a vertical position within a maximum of 600 mm from the Temperature and Pressure Relief Valve drain connection and away from electrical components. Ensure the expansion relief pipework discharges through the tundish. Tundish pipework must be 22 mm with a minimum vertical length of 300 mm below tundish. Maximum permitted length of 22 mm pipework is 9 m. Each bend or elbow is equivalent to 0.8 m of pipework. All pipework must have continuous fall and discharge in a safe, visible position. If any doubt, refer to Building Regulation G3. Discharge pipe must be dedicated to the cylinder and must not be used for any other purpose.

3.10 Flow and Return and Motorized valve

The heat pump primary flow and return connections should be made connections 1 & 2. The motorized valve can be connected to either the primary flow or return pipe. The primary flow and return fittings are 3/4" BSP female. The valve has 22mm x copper connections. The direction of primary flow in the coil is bottom to top. The maximum operating temperature of the primary flow would typically be 82°C.

For electrical connection of the motorized valve and immersion heater, please read Electrical Installation Instructions on page 13.



3.10.1 Fitting instructions

⚠ WARNING	
❗	The product shall be filled with water before the power is switched on.
❗	The discharge pipe from any safety device shall be at least one pipe size larger than the nominal outlet size of the safety device (< 9m length). The discharge pipe shall have continuous fall to drain, be uninterruptible and frost-free at all times.

⚠ CAUTION	
❗	The product shall be placed in a room with a floor drain. The manufacturer assumes no responsibility whatsoever if this provision is not followed.
❗	The product shall be properly aligned vertically and horizontally, on a floor or wall suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 40 cm in front of the electric junction box cover / 10 cm over the highest point.

3.10.2 Fitting recommendation

RECOMMENDATION	
-	Allow clearance to the floor. Unscrew the feet a minimum of 15 mm from the bottom of the product.
-	Mains power cable (3) should be hidden under one of the channels in the bottom of the product.
-	If a non-return valve is fitted in the system a reduction valve and expansion vessel shall be fitted (to stop dripping from the safety valve).
-	If the maximum water pressure exceeds 6 bar in a 24-hour period, a reduction valve and expansion vessel shall be fitted.
-	For installation in a rooms which does not conform to the wetroom standard, a watertight drip tray with overflow pipe ≥ 18 mm. inside diameter should be fitted under the product, in addition to an automatic stop cock with sensor. This will prevent possible material damage.

3.10.3 Pressure drop table - coil

Product info:		Pressure drop (mbar) at volume flow:							Cw value (m^3/h):
Product	Coil surface m^2	540 L/h (0,15L/s)	900 L/h (0,25 L/s)	1800 L/h (0,50 L/s)	2700 L/h (0,75 L/s)	3600 L/h (1,00L/s)	4500 L/h (1,25 L/s)	5400 L/h (1,50 L/s)	Flow @ 1bar pressure drop
DGC 200	2.6	40	109	415	824	1440	2150	3050	3.0
DGC 300	3.1	51	117	440	890	1555	2330	3340	2.9

3.11 Commissioning

1. Check all connections for tightness.
2. Open hot water tap furthest away from the OSO water heater. Open the mains stop cock to fill the water heater. When water flows evenly from tap, allow to run for a few minutes to flush through any dirt, swarf or residue, then close the tap. Open successive hot taps to purge any remaining air.
3. Check all water connections for leaks and rectify if necessary
4. Manually operate Expansion relief valve 6 (see page 8) to ensure free water flow through discharge pipe by turning knob counter-clockwise. To close continue to turn counter-clockwise until the valve shuts.
5. Manually operate Temperature and Pressure Relief Valve 7 (see page 8) to ensure free water flow through discharge pipe (Turn knob counter-clockwise).
6. Switch electrical power on.

3.12 Draining

Switch off the electrical power (Important to avoid damage to element).

Isolate heat pump from OSO unit. Turn off the cold water supply valve. Open hot water tap. Open drain valve (see page 8) at base of cylinder.The unit will drain.

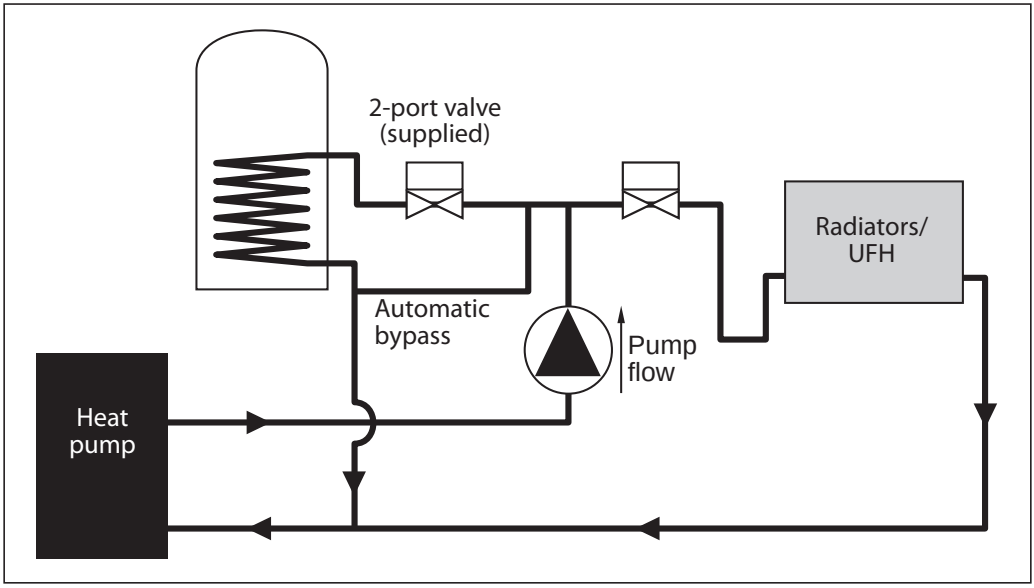
Draining process may be speeded up by opening the temperature and pressure relief valve. An internal ø18 mm hose can be applied to lead the water to a gully, sink or similar.

3.13 System flushing

This will not be necessary under normal circumstances as the line strainer will prevent ingress of foreign materials, however if flushing is required, run at least 50 litres of water from the cylinder at the highest possible flow rate. Close the taps and follow draining procedure (above).

3.14 Piping Diagram

3.14.1 S-plan piping diagram



4. ELECTRICAL INSTALLATION

4.1 Wiring and electric fitting

All wiring must conform to current IEE regulations Any fixed electric fittings must be installed by an authorised electrician. The relevant standards and regulations must be followed.

