

# Ecoline - SCE

120-150-180-210-250-300 l.

EN



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



**OSO**  
HOT WATER

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Symbols used in this manual:

 <b>WARNING</b>	Could cause serious injury or death
 <b>CAUTION</b>	Could cause minor or moderate injury or damage to property
 <b>DO NOT</b>	
 <b>DO</b>	

**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

- 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.

## Safety instructions for users

⚠ WARNING	
⊘	The overflow from the safety valve must NOT be sealed or plugged.
⊘	The product front and electric junction box must NOT be covered
⊘	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 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.
❗	Discharge must comply with current building regulations.
❗	Fixed electric fittings shall be used for installation in new homes or when changing an existing electrical setup in accordance with regulations.
❗	The mains cable shall withstand 85°C. A strain reliever must be fitted.
❗	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. Liability for consequential damage will only apply if this is followed.
❗	The product shall be properly aligned vertically and horizontally, on a floor or wall suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 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.co.uk](http://www.osohotwater.co.uk) 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](http://www.osohotwater.co.uk) for more information.

The product complies with the directives for:

- Low voltage LVD 2014/35/EU
- Electromagnetic compatibility EMC 2014/30/EU
- Press Equipment PED 2014/68/EU

## 1.3 Technical Data Sheet

TDS - Indirect water heater							
Directive: 2010/30/EU Regulation: EU 812/2013			Directive: 2009/125/EC Regulation: EU 814/2013				
Heat loss tested acc. to standard: EN 12897/2016							
Trade mark	M T. item no.	Model/identifier			ErP Rating	Heat loss W	Storage volume L
OSO Hotwater AS	1327051	SCE 120 - 2.8kW @ 230V/3.0kW @ 240V + coil 0.5m <sup>2</sup>			B	44	109
OSO Hotwater AS	1327052	SCE 150 - 2.8kW @ 230V/3.0kW @ 240V + coil 0.8m <sup>2</sup>			B	54	142
OSO Hotwater AS	1327053	SCE 180 - 2.8kW @ 230V/3.0kW @ 240V + coil 0.8m <sup>2</sup>			C	61	163
OSO Hotwater AS	1327054	SCE 210 - 2.8kW @ 230V/3.0kW @ 240V + coil 0.8m <sup>2</sup>			C	67	190
OSO Hotwater AS	1327055	SCE 250 - 2.8kW @ 230V/3.0kW @ 240V + coil 0.8m <sup>2</sup>			C	80	239
OSO Hotwater AS	1327056	SCE 300 - 2.8kW @ 230V/3.0kW @ 240V + coil 0.8m <sup>2</sup>			C	89	277

### CAUTION

This indirect hot water storage tank is intended to be connected to a high efficiency external energy source. The immersion heaters are intended for backup and supplementary use only. Immersion heaters as sole heat source should be avoided and would lead to higher energy consumption and higher operating cost.

## 1.4 General information

Thank-you for purchasing the OSO Ecoline SCE indirect hot water cylinder.

OSO advise that the electrical cables are fixed in place prior to the positioning of the cylinder.

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

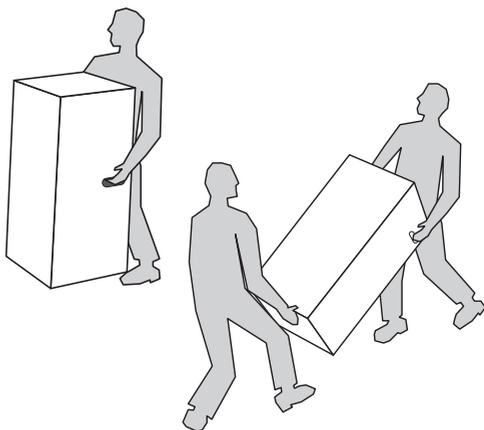
This OSO cylinder must be installed by a competent person and be installed in compliance with the OSO Installation and Maintenance Instructions, all current legislation, codes of practice and regulations governing the installation of unvented hot water cylinders in force at the date of installation.

## 1.5 Handling, location and positioning

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

### ⚠ CAUTION

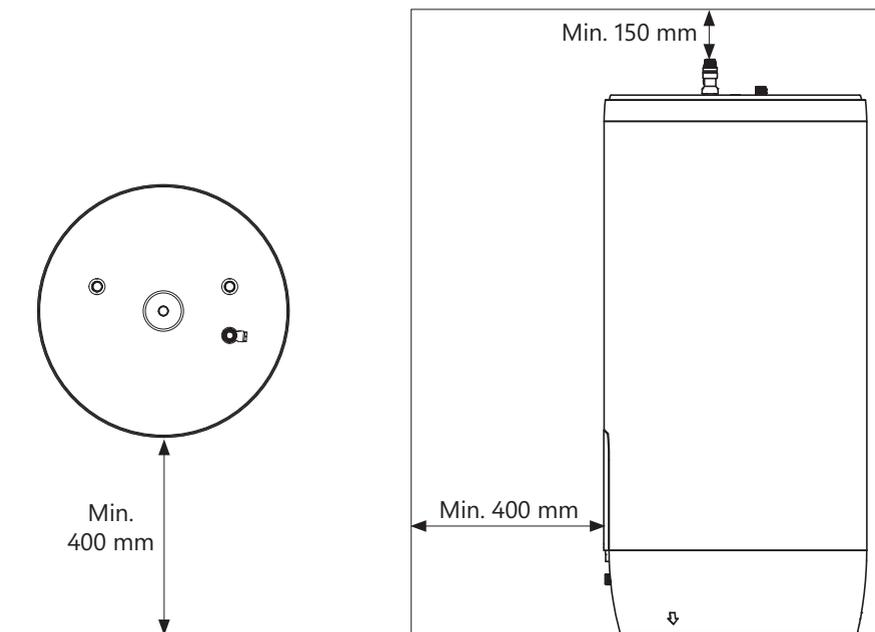
Tappings, valves etc. shall not be used to lift the product as this could cause malfunction.



