Supercharged - S_2S

150-250 l.

UK

SAFETY INFORMATION
AOM INFORMATION
INSTALLATION GUIDE
TDS – TECHNICAL DATA SHEET

hot water association
CHARTER MEMBER

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OSO HOTWATER

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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

This OSO product is approved to building and water regulations by KIWA Watertec Ltd.
Tel: 01495 308 185 - Email: watertecenquiries@kiwa.co.uk

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

Safety instructions

1. Read the following safety instructions carefully before installing, maintaining or adjusting the water heater.
2. Personal injury or material damage may result if the product is not installed or used in the intended manner.
3. Keep this manual and other relevant documents where they are accessible for future reference.
4. 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.

Safety instructions for users

	⚠ WARNING
⊘	The overflow from the safety valve must NOT be sealed or plugged.
⊘	The product must NOT be covered over the cover on the front.
⊘	The product must NOT be modified or changed from its original state.
⊘	The unit must be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations.
⊘	Children must 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.

Safety instructions for installers

	⚠ WARNING
⊘	The overflow from the safety valve must NOT be sealed or plugged.
⊘	The unit must be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations.
❗	The mains cable shall withstand 90°C. A cable clamp/strain reliever must be fitted.
❗	Discharge must comply with current building regulations.
❗	The product shall be filled with water before the power is switched on.
❗	The relevant regulations and standards, and this installation manual, must be followed.

	⚠ CAUTION
❗	The cylinder must be installed in compliance with current building regulations.
❗	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 400 mm in front of the immersion cover / 150 mm above the highest point.
⊘	Do not use the balanced cold connection to feed any outlets other than mixer showers. Under no circumstances use the balanced cold connection to feed all cold water outlets as this practice contravenes Section 10 of water regulations.

1. GENERAL INFORMATION

1.1 Product Identification

Identification of your product can be found on the label attached to the product. The label contains information about the product according to EN 12897: 2016 and EN 60335-2-21, in addition to other useful data. See Declaration of Conformity at www.osohotwater.com for more information.

OSO products are designed and manufactured according to:

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

OSO Hotwater AS is certified according to

- Quality ISO 9001
- Environment ISO 14001
- Working Environment ISO 45001

1.2 UKCA marking

The UKCA mark shows that the product complies with the relevant Directives. See Declaration of Conformity at www.osohotwater.co.uk 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

1.2.1 External management

- Wi-Fi 2.4 GHz b/g/n
- Bluetooth 4.3

1.5 General information

Thank-you for purchasing the OSO Supercharged S_2S unvented hot water cylinder. Designed to be simple and neat to install, the Supercharged S_2S differs from other unvented cylinders in that all of the principle connections, including hot and cold water pipes and expansion vessel are connected to the top of the cylinder. Full size template is provided to facilitate pipe positioning.

OSO advise that the connecting pipes and electrical cables are fixed in place prior to the positioning of the cylinder. Moving the cylinder into position should be the last thing done before connection of pipes and commissioning of the cylinder.

This manual gives detailed advice for installation and should be read carefully prior to fitting any unvented unit. OSO Supercharged S_2S 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.

1.3 Technical Data Sheet

TDS - Direct electric water heater								
Regulation: 2017/1369/EU - Regulation: EU 812/2013 Directive: 2009/125/EC - Regulation: EU 814/2013								
Water heater efficiency according to standard: EN 50440: 2015								
Trade mark	M T. item no.	Model/identifier	ErP profile	ErP Rating	Energy eff. %	AEC kWh/a	Th. stat setting	Storage volume L
OSO Hotwater AS	11014146	S_2S 150 - 3 kW/1X240V						
OSO Hotwater AS	11014147	S_2S 210 - 3 kW/1X240V						
OSO Hotwater AS	11014148	S_2S 250 - 3 kW/1X240V						

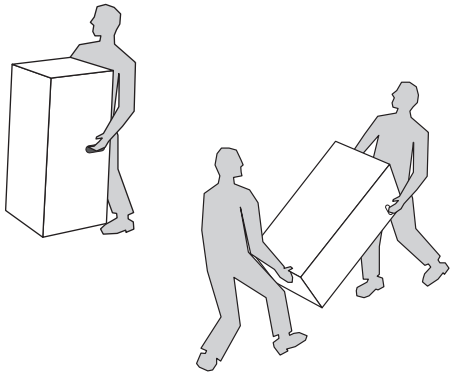
*Charge smart management.

1.4 Technical data, Charge R3 control unit

Data	Description
Type	Integrated (1.C Action - IEC 60730-2-9) - intended for indoor use only
Power supply	230V - 50Hz rated
Maximum load	3000 W (max. 16A)
Ambient temperature	0-40°C (max.)
Impulse voltage	2500 V
Degree of contamination	2
IP class	IP 44

1.6 Handling, location and positioning
The product should be transported carefully as shown, with packaging. Use the handles in the box.

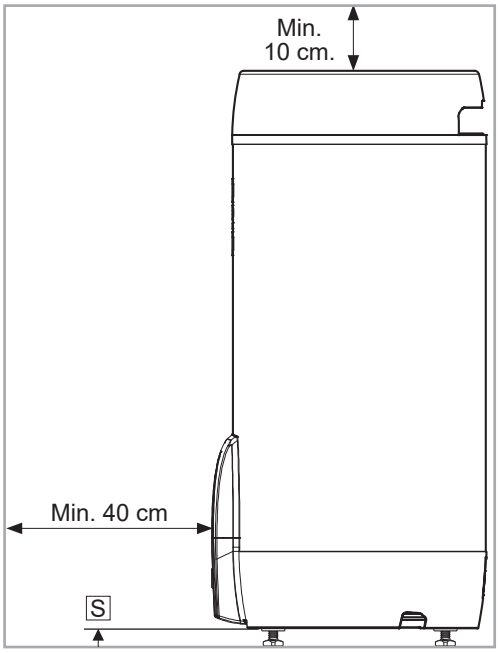
⚠ CAUTION
Tappings, valves etc. should not be used to lift the product as this could cause malfunction.



⚠ CAUTION	
❗	The cylinder must be installed in compliance with current building regulations.
❗	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 400 mm in front of the immersion cover / 150 mm above the highest point.
❗	The product shall be easily accessible in the home for servicing and maintenance.

1.6.1 Unpacking and positioning of product

1. Open the packaging and remove the protective plastic from the product.
2. The product is equipped with three factory-fitted adjustable feet (8), adjustable from 0-40 mm. Place the product carefully on its back, preferably on the cardboard packaging to avoid cosmetic damage.
3. Unscrew the adjustable feet at least 15 mm. from the bottom of the product (S)
4. Raise the product onto its feet, making sure that the feet are not exposed to oblique loads while the product is raised.
5. Place the product in a suitable place in the home, adjust the feet individually until the product stands firm and stable in plumb and level.



2. INSTALLATION

2.1 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 Supercharged S_2S should be transported and stored in a vertical position.

Removing junction box and drain valve cover, see pt. 2.20.

2.2 Siting the Supercharged S_2S

The cylinder should not be positioned until the connecting pipework and cables are fitted. There are few restrictions on the siting of the OSO Supercharged S_2S, however it should not be sited anywhere open to frost attack. The unit should be placed on a stable flat surface capable of withstanding the weight of the cylinder when full (see table on page 15) and access must be allowed for maintenance purposes. Prior to positioning the cylinder, wind out the feet in the base to protrude by 10 mm (35 mm if using optional wall bracket). If wall mounted with an OSO wall bracket, the wall should be capable of withstanding the forces generated by the weight of the full cylinder. 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.

