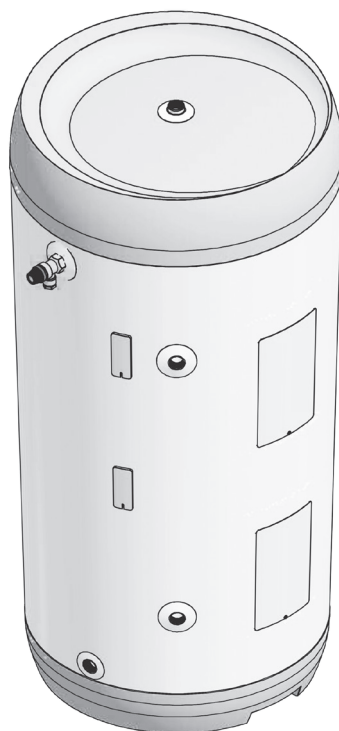


# Delta Geocoil - DGC VIP

200-250-300 l.

UK



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



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# OSO

HOT WATER

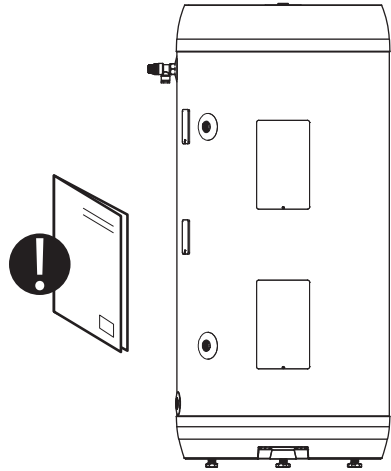
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# 1. SAFETY INSTRUCTIONS

## 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 Acknowledgement 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, 250 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 must NOT be sealed or plugged (safety valve not included).                            |
| ⊘         | The product must NOT be covered over the cover on the front.                                                 |
| ⊘         | The product must NOT be modified or changed from its original state.                                         |
| ⊘         | Children must NOT play with the product or go near it without supervision.                                   |
| ❗         | The product must be filled with water before the power is switched on.                                       |
| ❗         | Maintenance/settings must 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 must 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 must be at least one pipe size larger than the nominal outlet size of the safety device (< 9m length). The discharge pipe must have continuous fall to drain, be uninterruptible and frost-free at all times.                |
| ❗         | Fixed electric fittings must 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 must 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 must be placed in a room with a floor drain.<br>The manufacturer assumes no responsibility whatsoever if this provision is not followed.                 |
| ❗         | The product must 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](http://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



The UKCA mark shows that the product complies with the relevant Directives. See Declaration of Conformity at [www.osohotwater.com](http://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<br>item No. | Model / identifier                  | ErP<br>Rating                                    | Standing heat<br>loss W | Capacity<br>L |
|----------------------------------------------------|-----------------|-------------------------------------|--------------------------------------------------|-------------------------|---------------|
| OSO Hotwater AS                                    | 11009121        | DGC 200 - 2.8kW / 1x230V + HX 2.6m² | A                                                | 43                      | 191           |
| OSO Hotwater AS                                    | 11009122        | DGC 250 - 2.8kW / 1x230V + HX 2.6m² | A                                                | 47                      | 245           |
| 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

Delta Geocoil - DGC 200-250-300

##### 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 must be transported and stored in a vertical position.

##### 3.1.2 Delivery

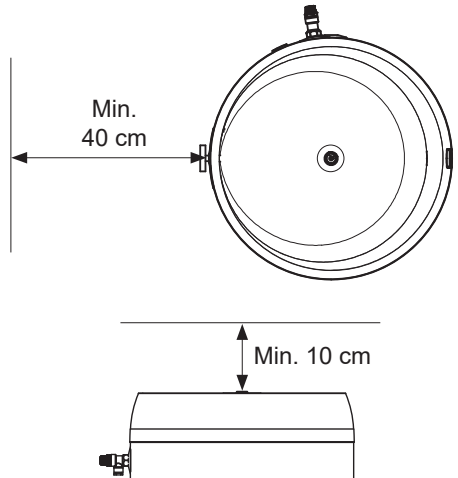
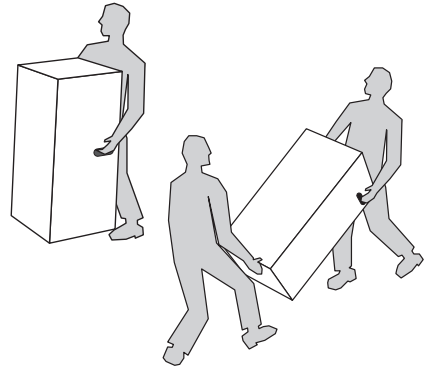
The product must be transported carefully as shown, with packaging. Use the handles in the box.

##### 3.1.3 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 must 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.



#### 3.2 Requirements for installation, location and positioning

#### ⚠ CAUTION

|   |                                                                                                                                                      |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ❗ | The product must be placed in a room with a floor drain.<br>The manufacturer assumes no responsibility whatsoever if this provision is not followed. |
| ❗ | The product must be placed in a dry and permanently frost-free position.                                                                             |
| ❗ | The product must 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 must be easily accessible in the home for servicing and maintenance.                                                                     |

### 3.3 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
- 3-port diverter valve
- Expansion vessel.

#### 3.3.1 Components factory fitted

- Immersion heater(s) (4).
- Thermostats / thermal cut-out (2).
- Temperature and pressure relief valve (1).
- Adjustable feet (5).

#### 3.3.2 Documentation supplied

- Installation manual & log book (3) (this document).

### 3.4 Supply requirements

An uninterrupted 22 mm 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, but a system pressure of max. 6 bar is recommended. See pt. 3.6.1.

For pressures over 10 bar an additional pressure reducing valve must be fitted in the supply pipe to the unit.

#### 3.4.1 Expansion vessels

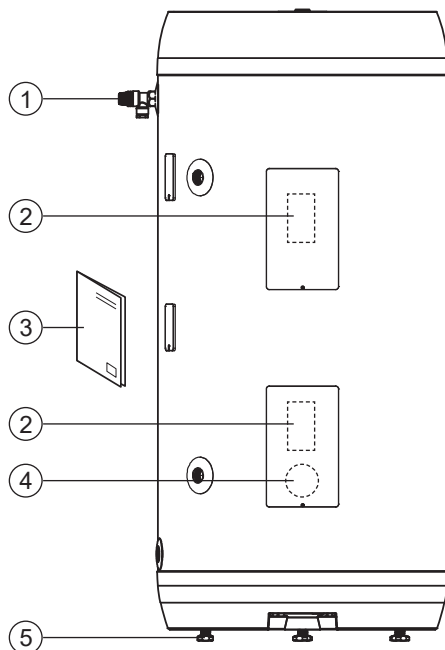
The vessel accommodates expanded water when the cylinder is heated and prevents the cylinder reaching its maximum working pressure.