When connecting cables to thermostats, use spade connectors as shown in diagram. Ensure that connector is less than 10 mm in outer dimension and fits inside the shoulders of the thermostat and is not tightened onto the top of the shoulders.

3.6.1 Electrical components

Component	Note
Safety thermostat	85°C safety cut-off
Working thermostat	50-75°C adjustable
Heating element	2.8 kW - 1-phase 230V
Power supply cable	Heat resistant to 90°C
Internal wires	Heat resistant

3.6.2 Electrical connections in the junction box

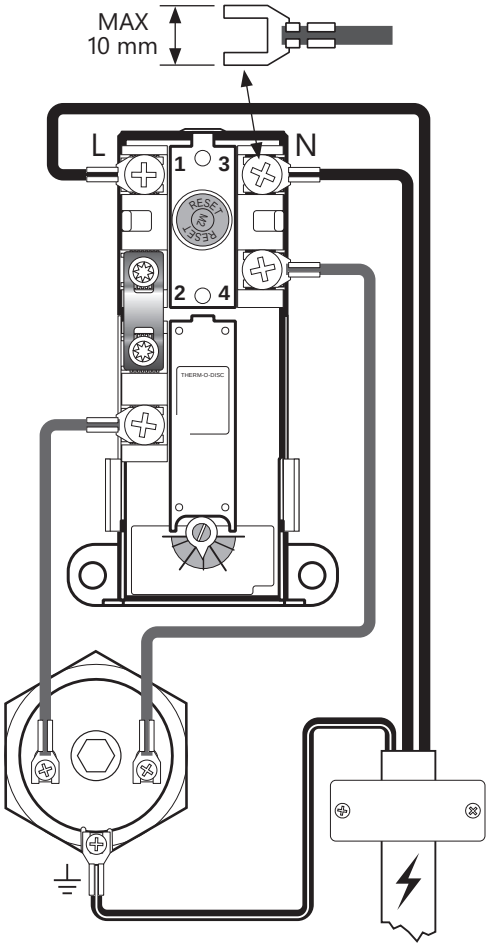
⚠ WARNING
Constant voltage present at terminals L and N. Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.

A) Live wire (L) connected to point '1' on the thermostat.
B) Neutral wire (N) connected to point '2' on the thermostat.
C) Yellow wire with green stripe ⏚ – Earth – connected to the terminal for the heating element (hexagonal brass)

3.6.3 Torque settings

Component	Torque
G 1.1/4" external - heating element	60 Nm (+/- 5)
Thermostat screws (1 and 2)	2 Nm (+/- 0.1)
Earth screw on the element head	2 Nm (+/- 0.1)

⚠ WARNING
The thermostat must never be dismantled/ opened. This will compromize its function and cause risk of overheating. Warranty will cease.



Electric connection, schematic

4.2 Immersion heater thermostat

The immersion heater is designed as an auxiliary heater as an emergency back-up. Power to immersion heaters should not be switched on until the unit is filled with water. All units are fitted with one 2.8 kW immersion heater which is located behind the electrical box. Alternative thermostats should not be used, regulations require immersion heaters on unvented cylinders to be connected with a thermal cut-out. Follow the wiring instructions in pt. 4.1.

The unit must be connected to a minimum 16 amp dedicated permanent supply complying with current I.E.E Wiring regulations, isolation is required via a minimum 20 amp double pole isolation switch with a minimum 3 mm separation required. All electrical wiring should be carried out by a competent electrician, using a heat resistant cable (minimum 85°C), and be in accordance with the latest I.E.E Wiring Regulations.

Each immersion heater has a working thermostat adjustable between 40°C - 70°C (+/- 5°C). A safety cut-out is also incorporated within the thermostat and will operate at 85°C (± 7°C). Should this happen, check reasons for thermal cut-out button being released and when satisfied press the reset button.

The immersion wiring should be run through a channel from base of cylinder to the immersion housing. The cable should be secured using the supplied clamps in the bottom opening of the channel.

4.3 Indirect heating system

4.3.1 Motorised valve

To comply with regulations governing the installation of indirect unvented cylinders, a motorised valve must be fitted in the primary pipework. Your OSO unit has been supplied with a two port motorised valve, which will act as a positive energy cut-out should the safety cut-out operate.

The unit should be installed on an “S” plan system. Please follow the wiring instructions carefully.

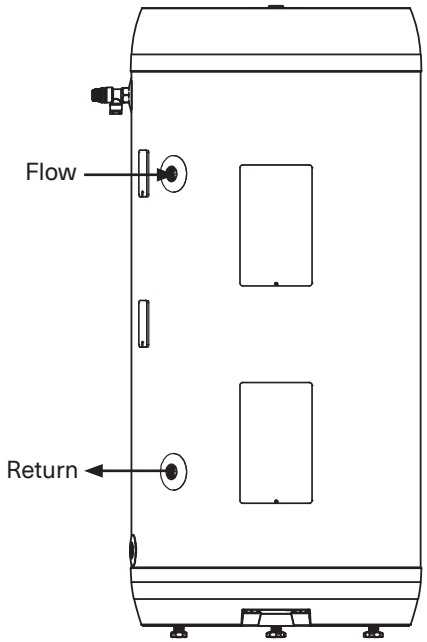
The thermal cut-out is pre-set to 85°C with a manual reset, to comply with building regulations. Should the safety cut out be brought into operation, the motorised valve will operate and close down the primary flow to the cylinder. To reset the safety cut-out and the motorised valve the reset button must be pressed in. Also see S-Plan Wiring on page 14-15.

4.4 External heat pump

Heat pumps to unvented hot water cylinders must be controlled by a thermal cut-out as well as a thermostat. The OSO Delta Geocoil is supplied with two sensor pockets (see pt. 4.6.4). Any external heat pump controller (not supplied) shall be wired through the OSO thermal cut-out as a safety device and use the middle sensor position on the cylinder to control the external heat pump into the heating coil.

Connect the external heat pump to the coil with the primary flow in a top-to-bottom direction as shown in illustration.

If using a 6-wire 28mm or 1” BSP V4043H on either circuit the white wire is not needed and must be made electrically safe.



4.5 S-plan wiring

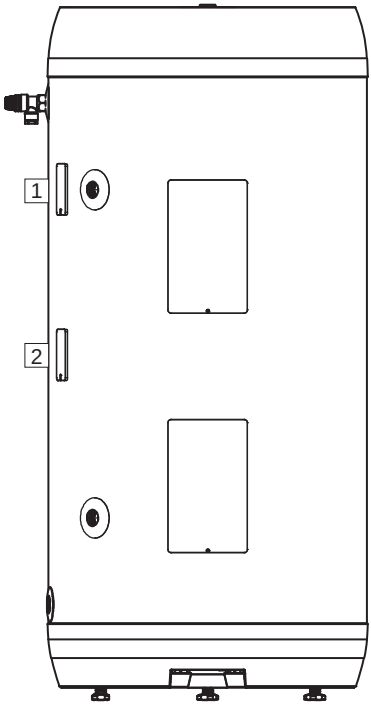
⚠ WARNING
OSO Hotwater (UK) Limited can not be held responsible if alternative wiring plans are used. *Important:* Before resetting the safety cut-out or altering the thermostat setting isolate electrical supply to the unit before removal of the lid. Ensure the lid to the junction box is refitted before power is switched back on.