The heater must be installed with a clearance for servicing of 40 cm in front of the junction box / 10 cm above the highest point. It must be easily accessible for servicing and maintenance.

2.3 Product description, Charge control unit

The control unit is integrated into the junction box of the product and controls the heating element of the water heater using hybrid relays. Based on temperature readings, consumption and varying electricity prices, the product will create a plan to heat water for the anticipated consumption in the most cost-efficient manner possible. The product communicates with the OSO Energy cloud solution via WiFi. OSO Charge syncs continuously with Norpool and will also take into account variations in the power grid in order to optimise the heating times of the water heater.

2.4 Component check list

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

- Tundish (incl. screws)
- Plastic cable strain relief

Components factory fitted:

- Charge control unit (see pt. 2.3)
- Expansion vessel(s)
- Flexible hose for expansion vessel with T piece connector
- Combination valve, includes line strainer, pressure reducing valve, balanced cold water connection (for shower or bidet only), blanking cap for balanced cold water connection, temperature & pressure relief valve and hot water blending valve.
- Immersion heater - 3 kW
- Thermostat / thermal cut-out
- Drain cock
- Lid for cylinder.

Documentation supplied:

- Installation manual & Service logbook (this document)
- Template for connecting pipework

2.5 Supply requirements

An uninterrupted 22 mm cold water mains supply is recommended, however if only a 15 mm supply is available, this may be used provided there is sufficient flow rate available. 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 8 bar. For pressures over 8 bar an additional pressure reducing valve must be fitted in the supply pipe to the unit.

2.6 Expansion vessels

Twin expansion vessels (single vessel on 150) are factory fitted to the multifunction valve using the supplied flexible hose. See illustration on page 9. The vessel(s) accommodate expanded water when the cylinder is heated and prevents the cylinder reaching its maximum working pressure.

2.7 Wall mounting
Wall mounting bracket is available for OSO Supercharged S_2S 150, see illustration.

2.8 Preliminary wiring
Before final installation and pipe fitting it is recommended to feed the factory fitted power supply cable to the power outlet. The OSO Supercharged S_2S is provided with two channels in the base to feed electrical wires to the Charge unit. The channels run diagonally from the front centre to the rear left and right, and ensures a neat installation with minimum visible wiring.

When the cylinder is moved into position remove the drain valve cover, see pt. 2.21. All internal wiring is pre-wired from the factory. The mains power cable is factory fitted and should be fed from the Charge unit through one of the base channels to the power outlet. OSO recommends connecting the power cable to a two-pole circuit breaker fitted on the wall near the cylinder.
The unit must be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations, isolation is required via a minimum 20 amp double pole isolation switch with a minimum 3 mm separation required.

All electrical wiring shall be carried out by a competent electrician and be in accordance with the latest IET Wiring Regulations. Size conductors according to IET Wiring Regulations. All relevant standards and regulations must be followed.

If the power supply cable is damaged in any way it must be replaced immediately. Use only a suitable heat resistant round flexible cable with a minimum rating of 90°C, for example H05V2V2-F (309-Y).

2.9 Pipework
The OSO Supercharged S_2S has all pipework connections at the top of the cylinder with these pipes secured to the rear wall. A template is provided to assist in the placement of these pipes. Decide where the cylinder is to be positioned and secure the wall template with the cross on the back wall at least 326 mm from the left wall and at the appropriate height for the cylinder according to the template.
Wind the cylinder feet out to protrude 10 mm to

match template instructions. Please note that if the cylinder is raised on its feet or on a plinth higher than floor level, the height of the template above the floor will need to be raised accordingly.
The connecting pipe tails should be fitted so they reach out away from the back wall horizontally, perpendicular to the wall and parallel with each other. The table below shows the exact distance these tails should be cut from wall to reach the cylinder connections. If pipes are clipped up the back wall behind the cylinder position, the tails should be longer. Use the lengths marked 'below'. If the pipes approach the template points from above/side, use the lengths marked 'above'.

OSO recommend that the discharge pipe should be located at the right side of the cylinder.

2.10 Pipe connections
Before connecting the cold supply (3), flush the cold supply pipework of all flux and debris. Lift off the cylinder lid to allow access to the combination valve and other connections.

2.11 Vessel connections
Check the expansion vessel(s) and hose connections are tight.

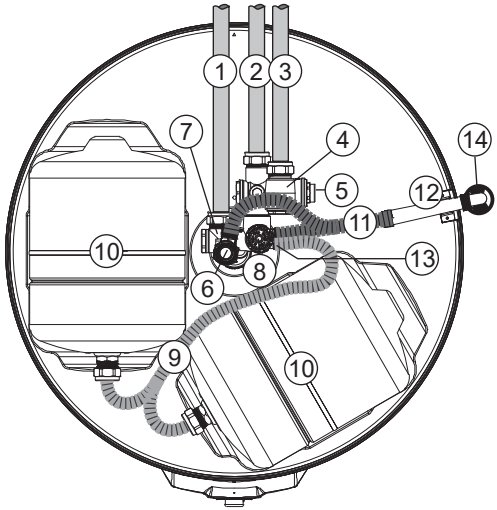
2.12 Remove the template
Position the cylinder to meet the heating and domestic water pipes.

2.13 Combination valve
The combination valve at the top of the cylinder is factory fitted and is water-tight. If necessary it can be rotated in either direction to suit the connecting pipework, up to half a turn without losing its seal.

2.14 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 (2) on the combination valve. 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.

Tail lengths from wall	Above	Below
Cold feed in (3)	202	242
Hot water out (1)	274	314
Balanced cold water out (2)	188	228

No.	Description	Dim.
1	Domestic hot water outlet (DHW out)	ø22 mm
2	Balanced cold water connection (Bal. CW)	ø22 mm
3	Cold water main supply inlet (CW in)	ø22 mm



No.	Description	Dim.
1	Domestic hot water outlet (DHW out)	ø22 mm
2	Balanced cold water connection (Bal. CW)	ø22 mm
3	Cold water main supply inlet (CW in)	ø22 mm
4	Line strainer	-
5	Pressure reducing valve - 3 bar	-
6	Temp&pressure relief valve - 90°C / 10 bar	1/2"
7	Hot water blending valve	-
8	Expansion relief valve - 8 bar	1/2"
9	Flexible hose	-
10	Expansion vessel(s)	-
11	Flexible hose - 2 pcs.	-
12	Manifold for tundish	-
13	Expansion vessel connection point	1/2" BSPM
14	Tundish	-

2.15 Cold mains supply
Connect the cold mains supply to the combination valve cold feed (see illustration below). The OSO unvented unit is designed for use with supply pressure up to 8 bar. For water pressures above 8 bar an additional pressure reducing valve must be fitted to the cold water supply pipe.

2.16 Hot water outlet
Connect the hot water distribution pipe to the combination valve hot water outlet (1), see illustration.

⚠ CAUTION
Do not use the balanced cold connection to feed any outlets other than mixer showers and Bidets. Under no circumstances use the balanced cold connection to feed all cold water outlets as this practice contravenes Section 10 of water regulations.

2.17 Flexible Y-hose
The flexible Y-hose (11) is preformed to the correct shape. Connect the inlet ends to the expansion relief valve (8) and the temperature and pressure relief valve (6).

