



Tetra Pak® Coiled Heat Exchanger



Highlights

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

Application

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

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.

Maximizing 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, minimizing heat surface area and system volumes, optimizing CIP and minimizing 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 top prevent cracking caused by thermal expansion.

The unit is available with an energy recovery feature can reduce heating and cooling energy consumption by up to 47% and ensures a quick payback on your investment.

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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 minimize 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.

Material

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

Design temperature and pressure rating

- Media design temperature: 165°C (329°F)
- Product pressure up to 300 bar
- Media pressure up to 10 bar

Approval

- PED and ASME
- Tubes and shells are designed in accordance with PED or ASME for the specified temperature and for the pressure ranges shown in the table below

Design pressure and dimensions

Size	Diameter A (mm)	Height B* (mm)	Approx. weight Empty (kg)	Approx. weight Full (kg)	Design pressure (tube) Bar	Design pressure (shell) Bar
60-106	916	3 890	1 800	2 800	110	10
60-86	916	3 300	1 560	2 335	110	10
60-63	916	2 570	1 270	1 825	110	10
48-100	766	3 890	1 315	2 050	155	10
48-80	766	3 300	1 120	1 755	155	10
48-60	766	2 570	910	1 400	155	10
42-90	614	3 890	950	1 465	230	10
42-70	614	3 300	805	1 240	230	10
42-50	614	2 570	645	990	230	10
33-60	470	3 300	480	705	290	10
33-40	470	2 570	376	560	290	10
33-30	470	2 570	350	534	290	10
25-68	414	3 300	370	552	300	10
25-45	414	2 570	285	431	300	10
25-30	414	2 570	260	408	300	10

*This does not represent the total installed height, which also includes the mounting and service area.

Connections

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

Information required for quotation

To ensure an accurate quotation, enquires 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.

