

Delta Twincoil - DTC

200-250-300 l.

EN



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



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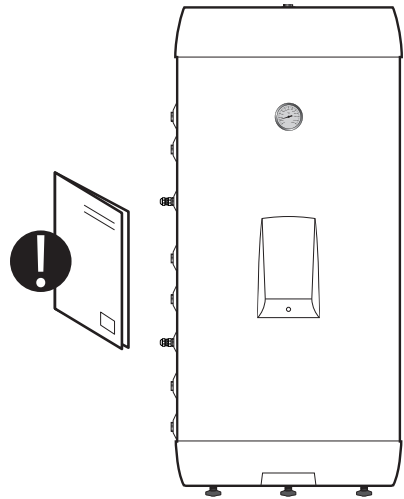
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1. SAFETY INSTRUCTIONS

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 Twin Coil VIP unvented hot water cylinder.

DELTA Twin Coil VIP is an unvented hot water cylinder for use with solar 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 Twin Coil 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 should be filled with water before the power is switched on.
❗	Maintenance/settings should 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 should 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)
❗	Any overflow pipe from the safety valve MUST be ≥ 18 mm inside, clear, undamaged and frost-free with a fall to the drain.
❗	Fixed electric fittings should 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 should 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 should be placed in a room with a drain, in accordance with the wetroom standard / latest TEK. Alternatively, fit an automatic stop valve with sensor and overflow from safety valve to drain. Liability for consequential damage will only apply if this is followed.
❗	The product should 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 cover / 10 cm over the top connection.

2. PRODUCT DESCRIPTION

2.1 Product identification

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

OSO products are designed and manufactured in accordance with:

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

OSO Hotwater AS is certified for

- Quality ISO 9001
- Environment ISO 14001
- Work environment OHSAS 18001

2.2 Intended use

Delta Twincoil is designed to supply homes with hot running water. The product is intended for use with two alternative energy sources.

2.3 CE marking



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

The product complies with Directives for:

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

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

2.4 ErP product fiche - Technical Data Sheet

Trade mark	MT item No.	Model / identifier	ErP Rating	Standing heat loss W	Capacity L
OSO Hotwater AS	10211600	DTC 200 - 2.8kW @ 230V/3.0kW @ 240V+HX 0.7+0.7m²	B	49	192
OSO Hotwater AS	10211700	DTC 250 - 2.8kW @ 230V/3.0kW @ 240V+HX 0.7+0.7m²	B	54	242
OSO Hotwater AS	10211800	DTC 300 - 2.8kW @ 230V/3.0kW @ 240V+HX 0.7+0.7m²	B	58	284
Directive: 2010/30/EU Regulation: EU 812/2013			Directive: 2009/125/EC Regulation: EU 814/2013		
Heat loss tested acc. to standard: EN 12897					

This OSO product is approved to building and water regulations by KIWA waterlec LTD.

Tel: 01495 308185

Email: waterleceenquiries@kiwa.co.uk

kiwa
approved
product



UK WATER SUPPLY
REGULATIONS

3. INSTALLATION INSTRUCTIONS

3.1 Products covered by these instructions

800 0306 Delta Twincoil - DTC 200
800 0308 Delta Twincoil - DTC 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 Twin Coil VIP should be transported and stored in a vertical position.

3.3.2 Delivery

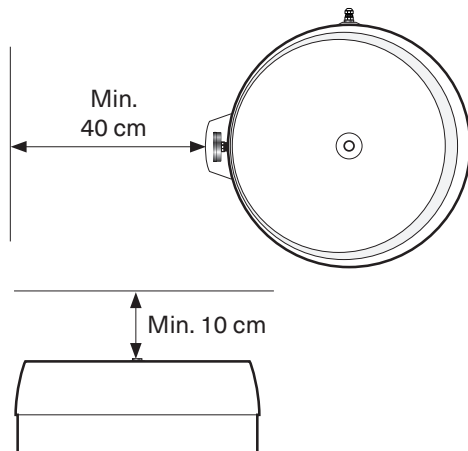
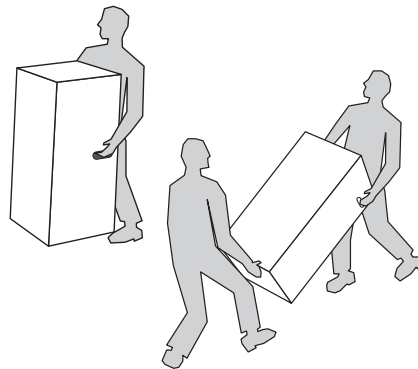
The product should be transported carefully as shown, with packaging. Use the handles in the box.

3.3.3 Siting the DELTA Twin Coil VIP

There are few restrictions on the siting of the OSO DELTA Twin Coil VIP, 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 data plate) and access must be allowed for maintenance purposes. Provision should also be allowed for the routing of the discharge pipe away from the cylinder to an outside point according to building regulation G3.

⚠ CAUTION

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



3.4 Requirements for installation, location and positioning

⚠ CAUTION

❗	The product should be placed in a room with a drain, in accordance with the wetroom standard / latest TEK. Alternatively, fit an automatic stop valve with sensor and overflow from safety valve to drain.
❗	The product should be placed in a dry and permanently frost-free position.
❗	The product should 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 cover / 10 cm over the top connection.
❗	The product should be easily accessible in the home for servicing and maintenance.

3.5 Component check list

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

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

3.5.1 Components factory fitted

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

3.5.2 Documentation supplied

- Installation manual & log book

3.6 Supply requirements

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

3.6.1 Expansion vessels

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

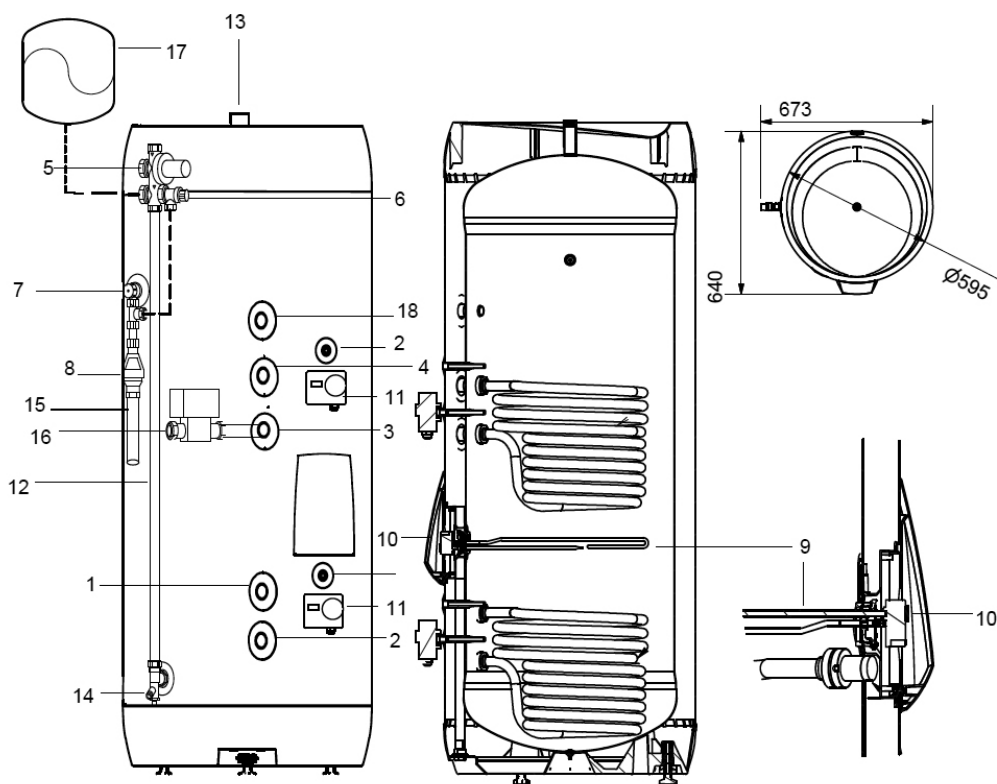
3.6.2 Compatible fittings and components

