

# IMMERSION HEATERS

## HO RANGE



### HO RANGE APPLICATION

The HO range of immersion heater is designed to heat light to medium oil and caustic (sodium hydroxide) solutions in storage tanks or sumps. The range is ideal for **anti-frost** or **anti-waxing** applications.

The HO range features a ceramic core heating element which is fitted inside a metal sheathed element tube. The ceramic core heating element can be withdrawn from the heater without removing the heater from the vessel. This is particularly advantageous where it is not practical to drain the vessel in order to inspect or replace the element, minimising down time and maintenance costs.

All models are fitted with a robust, water-tight, cast aluminium enclosure rated to IP66 suitable for indoor or outdoor applications or for use in damp or humid conditions.

Models are available in single and three phase configurations. Higher kW loadings can be supplied. Please contact our Technical Department.

### STANDARD RANGE

The HO range of immersion heater is suitable for heating light and medium oils such as hydraulic oil, heat transfer oil and some lubricating oils without emulsifiers. The range is also ideal for heating caustic (sodium hydroxide) solutions and other liquids, acids and chemical solutions.

The elements have a low average watts density of  $1.5 \text{ W/cm}^2$  ( $10 \text{ W/in}^2$ ). Models are available with a mild steel boss and element tube or a 316 stainless steel boss and element tube. The standard boss size is 2.5" BSP.

Mild steel models are suitable for heating oil and caustic solutions up to 45% concentration to a maximum of 60°C.

The stainless steel models are suitable for heating oil and high concentration caustic solutions or various other liquids, acids and chemical solutions.

LIST No	LIST No	kW LOAD @ 240/415V	No. OF PHASES	IMMERSED LENGTH mm(in)
Mild Steel Element Tube/Boss	316L Stainless Steel Element Tube/Boss			
HO101	HO201	1	1	480 (19")
HO102	HO202	1.5	1	685 (27")
HO103	HO203	2	1	890 (35")
HO104	HO204	3	1 or 3	1295* (51")
HO105	HO205	4.5	1 or 3	1950* (76.8")

\* Note: if the heater is over 1m long, it is important to support the element tube inside the vessel.

### SPECIALIST APPLICATIONS

The HO range can be specified with lower watts density elements to heat lubricating oils with emulsifiers, heavy oil, waste oil, or other liquids and solutions. Alternative fixing bosses are a popular variation to this range. If a flanged fixing is required please refer to our HF range.

To obtain a quotation or further information please contact our Technical Department.

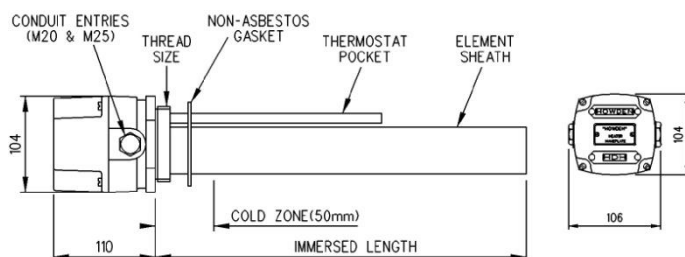
### MOUNTING

Heaters are suitable for horizontal screwed mounting, however vertical mounting heaters 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 fixing boss is threaded 2½" BSP, however alternative thread sizes are available including NPT threads. Please contact our Technical Department.

The heater is supplied with a fibre gasket.



### TEMPERATURE CONTROL

Standard models are supplied with a factory fitted control thermostat, with a range of 3-55°C rated 20 Amps, and an over-temperature cut-out thermostat, with a range of 45-95°C rated 16 Amps. Alternative thermostat ranges can be supplied. Please contact our Technical Department.

Where the current consumed exceeds the thermostat rating, the heater must be wired through a contactor switch. A contactor switch must be fitted on all three phase supplies.

Control panels can be supplied incorporating all necessary controls. Please refer to our TC range.

### OPERATING TEMPERATURE & PRESSURE

The standard range has a maximum design temperature of 90°C and maximum operating temperature of 55°C due to the thermostats fitted. The maximum operating pressure is 6 Bar.

Higher operating temperatures and pressures can be supplied. Please contact our Technical Department.

### VOLTAGE

Single phase heaters from our standard range are designed to operate at 230/240V and three phase heaters at 400/415V.

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 element tube is welded into the fixing boss. The boss material on standard models is either mild steel or 316L stainless steel, however alternative boss materials are available.

The terminal enclosure is cast aluminium, impact-resistant and rated to IP66 with two conduit entries (M20 and M25).

### COMMON VARIATIONS

Please contact our Technical Department for further details.

- Various operating voltages in single or three phase star or delta.
- Higher kW loadings.
- Lower watts densities.
- Smaller BSP sizes, however the thermostats may require to be mounted separately.
- NPT Threads.
- Alternative boss and tube materials.
- Longer cold zones.
- Alternative thermostat ranges, e.g. 30-90°C, 55-120°C.
- Higher operating pressures and temperatures.