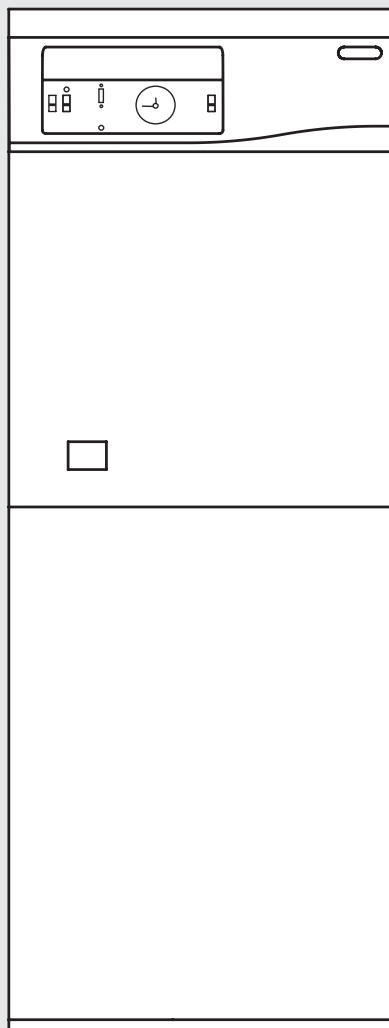


Electromax Technical Data



Electromax

Components

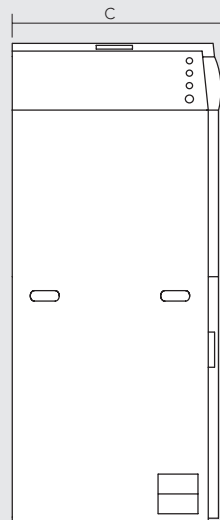
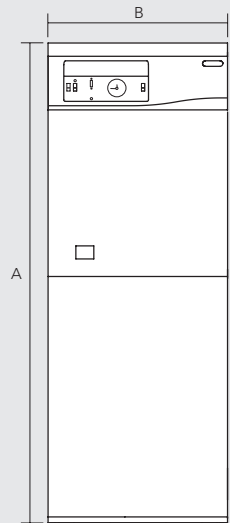
Check list

Within the Electromax packaging the following components are supplied;

- Electromax Unit
- Cold water combination valve comprising of;
 - Pressure reducing valve
 - Strainer
 - Check valve
 - Expansion valve
- Unvented system expansion vessel (18 litre, pre-charged to 3.5 bar)
- Wall mounting bracket for expansion vessel
- Programmable Room Thermostat (TP5000)
- Immersion heater key spanner
- Hose connection adaptor for primary system drain valve
- Set of cable entry glands and blanking plugs (3 x 20mm, 1 x 25.4mm)
- Installation manual
- User instructions
- Fitting template
- Warranty card

Electromax

Cylinder Performance



DIMENSIONS AND PERFORMANCE

Model	6kW Radiator	9kW Radiator	9kW Underfloor	6kW Underfloor
A Height (mm)*	1476	1476	1476	1476
B Width (mm)	550	550	550	550
C Depth (mm)**	600	600	600	600
Product Code	95:022:234	95:022:236	95:022:226	95:022:227

