

Albion

Mainsflow Thermal Store



Exceeding the Standard



INTRODUCTION

Mainsflow Thermal Store

Mainsflow is a thermal storage system, able to supply balanced mains pressure hot water and suitable for use in both new build and existing properties. Mainsflow combines the advantage of mains pressure hot water with the safety of traditional open vent storage in one versatile system. The units are supplied as a complete one box package to ensure simple and easy installation.

A selection of models is available to suit requirements of various applications. Mainsflow Contractor units are usually heated by traditional gas or oil fired boiler, however their flexibility and versatility allows for them to be used with alternative energy sources, such as solar or solid fuel. In addition to hot water, Mainsflow Contractor can also provide heat directly to space heating.

Mainsflow Electric Contractor is specifically designed to provide mains pressure hot water in properties, where a gas or oil supply is not available or where the installation of boilers is not practical. Easy to install and quiet in operation, Mainsflow Electric Contractor is the ideal choice for flats, apartments and all-electric buildings.

The advantages of Mainsflow

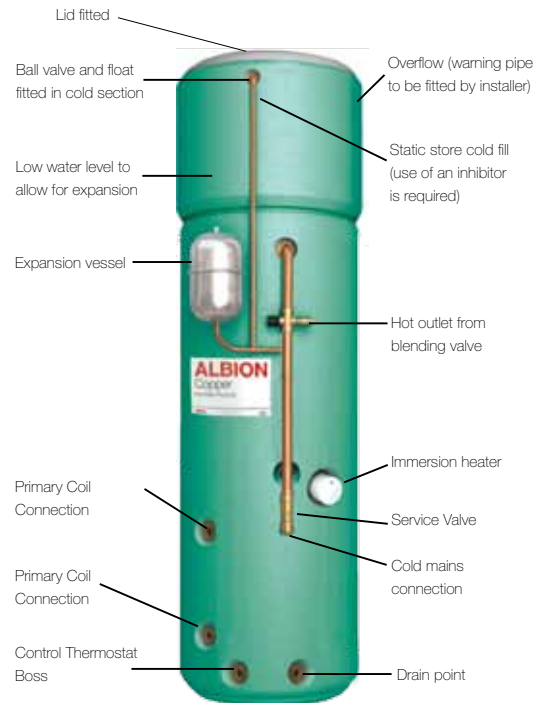
Mainsflow Contractor is a thermal store system heated from a gas, LPG or oil fired boiler, suitable for use in both new build and existing property refurbishment.

- Mains fed hot water throughout the home.
- No tanks in the loft.
- Flow rate more than double most combination boilers.
- Hot water temperature of 55°C.
- Mains pressure showering without a pump.
- Fills a bath in 3 minutes.

Great Performance

Mainsflow Contractor can provide hot water at a controlled temperature of up to 55°C with flow rates of up to 30 litres per minute - filling a bath in less than 3 minutes.

Mainsflow Contractor is suitable for a wide range of properties from a single bathroom home to three bathroom applications - for larger requirements two units may be linked together.



The benefits of Mainsflow Contractor

Albion Mainsflow Contractor pressurised hot water systems really are mains pressure made simple and the benefits are being enjoyed by many specifiers, developers, installers and homeowners alike.

Specifiers and developers have the confidence that by approving the Mainsflow Contractor they have chosen a product backed with a proven track record in the industry.

Installers know the Albion Mainsflow Contractor one box package has all the necessary components included to ensure a first time correct installation that is easy and simple to install and maintain.

Home owners have peace of mind with the benefits of dry loft space, high performance showering and economical running costs providing plenty of hot water to keep pace with the rigours of modern lifestyles.

Mainsflow contractor is the right choice.

Simple to install

The Mainsflow Contractor is exempt from G3 of the Building Regulations.

Mainsflow Contractor does not require expensive metal discharge pipe, just a standard 22mm plastic solvent-weld overflow.

Mainsflow Contractor does not have an air bubble or large expansion vessel to maintain - and no pressure/temperature relief valves to maintain either.

Only basic annual maintenance is required.