All thermostatically controlled boilers are compatible with indirect OSO cylinders.

3.6.3 Non-compatible products.

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

3.7 General layout



3.7.1 Reference chart

Ref no.	Key	Part No.
1	Flow 3/4" BSP Solar	
2	Return 3/4" BSP solar	
3	Flow 3/4" BSP Solar	
4	Return 3/4" BSP solar	
5	Pressure Reducing Valve Multibloc 3/4" (adjustable) includes Item 4	355030
6	Expansion relief valve (6 bar)	PREL355030
7	Temperature and Pressure Relief Valve	550853
8	Tundish	219005
9	Immersion Heater	71242
10	Immersion heater control thermostat	80314
11	Digital Dual Thermostat	80345
12	Cold feed tube (not supplied, see pt. 3.7.2 Cold feed tube)	
13	Hot Water Outlet 3/4" BSP	
14	Elbow/Drain Cock	250445
15	Discharge Pipe (not supplied)	

Ref no.	Key	Part No.
16	Motorized valve (not factory fitted)	92000
17	Expansion vessel	AX18, AX24
18	Secondary Return	

3.7.2 Cold feed tube

Vessel size	Length of tube (ø28) mm	Expansion vessel pre charge / size
200	980	3 bar / 18 litre
250	1200	3 bar / 24 litre
300	1450	3 bar / 24 litre

3.8 Pipe installation

The product is designed to be permanently connected to the mains water supply.

Approved pipes of the correct size should be used for installation. The relevant standards and regulations must be followed.

3.8.1 Incoming water pressure

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

3.8.2 Connecting pipes

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

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

3.9 Positioning the unit

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

3.9.1 Protection from frost

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

3.9.2 Cold water supply

1. To obtain the best performance from your OSO unvented system it is advisable to feed

the unit with an uninterrupted supply.

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

3.9.3 Hot water supply

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

3.9.4 Balanced cold water supply (optional)

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

3.9.5 Secondary return (optional)

Connect secondary return if required to fitting (18) page 8, see technical data table on page ??

3.9.6 Discharge pipe

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

3.10 Flow and Returns and Motorized valve

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

For electrical connection of the motorized valve and immersion heater, please read Electrical Installation Instructions. (Page ??).

The Solar flow and return connections should be made to the lower connections 1 & 2. Temperature control from the Solar circuit is achieved using a differential solar controller. This controller must be wired in series through the thermal cut-out on the OSO thermostat. If Solar Collectors are to be installed at a later date then connect the boiler primaries to the lower coil. If boiler primaries are connected to lower coil then the thermostat must be removed , and the grey wire uncoiled from inside thermostat. The thermostat must then be replaced inserting both wires into sensor pocket, resetting temperature to 60°C. The direction of solar primary flow in the solar coil is top to bottom. The solar circuit must be installed with a solar hydraulic station which must incorporate a pump and non-return valves in both flow and return within the solar circuit. This system will prevent thermal siphoning when the pump is not active

Temperature sensors for the cylinder provided with the differential controller should be inserted into the pockets provided.

There is no maximum primary temperature from the solar system and primary temperatures in excess of 100°C are not unusual. All components on the solar circuit must be suitable for these higher temperatures. Should the solar circuit be installed incorrectly, then all approvals and guarantees of the cylinder are invalid.

3.10.1 Fitting instructions

⚠ WARNING

❗	The product should be filled with water before the power is switched on.
❗	Any overflow pipe from safety valves must be of a suitable size, clear, undamaged and frost-free with a fall to the drain.

⚠ CAUTION

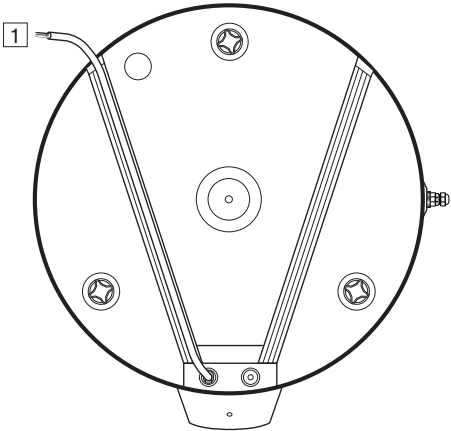
❗	The product should be placed in a room with a drain, in accordance with the wetroom standard / latest TEK. Alternatively, fit an automatic stop valve with sensor and overflow from safety valve to drain.
❗	The product should be properly aligned vertically and horizontally, on a floor or wall suitable 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 cover / 10 cm over the top connection.

3.10.2 Fitting recommendation

RECOMMENDATION	
-	Allow clearance to the floor. Screw the feet out a minimum of 15 mm from the bottom of the product.
-	Mains cable for wall socket (1) should be hidden under one of the channels in the bottom of the product.
-	If the non-return valve is tight, a reduction valve and expansion vessel should 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 should be fitted.
-	For installation in a rooms which does not conform to the wetroom standard, a watertight drip tray with overflow pipe ≥ 18 mm. inside diameter should be fitted under the product, in addition to an automatic stop cock with sensor. This will prevent possible material damage.