DHW cylinder

Off peak immersion heater input (kW)	3kW @ 240V 2.8kW @ 230V	3kW @ 240V 2.8kW @ 230V	3kW @ 240V 2.8kW @ 230V	3kW @ 240V 2.8kW @ 230V
Boost immersion heater input (kW)	3kW @ 240V 2.8kW @ 230V	3kW @ 240V 2.8kW @ 230V	3kW @ 240V 2.8kW @ 230V	3kW @ 240V 2.8kW @ 230V
Rated pressure	600MPa (6 bar)	600MPa (6 bar)	600MPa (6 bar)	600MPa (6 bar)
Pressure Reducing valve***	350MPa (3.5 bar)	350MPa (3.5 bar)	350MPa (3.5 bar)	350MPa (3.5 bar)
Expansion valve***	600MPa (6 bar)	600MPa (6 bar)	600MPa (6 bar)	600MPa (6 bar)
DHW expansion vessel (litres/bar)	18 / 3.5 bar	18 / 3.5 bar	18 / 3.5 bar	18 / 3.5 bar
Temperature/Pressure relief valve	90°C / 10 bar	90°C / 10 bar	90°C / 10 bar	90°C / 10 bar
Combined thermostat	10-70°C	10-70°C	10-70°C	10-70°C
Resettable thermal cut-out	85°C	85°C	85°C	85°C
Minimum Insulation Thickness (mm)	40	40	40	40

Electric Boiler & Primary Circuit

Electrical input (max)	6kW @ 240V 5.5kW @ 230V	9kW @ 240V 8.3kW @ 240V	9kW @ 240V 8.3kW @ 240V	6kW @ 240V 5.5kW @ 230V
Electrical supply voltage	220-240V	220-240V	220-240V	220-240V
Electrical supply frequency	50Hz	50Hz	50Hz	50Hz
Internal fuse rating (pump supply)	2 Amps	2 Amps	2 Amps	2 Amps
Primary system operating pressure (min)	100MPa (1 bar)	100MPa (1 bar)	100MPa (1 bar)	100MPa (1 bar)
Primary system pressure relief valve setting	300MPa (3 bar)	300MPa (3 bar)	300MPa (3 bar)	300MPa (3 bar)
Primary system expansion vessel (litres/bar)	12 / 1 bar	12 / 1 bar	12 / 1 bar	12 / 1 bar
Primary flow temperature radiator model	65-80°C	65-80°C	65-80°C	65-80°C
Primary flow temperature underfloor model	30-60°C	30-60°C	30-60°C	30-60°C

*300mm minimum clearance must be allowed above the unit to allow for Top Panel access. **50mm minimum clearance must be allowed at either side of the unit. ***Integral with cold water combination valve.

Electromax

Cylinder Performance

Model	6kW Radiator	9kW Radiator	9kW Underfloor	6kW Underfloor
Product Code	95:022:234	95:022:236	95:022:226	95:022:227
Capacity (litres)	180	180	180	180
Off peak heater 3kW Δt 45°C (mins)	180	180	180	180
Off peak heater 3kW Δt 50°C (mins)	200	200	200	200
Boost heater 3kW (quantity heated Δt 45°C in 60 mins) (litres)	57	57	57	57
Heat loss (kWh/24hr)	1.95	1.95	1.95	1.95
ErP Rating Heating	D	D	D	D
ErP Rating Hot Water	D	D	D	D