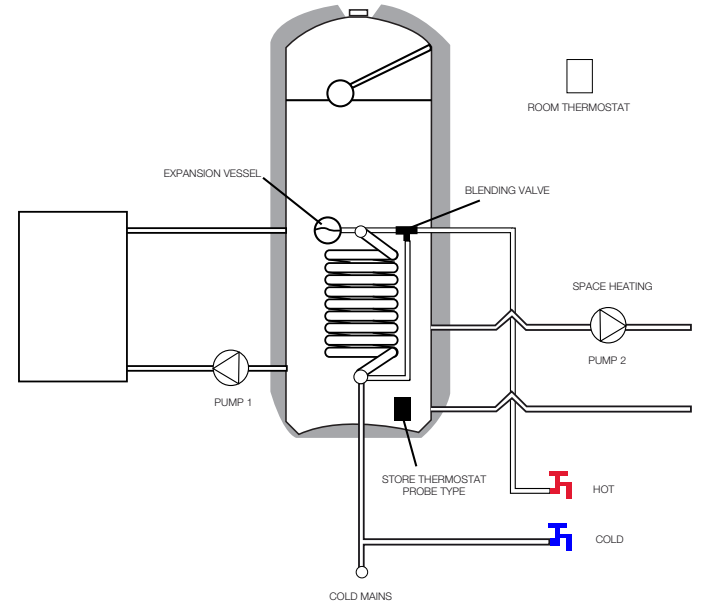
Direct Mainsflow Contractor

The Direct Mainsflow Contractor has one coil and is heated directly by the boiler. The stored water within the Mainsflow is primary water flowing throughout the boiler and radiator circuits. The store thermostat controls pump 1 and the boiler to heat the store. The boiler operates on maximum setting (choose a boiler with a flow minimum 80°C) and heats the store to 75°C. In turn the room thermostat will operate pump 2 and circulate hot water around the radiator circuit providing instant heat - a very useful benefit on cold winter mornings.

Mainsflow Direct units function in open vented primary systems. The feed and vent must be at the highest level in the system. They are not compatible with sealed primary systems.

Direct Mainsflow thermal store systems are designated Integrated Thermal Store.

Contractor Direct



Indirect Mainsflow Contractor

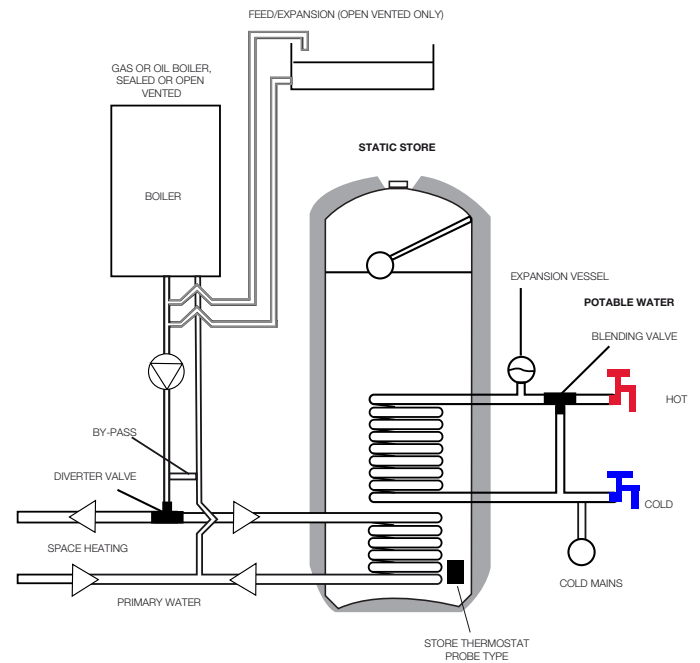
The Indirect Mainsflow Contractor has two coils and is heated indirectly by the boiler. The stored water in the Mainsflow is static and separate from the primary water by virtue of the Superduty Multicoil heat exchanger mounted in the base of the Mainsflow Indirect store.

Compatible with both 'Y' plan and 'S' plan control systems Mainsflow Indirect Contractors may be used with boilers with or without pump over-run in traditional open vented or sealed primary systems. The static store remains open vented. The space heating is powered directly from the boiler.

Indirect Mainsflow thermal store systems may be sited anywhere in the property - it is not necessary to be at the highest point of the system.

Indirect Mainsflow thermal store systems are designated Hot Water Stores.

