Optima Geocoil - OGC

300 l.

EN

SAFETY INFORMATION
O&M INFORMATION
INSTALLATION MANUAL
TECHNICAL DATA

11008491-146249-00 - 02-2023

CONTENTS

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

1.2 Safety instructions for users

⚠ WARNING	
⊘	The overflow from the safety valves must NOT be sealed or plugged.
⊘	The product front and electric junction boxes 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 unit must be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations.
❗	The product shall be filled with water before the power is switched on.
❗	Maintenance/settings shall only be carried out by persons over 18 years of age, with sufficient understanding.

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

1.3 Safety instructions for installers

⚠ WARNING	
⊘	The overflow from the safety valves must NOT be sealed or plugged.
❗	The unit must be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations.
❗	The electrical supply to the heater shall be done in accordance with current local regulations and best practice by a qualified electrician. Components for disconnection must be included in the fixed electrical installation in accordance with applicable standards and regulations.
❗	The mains power supply cable shall withstand 90°C. A strain reliever must be fitted (supplied).
❗	The product shall be filled with water before the power is switched on.
❗	Discharge must comply with current building regulations.
❗	The relevant regulations and standards, and this installation manual, must be followed.

⚠ CAUTION	
❗	The cylinder shall be installed in compliance with current building regulations.
❗	The product shall be properly aligned vertically and horizontally, on a floor suitable for the total weight of the product when in operation. See type plate.
❗	The product shall have a clearance for servicing of 400 mm in front of the electric junction box covers / 150 mm above the highest point.

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

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. Declaration of Conformity is available on request for more information.

The product is designed and manufactured in accordance with:

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

The manufacturer is certified for

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

2.2 Intended use

Optima OGC is designed to deliver hot water and hydronic heat from an electrical and/or external energy source. The OGC 300 can be used with a heat pump fitted with a three-way valve. The lower part of the cylinder is the buffer tank for the heating circuit, while the upper part is the domestic hot water tank. OGC is fitted with an electric immersion backup for the DHW tank.

2.3 UKCA marking

UK CA

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

2.4 Technical data

Model no.	Product code:	IP class	Capacity, persons	Weight kg.	Dia. x Height mm.	Freight vol. m^3	Volume L DHW/Buffer	Suitable for
11003523	OGC 300 - 2.8 kW 1x230V+HX 2.6 m^2	IP21	5.5	65	ø595x2131	0.8	225/65	HP

2.5 ErP data - Technical Data Sheet

Brand	Model no.	Model name	ErP Rating	Heat loss W DHW/Buffer	Real volume L DHW/Buffer
OEM	80800277	OGC 300	A/A	45/20	225/65
Regulation: 2017/1369/EU - Regulation: EU 812/2013		Directive: 2009/125/EC - Regulation: EU 814/2013			
Efficiency-tested according to standard: EN 50440: 2015					

2.6 Spare parts

Item no.	MFR part no.	Designation	Product description:	Dimension
72064	11000900	G 1.1/4"	Element - 2.8 kW 230V, 1-tube	Length 420 mm.
80020	11001067	TS2	Thermostat - 59T/66T 40-70°C 1-phase (electrical unit)	2-pole
81826	11001177	Connecting cable	Internal wire - 4#, black, fork+eye	Length 180 mm
81860	11001189	Earth cable	Internal wire - 4#, amp+fork	Length 205 mm
92025	11001421	T&P	Temp. and pressure relief valve, 7 bar/90-95°C	G 1/2"M
56029	11000609	AN	Anode	G 3/4"M
81032	11001120	Sensor pocket	Sensor pocket - material EPP	ø6 / ø8 mm
92043	11001428	G3 kit	G3 inlet group kit + tundish	

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

2.7 Technical and performance specifications

Description	Unit	OGC 300
Part number	-	11003523
Actual capacity of the water tank at 20°C - upper/lower	L	225/65
Outer diameter of the tank	mm	Ø595
Height of the appliance	mm	1776
Gross weight of the appliance	kg	65
Net weight of appliance once filled with sanitary water	kg	355
Material of element	-	Incoloy 825
Thermal insulation material	-	PUR+VIP*
Thermal insulation of the tank, average thickness	mm	50
IP classification	IP	21
Standby heat loss / 24 hour - upper/lower	kWh/24h	1.08/ 0.74
Standby heat loss - upper/lower	W	45/20
Hot water capacity >40°C	L	360
Primary flow rate for Reheat time & Primary heating power	l/h	900
Heat-up time 10°C - max	min	19
Recovery time after 70%	min	13
Power output - coil	kW	36.50
ErP class rating - upper	-	A
ErP class rating - lower	-	A
Pressure information		
Maximum design pressure of upper cylinder (rated pressure)	MPa//Bar	1 / 10
Maximum design pressure of lower cylinder (rated pressure)	MPa//Bar	0.20 / 2.5
Operating pressure of cylinder - upper	MPa//Bar	3
Max. operating temperature of cylinder	°C	70
Expansion vessel capacity	L	18
Hydraulic connections		
Buffer connections	Inch	G 1"F
Cold water	Inch	G 3/4"F
Hot water	Inch	G 3/4"F
Immersion heater	Inch	G 1.1/4"F
T&P valve (factory fitted)	Inch	G 1/2"F
Electrical characteristics		
Supply voltage and frequency	VAC / Hz	220-240 VAC / 50 Hz
Power of the electrical resistance	kW	2.8@230V / 3.0@240V
Electrical installation	-	IET regs
Thermostat type - junction box	-	Surface
Immersion heater - Phase	Phase	Single
Immersion thermostat - temperature range	°C	40-70
Immersion thermostat - set temperature	°C	70
Safety		
T&P valve opening pressure / temperature - upper (+/- 5%)	Bar / °C	7 / 90-95
Safety thermostat cutout	°C	85