OSO Delta Geocoil VIP cylinders can be fitted with all types of heat pumps.
Standard heat pumps operate using room and cylinder thermostats. Please follow upper diagram: 'Wiring for Standard Heat pump'.

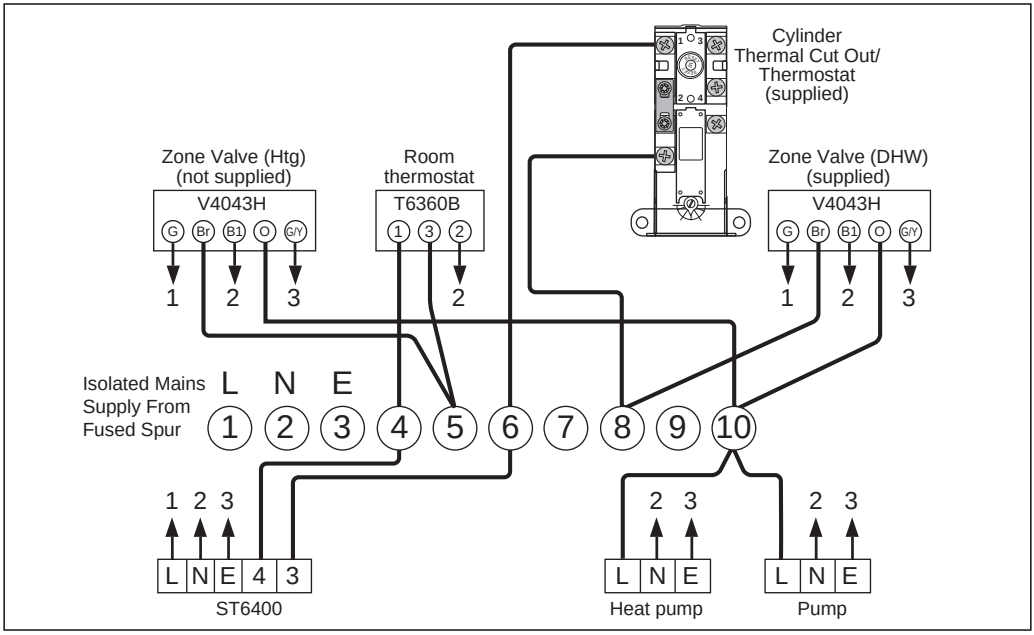
4.5.1 Thermistor controlled heat pumps
Many popular heat pumps now use a thermistor principle. A thermistor temperature sensor is supplied with the heat pump to attach to the cylinder. Temperature information is relayed back to the heat pump control system.

Two sensor pockets (1) and (2) are provided to secure the sensor on the Delta Geocoil VIP cylinder (see pt. 4.5.4). OSO recommend using the lower sensor (2) to control the heat pump.

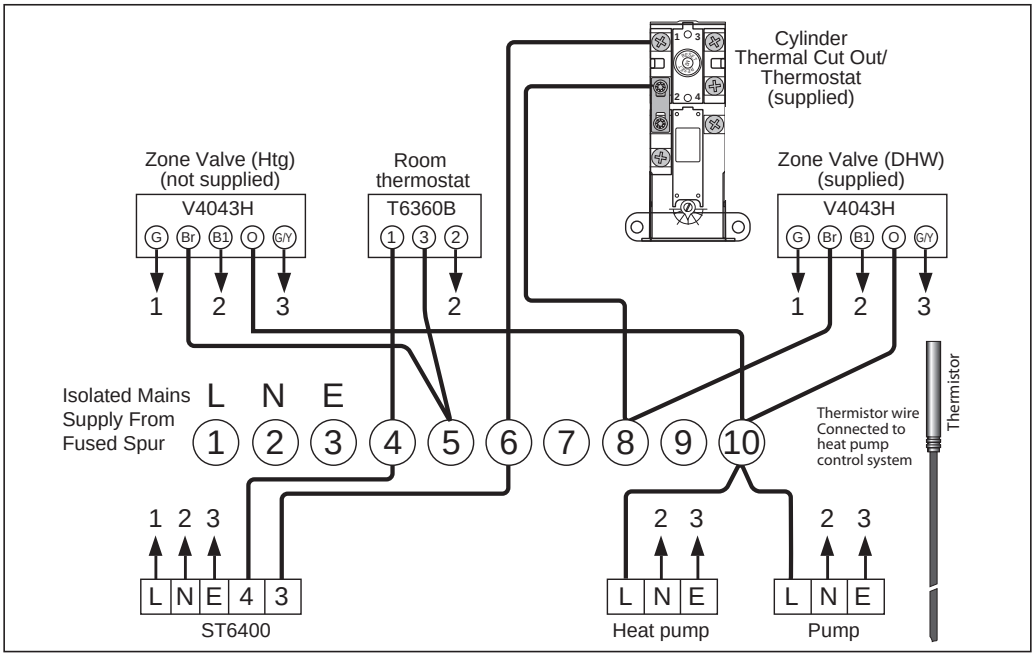
The supplied motorised valve must be used in accordance with Building Regulation G3. This is wired from the supplied cylinder thermostat, wired as high limit stat. Please follow lower diagram: 'Wiring for Thermistor Controlled Heat pump'.



S-plan wiring
'Wiring diagram for Heat pump without thermistor



S-plan wiring
Wiring diagram for Thermistor controlled Heat pump (strongly recommended)
Please contact manufacturer for heat pump specific wiring.



4.5.2 Fitting instructions

⚠ WARNING	
❗	The product shall be filled with water before the power is switched on.
❗	Fixed electric fittings shall be used for installation in new homes or when changing an existing electrical setup in accordance with regulations.
❗	The mains cable shall withstand 90°C. A strain reliever must be fitted (supplied).

⚠ CAUTION	
❗	The product must have a clearance for servicing of 40 cm in front of the cover / 10 cm over the top connection.
❗	If the mains cable is damaged, it must be replaced with cable of a quality that meets the requirements of the installation. The cable must be replaced by a qualified electrician.

