

## Electric Flange Heaters

**heatsystems** electric flange heaters were designed for direct heating of various liquid and gaseous media.

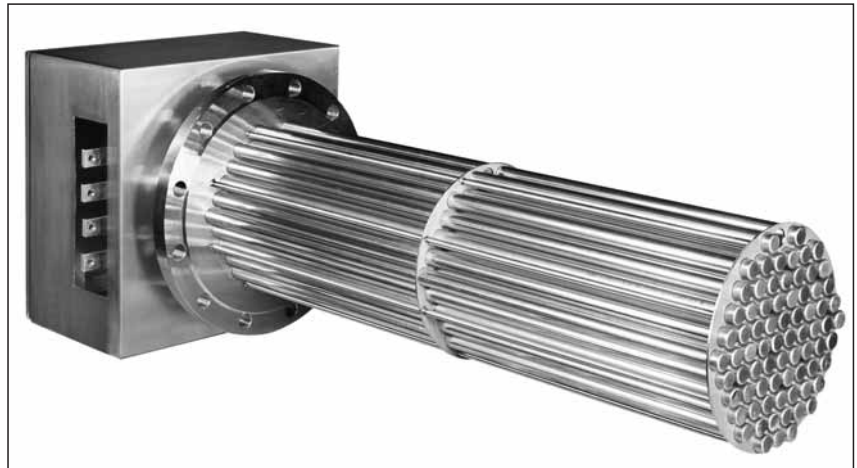
They are used preferably for heating:

- rape seed oil
- palm oil
- demineralised water
- fully desalinated water
- drinking water
- insulating oil
- transformer oil
- non-agressive circuit water
- cleaning fluids
- heavy oil
- bitumen
- heating water
- hydraulic oil
- diphyl
- lubricating oil
- turbine oil
- steam generation
- steam (superheating)
- heat transfer oil
- non-flammable gaseous media and vapours

### Usual materials for **heatsystems** electric flange heaters

#### Tube plate

- Steel
- Stainless steel AISI 316Ti (1.4571)
- Stainless steel AISI 316L (1.4404/1.4435)
- Stainless steel AISI 904L (1.4539)
- All other common stainless steels



**DN 300 / 72 cartridge heater / capacity 320 kW.**



**DN 200 / 24 cartridge heater / capacity 80 kW.**

#### Heating surface

- Stainless steel AISI 316Ti (1.4571)
- Stainless steel AISI 316L (1.4404/1.4435)
- Stainless steel AISI 309 (1.4828)
- Stainless steel AISI 904L (1.4539)
- Stainless steel Incolloy 800 (1.4876)
- Stainless steel Incolloy 825 (2.4858)
- Stainless steel Hastelloy C-278 (2.4819)
- Copper nickel CuNi10Fe
- Titanium Grade 2

#### Special materials:

- Niob / tantalum and similar



**Connection housing 600x600x210 mm for 800 kW at 1,110 Volt.**

## Electric Flange Heaters

**heatsystems** electric flange heaters consist of the following components:

### Design and construction

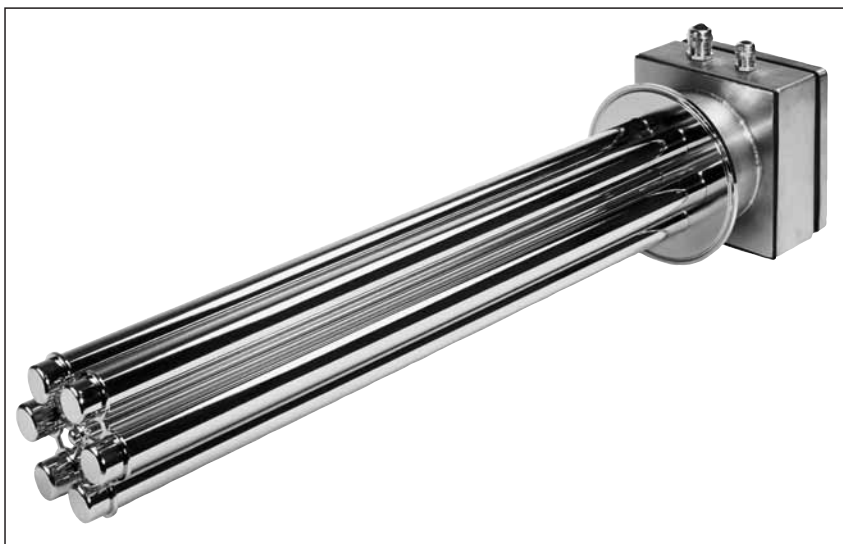
Computer-aided design of the surface load of the heating surfaces ensures optimum design and capacity. Optimisation based on the film temperature.