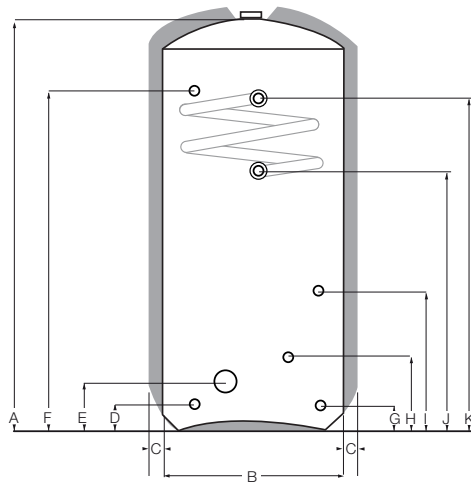
Contractor Indirect



Hot Water Provision

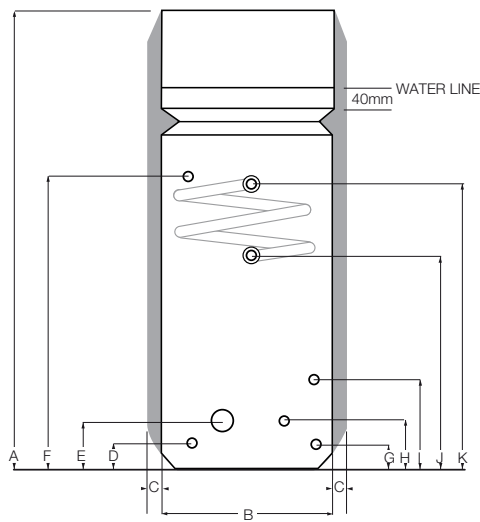
The provision of hot water in both Direct & Indirect Mainsflow Contractor is identical. Cold water from the mains passes through the heat exchanger, extracting heat from within the store and delivering hot water via a blending valve to all hot outlets throughout the home.

Mainsflow Contractor Direct



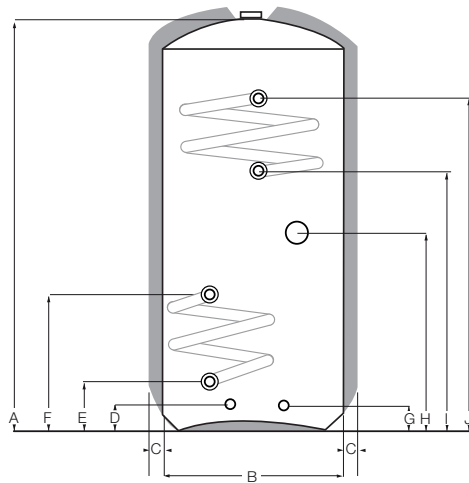
CAPACITY (Litres)	A (Height)	B (Diameter)	C (Insulation)	D (Boiler Return)	E (Immersion Heater Boss)	F (Boiler Flow)	G (Heating Return)	H (Thermostat)	I (Heating Flow)	J (Potable Coil)	K (Potable Coil)
120	900	450	50	100	150	700	100	200	300	400	700
140	1050	450	50	100	150	850	100	200	300	450	850
160	1200	450	50	100	150	1000	100	200	400	600	1000
180	1350	450	50	100	150	1150	100	200	400	750	1150
210	1500	450	50	100	150	1300	100	200	400	900	1300
250	1800	450	50	100	150	1600	100	200	400	1200	1600

Mainsflow Contractor Direct Combi



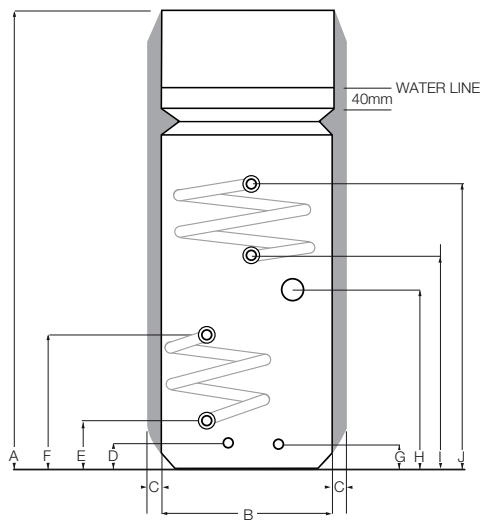
CAPACITY (Litres)	A (Height)	B (Diameter)	C (Insulation)	D (Boiler Return)	E (Immersion Heater Boss)	F (Boiler Flow)	G (Heating Return)	H (Thermostat)	I (Heating Flow)	J (Potable Coil)	K (Potable Coil)
120	1100	450	50	100	150	700	100	200	300	300	700
140	1240	450	50	100	150	850	100	200	300	450	850
160	1400	450	50	100	150	1000	100	200	400	600	1000
180	1550	450	50	100	150	1150	100	200	400	750	1150
210	1700	450	50	100	150	1300	100	200	400	900	1300
250	1995	450	50	100	150	1600	100	200	400	1200	1600

