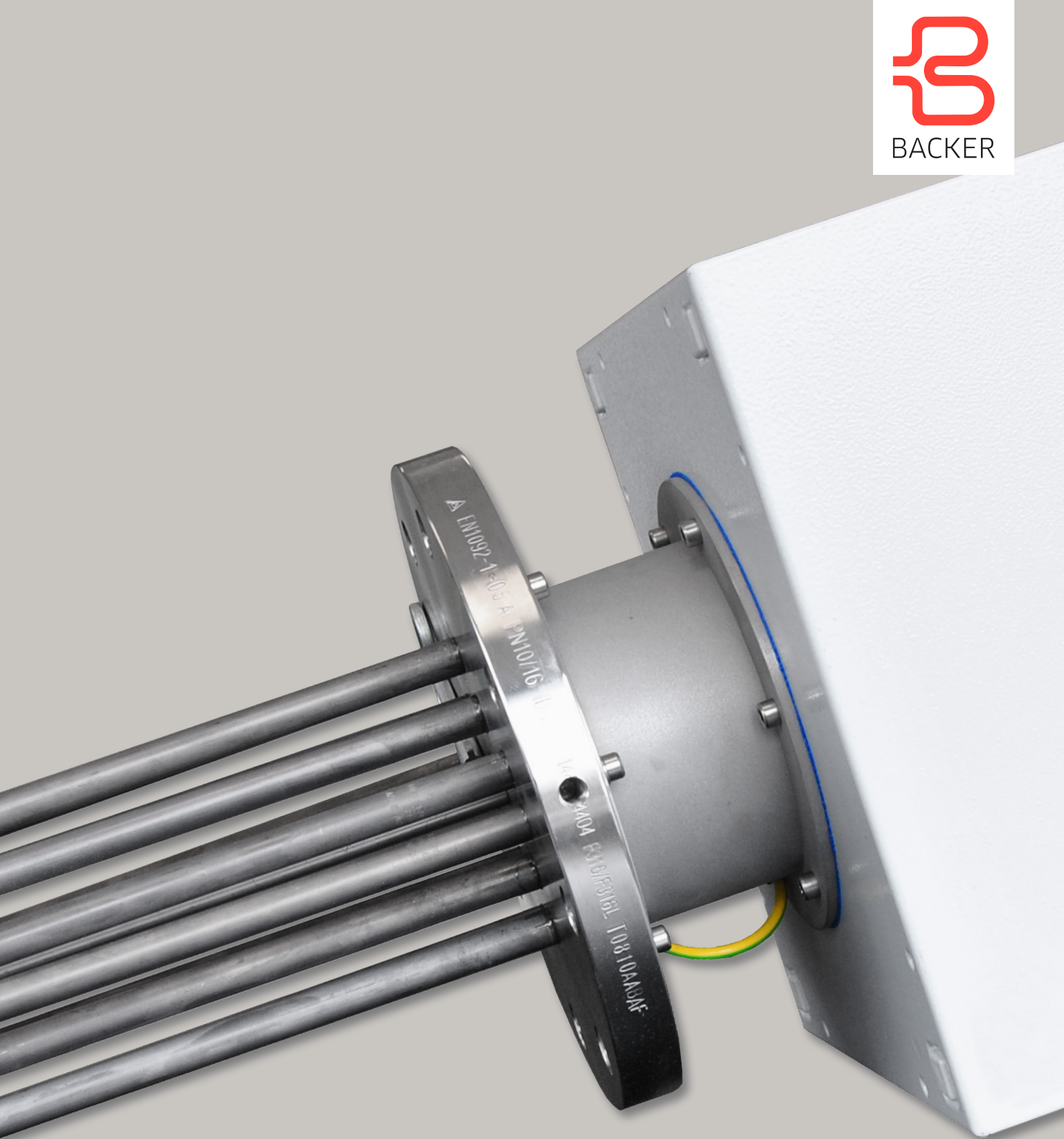




FLANGED IMMERSION HEATER

HEATING & ENERGY EFFICIENT • TEMPERATURE CONTROL

FLANGED IMMERSION HEATERS

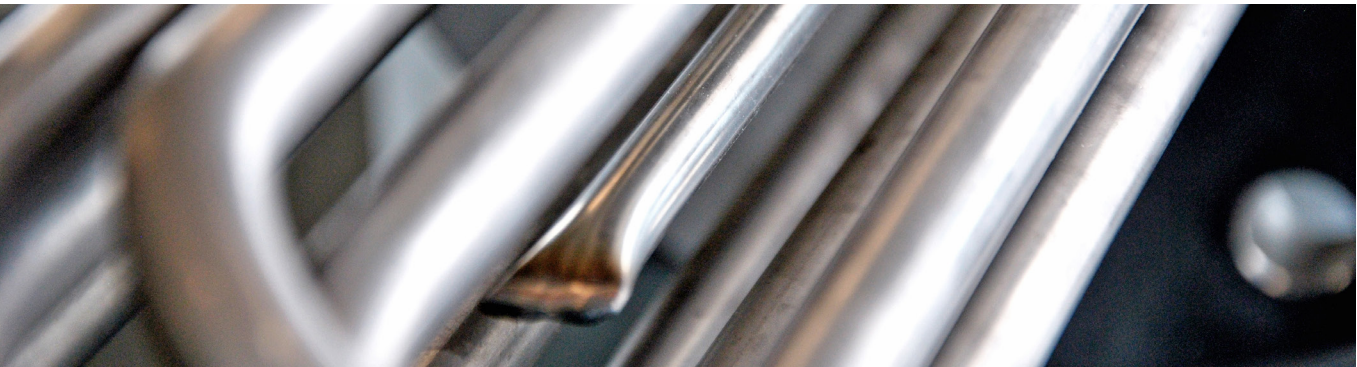


Innovations for the future

A partnership with Backer gives you a dedicated team of designers, project engineers and technical experts in the fields of electric heating, measurement and control, ready to provide you with the optimal solutions for your needs.

DESIGN FEATURES

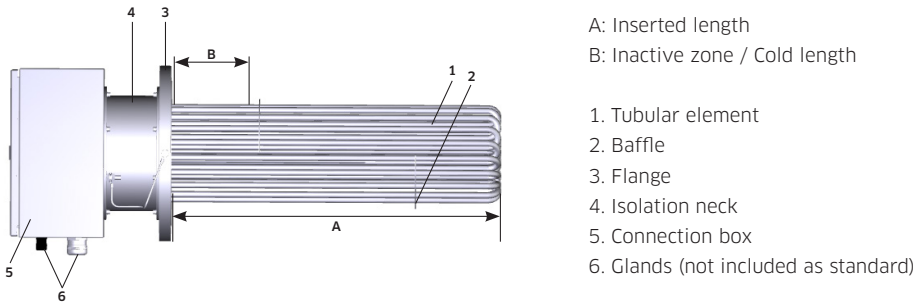
Backer’s Flanged Immersion Heaters give you efficient heating with a robust, industrial design. The selection of various materials, sizes, immersion lengths, watt densities, etc. ensures an optimized configuration for every unique application. The Backer engineering team are standing by for offering the right selection of Immersion heater for your needs.



Regardless if you need a standard configuration or a customized heater, backer provides the solution for your application.

ABOUT THE PRODUCT

The Backer range of Flanged Immersion Heaters are designed for applications in tanks and vessels as well as flow heaters. The heating elements which are welded, brazed, or clamped onto the flange are either pre-designed for standard applications or will be customized for specific needs. The standard flanges, insulation necks and connection boxes are pre-assembled in various sizes. The size, number of tubular elements, immersion length and watt density can easily be modified to meet every unique application demand.