#### 3.4.2 Compatible fittings and components

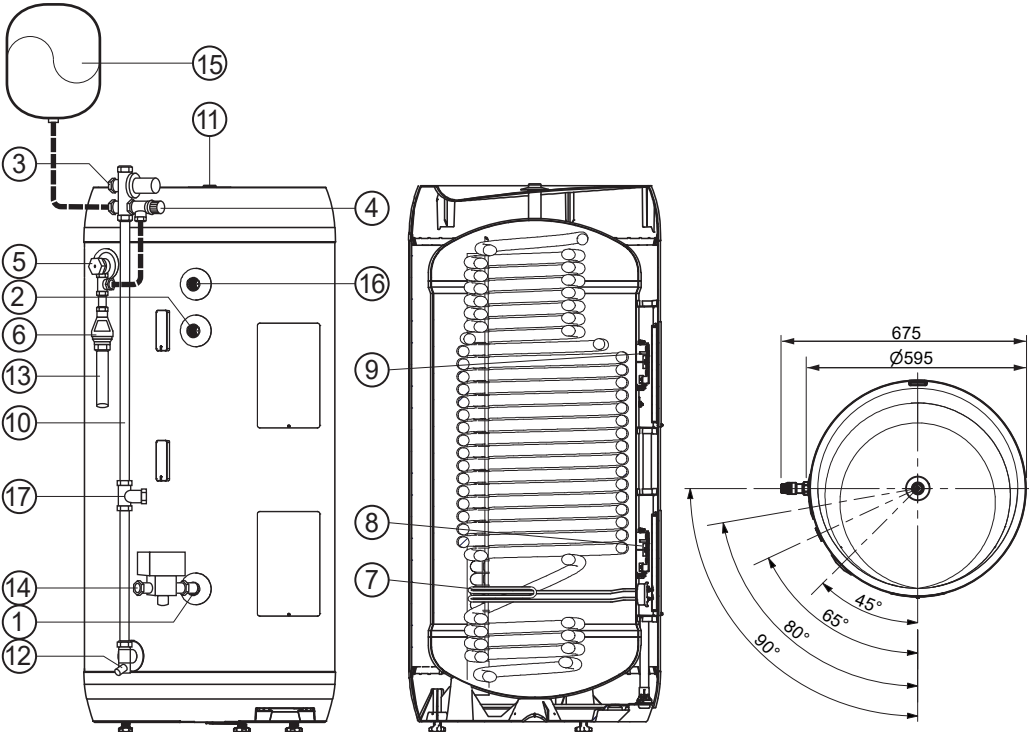
All thermostatically controlled heat pumps are compatible with indirect OSO cylinders.

#### 3.4.3 Non-compatible products.

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



3.5 General layout



3.5.1 Reference chart

| Ref no. | Key                                               | Part No.       |
|---------|---------------------------------------------------|----------------|
| 1       | Return 3/4" BSP                                   |                |
| 2       | Flow 3/4" BSP                                     |                |
| 3       | Pressure Reducing Valve Multibloc 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                       | 11001069-80025 |
| 9       | Cylinder thermostat                               | 11001071-80030 |
| 10      | Cold feed tube (not supplied, see pt. 3.5.2)      |                |
| 11      | Hot Water Outlet 3/4" BSP                         |                |
| 12      | Elbow/Drain Cock                                  | 250445         |
| 13      | Discharge Pipe (not supplied)                     |                |
| 14      | 3-way diverter valve (not factory fitted)         |                |
| 15      | Expansion vessel                                  | AX18, AX24     |
| 16      | Secondary Return (300 l.)                         |                |
| 17      | T-piece (for 200 & 300 l., not included)          |                |

3.5.2 Cold feed tube

| Vessel size | Length of tube (ø22) mm | Expansion vessel pre charge / size |
|-------------|-------------------------|------------------------------------|
| 200         | 980                     | 3 bar / 18 litre                   |
| 250         | 1250                    | 3 bar / 24 litre                   |
| 300         | 1450                    | 3 bar / 24 litre                   |

## 3.6 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.

### 3.6.1 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.

### 3.6.2 Connecting pipes

Pipes of suitable size and quality should be run to the connections on the product and fixed properly.

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 uninterrupted, undamaged and frost-free with a fall to the drain.

## 3.7 Positioning the unit

The water heater must be fitted level on a hard surface with sufficient load strength to take the full weight of the cylinder (see technical data table page 24). 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.

### 3.7.1 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 11.

### 3.7.2 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 (12) to the cold supply point, 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 (3) 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.

### 3.7.3 Hot water supply

Connect the hot water supply pipe to the outlet (11). Ensure connection is water tight.

### 3.7.4 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.

### 3.7.5 Secondary return (optional)

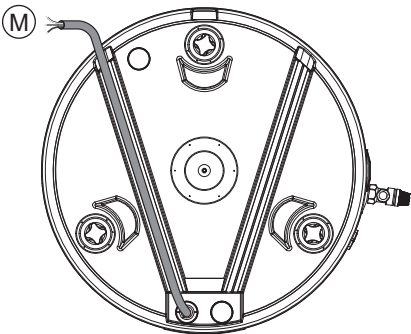
Connect secondary return if required to fitting (17) page 8, see technical data table on page 25. Connect the tundish outlet to the discharge pipe.

3.7.6 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.

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 motorised valve and immersion heater, please read Electrical Installation Instructions on page 14.



3.8 Flow and Return and Motorised valve

The heat pump primary flow and return connections should be made connections 1 & 2. The motorised 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

3.8.1 Fitting instructions

⚠ WARNING

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

⚠ CAUTION

|   |                                                                                                                                                                      |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ❗ | The product must be placed in a room with a floor drain.<br>The manufacturer assumes no responsibility whatsoever if this provision is not followed.                 |
| ❗ | The product must 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.                                 |

3.8.2 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 (M) 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 must 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 must be fitted.                                                                                                                                                                |
| - | For installation in a rooms which does not conform to the wetroom standard, a watertight drip tray with overflow pipe $\geq$ 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. |

### 3.8.3 Pressure drop table - coil

| Product info: |                 | Pressure drop (mbar) at volume flow: |                       |                        |                        |                       |                        |                        | Cw value (m³/h):             |
|---------------|-----------------|--------------------------------------|-----------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------------|
| Product       | Coil surface m² | 540 L/h<br>(0,15L/s)                 | 900 L/h<br>(0,25 L/s) | 1800 L/h<br>(0,50 L/s) | 2700 L/h<br>(0,75 L/s) | 3600 L/h<br>(1,00L/s) | 4500 L/h<br>(1,25 L/s) | 5400 L/h<br>(1,50 L/s) | Flow @ 1bar<br>pressure drop |
| DGC 200       | 2.6             | 40                                   | 109                   | 415                    | 824                    | 1440                  | 2150                   | 3050                   | 3.0                          |
| DGC 250       | 2.6             | 40                                   | 109                   | 415                    | 824                    | 1440                  | 2150                   | 3050                   | 3.0                          |
| DGC 300       | 3.1             | 51                                   | 117                   | 440                    | 890                    | 1555                  | 2330                   | 3340                   | 2.9                          |

### 3.9 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 (1) 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 (2) to ensure free water flow through discharge pipe (Turn knob counter-clockwise).
6. Switch electrical power on.

