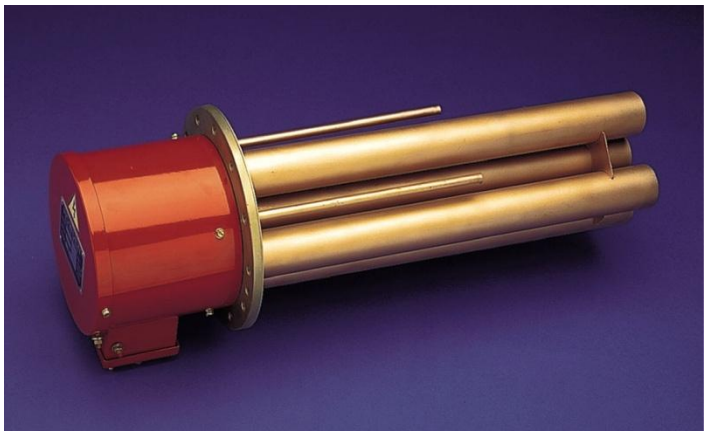
IMMERSION HEATERS

RE RANGE



RE RANGE APPLICATION

The RE range of immersion heater is used to heat water in building service applications or heat water, oil and other liquids in industrial, process, pharmaceutical and marine applications. The range is specifically designed to allow the elements to be withdrawn from the heater without requiring the vessel to be drained or the heater removed from the vessel. This feature significantly reduces maintenance costs and down time.

The heaters can be fitted to calorifiers, flow vessels, hot water cylinders, water heaters, water tanks, buffer vessels, oil and caustic tanks and oil line heaters.

Immersion heaters are ideal when fitted to calorifiers, buffer vessels or heat stores to be used as a backup or boost for heat pumps or conventional boilers.

The RE range features a ceramic core heating element which is fitted inside a metal sheathed element tube. This construction results in low watts density elements which are ideal for heating hard water, oil, caustics and various other liquids.

STANDARD RANGE

The standard RE range of immersion heaters is designed to heat water in building service, industrial and process applications. kW loadings between 6kW to 126kW are available in three phase star or delta configurations.

The standard RE range is fitted with copper element tubes which have a watts density of 3.1 W/cm^2 (20W/in^2), offering improved performance in most hard or aggressive waters.

All units are fitted with a control thermostat and an over-temperature manual reset thermostat which prevents the water from overheating. PT100 (RTD) temperature sensors and thermocouples can also be fitted.

A choice of IP41 or IP65 rated, terminal enclosures are available constructed from mild steel with a painted finish.

SPECIALIST APPLICATIONS

The RE range is extremely flexible and our Technical Department can provide specifications suitable for a wide range of applications as listed below. To obtain a quotation or further information please contact our Technical Department.

- Oil heating such as lubricating oil, hydraulic oil, heat transfer oil, heavy fuel oils and waste oil.
- Caustics (sodium hydroxide), acids and other chemicals.
- Anti-frost applications.

MOUNTING

Heaters are suitable for horizontal flanged mounting, however, heaters for vertical mounting can be supplied. Please contact our Technical Department.

To avoid localised boiling or air locks, care should be taken to ensure the cold zone extends beyond any neck piece. Longer cold zones are available. Please contact our Technical Department.

The standard 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.

The heater is supplied with a WRAS approved fibre gasket.

TEMPERATURE CONTROL

Our general recommendation for heaters above 6kW is that temperature control devices should be mounted away from the heater to avoid interference. Further guidance is given in the Technical Section of our website.

Standard models are supplied with a factory fitted control thermostat, with a range of 37-90^{o}C rated to 20 Amps and an over-temperature, manual reset, safety cut-out thermostat, with a range of 45-95°C rated to 16 Amps. Alternative thermostat ranges are available. Please contact our Technical Department.

Alternatively, the heater can be operated through a single thermostat or temperature sensor such as a PT100 (RTD) or thermocouple by means of a multi-stage controller.

