

PHARMACEUTICAL HEAT EXCHANGER

P-TFM-I

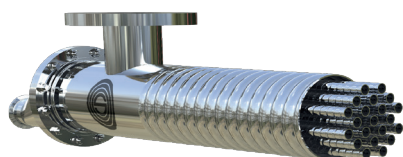
Multitube. Non removable tube bundle. Double tube sheet.

PHARMACEUTICAL LINE

Designed in accordance with the recommendations set by the FDA. To avoid cross-contamination the exchanger has a double tubesheet. The finished meet the highest standards, with certified roughness if required. The design ensures drainability and product recovery.

OPERATION

The P-TFM-I is a tubular heat exchanger consisting of a tube bundle within a shell. The product flows through the inner tubes while the service flows through the outer channel. This model incorporates a double tube sheet that avoids the risk of cross contamination between product and service.

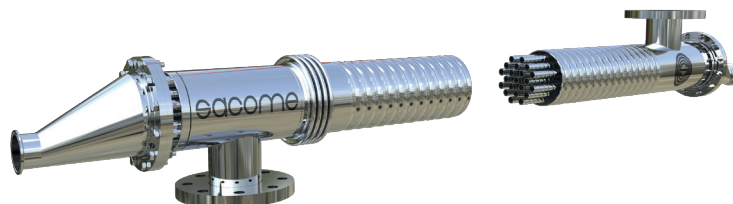
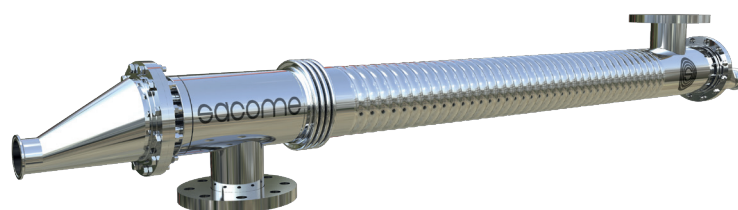


ADVANTAGES OF CORRUGATION

- HYGIENIC PROFILE
- DIFFERENT CORRUGATION GEOMETRIES (HARD/SOFT/PLAIN)
- TURBULENT FLOW (LOWER REYNOLDS NUMBER THAN FOR SMOOTH TUBES)
- HIGHER HEAT TRANSFER COEFFICIENTS AND LOWER EXCHANGE AREA
- HOMOGENEOUS THERMAL TREATMENT
- LOWER FOULING
- SHORTER RESIDENCE TIMES
- LONGER RUNNING TIMES

ADVANTAGES OF TUBULAR HEAT EXCHANGER

- LOW MAINTENANCE COSTS
- HIGH WORKING PRESSURES
- HIGH WORKING TEMPERATURES
- PROCESSING OF PARTICULATE OR FIBRE PRODUCTS
- EASY INSPECTION AND DISASSEMBLY
- HIGH SECURITY IN ASEPTIC PROCESSES
- EASY TO ENLARGE



APPLICATIONS

Heating or cooling water for injection (WFI), purified water (PW), distilled water, products of biotechnology or pharmaceutical industry, as can be glucose, emulsions or cosmetics among others.

Discover all the advantages of corrugation in tubular heat exchangers
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SACOME HEAT EXCHANGER TYPE DEFINITION

P-TFM-I-7-1-85/17-6000-316L/316L-H

P

PHARMACEUTICAL LINE

TFM

MULTITUBULAR

I

NOT REMOVABLE TUBE BUNDLE

0/1

WITHOUT/WITH EXPANSION JOINT

7

NUMBER OF INNER TUBES

85

Ø SHELL (mm)

17

Ø INNER TUBE (mm)

6000

NOMINAL LENGTH (mm)

316L

SHELL SIDE MATERIAL

316L

TUBE SIDE MATERIAL

H/S/P

CORRUGATION INDICATOR

(HARD / SOFT / PLAIN)

STANDARD DESIGN CONDITIONS

Design temperature
180 °C

Design pressure
10 barg

For higher design pressures or temperatures as well as hazardous fluids, the heat exchangers can be checked according to AD 2000 Merkblätter, ASME VIII Div.1, PD 5500, EN13445 or by Finite Elements Analysis and CE certificated by individual inspection modules.

Included: 3.1 Quality certificate and CE Marking according to 2014/68/UE.

STANDARD MEASURES

Shell side diameter
52 mm – 204 mm

Inner tube diameter
≥ 12 mm

Length
1-1.5-2-3-6 m

* Other available sizes under request.

MATERIALS

Shell & Tubes

Stainless Steel 304 or 316L

* Other materials available on request (2205, 2507, 254 SMO among others)

AVAILABLE CONNECTIONS

Clamp

* Other connections available on request.

SURFACE FINISH

External

External Polished

Product side

Roughness product channel according to the specifications of each project ($R_a \leq 0.4, 0.5, 0.6$ or $0.8 \mu m$). Electropolished on request.

OPTIONS

INSULATION

Mineral wool coated in 304 stainless steel metal sheet.

INTERCONNECTIONS

In case the equipment contains several units in series, SACOME can provide the interconnections for the product channel and the service channel.

FRAME

In 304 stainless steel. The type and shape of the frame will be selected to fit the needs of each project. If required, equipment may be sloping for better drainage.



SACOME