*Vaccuum Insulation Panels

3. INSTALLATION INSTRUCTIONS

3.1 Products covered by these instructions

11003523 OGC 300

3.2 Included in delivery

Ref no.	Num-ber of	Description
1	1	Stainless steel water heater
2	1	T&P relief valve 7 bar/90-95°C
3	1	Safety cut-out (primary circuit/heating coil)
4	2	Sensor pocket ø6 / ø8
5	2	PG strain reliever
6	1	Temp. limiter & safety cut-out (sec. circuit)
7	1	Immersion heater
8	1	Installation manual (this document)
9	3	Adjustable feet (factory fitted)
10	1	G3 Inlet Group kit (see pt. 3.2.1).

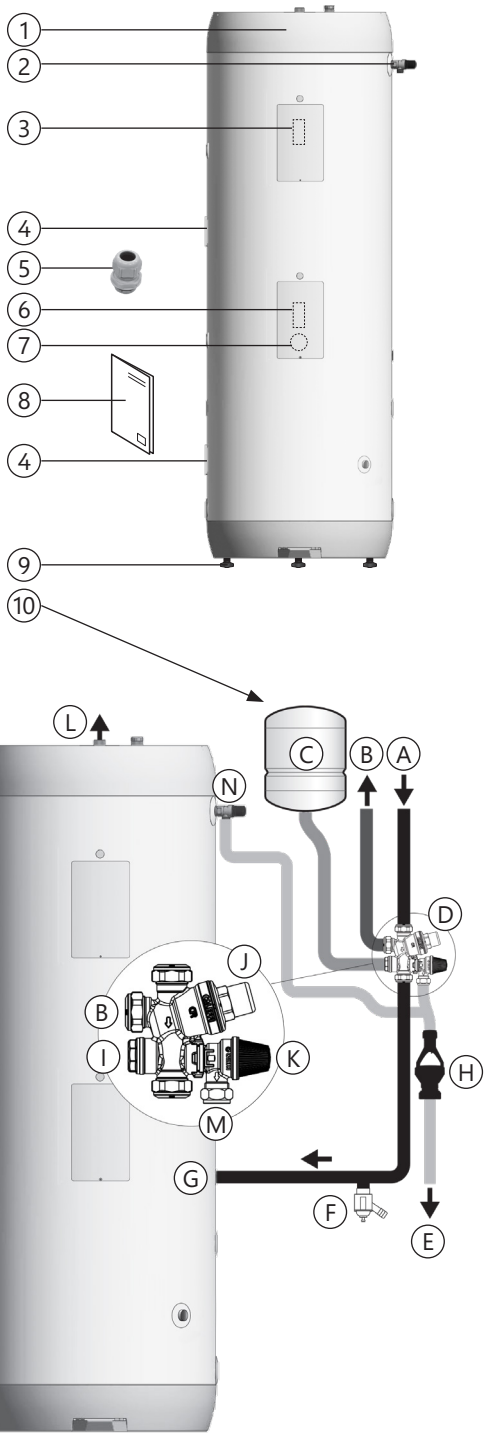
3.2.1 Adjusting the feet (9)

The product is equipped with three factory fitted feet (F), adjustable from 0-40 mm. Unscrew the feet a minimum of 15 mm from the bottom of the product. Then adjust the feet individually until the product is standing firmly and level vertically and horizontally.

3.2.2 G3 Inlet Group kit

The product is supplied with a G3 Inlet Group kit. The kit contains the components shown in table below and illustration (right).

No.	Description	Dim.
A	Cold water supply	ø22 mm
B	Balanced cold supply (optional)	ø22 mm
C	Expansion vessel	1/2"
D	Multibloc valve	3/4"
E	Discharge pipework	15-22 mm
F	Drain cock (not supplied)	N/A
G	Cold water inlet	3/4" int.
H	Tundish	15-22 mm
I	Expansion vessel connection point	3/4"
J	Line strainer	-
K	Expansion relief valve 6 bar	ø15 mm
L	Domestic hot water outlet (DHW)	3/4" int.
M	Expansion overflow connection	ø15 mm
N	T&P relief valve 7 bar / 90-95°C	1/2"



3.3 Product dimensions / connection heights

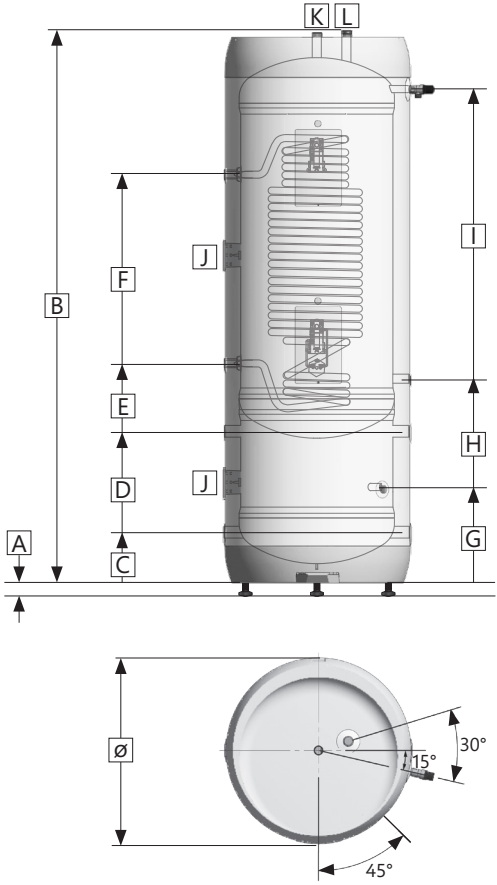
All dimensions in mm.