2.18 Tundish and manifold
Recommended position of the tundish (14) is to the right of the cylinder as seen from the front. Connect the tundish manifold (12) to the outlet end of the flexible Y-hose (11). Tundish should be visible and positioned away from electrical devices. Tundish manifold (12) can be secured with supplied screws.

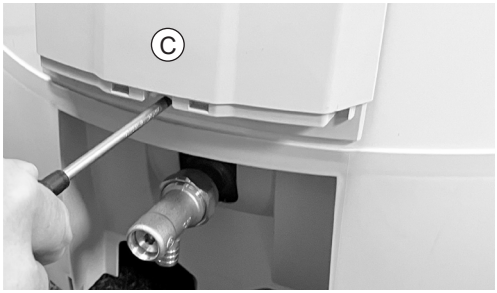
2.19 Discharge pipe
Connect the tundish outlet to the discharge pipe. Install the tundish in a vertical position within a maximum of 500 mm from the Temperature and Pressure Relief Valve drain connection. Ensure the expansion relief pipework discharges through the tundish. Tundish pipework must be 22 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 continous fall and discharge in a safe, visible position. If any doubt, refer to Building Regulation G3.

2.20 Dedicated discharge pipe
Discharge pipe must be dedicated to the cylinder and must not be used for any other purpose.

2.21 Removing drain valve cover & Charge unit
Grab the bottom of the drain valve cover (D) and give a sharp tug outwards and upwards. This will reveal the fastening screw for the Charge unit (C). See images below.

⚠ 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. With a permanently connected heater, the qualification requirements for electrical work must be followed.



2.22 Internal wiring

⚠ WARNING	
❗	The water heater shall be filled with water before the power is switched on, otherwise the warranty will be void.
❗	Permanent electric fittings must be installed by an authorised electrician.
❗	In the event that the cable is damaged, the cable must be replaced by a suitable cable with the correct specification.
❗	Electrical cables must be installed in such a way that they are not exposed to damaging mechanical, thermal or chemical impact. Strain relievers must be used. All damaged cables must be replaced.

⚠ 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. With a permanently connected heater, the qualification requirements for electrical work must be followed.

All internal wiring in this product is factory fitted. The following information is for use only in case of any servicing needs, ie replacing the immersion heater, thermostat or any electrical wires.

2.22.1 Electrical connection

Mains cables for the control unit and heater will be fully connected at the factory and fitted with a power supply cable.

Internal connection from the control unit to the heater has been performed as follows:

A) Phase wire (L) is connected to point “1” on the safety thermostat.

B) Neutral wire (N) is connected to point “3” on the safety thermostat.

C) Yellow wire with green stripe ⏚ – Earth – is connected to the terminal for the heating element (hexagonal brass)

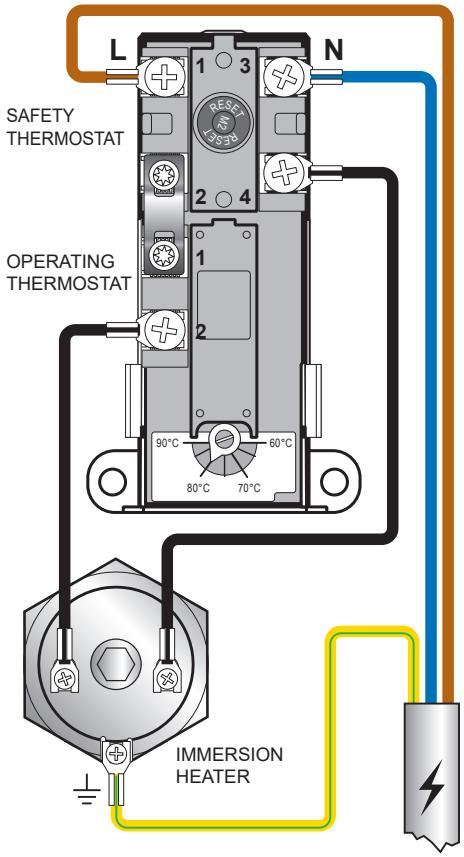
D) Internal wires from the element to the thermostat are connected to point “4” on the safety thermostat and point “2” on the operating thermostat respectively. See illustration.

All connection points must be tightened using torque in accordance with table 3.8.2.

Fixed electrical fittings must be used for installations in domestic properties in accordance with current local laws and regulations, as well as in the event of any changes to the property’s existing electrical installations.

Any electrical work must be performed by an authorized electrician. Any replacement parts must be of the correct type, see spare parts list on page 22.

The relevant regulations and standards, as well as this installation manual, must be followed.



2.22.2 Torque settings

Component	Torque
G1.1/4”M - heating element	60 Nm (+/- 5)
Thermostat screws	2 Nm (+/- 0.1)
Screws on the element head	2 Nm (+/- 0.1)

3. COMMISSIONING

3.1 Commissioning and filling

1. Check all connections for tightness. Open hot water tap furthest away from the OSO water heater.
2. 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) (see illustration on previous page) 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) (see illustration on previous page) to ensure free water flows through discharge pipe (Turn knob counter-clockwise).
6. Switch electrical power on.
7. Replace the cylinder lid – this is important as the lid prevents heat loss from the cylinder and combination valve, conserving valuable energy. Do not place heavy objects on the lid.

3.2 Draining

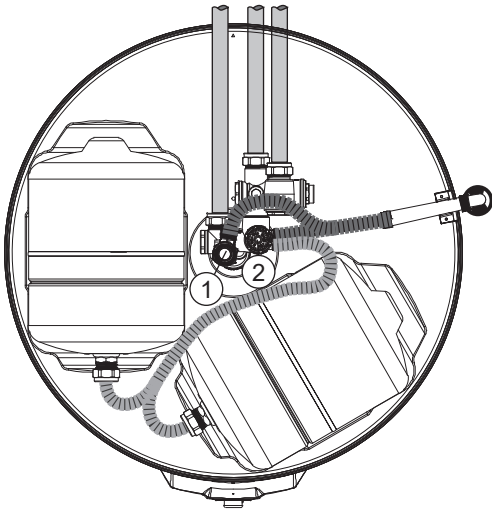
⚠ WARNING
The water temperature in the heater is 80°C and could cause scalding. Before emptying, a hot tap shall be opened to the max. pressure/ temperature for min. 3 minutes.

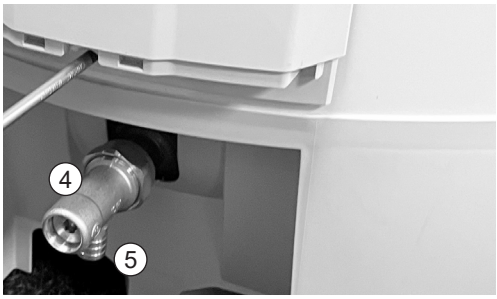
Switch off the electrical power (important to avoid damage to the immersion heater). Turn off the cold water supply valve. Open hot water tap. Remove drain valve cover (3) by grabbing the bottom of the cover as shown and give a sharp tug outwards and upwards.
Open drain valve (4) at base of cylinder using a 6 mm hex key. The unit will drain. Draining process may be speeded up by opening the temperature and pressure relief valve (2). An internal ø18 mm hose can be applied to the drain valve outlet (5) to lead the water to a gully, sink or similar.