3.11 Commissioning

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



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 Draining

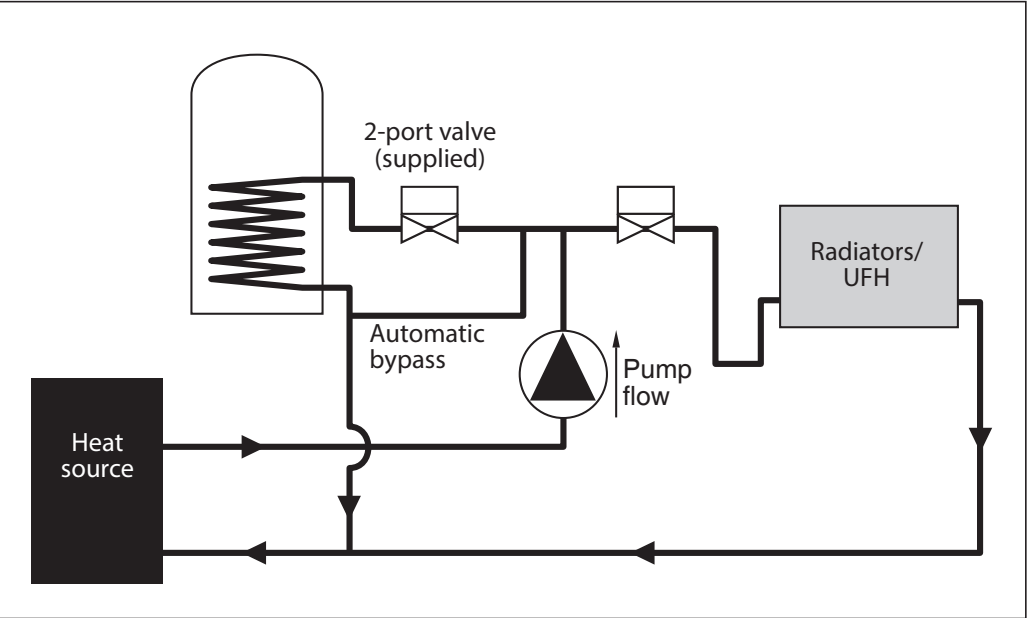
Switch off the electrical power (Important to avoid damage to element).
Isolate boiler from OSO unit. Turn off the cold water supply valve. Open hot water tap. Open drain 14 (see page 8) at base of cylinder. The unit will drain.
Draining process may be speeded up by opening the temperature and pressure relief valve. An internal $\varnothing 18$ mm hose can be applied to lead the water to a gully, sink or similar.

3.13 System flushing

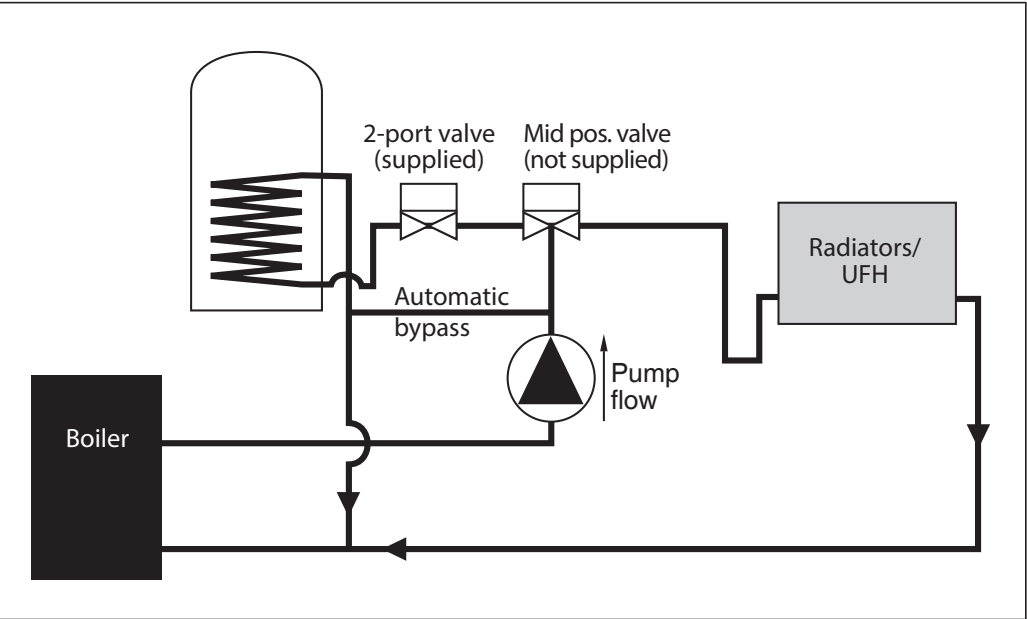
This will not be necessary under normal circumstances as the line strainer will

3.14 Piping Diagrams

3.14.1 S-plan piping diagram



3.14.2 Y-plan piping diagram



4. ELECTRICAL INSTALLATION

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.


4.1 Electrical components

Component	Note
Work thermostat	5-70°C adjustable
Heating element	1-phase 230 V

4.2 Electrical connections in the junction box

⚠ WARNING

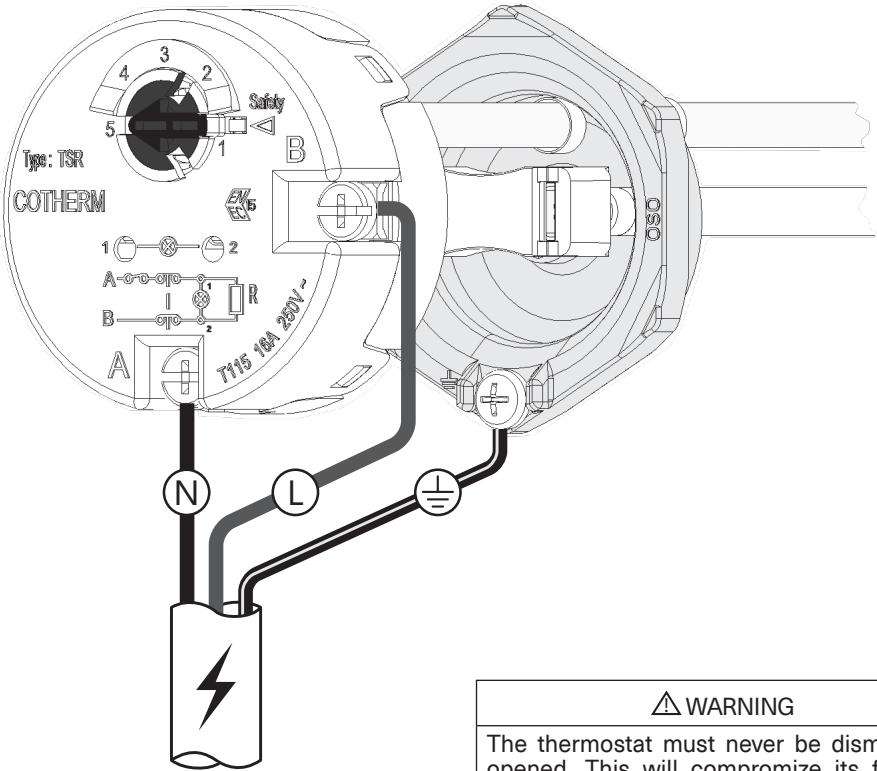
Constant voltage present at terminals L and N.
Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.