### 3.10 Draining

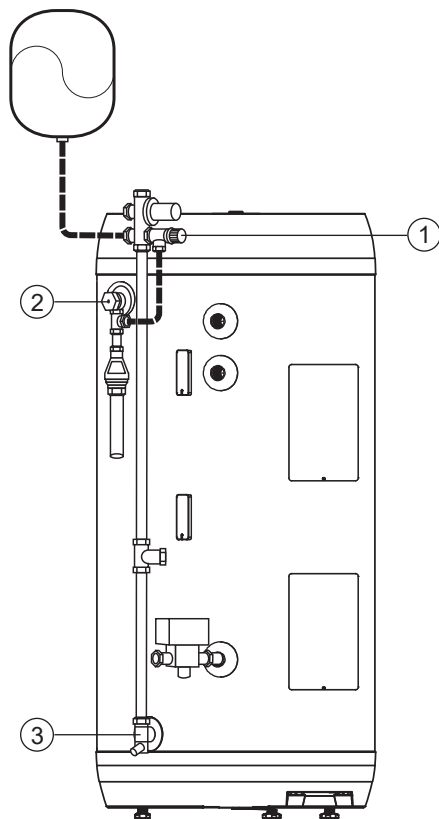
Switch off the electrical power (Important to avoid damage to element).

Isolate heat pump from OSO unit. Turn off the cold water supply valve. Open a hot water tap. Open the drain cock (3) 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 suitable gully, sink or similar.

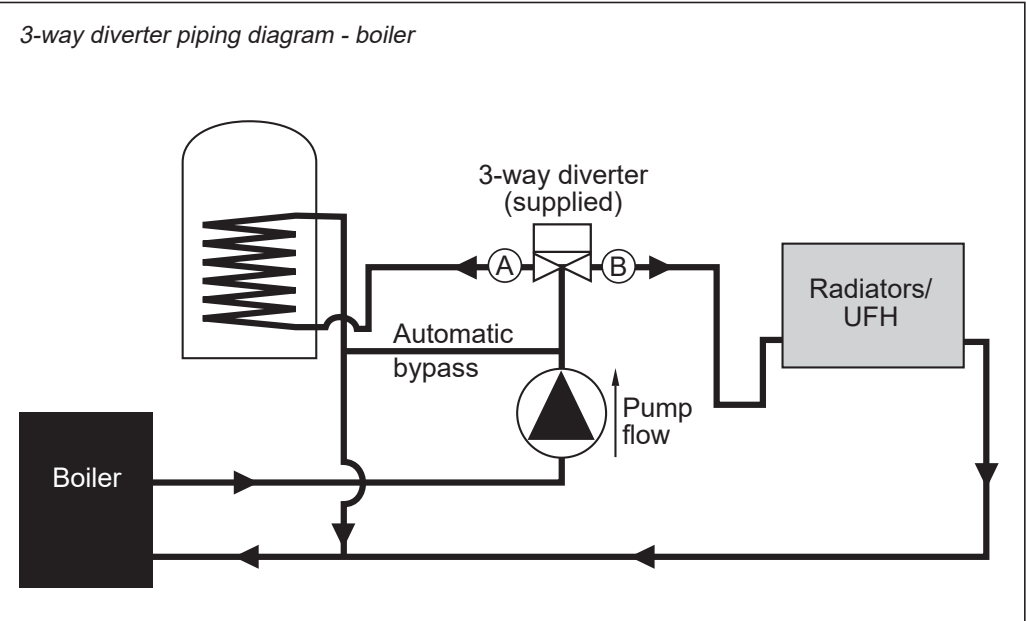
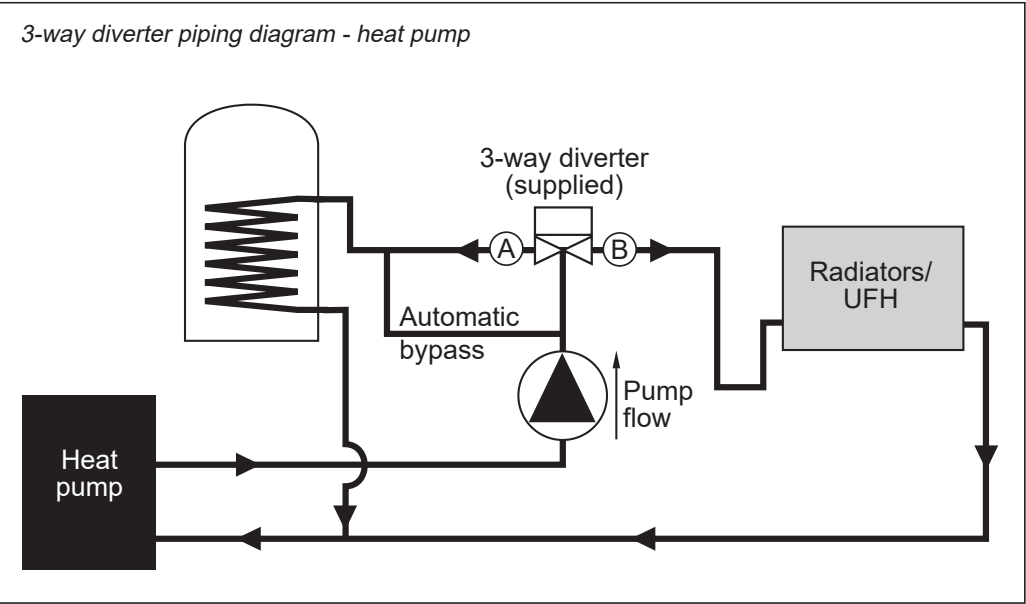
### 3.11 System flushing

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).