Product	A	B	C	D	E	F	G	H	I	ø
OGC300	0-40	1776	155	481	701	1311	305	693	1587	595

Tolerance +/- 5 mm (not dimension A).

3.4 Connections - dimensions and function

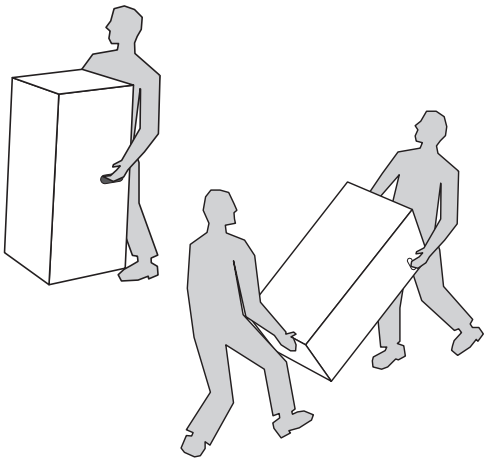
Connect-ion	Dimension	Function
C	1" int. thread	Buffer connection, lower
D	1" int. thread	Buffer connection, upper
E	3/4" int. thread	Coil connection, lower
F	3/4" int. thread	Coil connection, upper
G	1/2"	Safety valve conn., lower cylinder
H	3/4" int. thread	Cold water inlet, upper cylinder
I	ø15 mm	T&P relief valve, upper cylinder
J	ø6/ø8 mm	Sensor slot
K	3/4" int. thread	Hot water outlet
L	3/4" int. thread	Anode



3.4.1 Delivery

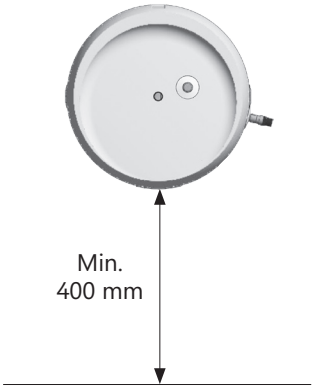
The product should be transported carefully as shown, with packaging. Use the handles in the box.

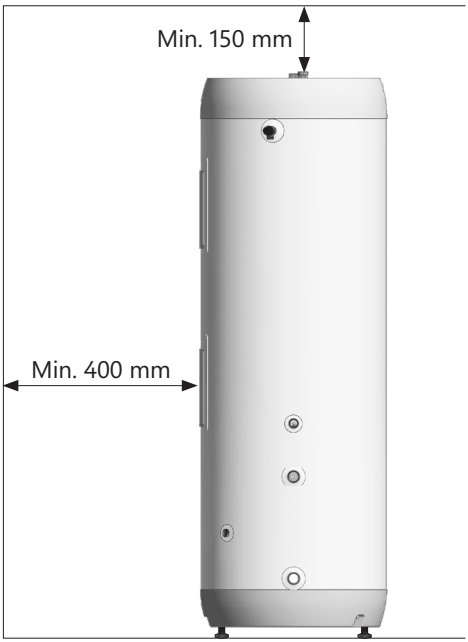
⚠ CAUTION
Pipe stubs, valves etc. should not be used to lift the product as this could cause malfunctions.



3.5 Requirements for installation location and positioning

⚠ CAUTION	
❗	The cylinder shall 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 suitable for the total weight of the product when in operation. See type plate.
❗	The product shall have a clearance for servicing of 400 mm in front of the electric junction box covers / 150 mm above the highest point.
❗	The product shall be easily accessible in the home for servicing and maintenance.





3.6 Pipe installation

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

3.6.1 Incoming water pressure

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

3.6.2 Fitting cold and hot water pipes (CW-HW) and discharge pipes

A) Approved CW and HW pipes of a suitable dimension connects to the cold water inlet (H) and hot water outlet (K) connections. Use a suitable thread sealant.

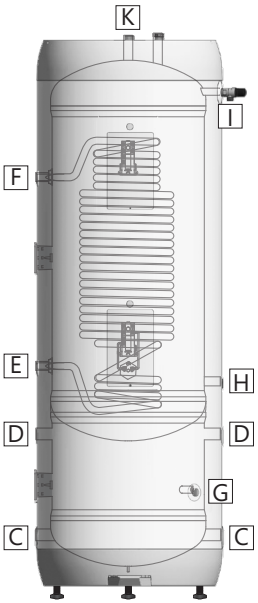
B) Discharge pipe of suitable dimension is run to the safety valve overflow connection (I). Ensure the discharge pipe is fitted uninterruptable, undamaged and frost-free. See