- A) Blue wire (R) – Neutral – connected to point 'A' on the thermostat.
- B) Brown wire (S) – Live – connected to point 'B' on the thermostat.
- C) Yellow wire with green stripe  – Earth – connected to the terminal for the heating element (hexagonal brass)

4.2.2 Torque settings

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

4.2.1 Wiring diagram



⚠ WARNING

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

4.3 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 3 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 shown connecting the live, neutral and earth as indicated. The unit must be permanently connected to the electrical supply through a double-pole linked switch with a minimum break capacity of 13 amps.

Each immersion heater has a working thermostat adjustable between 18°C - 70°C (+/- 5°C). A safety cut-out is also incorporated within the thermostat and will operate at 87°C (\pm 7°C). Should this happen, check reasons for thermal cut-out button being released and when satisfied press the reset button.

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

4.4 Indirect heating system

4.4.1 Motorized valve

To comply with regulations governing the installation of indirect unvented cylinders, a motorized valve must be fitted in the primary pipework. Your OSO unit has been supplied with a two port motorized valve, which will act as a positive energy cut-out should the safety cut-out operate. The motorized valve will also control the temperature of the domestic stored water via the cylinder thermostat, which is located in the electrical box. The unit can be installed on an "S" or "Y" plan system. Please follow the wiring instructions carefully.

4.4.2 Digital Dual Cylinder Thermostat

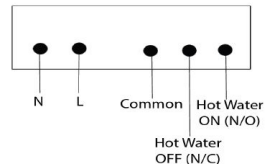
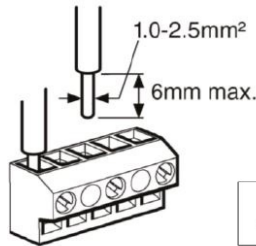
The Digital Dual Thermostat has real safety and energy saving benefits and provides accurate temperature control. It also features a clear and informative LCD display. Leave the cylinder thermostat set at 60°C in line with current govern-

ment guidelines. Lowering the temperature will substantially reduce the amount of usable hot water available on a daily basis and could result in bacterial growth unless the legionella facility is activated. THIS FUNCTION IS DEACTIVATED AS STANDARD. To activate turn the unit OFF and back ON again by holding down the black Holiday button until the display is blank (OFF), and again until the display is on to turn (ON.).

The legionella mode gives a weekly automatic one hour "boost" to above 60°C which kills any legionella bacteria. This function is adjustable allowing the duration of the legionella override to be adjusted from 1 to 7 days or completely disabled to operate as a conventional Dual Cylinder Thermostat.

The LCD display shows the current water temperature and the user defined water temperature, while the red LED indicates that the unit is calling for heat. The sensitive electronic sensors operate at a far greater accuracy than conventional thermostats. The dial makes it easy to set the required controller temperature (between 25°C and 65°C)

The second (limit) safety thermostat is pre-set to 80°C with a concealed manual reset, to comply with building regulations. Should the safety cut out be brought into operation, the motorized valve will operate and close down the primary flow to the cylinder. To reset the safety cut-out and the motorized valve the reset button must be pressed in.



Also see S-Plan and Y Plan Wiring page 15-16. This product requires a fused permanent Live and Neutral supply.

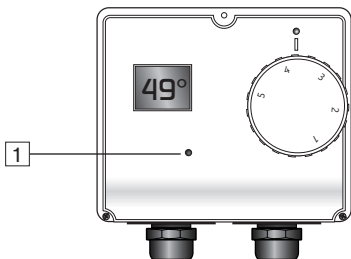
4.5 Adjusting the 1 hour boost

The thermostat has user defined settings where the duration of the legionella Override/Boost can be adjusted from 1 to 7 days or completely disabled to operate as a conventional dual cylinder thermostat.

1. To disable/adjust the legionella boost turn the unit off by pressing and holding down the HOLIDAY button until an audible click is heard and the red LED turns off and the digital display goes blank.
2. Release the button and after approx. 10 seconds press and hold the HOLIDAY button again. After 5 seconds an audible click is heard, the red LED will light up and the digital display will come back on, keep the HOLIDAY button pressed for a further 5 seconds until the digital display flashes.
3. Release the button and use the HOLIDAY button to choose between disabling the override/Boost (OF in display) or setting delay between boost/override from 1 - 7 days (1-7 in display)
4. Once selected release the button and the unit will return to the user set position within 5 seconds

4.6 Holiday mode

Holiday mode is set using the black button located under the display. Press and hold the holiday switch (1) for a minimum of 10 seconds until you hear an audible click, and this switches the digital Dual Cylinder Thermostat off completely so there is no water heating and no weekly “boost” heating. When in Holiday mode, the display is off. This feature should only be used when the property is vacant for extended periods and there is no requirement for water heating or for the weekly “boost”.



Pressing and holding the holiday switch (1) again for a minimum of 10 seconds until you

hear an audible click will restart the Electronic Dual Cylinder Thermostat, the display will show the cylinder temperature and the weekly “boost” will immediately start, and recur every 7 days at the same time depending on the user set position.

4.7 Lower (solar) coil

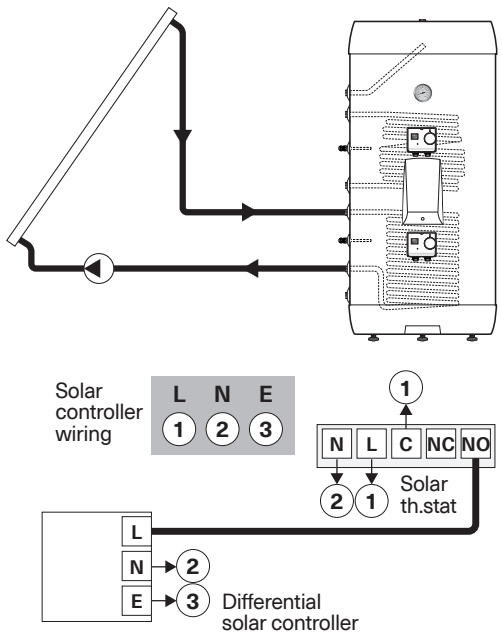
Heat sources to unvented hot water cylinders must be controlled by a thermal cut-out as well as a thermostat. The OSO Solarcyl is supplied with solar sensor pockets. The solar controller (not supplied) and solar sensor point should be wired through the OSO thermal cut-out.

4.8 Solar control

A Differential Solar Controller is required to achieve Solar thermal control and Solar water heating. Please note that the direction of flow in the solar coil is reversed compared to the boiler coil. If the cylinder is not being used for solar use, connect the boiler to the lower coil with the primary flow in a bottom to top direction.

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.

4.8.1 Solar controller pipe fitting and wiring



4.9 S-plan wiring

OSO DELTA Twin Coil 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'.