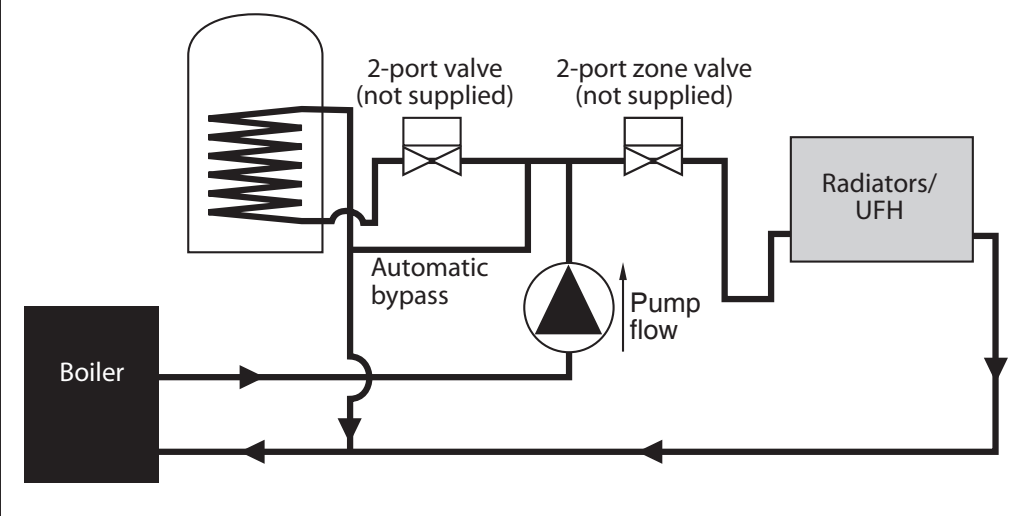
3.12 Piping Diagrams

With 3-way diverter

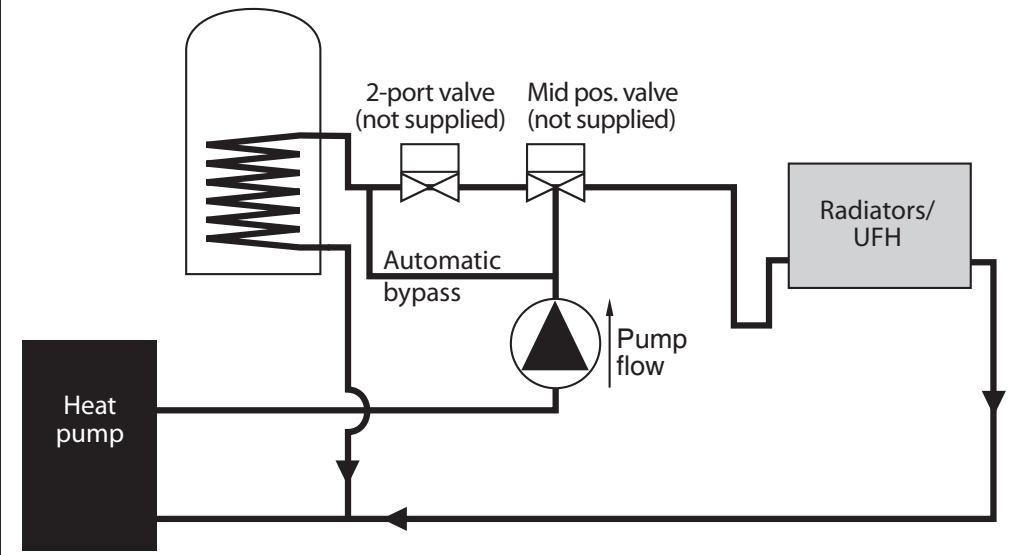


With 2-port valve

S-plan piping diagram



Y-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

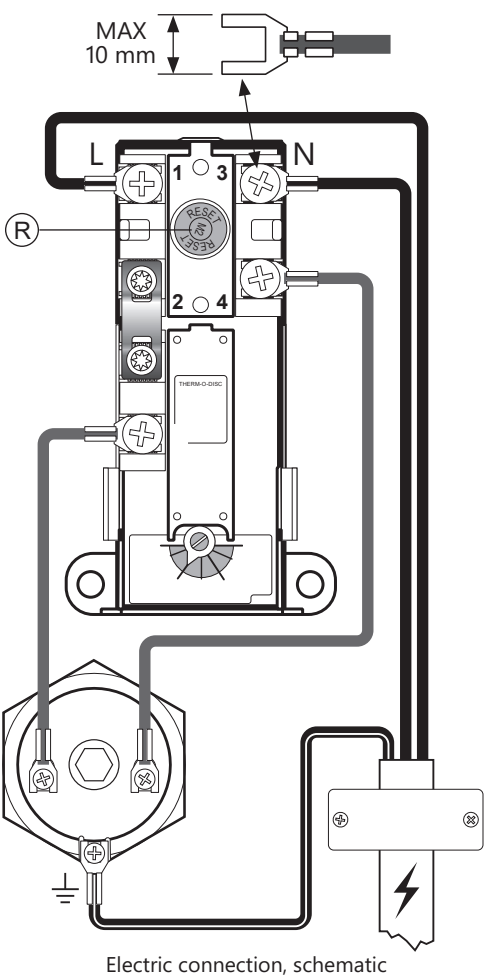
|                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>⚠ WARNING</b></p> <p>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.</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- 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) |

|                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>⚠ WARNING</b></p> <p>The thermostat must never be dismantled/opened. This will compromise its function and cause risk of overheating. Warranty will cease.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## 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 90°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 ( $\pm 7^\circ\text{C}$ ). 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 hot water cylinders, a motorised valve must be fitted in the primary flow or return (Building Regulations Part G3, IEE BS 7671). Your OSO unit has been supplied with a 3-way motorised valve, which acts as a positive energy cut-out should the safety cut-out operate. The motorised valve also controls the temperature of the domestic stored water via the cylinder thermostat located inside the electrical box. The unit should be installed using the OSO 3 port diverter wiring diagram (see page 12, lower illustration); alternatively, S-Plan or Y-Plan systems may be used. Please follow the instructions carefully, ensuring all electrical connections conform to current IEE Wiring Regulations (BS 7671).

The working thermostat is adjustable between

50°C and 75°C, while the safety cut-out will operate at 85°C  $\pm 3^\circ\text{C}$ . If the safety cut-out operates, the motorised valve will automatically close the primary flow to the cylinder. Before resetting the safety cut-out or adjusting the thermostat, always isolate the electrical supply and remove the junction-box cover. To reset the unit, press the manual reset button (R), then restore power and check that the system operates correctly.

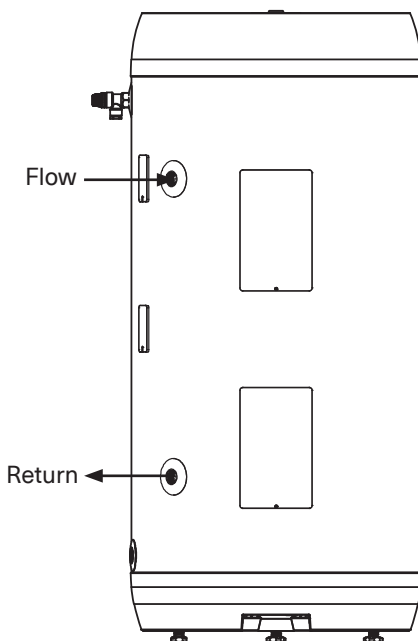
OSO Hotwater (UK) Ltd cannot be held responsible for faults or malfunctions resulting from the use of alternative wiring plans or non-standard installation methods.

## 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. 4.5.4). Any external heat pump controller (not supplied) must 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 W-plan wiring layout

### 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 boilers. Standard boilers operate using room and cylinder thermostats. Please follow the diagram below. Failure to use the 3-way valve contravenes regulations.

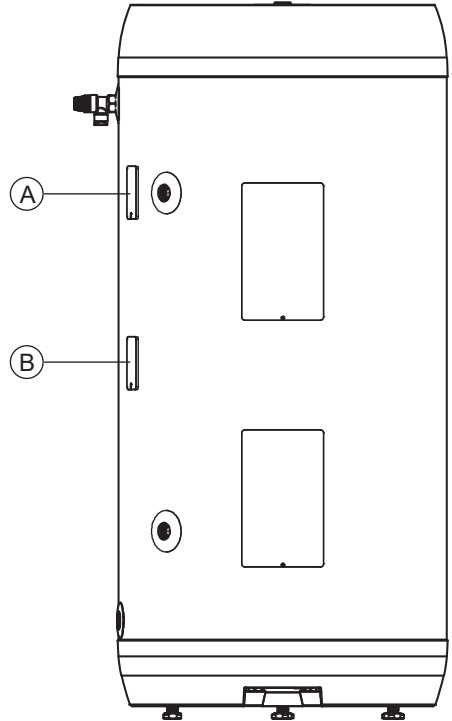
The wiring plan is based on the use of a 10-way Junction Box (Honeywell Part no. 42002116-001). Junction Box terminal 8 is switched live and, if needed, terminal 10 is pump live.