ErP

Technical data

Hot Water

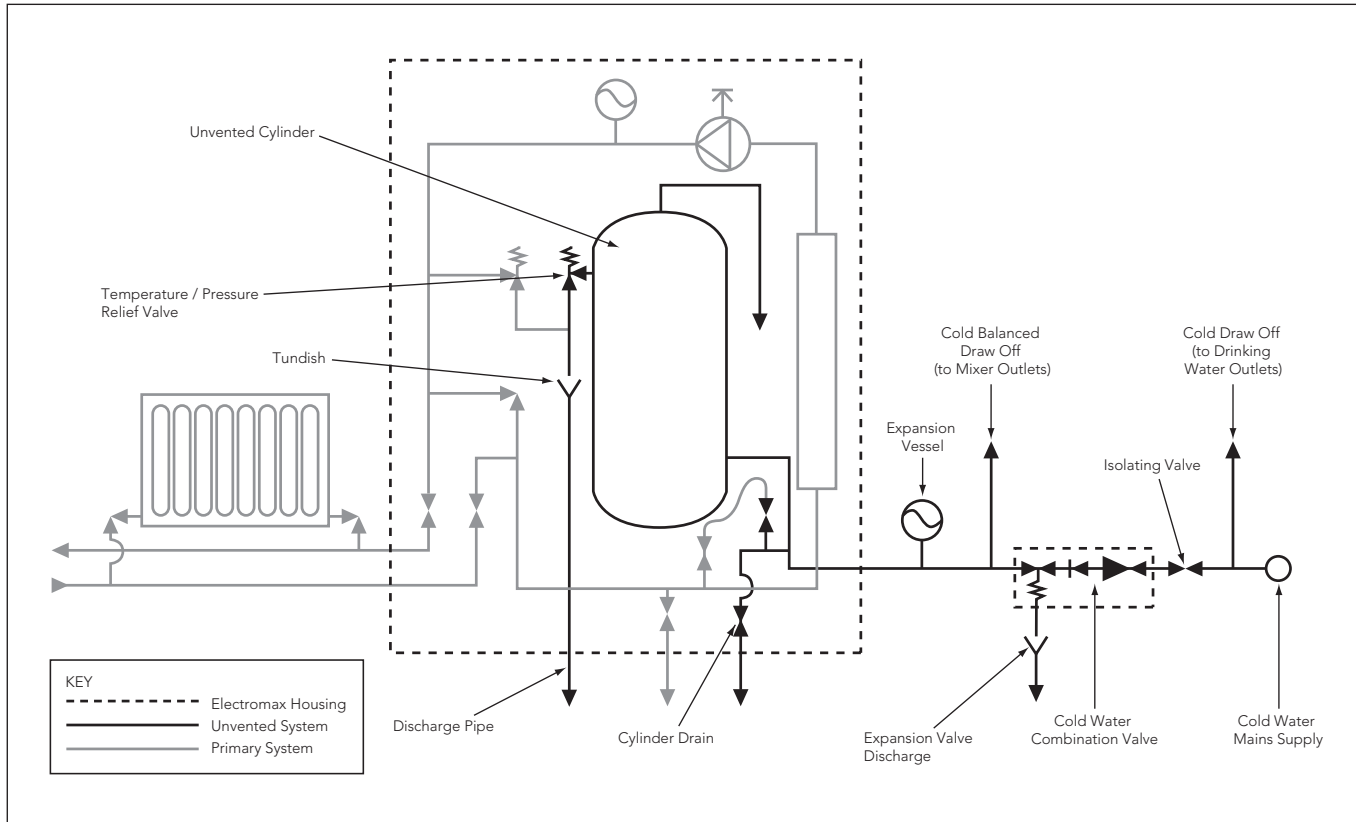
Supplier's name or trade mark	Electromax			
	6kW Standard	6kW Underfloor	9kW Standard	9kW Underfloor
Supplier's model identifier				
Storage volume V in litres	180.0	180.0	180.0	180.0
Mixed water at 40°C V40 in litres	289	289	289	289
The declared load profile	L	L	L	L
The water heating energy efficiency class of the model	D	D	D	D
The water heating energy efficiency in %	36.2	36.2	36.2	36.2
The annual electricity consumption in kWh	2830	2830	2830	2830
Daily fuel consumption Q _{fuel} in kWh	13.250	13.250	13.250	13.250
The thermostat temperature settings of the water heater, as placed on the market by the supplier	60°C	60°C	60°C	60°C
Tested for off peak use	Yes	Yes	Yes	Yes

Heating

Supplier's name or trade mark	Electromax			
	6kW Standard	6kW Underfloor	9kW Standard	9kW Underfloor
Supplier's model identifier				
Seasonal space heating energy efficiency class	D	D	D	D
Rated heat output kW	6	6	9	9
Seasonal space heating energy efficiency %	37	37	37	37
Annual energy consumption kWh	12986	12986	19472	19472

