

RANGE

Senator Electric Flow Boilers



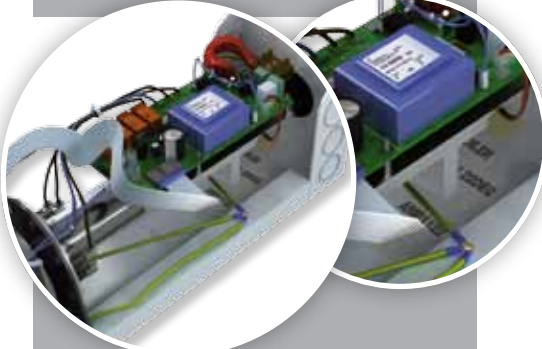
Making Life Simpler





Electric Wet Central Heating

The Range Senator electric flow boiler is designed to heat re-circulated water used in wet central heating systems. The water is heated when it is passed over electric immersion elements, which are contained in a Duplex stainless steel chamber. The temperature of the water is monitored and controlled by a modulation technique switching on the immersion elements. The switching of the elements is carried out by solid-state technology under the control of a microcomputer contained within the control section of the unit. The operation of the unit can be controlled by standard room thermostats etc.



Senator Features and Benefits

- Duplex stainless steel for compatibility with stainless unvented systems and ultimate peace of mind.
- Domestic Hot Water is available via a direct or indirect cylinder.
- Can be used with sealed OR open vented systems.
- No flue or fuel tank required so can offer flexibility in siting.
- Extremely quiet in operation.
- Operates from standard room thermostats etc.
- Pump run-on facility.
- Solid-state technology enables zero volt switching.
- Soft start and soft modulation.
- Front panel operation indicators.
- Automatic self-check every time it operates.
- Optical isolation to enable connection of more units on single or 3-phase supply.
- Electrical cable termination inside the unit.
- Safety trip for no water or no flow or excessive element current.
- Element failure warning.
- Stove enamelled white steel case.

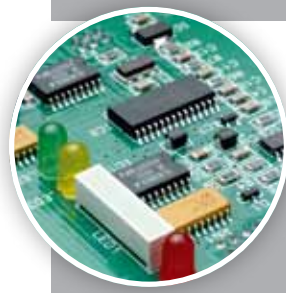
Senator Model Range

RFB006	6kW (20,480Btu/h)	1050 x 120 x 120mm
RFB009	9kW (30,730Btu/h)	1050 x 120 x 120mm
RFB011	11kW (37,565Btu/h)	1050 x 120 x 120mm
RFB012	12kW (40,980Btu/h)	1050 x 120 x 120mm



Duplex Stainless Steel the Only Option

Duplex stainless steel, for so long reserved for the intense demands of chemical plants, forms the heart of every Range Senator electric flow boiler. Duplex stainless steel offers superior corrosion resistance to copper and lesser grades of stainless steel, particularly in aggressive water areas. Duplex stainless steel is a special combination of Austenitic and Ferritic stainless steels. Its low-carbon, high-chromium composition is allied to careful design and state-of-the-art TIG welding equipment in our multi-million pound factory. As a result, it is resistant to all forms of corrosion including crevice, pitting, uniform corrosion and stress corrosion cracking. Duplex stainless steel has a superior strength-to-weight ratio to copper. The Range Senator has higher pressure ratings than its copper counterparts and still retains light weight properties.



Duplex Stainless Steel and the Environment

Duplex stainless steel is extremely environmentally friendly. As a material it is 100% recyclable and in fact over 90% of new stainless steel comes from old re-melted stainless steel. Stainless steel will go on to complete full life cycles indefinitely.

Senator Guarantee*

The Range Senator electric flow boiler's comprehensive guarantee covers defects originating from faulty workmanship and materials in manufacture of the Duplex stainless steel shell for a period of 5 years and fitted components a period of 2 years. The guarantee covers the replacement of any faulty parts and labour costs to replace them. *The unit is designed to operate the majority of wet central heating systems in domestic, commercial, industrial and public buildings. It must not be used in an environment that is classified as hazardous and could therefore cause a fire or explosion, or where there is a danger of ignition by a flame path. Conditions apply. Full details of our guarantee terms are published in the products installation instructions or are available separately on request.



Range Senator Compatibility

The Range Senator electric flow boiler is the only unit on the market utilising corrosion resistant Duplex stainless steel and as such is truly compatible with today's stainless unvented water heating systems.