### Heating surface

Highly compressed tubular heater, rod-shaped cartridge heater or oval tube heater. Material, dimensions and length individually adapted to the application. Welded gas tight into the flange plate. Inserted tubular heater diameters are e. g. 6.5 mm, 8.5 mm, 16 mm, Cartridge heater diameters 8.5 mm, 16 mm and 25 mm, Oval tube heater diameter 16 x 6 mm. The optimum suitable heater is determined depending on the immersion length and the medium to be heated.

### Flange plate

Dimensions according to:  
EN 1092-2, form A as normal version  
On request also in form C or form N according to DIN 2512  
ANSI standard B 16.5 rf  
Tri-Clamp according to DIN 32676  
For vessels according to DIN 4800 to 4805  
According to customer requirements.



**Tri-Clamp DN 100 according to DIN 32676 / 6 cartridge heaters / medium demineralised water / capacity 25 kW / material stainless steel material 316L / electro polished version.**

### Connection housing

Steel, powder-coated or stainless steel.  
On request material stainless steel AISI 316Ti (1.4571) or stainless steel AISI 316L (1.4404/1.4435).  
The heaters are wired to terminals ready to connect in the connection housing. Temperature controllers, temperature limiters or overheating protection are installed optionally. Electrical protection type according to IP 54, IP 65 on request. Stationary heating and pressure compensation element for preventing condensation can be provided optionally.

### Temperature controlling and limiters

Temperature controllers and/or temperature limiters (effective on the medium) are installed in the connection housing on request.

Optional: Overheating protection (effective on the surface of the heating elements).

Temperature controllers and limiters can be designed both electromechanically and for electronic evaluation (Pt 100, thermocouple). Separate arrangement is possible.

## Electric Flange Heaters

### Other options in **heatsystems** electric flange heaters:

- dead-leg-free version
- roughness depth of the parts which come into contact with the medium  $Ra < 0.8 \mu m$
- material certification according to EN 10204-3.1
- acceptance by TÜV, GL, DNV, LR, BV
- gap between pipe plate and heating elements reduced to minimum dead-leg (nearly dead-leg-free version)
- heater in the connection housing to reduce condensation
- fan in the connection housing to prevent too high temperatures
- pressure compensation element to prevent condensation in the connection housing
- explosion-proof connection housing
- complete temperature control and control temperature limiting, also with cabinet as turn key solution
- combined heating, electric and with steam, hot water or hot oil
- exchangeable ceramic heating elements
- mounted rollers as insertion aid



