

# Small Immersion Heater ROTKAPPE®

ROTKAPPE Small Immersion Heaters are most suitable for direct heating of nearly all process liquids and corresponding applications. Excellent chemical resistance is ensured by the use of different immersion tube materials and variable fitting options help you to meet the individual requirements of heating installations. A long life span with optimum reliability is assured by using high quality materials thereby ensuring faultless operation of your system.

The small immersion heaters are used primarily in smaller plants and tanks for surface treatment and in the laboratory sector.

The ROTKAPPE small immersion heater is constructed on a modular basis and consists of a tube, a long-life heating cartridge, a terminal casing and a lead.

## The Immersion Heater Tube

We can offer you the optimum material for every application. The heated length (minimum immersion depth) is marked by a ring which is generally two-thirds of the tube length. The tube is not heated above this mark. The heated portion must always be covered with liquid even in the case of high liquid level fluctuation.

## The Long-Life Heating Cartridge

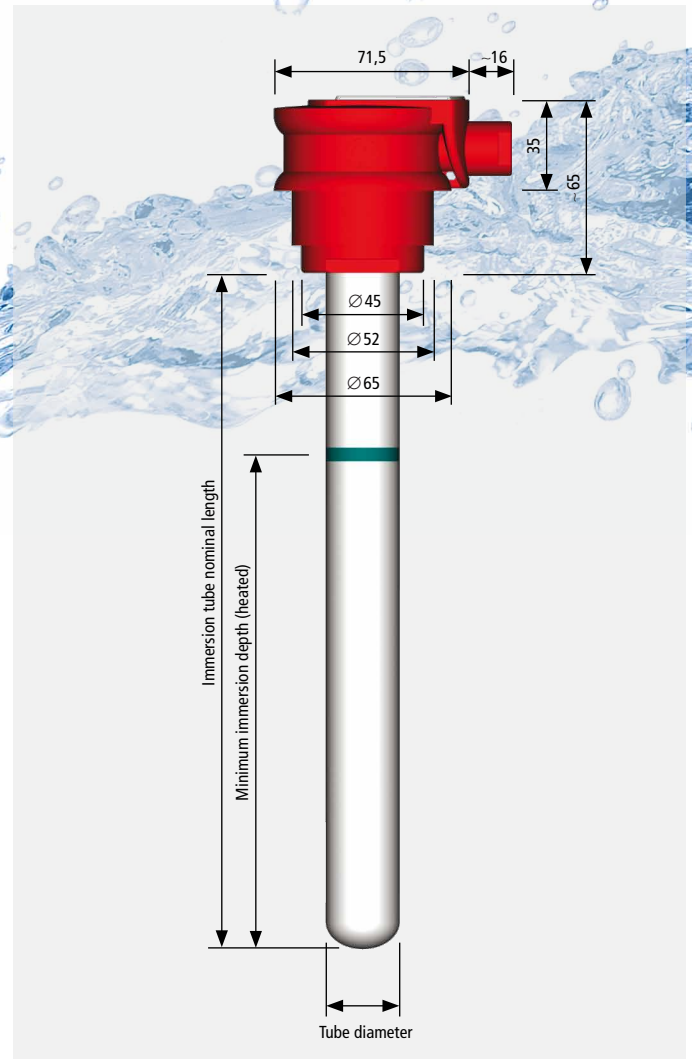
Long-life heating cartridges are made from ceramic groove bodies with high electrical insulation values and good mechanical strength. A high temperature resistance heating wire is fitted as a coil in order to achieve the best possible heat radiation from tube to liquid. The cartridges for small immersion heaters are available in 230 volts for a single phase connection.

## The Terminal Casing LC

The Terminal Casing LC for small immersion heaters is made from high temperature stabilized PP (LC) or PVDF (LC/L). The protective casing is IP 65 (jet-waterproof) according to EN 60529.

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

The support HL offers space-saving mounting at the rim of the tank.



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## The Lead

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

## Accessories

- Mounting wrench SL
- Mounting Sleeve ML
- Support HL

## Electrical Safety

The small immersion heaters are classified as "safety class 1" according to EN 60519/1-2. All metal parts that are not protected from human contact are securely connected to earth. Using non-conductive tubes made of porcelain or glass, a "protective coil" is also fitted to the heating cartridges in order to earth these tubes. The highest possible electrical safety is therefore ensured by using an earth leakage circuit breaker (ELCB).



# Safety and Quality Heating



The chemicals in your treatment liquids demand the utmost of the chemical resistance of the materials used. When choosing the materials the physical processes (possible encrustment) and thermal limits (surface power density) have to be taken equally into consideration. The advantages and disadvantages of the individual materials are illustrated in the chemical resistance list. The following table gives an overview of the standard types available. The specific surface power density for the immersion heater tube is stated in  $W/cm^2$  according to the minimum immersion depth and the rated power.

## Immersion Tube Material Specifications

Type	Tube diameter [mm]
PS 28	Special hard porcelain, glazed
TG 28	Technical glass (hydrolytic class 1, acid class 1, alkaline class 2 according to DIN 12111, 12116 & 52322)
KB 25	Stainless steel (material no. 316TI)
TI 25,4	Titanium (material no. 3.7035)

## ROTKAPPE Small Immersion Heater Tube Overview (Summary)

Nominal length [mm]	Minimum immersion depth [mm]	Surface power density [ $W/cm^2$ ]				
		Rated power [kW]	PS	TG	KB	TI
200	130	0,315	3,7	3,7	4,1	4,1
300	180	0,250	1,9	1,9	2,2	2,2
300	180	0,315	2,4	2,4	2,7	2,7
300	180	0,400	3,1	3,1	3,5	3,5
400	280	0,400	1,9	1,9	2,1	2,1
400	280	0,800	3,7	3,7	4,2	4,2
500	330	0,500	1,9	1,9	2,2	2,2
500	330	0,800	3,1	3,1	3,5	3,5
500	330	1,000	3,9	3,9	4,3	4,3
630	460	0,500	-	-	1,6	1,6
630	460	1,000	-	-	3,2	3,2
630	460	1,250	-	-	4,1	4,1
800	560	0,500	-	-	1,3	1,3
800	560	1,000	-	-	2,6	2,6
800	560	1,500	-	-	3,9	3,9
1000	725	1,000	-	-	2,0	2,0
1000	725	1,600	-	-	3,2	3,2

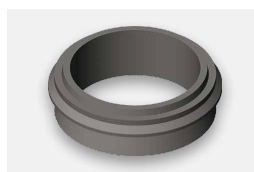
## Accessories for Small Immersion Heaters with Terminal Casing LC



### Mounting Wrench SL

For opening and closing the terminal cap LC and the lead screw fixing.

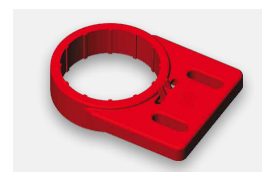
Material: Grivory GVN



### Mounting Sleeve ML

Enables space-saving fitting in tank tops or tank cross-beams. Drill-hole diameter: 63 mm.

Material: EPDM



### Support HL

A very simple method of safely fixing small immersion heaters is guaranteed by using this support. It is screwed firmly onto the tank rim and the terminal casing is a simple push-fit.

Material: PP and PVDF (HL/L)