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

The standard range has a maximum design temperature of 90^{o}C and maximum operating temperature of 70°C due to the thermostats fitted. The maximum operating pressure is 6 Bar.

Models suitable for higher operating temperatures and pressures are available. 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 480V AC or DC. Please contact our Technical Department.

CONSTRUCTION

Immersion heaters are manufactured generally to BS7798.

The standard construction material is copper element tubes and brass flange. Stainless steel 316L element tubes and stainless steel 316L flange can also be supplied. Please contact our Technical Department. Elements tubes are expanded or welded into the flange.

The standard terminal enclosures offered are rated to either IP41 or IP65 and are constructed from painted mild steel. The enclosure is supplied with a removable gland plate to be drilled on site to suit the cable glands being used. The heater is fully earth bonded and is provided with an earth bonding bar inside the terminal enclosure.

Stainless Steel or other enclosure specifications can be supplied on request. Please contact our Technical Department.

COMMON VARIATIONS

Please contact our Technical Department for further details.

- Various operating voltages in single or three phase star or delta.
- Alternative circuit configurations.
- Alternative flange standards, e.g. ANSI, JIS, etc.
- Higher operating pressures.
- Higher operating temperatures. The terminal enclosure can be stood off to allow for higher operating temperatures.
- Alternative flange materials, e.g. mild steel, stainless steel.
- Alternative element tube materials, e.g. stainless steel, mild steel, mild steel integron tube.
- Lower watts density elements for prolonged element life or for use with oils, caustics, acids or other chemical solutions.
- Baffles can be fitted for flow heater applications.
- Low water level indication thermostat.
- Longer cold zones.
- Alternative thermostat ranges, e.g. 60-120^{o}C, 0-40^{o}C, or PT100 (RTD) or thermocouple sensors.
- Vertical mounting heaters.
- A terminal rail can be supplied to ease wiring (IP55 / IP65 terminal enclosures only).
- Stainless steel 304 or 316 enclosures.
- IP55 rated vented enclosures.
- Anti-condensation heater fitted inside the terminal enclosure.

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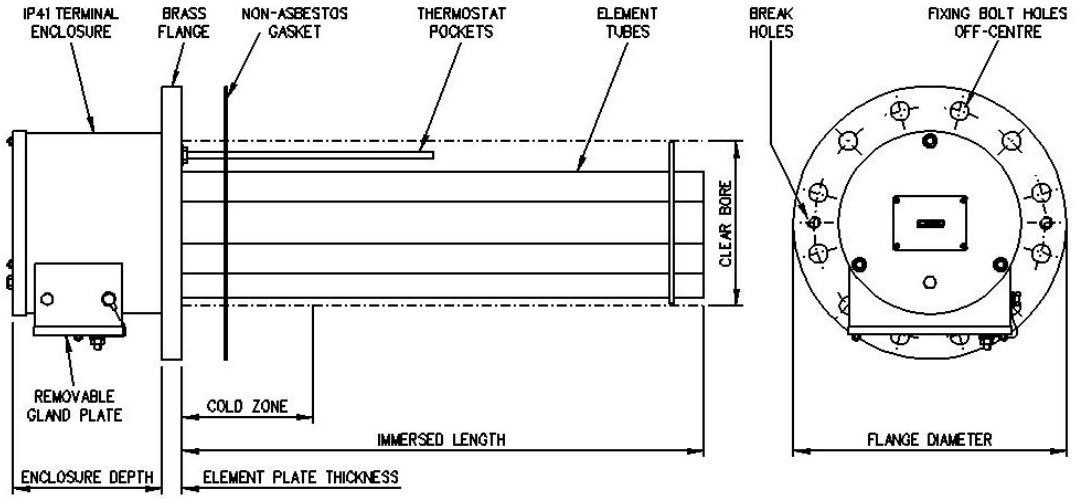
STANDARD LIST NUMBERS