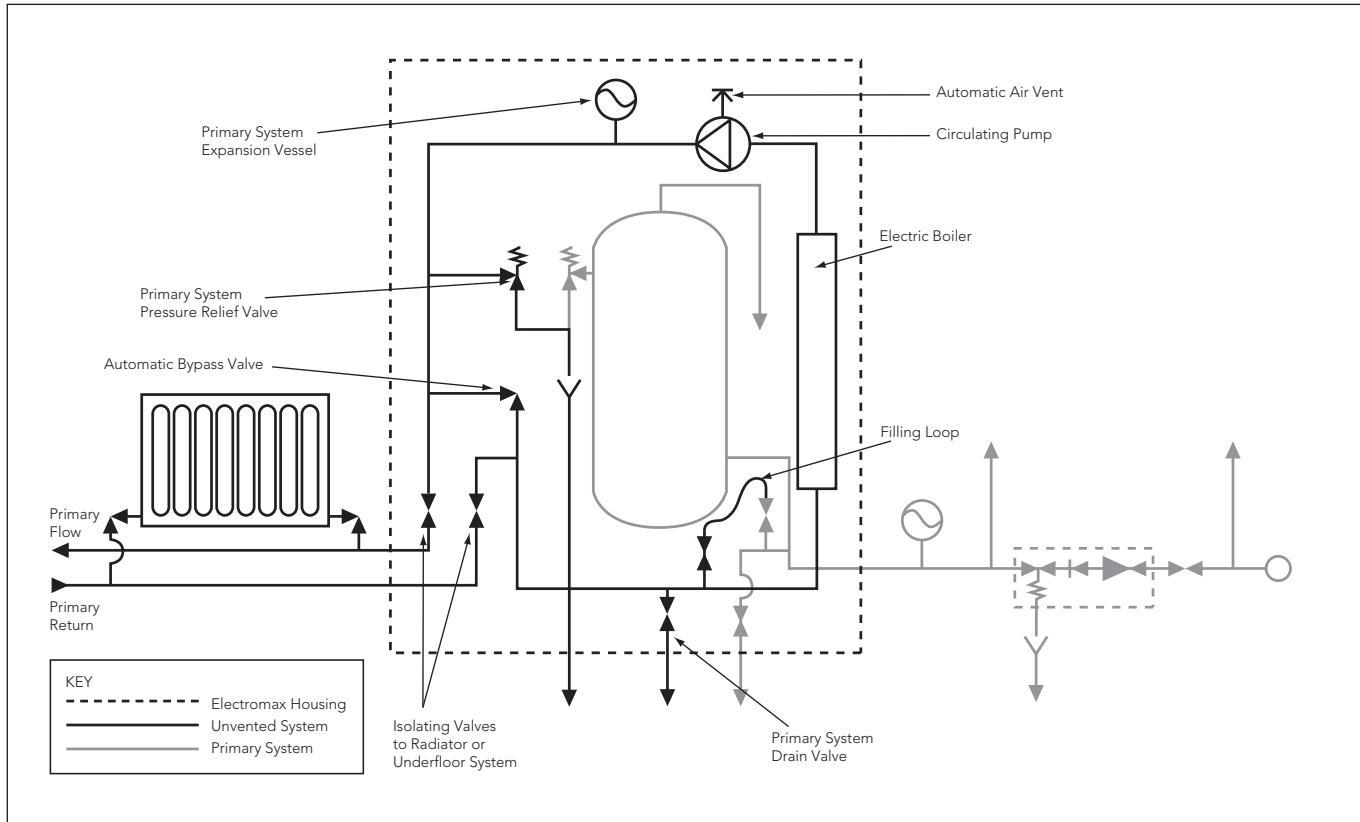
Electromax System Schematics

UNVENTED SYSTEM



Electromax System Schematics

PRIMARY SYSTEM



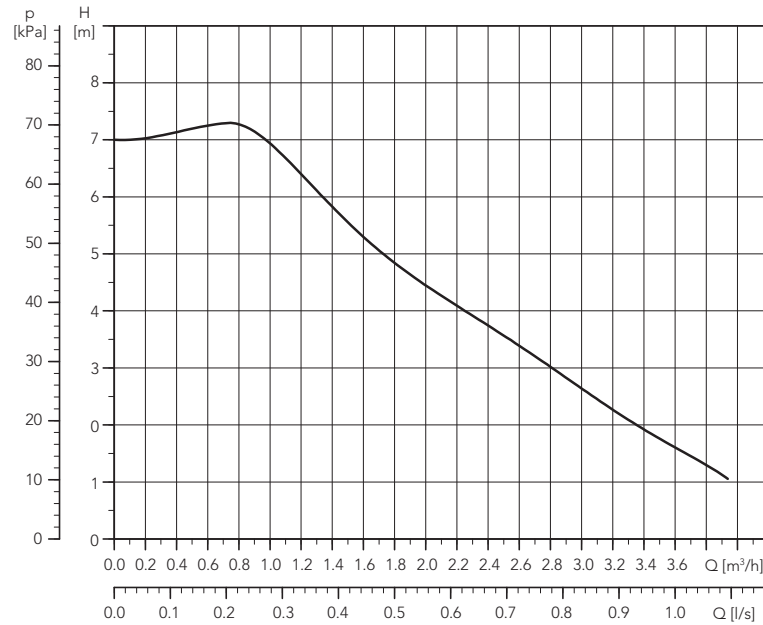
Electromax

Specification

Component Detail: Pump Specifications & Characteristics:

Primary circulating pump:

- The pump used in this product has been upgraded to comply with ErP regulations brought into force 1st August 2015 (Directive EN16297/3) which set strict new requirements for the energy efficiency of standalone circulating pumps.
- Model No: Grundfos UPM Auto L
- Minimum inlet pressure: 0.05MPa (0.5 bar) at 95°C liquid temperature
- Maximum system pressure: 1MPa (10 bar)
- Voltage rating: 1 x 130V + 10%/-15%, 50Hz
- Maximum ambient temperature: +70°C
- Maximum media temperature: +95°C on composite housings, +110°C on cast iron housings