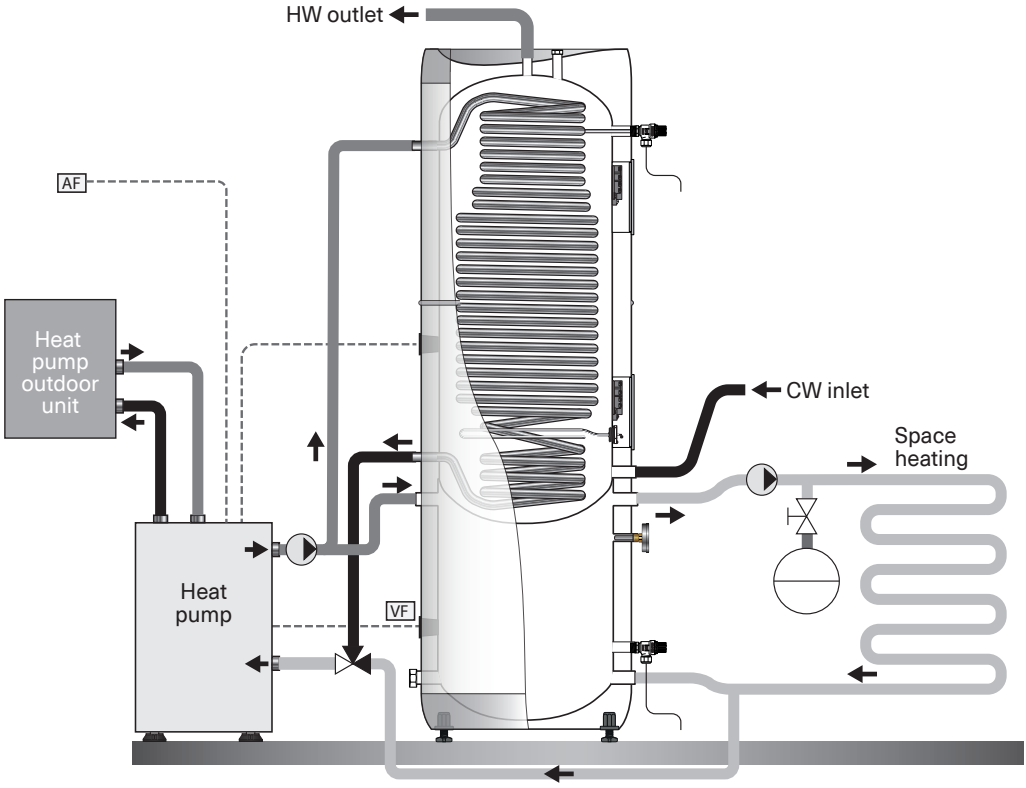
illustration and instructions on page 17.

3.6.3 Fitting pipes to coil and buffer volume
A) Approved pipes of a suitable dimension can be fitted to coil connections (E) and (F).
B) Approved pipes of a suitable dimension can be fitted to buffer volume connections (C) and (D). A drain cock should be fitted to the lowest point of the circuit (not included). Connection (G) can be used for a safety valve for the buffer volume.

All connection dimensions and functions, see pt. 3.4. Unused connections must be properly plugged. Use a suitable thread sealant with all connections to avoid leaks.

3.6.4 Pipe fitting schematics
Suggested pipe fitting layout, see illustration below. The illustration is a schematic layout and is not to be used as fitting instructions. Pipe installation to be performed by authorised personnel.





3.6.4 Fitting instructions

⚠ WARNING	
❗	The product shall be filled with water before the power is switched on. Upper vessel shall be filled first.
❗	Discharge shall comply with current building regulations.

⚠ CAUTION	
❗	The cylinder shall 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 suitable for the total weight of the product when in operation. See type plate.
❗	The product shall have a clearance for servicing of 400 mm in front of the electric junction box covers / 100 mm over the highest point.

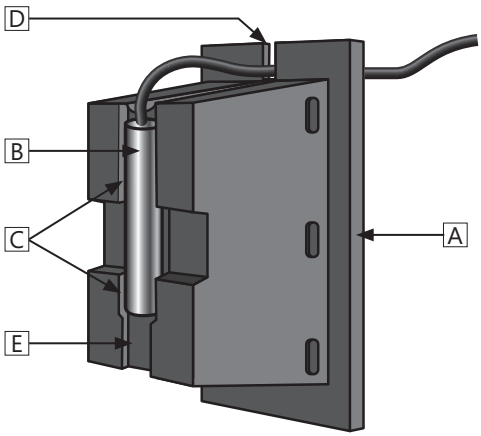
3.6.5 Fitting recommendation

RECOMMENDATION	
-	Allow clearance to the floor. Unscrew the adjustable feet (factory fitted) a minimum of 15 mm from the bottom of the product.

3.6.6 Temperature sensor installation

The product is equipped with two temperature sensor brackets which allows installation of 6 or 8 mm. temperature sensors. To install the temperature sensor follow the instructions below.

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



3.7 Electrical installation

The unit shall be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations, isolation is required via a minimum 20 amp double pole isolation switch with a minimum 3 mm separation required. All electrical wiring shall be carried out by a competent electrician, using a heat resistant flexible cable (minimum 90°C), and be in accordance with the latest IET Wiring Regulations.
The relevant standards and regulations must be followed.