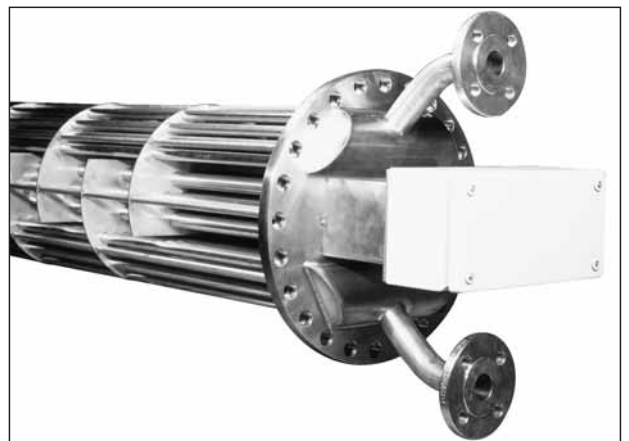
*Dead-leg-free version.*



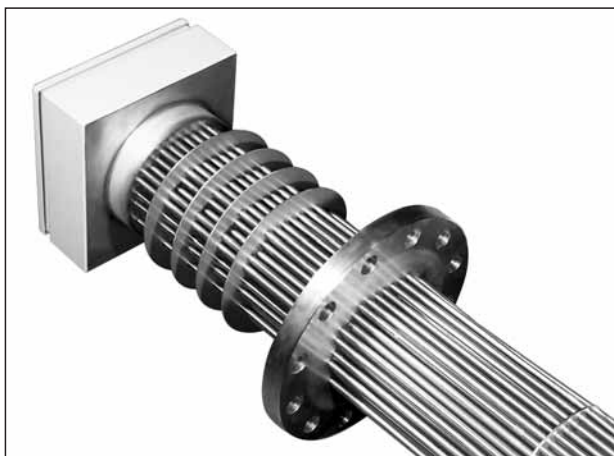
*Dead-leg-free version.*



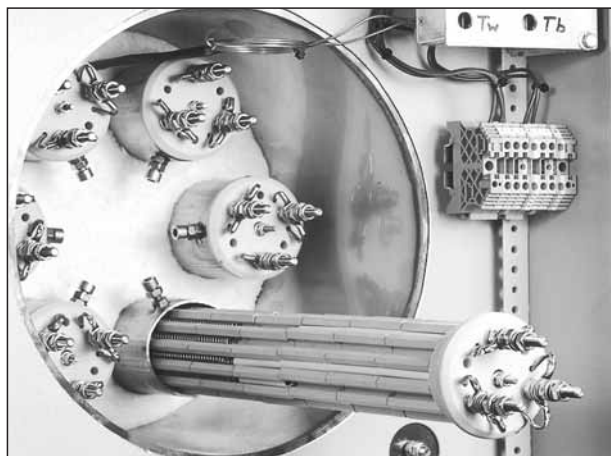
*Explosion-proof connection housing.  
Capacity 80 kW.*



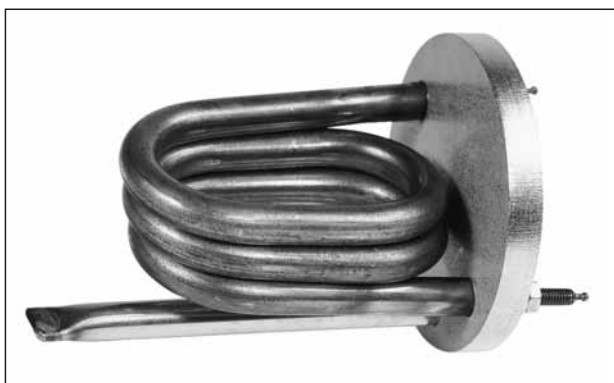
*Combined heating by heat transfer fluid and electrically.*



*Connection housing, heat-insulated, here for an operating temperature of 380 °C (installed vertically).*



*Exchangeable ceramic heating elements.*



*Customized flange plate.  
Capacity 600 W / 24 V. Medium rape seed oil.*



*Customized, square flange plate.  
Capacity 12 kW / medium hot water.*



*Mounted rollers as insertion aid.*

## Compact Electric Flange Heater for Heating of Drinking Water

Worldwide, a large number of stainless steel vessels are installed as drinking water vessels. Screw-in tubular heaters are mainly installed there although a flange connection is provided on the vessel for the **heatsystems** compact electric flange heater. Screw-in heaters often fail depending on the water quality. This is usually the result of installing heaters with too high surface load. For this reason, the series of **heatsystems** compact electric flange heaters with surface loads of only approx. 32 W/sq inch was developed.



**Compact electric flange heater, capacity 12 kW.**

Special features of this version are:

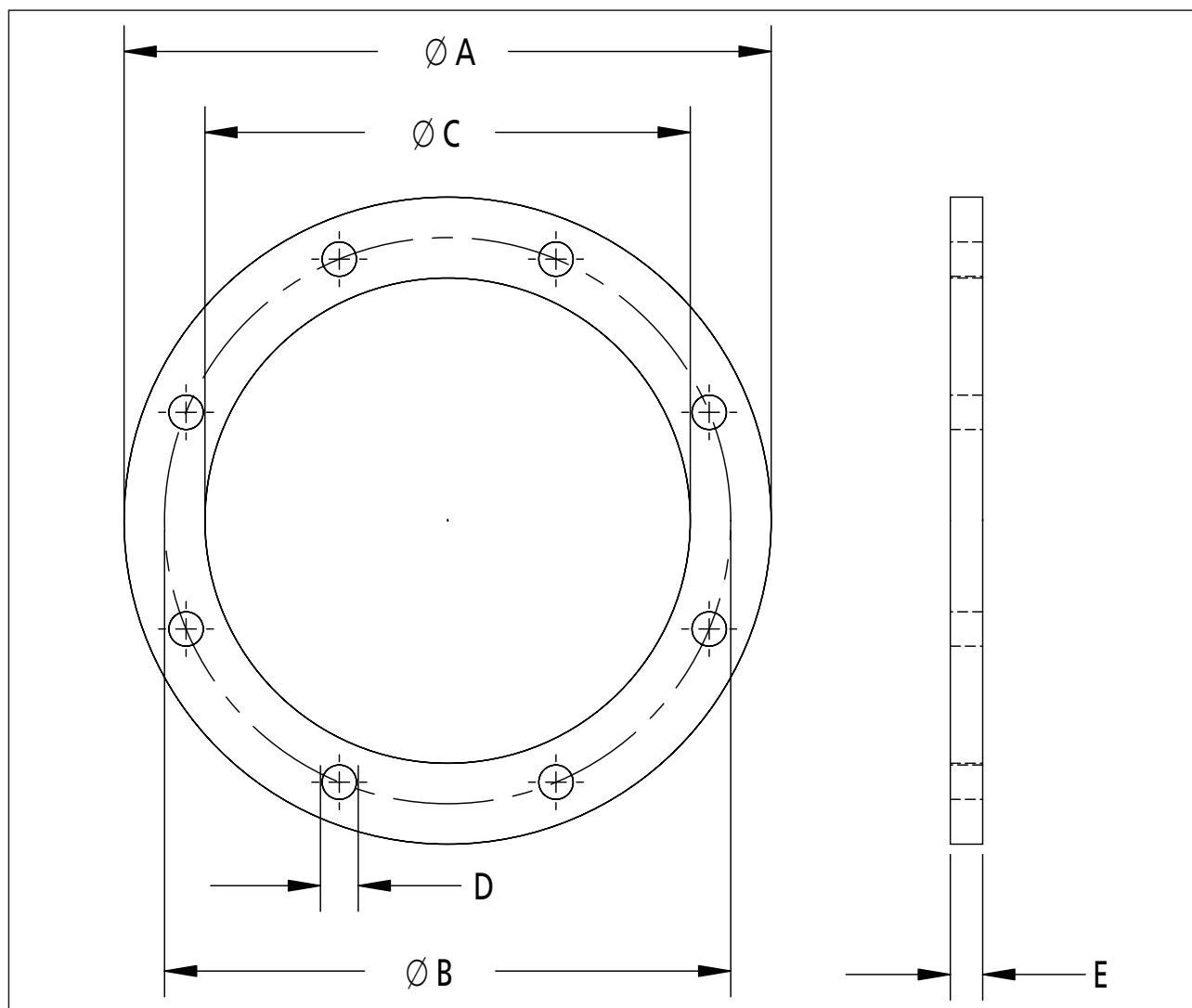
- low surface load, approx. 32 W/sq inch
- stainless steel flange plate
- heating surface of copper nickel CuNi10Fe or stainless steel AISI 904L (1.4539)
- welded version
- built-in temperature controller, setting range 30 to 85 °C, switching difference 12+/-6K
- built-in frost protection circuit
- built-in temperature limiter
- switch off temperature 110 °C-8K
- temperature controller, frost protection circuit and temperature limiter are wired for direct switching
- separate switching contactors are not necessary, only a fused supply cable
- seal contained in the scope of delivery

### Versions available from stores stock

Capacity	Voltage	Current	Stock no..
4,0 kW	400 Volt 3ph	5,8 Amps 3ph	F911 037
6,0 kW	400 Volt 3ph	8,7 Amps 3ph	F910 537
8,0 kW	400 Volt 3ph	11,6 Amps 3ph	F910 528
10,0 kW	400 Volt 3ph	14,5 Amps 3ph	F911 038

Please state the version (see page FHK 6/09E) and stock no. when ordering.