The Range Senator does not require a flue or a fuel supply tank. Its quiet operation makes Range Senator the ideal choice for conservatories, loft and home extensions and is widely specified in apartments and all-electric building projects. In larger applications, the Range Senator can be connected in tandem (see diagram on page 5) to provide a greater output capable of satisfying a much greater demand. Whether supplying conventional radiators or underfloor heating, there is a Range Senator that fits the bill.

The use of a Senator electric flow boiler can be combined with solar thermal water heating. In such systems normally Senator will provide space heating whereas Domestic Hot Water will be heated by solar collectors, such as Thermomax vacuum tube panels.

Range Senator has many safety features incorporated and being fully BEAB approved has been designed to be intrinsically safe. Safety being a key issue, the Range Senator is the perfect choice for Nursing Homes, Retirement Homes and 'caring' institutions of all types.



- Typical Applications**
- 1. Wet central heating systems
 - 2. Apartments
 - 3. Mobile Homes
 - 4. Family Homes
 - 5. Nursing Homes

Technical Specification

Off-Peak Tariff Electricity

Off-peak tariffs operate in varying formats throughout the country with regional suppliers providing different off-peak durations and timings throughout the day, however the principles of supply are similar. Usually regional suppliers provide electricity at a lower cost during hours of low demand and revert to standard tariff rates at times of peak demand.

Two popular off-peak supply tariffs are Economy 7 and 10. Typically Economy 7 provides seven hours of reduced cost electricity during the night hours usually between 1.00am and 8.00am. Economy 10 provides some five hours of reduced cost electricity overnight with two further top ups of two to three hours during the afternoon and evening. Your regional supplier may offer other alternative schemes along with the appropriate metering requirements.

Part No.	Model	No. of Elements		Electrical Loading		
		3kW	2kW	220V	230V	240V
RFB006	6kW	2		22.92 A 5.04 kW	23.96 A 5.51 kW	25.00 A 6.00 kW
RFB009	9kW	3		34.38 A 7.56 kW	35.94 A 8.27 kW	37.50 A 9.00 kW
RFB011	11kW	3	1	42.01 A 9.24 kW	43.92 A 10.10 kW	45.83 A 11.00 kW
RFB012	12kW	4		45.83 A 10.08 kW	47.92 A 11.02 kW	50.00 A 12.00 kW

Part No.	Model	Current Drawn @ 240V	Suggested Drawn MCB Rating
RFB006	6kW	25.00	30
RFB009	9kW	37.50	45
RFB011	11kW	45.83	50
RFB012	12kW	50.00	63

Output Temperature Control Range: 65°C to 80°C. Operating voltage 200V - 245V 50Hz

Pump supply fuse (internal) T 2A 240V - 20x5mm. 'DEMAND' control input signal requires 200V - 245V 50Hz
'DEMAND' control input signal draws less than 0.25. 10mA typical. Optical isolation between the control signals and the unit supply. High limit switches trip @ 90°C ± 4°C

Linking The Senator Boiler To Off-Peak Electricity

The Senator Boiler can take advantage of low tariff energy provision if programmed to operate in conjunction with off-peak hours. This is achieved by maintaining temperature levels to both the ambient room and the fabric of the building during the off-peak hours. By ensuring temperature levels are satisfied before moving from off-peak to standard rate electricity, the required input during the standard rate period will be minimised.

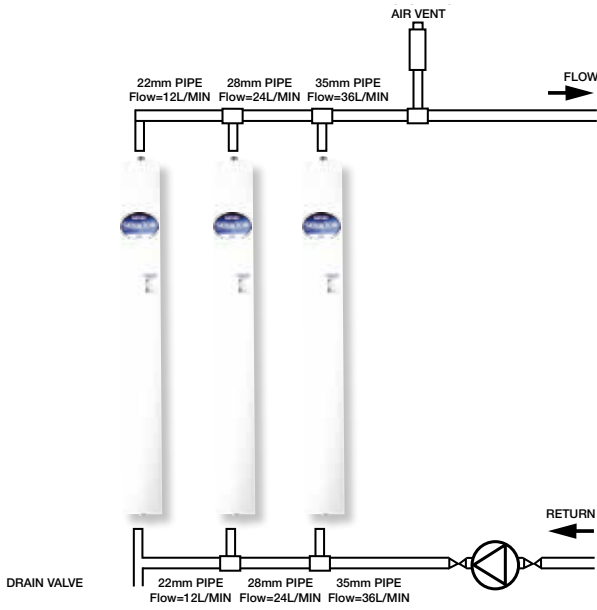
In addition hot water will benefit from these tariffs regardless of whether the cylinder is a separate directly heated unit powered by immersion heaters or a fully integrated indirect unit powered from the Senator Boiler. Either way, if the cylinder is sized correctly for the property usage it may be possible to provide all the hot water requirements from the off-peak tariffs.