Mainsflow
Contractor
Indirect



CAPACITY (Litres)	A (Height)	B (Diameter)	C (Insulation)	D (Thermostat)	E (Coil)	F (Coil)	G (Feed)	H (Immersion Heater Boss)	I (Potable Coil)	J (Potable Coil)
120	900	450	50	80	100	350	80	N/A	400	700
140	1050	450	50	80	100	350	80	400	450	850
160	1200	450	50	80	100	400	80	450	600	1000
180	1350	450	50	80	100	400	80	450	750	1150
210	1500	450	50	80	100	400	80	450	900	1300
250	1800	450	50	80	100	400	80	450	1200	1600

Mainsflow
Contractor
Indirect Combi



CAPACITY (Litres)	A (Height)	B (Diameter)	C (Insulation)	D (Thermostat)	E (Coil)	F (Coil)	G (Drain)	H (Immersion Heater Boss)	I (Potable Coil)	J (Potable Coil)
120	1100	450	50	80	100	350	80	N/A	400	700
140	1240	450	50	80	100	350	80	400	450	850
160	1400	450	50	80	100	400	80	450	600	1000
180	1550	450	50	80	100	400	80	450	750	1150
210	1700	450	50	80	100	400	80	450	900	1300
250	1995	450	50	80	100	400	80	450	1200	1600

Choosing the right product

Capacity (litres) Size	Application (to BS6700)	Boiler (x1000 btu)	Sizing (kW)	Reheat time	Weight (empty)	Weight (full)
120 1100 x 550	Small to average 2/3 bedroom houses with standard single bath and shower above bath	30	9	60 min.	33	153
140 1240 x 550	Family houses, single bathroom properties with en-suite shower	40	12	40 min.	35	175
160 1400 x 550	Twin bathroom properties (2 standard baths or showers)	50	15	30 min.	36	196
180 1550 x 550	Twin bathroom properties (1 standard and 1 larger bath)	60	18	45 min.	37	217
210 1700 x 550	3 standard or 2 large baths	80	24	40 min.	39	249
250 1995 x 550	2 large or 3 standard baths and 2 en-suite showers	100	30	40 min.	41	291

Boiler Sizing: The table suggests the minimum boiler sizes to achieve the required performance of each unit.

Size may include heating load with a minimum allowance of 10,000 btu (3kW) for hot water. Where smaller boilers are used recovery times/ performance will be reduced. The use of a modulating boiler may increase recovery times.

System design

A well designed Mainsflow installation will provide superb quality hot water around the house and will help to reduce overall heating bills.

It is important to pay particular attention to the information relating to design, sizing and controls to get the best out of the system.

All units come with full installation and user guides.

As with all mains fed systems, it is obligatory to install certain components. The Albion Mainsflow Contractor is supplied complete with all the required controls for the delivery of safe hot water.

Approvals and standards

Albion Mainsflow units are designed to comply with the WMA Specification for Thermal Store systems.

Mainsflow units now form part of the National Home Energy Rating System (NHERS).

The systems are compatible with gas or oil fired boilers.

Albion Mainsflow units meet all flowrate and performance specifications laid down by BS6700.

Mainsflow thermal store systems have been successfully used by many leading house builders, local authorities and housing associations.



How does Mainsflow compare

It is worth comparing the hot water performance of the Mainsflow system with that of other systems. For instance, Mainsflow will provide hotter water with much higher flow rates than a combination boiler.

Combination Boiler	
Output	Flow Rate
24 kW	9.5 lpm
28 kW	11.5 lpm
34 kW	13.5 lpm

Mainsflow Contractor	
Capacity	Flow Rate
120	20 lpm
140	25 lpm
160	30 lpm

Typically combination boiler flow rates are based upon a temperature rise of only 35°C.

Mainsflow will deliver hot water at up to 55°C.