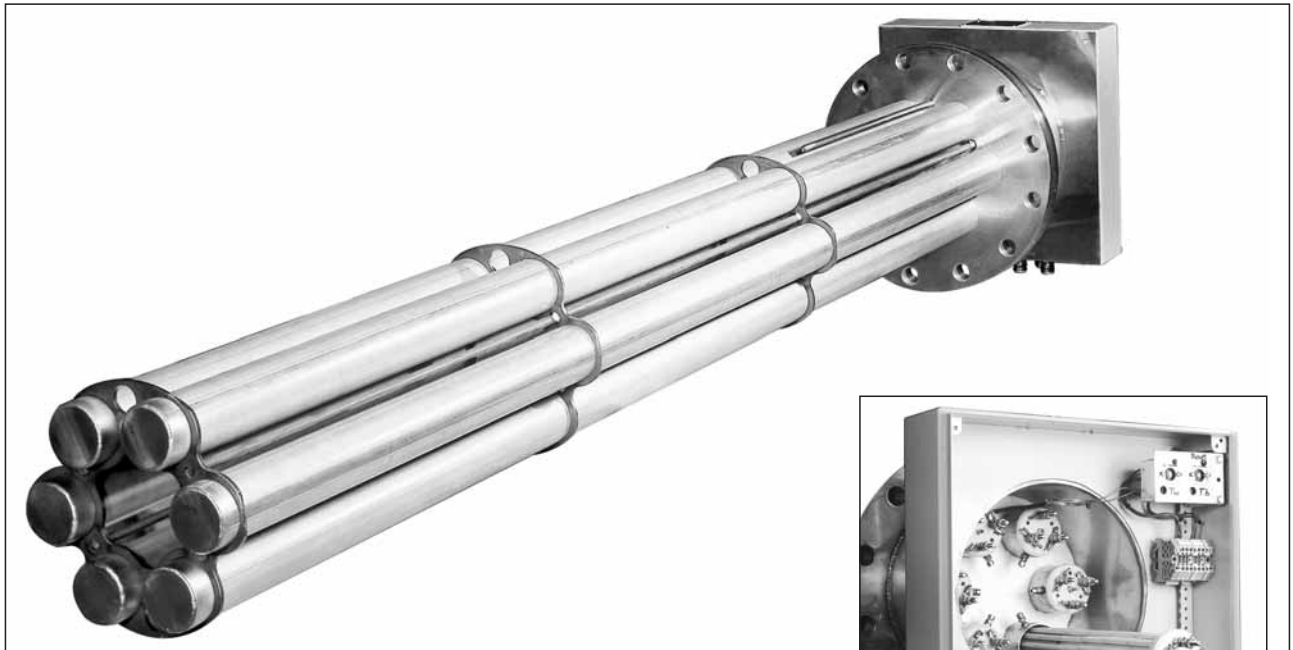
## Compact Electric Flange Heaters for the Heating of Drinking Water



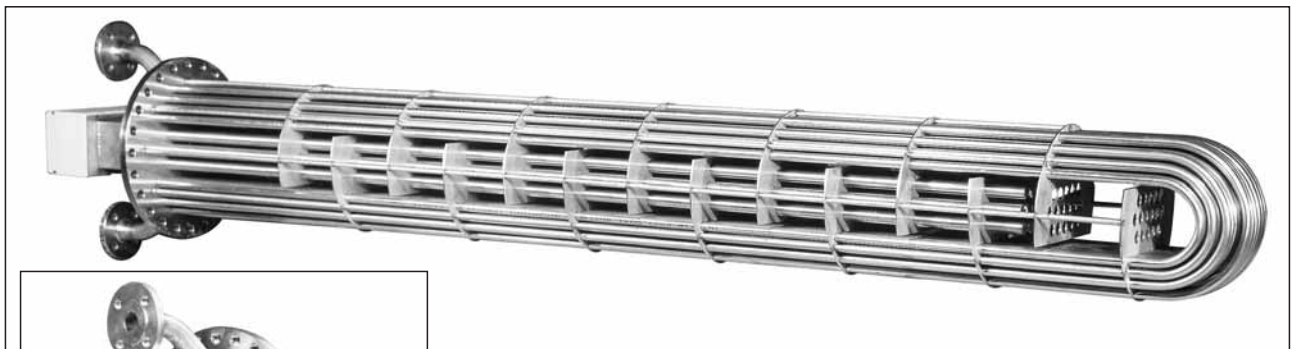
Version	A	B	C	D	E
1	160 mm	150 mm	120 mm	M 10	8 mm
2	180 mm	150 mm	120 mm	M 10	8 mm
3	180 mm	150 mm	110 mm	M 12	10 mm
4	280 mm	245 mm	199 mm	M 14	14 mm