### ⚠ CAUTION

- |   |  |
|---|--|
| ❗ | The cylinder must be installed complying 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 Clearances



## 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 Ecoline SCE should be transported and stored in a vertical position.

### 2.2 Siting the Ecoline SCE

There are few restrictions on the siting of the OSO Ecoline SCE, 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 20) 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.

### 2.3 Component check list

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

- Expansion vessel with wall bracket
- Fittings kit

*Components factory fitted:*

- Temperature & pressure relief valve
- Immersion heater(s) - 3 kW
- Thermostat(s) / thermal cut-out.

*Documentation supplied:*

- Installation manual & service logbook

### 2.4 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

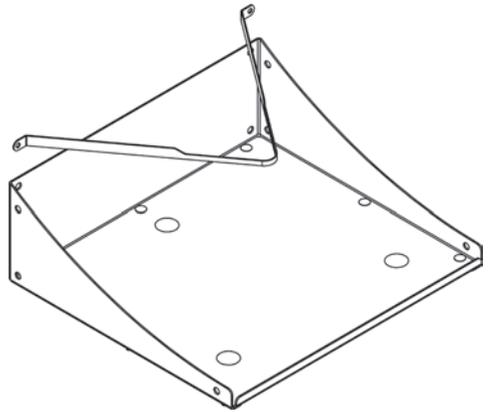
with supply pressure up to 12 bar. For pressures over 12 bar an additional pressure reducing valve must be fitted in the supply pipe to the unit.

### 2.5 Expansion vessel

An external expansion vessel is provided to be connected to the multifunction valve. The vessel(s) accommodate expanded water when the cylinder is heated and prevents the cylinder reaching its maximum working pressure.

### 2.6 Wall mounting

VB16 wall mounting brackets are available for OSO unvented units Ecoline SCE 120-180.



### 2.7 Preliminary wiring

Before final installation and pipe fitting it is recommended to feed the electrical wires to the electrical box. The OSO Ecoline SCE is provided with two channels in the base to feed electrical cables to the cylinder. The channels run diagonally from the front centre to the rear left and right, and ensures a neat installation with minimum visible cabling.

When the cylinder is moved into position remove the electrical box covers. The power cables should be fed up from the base channels into the electrical box. When cables are connected they must be secured using the cable clamp.

All cables should comply with BS6141 table 8 HOFR 85c. Cables should be sufficient length to reach from the junction box through the base channels and leave an amount of tail from the front of the cylinder sufficient to reach the electrical connec-

tion point.

For more information about electrical installations see chapter 4. ELECTRICAL INSTALLATION.

## 2.8 Adjustable feet

Ensure the cylinder feet are wound out to protrude at least 10 mm. from the bottom of the product. Adjust the feet to ensure the product is plumb and level when placed in its final location.

## 2.9 Pipework

The product is designed with a 22 mm. cold water inlet connection at the bottom, and a 22 mm. hot water outlet at the top. Before connecting the cold supply, flush the cold supply pipework of all flux and debris.

## 2.10 Vessel connections

Fit the expansion vessel and bracket on a suitable wall close to the cylinder. Check the expansion vessel(s) connections are tight.

## 2.11 Combination valve

Fit the valve.

## 2.12 Cold mains supply

Connect the cold mains supply (1) to the cold inlet connection of the cylinder (7) and fit a drain valve at lowest point of cold supply pipe (6). Make the connection of multibloc valve on cold supply pipework, see illustration. If secondary return is required, fit via a Tee piece in the cold feed pipe to the cylinder (7).

## 2.13 Hot water outlet

Connect the hot water distribution pipe to the  $\varnothing 22$  mm. hot water draw off (12) on top of cylinder.

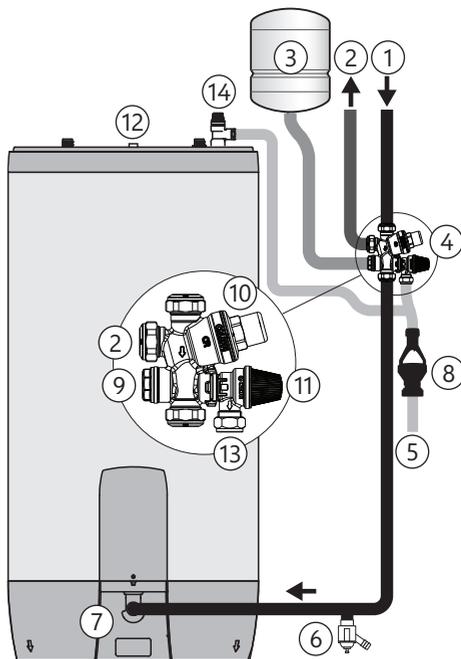
## 2.14 Balanced cold water supply (optional)

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.