#### 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 (A) and (B) are provided to secure the sensor on the Delta Geocoil VIP cylinder (see pt. 4.7.3). OSO recommend using the lower sensor (B) to control the heat pump.

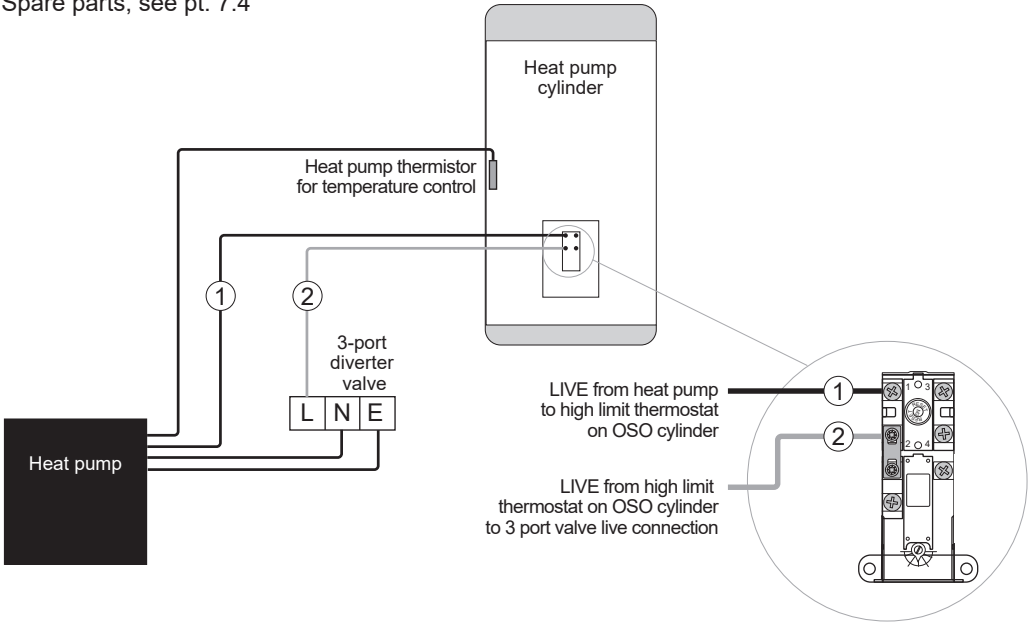
The supplied motorised valve must be used in accordance with Building Regulation G3. This is wired from the supplied cylinder thermostat, wired as high limit stat. Please follow diagram on next page: 'Wiring for Thermistor Controlled Heat pump'.



Wiring for thermistor controlled heat pump

Piping diagram, see pt. 3.12

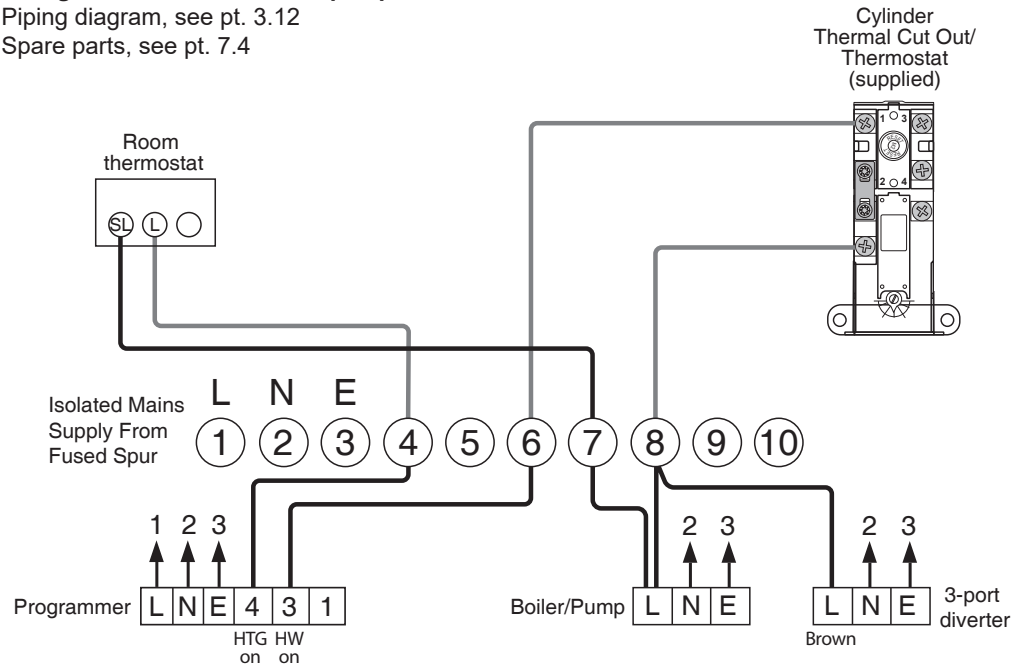
Spare parts, see pt. 7.4



Wiring for non thermistor heat pump

Piping diagram, see pt. 3.12

Spare parts, see pt. 7.4



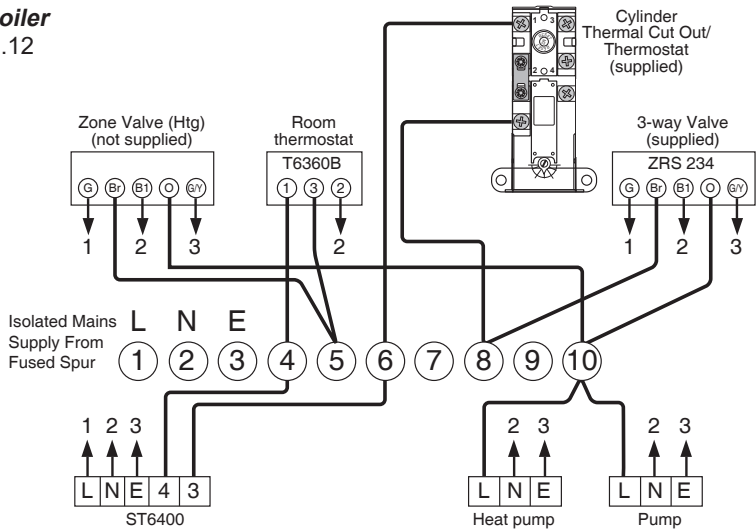
4.6 S-plan wiring layout

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

Wiring for heat pump boiler

Piping diagram, see pt. 3.12  
Spare parts, see pt. 7.4

Both wiring plans shown is based on the use of a 10-way Junction Box (Honeywell Part no. 42002116-001). Junction Box terminal 8 is switched live and, if needed, terminal 10 is pump live.