- Peak temperature: $T_m=130^\circ\text{C}$ (for peak ≤ 30 min)

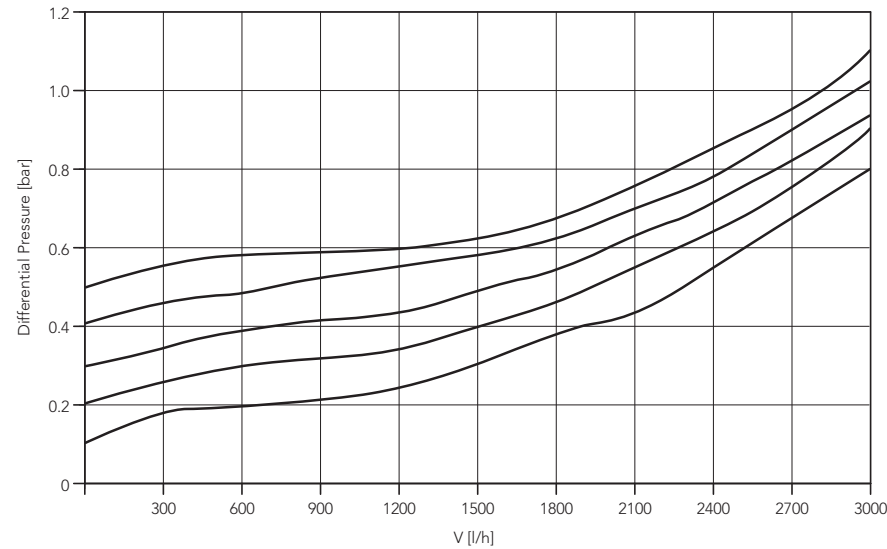


Electromax Specification

Automatic bypass valve characteristics:

Danfoss TP5000 Programmable Room Thermostat:

- Programmer dimensions: 110mm (W) x 88mm (H) x 28mm (D)
- Power Supply: 2 x AA/MN1500/LR6 alkaline batteries
- Switching action: SPDT (voltage free)
- Memory back up retained for life of product
- Control temperature range: Off, 5 to 30°C
- Type of control: 5/2 day, 24 hour or A/B block programming
- Ball hardness test: 75°C



Electromax

Specification

Installation requirements:

Location of the Electromax:

The Electromax must not be sited outside or in any location where it could be exposed to the weather. It must be installed in a dry and frost free environment.