## ⚠ CAUTION

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



No.	Description	Dim.
1	Cold water supply	$\varnothing 22$ mm
2	Balanced cold supply (optional)	$\varnothing 22$ mm
3	Expansion vessel	1/2"
4	Multibloc valve	3/4"
5	Discharge pipework	15-22 mm
6	Drain cock (not supplied)	3/4"
7	Cold water inlet	$\varnothing 22$ mm
8	Tundish	15-22 mm
9	Expansion vessel connection point	3/4"
10	Line strainer	-
11	Expansion relief valve 6 bar	$\varnothing 15$ mm
12	Domestic hot water outlet (DHW)	$\varnothing 22$ mm
13	Expansion overflow connection	$\varnothing 15$ mm
14	T&P safety valve 90-95°C - 7 bar	1/2"

## 2.15 Tundish

Recommended position of the tundish (8) is to the right of the cylinder as seen from the front, see illustration on previous page.

The tundish should be visible and positioned away from electrical devices.

## 2.16 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 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, see page 15.

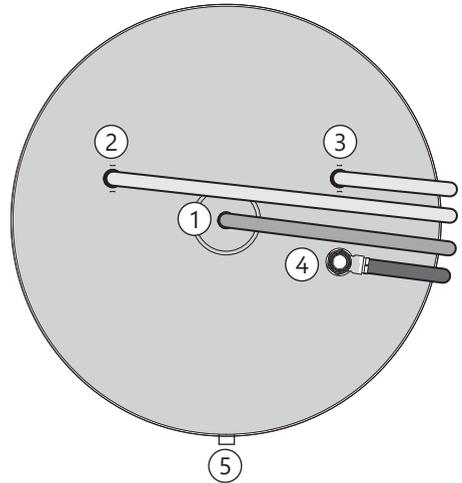
## 2.17 Primary Flow and Return

The boiler primary flow and return connections should be made to flow and return connections on top of cylinder. To comply with regulations governing the installation of indirect unvented cylinders, a motorised valve must be fitted in the primary pipework. Your OSO unit has been supplied with a two port motorised valve, which will act as a positive energy cut-out should the safety cut-out operate. The motorised valve will also control the temperature of the domestic stored water via the cylinder thermostat, which is located in the electrical box.

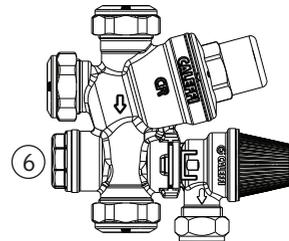
The unit can be installed on an "S" or "Y" plan system. The motorised valve should be connected to primary flow pipe. The motorised valve has 22 mm copper connections. the maximum operating temperature of the primary flow should be 82°C.

For electrical connection of the motorised valve please read pt. 4 Electrical installation instructions.

No.	Description	Dim.
1	Domestic hot water outlet (DHW out)	ø22 mm
2	Coil FLOW	ø22 mm
3	Coil RETURN	ø22 mm
4	Temperature and Pressure relief valve	1/2"
5	Cold water inlet	ø22 mm
6	Expansion relief valve connection	3/4"



Alternative pipework configurations would be allowed to suit installation.



### 3. COMMISSIONING

#### 3.1 Commissioning and filling

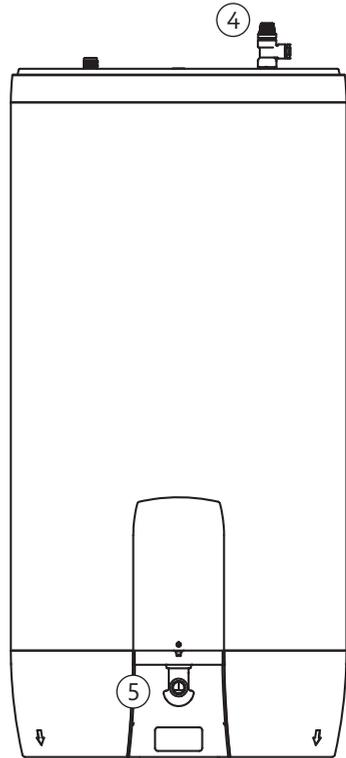
1. Check all connections for tightness.
2. Open hot water tap furthest away from the OSO water heater.
3. Open the mains stop cock to fill the water heater. When water flows evenly from tap, allow to run for a few minutes to flush through any dirt, swarf or residue, then close the tap. Open successive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

#### 3.2 Draining

Switch off the electrical power. Attach a hose to drain valve (6), open valve to drain. Open a hot tap. Draining process may be speeded up by opening the Temperature and Pressure relief valve (4). A hose can be applied to the cold water connection 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.

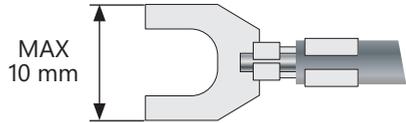


## 4. ELECTRICAL INSTALLATION

### 4.1 Immersion heaters

Power to immersion heaters should not be switched on until the unit is filled with water. All units are fitted with a 3 kW immersion heater. Immersion heaters must be wired through the factory fitted thermostat and thermal cut-out according to diagram on the reverse of the electrical box cover or see wiring diagram (right).

Alternative thermostats should not be used, regulations require immersion heaters on unvented cylinders to be connected with a thermal cut-out. Recommended torque is 0,2 kp (20Nm). End terminal fork width must not exceed 10 mm, see illustration.



### 4.2 Wiring of immersion heaters

Follow the wiring instructions connecting the live, neutral and earth as indicated in the illustration (page 11). A dedicated permanent supply complying with current IEE regulations should be used, and each circuit must be protected by a suitable fuse and double pole isolating switch with a contact separation of at least 3 mm in both poles. All cables should comply with BS6141 table 8 HOFr 85c. IEE wiring regulations must be followed throughout.

All internal wiring is factory mounted. Each immersion heater has a working thermostat adjustable between 40°C - 70°C.