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## Electric Flange Heaters



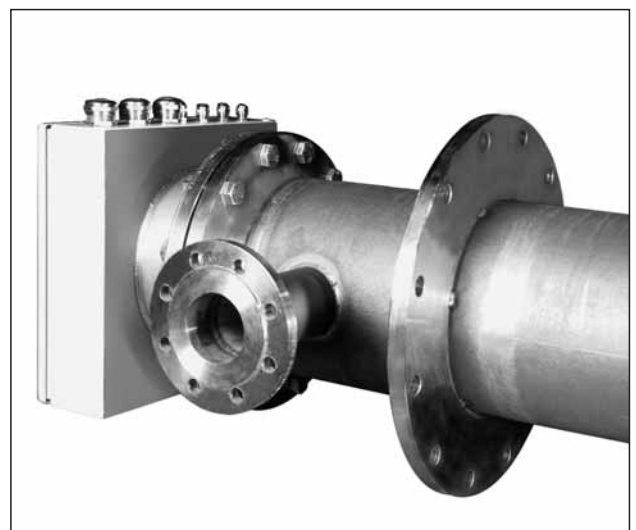
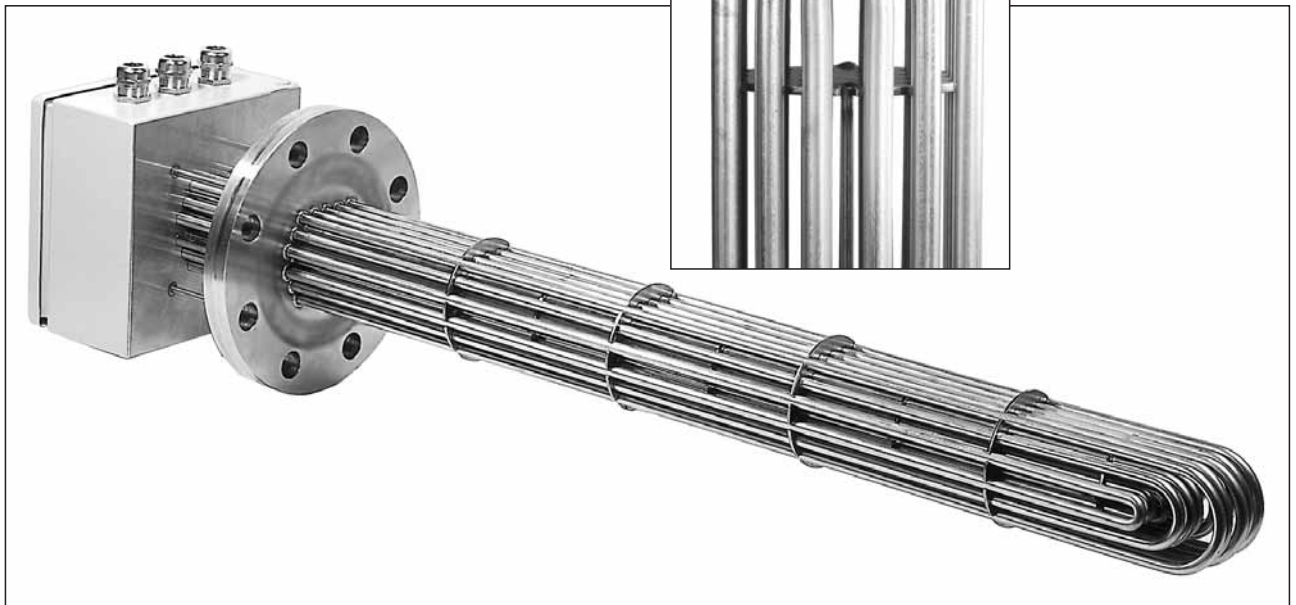
*Electric flange heater with exchangeable ceramic heating elements.  
It is possible to change heating elements without draining the medium.  
This version is used when large vessels are heated electrically.*



**heatsystems** flange heater with combined electric and hot oil heating.

## Electric Flange Heaters

*Modified arrangement of the heating elements in comparison with the conventional design enables a larger heated surface with the same nominal width and immersion length. Heaters with identical geometrical dimensions enable greater capacity with the same surface load. Optimized flow paths enable higher heat surface loads.*



*Tank plug-in pre-heater for electric heating of the tapping point in a heavy oil tank. The heated heavy oil is tapped directly from the protective pipe; the heavy oil is heated specifically at the tapping point.*