4.9.1 Thermistor controlled boilers

Many popular boilers now use a thermistor principle. A thermistor temperature sensor is supplied with the boiler to attach to the cylinder. Temperature information is relayed back to the boiler control system. A Pocket is provided (see below to secure the sensor on the DELTA Twin Coil VIP cylinder. The probe is run through a channel from base of cylinder to the immersion housing and housed there in a pocket. The ther-

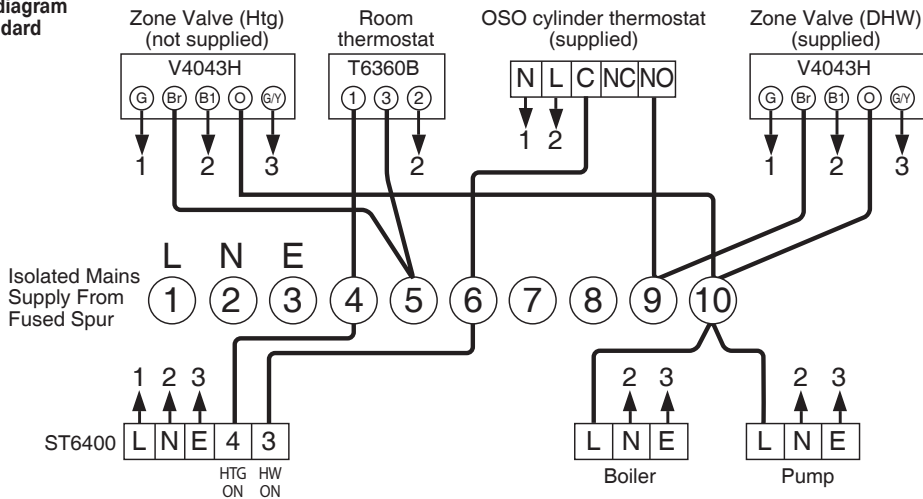
mistor cable should be secured using the supplied clamps in the bottom opening of the channel. The supplied motorised valve must be used in accordance with Building Regulation G3. This is wired from the supplied cylinder thermostat, wired as high limit stat. Please follow lower diagram: 'Wiring for Thermistor Controlled Boiler'.

⚠ WARNING

OSO Hotwater (UK) Limited can not be held responsible if alternative wiring plans are used.

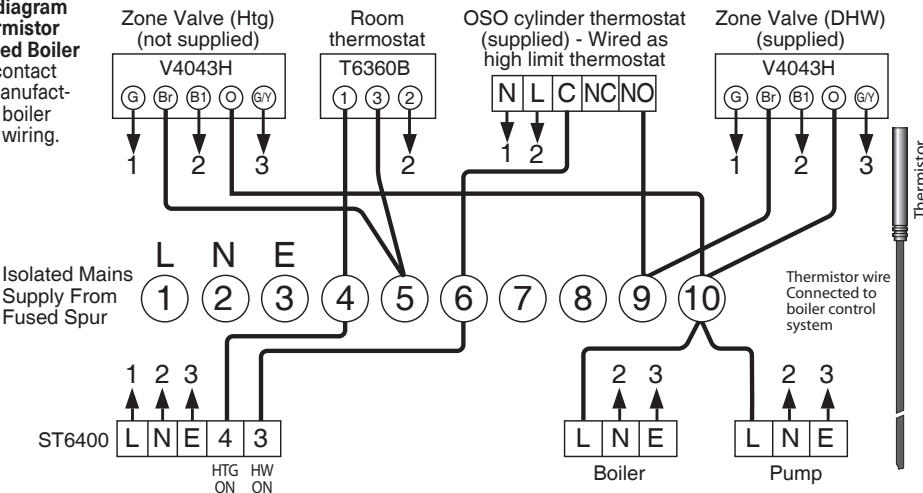
Important: Before resetting the safety cut-out or altering the thermostat setting isolate electrical supply to the unit before removal of the lid. Ensure the lid to the electrical box is replaced before power is switched back on.

Wiring diagram for Standard Boiler



Wiring diagram for Thermistor controlled Boiler

Please contact boiler manufacturer for boiler specific wiring.



4.10 Y-plan wiring

OSO DELTA Twin Coil 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'.

4.10.1 Thermistor controlled boilers

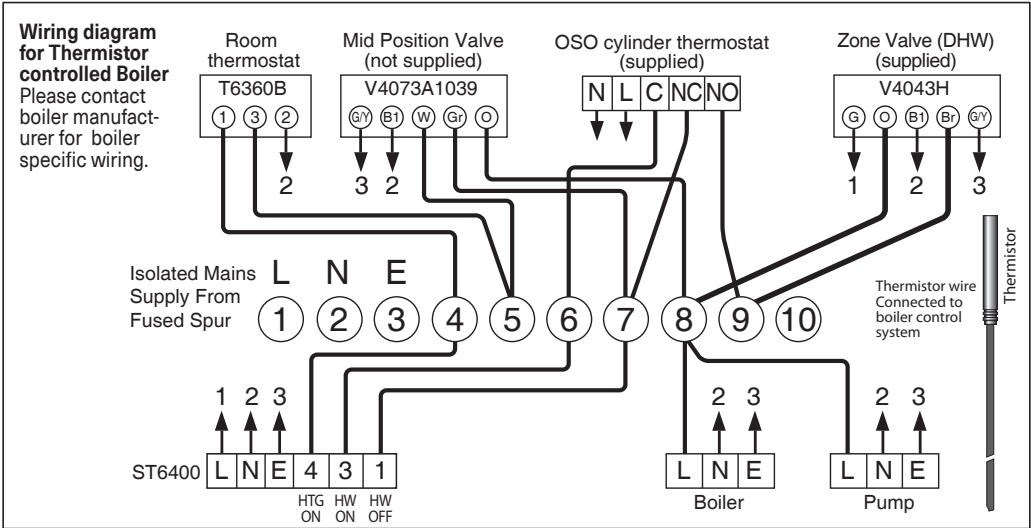
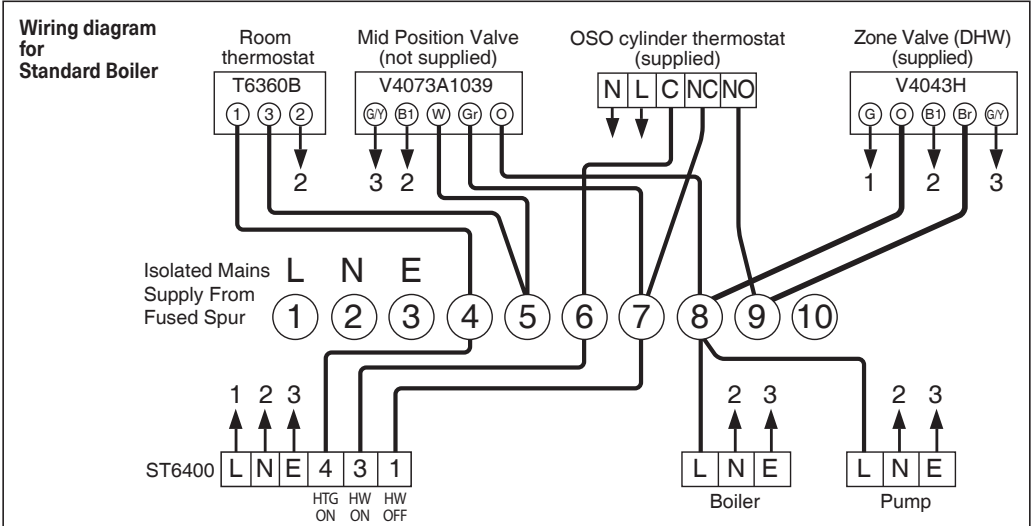
Many popular boilers now use a thermistor principle. A thermistor temperature sensor is supplied with the boiler to attach to the cylinder. Temperature information is relayed back to the boiler control system. A Pocket is provided (see below to secure the sensor on the DELTA Twin Coil VIP cylinder. The probe is run through a channel from base of cylinder to the immersion housing and housed there in a