WATT DENSITY SELECTION

Watt densities range from 1-10 watts per square centimetre. Choosing the correct watt density is essential for prolonging the life of the heater and prevent fluid degradation. The fluid’s ability to absorb heat from the element will determine the proper watt density. Water easily absorbs heat from the elements, so a high watt density is appropriate. Fluids like Crude Oil as well as gases, do not absorb heat from the element that well and consequently a much lower watt density is required.

FLANGED IMMERSION HEATERS

ELEMENT MATERIAL

Materials	Standard	Optional
Tubular elements	Select by media and temperature	
Baffles	EN 1.4404	EN 1.4301
Flange	EN 1.4404	
Insulation neck	EN 1.4301	
Connection box	EN 1.4301	Powder coated steel / EN 1.4404

DESIGN SELECTION

The flanged heaters can be designed either as a flow heater in a flow tube or as a batch heater in a tank. The construction will differ slightly, depending on the actual installation mode.

When selecting the correct Flanged Immersion Heater, the following application parameters needs to be considered:

- Type of fluid/gas to be heated (temperature sensitivity)
- Flow rate, if designed as a Flow heater
- Physical limitations such as, materials, flange size and immersion length
- Power demand
- Voltage required
- Other relevant information such as, control system, pressure class, hazardous environment, certification, etc.