3.7.1 Electrical components

Component	Note
Safety cut-out, upper & lower	85°C thermal cut-out
Temperature limiter, upper box	40-70°C adjustable
Work thermostat, lower box	40-70°C adjustable
Immersion heater, lower box	1ph. 230V
Internal wires, lower box	Heat-resistant

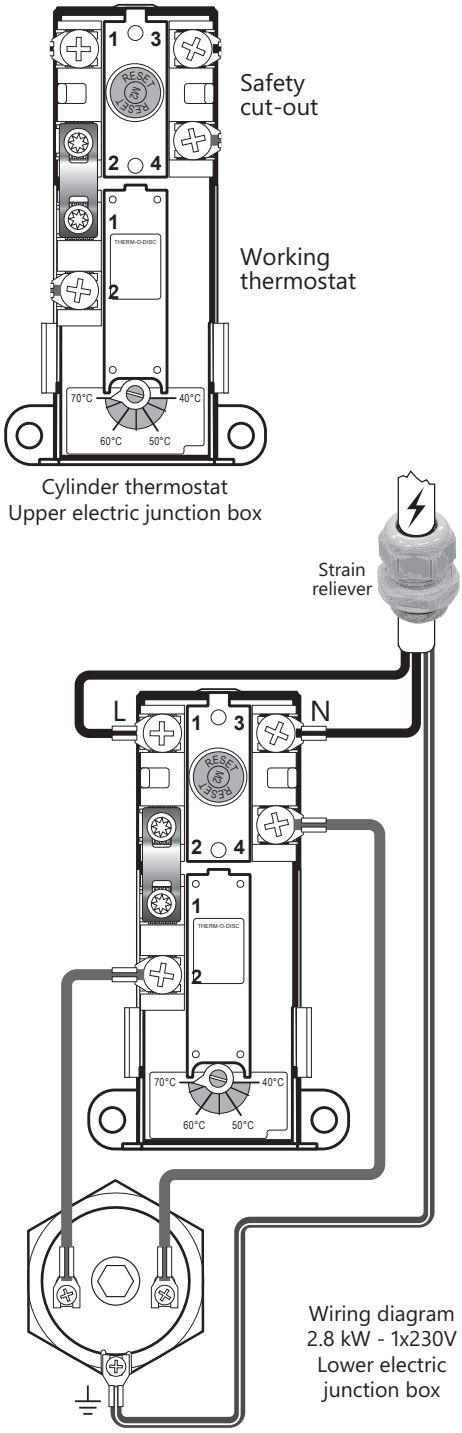
⚠ WARNING
Continuous voltage is present at the terminals in the junction boxes. Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.

3.7.2 Cylinder thermostat in the upper junction box
The factory fitted cylinder thermostat in the upper electric junction box is designed for thermostatic control of an optional external energy source (not included). See user manual for the external energy source for wiring plan.

3.7.3 Electrical connections in the lower junction box
A) Live wire (L) is connected to point '1' on the safety thermostat.
B) Neutral wire (N) is connected to point '3' on the safety thermostat.
C) Earth wire, yellow with green stripe ⏚ is connected to the terminal on the heating element (hexagonal brass)
D) Internal wires from the element to the thermostat are factory fitted and connected to point '4' on the safety thermostat and point '2' on the work thermostat. See illustration (right).

3.7.4 Torque settings

Component	Torque
G 1.1/4" heating element	60 Nm (+/- 5)
Thermostat screws	2 Nm (+/- 0.1)
Screw on the element head	2 Nm (+/- 0.1)



3.7.5 Fitting instructions

⚠ WARNING	
❗	The product shall be filled with water before the power is switched on. Upper cylinder shall be filled first.
❗	The unit shall be connected to a minimum 16 amp dedicated permanent supply complying with current IET Wiring regulations. Any electric fittings must be installed by an authorised electrician. Components for disconnection must be included in the fixed electrical installation in accordance with applicable standards and regulations.
❗	Mains cable shalld withstand 90°C continuously. A strain reliever must be fitted (supplied).

⚠ CAUTION	
❗	The product shall have a clearance for servicing of 400 mm in front of the electric junction box covers / 100 mm over the highest point.
❗	In case of damage to the power supply cable, this shall be replaced with a suitable cable by an authorised electrician.

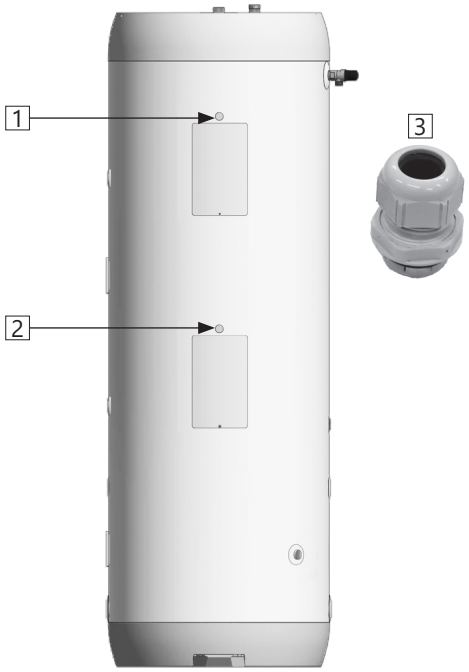
3.7.6 Fitting recommendation

RECOMMENDATION	
-	Mains cables are fed into the junction boxes via prefabricated holes in the casing (1) and (2). The holes are sized for fitting the strain relievers (3) supplied.
-	For the lower junction box a ≥ 15A circuit breaker / ≥ 2.5# wire should be used. Make sure that no wires are trapped or pinched and are not damaged in any way.

3.7.7 Strain relievers

Two strain relievers (3) are supplied with the product, fitted in the prefabricated holes for power supply wires (1) and (2). The strain relievers shall be used.

All electrical work must be performed by an authorised electrician.