A safety cut-out is also incorporated within the thermostat and will operate at 85°C ± 3°C. Should this happen, check reasons for thermal cut-out button being released and when satisfied press the reset button. Important: Before resetting the safety cut-out or altering the thermostat setting, isolate electrical supply to the unit prior to removal of the lid. Ensure the lid to the electrical box is replaced correctly and the retaining screw is fitted.

### 4.3 Electrical connections

The OSO Ecoline SCE is provided with two channels in the base to lay electrical cables to the cylinder. The channels run diagonally from the front centre to the rear left and right, and allow the installation to be neat with minimum visible cabling. The immersion heater cable 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 should be carried out by a competent electrician, using a heat resistant Flexible cable (minimum 90°C), and be in accordance with the latest IET Wiring Regulations.

Immersion Heater rating is 230V x 2,8 kW.

#### 4.4 System wiring

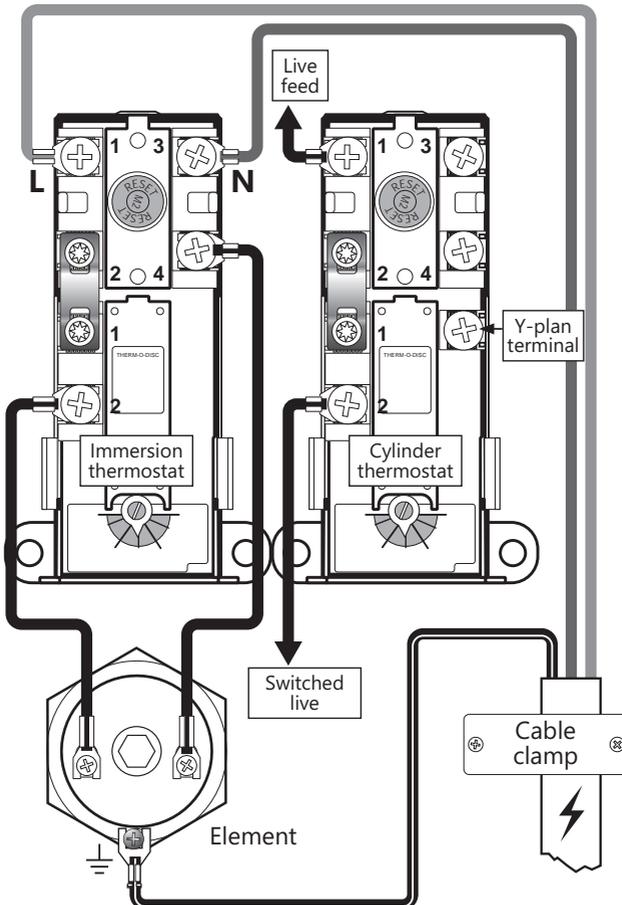
**Motorised valve:** *To comply with regulations governing the installation of indirect unvented cylinders, a motorised valve must be fitted in the primary pipework.*

Your OSO unit has been supplied with a two port motorised valve, which will act as a positive energy cut-out should the safety cut-out operate. The motorised valve will also control the temperature of the domestic stored water via the cylinder

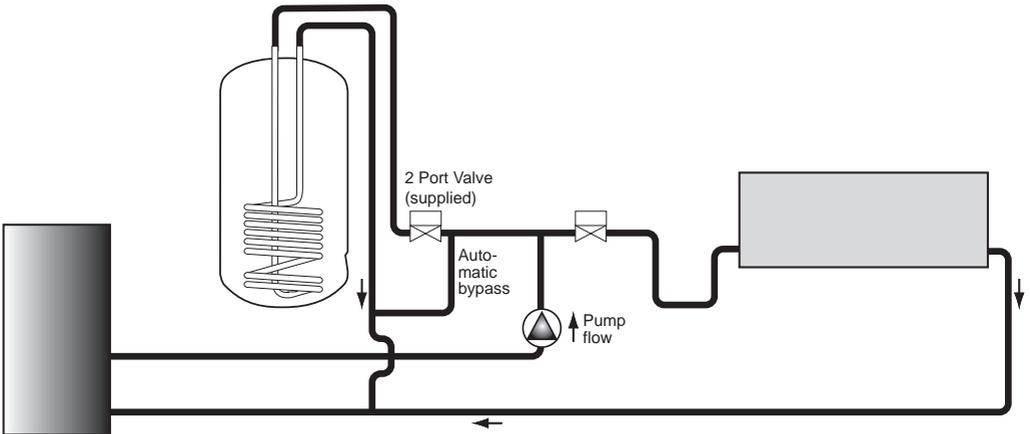
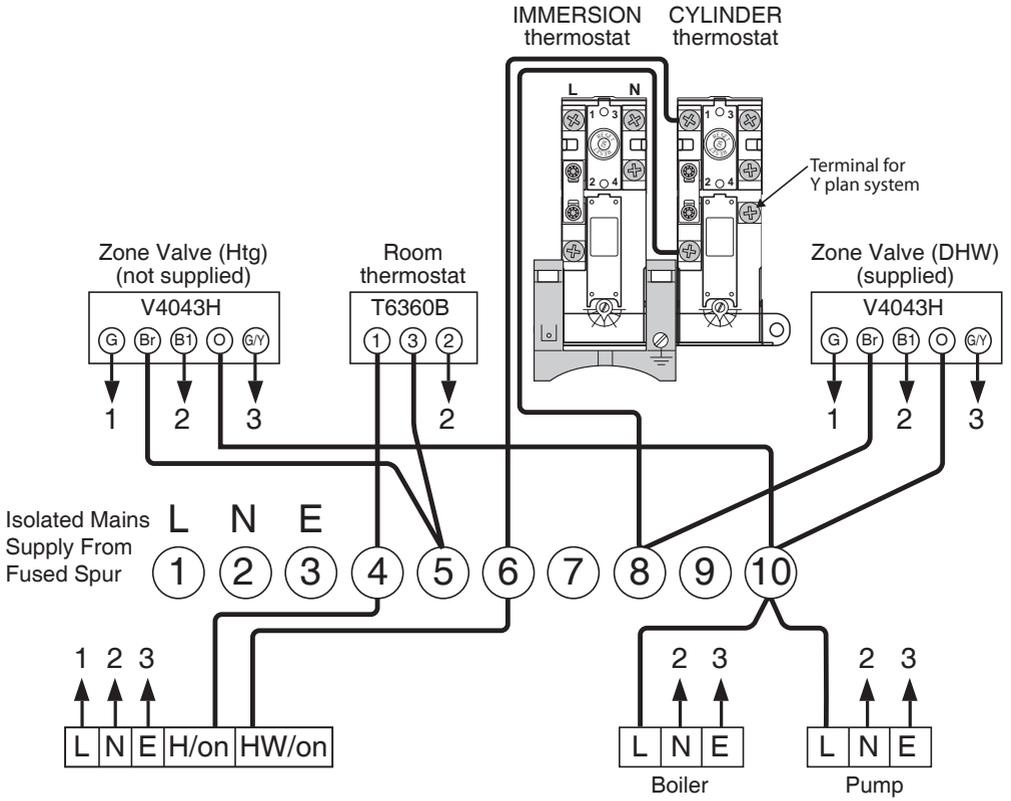
thermostat, which is located in the electrical box. The unit should be installed on an "S" or "Y" plan system.

