

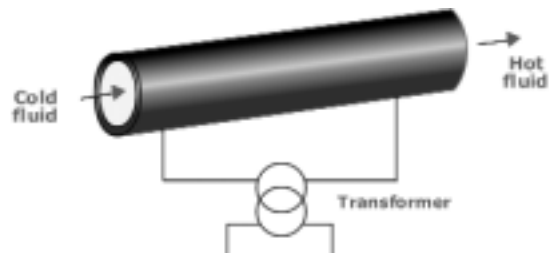
HIGH PERFORMANCE IHS IN-LINE HEATERS

For the most difficult cases

Operating principle of the Impedance pipe Heating System (IHS)

The walls of the tube or pipe in which the fluid flows are used as an electrical resistance (see sketch).

The heat energy dissipated in the walls is directly transferred to the fluid which flows in the tube.

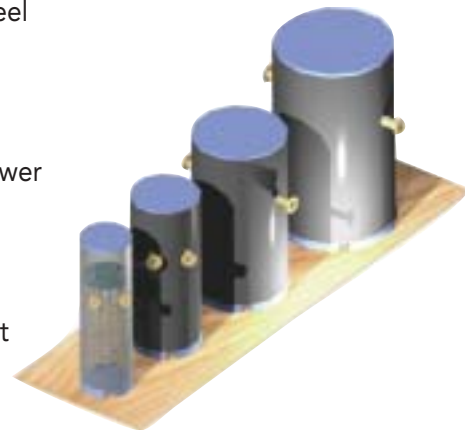


Why use the IHS heater REVTECH

- Standard operating temperatures up to 950°C (1750°F)
- Low response time with temperature ramps > 5°C/sec
- High heat transfer coefficient between tube surface and fluid avoids local overheating
- Accepts highly fluctuating flowrates
- Indestructible tubular heating element
- Interior of tube perfectly smooth allowing liquids containing solids to be heated
- Highly flexible
- All stainless steel construction (or in more exotic alloys)

General specifications for standard REVTECH IHS heaters

- Tubular heating element in 304L stainless steel
- Heat body in 304L stainless steel
- Flanged or welded connections to process
- Air cooled by fan
- Temperature and power regulation using power converter
- PT100/type K thermocouple temperature probes
- Outlet fluid temperature accuracy: +/- 2°C at constant flow rate
- Standard pressure 20 bars, higher pressures on request



Consult us for in-line IHS heaters up to 2500kW and 1200°C.



Technical informations

Heat transfer coefficient and reliability

The high heat transfer coefficients obtained in our IHS systems are due to the highly turbulent and constant regimes inside the tube. The surface heat charge can easily exceed 30 W/m^2 for water-based applications (typically $<12 \text{ W/m}^2$ for resistance heaters). It is also possible to operate at levels much nearer the boiling point than in classic electrical heaters, without risk of boiling, local overheating and rupture of the heating element. In gas systems, the low difference in temperature between the tube and the gas means higher temperatures without risk of overheating the tubular heating element.

Two-phase flows (liquids + solids)

The interior of our tubular IHS heater is a perfectly smooth tube without any retention zones. Unlike bundles of resistant heating elements, liquids containing solids can be heated without danger.

Absence of dead zones and reliability

The high heat transfer coefficients and the total absence of dead zones avoid local overheating and/or boiling which lead to the rupture of typical resistant heating elements.

Strength and reliability

The central element in a REVTECH tubular IHS heater is a metallic tube (stainless steel, iron/nickel or iron/aluminium alloy) with a minimal thickness of 1,6 mm and a minimal diameter of 21 mm. The assembly system allows for heat expansion and ensures a structural strength far greater than typical resistant heating elements. The tubular element is indestructible if used correctly. The result is a reliable, compact and efficient in-line heater, particularly suitable for the heating of difficult fluids at high temperatures.

REVTECH

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