4. COMMISSIONING

4.1 Commissioning and filling

Upper vessel:

1. Check all connections for correct fitment and tightness.
2. Open the hot water tap furthest away from the water heater. Leave open.
3. Open the mains cold water supply stop cock to fill the water heater. When water flows evenly from the open tap without any air locks, allow to run for a few minutes to flush through any dirt, swarf or residue. Close the tap. Open successive remaining 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 (7) to ensure free water flow through discharge pipe by turning knob counter-clockwise. Ensure that the water flows freely to drain. To close valve continue to turn knob counter-clockwise until the valve shuts.

Lower vessel:

1. Check all connections for correct fitment and tightness.
2. Fill the volume in accordance with instructions for the external heat source/heating system. Ensure all air is purged from the vessel to avoid air pockets, which may cause inefficient or faulty operation.

4.2 Turning on the power

When the cylinder has been filled with water, the power can be switched on. Turn on power switch/circuit breaker.

4.3 Temperature adjustment of tap water

The outgoing hot water temperature from the product to the taps will be the same as the set temperature of the thermostat. For temperature adjustment, see section 5.1.1.

Since the water temperature in the product can be up to 70°C it is strongly recommended to include a mixer valve in the system to avoid danger of scalding at the taps.

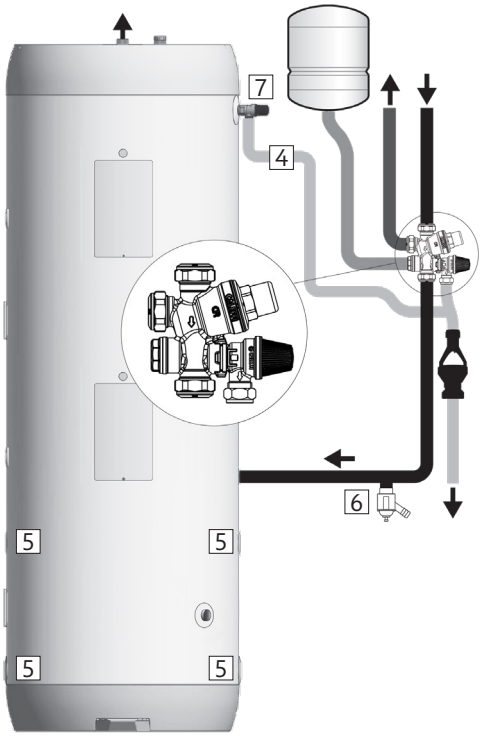
4.4 Control points (min. annually)

A) Check that all pipe connections to/from the product are tight and not leaking. Tighten if necessary.

B) Check that the power supply to the product is not at risk of exposure to mechanical, thermal or chemical damage.

C) Check that any discharge pipe (4) from the safety valve overflow is kept uninterruptable, undamaged and frost-free sloping to the drain.

D) Check that the product is positioned level vertically and horizontally.



4.5 Draining

Lower vessel:

If an external heat source is fitted, follow the emptying instructions for this product. Drain the lower vessel by opening the drain cock fitted at the lowest point of the circuit, see pt. 3.6.3.

Upper vessel:

A) Disconnect the power supply.

B) Shut off incoming cold water supply.

C) Open a hot water tap to the maximum, leave open (prevents vacuum).

D) Drain the vessel through drain cock (6). Note that the water in the vessel can be very hot,

take necessary precautions.
After draining close drain cock. Close all open taps.

The vessel must be filled with water before power is turned on, see pt. 4.1.

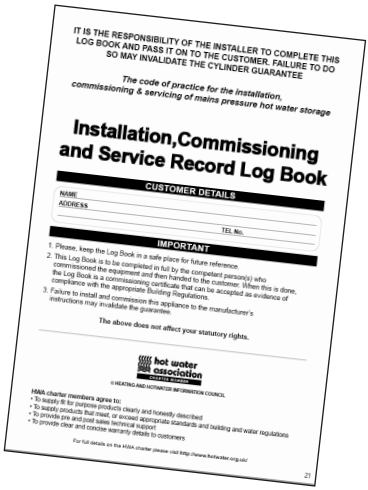
4.6 System flushing

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 described in pt. 4.5.

4.7 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.
Enter contact details in the Installation, Commissioning and Service Record Log Book at the back of this manual.
Hand this installation manual over to the end-user.

⚠ WARNING
The water temperature in the product can be up to 70°C and could cause scalding. Before emptying, a hot tap should be opened to the max. pressure/temperature for min. 3 minutes.



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.

hot water association

© 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/

21

5. USER GUIDE, 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. Important: Before resetting the safety cut-out or altering the thermostat setting, isolate electrical supply to the unit prior to removal of the electric junction box cover (2).
3. Reduce the thermostat setting and press the reset button (6). After adjustments are completed, ensure the electric junction box cover (2) is refitted correctly and the retaining screw is fitted.
4. If still out of operation, contact installer.

5.2 Settings

5.2.1 Thermostat setting

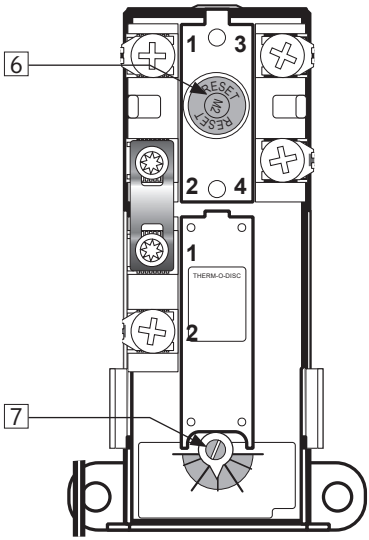
The supplied thermostats are adjustable from 40-70°C. The thermostats should not be set lower than 60°C to prevent bacteria growth.
To adjust the temperature:
A) Disconnect the power supply.
B) Remove the junction box cover (1) by unscrewing the retaining screw (2).
C) Adjust the temperature on the thermostat dial (7) with a screwdriver.

