



HEAT EXCHANGERS FOR THE  
**CHEMICAL**  
PROCESSING INDUSTRY



**TITAN**  
METAL FABRICATORS INC.

# HEAT EXCHANGERS for the CHEMICAL

Titan Metal Fabricators designs and fabricates highly corrosion resistant equipment for the chemical, petrochemical and pharmaceutical industries. Our expertise lies in our reputation and proven ability to design and fabricate cost effective heat exchangers using the reactive metals tantalum, zirconium, niobium, titanium and the high nickel alloys. Heat exchangers made from these metals can be used with extremely corrosive fluids and last for decades if designed and fabricated correctly. You need the confidence your job is not going to have problems. We have the experience to make sure everything comes together—budget, design, fabrication and schedule—to yield the most trouble-free installation possible.

Our heat exchanger product line includes many variations of the shell and tube family and all TEMA designs as follows:

- Fixed Tubesheet
- U-bundle
- Packed Head, Floating Tubesheet
- Kettle Reboilers
- Falling Film Evaporators
- Falling Film Absorbers
- Bayonet
- Helical Coil
- Immersion Coil
- Double Pipe

Our normal designs and capacities:

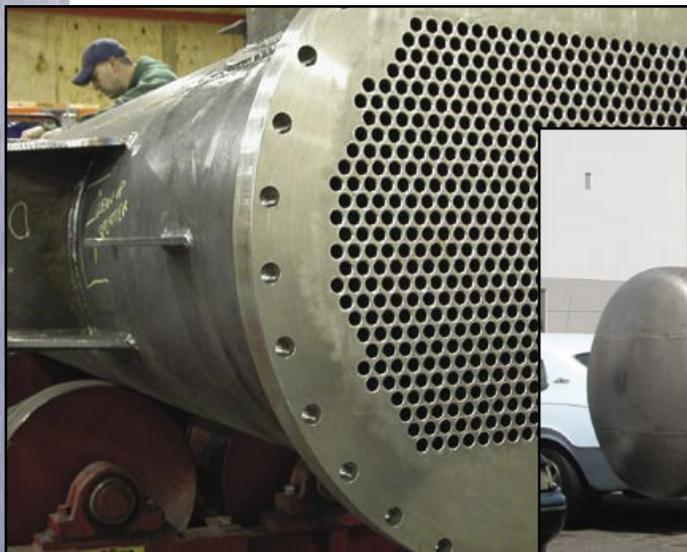
- Diameter 8 feet
- Length 50 feet
- Weight 50 tons
- Pressure 2000 PSI
- Temperature 700°F

Design codes and standards:

- TEMA
- ASME
- National Board
- PED
- JIS

The reactive metals have unique properties which affect heat exchanger design. Our Project Management staff analyzes all of these issues on every project. We have experience in all of these critical areas:

- Material Selection
- Corrosion Allowance
- Thin Wall Tubing
- Vibration Analysis
- Tube Expansion
- Hydrogen Embrittlement Protection
- Nozzle Design
- Explosion Clad Design
- Loose Lined vs. Clad Tubesheets
- Expansion Joint Selection
- NDT Procedures
- Helium Mass Spectrometer Procedures
- Welding and Purge Procedures
- Heat Treat Requirements



# PROCESSING INDUSTRY

Titan Metal Fabricators' dedication to only the reactive metals has led us to become experts in heat exchanger applications for the following chemical and pharmaceutical processes:

- Acetic Acid
- Agricultural Chemicals
- Ammonium Nitrate
- Bromine
- Chlorine
- Formic Acid
- Hydrochloric Acid
- Multi-Purpose Pharmaceutical Plants
- Polycarbonate Production
- Nitric Acid
- Silicone Production
- Sulfuric Acid Concentration
- Purified Terephthalic Acid
- Vinyl Chloride Monomer

## PROJECT MANAGEMENT

The key to the success of your project lies within our Project Management system. From initial proposal through design, fabrication and start-up, our project management system gives the responsibility to one person. The system fosters an intimate knowledge of each project's design, quality and delivery requirements, ensuring that it meets the expectations of each individual customer. Our in-house staff includes Mechanical, Thermal and Chemical engineers with a combined emphasis on corrosion resistance. We are fully integrated with in-house thermal and mechanical design state-of-the-art software.



## MANUFACTURING AND QUALITY CONTROL

We work exclusively with the reactive metals and we do it every day. We have the experience and the proven ability to weld these metals correctly. This is your greatest assurance of quality when using these metals in your equipment. In addition to our own stringent procedures and inspection process, we use AWS, ASTM, ASME, PED and TEMA standards to meet or exceed our customers' highest expectations.

## MORE INFORMATION

Call us if you have an application problem that you think the reactive metals may solve. We can help you decide which metal to use and the proper design and specification. We would be pleased to send you more information such as additional literature, corrosion resistance charts, material properties or customer references.



## THE TITAN MISSION

... In a word, it's **QUALITY.**

"We believe **QUALITY** is imperative not only in manufacturing, but throughout the entire company. Through our commitment to providing customers with quality products, service, design, innovation, manufacture, testing and inspection, we have become and will remain a world leader in the development of corrosion resistant equipment."



TITAN Metal Fabricators, Inc. designs, fabricates and repairs corrosion resistant equipment fabricated with TANTALUM, NIOBIUM, ZIRCONIUM, TITANIUM and the NICKEL ALLOYS. Our corporate offices and 21,000-square-foot manufacturing headquarters are located just off Pacific Coast Highway in Oxnard, California—within an easy drive of Los Angeles International Airport (LAX) and with complete access to the Port of Los Angeles and Port Hueneme to facilitate international ocean freight.

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