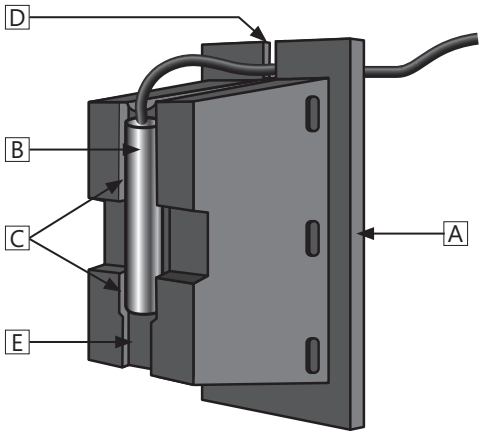
4.5.3 Fitting recommendation

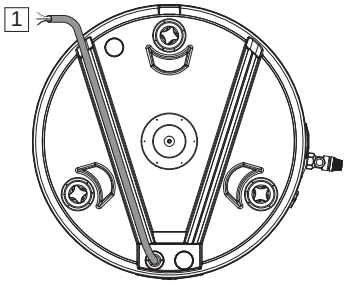
RECOMMENDATION	
-	Mains cable (1) for wall socket/wall box should be hidden under one of the channels in the bottom of the product, see illustration at bottom of page.
-	For products with ≤ 2kW capacity, a ≥ 10A fuse / ≥ 1.5# wire should be used*. For products with ≤ 3kW capacity, a ≥ 15A fuse / ≥ 2.5# wire should be used (230V).

4.5.4 Temperature sensor installation

The product is equipped with two temperature sensor brackets which allows installation of a 6 or 8 mm. temperature sensor. OSO recommend using the lower sensor position. To install the temperature sensor follow the instructions below.

1. Remove temperature sensor bracket (A) from tank body by gripping it and pulling straight out.
2. Insert temperature sensor (B) firmly into the appropriate grooves in the sensor bracket and place the temperature sensor cable in the cable slot (D).
   An 8 mm. sensor (shown) fits in the upper grooves (C) while a 6 mm. sensor fits in the lower groove (E).
3. Refit the sensor bracket into the tank body, ensuring the bracket is inserted fully to establish proper contact between the sensor and the stainless steel inner tank surface. Make sure the sensor cable is positioned properly in the cable slot (D) to avoid potential damage to the cable.





4.6 Handover to end-user

THE INSTALLER MUST:
Brief the end-user on safety and maintenance instructions.
Brief the end-user on settings and emptying the product.
Hand this installation manual over to the end-user.
Enter contact details on the type plate on the product.

5. USER GUIDE

5.1 Settings

5.1.1 Thermostat setting for non-thermistor controlled heat pumps

The thermostat on the product is adjustable from 40-70°C. The thermostat should not be set lower than 65°C to prevent bacteria growth. To adjust the temperature:

A) Disconnect the power supply.
B) Remove the electric junction box cover (2) with a screwdriver.
C) Adjust the temperature on the thermostat adjustment dial (4).
D) The thermostat is adjustable from 40-70°C.

Refit the junction box cover (2) before connecting the power supply.

5.1.2 Resetting the safety thermostat

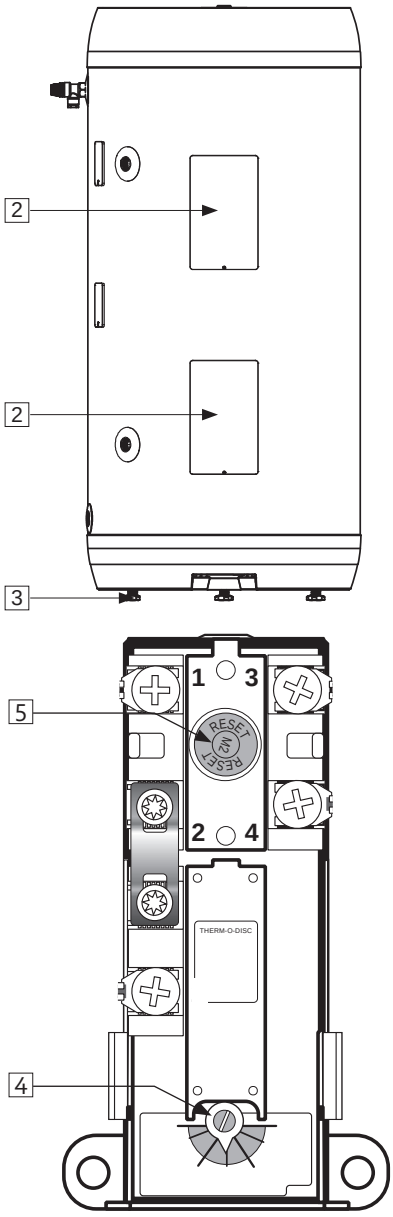
The safety thermostat on the product cuts out when there is a risk of overheating. This is reset by removing the cover (2) and pressing the 'Safety' button (5). If the thermostat cuts out repeatedly, contact the installer.

5.1.4 Adjusting the feet

The product is equipped with three factory-fitted feet (3), adjustable from 0-40 mm. Unscrew the feet a minimum of 15 mm from the bottom of the product. Adjust the feet individually until the product is standing stable and straight vertically and horizontally.

⚠ WARNING
The thermostat must never be dismantled or opened. This will compromize its function and cause risk of overheating. Warranty will cease.

⚠ WARNING
Constant voltage present in the junction box. Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.



6. SAFETY AND SERVICING

Maintenance must be carried out by a competent person.

6.1 Safety Cut-out

The safety cut-out operates if:

1. Wiring is incorrect.
2. The immersion heater thermostat or cylinder thermostat fails.
3. Thermostat is set too high.
4. Remember before resetting the safety cut-out or altering the thermostat setting, isolate electrical supply to the unit prior to removal of the electrical box lid.
5. Reduce thermostat setting and press the reset button. After adjustments are completed, ensure the lid to the electrical box is refitted.
6. If still out of operation, contact installer.

6.2 Intermittent or slow discharge from tundish

1. Turn off the electrical supply to the immersion heaters.
2. Turn off cold water supply valve.
3. Open a hot tap.
4. Turn the knob on the Temperature and Pressure Relief Valve (5) to the left and hold in this position for thirty seconds.
5. Attach a foot pump with a schraeder (car type) valve to the expansion vessel.
6. Pump up to 3 bar
7. Open cold water supply valve.
8. When water flows through open tap, close tap
9. Turn on electrical supply to the immersion heaters.

6.3 Continuous very hot water discharge from tundish

This indicates a malfunction of a thermal cut-out, operating thermostat or the combined temperature and pressure relief valve. Turn off the electrical supply to the immersion heater and also isolate an indirect unit from the heat pump. Contact the installer or competent engineer.