3.3 System flushing

System flushing 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 flowrate. Close the taps and follow draining procedure above.

⚠ WARNING
The water heater must be filled with water before the power is switched on.





4. SETTING UP THE CHARGE UNIT

⚠ WARNING
The control unit must not be covered in any way.

4.1 Preparations before startup

After installation, the power supply to the water heater will be controlled by the Charge control unit. The control unit is operated using the button at the front (2) and a mobile application. We recommend downloading the app before the system is prepared for operation, see Section 4.3.

4.2 Checkpoints before startup

1. Check that wires are not exposed to mechanical, thermal or chemical impact.
2. Check that the control unit is secured to the wall and easily accessible.

4.3 Installing the OSO inCharge app

OSO inCharge is a mobile application that provides insight into consumption patterns and optimisation possibilities for the water heater. You can download and install the OSO

Google Play Store >

Apple AppStore >

inCharge app from the Apple AppStore or Google Play Store. You can also scan the QR codes displayed.

Login: At initial start-up, the user needs to create an account with a username and password (unless they already have an account). Follow the instructions presented in the app.

4.4 WiFi connection

1. Launch the OSO inCharge app. Create account.
2. Press down the control unit button (2) for at least one second to start connecting to the home WiFi.

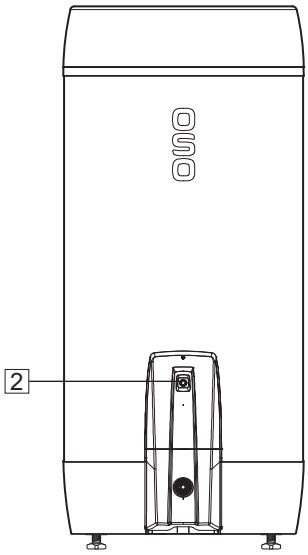
The turquoise light on the button will flash rapidly and the unit will now be in configuration mode. Follow the instructions in the app to complete the WiFi connection.

When the configuration has been completed, the control unit will automatically return to normal operating mode. This is indicated by a continuous turquoise light in the button (2).

If you do not update the configuration from the app after placing the control unit in configuration mode, the unit will automatically return to normal operating mode after three minutes.

For further information about the control unit status, see Section 5.6.

⊘ DO NOT
The Charge control unit must NOT be opened. The warranty will be void if the unit is opened.



5. SETTINGS AND MAINTENANCE

5.1 Settings, water heater

5.1.1 Thermostat settings

The product thermostat has been preconfigured to 80°C and *shall not* be adjusted. The power supply to the product is managed by the Charge unit.

5.1.2 Resetting the safety thermostat

The safety thermostat on the product cuts out when there is a risk of overheating. Before any action is taken, disconnect the power supply and The thermostat is reset by removing the drain valve cover (1) and the Charge unit (3) by removing the screw (2) (See pt. 2.21). Press the red 'RESET' button (4).

Make sure that the Charge unit and drain valve cover is refitted correctly before turning the power supply back on.

If the thermostat cuts out repeatedly, contact the installer - see contact information in pt. 5.7.

5.2 Maintenance and annual inspection

Maintenance must only be carried out by persons over 18 years of age with sufficient expertise.

Water heaters and pipe connections must be inspected annually. Checkpoints, heater:

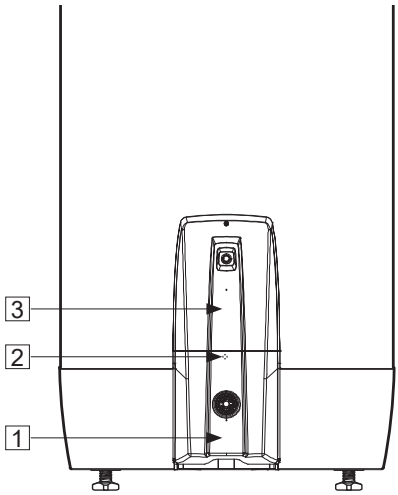
A) Check that all pipe connections to/from the product are tightened and not leaking.
B) Check that the power supply to the product is not at risk of exposure to mechanical, thermal or chemical damage, including the effect of a non-approved power control.
C) Check that any overflow pipe from the tundish is uninterruptable, clear and frost-free with a fall to the drain. The overflow pipe must have a visible outlet for inspection.
D) Check that the product is in a stable position both vertically and horizontally.

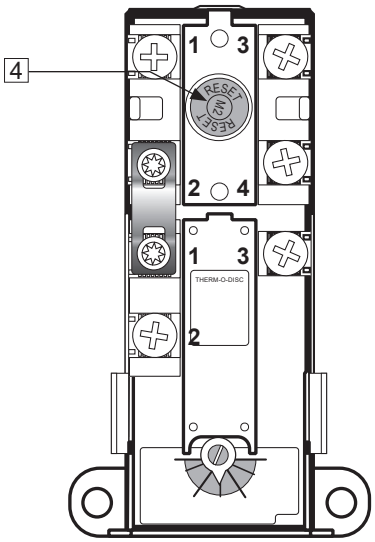
The control unit must be subjected to annual inspections in the same way as other electrical equipment. Check that the control unit is not covered in any way and that cables are not at risk of being exposed to mechanical, thermal or chemical impact.

5.3 Troubleshooting

If problems arise when the control unit is in use, check for possible faults and fixes in table 5.5.
If the problem does not appear in the table or you are unsure what is wrong, contact the installer

> ⚠ 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. With a permanently connected heater, the qualification requirements for electrical work must be followed.





(see contact details in pt. 5.7) or OSO Hotwater AS - see contact details on the back of this manual.

5.4 Bypass mode

In the event of a fault in the control unit that causes the hot water heater not to heat, the OSO Charge control unit can be placed in bypass mode. This means that the heater will not use Charge smart features and will behave like a standard heater. This is done by depressing the control unit button for 10-15 seconds until the LED in the button turns red.

5.5 Status table

CONTROL UNIT STATUS		
Button (7) light pattern	**LED colour**	**Description**
ON (50ms) / OFF (950ms) - - - - - -	Turquoise	Initialising WiFi connection
ON (700ms) / OFF (700ms) - - - - - - - - -	Turquoise	Connected to internet via WiFi, connecting to IoT hub
ON ————————	Turquoise	Connected to IoT via WiFi
ON (30ms) / OFF (60ms) - - - - - - -	Blue	Preparing to activate Bluetooth
ON (700ms) / OFF (700ms) - - - - - - - - -	Blue	Bluetooth discoverable (ready to pair)
ON ————————	Blue	Bluetooth connected
ON ————————	Red	Bypass mode enabled

5.6 Handover to end user

❗ THE INSTALLER MUST:
Brief the end-user on safety and maintenance instructions.
Brief the end-user on the use of the product.
Brief the end-user on settings and emptying of the heater.
Enter their contact details on page 23.
Hand this manual over to the end-user.

5.7 Contact information - installer

CONTACT DETAILS	
Installed by (company):	
Company address:	
Company phone:	
Company email:	
Installation date:	

5.8 Safety cut out, water heater

1. The safety cut-out operates if:
   a. Wiring is incorrect.
   b. The immersion heater thermostat or cylinder thermostat fails.
2. 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
3. Reduce thermostat setting an press the reset button. After adjustments are completed, ensure the lid to the electrical box is replaced correctly and the retaining screw is fitted
4. If still out of operation, contact installer.