Micro Generation Electricity

Should the property have access to Micro Generated Electricity, the usage of this type of power source will reduce operating costs even further. The Senator Boiler is compatible with such supply. It may even be possible for any excess of home produced electricity to be sold back into the supply system.

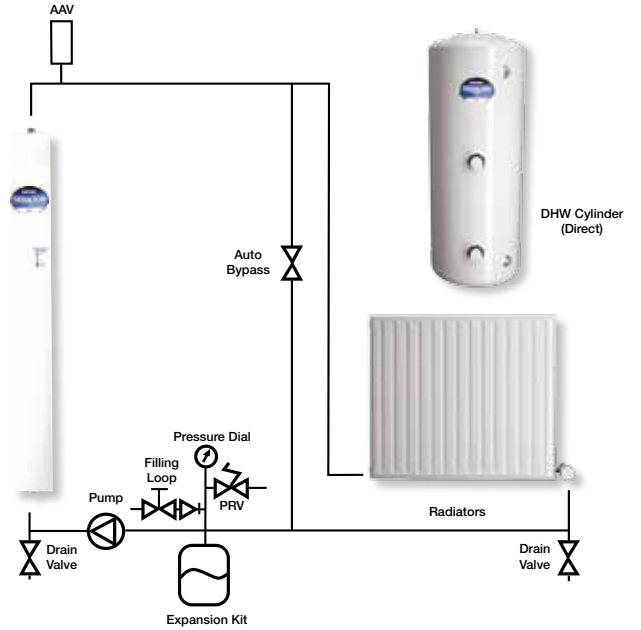


Senator: Coupling Units Together



Multiple boiler installations (up to 3) require pump wiring via relays. Order part No. FBP 0531

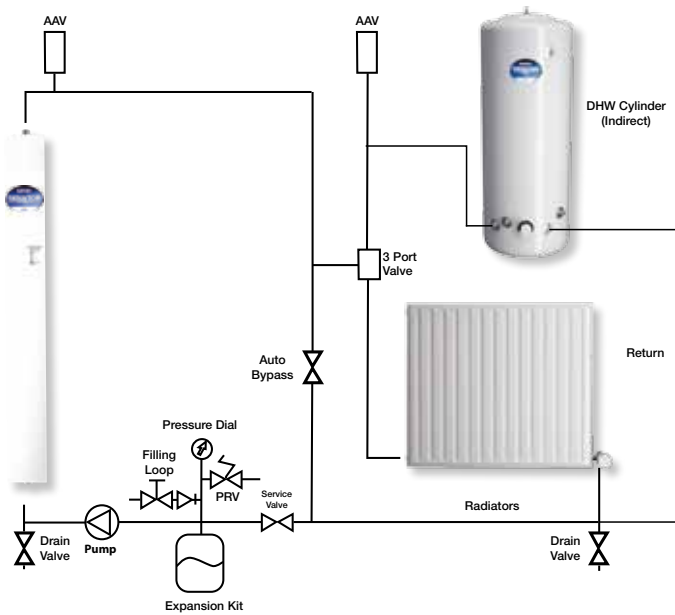
Heating Only Systems



Priority Relay Kits are available if required, order part no. FBP0511

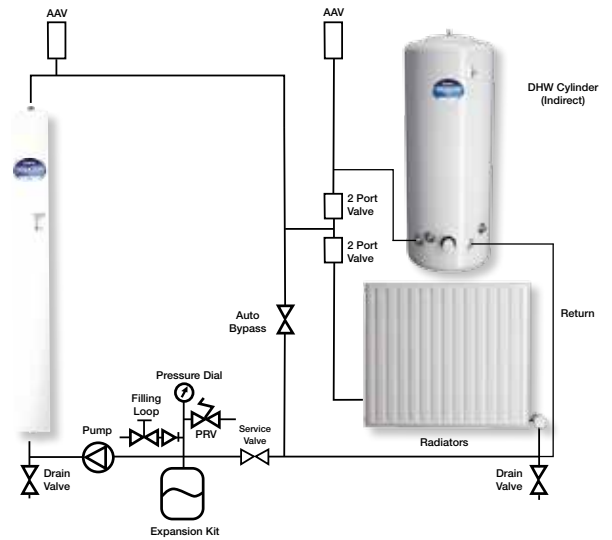
Heating and water heating

Y Plan systems



Y Plan systems require a capacitor. Seek advise from Range Technical Service.