Flow rates are dependent upon the capability of the incoming main.

The above performance figures for combination boilers do not relate to any specific boiler manufacturer, but are typical for the quoted outputs.

Flow rates

When choosing Mainsflow, installers and specifiers must take into account flow rates and pressure. The units are designed to deliver hot water at given flow rates and it is therefore important to ensure that the mains supply into the property is adequate, i.e. a minimum of 2 bar pressure at 20 litres per minute for single bathroom applications and appropriately for larger installations.

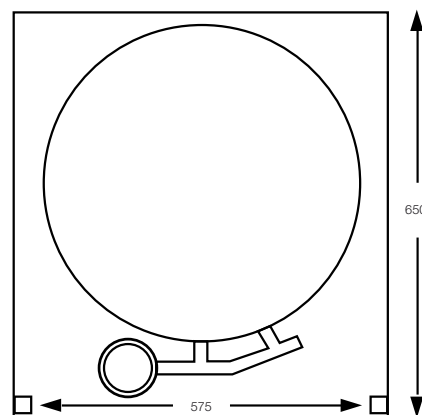
Flow rates must be controlled to reflect the performance of the unit, e.g. 160L units must be restricted to a maximum hot water flow of 30 litres per minute.

Likewise, pipework distribution within the property must be designed to suit the requirements of all terminal fittings such as shower mixers and taps.

Mainsflow contractor specification

- Cylinder models are suitable for a maximum working head of 10 metres with separate feed and vent pipes. If a combined feed and vent pipe is used the maximum working head must not exceed 6 metres.
- Direct unit primary connections are 22mm on units up to and including 160 litres and 28mm on larger sizes.
- Indirect primary connections are 22mm across the range.
- Potable connections are 22mm on all units.
- All tappings are within a 90° arc to assist access on installation and maintenance.
- All Mainsflow Contractor units are boxed to ensure the product arrives in good condition.

Mainsflow units fit through a standard 600mm doorframe (575mm actual), and require a footprint area of 650mm x 600mm.



N.B. All diagrams are schematic only. It is the installer's responsibility to ensure any legal installation requirements are adhered to.

Reference should be made to the advice contained within this page and to the installation instructions. Albion cannot be held responsible if this advice is not complied with.

Pressure reducing valves should be fitted where incoming mains exceeds 3.5bar.

Take into account overnight increases in mains pressure.

In areas where CaCo₂ is greater than 200 mg/l suitable dosing/scale eliminators should also be fitted. Before a softener is used the system must be driven for six months to build up a protective copper patina. A bye-pass pipe can be fitted to allow this.

Potable controls must be fitted and all expansion allowed for.

All boiler manufacturers instructions must be complied with.

Due to our policy of continuous improvement, we reserve the right to alter product specifications without prior notice.

Multi-fuel options

Using thermal store with solar power, cooking appliances, solid fuel and underfloor applications

With cold water storage out of the loft space and hot water performance that's hard to beat, it isn't surprising that customers seek to use these benefits with alternative fuels and space heating systems.

The Albion Mainsflow thermal store system is flexible and can be used in a number of dual-fuel and space heating options.

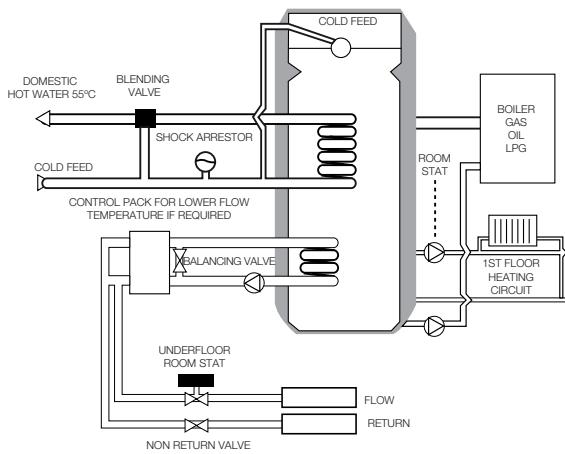
The schematics shown here demonstrate this flexible approach to heat source and heat emitter.

The schematics also provide a basis for other designs - as long as the appropriate balance between input and output is achieved alongside safe, controlled system design.

These products are supplied as Mainsflow Contractor specification.