5.9 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 (C) to the left and hold in this position for 30 seconds
5. Check pre-charge in expanison vessel and adjust pressure if necessary.
6. Open cold water supply valve.
7. When water flows through open tap, close tap. Turn on electrical supply to the immersion heaters.

5.10 Continous 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 boiler. Contact the installer or competent engineer.

5.11 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 a 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 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

5.12 Warranty

Cylinder should be serviced annually (as below) and logbook should be updated in order to validate warranty. Logbook and service records act as warranty document. For terms of warranty see Service logbook at rear of manual.

5.13 Service procedure

The following maintenance work has to be carried out annually by a competent person:

1. Inspection of pressure/temperature relief valve and expansion relief valve.
2. Manually operate each valve by twisting the operating cap, and check if water flows unobstructed via the tundish to the discharge point.
3. Ensure that both valves re-seat satisfactorily.
4. Visual inspection of expansion vessel.
5. If the pressure is below 3.0 bar, top up with suitable air pressure pump to pressure on vessel label.
6. Complete the service section of Benchmark/ Cylinder Commissioning Checklist included in the inside back pages of these instructions.
7. Remove , clean and replace line strainer.
8. 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.
9. Visual inspection of valves, external fittings, immersion heaters and electrical connections.

5.14 Combination valve

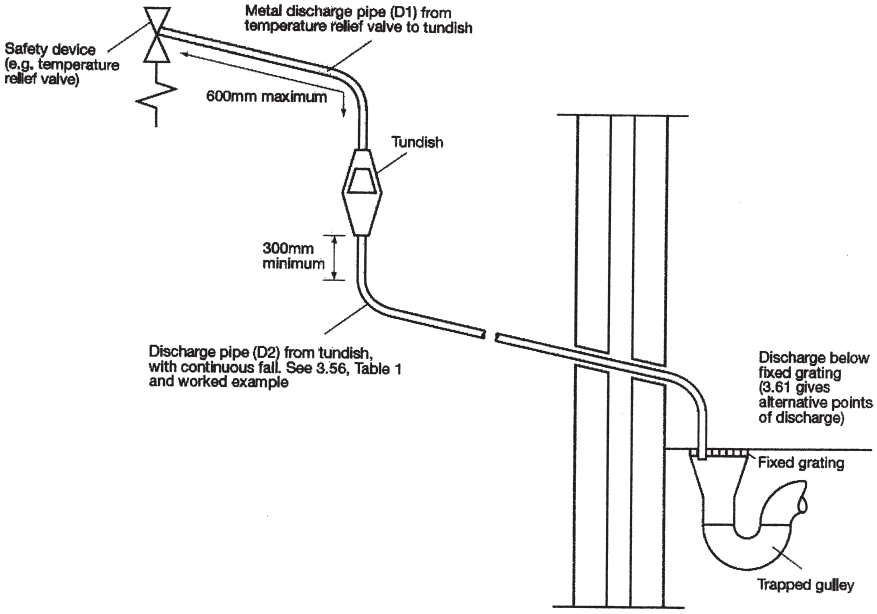
The combination valve can be separated by unscrewing once whole valve is removed from Cylinder. The entire valve can be removed by unscrewing from the top connection. When refitting, the valve does not tighten, the seal is created by a double O-ring. To create the seal, the valve should be wound down until it will not go any further, then wound back up less than one full turn to

point in the desired direction.

5.15 Drain valve removal/replacement
To remove drain valve, turn off power supply and drain cylinder fully. When cylinder has drained, unscrew rear locking ring behind drain valve (turn clockwise. Pull drain valve off. Reverse procedure to refit drain valve.

5.16 Alternative discharge
Discharge pipes must be metal, change to discharge pipes should be suitably temperature rated as defined by G3 building Regulations. The pipe must 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). 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.

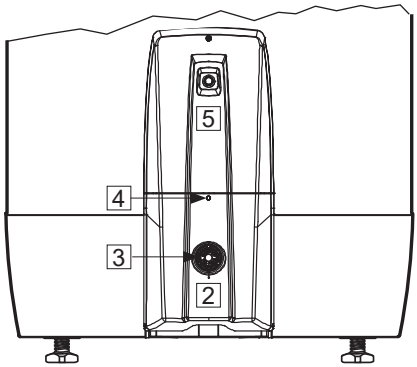


Valve Outlet size	Minimum size of discharge pipe D1	Minimum size of discharge pipe D2 from tundish	Maximum resistance allowed expressed as a length of straight pipe (i.e. no elbown or bends)	Resistance created by each elbow or bend
G 1/2	15 mm	22 mm	up to 9 m	0.8 m
		28 mm	up to 18 m	1.0 m
		35 mm	up 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

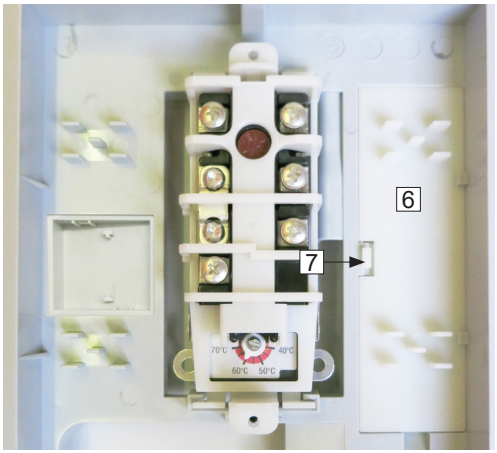
5.17 Replacing the temperature sensor

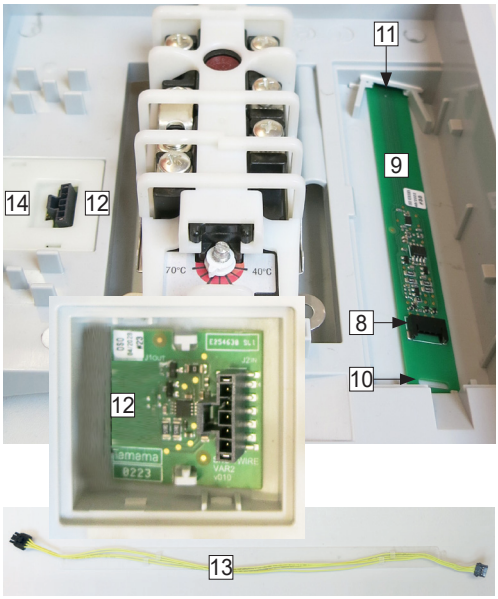
The temperature sensor in the control unit is factory fitted and connected to the control unit. If the temp. sensor needs to be replaced:

- Disconnect the power supply to the product and make sure that the power cannot be turned on while work is ongoing.
- Close the cold water supply to the product.
- Removing the Charge control unit/electrical cover (5):
  A) Remove the drain valve cover (2) by grabbing the bottom and pulling it straight out.
  B) Loosen the fixing screw (4)
  C) Lift the control unit/electrical cover (5) off the heater.
  NOTE: Make sure that wires are not loaded/ stretched, as this could damage connection points and wires.