Please follow the wiring instructions carefully. The working thermostat which controls the temperature of the domestic hot water is adjustable between 40°C - 70°C. A safety cut out is also incorporated within the thermostat and will operate at 85°C ± 3°C. Should the safety cut out be brought into operation, the motorised valve will operate and close down the primary flow to the cylinder. To reset the safety cut-out and the motorised valve the reset button must be pressed in.

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

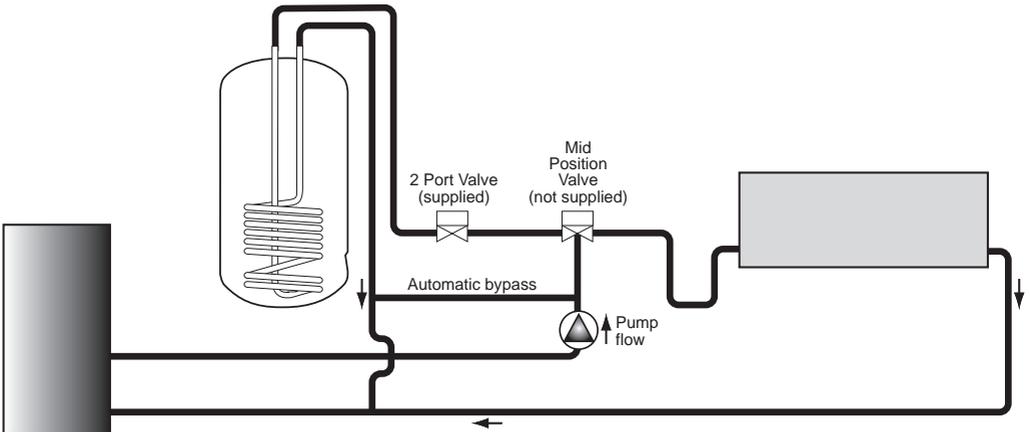
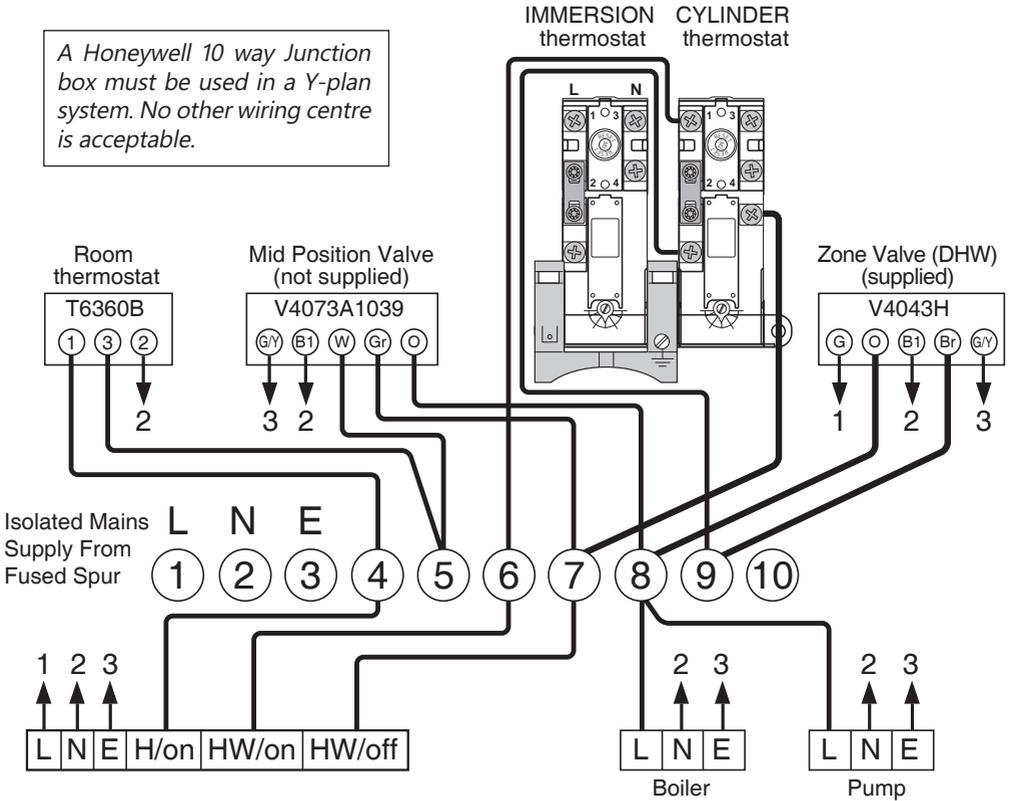