6.4 Expansion vessel maintenance

The expansion vessels do not require annual maintenance and should not be tampered with unless an intermittent or slow discharge from the tundish occurs when water is being heated. In this situation, maintenance must be carried out by competent person and the precharge pressure must be restored to the original value. An annual visual inspection is recommended. Important: To check the precharge the expansion vessel must be completely empty of water. If the precharge pressure is different from the value shown on the label it must be restored to the original value. Do not remove expansion vessel without depressurising the cylinder and draining 10 litres of water from the drain valve at the base of the cylinder.

6.5 Guarantee

Cylinder should be serviced annually and the log book should be updated in order to validate guarantee. The log book and service records act as guarantee document. For terms of guarantee please see the log book on page 23.

6.6 Servicing Procedure:

7.6.1 Expansion relief valve

Ensure that expansion relief valve works by manually opening to discharge water to tundish.

6.6.2 Pressure reducing valve

Isolate the cold water supply and open a ground floor cold tap. Unscrew the pressure reducing cartridge. Clean the filter mesh and the cartridge under running water. Replace cartridge ensuring that strainer is correctly located and reassemble the unit.

6.6.3 Expansion relief cartridge

Isolate the cold supply and open a ground floor cold tap. unscrew expansion relief headwork from valve body. Clean valve seat face and seating - do not scratch or damage either seat face or seating. Refit in reverse order. Do not overtighten.

6.6.4 Temperature and Pressure relief valve

Ensure that Temperature & Pressure Relief valve works by manually opening to discharge water to tundish.

6.6.5 Internal inspection

The immersion heater can be removed to provide visual inspection access to the cylinder.

7. OSO FAULT FINDING GUIDE

7.1 Faults and fixes

If problems arise when the product is in use, check for possible faults and fixes in the table. If the problem is not shown in the troubleshooting table or you are unsure what is wrong, contact the installer (see type plate on the product) or OSO Hotwater AS.

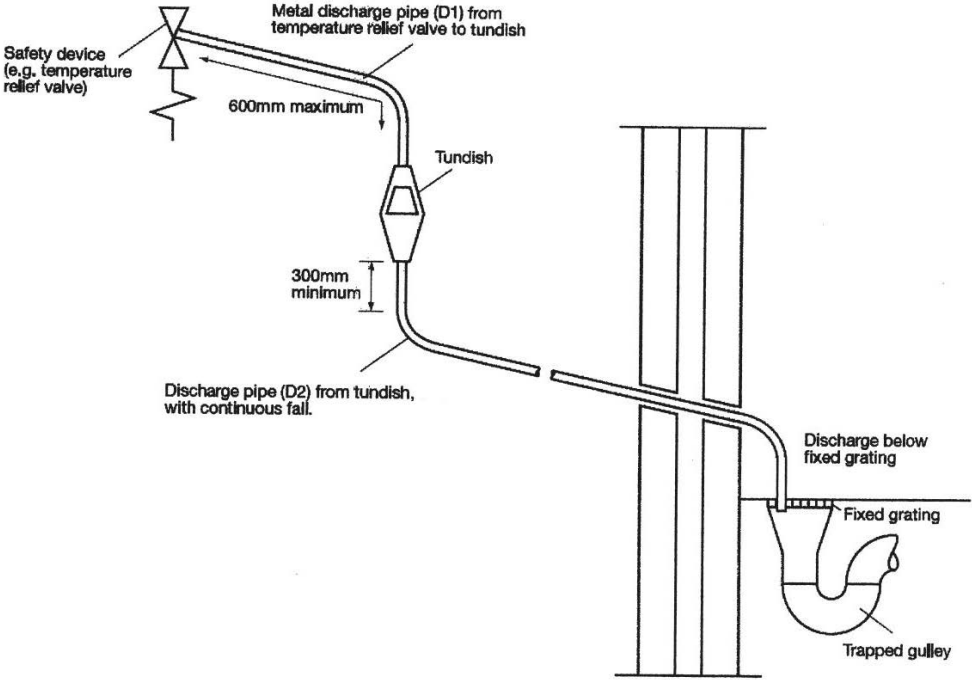
TROUBLESHOOTING		
Problem	**Possible cause of fault**	**Possible solution**
No hot water	Power supply interrupted.	Check that the fuse is set and the earth breaker has not tripped.
	Failure in heat pump	Refer to the respective heat pump manual.
	Thermostat has cut out.	Press the 'Reset' button on the safety thermostat; see 'User guide'.
	Heating element is defective.	Replace heating element. Contact auth. installer.
	Leak in hot water pipe	Verify as follows: a) close the mixer valve, b) wait 2-3 hours, c) feel the mixer valve to see whether it is hot. If so, there is a leak in the hot water pipe or elsewhere. Contact auth. installer.
There is leakage/dripping from the safety valve/ there is often water on the floor by the cylinder in the morning	Pressure reduction valve, water meter or blocked non-return valve on the water intake. Water pressure into the home is too high.	Fit AX expansion vessel which absorbs expansion during heating, and fit pressure reduction valve for stable water pressure inside the home. The pressure reduction valve is adjusted according to the set pressure in the expansion vessel. Contact auth. installer.
	The safety valve is worn or there are particles stuck between the membrane and the valve seat because the water is dirty	Try to flush with water through the safety valve. Open valve for approx. 1 minute. If the valve still leaks, it must be replaced. Contact auth. installer.
	Leak from heating element.	Verify as follows: a) cut the electric supply, b) unscrew the cover, c) visually check whether there is a leak from the heating element. If so, replace the gasket/heating element. Contact auth. installer.
Not enough hot water	High consumption in the home.	Switch to a larger OSO water heater. Contact auth. installer.
Water temperature not high enough	Bleed from cold to hot water in taps.	Contact auth. installer.
Fuse/earth breaker trips repeatedly	Possible fault in the heater's electrical system.	Verify as follows: a) cut the electric supply, b) unscrew the cover, c) visually check the junction box for any problems. If so, contact auth. installer to check. Fit the cover.
Long time before the water reaches the tap	Long stretch of pipe from water heater to tap.	Fit circulation wire or heating cable to HW pipe. Or fit an auxiliary heater by the tap. Contact auth. installer.
Knocking in the pipes when the hot tap is closed	Large pressure increase when the tap is closed quickly.	Completely normal. Fit AX expansion vessel if troublesome. Contact auth. installer.
Important - please note: Always disconnect electrical supply before removing any electrical equipment covers		

7.2 Alternative discharge

Discharge pipes should be in metal and dedicated to the unvented cylinder. The pipe should have a continuous fall and should terminate in a safe and visible place.