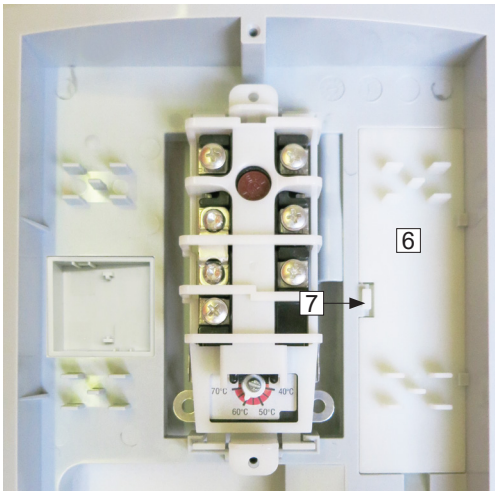
- **Replacing the temperature sensor, 200 l.:**
  A) Remove the sensor cover (6) by loosening the locking hatch (7).
  B) Disconnect the control unit from the temperature sensor by pushing down the plug's locking hatch and pulling the plug out of the sensor connector (8).
  C) Remove the old temperature sensor (9) by pushing the sensor up slightly and out of the bottom attachment (10). The sensor must then be bent upwards and pulled out using the sensor groove (11) in the junction box.
  D) Insert the new temperature sensor using the sensor groove (11) and push it all the way down into the bottom attachment (10). Plug the wire from the control unit into the connector on the temperature sensor (8).
  E) Reinstall the sensor cover (6).
  F) Reinstall the control unit/electrical cover by tightening the screws (4). Refit the safety valve cover (2).
  G) Open the water supply to the product and turn the power supply back on.





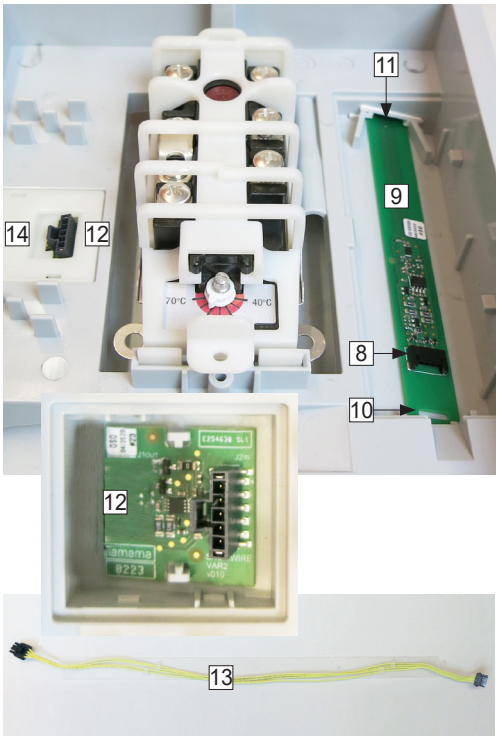
- **Replacing the temperature sensor, 300 l.:**
  300 l. is equipped with a temperature sensor rail with an extension cable (13) and an additional temperature sensor in the junction box (12). These are connected using separate cables from the control unit. The connectors are different so that no confusion can occur.
  Replacing temperature sensor rails with

extension cable:
A) Remove the sensor cover (6) by loosening the locking hatch (7).
B) Disconnect the control unit cable from the extension cable by pressing down the locking hatch and pulling the plug out of the connector on the extension cable.
C) Remove the old temperature sensor (9) by pushing the extension cable up slightly and out of the bottom attachment (10). Bend the extension cable upwards and pull it out through the sensor groove (11) in the junction box together with the extension cable. Disconnect the extension cable and remove the old temperature sensor.
D) Insert the new temperature sensor into the sensor groove (11) and connect the extension cable (13) by plugging it into the connector on the temperature sensor.
E) The cable from the control unit must be plugged into the extension cable.
F) Reinstall the sensor cover.
G) Reinstall the control unit/electrical cover by tightening the screws (4). Refit the safety valve cover (2).
H) Open the water supply to the product and turn the power supply back on.

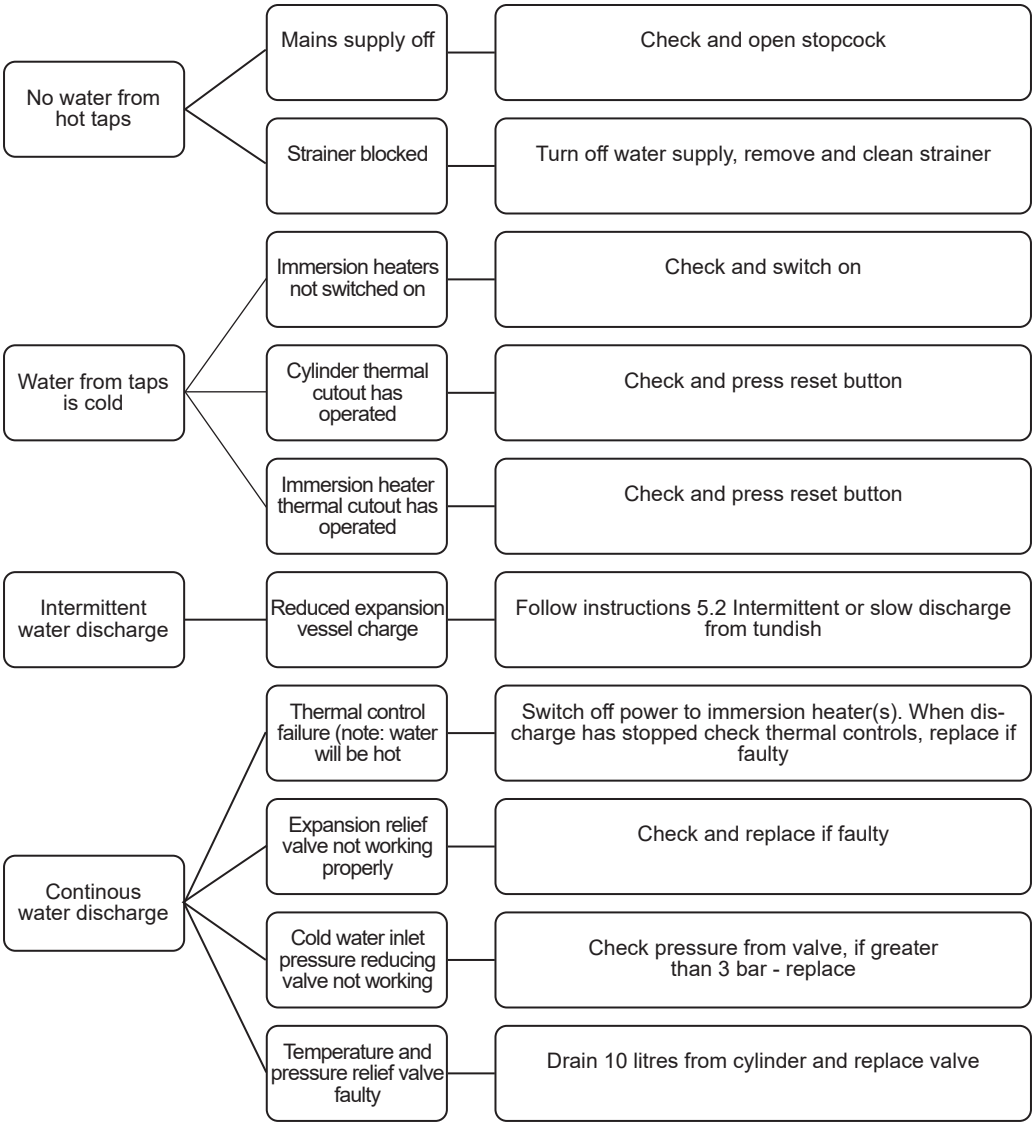


Replacing the additional temperature sensor (300 l.):
A) Disconnect the cable from the control unit by pressing down the locking hatch and pulling the plug out of the connector on the sensor (12).
- B) Remove the sensor cover (14) by pushing a screwdriver down into one of the grooves on the cover to loosen the catch.

