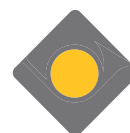


CORE-THERM

- High pressure heat exchanger -
- Pressure resistant on product and service side -
- Up to +10barg between -10 to + 200°C -
- Corrosion resistant on product and service side -
- SiC-Tubes -

De Dietrich
PROCESS SYSTEMS





The fully corrosion resistant heat exchanger for the really tough conditions!

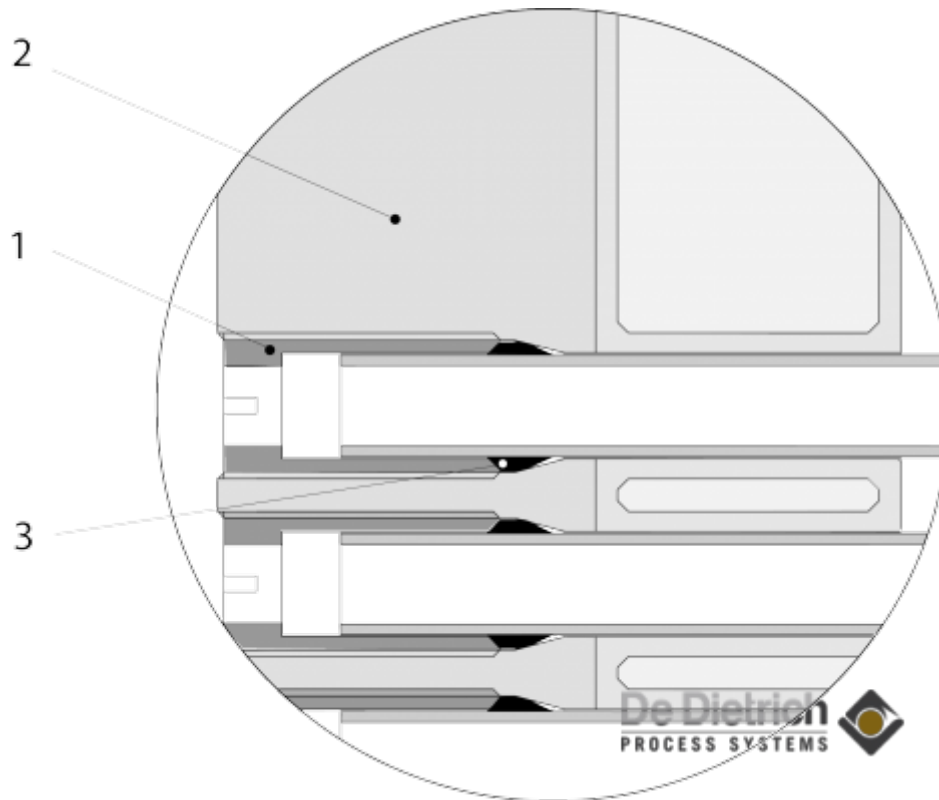
DESCRIPTION AND FEATURES:

- Single tube seal with double clamp rings
- Diffusion-resistant tube plate
- DN 100-DN 300: -1/+10 bar, -10/+200°C
- 0,4-20 m² heat transfer area

Heat exchangers made of inert, non-metallic materials are a requirement in the chemical and pharmaceutical industries where it is essential to avoid any interaction between the materials of construction and the substances being processed. In addition to chemical resistance there is a prime requirement for resistance against abrasion and easy of cleaning of the equipment.

It is usually not possible to fuse-join or weld non-metallic materials which meet these requirements, so that the tightness of the heat exchanger depends on the quality of the sealing between the inner tubes and the tube plate.

Considering the different thermal expansion coefficients and the possible temperature differences in the equipment these seals must be capable of taking up any linear expansion that occurs.



SINGLE TUBE SEAL:

The pure PTFE clamp seal for the individual tubes provides a high degree of safety. Every seal is set to the required sealing force and after maintenance work was carried out and in case the tube has been changed it can be reset to the optimum setting again.

The slopes on the contact surfaces between the screw connection (1) and the clamp seal (3) on the one side and between the clamp seal and the tube plate (2) on the other side have been designed for compensating the different thermal expansions of the materials in contact. Together with the polished ends of the SiC tubes this principle guarantees high and controlled sealing forces and as a result no leaks even after a long time in service.

CLEANING OF THE SERVICE SIDE:

In operation it is often not possible to prevent soiling of the heat exchanger tubes on the service side so that efficient cleaning is one of the main criteria to select a heat exchanger. CORE-THERM provides the possibility of cleaning the heat exchanger tubes mechanically or replacing them individually without affecting the sealing force on the other tubes. Even when the header on the service side is removed the tube plate remains fixed to the shell.

TUBE PLATE:

CORE-THERM heat exchangers are fit up with PTFE tube plates with a reinforcing plate. They can be operated with corrosive products at high pressures up to +10barg as well as under vacuum.

The reinforcing plate is equipped with a steel core which guarantees the pressure persistence of the tube plate. The steel core is coated with diffusion resistant PFA ensuring the corrosion durability.

SILICON CARBIDE TUBES:

Sintered SiC is a monolithic material which contains no further components in its structure. SiC meets the main requirements of an optimum heat exchanger tube due to its heat conductivity of 125W/m²K and its high corrosion resistance.

The benefits of SiC are:

- Very good chemical resistance, similar to borosilicate glass
- High pressure resistance
- Very good thermal conductivity
- Very good temperature and thermal shock resistance

DE DIETRICH GLASS LINING:

The usual and common way to operate a shell and tube heat exchanger is with the product in the shell.

Working with corrosive media implies that the materials of the shell and the tubes have to fulfil the same requirements in terms of corrosion resistance.

For such applications De Dietrich glass-lined shells together with SiC tubes are a perfect material combination working with aggressive media at high pressures up to +10barg as well as under vacuum and operation temperatures up to 200°C.

TECHNICAL DATA:

DN	Area [m²]	L [mm]	DN1	DN2/3	DN4
100	0,4	1588	80	50	25
	0,7	2368			
	1,0	3368			
	1,6	4588			
150	1,3	1588	100	50	50
	2,2	2368			
	3,5	3368			
	5	4588			
200	2,3	1638	150	50	80
	4	2418			
	6,2	3418			
	8,7	4638			
300	5	1739	250	80	100
	8,7	2519			
	13,5	3519			
	19,2	4739			

Questions? We are here to help.

If you'd like to talk with a sales representative about purchasing De Dietrich Process Systems's products and services, you can reach us here.

Options

Corrosion-resistant turbulence promoters for the heat exchanger tubes



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