Downward discharges at low level, i.e. up to 100 mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that where children may play or otherwise come into contact with discharges, a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility.

Discharge at high level, i.e. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible (tundish visible or not) or onto a roof capable of withstanding high temperature discharges of water and 3 m from any plastics guttering system that would collect such discharges (tundish visible).

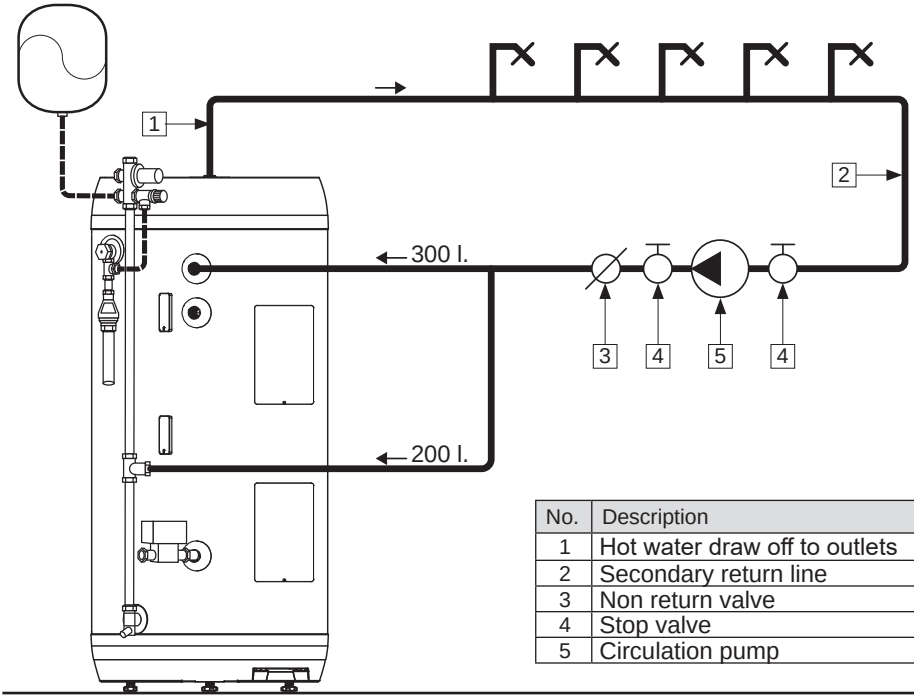


7.2.1 Single pipe discharge

Where a single pipe serves a number of discharges, such as in blocks of flats, the number served should be limited to not more than 6 systems so that any installation discharging can be traced reasonably easily. The single common discharge pipe should be at least one pipe size larger than the largest individual discharge pipe to be connected. For further information contact your Building Control Office

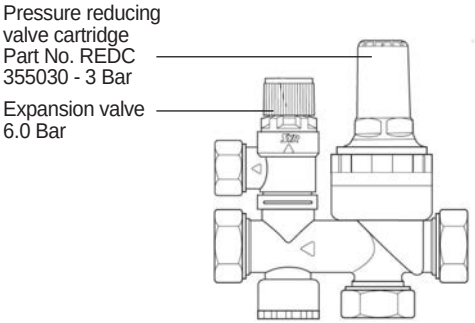
Valve outlet size	Minimum size of discharge pipe D1	Minimum size of discharge pipe D2 from tundish	Minimum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G 1/2	15 mm	22 mm	Up to 9 m.	0.8 m.
		28 mm	Up to 18 m.	1.0 m.
		35 mm	Up to 27 m.	1.4 m.
G 3/4	22 mm	28 mm	Up to 9 m.	1.0 m.
		35 mm	Up to 18 m.	1.4 m.
		42 mm	Up to 27 m.	1.7 m.
G 1	28 mm	35 mm	Up to 9 m.	1.4 m.
		42 mm	Up to 18 m.	1.7 m.
		54 mm	Up to 27 m.	2.3 m.

7.3 Secondary return



No.	Description
1	Hot water draw off to outlets
2	Secondary return line
3	Non return valve
4	Stop valve
5	Circulation pump

7.4 Spare parts



Description	Part No.
Multibloc valve	355030
Temperature & pressure relief valve	550853
Pressure reducing valve	RED355030
Elbow drain valve	250445
Immersion heater, Incoloy 3 kW	71242
Honeywell 2 port valve	92000
Fittings kit	
Cylinder thermostat	80030
Immersion thermostat	80314
Expansion vessel	AX 24
For spares: www.oso-spares.co.uk	

7.4.1 Obtaining spare parts

To obtain the address of a local stockist contact:
OSO HOTWATER (UK) LIMITED
Endeavor House, Seventh Avenue, Team Valley Trading Estate, Gateshead, Tyne & Wear, NE11 0EF
Phone: (0191) 482 0800 • Fax: (0191) 491 3655
E-mail technical.uk@oso-hotwater.com
E-mail spareparts.uk@oso-hotwater.com
E-mail sales.uk@oso-hotwater.com
All replacement parts should be supplied by OSO HOTWATER (UK) LIMITED.