C) Lift the old temperature sensor (12) out.
D) Insert the new temperature sensor and install the sensor cover (14). Plug the cable into the control unit.
E) Reinstall the control unit/electrical cover by tightening the screws (4). Refit the safety valve cover (2).
F) Open the water supply to the product and turn the power supply back on.



6. OSO FAULT FINDING GUIDE



Troubleshooting for Charge smartcontrol, see Section 5.5.

7. TECHNICAL AND PERFORMANCE SPECIFICATIONS

7.1 Technical data - Supercharged S_2S

Description	Unit	S2S 150	S2S 210	S2S 250
Part number	No.	11014146	11014147	11014148
GTIN number	No.	7070644011680	7070644011697	7070644011703
Actual capacity of the water tank at 20°C	L.	151	202	254
Outer diameter of the tank	mm	595	595	595
Height of the appliance	mm	1110	1375	1645
Gross weight of the appliance	kg	43	47	53
Net weight of appliance once filled with sanitary water	kg			
Material of element	-	Titanium Gr1	Titanium Gr1	Titanium Gr1
Thermal insulation material	-	PUR foam	PUR foam	PUR foam
Thermal insulation of tank, avg. thickness	mm	95	95	95
IP classification	IP	21	21	21
Standing heat loss / 24 hour	kWh/24h			
Standing heat loss	Watts			
Thermal energy efficiency	%			
Annual Electrical Consumption (AEC)	kWh			
Load profile	ErP			
Hot water capacity(1) >40°C	L.			
Heat up (lower element) 10°C - max	min			
Recovery (lower element) after 70%	min			
Heat up (upper element) 10°C - max	min			
Recovery (upper element) after 70%	min			
ErP class	Rating			
Pressure information				
Maximum design pressure of cylinder (rated pressure)	MPa/Bar	1 / 10	1 / 10	1 / 10
Operating pressure of cylinder	MPa/Bar	3	3	3
Max. operating temperature of cylinder	°C	75	75	75
Expansion solution	-	GWS 3.5bar	GWS 3.5bar	GWS 3.5bar
Expansion vessel capacity	L.	1 x 8	2 x 8	2 x 8
Hydraulic connections				
Secondary return	mm	15	15	15
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”
Safety valve (factory fitted)	Inch	1/2”	1/2”	1/2”
T&P valve (factory fitted)	Inch	1/2”	1/2”	1/2”
Pressure reducing valve	Inch	3/4”	3/4”	3/4”
Electrical characteristics				
Supply voltage and frequency	VAC/Hz	220-240 VAC 50 Hz	220-240 VAC 50 Hz	220-240 VAC 50 Hz
Power of the electrical resistance	kW	3.0kW@240V 2.8kW@230V	3.0kW@240V 2.8kW@230V	3.0kW@240V 2.8kW@230V
Electrical installation	-	IET regs	IET regs	IET regs
Thermostat type - junction box	-	Surface	Surface	Surface
Immersian Heater - Phase	Phase	single	single	single
Immersion thermostat - temp range	°C	50-75	50-75	50-75
Immersion thermostat - set temp	°C	75	75	75
Safety				
Safety valve opening pressure +/- 5%	Bar	8	8	8
T&P valve opening pressure/Temp.	Bar/°C	10/90	10/90	10/90
Safety thermostat cutout	°C	85	85	85

8. TERMS OF USE, CHARGE

The service, an optimisation application for hot water tanks, ("the Service"), is provided by OSO Energy AS, business registration no. 925 156 663, Industriveien 1, NO-3300 Hokksund ("OSO").
The terms of use ("the Terms") apply to the natural person ("you") using the Service.

ABOUT THE SERVICE
The Service is an optimisation service for OSO hot water tanks with associated control units ("the Product") and is used to optimise water heating in relation to cost and other considerations. The Service can be downloaded as a mobile phone application (app). Further information about OSO and its products and services can be found at https://osoenergy.no/

THE AGREEMENT
The agreement between yourself and OSO comprises these Terms and the OSO Privacy Policy. The agreement applies solely to your use of the Service. Terms and conditions of purchase and use of the Products follow from your agreement with the seller of the Product.

USE OF THE SERVICE
You must be 18 years of age or older to access the Service. In order to use the Service, the customer must identify themselves in accordance with the applicable authentication requirements in the application. This could be SMS, e-mail or other supported solutions.
The Service is an optimisation service for the Product and shall be used to attempt to optimise the water and power consumption of the product. The app provides insight into the available volume of hot water, historical consumption data and general information about the water heater. The app supports multiple water heaters and allows the customer to manage these using a single interface. The Service includes functionality to optimise the heating of water in relation to cost, as well as maintaining quality in terms of of e.g. frequency, hot water availability and voltage. You will have access to certain configuration options for optimisation. The app supports notifications.
Optimal use and benefit of the Service is subject to the Product having been mounted, installed and positioned in the manner and environment specified in the instructions for use of the Product. Moreover, the Product control unit must not have been opened or otherwise damaged or impacted.
The Service must be used in accordance with any instructions provided by OSO. The Service must not be used for purposes that contravene the Terms or legislation or for anything other than the intended Products. You are responsible for all actions and activities associated with your use of the Service and neither OSO nor its subcontractors are liable for any unauthorised access to the Service resulting from negligence on your part.
You may not copy, reproduce, sell, license, distribute, modify, decompile or otherwise modify the Service or make the Service or parts thereof available to others.
Please refer to the current user manual available at www.osoenergy.no/brukermanual for an exhaustive description of the service and its features.

ACCESSIBILITY
If you experience any difficulties using the Service, please contact OSO via email: info@osoenergy.no or phone: +47 32 25 00 00. OSO will respond as soon as possible and usually within one working day.
OSO may implement appropriate measures that may affect access to the Service for technical, maintenance or safety reasons. To the extent that it is practicable, OSO will provide information about any unavailability of/limitations to Services. Such information will be issued via the communication channels to which OSO has access, e.g. via the application or OSO website, and in the manner and to the extent deemed appropriate by OSO.

LIMITED ACCESS TO THE SERVICE
The Service may be interrupted due to circumstances outside of the control of OSO or its subcontractors if such circumstances may affect the functionality and availability of the Service. Neither OSO nor its subcontractors can control such circumstances and OSO can therefore not guarantee continuous or uninterrupted access to the Service. Nevertheless, OSO will seek, to a reasonable extent, to eliminate any factors that interrupt or risk interrupting the functionality and availability of the Service.
OSO reserves the right to terminate your access to the Service at any time if OSO suspects that you are violating the Terms or otherwise acting in a manner that means that OSO or its subcontractors, other users or persons are at risk of loss or damage. You are financially liable to OSO to the extent that follows from general tort law.

UPGRADED FEATURES AND NEW VERSIONS OF THE SERVICE
Upgraded features and new versions of the Service will be implemented in the Service to the extent deemed necessary by OSO. OSO reserves the right to modify or adjust the Service or the way in which the Service is delivered without prior warning and at any time.
The Service shall remain available for at least five years after installation.
The Products to which the Service is linked may have a longer service life than the period for which the Service is delivered. The Products will also work for their intended purpose without the Service.

