Tetra Pak® Coiled Heat Exchanger



Application

The Tetra Pak® Coiled Heat Exchanger provides efficient heating and cooling of low to high viscous and smooth to particulate products.

Highlights

- Enables high capacity processing of high viscous products
- High heat transfer efficiency minimises system volumes
- Gentle mechanical treatment ensures excellent particle integrity up to Ø 25 mm
- Designed for high hygiene and low maintenance

Working principle

In the Tetra Pak Coiled Heat Exchanger, product flows through a coil-shaped tube and media flows around the product tube to heat or cool the product. An additional feature of the coiled design is that it creates a second flow pattern (the Dean effect) at high velocity, which increases heat transfer efficiency.

Maximising versatility and efficiency

Continuous processing of viscous products generates high pressure with increased velocity. The pressure rating of the Tetra Pak Coiled Heat Exchanger enables you to process higher capacities of high viscous products, improving production efficiency and cutting cost per litre. Higher product velocity also improves heat transfer efficiency, minimising heat surface area and system volumes, optimisig CIP and minimising product losses. The coiled mono-tube unit – between 30 and 100 meters long – has only one inlet and one outlet connection. This enables gentle mechanical treatment and ensures excellent particle integrity for particles of up to 25 millimetres in diameter. The unit has an overall hygienic design that is easy to maintain. Floating ends through the bottom flange and to prevent cracking caused by thermal expansion.

If several units are installed in series, significant energy savings can be achieved by connecting media side in water loops. This can reduce heating and cooling energy consumption by up to 50% to ensure quicker payback on your investment.

Standard design

The coiled product tube is placed in a vertical chamber where media flows. The bottom product tube connection is sealed by O-rings to create a system that allows movement between the product tube and the media shell. This design absorbs the effects of thermal expansion and prevents the tube from cracking. The unit is supplied with insulation to minimise heat losses and ensure operator safety. The heat exchanger dimension is selected based on each specific application – the number of units depends on desired capacity and required heat transfer area.

Approval

- PED and other approvals on request
- Tubes and shells are designed in accordance with PED for the specified temperature and for the pressure ranges shown in the table below
- 3-A approval for all models

Material

- Surfaces in contact with product: EN 1.4462 (Duplex 2205)
- Other parts in EN 1.4301 (AISI 304) and EN 1.4307 (AISI 304L)
- Seals in EPDM

Design temperature and pressure rating

- Media design temperature: 175°C (347°F)
- Product pressure up to 300 bar
- Media pressure up to 10 bar

CHE Model	Diameter A (mm)	Height B* (mm)	Approx. weight empty (kg)	Approx. weight full (kg	Design pressure tube (bar)	Design pressure shell (bar)
CHE14-30	273	2 888	238	268	267	10
CHE14-40	273	2 888	268	297	267	10
CHE25-30	414	3 230	263	411	300	10
CHE25-45	414	3 230	342	488	300	10
CHE25-68	414	3 930	427	609	300	10
CHE33-30	470	3 203	403	587	290	10
CHE33-40	470	3 203	429	610	290	10
CHE33-60	470	3 933	533	756	290	10
CHE42-50	614	3 208	781	1 127	230	10
CHE42-70	614	3 937	941	1 380	230	10
CHE42-90	614	4 526	1 086	1 593	230	10
CHE48-60	766	3 230	1 027	1 514	155	10
CHE48-80	766	3 965	1 432	2 067	155	10
CHE48-100	766	4 551	1 462	2 197	155	10
CHE60-63	916	3 253	1 374	2 090	110	10
CHE60-86	916	3 982	1 674	2 559	110	10
CHE60-106	916	4 575	1 919	2 945	110	10

*This does not represent the total installed height, which also includes the mounting and service area.
Allow additional clearance of 1 000mm. Frame hight is 510mm +/- 10mm.

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Connections

- Media: DIN flange
- Product: high-pressure union

Information required for quotation

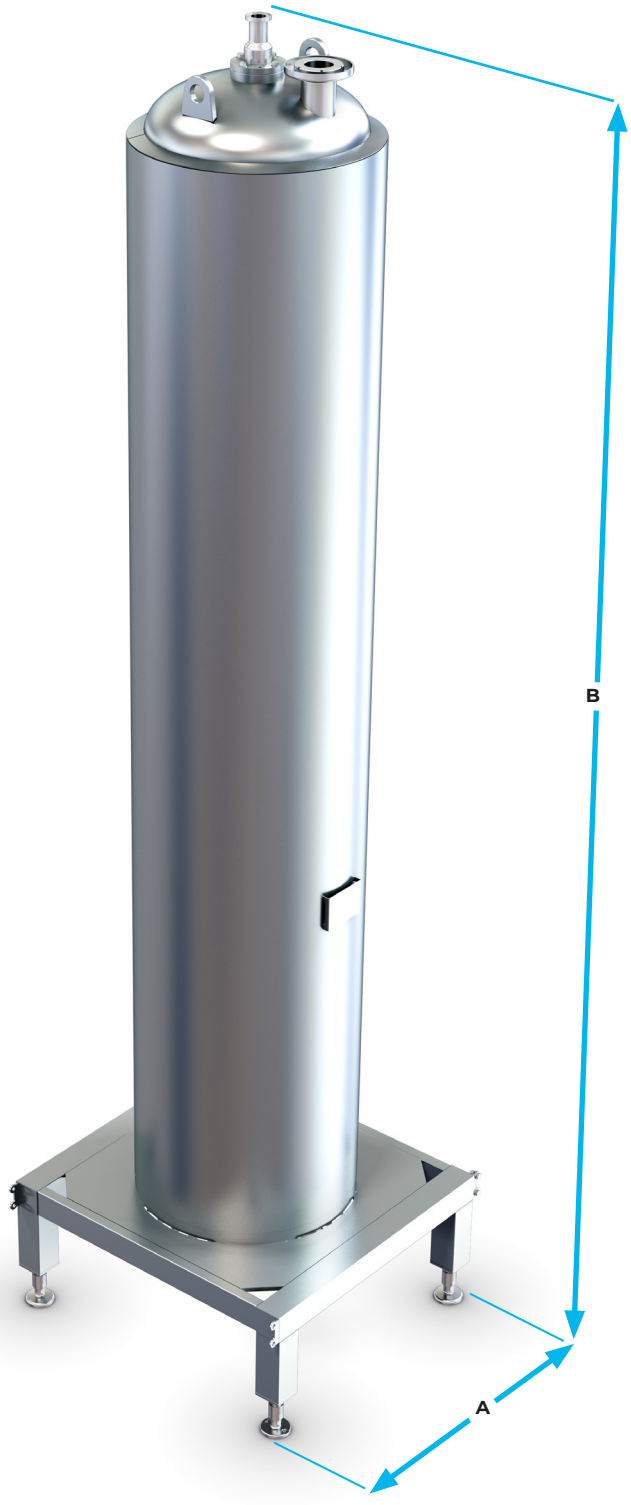
To ensure an accurate quotation, enquiries should include information about:

- Required flow rates
- Temperature program
- Physical properties of product and media

Environment

Tetra Pak Coiled Heat Exchangers are designed for optimum utility consumption for each specific application. Exact energy consumption depends on how the heat exchanger is used.

Tetra Pak Coiled Heat Exchangers consist of parts that can be separated for recycling.



Measures according to the separate chart.

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