8. TECHNICAL DATA

8.1 Data table Delta Geocoil DGC

Description	Unit	DGC 200	DGC 300
Part number	No.	11009121	11009123
Product number	GTIN	7070644004415	707064400439
Actual capacity of the water tank at 20°C	L.	191	281
Outer diameter of the tank	mm	595	595
Height of the appliance	mm	1270	1750
Gross weight of the appliance	kg	49	63
Net weight of appliance	kg	45.5	58
Net weight of appliance once filled with sanitary water	kg	237	340
Material of tank and integrated heat exchanger	-	1.4521 / 1.4521	1.4521 / 1.4521
Material of element	-	Incoloy 825	Incoloy 825
Thermal insulation material	-	PUR + VIP	PUR + VIP
Thermal insulation of the tank, average thickness	mm	50	50
IP classification	IP	21	21
Standby heat losses / 24 hour	kWh/24h	1.03	1.18
Standby heat losses	Watts	43.0	49.0
Hot water capacity - mixed to 40°C	L.	312	416
Heating time (coil)	min.	34.1	51.8
Reheat time (1) (70%) (coil)	min.	23.9	36.3
Dedicated Heat Pump volume	l.	94	104
Primary Heating Power (1) (coil)	kW	16.9	15.2
Primary flowrate for Reheat time and primary heating power	l/h	900	900
Primary Heat exchanger pressure drop (1)	mBar	50	50
Heat up time element	min.	138	246
Reheat time (1) (70%) 1 element	min.	97	172
ErP class	Rating	A	A
Pressure information			
Maximum design pressure of cylinder (rated pressure)	MPa/Bar	1 / 10	1 / 10
Maximum design pressure of heating coil	MPa/Bar	1 / 10	1 / 10
Operating pressure of cylinder	MPa/Bar	3.0	3.0
Operating pressure of heating coil	MPa/Bar	2.5	2.5
Max. operating temperature of cylinder	°C	70	70
Max. operating temperature of heating coil	°C	99	99
Expansion solution	-	Aquasystem 3 Bar	Aquasystem 3 Bar
Expansion vessel capacity	l.	18	24
Heat Exchanger information			
Primary heat exchanger volume	l.	14.5	17
Primary heat exchanger surface area	m²	2.6	3.1
Ø int. et Ø ext.	mm/mm	ø24 / ø25.6	ø24 / ø25.6
Hydraulic connections			
Secondary return	mm	1/2”	1/2”
Primary heat exchanger flow	Inch	3/4”	3/4”
Primary heat exchanger return	Inch	3/4”	3/4”
Cold water	Inch	3/4”	3/4”
Hot water	Inch	3/4”	3/4”
Immersion heater	Inch	5/4”	5/4”
Expansion Relief Valve	Inch	1/2”	1/2”
T&P valve (factory fitted)	Inch	1/2”	1/2”
Pressure reducing valve	Inch	ø22	ø22
Temperature sensor sleeve diameter	mm	8 / 6	8 / 6
Electrical characteristics			
Supply voltage and frequency	V/Hz	230/50	230/50
Current	A	13	13
Power of the electrical resistance	W	3000	3000
Electrical installation	-	IEEE regs	IEEE regs
Thermostat type - cylinder	-	Surface	Surface
Immersion capacity	kW	2.8	2.8
Immersion Heater - Phase	Phase	Single	Single
Immersion heater - Voltage	Volt	230	230
Immersion thermostat - temp range	°C	40-70	40-70
Immersion thermostat - set temp	°C	60	60
Indirect thermostat - temp range	°C	40-70	40-70
Indirect thermostat - set temp	°C	60	60
Safety			
Safety valve opening pressure +/- 5%	Bar	6	6
T&P valve opening pressure/Temp.	Bar/°C	10/90	10/90
Safety thermostat cutout - immersion	°C	85	85
Safety thermostat cutout - cylinder	°C	85	85
Packaging			
Width of box	mm	610	610
Depth of box	mm	610	610
Height of box	mm	1320	1780
Weight of box	Kg.	49	63

IT IS THE RESPONSIBILITY OF THE INSTALLER TO COMPLETE THIS LOG BOOK AND PASS IT ON TO THE CUSTOMER. FAILURE TO DO SO MAY INVALIDATE THE CYLINDER GUARANTEE

OSO HOTWATER

The code of practice for the installation, commissioning & servicing of mains pressure hot water storage

Installation,Commissioning and Service Record Log Book

CUSTOMER DETAILS

NAME

ADDRESS

TEL No.

IMPORTANT

1. Please, keep the Log Book in a safe place for future reference.
2. This Log Book is to be completed in full by the competent person(s) who commissioned the equipment and then handed to the customer. When this is done, the Log Book is a commissioning certificate that can be accepted as evidence of compliance with the appropriate Building Regulations.
3. Failure to install and commission this appliance to the manufacturer's instructions may invalidate the guarantee.

The above does not affect your statutory rights.

hot water association CHARTER MEMBER

HWA charter members agree to:

- To supply fit for purpose products clearly and honestly described
- To supply products that meet, or exceed appropriate standards and building and water regulations
- To provide pre and post sales technical support
- To provide clear and concise warranty details to customers

For full details on the HWA charter please visit **http://www.hotwater.org.uk/**

INSTALLER & COMMISSIONING ENGINEER DETAILS

INSTALLER DETAILS

COMPANY NAME DATE

ADDRESS

INSTALLER NAME TEL No.

REGISTRATION DETAILS

REGISTERED OPERATIVE ID CARD No.
(IF APPLICABLE)

COMMISSIONING ENGINEER (IF DIFFERENT)

NAME DATE

ADDRESS

TEL No.

REGISTRATION DETAILS

REGISTERED OPERATIVE ID CARD No.
(IF APPLICABLE)

APPLIANCE & TIME CONTROL DETAILS

MANUFACTURER OSO HOTWATER (UK)			MODEL
CAPACITY	litres		SERIAL No.
TYPE	UNVENTED		
TIME CONTROL	PROGRAMMER ☐	or	TIME SWITCH ☐

IT IS THE RESPONSIBILITY OF THE INSTALLER TO COMPLETE THIS LOGBOOK AND PASS IT ON TO THE CUSTOMER. FAILURE TO DO SO MAY INVALIDATE THE CYLINDER GUARANTEE

COMMISSIONING PROCEDURE INFORMATION

Heat pump PRIMARY SETTINGS (INDIRECT HEATING ONLY) ALL Heat pumpS

IS THE PRIMARY A SEALED OR OPEN VENTED SYSTEM?	**SEALED ☐ OPEN ☐**
WHAT IS THE Heat pump FLOW TEMPERATURE?	**°C**

ALL MAINS PRESSURISED SYSTEMS

WHAT IS INCOMING STATIC COLD WATER PRESSURE AT THE INLET TO THE PRESSURE REDUCING VALVE?	**bar**
HAS STRAINER (IF FITTED) BEEN CLEANED OF INSTALLATION DEBRIS?	**YES ☐ NO ☐**
HAS A WATER SCALE REDUCER BEEN FITTED?	**YES ☐ NO ☐**
WHAT TYPE OF SCALE REDUCER HAS BEEN FITTED?	

UNVENTED SYSTEMS

ARE COMBINED TEMPERATURE AND PRESSURE RELIEF VALVE AND EXPANSION VALVE FITTED AND DISCHARGE TESTED?	**YES ☐ NO ☐**
IS PRIMARY ENERGY SOURCE CUT OUT FITTED (NORMALLY 2 PORT VALVE)?	**YES ☐ NO ☐**
WHAT IS THE PRESSURE REDUCING VALVE SETTING (IF FITTED)?	**bar**
WHERE IS OPERATING PRESSURE REDUCING VALVE SITUATED?	**YES ☐ NO ☐**
HAS THE EXPANSION VESSEL OR INTERNAL AIR SPACE BEEN CHECKED?	**YES ☐ NO ☐**
WHAT IS THE HOT WATER TEMPERATURE AT THE NEAREST OUTLET?	**°C**