The Electromax must be vertically mounted on a flat, level surface capable of supporting the 'full' weight of the unit, 256kg.

The location chosen must allow the discharge pipe from the unvented cylinder safety valves to be correctly installed. Domestic hot water pipe runs should be kept as short as possible for maximum economy. Sufficient access must be allowed around the unit to allow removal of the front and top panels for servicing and maintenance of the system.

An installation template is supplied with the unit to aid location and layout of pipework connections.

Water supply:

It should be noted that the water supply to the property will be supplying both the hot and cold water requirements simultaneously. It is recommended that the maximum water demand is assessed and the water supply checked to ensure this demand can be satisfactorily met.

NOTE: A high water pressure will not always guarantee high flow rates.

Wherever possible the Electromax supply pipe should be 22mm. We suggest the minimum supply requirements should be 1.5 bar pressure and 20 litres per minute flow-rate. However at these values outlet flow rates may be poor if several outlets are used simultaneously. The higher the available water pressure and flow rate the better the system performance.

The Electromax unvented cylinder has an operating pressure of 3.5 bar which is controlled by the cold water combination valve assembly. The cold water combination valve assembly can be disconnected to a maximum pressure of 16 bar.

The Electromax is to be used for the storage of wholesome water (max 250mg/l Chloride).

For optimum performance after installation the Electromax boiler and its associated central heating system must be flushed in accordance with the guidelines given in BS 7593:1992 "Treatment of water in domestic hot water central heating systems". This must involve the use of proprietary cleanser, such as GE Betz Sentinel X300 or X400, Ferno "Superfloc" or Salamander system cleanser. Follow

the manufacturer's instructions to ensure correct cleansing of the system.

For long term protection against corrosion and scale, after flushing, the system should be dosed with an inhibitor such as GE Betz Sentinel X100, Fernox MB-1 or Copal or Salamander System Inhibitor in accordance with the guidelines given in BS 7593:1992.

Failure to flush and add inhibitor to the system will invalidate the appliance warranty.

Outlet/Terminal Fittings:

NOTE: All pipework, fittings and terminal fittings must be compatible with unvented systems and have a rated operating pressure of at least 6 bar. Where plastic pipe / fittings are being used the rated pressure must be achievable at outlet temperatures that can be expected within the hot water distribution pipework. If in doubt consult the manufacturer of the fittings selected.

The Electromax unvented cylinder can be used in conjunction with most types of terminal fittings. It is advantageous in many mixer showers or taps to have balanced pressure hot and cold water supplies, in these instances the balanced cold water supply should be teed off the supply to the Electromax immediately after

the cold water combination valve.

Pipe Fittings:

Pipe connections to the Electromax must be made using 22mm compression type fittings. Solder connections directly to the unit must not be made as the heat may damage the insulation materials used. Damage caused by heat applied to solder fittings in close proximity to the unit will not be covered by the warranty. Solder connections may be used elsewhere in the system away from the Electromax unit. Use water soluble flux for making soldered joints and ensure any flux residue is removed following installation.

Secondary Circulation:

Secondary circulation is not recommended for the Electromax as it is intended for Off-Peak electrical operation. During other periods the electricity supply is interrupted to the immersion heaters so no reheating will take place. Circulating the stored water would gradually cool it to an unacceptable temperature.