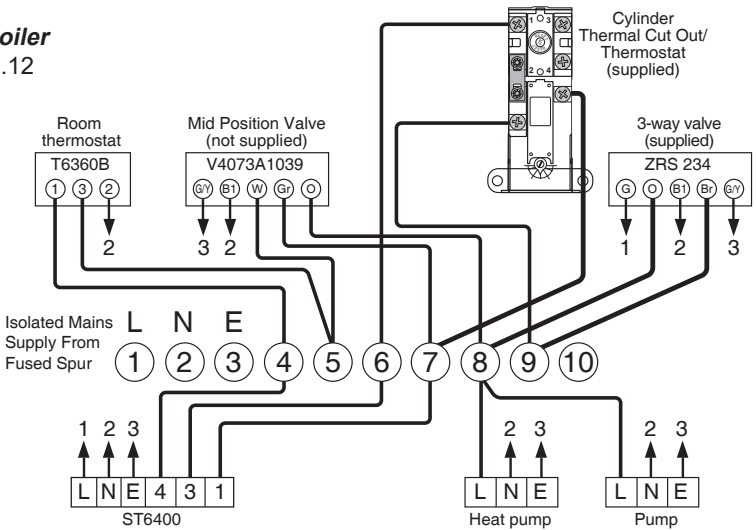
4.7 Y-plan wiring layout

OSO Delta Geocoil VIP cylinders can be fitted with all types of boilers. Standard boilers operate using room and cylinder thermostats. Please follow upper diagram: 'Wiring for Standard Boiler'. Y-plan systems with unvented cylinders require use of both a mid-position valve and the supplied zone

valve. Failure to use the zone valve contravenes regulations. Both wiring plans shown is based on the use of a 10-way Junction Box (Honeywell Part no. 42002116-001). Junction Box terminal 8 is switched live and, if needed, terminal 10 is pump live.

Wiring for heat pump boiler

Piping diagram, see pt. 3.12  
Spare parts, see pt. 7.4



4.7.1 Fitting instructions

⚠ WARNING

|   |                                                                                                                                                  |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------|
| ❗ | The product must be filled with water before the power is switched on.                                                                           |
| ❗ | Fixed electric fittings must be used for installation in new homes or when changing an existing electrical setup in accordance with regulations. |
| ❗ | The mains cable must 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. |

4.7.2 Fitting recommendation

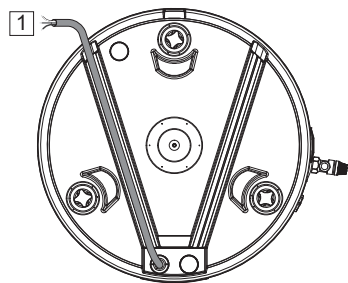
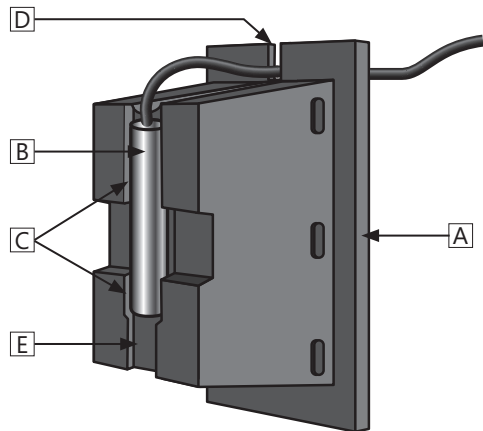
RECOMMENDATION

|   |                                                                                                                                                                                                                                  |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - | 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 $\leq 2\text{kW}$ capacity, a $\geq 10\text{A}$ fuse / $\geq 1.5\#$ wire should be used*.<br>For products with $\leq 3\text{kW}$ capacity, a $\geq 15\text{A}$ fuse / $\geq 2.5\#$ wire should be used (230V). |

4.7.3 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.



4.8 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 50-75°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 50-75°C.

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

#### 5.1.2 Resetting the safety thermostat

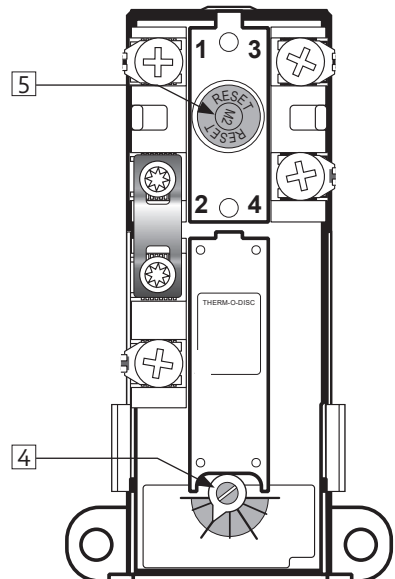
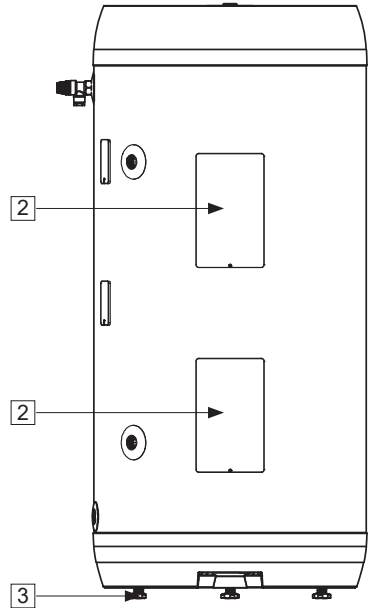
The safety thermostat on the product cuts out when there is a risk of overheating. This is reset by removing the cover (2) and pressing the 'Safety' button (5). If the thermostat cuts out repeatedly, contact the installer.

#### 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

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.



### ⚠ WARNING

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

## 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. Depressurize the cylinder by draining water; open a hot water tap.
4. Attach a foot pump with a schraeder (car type) valve to the expansion vessel.
5. Pump up to 3 bar (set to incoming pressure if lower than 3 bar).
6. Open cold water supply valve.
7. When water flows through open tap, close tap
8. 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 27.

### 6.6 Servicing Procedure:

#### 6.6.1 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.

| Problem                                                                                                                  | Possible cause of fault                                                                                                  | Possible solution                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No hot water</b>                                                                                                      | 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.                                                                |
| <b>There is leakage/dripping from the safety valve/ there is often water on the floor by the cylinder in the morning</b> | Pressure reduction valve, water meter or blocked non-return valve on the water intake.                                   | 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. |
|                                                                                                                          | Water pressure into the home is too high.                                                                                |                                                                                                                                                                                                                                                                      |
|                                                                                                                          | 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.                                                         |
| <b>Not enough hot water</b>                                                                                              | High consumption in the home.                                                                                            | Switch to a larger OSO water heater. Contact auth. installer.                                                                                                                                                                                                        |
| <b>Water temperature not high enough</b>                                                                                 | Bleed from cold to hot water in taps.                                                                                    | Contact auth. installer.                                                                                                                                                                                                                                             |
| <b>Fuse/earth breaker trips repeatedly</b>                                                                               | 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.                                                                                    |
| <b>Long time before the water reaches the tap</b>                                                                        | 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.                                                                                                                                                    |
| <b>Knocking in the pipes when the hot tap is closed</b>                                                                  | Large pressure increase when the tap is closed quickly.                                                                  | Completely normal. Fit AX expansion vessel if troublesome. Contact auth. installer.                                                                                                                                                                                  |
| <b>Important - please note:</b> Always disconnect electrical supply before removing any electrical equipment covers      |                                                                                                                          |                                                                                                                                                                                                                                                                      |