pocket. The thermistor cable should be secured using the supplied clamps in the bottom opening of the channel. The supplied motorised valve must be used in accordance with Building Regulation G3. This is wired from the supplied cylinder thermostat, wired as high limit stat Please follow lower diagram: 'Wiring for Thermistor Controlled Boiler'.

⚠ WARNING

OSO Hotwater (UK) Limited can not be held responsible if alternative wiring plans are used.

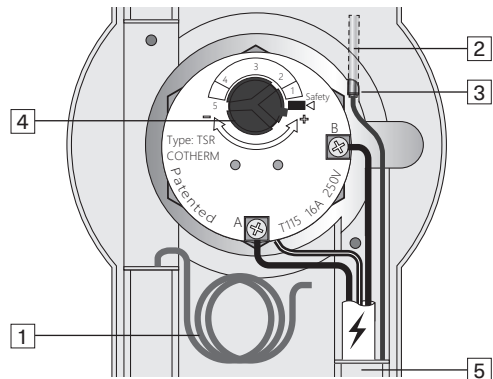
Important: Before resetting the safety cut-out or altering the thermostat setting isolate electrical supply to the unit before removal of the lid. Ensure the lid to the electrical box is replaced before power is switched back on.



4.11 Cylinder thermostat as high limit th.stat only

Coil the grey temperature probe wire (1) inside the thermostat box and insert black probe (2) into thermostat pocket of cylinder (3). Turn dial (4) on the front of thermostat to position 5.

Cables are run through cable channel from cylinder base (5).



4.11.1 Fitting instructions

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

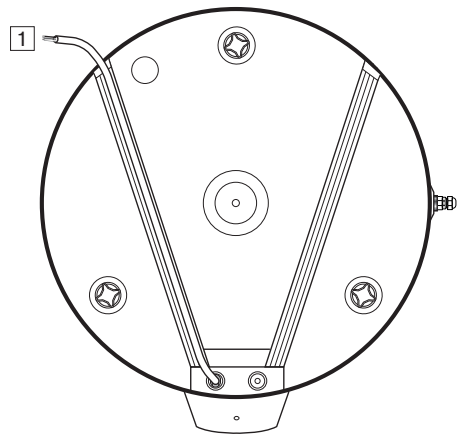
⚠ CAUTION	
❗	The product must have a clearance for servicing of 40 cm in front of the cover / 10 cm over the top connection.
❗	If the mains cable is damaged, it must be replaced with cable of a quality that meets the requirements of the installation. The cable must be replaced by a qualified electrician.

4.11.2 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, as shown.
-	For products with ≤ 2kW capacity, a ≥ 10A fuse / ≥ 1.5# wire should be used*. For products with ≤ 3kW capacity, a ≥ 15A fuse / ≥ 2.5# wire should be used (230V).

4.12 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

The thermostat on the product is adjustable from 5-70°C. The thermostat should not be set lower than 65°C to prevent bacteria growth. To adjust the temperature:

- A) Disconnect the power supply.
- B) Remove the electric junction box cover (1) with a screwdriver.
- C) Adjust the temperature on the thermostat adjustment dial (3).
- D) The thermostat is adjustable from 5-70°C. Turning the dial (3) all the way to + gives the highest temperature (70°C). The temperature can be reduced as desired by turning the dial (3) towards (-).

Fit the junction box cover (1) before connecting the power supply.

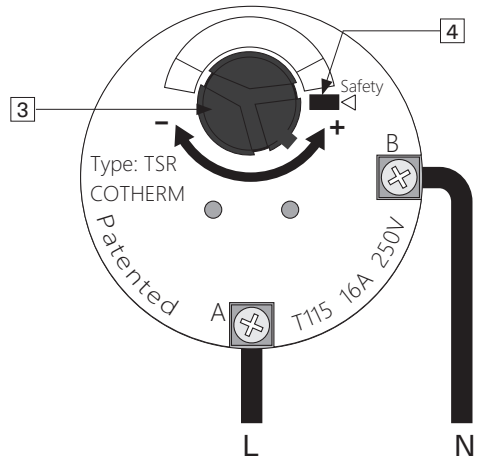
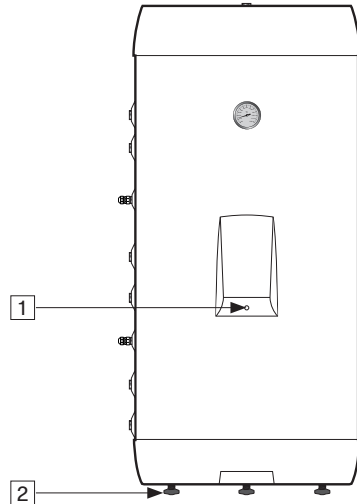
5.1.2 Resetting the safety thermostat

The safety thermostat on the product cuts out when there is a risk of overheating. This is reset by removing the cover (1) and pressing the 'Safety' button (4). If the thermostat cuts out repeatedly, contact the installer.

5.1.4 Adjusting the feet

The product is equipped with three factory-fitted feet (2), adjustable from 0-40 mm. Screw the feet out a minimum of 15 mm from the bottom of the product. Adjust the feet individually until the product is standing firm 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/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 replaced.
6. If still out of operation, contact installer.

6.2 Intermittent or slow discharge from tundish

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

6.3 Continuous very hot water discharge from tundish

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

6.6 Servicing Procedure:

7.6.1 Expansion relief valve

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

6.6.2 Pressure reducing valve

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

6.6.3 Expansion relief cartridge

Isolate the cold supply and open a ground floor cold tap. unscrew blue 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 troubleshoot-

ing table or you are unsure what is wrong, contact the installer (see type plate on the product) or OSO Hotwater AS.