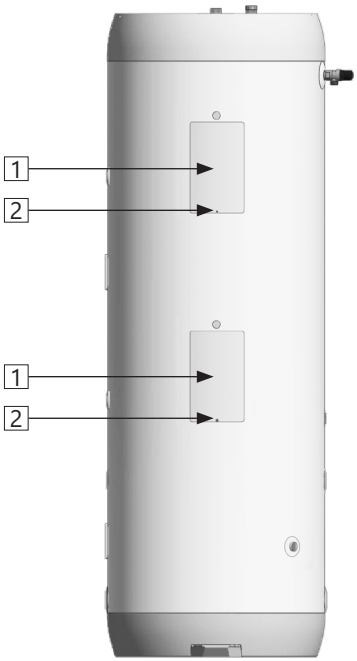
Changing the temperature setting on the thermostat changes the temperature of the water inside the vessel. Increasing the temperature will result in a higher available hot water volume.
The outgoing hot water temperature from the product to the taps will be the same as the set temperature of the thermostat. For temperature adjustment, see pt. 5.2.
Since the water temperature in the product can be up to 70°C it is strongly recommended to include a mixer valve in the system to avoid danger of scalding.

5.2.2 Resetting the safety thermostat

The safety thermostat on the product cuts out when there is a risk of overheating. This can be reset by disconnecting the power supply and removing the junction box cover - loosen the retaining screw (2) securing the cover (1) - see illustration. Press the red "RESET" button (6). A noticeable click should be heard when the thermostat resets. If the thermostat cuts out repeatedly, contact the installer.
The junction box cover (1) must be refitted before the power is switched back on.

> ⚠ WARNING
>
> Continuous voltage is present at the terminals in the junction boxes. Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.





5.3 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 clockwise 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.

5.4 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 any indirect unit connected to the vessel or coil. Contact the installer or competent engineer.

5.5 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

5.6 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.

5.7 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.

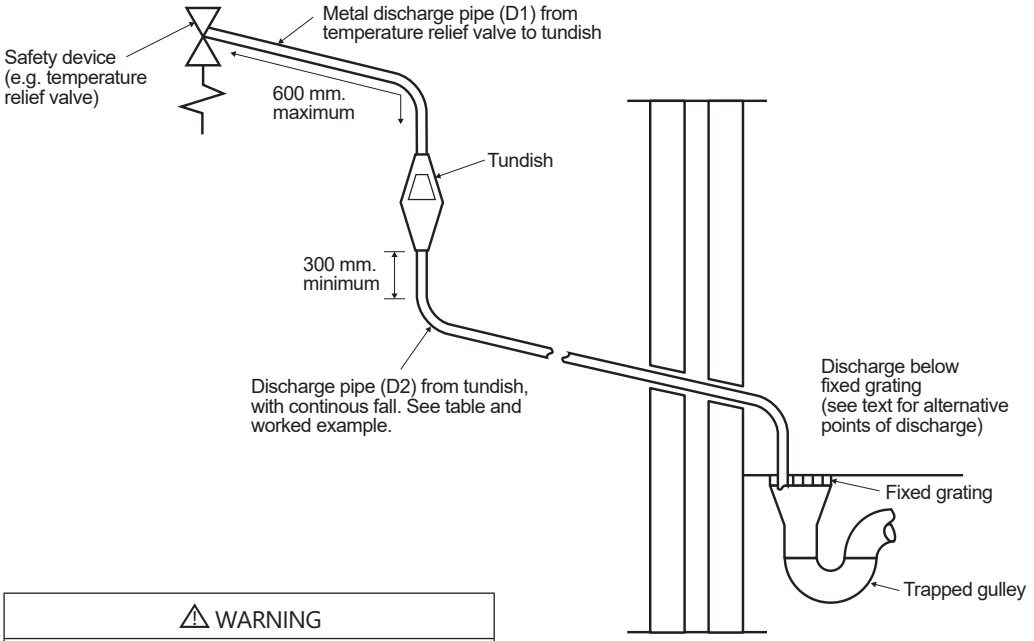
5.8 Discharge

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.

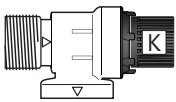
For further information contact your Building Control Office.



⚠ WARNING
The tundish shall be installed away from any electrical devices.

Valve Outlet size	Minimum size of discharge pipe D1	Minimum size of discharge pipe D2 from tundish	Maximum resistance allowed expressed as a length of straight pipe (i.e. no elbown or bends)	Resistance created by each elbow or bend
G 1/2	15 mm	22 mm 28 mm 35 mm	up to 9 m up to 18 m up to 27 m	0.8 m 1.0 m 1.4 m

5.9 Annual inspection of safety valves

MAINTENANCE INSTRUCTIONS		
❗	Maintenance should be carried out by persons over 18 years of age, with sufficient understanding.	
❗	Annual inspection of P&T relief valve:	
-	Open valve for 1 min. by turning the knob (K) approx. 90 degrees to the open position.	
-	Visually check that the water is flowing freely to the drain.	
-	YES = OK. Close the valve by turning the knob (90) a further 90 degrees to the closed position.	
-	NO = NOT OK. Disconnect power supply / shut off water supply. Contact installer.	