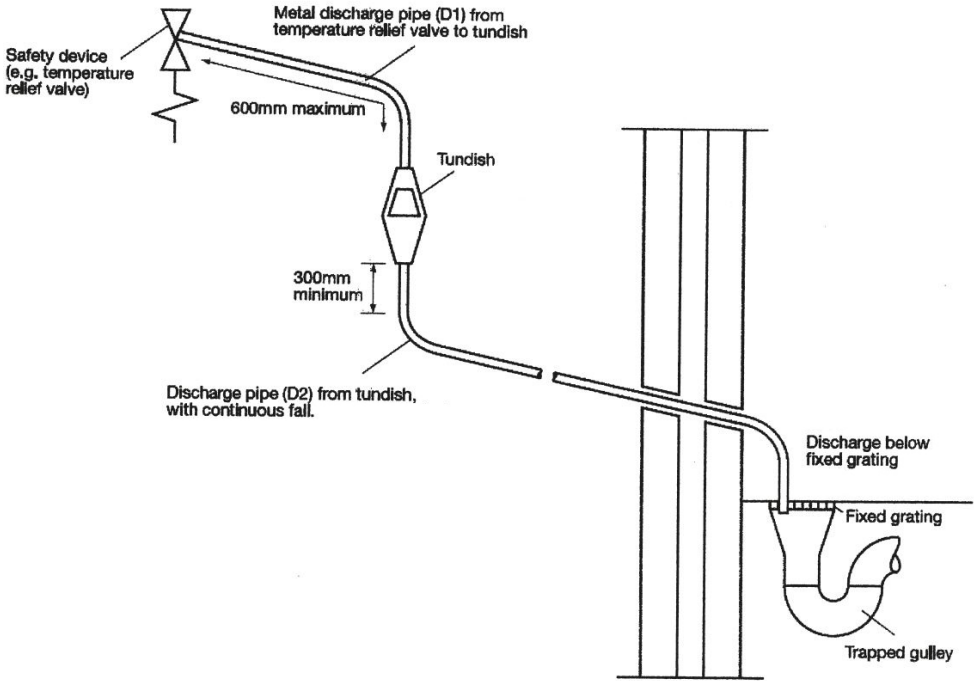
## 7.2 Alternative discharge

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).



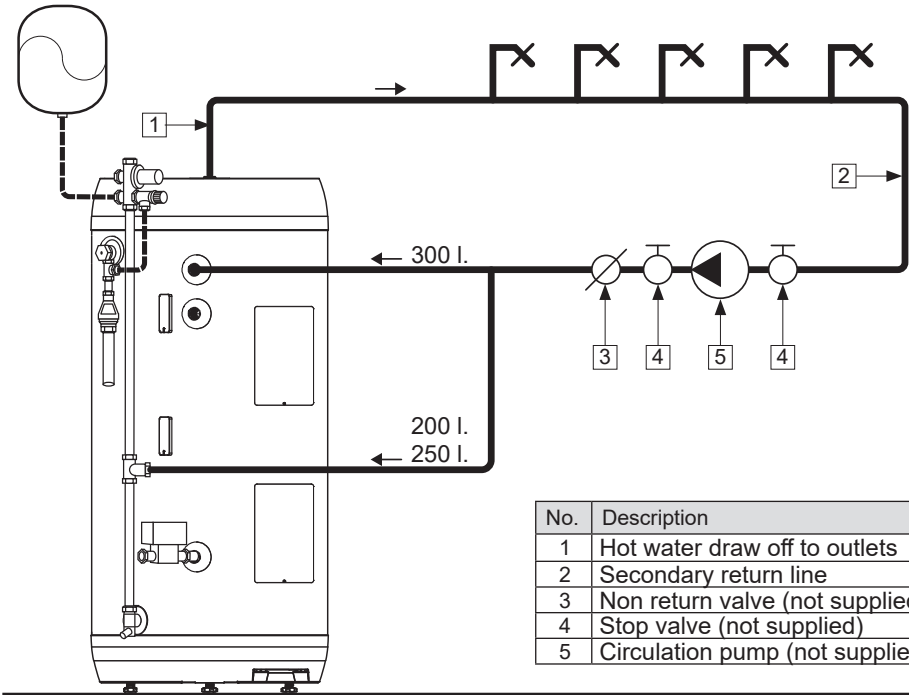
### 7.2.1 Single pipe discharge

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

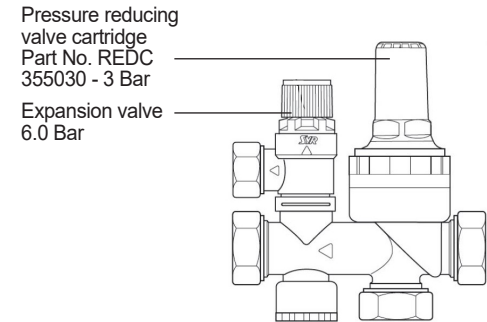
| Valve outlet size | Minimum size of discharge pipe D1 | Minimum size of discharge pipe D2 from tundish | Minimum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends) | Resistance created by each elbow or bend |
|-------------------|-----------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------|
| 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 (not supplied) |
| 4   | Stop valve (not supplied)       |
| 5   | Circulation pump (not supplied) |

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       |
| Motorised 3-way valve                                                                | 92000       |
| Cylinder thermostat                                                                  | 80345       |
| Immersion heater thermostat                                                          | 80314       |
| Expansion vessel                                                                     | AX18, AX 24 |
| For spares: <a href="mailto:sales.uk@oso-hotwater.com">sales.uk@oso-hotwater.com</a> |             |