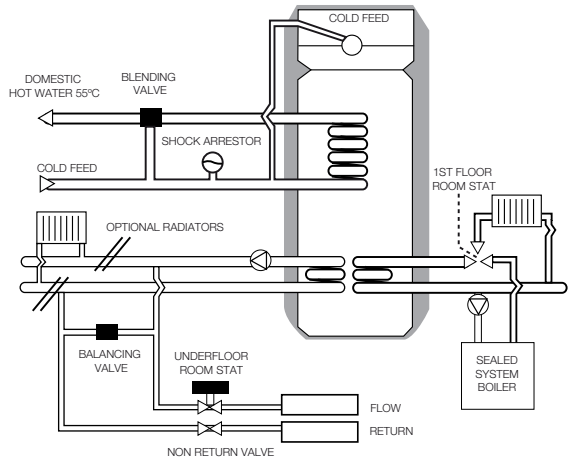
OPTION 1

Open vented primary boiler / underfloor circuit ground, radiators first floor



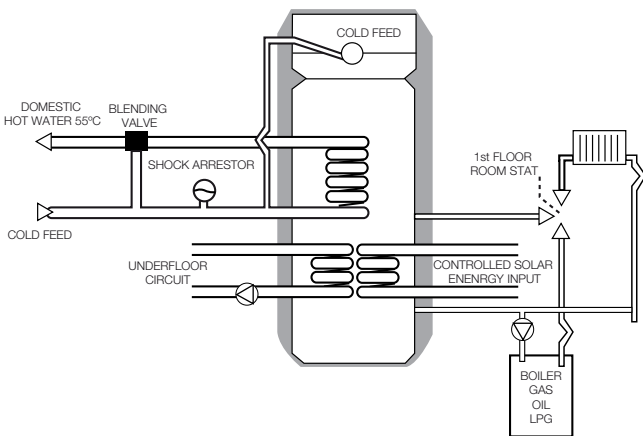
OPTION 2

Sealed primary system - underfloor or radiator ground floor, radiator first floor



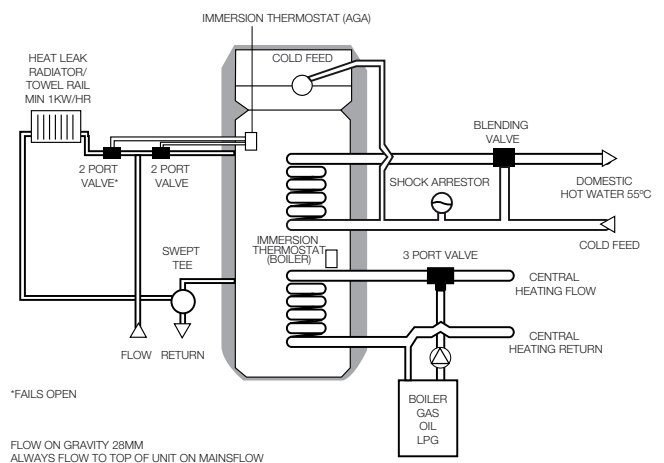
OPTION 3

With solar input open vented primary boiler/underfloor ground floor, radiators first floor.



OPTION 4

Integrated hot water and heating with conventional boilers and Aga rayburn solid fuel as alternative heat source suitable for gravity flow / return



Mainsflow and Multi-fuel sizing & application		
MFM Combi	Size*	Application
30 / 180	1550 X 450	Family houses, single bathroom properties with en-suite shower.
30 / 210	1700 X 450	Twin bathroom properties (2 standard baths or showers).
30 / 250	1995 X 450	3 standard or 2 large baths.

Suggested minimum boiler sizes to achieve required performance of the following sizes		
MFM Combi	1000 BTU's	Kilowatts
30 / 180	60 Plus	18 kW Plus
30 / 210	80 Plus	20 kW Plus
30 / 250	100 Plus	30 kW Plus

*excludes foam insulation - please add 100mm to diameter

The first 2 digits of the product code relate to flow rate in litres per minute. The following 3 digits indicate capacity in litres.

Mainsflow Electric

A NEW all-electric mains pressure hot water system with all the benefits of thermal storage

The Mainsflow Electric is specifically designed to provide mains fed hot water in properties where a boiler is not available.

Operating from electrical input only, these clean and quiet units are easy to install, overcoming difficulties associated with unvented units, particularly in flats and apartments. A 22mm solvent weld plastic overflow is all that is required.

