HEAT
EXCHANGE
MASTERY

MADE IN ITALY SINCE 1951

HEAT EXCHANGERS

FIC S.p.A. - Industrial Division

FIHE
FIC Industrial Heat Exchangers

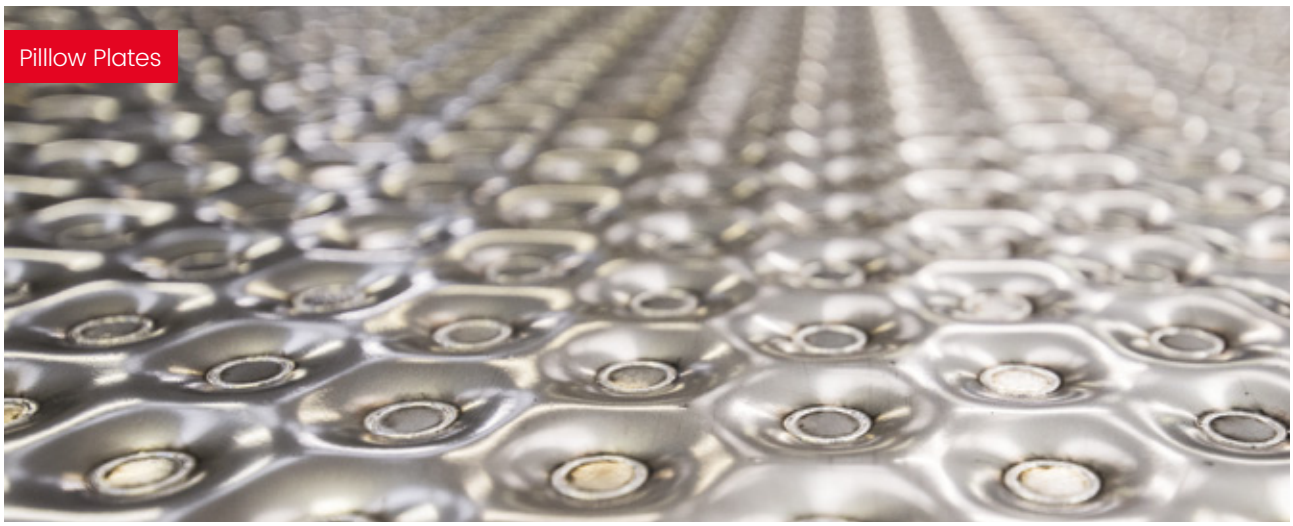
In all industrial processes, large quantities of energy are often needed and must be used with the maximum efficiency, for both economic and environmental reasons.

FIC S.p.A.'s Heat Exchangers (FIHE - FIC Industrial Heat Exchangers) represent **the optimal solution for the transfer of thermal energy in the indirect way** under various operating conditions.

TECHNOLOGY

The basic element is the **Pillow Plates (Dimple Plate)**.

- The plates are welded with **laser** or **multispot resistance technology**, depending on the application.
- After being welded, the pates **are assembled in bundles**; they may be enclosed in casings according to a *shell&plate* design.


Pilllow Plates


Qualified welders

MATERIALS

Steel of various grades can be used as construction material:

- austenitics (AISI 304, AISI 316L, AISI 316Ti, AISI 317, AISI 321, others);
- ferritics (AISI 430);
- special (SMO 254, AISI 904L, others);
- duplex (SAF 2205, SAF 2307, LDX 2101);
- High Nickel alloys (Hastelloy);
- other materials.

OPERATING CONDITIONS

- Pressures from a few bars up to 60-80 bar
- Temperatures from -200° C up to 600° C
- The heat exchange duty can reach up to tens of MW.

Each Heat Exchanger is customized and 100% designed according to the specific needs of the individual process.

ADVANTAGES

Why choose FIHE:

- **high thermal exchange efficiency**, thanks to the high turbulence in the Pillow Plates heat transfer plates;
- **reduced pressure drops**, with consequent savings of both capital and operating costs;
- **easy cleaning**, thus this solution is optimal when fouling phenomena occurs (e.g. powders, fibers, etc.);
- **design flexibility**, fundamental both for retrofit situations and new installations;
- **wide operating range** in terms of working conditions (temperature and pressure) and heat-transfer capacity.

SCOPE OF APPLICATION
Outputs and possible applications

FIHE - FIC Industrial Heat Exchangers - can be manufactured to satisfy many needs in different sectors.

IMMERSION PLATE BATTERIES

For maintaining low and high temperature bath temperatures, e.g. in surface treatament installations or in the food industry

BSHE - BULK SOLID HEAT EXCHANGERS

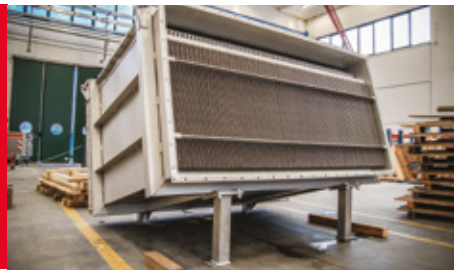
For the heat treatment of granular solids: fertilizers, sugar, polymeric materials, vegetable seeds etc.