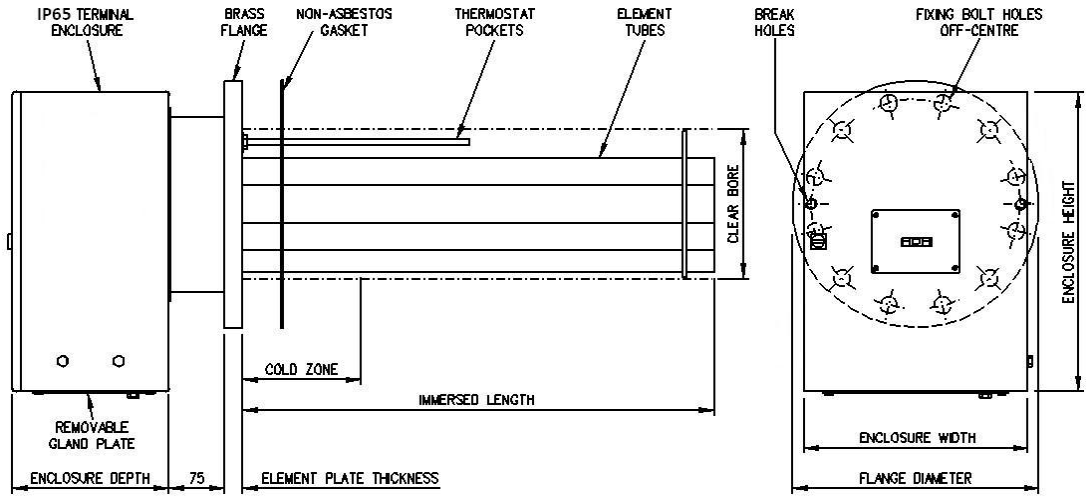
LIST No		SUPPLY		DIMENSIONS		ENCLOSURE DETAILS		FLANGE DETAILS to BS EN 1092-1 PN6				
IP41 ENCLOSURE	IP65 ENCLOSURE	kW LOAD @ 415V	No. OF CIRCUITS*	COLD ZONE mm	IMMERSED LENGTH* mm	IP41 Diameter x Depth mm	IP65 H x W x D mm	NOMINAL BORE	FLANGE DIA.	No. OF BOLT HOLES	DIA. OF BOLT HOLES	PCD OF BOLT HOLES
RE201	RE301	9	1 @ 9	100	760	168 Dia x 150	220 x 220 x 100	150	265	8	18	225
RE202	RE302	12	1 @ 12	100	915	168 Dia x 150	220 x 220 x 100	150	265	8	18	225
RE203	RE303	18	1 @ 18	100	1320**	168 Dia x 150	220 x 220 x 100	150	265	8	18	225
RE204	RE304	24	2 EQUAL	100	915	222 Dia x 180	400 x 300 x 210	200	320	8	18	280
RE205	RE305	30	2 EQUAL	100	1120**	222 Dia x 180	400 x 300 x 210	200	320	8	18	280
RE206	RE306	36	2 EQUAL	100	1320**	222 Dia x 180	400 x 300 x 210	200	320	8	18	280
RE207	RE307	54	3 EQUAL	100	1320**	292 Dia x 255	500 x 400 x 210	250	375	12	18	335
RE208	RE308	72	4 EQUAL	100	1320**	330 Dia x 255	500 x 400 x 210	300	440	12	22	395
RE209	RE309	90	5 EQUAL	100	1320**	392 Dia x 350	600 x 500 x 210	350	490	12	22	445
RE210	RE310	108	6 EQUAL	100	1320**	417 Dia x 350	600 x 500 x 210	400	540	16	22	495
RE211	RE311	126	7 EQUAL	100	1320**	417 Dia x 350	600 x 500 x 210	400	540	16	22	495

* Alternative immersed lengths & circuit configurations can be supplied.
** Note: if the heater is over 1m long, it is recommended that the element tubes are supported inside the vessel.

RE General Arrangement with IP41 Enclosure



RE General Arrangement with IP55 Enclosure



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