Primary Central Heating Pipework:

Connections to the Electromax primary flow and return must be in 22mm \varnothing /dia. pipe. Isolating valves are fitted to the Electromax unit on the primary flow and return connections to enable the Electromax boiler to

be isolated from the primary circuit for maintenance and servicing. Connections to the isolating valves are 22mm compression.

Conventional radiator based central heating design considerations should be made in selecting the radiators and circulating pipework sizes. The maximum output from the Electromax boiler can be 9kW or 6kW, ensure the radiator load does not exceed this.

NOTE: The Electromax boiler is dedicated to the space heating only, the domestic hot water is heated by separate immersion heaters, so there is no requirement to allow a hot water loading factor in designing the primary system.

Use water soluble flux for making soldered joints and ensure any flux residue is removed following installation.

NOTE: A filling loop is provided within the Electromax casing to fill the primary circuit directly from the cold water supply. When the system is full and correctly pressurised the flexible hose of the filling loop should be disconnected from the primary circuit.

Electromax

Specification

Boiler Connection:

The Electromax boiler has a rated maximum output of 9kW or 6kW at 240V ~ . The supply cable must therefore be separate and dedicated to the boiler. The supply cable should be a minimum of 10mm² cross sectional area, (check the IEE Wiring Regulations for correct cable sizing). It must be routed into the Electromax via the 25mm cable gland previously fitted. The Live (Brown) conductor should be connected to the termination marked "L SUPPLY"; the Neutral (Blue) conductor should be connected to the termination marked "N SUPPLY"; the Earth (Green/Yellow) conductor should be connected to the termination marked.

Warranty:

This product is covered against faulty materials and manufacture. The following warranty periods apply from the date of purchase:

Product	Warranty period
Stainless steel cylinder	10 years
Electric boiler	2 years
DHW Expansion Vessel	5 years
All other valves, fittings and electrical parts	2 years

Codes of practice / legislation:

EU Directives:

- Pressure Equipment Direct 97/23/EC
- Low Voltage Directive (LVD) 2006/94/EC
- Compatibility (EMC) Directive 2004/108/EC

Legislation:

- Building Regulations Part G and Part L (England and Wales)
- Scottish Building Standards Section 4 and Section 6
- Building Regulations (Northern Ireland) Parts F1 and F2 and Part P
- Water Supply (Water Fittings) Regulations (England and Wales)
- The Water Byelaws 2004 (Scotland)

Standards:

- Relevant clauses of the followings standards and compliant with
 - EN12897 – Specification for indirectly heated unvented cylinders
 - EN 60335-2-21 – Safety-Particular requirements for storage water heaters
- The stainless steel materials used comply with the relevant clauses of:
 - EN 10088 – Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes

Components supplied comply with the following standards:

- BS EN 1490 Building valves – combined temperature and pressure relief valves
- BS EN 1491 building valves – expansion valves
- BS 6144 Specification for expansion vessels using an internal diaphragm for unvented water supply systems
- BS EN 1567 Building Valves – Water pressure reducing valves and combination reducing valves
- BS EN 60730-1 Automatic Electrical Controls – For households and similar use. Part 1:General requirements
- BS EN 60730-2-8 Automatic electrical controls – particular requirements for electrically operated water valves
- BS EN 13959 Anti-pollution check valves

The use of these water heaters will aid in compliance with:

- Health and Safety executive approved code of practice L8: The control of legionella bacteria in water systems
- BS EN 806 Parts 1 to 5: Specification for installations inside building conveying water for human consumption

- BS 8558 Guide to design, installation, testing and maintenance of services supplying water for domestic use within buildings
- Chartered Institute of Building services engineers Guide B and Guide F

Manufactured in a factory approved to:

- BS EN ISO 9001
- OHSAS 18001
- ISO 14001
- ISO 50001

Approvals:

- Nemko

SMART HOT WATER SOLUTIONS

SPECIFICATION ADVICE HOTLINE

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AFTER SALES SERVICE

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