TROUBLESHOOTING		
Problem	Possible cause of fault	Possible solution
No hot water	Power supply interrupted.	Check that the fuse is set and the earth breaker has not tripped.
	Thermostat has cut out.	Press the 'Safety' button on the safety thermostat; see 'User guide'.
	Heating element is defective.	Replace heating element. Contact auth. installer.
	Leak in hot water pipe	Verify as follows: a) close the mixer valve, b) wait 2-3 hours, c) feel the mixer valve to see whether it is hot. If so, there is a leak in the hot water pipe or elsewhere. Contact auth. installer.
There is leakage/dripping from the safety valve/ there is often water on the floor by the cylinder in the morning	Pressure reduction valve, water meter or blocked non-return valve on the water intake.	Fit AX expansion vessel with absorbs expansion during heating, and fit pressure reduction valve for stable water pressure inside the home. The pressure reduction valve is adjusted in according to the 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.
Not enough hot water	High consumption in the home.	Raise the temperature on the thermostat to 70°C; see 'User guide'. Switch to a larger OSO water heater. Contact auth. installer.
Not high enough temperature	The mixer valve is set for low temperatures.	Raise the temperature on the mixer valve; see 'User guide'.
	The thermostat is set for low temperatures.	Raise the temperature on the thermostat to 70°C; see 'User guide'.
	Change from cold to hot water in taps.	Contact auth. installer.
Fuse/earth breaker trips repeatedly	Possible fault in the heater's electrical system.	Verify as follows: a) cut the electric supply, b) unscrew the cover, c) visually check the junction box for any problems. If so, contact auth. installer to check. Fit the cover.
Long time before the water reaches the tap	Long stretch of pipe from water heater to tap.	Fit circulation wire or heating cable to HW pipe. Or fit an auxiliary heater by the tap. Contact auth. installer.
Knocking in the pipes when the hot tap is closed	Large pressure increase when the tap is closed quickly.	Completely normal. Fit AX expansion vessel if troublesome. Contact auth. installer.
Important - please note: Always disconnect electrical supply before removing any electrical equipment covers		

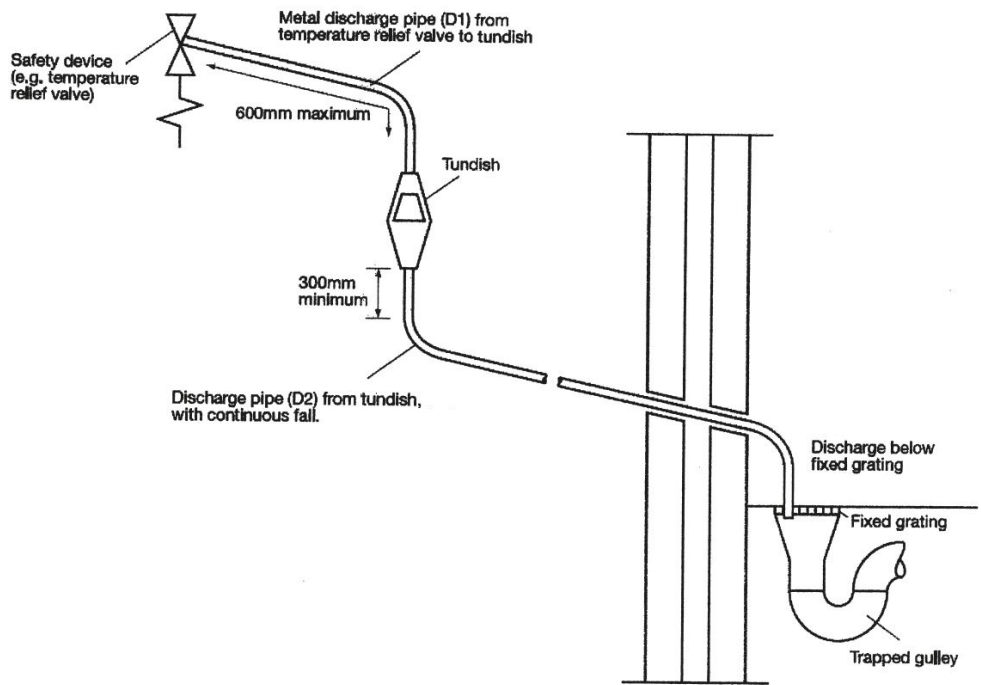
7.2 Alternative discharge

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

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

wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility.

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



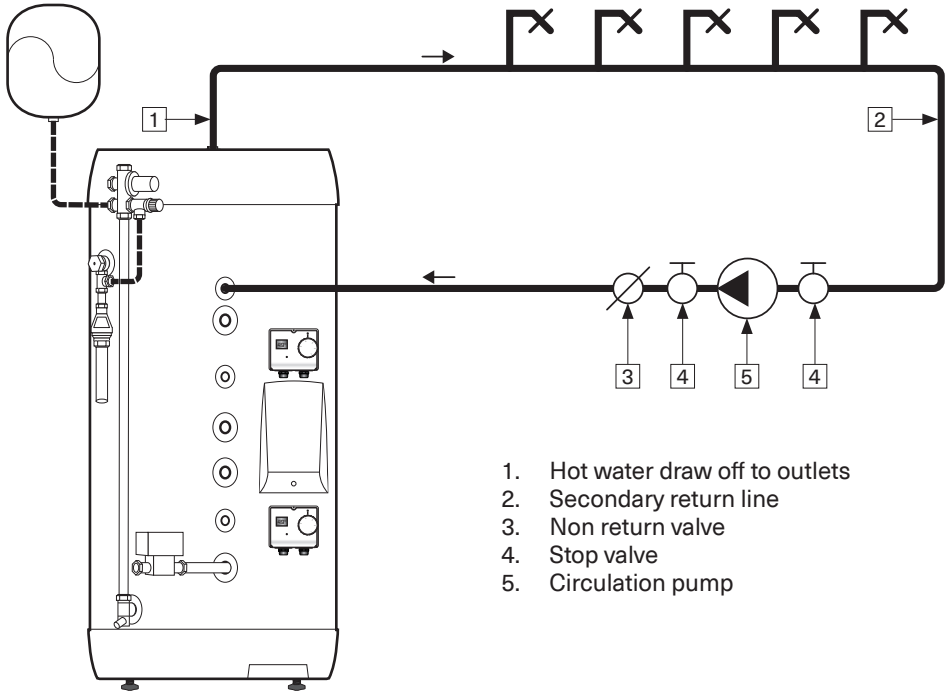
7.2.1 Single pipe discharge

Where a single pipe serves a number of discharges, such as in blocks of flats, the number served should be limited to not more than 6 systems so that any installation discharging can be traced reasonably

easily. The single common discharge pipe should be at least one pipe size larger than the largest individual discharge pipe to be connected. For further information contact your Building Control Office

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

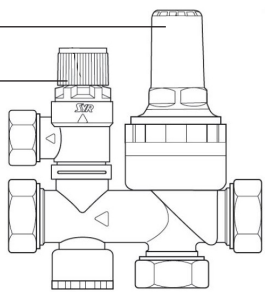
7.3 Secondary return



- 1. Hot water draw off to outlets
- 2. Secondary return line
- 3. Non return valve
- 4. Stop valve
- 5. Circulation pump

7.4 Spare parts

Pressure reducing
valve cartridge
Part No. REDC
355030 - 3 Bar
Expansion valve
6.0 Bar