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  
E-mail [technical.uk@oso-hotwater.com](mailto:technical.uk@oso-hotwater.com)  
E-mail [sales.uk@oso-hotwater.com](mailto: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 250          | DGC 300          |
|------------------------------------------------------------|---------|------------------|------------------|------------------|
| Part number                                                | No.     | 11009121         | 11009122         | 11009123         |
| Product number                                             | GTIN    | 7070644004415    | 7070644013004    | 7070644004392    |
| Actual capacity of the water tank at 20°C                  | L.      | 191              | 245              | 281              |
| Outer diameter of the tank                                 | mm      | 595              | 595              | 595              |
| Height of the appliance                                    | mm      | 1270             | 1540             | 1750             |
| Gross weight of the appliance                              | kg      | 56               | 64               | 72               |
| Net weight of appliance                                    | kg      | 54               | 61               | 69               |
| Net weight of appliance once filled with sanitary water    | kg      | 245              | 306              | 353              |
| Material of tank and integrated heat exchanger             | -       | 1.4521 / 1.4521  | 1.4521 / 1.4521  | 1.4521 / 1.4521  |
| Material of element                                        | -       | Incoloy 825      | Incoloy 825      | Incoloy 825      |
| Thermal insulation material                                | -       | PUR + VIP        | PUR + VIP        | PUR + VIP        |
| Thermal insulation of the tank, average thickness          | mm      | 50               | 50               | 50               |
| IP classification                                          | IP      | 21               | 21               | 21               |
| Standby heat losses / 24 hour                              | kWh/24h | 1.03             | 1.13             | 1.18             |
| Standby heat losses                                        | Watts   | 43.0             | 46.0             | 49.0             |
| Hot water capacity - mixed to 40°C                         | L.      | 303              | 388              | 443              |
| Heating time (coil)                                        | min.    | 21.0             | 27.0             | 28.0             |
| Reheat time (1) (70%) (coil)                               | min.    | 14.7             | 18.9             | 19.6             |
| Dedicated Heat Pump volume                                 | l.      | 175              | 224              | 256              |
| Primary Heating Power (1) (coil)                           | kW      | 30.2             | 30.1             | 33.1             |
| Primary flowrate for Reheat time and primary heating power | l/h     | 900              | 900              | 900              |
| Primary Heat exchanger pressure drop (1)                   | mBar    | 50               | 50               | 50               |
| Heat up time element                                       | min.    | 180              | 239              | 285              |
| Reheat time (1) (70%) 1 element                            | min.    | 126              | 167              | 200              |
| ErP class                                                  | Rating  | A                | A                | A                |
| Pressure information                                       |         |                  |                  |                  |
| Maximum design pressure of cylinder (rated pressure)       | MPa/Bar | 1 / 10           | 1 / 10           | 1 / 10           |
| Maximum design pressure of heating coil                    | MPa/Bar | 1 / 10           | 1 / 10           | 1 / 10           |
| Operating pressure of cylinder                             | MPa/Bar | 3.0              | 3.0              | 3.0              |
| Operating pressure of heating coil                         | MPa/Bar | 2.5              | 2.5              | 2.5              |
| Max. operating temperature of cylinder                     | °C      | 70               | 70               | 70               |
| Max. operating temperature of heating coil                 | °C      | 99               | 99               | 99               |
| Expansion solution                                         | -       | Aquasystem 3 Bar | Aquasystem 3 Bar | Aquasystem 3 Bar |
| Expansion vessel capacity                                  | l.      | 18               | 24               | 24               |
| Heat Exchanger information                                 |         |                  |                  |                  |
| Primary heat exchanger volume                              | l.      | 14.5             | 14.5             | 17               |
| Primary heat exchanger surface area                        | m²      | 2.6              | 2.6              | 3.1              |
| Ø int. et Ø ext.                                           | mm/mm   | ø24 / ø25.4      | ø24 / ø25.4      | ø24 / ø25.4      |
| Hydraulic connections                                      |         |                  |                  |                  |
| Secondary return                                           | mm      | 1/2"             | 1/2"             | 1/2"             |
| Primary heat exchanger flow                                | Inch    | 3/4"             | 3/4"             | 3/4"             |
| Primary heat exchanger return                              | Inch    | 3/4"             | 3/4"             | 3/4"             |
| Cold water                                                 | Inch    | 3/4"             | 3/4"             | 3/4"             |
| Hot water                                                  | Inch    | 3/4"             | 3/4"             | 3/4"             |
| Immersion heater                                           | Inch    | 5/4"             | 5/4"             | 5/4"             |
| Expansion Relief Valve                                     | Inch    | 1/2"             | 1/2"             | 1/2"             |
| T&P valve (factory fitted)                                 | Inch    | 1/2"             | 1/2"             | 1/2"             |
| Pressure reducing valve                                    | Inch    | ø22              | ø22              | ø22              |
| Temperature sensor sleeve diameter                         | mm      | 8 / 6            | 8 / 6            | 8 / 6            |
| Electrical characteristics                                 |         |                  |                  |                  |
| Supply voltage and frequency                               | V/Hz    | 230/50           | 230/50           | 230/50           |
| Current                                                    | A       | 13               | 13               | 13               |
| Power of the electrical resistance                         | W       | 2800             | 2800             | 2800             |
| Electrical installation                                    | -       | IEEE regs        | IEEE regs        | IEEE regs        |
| Thermostat type - cylinder                                 | -       | Surface          | Surface          | Surface          |
| Immersion capacity                                         | kW      | 2.8              | 2.8              | 2.8              |
| Immersion Heater - Phase                                   | Phase   | Single           | Single           | Single           |
| Immersion heater - Voltage                                 | Volt    | 230              | 230              | 230              |
| Immersion thermostat - temp range                          | °C      | 50-75            | 50-75            | 50-75            |
| Immersion thermostat - set temp                            | °C      | 60               | 60               | 60               |
| Cylinder thermostat - temp range                           | °C      | 40-70            | 40-70            | 40-70            |
| Cylinder thermostat - set temp                             | °C      | 60               | 60               | 60               |
| Safety                                                     |         |                  |                  |                  |
| Safety valve opening pressure +/- 5%                       | Bar     | 6                | 6                | 6                |
| T&P valve opening pressure/Temp.                           | Bar/°C  | 10/90            | 10/90            | 10/90            |
| Safety thermostat cutout - immersion                       | °C      | 85               | 85               | 85               |
| Safety thermostat cutout - cylinder                        | °C      | 85               | 85               | 85               |
| Packaging                                                  |         |                  |                  |                  |
| Width of box                                               | mm      | 610              | 610              | 610              |
| Depth of box                                               | mm      | 610              | 610              | 610              |
| Height of box                                              | mm      | 1320             | 1580             | 1780             |
| Weight of box                                              | Kg.     | 56               | 64               | 72               |

## Notes

[illegible]

**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

**HOT WATER**

*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.**



© HEATING AND HOTWATER INFORMATION COUNCIL

**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.<br>(IF APPLICABLE) |         |

## COMMISSIONING ENGINEER (IF DIFFERENT)

|                                                     |      |
|-----------------------------------------------------|------|
| NAME                                                | DATE |
| ADDRESS                                             |      |
|                                                     |      |
| TEL No.                                             |      |
| REGISTRATION DETAILS                                |      |
| REGISTERED OPERATIVE ID CARD No.<br>(IF APPLICABLE) |      |

## APPLIANCE & TIME CONTROL DETAILS

|                                |                                                                             |
|--------------------------------|-----------------------------------------------------------------------------|
| MANUFACTURER OSO HOTWATER (UK) | MODEL                                                                       |
| CAPACITY                       | litres                                                                      |
| Manufacturing date             |                                                                             |
| TYPE                           | UNVENTED                                                                    |
| TIME CONTROL                   | PROGRAMMER <input type="checkbox"/> or TIME SWITCH <input type="checkbox"/> |

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      CUSTOMER'S  
SIGNATURE      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)**

# WARRANTY - 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 must be subject only to the mandatory provisions of the law. The conditions and limitations set out below must 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 must 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 must 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 CaCO<sub>3</sub>). 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 must 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 must be done according to the installation manual and all relevant codes of practice. Any replacement parts used must 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 must 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 (UK) Limited**

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Gateshead,  
Tyne & Wear,  
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