The Backer engineers are ready to help you in designing the optimum heater for your application.

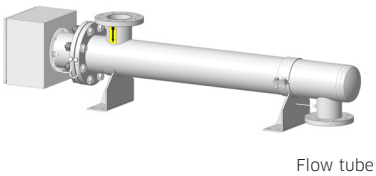
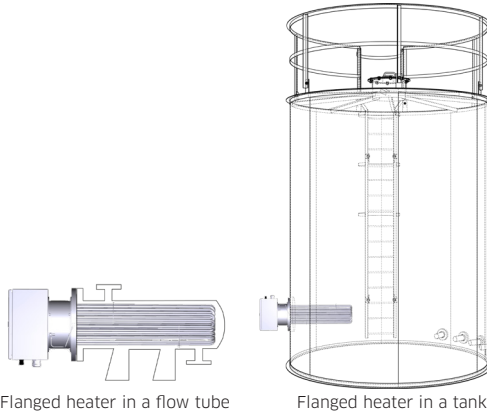
ADDITIONAL OPTIONS & CAPABILITIES

Process control

Backer can provide a both standards aswell as cusotmized sensors, controllers and regulators to achieve the appropriate control loop for every application. On/off control is normally suitable for tank applications while full PID-regulation might be needed for flow heaters.

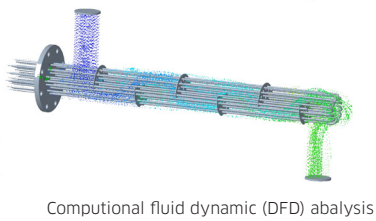
Flow heater / Circulation heater

For heating continous flows of media a Flanged heater can be combined with a Flow tube and optimized for the required thermal duties. The Flow heater can either be supplied as a stand alone unit or as a skid mounted version, fitted with auxilliary equipment such as filters, pumps, sensors, controllers and expansion vessles.



ADDITIONAL SERVICES

- For non-generic and sensitive applications Backer offers Computational fluid dynamics (CFD) analysis for ensuring the thermodynamical and fluidical performance
- When needed, pressure tests can be carried out for system designs up to PN63
- Aftermarket services, such as renovation and product maintenance are performed in our workshop. Some services can also be carried out on site.



FLANGED IMMERSION HEATERS

The selection of tables below are set up for typical watt loads of 6-10 W/cm² for water, 2-4 W/cm² for light fuel oil and 1-2 W/cm² for air and heavy fuel oil. The cold length (B) is set to 108 mm.

WATER APPLICATIONS, WATT DENSITY 6-10 W/cm²

Immersion length (mm)								
Flange size	No. of 14mm tubes	750	1 000	1 250	1 500	1 750	2 000	2 250
DN150	9	46 kW	63 kW	81 kW	99 kW	117 kW	135 kW	152 kW
DN200	12	61 kW	84 kW	108 kW	132 kW	156 kW	179 kW	203 kW
DN250	18	91 kW	127 kW	162 kW	194 kW	234 kW	269 kW	305 kW
DN300	27	137 kW	190 kW	243 kW	297 kW	350 kW	404 kW	457 kW

LIGHT FUEL OIL APPLICATIONS, WATT DENSITY 2-4 W/cm²

Immersion length (mm)								
Flange size	No. of 14mm tubes	750	1 000	1 250	1 500	1 750	2 000	2 250
DN150	9	15 kW	21 kW	27 kW	33 kW	38 kW	45 kW	51 kW
DN200	12	20 kW	28 kW	36 kW	43 kW	52 kW	60 kW	68 kW
DN250	18	30 kW	42 kW	54 kW	66 kW	78 kW	90 kW	102 kW
DN300	27	46 kW	63 kW	81 kW	99 kW	117 kW	135 kW	152 kW

AIR AND HEAVY FUEL OIL APPLICATIONS, WATT DENSITY 1-2 W/cm²

Immersion length (mm)								
Flange size	No. of 14mm tubes	750	1 000	1 250	1 500	1 750	2 000	2 250
DN150	9	8 kW	10 kW	13 kW	16 kW	19 kW	22 kW	25 kW
DN200	12	10 kW	14 kW	18 kW	22 kW	26 kW	30 kW	34 kW
DN250	18	15 kW	21 kW	27 kW	33 kW	39 kW	45 kW	51 kW
DN300	27	23 kW	31 kW	40 kW	58 kW	58 kW	67 kW	76 kW



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