### 4.5 S plan wiring layout



## 4.6 Y plan wiring layout

A Honeywell 10 way Junction box must be used in a Y-plan system. No other wiring centre is acceptable.



## 5. SAFETY AND SERVICING

***Maintenance must be carried out by a competent person.***

### 5.1 Safety cut out

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 and 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.

### 5.2 Intermittent discharge from tundish

1. Turn off the electrical supply to the immersion heater.
2. Turn off cold water supply valve.
3. Open a hot tap.
4. Turn the knob (K) on the Temperature and Pressure Relief Valve to the left and hold in this position for 30 seconds (see below).
5. Check pre-charge on 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.



### 5.3 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.

### 5.4 Expansion vessel maintenance

The expansion vessels require annual maintenance 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

### 5.5 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.

### 5.6 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. Turn off mains water supply and open nearest hot water tap to depressurise the DHW system.
5. Check the expansion vessel.
6. If the pressure is below 3 bar, top up with a suitable air pressure pump to pressure shown on vessel label.
7. Complete the service section of Benchmark/Cylinder Commissioning Checklist included in the inside back pages of these instructions.
8. Remove, clean and replace line strainer.
9. 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.
10. Visual inspection of all valves, external fittings, immersion heaters and electrical connections.

## 5.7 Discharge

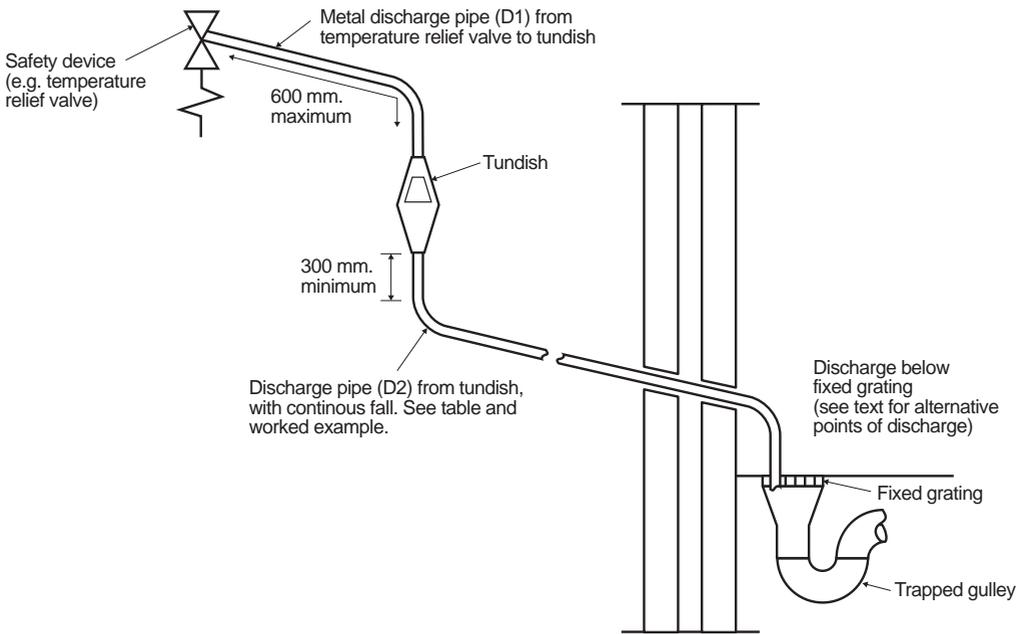
Discharge pipes must be metal or suitably temperature rated as defined by G3 building Regulations. The pipe should have a continuous fall and should terminate in a safe and visible place.

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).

