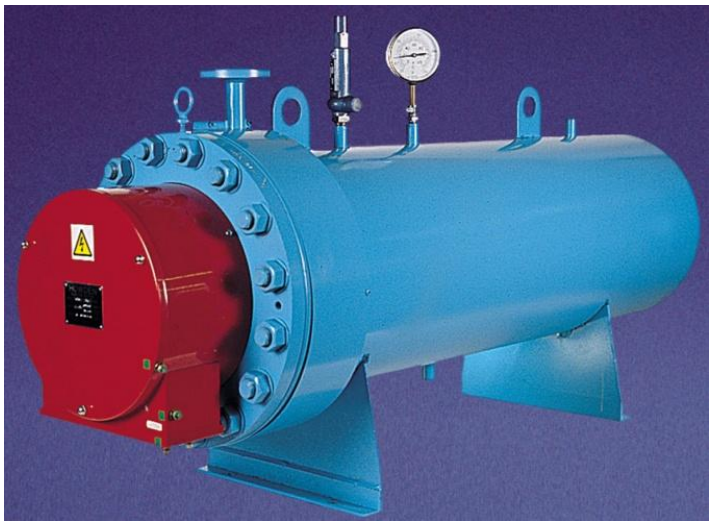
FLOW / LINE HEATERS

CH, EH & FH RANGES



CH/EH/FH RANGE APPLICATION

The CH, EH and FH ranges of flow heater or boiler are designed to heat water, oils, caustics and other chemical solutions instantaneously in building services, industrial, process, pharmaceutical and marine applications. They are suitable for applications where a continuous and steady demand for heat is required. Flow heaters are ideal when used as a backup or boost for heat pumps or conventional boilers.

The vessel body can be constructed from either copper, mild steel or stainless steel, and is insulated with mineral fibre insulation encased in stucco aluminium cladding. The units are suitable for operation in vented or unvented systems. It should be noted that an unvented system requires the addition of an expansion vessel and appropriate controls.

A guide to vessel material suitability is generally as follows:

Copper (CH):	suitable for closed and open systems and generally recommended if there is chlorine in the water. Copper also has anti-bacterial properties.
Mild Steel (EH):	suitable for closed systems only or oil heating.
Stainless Steel (FH):	suitable for closed and open systems.

The unit is fitted with either a GE (glanded rod type elements) or an RE (ceramic core type elements) immersion heater. Please refer to our product information sheets on the available heater options for further details.

Maximum kW loadings depend on application and are available in three phase configurations from 12kW to 750kW. Units can be linked in parallel or in series to obtain higher outputs. For low kW loads our MH or EC ranges may also be suitable.

The flow heater is suitable for either stage control or thyristor control. Temperature control can be by thermostat or a temperature sensor such as a PT100 (RTD) or thermocouple.

All units are fitted with a pressure relief valve as standard.

STANDARD RANGE

The standard CH, EH and FH ranges of flow heater are designed to heat water in building service, industrial and process applications. The design of the unit is shown in the diagram overleaf.

SPECIALIST APPLICATIONS

The CH, EH, and FH range is extremely flexible and our Technical Department can provide specifications suitable for many applications. To obtain a quotation or further information please contact our Technical Department.

MOUNTING & CONNECTIONS

The vessel is suitable for horizontal mounting and has support legs to attach the unit to the floor, supporting steel framework or skid. Vertical mounting units can be supplied. Please contact our Technical Department.

All connections are internally threaded BSP as standard, however, flanged connections can be supplied. The inlet and outlet connections are sized to suit your pipework. Connections are supplied for a thermometer, pressure gauge, pressure relief valve, level sensor and drain. Additional connections can be supplied. Please contact our Technical Department.

The standard heater flange specification is to BS EN 1092-1 (replaces BS 4504) PN6. Alternative flange specifications and pressure ratings are available. Please contact our Technical Department.

For detailed vessel dimensions please contact our Technical Department.

TEMPERATURE CONTROL

All standard models are supplied with a control thermostat and over-temperature cut-out thermostat.

Additional thermostats can be fitted (where space permits) to allow control of one stage per thermostat.

Alternatively, the heater can be fitted with a temperature sensor such as a PT100 (RTD) or thermocouple wired to a PID temperature controller outputting to a step controller or thyristor.

Where the electricity supply is three phase, the heater must be wired through a contactor switch. Howden Electric can supply control panels incorporating all necessary controls. Please refer to our TC range.

OPERATING TEMPERATURE & PRESSURE

Standard models have a maximum operating temperature of 90^{o}C and a maximum operating pressure of 10 Bar. Higher operating temperatures and operating pressures can be supplied. Please contact our Technical Department.

VOLTAGE

Three phase heaters from our standard range are are suitable for all 400/415 volts, 3 or 4 wire supplies.

Non-standard models can be supplied designed to suit operating voltages from 110V to 690V AC or DC. Please contact our Technical Department.

