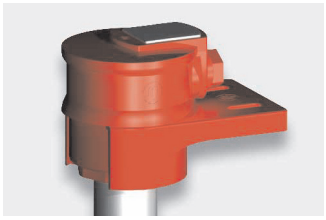
Angular Immersion Heaters ROTKAPPE®



Angular Immersion Heater with HWB Support

ROTKAPPE angular immersion heaters are the ideal method of direct heating for all containers with a low liquid level or high level fluctuation. The heating of the liquid from the container bottom is achieved by the horizontal heated immersion tube and this ensures optimum heat radiation as well as good heat distribution.

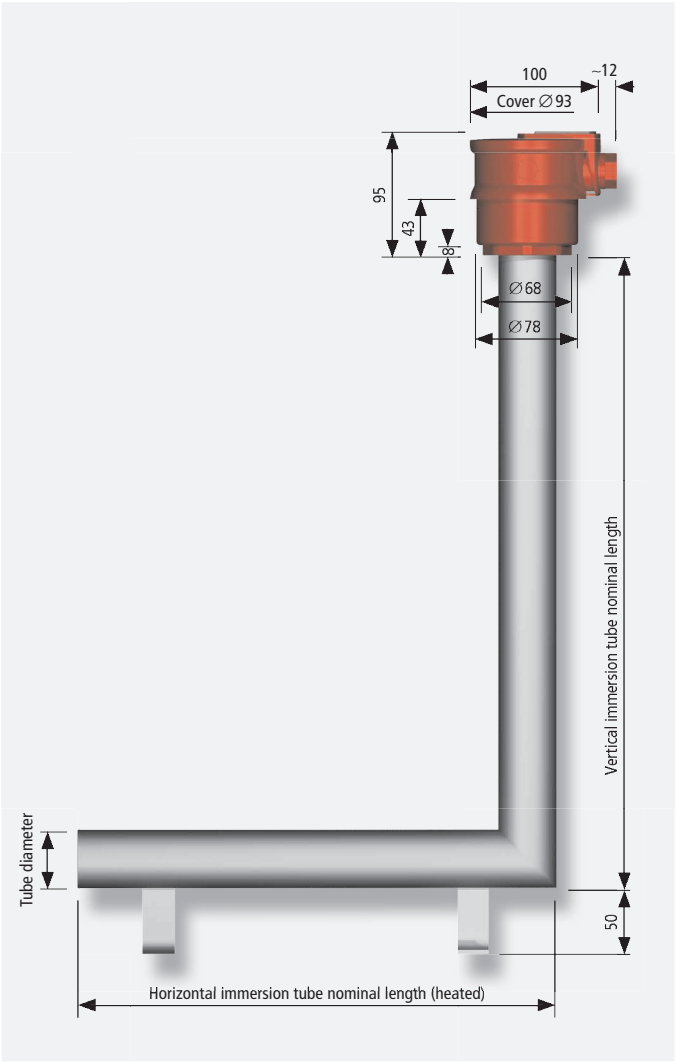
The rated power is determined by the length of the horizontal immersion tube. A relatively high heating performance is also possible because the entire tube length can be used for heating. The vertical, unheated immersion tube section can be adapted to the container depth.

Nearly every desired adaptation to the container size can be realized according to specific customer requirements. The compact type of construction saves space and as a result you can plan more cost effectively.

The table shows an overview of some standard types. The respective specific surface power density for the immersion tubes is stated in W / cm² according to the heated horizontal immersion tube's nominal length and to the rated power.

An adaptation to the maximum permissible surface power density of the process liquid can be easily done by variation of the rated power and the immersion tube length.

ROTKAPPE angular immersion heaters consist of the heated horizontal immersion tube, the long-life heating cartridge, the unheated vertical immersion tube, the terminal casing and the lead.



ROTKAPPE Angular Immersion Heater

The Immersion Heater Tube

The horizontal and the vertical immersion tubes are welded together. Good chemical resistance is ensured by using the various metal immersion tube materials. A long lifespan with optimum reliability is assured by using high quality materials, thereby ensuring faultless operation of your system. Angle shaped supports are welded onto the horizontal immersion tube in order to observe the minimum distance to the container bottom or fixing.

The Long-life Heating Cartridge

Long-life heating cartridges are made from ceramic groove bodies with high electrical insulation values and good mechanical strength. A high temperature resistance heating wire is fitted as a coil in order to achieve the best possible heat radiation from tube to liquid. The cartridges for angular immersion heaters are available in rated voltages up to a maximum of 500 volts for one, two and three phase connections. The cartridges cannot be replaced by the user.

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Angular Immersion Heater Overview

(Vertical immersion tube: any length, min. 200 mm)

Horiz. Immersion Tube [mm]	Rated Power [kW]	Rated Voltage 230 V~	Rated Voltage 400 V3~	Surface Power Density [W / cm²] KB	SB	TI
250	0,63	x	-	3,1	3,1	3,1
500	2,00	x	x	3,6	3,6	3,6
750	3,00	x	x	3,4	3,4	3,4
1000	4,00	-	x	3,2	3,2	3,2
1250	5,00	-	x	3,2	3,2	3,2
1500	6,00	-	x	3,1	3,1	3,1
1750	7,00	-	x	3,1	3,1	3,1
2000	8,00	-	x	3,1	3,1	3,1
2250	9,00	-	x	3,1	3,1	3,1
2500	10,00	-	x	3,0	3,0	3,0
2750	11,00	-	x	3,0	3,0	3,0

Angular Immersion Heater Materials

Type
Immersion tube diameter [mm]

KB 45 Stainless Steel (Material No. 316TI)
SB 45 Steel E 235
TI 45 Titanium (Material No. 3.7035)

The Terminal Casing

The BC terminal casing for angular immersion heaters consists of high temperature stabilized PP. Problem-free use in most process liquids is ensured by good mechanical and thermal strength as well as wide ranging chemical resistance. The PVDF terminal casing (BC/L) is recommended in cases of extreme temperature (liquid temperature >80°C) or when subjected to strongly oxidizing chemicals (e.g. chrome electrolyte or HNO_3). The protective casing is IP 65 (jet-waterproof) according to EN 60529.

Easy access to the terminal (after fitting) when connecting the lead is also ensured by unscrewing the cap with the mounting wrench SB.

The Lead

The PVC connecting lead is with a standard length of 1.6 m. Other lead lengths can be provided if desired.

Safety Technology

Please remember that electrical heating systems are supposed to be equipped with safety technology (temperature limiter and dry-out protection) on the part of the user according to EN 60519/1-2.

This can be most effectively implemented by level rod-probes and floating switches with integrated temperature sensors and the relevant electronics. We can also offer you suitable products for this and we can advise you in all aspects of safety technology.

Accessories

Standard supports are available for secure fixing of the angular immersion heater or a specific flange connection can be planned to suit your needs. We would be glad to advise you on the best possible fixing.

- Support HWB (PP)
- Support HWB/L (PVDF)
- Mounting Wrench SB

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