Mainsflow Electric Contractors are fitted with two 3kW immersion heaters to utilise off-peak tariffs and to provide a top-up boost at day rate tariff to deliver a further 35 litres of usable water if required during peak periods. Higher rated immersion heaters are available on request. Each unit is a self contained open vented store with header tank. It can be sited anywhere in the property. Contractor controls include a pre-plumbed package with isolation valve, flow controller, expansion vessel, blending valve and ball valve with copper float. A pressure reducing valve is supplied loose. Special inhibitor is provided for the store.

- High flow rates 20 litres per minute
- Standard overflow arrangement
- 4 models available
- Utilises off-peak tariffs
- Inhibitor supplied
- 5-year guarantee*

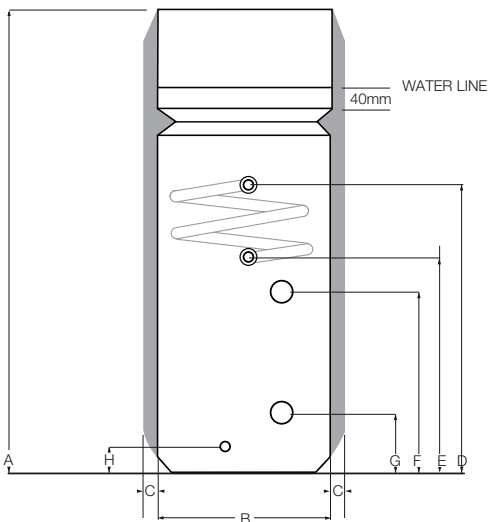
*5-year guarantee on shell, 2-years on components.

Capacity	Typical Application
160 /180 Litres	Single bath / shower over bath, 1 bed, 2 persons
210 Litres	Single bath plus 1 shower, 2 bed, 3 persons
250 Litres	Single bath plus 1 shower, 3 bed, 4 persons

Note: Normal bathing temperatures are 40°C and a standard bath is designed as 100 litres at 40°C in BS6700.

Store Capacity	Litres available at the hot tap		
	@50°C	@45°C	@40°C
160/180 Litres	100	120	150
210 Litres	125	155	190
250 Litres	150	190	230

Incoming cold mains not exceeding 10°C.
Ambient temperature not exceeding 20°C.
Store temperature charged to 80°C.
Flow rate at outlet 20 lpm.



CAPACITY (Litres)	A (Height)	B (Diameter)	C (Insulation)	D (Potable Coil)	E (Potable Coil)	F (Immersion Heater)	G (Immersion Heater)	H (Drain)
160	1400	450	50	1000	600	410	150	80
180	1550	450	50	1150	750	550	150	80
210	1700	450	50	1300	900	710	150	80
250	1995	450	50	1600	1200	1010	150	80

Albion Water Heaters - a market leader in the manufacture and supply of quality hot water systems.

Albion Water Heaters, part of Kingspan Group, is a major manufacturer of Domestic Hot Water storage systems in the UK and offers products backed by the service and technical development skills that only a company of its size can.

All sites are licensed to British Standards quality assurance BS EN ISO 9001:2008 and Albion is a BSI registered firm. This means that all manufacturing plants are monitored by an independent inspectorate and the quality systems employed by Albion meet the stringent requirements set down. Specifiers, stockists and users can depend on Albion for consistent quality and supply.

Albion continues to develop energy saving and innovative hot water products for domestic and commercial applications.

Guarantee

Albion Mainsflow cylinders carry a 5-year guarantee against faulty materials or manufacture provided that:

- They have been correctly installed in line with all the relevant standards, regulations and codes of practice in force at that time.
- They have not been modified in any way, other than by Albion.
- They have not been misused, tampered with or subjected to neglect.
- The system is fed from the public mains water supply.
- They have only been used for the storage of potable water.
- They have not been subjected to frost damage.
- The benchmark sticker on the cylinder has been signed and dated by the installer.
- The guarantee period starts from the date of purchase and no registration is required.
- All the components fitted to/or supplied with the cylinder carry a 2-year guarantee.

Exclusions

The guarantee does not cover:

- The effects of scale build up.
- Any labour charges associated with replacing the unit or its parts.
- Any consequential losses caused by the failure or malfunction of the unit.



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

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