ALL PRODUCTS

DOES THE HOT WATER SYSTEM COMPLY WITH THE APPROPRIATE BUILDING REGULATIONS?	**YES ☐**
HAS THE SYSTEM BEEN INSTALLED AND COMMISSIONED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS?	**YES ☐**
HAVE YOU DEMONSTRATED THE OPERATION OF THE SYSTEM CONTROLS TO THE CUSTOMER?	**YES ☐**
HAVE YOU LEFT ALL THE MANUFACTURER'S LITERATURE WITH THE CUSTOMER?	**YES ☐**

COMPETENT PERSON'S SIGNATURE	**CUSTOMER'S SIGNATURE**
	(To confirm demonstrations of equipment and receipt of appliance instructions)

PLEASE FOLLOW THE INSTALLATION AND COMMISSIONING INSTRUCTIONS IN THE INSTALLATION MANUAL SUPPLIED WITH THE EQUIPMENT (this document)

GUARANTEE - OSO UNVENTED HOTWATER CYLINDER

1. Scope
OSO Hotwater UK Ltd. (hereinafter called OSO) warrants for 2 years from the date of purchase, that the Product will: i) conform to OSO specification, ii) be free from defects in materials and workmanship, subject to conditions below. All components carry a 2-year warranty. The warranty is voluntarily extended by OSO to 25 years for the stainless steel inner tank. This extended warranty only applies to Products purchased by a consumer, that has been installed for private use and that has been distributed by OSO or by a distributor where the Products have been originally sold by OSO.
The extended warranty does not apply to Products purchased by commercial entities or for Products that have been installed for commercial use. These shall be subject only to the mandatory provisions of the law. The conditions and limitations set out below shall apply.

2. Coverage
If a defect arises and a valid claim is received within the statutory warranty period, at its option and to the extent permitted by law, OSO shall either; i) repair the defect, or; ii) replace the product with a product that is identical or similar in function, or; iii) refund the purchase price.
If a defect arises and a valid claim is received after the statutory warranty period has expired, but within the extended warranty period, OSO will supply a product that is identical or similar in function. OSO will in such cases not cover any other associated costs. In addition, for every year after the statutory warranty period, the claimant must contribute 4 % of the list price of the cylinder in question to OSO.
Any exchanged Product or component will become the legal property of OSO. Any valid claim or service does not extend the original warranty. The replacement Product or part does not carry a new warranty.

3. Conditions
The Product is manufactured to suit most public water supplies. However, there are certain water chemistries (outlined below) that can have a detrimental effect on the Product and its life expectancy. If there are uncertainties regarding water quality, the local water supply authority can supply the necessary data.
The warranty applies only if the conditions set out below are met in full:

- The Product has been installed by a professional installer, in accordance with the instructions in the installation manual and all relevant Codes of Practice and Regulations in force at the time of installation.
- The Product has not been modified in any way, tampered with or subjected to misuse and no factory fitted parts have been removed for unauthorized repair or replacement.
- The Product has only been connected to a domestic mains water supply in compliance with the European Drinking Water Directive EN 98/83 EC, or latest version. The water should not be aggressive, i.e. the water chemistry shall comply with the following:

- Chloride	< 250 mg / L
- Electric Conductivity (EC) @25°C	< 750 uS / cm
-Saturation Index (LSI) @80°C	> - 1,0 / < 0,8
- pH level	> 6,0 / < 9,5

- The immersion heater has not been exposed to hardness levels exceeding 5°dH (180 ppm CaCO3). Warranty is invalid if the product is affected by accumulation of limescale/calcium deposits. A water softener is recommended in such cases.
- Any disinfection has been carried out without affecting the Product in any way whatsoever. The Product shall be isolated from any system chlorination.
- The Product has been in regular use from the date of installation. If the Product is not intended to be used for 60 days or more, it must be drained.
- The immersion heater element must be removed for inspection on service after 5 years. The threads must be checked for corrosion. If signs of corrosion are evident, the element must be replaced. Subsequently the element must be removed and examined every 3 years. Failure to do so in areas of aggressive water may result in the element separating from the cylinder with consequential escape of water.
- Service and/or repair shall be done according to the installation manual and all relevant codes of practice. Any replacement parts used shall be original OSO spare parts.
- The Service record / Benchmark logbook has been completed and updated after each annual service. Invoices should be kept as proof of service.
- The Commissioning Checklist / Benchmark certificate has been completed at the time of installation.
- Any third-party costs associated with any claim has been authorized in advance by OSO in writing.
- The purchase invoice and/or installation invoice, a water sample as well as the defective product is made available to OSO upon request.

Failure to follow these instructions and conditions may result in product failure, and water escaping from the Product.

4. Limitations
The warranty does not cover:

- Any fault or costs arising from incorrect installation, incorrect application, lack of regular maintenance in accordance with the installation manual, neglect, accidental or malicious damage, misuse, any alteration, tampering or repair carried out by a non-professional, any fault arising from the tampering with or removal of any factory fitted safety components or measures.
- Any consequential damage or any indirect loss caused by any failure or malfunction of the Product whatsoever.
- Any pipework or any equipment connected to the Product.
- The effects of frost, lightning, voltage variation, lack of water, dry boiling, excess pressure or chlorination procedures.
- The effects of stagnant (de-aerated) water if the Product has been left unused for more than 60 days consecutively.
- Damage caused during transportation. Buyer shall give the carrier notice of such damage.
- Costs arising if the Product is not immediately accessible for servicing.

These warranties do not affect the Buyer's statutory rights.

Customer service
In case of problems that cannot be resolved with the aid of the troubleshooting guide in this installation manual, contact either:
A) The installer who supplied the product.
B) OSO Hotwater UK Limited:
Tel.: (0191) 482 0800 Fax: (0191) 491 3655
Email: technical.uk@oso-hotwater.co.uk

Removing the product
A) Disconnect the power supply.
B) Shut off incoming cold water supply.
C) Empty the product of water – see pt. 3.12.
D) Disconnect all pipes.
E) The product can now be removed.

Returns scheme
This product is recyclable and should be taken to the environmental recycling centre. If the product is to be replaced with a new one, the installer can take the old cylinder away for recycling.

SERVICE INTERVAL RECORD

It is recommended that your hot water system is serviced regularly and that your service engineer completes the appropriate Service Interval Record below.

SERVICE PROVIDER

Before completing the appropriate Service Interval Record below, please ensure you have carried out the service as described in the manufacturer's instructions and in compliance with all relevant codes of practice.

SERVICE 1 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 2 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 3 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 4 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 5 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 6 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 7 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 8 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 9 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

SERVICE 10 **DATE:**
ENGINEER NAME
COMPANY NAME
TEL No.
COMMENTS
SIGNATURE

When all the above services have been completed, please contact OSO Hotwater for an additional service interval record sheet.

OSO
HOTWATER

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