PILLOW PLATES
Heat Exchange Steel Heart

All industrial processes involve Heat Exchange: oil & gas, chemical, power, metallurgy, food, textiles and many others. In all these areas, FIC S.p.A., with the Pillow Plates technology, is capable to give customized solutions, guaranteeing efficiency and energy savings.

TECHNOLOGY
The Pillow Plates system consists of two stainless steel sheets welded together and further deformed by inflation to obtain a cross section.

- The welding technology can be laser or multispot resistance. FIC defines the most appropriate technology and the best weld pattern in order to meet the project’s purpose.
- The exchange surface works 100% without dead areas.
- The high turbulence inside the plate guarantees high heat-transfer coefficients.
SINGLE OR DOUBLE-EMBOSSED
Two types of Pillow Plates

**Single embossed** defines a Pillow Plates with only one deformed sheet. The laser permits to control the welding penetration leaving the surface of the thickest sheet completely unaltered. This type is often used for pharmaceutical and alimentary applications.

The **double embossed** Pillow Plates, on the other hand, involves the deformation of both sheets, guaranteeing larger sections of passage. This type is mainly used for falling films, heat recovery, immersion batteries.

**MATERIALS**
All stainless steel, even duplex, can be used: AISI 304, 316L, 316Ti, 321, 904L, SAF2205, SAF 2307, LDX 2101, SMO 254, etc.
Also special alloys (eg Hastelloy).

**DIMENSIONS AND THICKNESSES**
Dimensions up to 2000x12000 mm and more.
Thickness starting from 0.6 + 0.6 mm up to 4 + 4 mm and from 1.5 + 0.6 mm up to 18 + 2 mm and more.
OPERATING CONDITIONS
Great flexibility for multiple applications

Pillow Plates can be designed for a wide range of pressures from 2-3 bar up to 80 bar. Working temperatures can range from -200° C to 600° C.

COOLING/HEATING MEDIA
Freon - Glicole - Water - CO₂ - R717 – Steam – Thermal oil

ASSEMBLY TYPE AND EXECUTIONS
There are possible embodiments in various shapes and sizes, depending on the uses:

- Chemical industry (e.g. galvanic industry for industrial refrigeration)
- Typically for tanks, both existing - with the “clamp-on” solution - or for new ones
- Beverage, dairy and chemical industries
- Granular solids and in the food industry
- Ideal for liquid to liquid or liquid to gas applications, and for refrigeration
- In the textile, food and dairy industries
- Trays, Half Pipes
- Bundles
- Rings, Hoods, Tunnels

OTHER TYPE
- HOPPERS, for high viscosity products
- TANKS, e.g. for the dairy industry or the textile industry
- SANDWICH PLATES, special constructions with the two perfectly flat and smooth surfaces used in the pharmaceutical and food sectors
- OTHER GEOMETRIES
FIELDS OF APPLICATIONS

Pillow Plates technology is used in many industrial sectors:

- Oil&gas
- Chemical
- Beverage, beer, enology
- Dairy
- Food
- Heat recovery from industrial or civil dirty waste and seawage
- Generation of energy from renewable sources in the hydropower generation
- Aerospace
- Pharma
- Textile
- Cosmetics
FIC - HEAT EXCHANGE MASTERY
Market leader for more than 50 years

FIC S.p.A. is the world leader in the heat exchange technologies, a sector in which it has been present since 1951. Thanks to a constant process of technological innovation, today the company represents a reference for the global market exporting in more than 60 countries worldwide.

CUSTOMIZED DESIGN AND PRODUCTION
FIC thanks to its team of specialized engineers can study customized and innovative solutions, according to a work-flow based on sequential steps:

- listening to the clients and their needs;
- data collection;
- study of the solution, thermal and mechanical sizing;
- detailed engineering and drawing;
- discussion of the project with the client;
- operational phase: construction, inspections;

40.000 sqm
of production area

35 tons
lifting capacity

1.500 tons
of steel worked every year

130
employees
- **Test** based on one or more checks: bubble test, He test, Hydro test, burst-test, metallographic analysis, dye penetrant, visual and dimensional controls, FAT;
- **Delivery** of the product and of the necessary documentation;
- **After sales**: technical assistance and availability of spare parts.

Thanks to three laser welding lines and a multipoint resistance welding line, lead time are always quick.

**CERTIFICATIONS**

FIC S.p.A. is certified according to:

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<td>Quality standard</td>
<td>Quality requirements or every welding process of the company</td>
<td>Pressure Equipment Directive</td>
<td>For the pressure equipments</td>
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The company designs according to the **ASME and AD2000 calculation codes.** FIC S.p.A. cooperates with **internationally recognized Notified Bodies (RINA)** for periodic updates and qualifications of welding processes and of its qualified welders.