Description	Part No.
Multibloc valve	355030
Temperature & pressure relief valve	550853
Pressure reducing valve	RED355030
Elbow drain valve	250445
Immersion heater, Incoloy 3 kW	71242
Honeywell 2 port valve	92000
Fittings kit	
Cylinder thermostat	80345
Immersion thermostat	80314
Expansion vessel	AX 24
For spares: www.oso-spares.co.uk	

7.4.1 Obtaining spare parts

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

8. TECHNICAL DATA

8.1 Data table Delta DTC

Description	Unit	DTC 200	DTC 250	DTC 300
Part number	No.	10211600	10211700	10211800
Product number	GTIN	7070644004385	7070644004392	7070644004408
Actual capacity of the water tank at 20°C	L	191	242	281
Outer diameter of the tank	mm	595	595	595
Height of the appliance	mm	1270	1540	1750
Gross weight of the appliance	kg	49	57	63
Net weight of appliance	kg	45.5	53	58
Net weight of appliance once filled with sanitary water	kg	237	298	340
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	1.18	1.30	1.39
Standby heat losses	Watts	49.0	54.0	58.0
Hot water capacity - mixed to 40°C	L	312	385	416
Heating time (upper coil)	min.	21.5	27.4	30.7
Reheat time (1) (70%) (upper coil)	min.	16.1	20.6	23.6
Primary Heating Power (1) (upper coil)	kW	17.9	17.0	16.3
Heating time /Lower/Solar coil)	min.	34.1	45.4	51.8
Reheat time (1) (70%) (Lower/Solar coil)	min.	23.9	31.8	36.3
Dedicated Solar volume	l.	94	104	104
Primary Heating Power (1) (Lower/Solar coil)	kW	16.9	16.0	15.2
Primary flowrate for Reheat time and primary heating power	l/h	900	900	900
Primary Heat exchanger pressure drop (1)	mBar	50	50	50
Solar Heat exchanger pressure drop (1)	mBar	50	50	50
Heat up time element	min.	138	196	246
Reheat time (1) (70%) 1 element	min.	97	137	172
ErP class	Rating	B	B	B
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
Maximum design pressure of solar 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
Operating pressure of solar 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
Max. operating temperature of solar 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.	3.8	3.8	3.8
Primary heat exchanger surface area	m ²	0.69	0.69	0.69
Ø int. et Ø ext.	mm/mm	ø20.4 / ø22	ø20.4 / ø22	ø20.4 / ø22
Solar heat exchanger volume	l.	3.8	3.8	3.8
Solar heat exchanger surface area	m ²	0.69	0.69	0.69
Ø int. et Ø ext.	mm/mm	ø20.4 / ø22	ø20.4 / ø22	ø20.4 / ø22
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"
Solar heat exchanger flow	Inch	3/4"	3/4"	3/4"
Solar 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	3/4"	3/4"	3/4"
Temperature sensor sleeve diameter	mm	8	8	8

Data table - continued

Description	Unit	DTC 200	DTC 250	DTC 300
Part number	No.	10211600	10211700	10211800
Product number	GTIN	7070644004385	7070644004392	7070644004408
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	3000	3000	3000
Electrical installation	-	IEEE regs	IEEE regs	IEEE regs
Thermostat type - cylinder	-	Probe/Probe	Probe/Probe	Probe/Probe
Immersion capacity	kW	3	3	3
Immersion Heater - Phase	Phase	Single	Single	Single
Immersion heater - Voltage	Volt	230	230	230
Immersion thermostat - temp range	°C	18-70	18-70	18-70
Immersion thermostat - set temp	°C	60	60	60
Indirect thermostat - temp range	°C	25-65	25-65	25-65
Indirect 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	87	87	87
Safety thermostat cutout - cylinder	°C	80	80	80
Packaging				
Width of box	mm	610	610	610
Depth of box	mm	610	610	610
Height of box	mm	1320	1570	1780
Weight of box	Kg.	49	57	63

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



*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. (IF APPLICABLE)	

COMMISSIONING ENGINEER (IF DIFFERENT)

NAME	DATE
ADDRESS	
TEL No.	
REGISTRATION DETAILS	
REGISTERED OPERATIVE ID CARD No. (IF APPLICABLE)	

APPLIANCE & TIME CONTROL DETAILS

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

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 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)**

GUARANTEE - OSO UNVENTED HOTWATER CYLINDER

1. Scope

OSO Hotwater UK Ltd. (hereinafter called OSO) warrants for 2 years from the date of purchase, that the Product will: i) conform to OSO specification, ii) be free from defects in materials and workmanship, subject to conditions below. All components carry a 2-year warranty. The warranty is voluntarily extended by OSO to 25 years for the stainless steel inner tank. This extended warranty only applies to Products purchased by a consumer, that has been installed for private use and that has been distributed by OSO or by a distributor where the Products have been originally sold by OSO.

The extended warranty does not apply to Products purchased by commercial entities or for Products that have been installed for commercial use. These shall be subject only to the mandatory provisions of the law. The conditions and limitations set out below shall apply.

2. Coverage

If a defect arises and a valid claim is received within the statutory warranty period, at its option and to the extent permitted by law, OSO shall either: i) repair the defect, or; ii) replace the product with a product that is identical or similar in function, or; iii) refund the purchase price.

If a defect arises and a valid claim is received after the statutory warranty period has expired, but within the extended warranty period, OSO will supply a product that is identical or similar in function. OSO will in such cases not cover any other associated costs. In addition, for every year after the statutory warranty period, the claimant must contribute 4 % of the list price of the cylinder in question to OSO.

Any exchanged Product or component will become the legal property of OSO. Any valid claim or service does not extend the original warranty. The replacement Product or part does not carry a new warranty.

3. Conditions

The Product is manufactured to suit most public water supplies. However, there are certain water chemistries (outlined below) that can have a detrimental effect on the Product and its life expectancy. If there are uncertainties regarding water quality, the local water supply authority can supply the necessary data.

The warranty applies only if the conditions set out below are met in full:

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

- Chloride	< 250 mg / L
- Electric Conductivity (EC) @25°C	< 750 uS / cm
- Saturation Index (LSI) @80°C	> - 1,0 / < 0,8
- pH level	> 6,0 / < 9,5
- The immersion heater has not been exposed to hardness

levels exceeding 10°dH (180 ppm CaCO₃). A water softener is recommended in such cases.

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

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

4. Limitations

The warranty does not cover:

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

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

Customer service

In case of problems that cannot be resolved with the aid of the troubleshooting guide in this installation manual, contact either:

A) The installer who supplied the product.

B) OSO Hotwater UK Limited:

Tel.: (0191) 482 0800 Fax: (0191) 491 3655

Email: technical.uk@oso-hotwater.co.uk

Removing the product

A) Disconnect the power supply.

B) Shut off incoming cold water supply.

C) Empty the product of water – see section 4.4.

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.



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