S Plan systems



Priority Relay Kits are available if required, order part no. FBP0511

Products List

Kingspan offer a complete range of renewable energy and related products for both domestic and commercial applications. Our complete solar package solutions include initial advice, professional design specifications and technical assistance through to a network of fully trained Kingspan Solar Accredited Installers who are kept up-to-date with the latest regulations and available grants.

Our range of products consists of:



Tribune HE cylinders, manufactured from Duplex stainless steel, offer the benefits of mains pressure hot water – powerful showers and fast filling baths, making them particularly suitable for use in properties with multiple bathrooms. They offer fast reheat times and exceptionally low heat loss.

Tribune HE range comprises over 50 models in Direct and Indirect version to suit a wide variety of applications. Reduced diameter cylinders are also available, as well as pre-plumbed models designed to save on-site installation time and solar units to use with renewable energy sources.



Albion Water Heaters and Manchester Calorifiers design and manufacture a large range of open vented and unvented calorifiers for commercial and industrial use in copper, stainless steel and mild steel. They also offer marine calorifiers and hot water provision for light commercial vehicles. All products feature high quality, durability and exceptional performance.

For maximum efficiency, units can be custom-designed for each specific application. A renewable heat source, e.g. solar panels, can also be incorporated into the system and sized to meet the heating and hot water requirements of the property.



Kingspan SOLAR

Kingspan Solar Ltd provides the commercial and domestic markets with an ultimate solar package, custom-designed to suit requirements of each individual application.

The Package incorporates high quality flat plate solar thermal panels or high performance Thermomax evacuated tube solar collectors. The system can incorporate the latest condensing boiler technology, underfloor heating or the traditional radiator system. It is then coupled to a high performance Range Tribune HE Duplex stainless steel solar cylinder. The package includes all components required to complete the installation.



Kingspan Climate^{❄️}

This silent solar powered cooling/heating system is perfect for hotter Mediterranean-style climates. The Kingspan Climate package includes the ClimateWell, premium quality Thermomax vacuum tube collectors, controllers and a Kingspan cylinder.

Compact and incredibly cheap to run, the Kingspan Climate can also provide heating for domestic hot water and swimming pools.



Kingspan AEROMAX

Aeromax heat pumps use natural heat from the air outside to provide central heating (underfloor heating or traditional radiators) and/or hot water for your home. Highly efficient, the units are compact and easy to install. Incredibly quiet, they require virtually no maintenance. Offered with complete package solutions and can be coupled with the highly efficient Range Tribune HE renewable energy cylinder to maximise efficiency benefits.



RANGE

Range Cylinders manufacture open vented copper cylinders in over 400 different sizes, types and styles. They are designed to heat up quickly and to retain their heat for long periods, offering a good economical system for domestic applications.

Range of products includes Solarmax - a double feed indirect twin coil cylinder for use with solar collectors. Bottom coil is designed to accept input from a renewable heat source. When this input is not sufficient, the water can be heated by traditional gas, oil or electric boiler.





Senator Guarantee*

The Range Senator electric flow boiler's comprehensive guarantee covers defects originating from faulty workmanship and materials in manufacture of the Duplex stainless steel shell for a period of 5 years and fitted components a period of 2 years. The guarantee covers the replacement of any faulty parts and labour costs to replace them.

*The unit is designed to operate the majority of wet central heating systems in domestic, commercial, industrial and public buildings. It must not be used in an environment that is classified as hazardous and could therefore cause a fire or explosion, or where there is a danger of ignition by a flame path. Conditions apply. Full details of our guarantee terms are published in the products installation instructions or are available separately on request.

Kingspan Hot Water Systems Ltd have a policy of continuous product development and may introduce product modifications from time to time. As a consequence details given in this brochure are subject to alteration without notice.



Hot Water Systems

Range Cylinders

Tadman Street, Wakefield, WF1 5QU
Tel: 01924 376026 Fax: 01924 385015

Technical Helpline: 0845 260 7260
Technical Fax Line: 0845 260 7261

www.range-cylinders.co.uk
www.kingspanhws.com

Issue 02
June 2009