CONSTRUCTION

The vessel is manufactured to Sound Engineering Practice (SEP) and is constructed from either copper, mild steel or 316 stainless steel. Copper vessels are brazed. Mild steel and stainless steel vessels are welded. Vessels are insulated with mineral fibre insulation encased in stucco aluminium cladding. On stainless steel vessels, a moisture barrier is applied to the vessel below the insulation to prevent chloride stress corrosion cracking.

All vessels are supplied complete with thermometer, pressure gauge and pressure relief valve.

Please refer to the heater range (GE or RE) for further details on the heater construction. The heater is sealed to the vessel flange with a WRAS approved fibre gasket.

COMMON VARIATIONS

Please contact our Technical Department for further details.

- Inlet and outlet can be screwed BSP or any common flange specification.
- Heater flange can be any common flange specification.
- The length of the units can be varied to suit the space available.
- Various accessories are available such as temperature pressure relief valves, low level switches, expansion vessels, unvented kits, etc.
- Appropriate control panels can be supplied..
- Units can be mounted piggy back.

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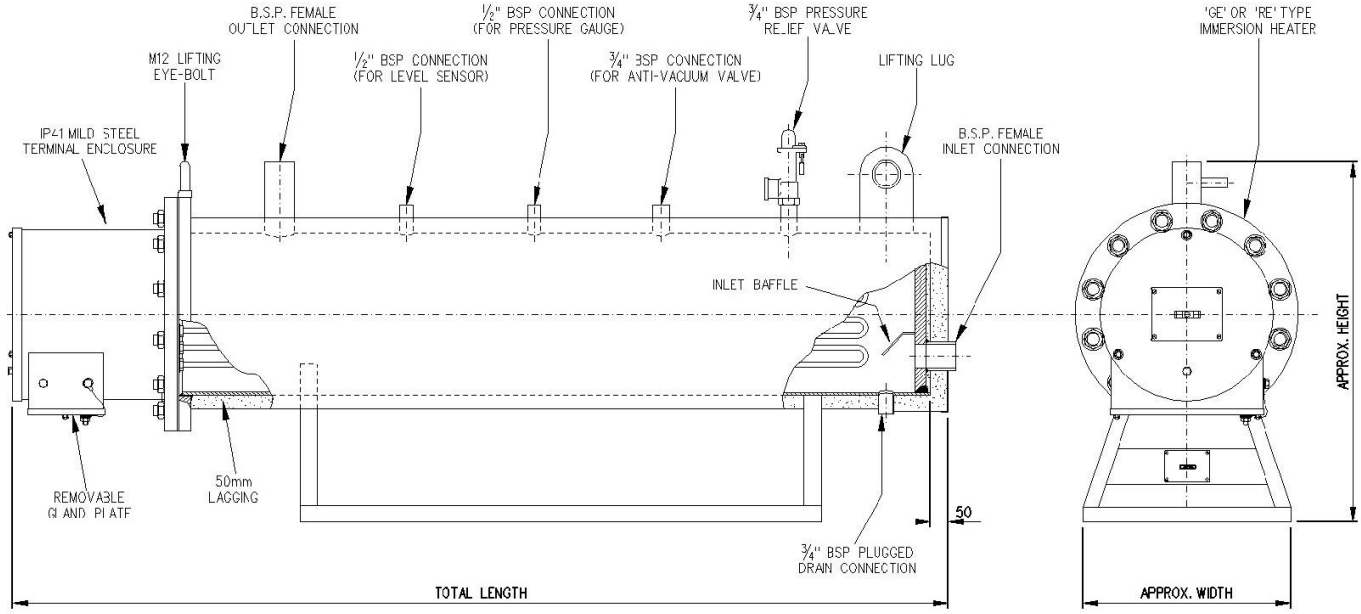
STANDARD LIST NUMBERS

LIST No's			kW LOAD @ 415V	OUTPUT (BTUs/Hr) x 1000	APPROX. WEIGHT (FULL) (kg)	APPROX. LENGTH mm	APPROX. WIDTH mm	APPROX. HEIGHT mm
COPPER	MILD STEEL	STAINLESS STEEL						
CH101	EH101	FH101	12	40	257	1800	265	850
CH102	EH102	FH102	24	81	360	1800	265	850
CH103	EH103	FH103	30	102	375	1800	265	850
CH104	EH104	FH104	60	204	480	1830	320	1000
CH105	EH105	FH105	90	307	500	1900	375	1080
CH106	EH106	FH106	120	409	510	1900	440	1120
CH107	EH107	FH107	150	511	530	1900	440	1120
CH108	EH108	FH108	180	614	750	2010	490	1200
CH109	EH109	FH109	240	814	760	2010	540	1220
CH110	EH110	FH110	300	1023	780	2010	595	1600

CH/EH/FH General Arrangement



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