6. TROUBLESHOOTING

6.1 Faults and fixes

If problems arise when the product is in use, check for possible faults and fixes in the table. If the problem is not shown in the troubleshooting table or you are unsure what is wrong, contact the installer (see Installation, Commissioning and Service Record Log Book at the back of this manual.).

TROUBLESHOOTING, DOMESTIC HOT WATER - UPPER CYLINDER		
Problem	**Possible cause of fault**	**Possible solution**
There is leakage/dripping from the safety valve	Pressure reduction valve, water meter or blocked non-return valve on the water intake. Water pressure into the home is too high.	Fit an 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.
	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. See section 5.2. 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.
No hot water	Power supply interrupted.	Verify that the circuit breaker is on / tthe earth breaker has not tripped.
	Thermostat has cut out.	Press the 'RESET' button on the safety thermostat; see 'User guide'.
	Heating element is defective.	Replace heating element. Contact auth. installer.
	Leak in hot water pipe	Verify as follows: a) close the mixer valve, b) wait 2-3 hours, c) feel the mixer valve to see whether it is hot. If so, there is a leak in the hot water pipe or elsewhere. Contact auth. installer.
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 water heater. Contact auth. installer.
Not high enough temperature	The thermostat is set for low temperatures.	Raise the temperature on the thermostat to 70°C; see 'User guide'.
	Bleeding from cold to hot water in taps.	Contact auth. installer.
Circuit breaker/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.
Knocking in the pipes when the hot tap is closed	Large pressure increase when the tap is closed quickly.	Completely normal. Fit an expansion vessel if troublesome. Contact auth. installer.

TROUBLESHOOTING HEATING SYSTEM - LOWER CYLINDER		
Problem	**Possible cause of fault**	**Possible solution**
Heating system provides little or no room heating	The system lacks power	Check the circuit breakers and power supply wires
	Circulation pump is out of operation.	Listen to or feel the pump (NB: the pump may be hot) to check whether it is running. If no: Contact auth. installer.
	There is air in the system	If an external heat source is fitted, check its instructions for ventilation. In electric-only operation, the system is vented via bleed valves etc. Any radiatos are vented individually. Contact auth. Installer when needed.
	Return valves are set incorrectly	Check that return valves provide the correct throttling. Contact auth. Installer when needed.
The heating system safety valve is dripping/ running	The expansion tank is defective	Open the air filling valve on the tank. If water is leaking out, the vessel is broken and must be replaced.
	The pressure in the heating system is too high	Check the system pressure. Normal operating pressure is 1-2 bar. Contact auth. Installer when needed.
	The valve is defective	Replace the valve. Contact auth. installer.
The heating circuit has to be refilled frequently	Leak in the heating system	Check all pipe couplings. Turn off the power supply, remove the lid on the junction box in the lower cylinder and check leakage from heating elements. If there is a leak from the element: Gasket needs to be replaced. Contact auth. installer. The cover should be fitted before switching on the power.

7. SYSTEM RATING

7.1 Energy labelling of heating systems

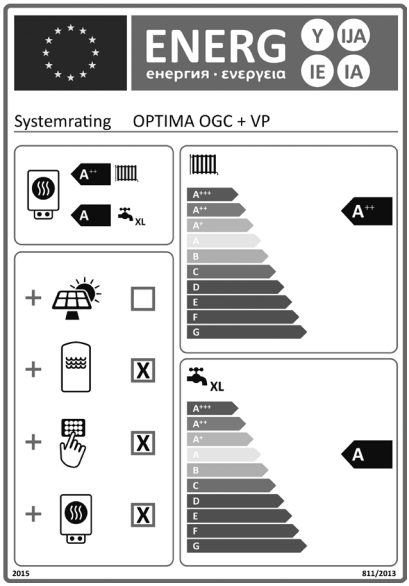
The ErP directive requires heating systems to be fully energy labelled. The OGC 300 comes with energy labelling for connection to a heat pump.

For the energy labelling requirements to be met, the energy efficiency must be:

- Room heating > 125%
- Tap water > 55%

The attached energy label (see illustration) can be affixed to the product when the system meets the requirements for energy efficiency, as shown above.

Check the heat pump's technical data form (product fiche) for details of its energy efficiency.



8. WARRANTY CONDITIONS - applies to UK only

1. Scope:
SUPPLIER warrants for 2 years from the date of purchase the Product by the final recipient, that the Product will: i) conform to SUPPLIER's specification, ii) be free from defects in materials and workmanship subject to conditions below. All components carry a 2-year warranty.

2. Coverage:
If a defect arises and a valid claim is received within the warranty period, SUPPLIER shall, at its option, 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. Any exchanged Product or component will become the legal property of SUPPLIER.

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 latest edition of the European Drinking Water Directive, 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 µS / cm
- 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.
- Service and/or repair shall be done according to the installation manual and all relevant codes of practice. Any replacement parts shall be original spare parts.
- A water sample as well as the defective product is made available to SUPPLIER upon request.
- Mandatory proof of the annual inspection of the factory fitted sacrificial anode.

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. CUSTOMER shall give the carrier notice of such damage.
- Costs arising if the Product is not immediately accessible for servicing.

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.
B) The manufacturer (get manufacturer contact details from installer).

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9. REMOVING THE PRODUCT

9.1 Removal

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.

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.

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.

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		**MODEL**	
CAPACITY	**litres**	**MANUFACTURE date**	
TYPE	**UNVENTED**		
TIME CONTROL	**PROGRAMMER** ☐	**or**	**TIME SWITCH** ☐

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

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

HWSLB First Edition 01.03.02

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