PERSONAL DATA
The following data will be processed by OSO in order for OSO to deliver the Service:
A. Information about the serial number of your Product
B. Information or data about you as collected from the control unit linked to the Product, including location (map coordinates - for installation), meter point ID, temperature, hot water volume and electricity readings for the Product;
C. Information or data you choose to enter in the Service; and
D. Information or data created in the Service, as statistics.

OSO may share information about you related to your use of the Service with other parties in order to improve the Service/Product and contribute to more efficient utilisation of the power grid.
A more comprehensive and detailed description of the collection and processing of your personal data can be found in the Privacy Policy at https://osoenergy.no/personvern/

LINKS TO OTHER WEBSITES
You may encounter links to websites provided by third parties in the Service. OSO has no control over or responsibility for such affiliated websites or the contents thereof and shall not be held liable for any damage arising in connection with the use of services available on linked websites. You shall read the respective terms of use and privacy policies for such third party websites.

INTELLECTUAL PROPERTY RIGHTS
All rights to the Service and Product, including intellectual property rights, are owned by OSO and OSO's subcontractors. Such rights include, but are not limited to, the operation, method, software and design of the Service. Such rights include, but are not limited to, the operation, method, software and design of the Service.

THIRD-PARTY APPLICATIONS
You may require access to certain third-party applications in order to use parts of the Service. You are responsible for installing and updating such third-party applications.
You must use third-party applications in accordance with the terms of the application. You must indemnify OSO and its subcontractors in the event of any claims against OSO or its subcontractors arising as a result of your use of third-party applications.
Neither OSO nor its subcontractors are liable for defects in, and cannot guarantee the functionality of, any third-party application.

LIABILITY AND LIMITATION OF LIABILITY
Neither OSO nor its subcontractors shall be liable for loss of earnings, repayments to third parties or other indirect or consequential losses. This limitation shall not apply in the event of gross negligence or wilful intent.

FORCE MAJEURE
OSO and its subcontractors shall not be liable for non-fulfilment of the obligations under the Terms, during the period in which and to the extent that OSO or its subcontractors are hindered by circumstances outside our control, including war, warlike conditions, labour disputes, epidemics, pandemics, new or amended legislation, government measures, interruptions or faults in electricity or communication systems, fire, flooding or other factors of similar significance.

MODIFICATION AND TERMINATION OF THE SERVICE
OSO reserves the right to modify or supplement these Terms at any time. You will be notified of any significant modifications.
All modified terms will automatically take effect no later than fourteen (14) days after the modifications have been published in the Service. By continuing to use the Service after fourteen (14) days, you will be deemed to have accepted the new Terms.
You may stop using the Service at any time. Please note that uninstalling the Service from your mobile or stopping using the Service will not automatically result in the closure of your account in the Service. You need to actively close your account in the app.

COMMUNICATION
You accept that all communication from OSO or its subcontractors may be submitted electronically, either via the Service or to your email address.

DURATION
The Terms apply from the date on which you register a user account for the use of the Service and until you have closed your account in the app or the Service is discontinued by OSO.

CHOICE OF LAW AND LEGAL VENUE
The Terms shall be interpreted in accordance with and as supplemented by Norwegian law. Attempts shall be made to resolve any dispute arising as a result of or in connection with these Terms or in connection with breach, termination or invalidity of the Terms through negotiations. If negotiations are not successful, you, as the consumer, may contact the Norwegian Consumer Authority to request arbitration, cf. Complaining to the Norwegian Consumer Authority - Norwegian Consumer Authority.
If the parties agree, or if you a business, the case can be brought directly before the ordinary courts.
If you are consumer residing in another EU country, you may lodge a complaint via the European Commission's complaints portal: http://ec.europa.eu/odr

Last updated: 16/03/2022. See www.osoenergy.no for the latest version.

9. REMOVING THE PRODUCT

9.1 Removal

1. Disconnect the power supply, disconnect all cables and wires.
2. Shut off incoming cold water supply.
3. Empty water heater – see pt. 3.2.
4. Disconnect all pipes.
5. The product can now be removed.

9.2 Returns scheme

This product is recyclable and shall be taken to the environmental recycling centre. The Charge control unit must be disposed of as electrical waste.
If the product is to be replaced with a new product, the installer could take the old product away for recycling.

10 SPARE PARTS

10.1 Spare parts list

OSO Product no.	Designation	Product description:	Dimension
11000901	Thr. 5/4"	Element - 3 kW/1x230V - 1-tube - Inc 825	Length 450 mm.
11001075	TS2	Thermostat - 59T/66T 60-90°C 1-phase	2-pole
11011345	TS2 clip	Mounting cip for thermostat TS2 - single	
11001124	Mains cable	Cable 2.5# - 2+earth	Length 280 m.
11001141	Connecting cable	Internal cable - 2.5# ,180°C / fork+fork connectors	Length 205 mm
11001329	Mixer valve	Mixer valve for Super Series UK, ø38, complete	ø 38 mm
11001357	DV-360	Drain valve with hose drain connection	ø22 x 10 mm
11012550	Temperature sensor	Integrated sensor rod,150L	
11012551	Temperature sensor	Integrated sensor rod,200L	
11012675	I2C extender cable	For connection of integrated sensor rod temp sensor, 250-300 l.	
11011911	Control unit	CHARGE R3 200/150 integrated assembly(Wi-Fi)	
11011912	Control unit	CHARGE R3 300/250 integrated assembly(Wi-Fi)	
11012161	AXI 16	Expansion vessel kit - 3.5 bar[1)]	8 l.
11011354	Plastic cover	Drain valve cover for Supercharge S_2S series	
11012208	S_2 acc. kit	Accessory kit for Super S_2 series - UK[2)]	

[1)]Expansion vessel kit contains:
- Expansion vessel, 8 ltrs. - 2 pcs.
- Flexible hose Y-type G1/2"F x 2xG3/4"F - L=540

[2)]Accessory kit contains:
- Tundish ø15 / 1/2" - ø22/M28, plastic
- Strain reliever double - 2.5#
- Screw ø3mm - L12mm for strain reliever, 4 pcs.
- Manifold 2xG1/2"M x G1/2"F
- Flexible hose G1/2"F x G1/2"F L=260 - 2 pcs.

Please direct technical questions and requests for spare parts to the suitable OSO contact point below:

Phone: (0191) 482 0800 Fax: (0191) 491 3655
E-mail technical.uk@oso-hotwater.co.uk
E-mail spareparts.uk@oso-hotwater.co.uk

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 WARRANTY

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 warranty.

The above does not affect your statutory rights.

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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	PRODUCT No.		MANUFACTURING date
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 Warranty

COMMISSIONING PROCEDURE INFORMATION

BOILER PRIMARY SETTINGS (INDIRECT HEATING ONLY) ALL BOILERS

IS THE PRIMARY A SEALED OR OPEN VENTED SYSTEM?	**SEALED** ☐	**OPEN** ☐
WHAT IS THE BOILER 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)

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.

HWSLB First Edition 01.03.02

11. WARRANTY CONDITIONS - applies to UK only

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 been connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations.
- 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 must be isolated from chemically treated water.
- 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.

OSO
HOTWATER

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Team Valley Trading Estate,
Gateshead,
Tyne & Wear,
NE11 0EF
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E-mail spareparts.uk@oso-hotwater.co.uk
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