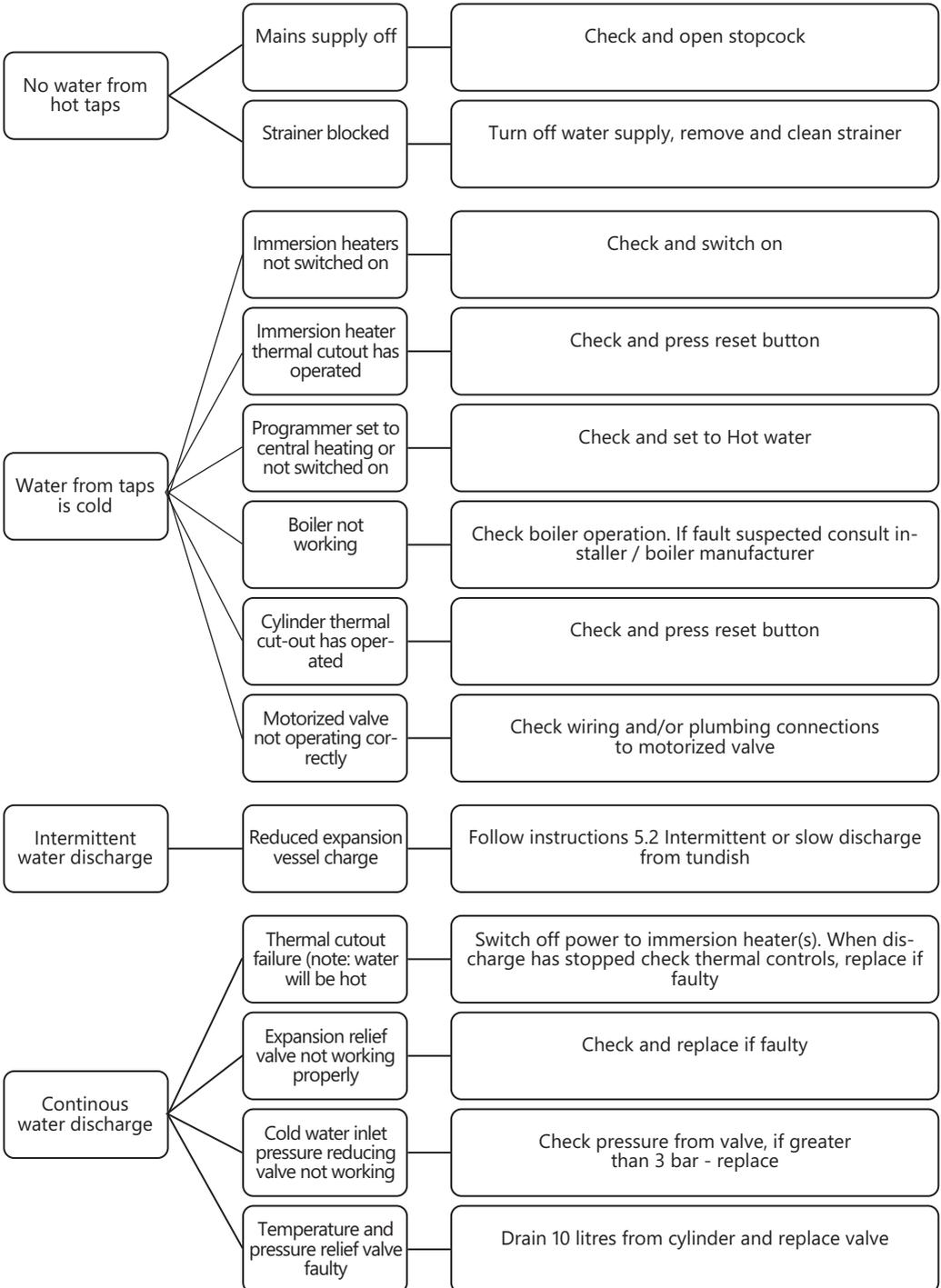
Where a single common discharge pipe serves more than one system, it should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected.

