CALORIFIERS / WATER CYLINDERS

MS RANGE

MS RANGE APPLICATION

The MS range is primarily intended for building services applications where there is a requirement for electric water heating to cater for domestic hot water (DHW) services. Typical applications include hotels, schools, hospitals, health centres, nursing homes, sports centres and marine applications on vessels and rigs. Other applications have been supplied where a requirement for electrically heated hot water exists.

A calorifier is simply the name given to a large hot water tank, also known as hot water cylinder or vessel.

The MS range caters for applications that require direct electric heating (indirect heating is where the heat is generated outwith the hot water vessel such as in a gas boiler or heat pump). The vessel can be supplied with an internal coil for connection to a heat pump or conventional boiler. An electric heater is ideal for backing up the alternative heat source or providing a boost during periods of peak hot water demand. The MS range can also be used to store heat from wind and hydro renewable energy sources.

Heater kW loadings ranging from 3kW to 300kW can be supplied. Two immersion heaters can be fitted, one at the bottom to heat the full cylinder with the option of a second immersion heater closer to the top of the vessel to act as a boost if required.

The electric heaters can be multi circuit with supplies from different sources, e.g. solar PV and mains electricity.

Control panels can be supplied either separately or mounted and wired on the vessel incorporating all the necessary controls including circulation and anti-legionella pumps.

The vessel is constructed to suit the application and specification. Vessels to our standard design can be supplied in copper, mild steel, copper lined mild steel and stainless steel. They can be designed to operate in unvented (pressurised) and vented systems.

IMMERSION HEATER SELECTION

The Howden RX, WR, FE, BF, GE and RE ranges are all suitable for fitting to MS vessels.

Where the vessel diameter is not large enough to accommodate the immersed length of an immersion heater, multiple smaller heaters can be fitted to the vessel, one above the other.

An aid to selecting the appropriate immersion heater is as follows:

RX and WR:	RX (3-12kW) and WR (3-24kW) are suitable as the main heat source for small hot water requirements or for use as a boost heater in the top of the cylinder. The heaters are single circuit. The elements are fixed type and therefore if an element fails, the full heater requires to be replaced.
FE	FE (6-120kW) is suitable for use as the main heat source. The FE can be split into a limited number of circuits. The elements are fixed type and therefore if an element fails, the full heater requires to be replaced.
BF and GE	BF (6-60kW) and GE (12-300kW) are suitable as the main heat source. The BF can be split into a limited number of circuits, however, the GE can be split into many circuits. The elements are glanded type so individual elements can be replaced.
RE	RE (9-126kW) is suitable for use as the main heat source. The RE can be split into many circuits. The elements are of ceramic core type and individual elements can be replaced without having to drain and remove the heater from the vessel. However, please note an RE heater is substantially larger and more expensive compared to a similar kW rated GE type heater.

Further information on the immersion heater ranges above can be found in the product information sheet specific to the immersion heater range. If you require assistance please contact our Technical Department for further details.

CONNECTIONS & FITTINGS

The vessel will be supplied with thermometer, pressure gauge, pressure relief valve and drain cock as standard.

The vessel is supplied with connections for secondary return, temperature pressure relief valve, anti-vacuum valve, low level sensor and anti-legionella pump connections as standard.

An inspection hatch is optional.

TEMPERATURE CONTROL

A control thermostat, with a range of 37-90^{o}C rated to 20 Amps and an over-temperature cut-out thermostat, with a range of 45-95°C rated to 16 Amps are supplied as standard. Thermostats are positioned to avoid thermostat and contactor cycling.

Control panels can be supplied incorporating all necessary controls (see TC range).

OPERATING TEMPERATURE & PRESSURE

The MS range is generally suitable for pressure ranges from 1 to 10 bar inlet pressure. The pressure rating may affect which immersion heater ranges are available. The maximum operating temperature is 90^{o}C.

INSTALLATION

Refer to the diagram on the opposite page for the standard layout of the vessel. As vessels are custom manufactured, vessel dimensions and connection locations can be provided to suit your requirements.

CONSTRUCTION

The MS range of calorifier is manufactured generally to BS843.

The cold entry is baffled to promote heat stratification. The standard insulation specification is mineral fibre insulation encased in stucco aluminium cladding

COMMON OPTIONS

Please contact our Technical Department for further details.

- See relevant heater catalogue sheets for options.
- Pressurised (unvented) system kit.
- Low level sensor.
- Temperature pressure relief valve.
- Anti-legionella pump.
- Inspection hatch.
- Anti-vacuum valve.
- Fully packaged with control panel.

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MS RANGE

STANDARD LIST NUMBERS

LIST No.		CAPACITY (Litres)	OUTER DIAMETER (mm)	HEIGHT (mm)	INLET HEIGHT 'D' (mm)	HEATER MAX. IMMERSED LENGTH (mm)	No. OF FLANGES	INLET / OUTLET CONNECTIONS (BSP)	SECONDARY RETURN CONNECTION (BSP)	APPROX. WEIGHT EMPTY (kg)	APPROX. WEIGHT FULL (kg)
25m WORKING HEAD	10m WORKING HEAD										
MS101	MR101	255	600	1700	300	457	1	1½"	1½"	85	340
MS102	MR102	290	610	1875	300	457	1	1½"	1½"	96	386
MS103	MR103	370	760	1650	380	550	1	2"	2"	118	488
MS104	MR104	450	760	1950	500	550	1	2"	2"	133	588
MS105	MR105	450	760	1950	500	550	2	2"	2"	133	588
MS106	MR106	550	825	1900	520	635	1	2"	2"	180	730
MS107	MR107	550	825	1900	520	635	2	2"	2"	180	730
MS108	MR108	700	900	1950	540	710	1	2"	2"	210	910
MS109	MR109	700	900	1950	540	710	2	2"	2"	210	910
MS110	MR110	900	950	2200	540	760	1	2"	2"	245	1145
MS111	MR111	900	950	2200	540	760	2	2"	2"	245	1145
MS112	MR112	1250	1055	2300	570	860	1	2"	2"	290	1540
MS113	MR113	1250	1055	2300	570	860	2	2"	2"	290	1540
MS114	MR114	1500	1195	2150	620	1015	1	2"	2"	357	1860
MS115	MR115	1500	1195	2150	620	1015	2	2"	2"	357	1860
MS116	MR116	1800	1200	2500	620	1015	2	2"	2"	390	2140
MS117	MR117	1800	1200	2500	620	1015	3	2½"	2½"	390	2140
MS118	MR118	2000	1200	2700	620	1015	2	2½"	2½"	430	2430
MS119	MR119	2000	1200	2700	620	1015	3	2½"	2½"	430	2430
MS120	MR120	2500	1345	2650	645	1145	2	2½"	2½"	500	3000
MS121	MR121	2500	1345	2650	645	1145	3	2½"	2½"	500	3000
MS122	MR122	3000	1345	3100	645	1145	2	2½"	2½"	570	3570
MS123	MR123	3000	1345	3100	645	1145	3	2½"	2½"	570	3570

MS Vessel General Arrangement