PROCESS-THERM

For the energy recovery from gas or smoke streams with a high content of relative humidity and powders, typically in Spray Drying plants

HEAT-EXCHANGERS WITH SHELL

E.g. for heat recovery in the pulp & paper sector or in the textile sector



FLUE GAS CONDENSER (FGC)

Used for the optimization of energy efficiency - up to 25-30% or more - in district heating plants and networking

SPECIAL HEAT EXCHANGERS

For many industrial processes and realized according to the “engineered to project” logic: condensers, evaporators, reboilers

APPLICATION FIELDS
Best performance in every field

FIC Industrial Heat Exchangers can be used for gas to liquid or liquid to liquid process and also liquid to solid applications, in many industrial sectors.

Oil&gas

Chemical

Pulp-paper

Fertilizers

Mining

Power

Food

Pharma

Textile

FIC - HEAT EXCHANGE MASTERY
Customization and quality

FIC S.p.A. is the **world leader in 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 point in the global market with exports to over 60 countries worldwide.

CUSTOMIZED DESIGN AND PRODUCTION

FIC thanks to its team of specialized engineers is capable to study **customized and innovative design solutions**, according to a work-flow based on several steps:

- **listening to the clients** and their needs**;**
- **data collection** and possible survey straight on the plant;
- study of the solution, **thermal and mechanical design** using specific softwares and FEM analysis;
- **acquisition of the contract** and assignment to the project manager;

40.000 sqm
of production area

4 welding
lines fully automated

35 tons
lifting capacity

1.500 tons
of steel worked every year

130
employees


CO_2 laser welding


FIC S.p.A.

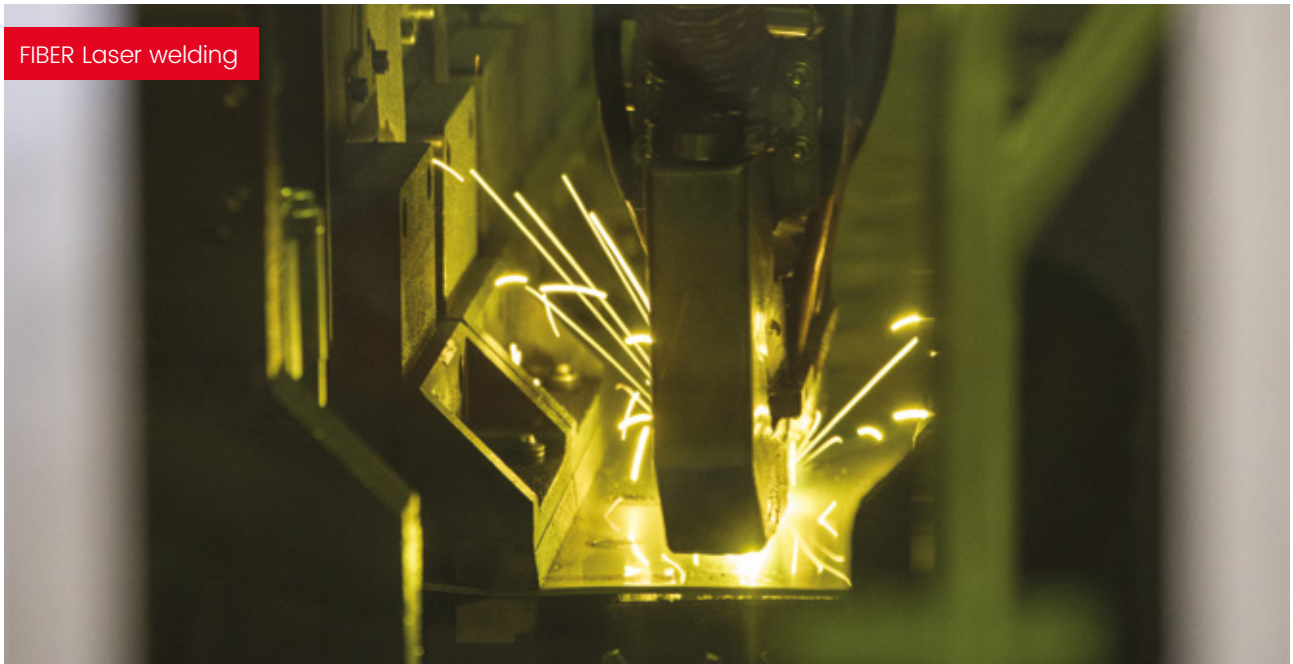
- **detailed engineering** and drawing;
- **discussion of the project** with the client to check details;
- **operational phase**: construction, inspections;
- **test** through one or more checks: bubble test, He test, Hydro test, burst-test, metallographic analysis, non destructive test and dye penetrant, visual and dimensional controls, FAT;
- **delivery** of the product and of the necessary documentation;
- **commissioning** and test run;
- **after sales**: technical assistance and availability of spare parts;

CERTIFICATIONS

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

ISO 9001:2015	**ISO 3834**	**PED, 2014/68/UE**	**ASME U-Stamp**
Quality standard	Quality requirements for every welding process of the company	Pressure Equipment Directive	For the pressure equipments

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.



FIBER Laser welding

AZIENDA CON SISTEMA
DI GESTIONE QUALITÀ
CERTIFICATO DA DNV GL
= ISO 9001 =

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