**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 elbow 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

## 6. OSO FAULT FINDING GUIDE



# 7. TECHNICAL AND PERFORMANCE SPECIFICATIONS

## Technical data - Ecoline SCE

Description	Unit	SCE 120	SCE 150	SCE 180	SCE 210	SCE 250	SCE 300
Part number	No.	1327051	1327052	1327053	1327054	1327055	1327056
EAN number	-	7070644008260	7070644008277	7070644008284	7070644008291	7070644008307	7070644008314
Actual capacity of the water tank at 20°C	L	109	142	163	190	239	277
Outer diameter of the tank	mm	580	580	580	580	580	580
Height of the appliance	mm	870	1050	1160	1300	1550	1750
Gross weight of the appliance	kg	42	47	52	57	64	70
Net weight of appliance once filled with sanitary water	kg	151	189	215	247	303	347
Material of tank and integrated heat exchanger	-	1.4521	1.4521	1.4521	1.4521	1.4521	1.4521
Material of element	-	incoloy 825					
Thermal insulation material	-	PUR	PUR	PUR	PUR	PUR	PUR
Thermal insulation of the tank, average thickness	mm	35	35	35	35	35	35
IP classification	-	24	24	24	24	24	24
Standby heat losses / 24 hour	kWh/24h	1.06	1.25	1.46	1.61	1.92	2.02
Standby heat losses	Watts	44	52	61	67	80	84
Hot water capacity(1) >40°C	L	148	198	248	281	355	376
Heating time (coil)	min.	28	29	34	39	48	54
Reheat time (1) (70%) (coil)	min.	19	21	24	27	34	38
Primary Heating Power (1) (coil)	kW	13	16	16	17	17	17
Primary flowrate for Reheat time & Primary heating power	l/h	900	900	900	900	900	900
Primary Heat exchanger pressure drop (1)	mBar	44	44	47	47	47	47
Heat up 1 element	min.	98	136	154	186	235	279
Reheat time (1) (70%) 1 element	min.	69	35	108	130	165	195
ErP class	-	B	B	C	C	C	C
<b>Pressure information</b>							
Maximum design pressure of cylinder (rated pressure)	MPa/Bar	1 / 10	1 / 10	1 / 10	1 / 10	1 / 10	1 / 10
Maximum design pressure of heating coil	MPa/Bar	1 / 10	1 / 10	1 / 10	1 / 10	1 / 10	1 / 10
Operating pressure of cylinder	MPa/Bar	3	3	3	3	3	3
Operating pressure of heating coil	MPa/Bar	2	2	2	2	2	2
Max. operating temperature of cylinder	°C	70	70	70	70	70	70
Max. operating temperature of heating coil	°C	99	99	99	99	99	99
Expansion solution	Bar	3	3	3	3	3	3
Expansion vessel capacity	L	12	12	18	18	25	25
<b>Heat Exchanger information</b>							
Primary heat exchanger surface area	m <sup>2</sup>	0.5	0.8	0.8	0.8	0.8	0.8
Ø int. et Ø ext.	mm/mm	ø20.4 / ø22					
Ø int. et Ø ext.	mm/mm	N/A	N/A	N/A	N/A	N/A	N/A
<b>Hydraulic connections</b>							
Secondary return	mm	N/A	N/A	N/A	N/A	N/A	N/A
Primary heat exchanger flow	mm	ø22	ø22	ø22	ø22	ø22	ø22
Primary heat exchanger return	mm	ø22	ø22	ø22	ø22	ø22	ø22
Cold water	mm	ø22	ø22	ø22	ø22	ø22	ø22
Hot water	mm	ø22	ø22	ø22	ø22	ø22	ø22
Immersion heater	Inch	5/4"	5/4"	5/4"	5/4"	5/4"	5/4"
Safety valve (factory fitted)	Inch	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
T&P valve (factory fitted)	Inch	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Pressure reducing valve	Inch	ø22	ø22	ø22	ø22	ø22	ø22
<b>Electrical characteristics</b>							
Supply voltage and frequency	V/Hz	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Current	A	13	13	13	13	13	130
Power of the electrical resistance	W	3000	3000	3000	3000	3000	3000
Electrical installation	-	IEEE regs					
Thermostat type - cylinder	-	Surface	Surface	Surface	Surface	Surface	Surface
Immersion capacity	kW	3.0kW @240V 2.8kW @230V					
Immersion Heater - Phase	Phase	single	single	single	single	single	single
Immersion heater - Voltage / Hz	Volt	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Immersion thermostat - temp range	°C	40-70	40-70	40-70	40-70	40-70	40-70
Immersion thermostat - set temp	°C	0	60	60	60	60	60
Indirect thermostat - temp range	°C	40-70	40-70	40-70	40-70	40-70	40-70
Indirect thermostat - set temp	°C	60	60	60	60	60	60
<b>Safety</b>							
Safety valve opening pressure +/- 5%	Bar	6	6	6	6	6	6
T&P valve opening pressure/Temp.	Bar / °C	7 / 90	7 / 90	7 / 90	7 / 90	7 / 90	7 / 90
Safety thermostat cutout - cylinder	°C	85	85	85	85	85	85
Safety thermostat cutout - immersion	°C	85	85	85	85	85	85
<b>Packaging</b>							
Width of box	mm	595	595	595	595	595	595
Depth of box	mm	595	595	595	595	595	595
Height of box	mm	895	1075	1185	1325	1875	1775
Weight of box	Kg.	45	50	55	60	68	74



**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**

<b>NAME</b>	_____
<b>ADDRESS</b>	_____
	<b>TEL No.</b> _____

## **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	MANUFACTURE date	
TYPE	UNVENTED		
TIME CONTROL	PROGRAMMER <input type="checkbox"/>	or	TIME SWITCH <input type="checkbox"/>

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

# COMMISSIONING PROCEDURE INFORMATION

## 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?      \_\_\_\_\_  
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)

## 8. WARRANTY - OSO UNVENTED HOTWATER CYLINDER

### 1. Scope

OSO Hotwater UK Ltd. (hereinafter called OSO) warrants for 2 years from the date of purchase, that the Product will: i) conform to OSO specification, ii) be free from defects in materials and workmanship, subject to conditions below. All components carry a 2-year warranty.

The warranty is voluntarily extended by OSO to 25 years for the stainless steel inner tank. This extended warranty only applies to Products purchased by a consumer, that has been installed for private use and that has been distributed by OSO or by a distributor where the Products have been originally sold by OSO.

The extended warranty does not apply to Products purchased by commercial entities or for Products that have been installed for commercial use. These 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	< 100 mg / L
- Electric Conductivity (EC) @25°C	< 300 uS / cm
- Saturation Index (LSI) @80°C	> -1,0 / < 0,8

### 8.1 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.

- pH level > 6,0 / < 9,5

Storage temperature shall not exceed 65°C.

- The immersion heater has not been exposed to hardness levels exceeding 10°dH (180 ppm CaCO<sub>3</sub>). 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.

B) OSO Hotwater UK Limited:

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

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

## 9. REMOVING THE PRODUCT

### 9.1 Removal

- Switch off, isolate and make power supply safe.
- Shut off incoming cold water supply.
- Empty the product of water – see section 4.4.
- Disconnect all pipes.
- The product can now be removed.

### 9.2 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.

<b>SERVICE 1</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 2</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 3</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 4</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 5</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 6</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 7</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 8</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 9</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

<b>SERVICE 10</b>	<b>DATE:</b>
ENGINEER NAME	_____
COMPANY NAME	_____
TEL No.	_____
COMMENTS	_____
SIGNATURE	_____

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

# OSO

## HOTWATER

### **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.co.uk](mailto:technical.uk@oso-hotwater.co.uk)  
E-mail: [sales.uk@oso-hotwater.co.uk](mailto:sales.uk@oso-hotwater.co.uk)

### **OSO Hotwater AS**

Industriveien 1  
3300 Hokksund - Norway  
Tel.: +47 32 25 00 00  
[oso@oso.no](mailto:oso@oso.no)  
[www.osohotwater.com](http://www.osohotwater.com)