



PROCESS EQUIPMENT FOR THE  
**CHEMICAL**  
PROCESSING INDUSTRY



**TITAN**  
METAL FABRICATORS INC.

# CORROSION RESISTANT PROCESS EQUIPMENT FOR INDUSTRY

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 process equipment using the reactive metals tantalum, zirconium, niobium, titanium and the high nickel alloys. Process equipment 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.



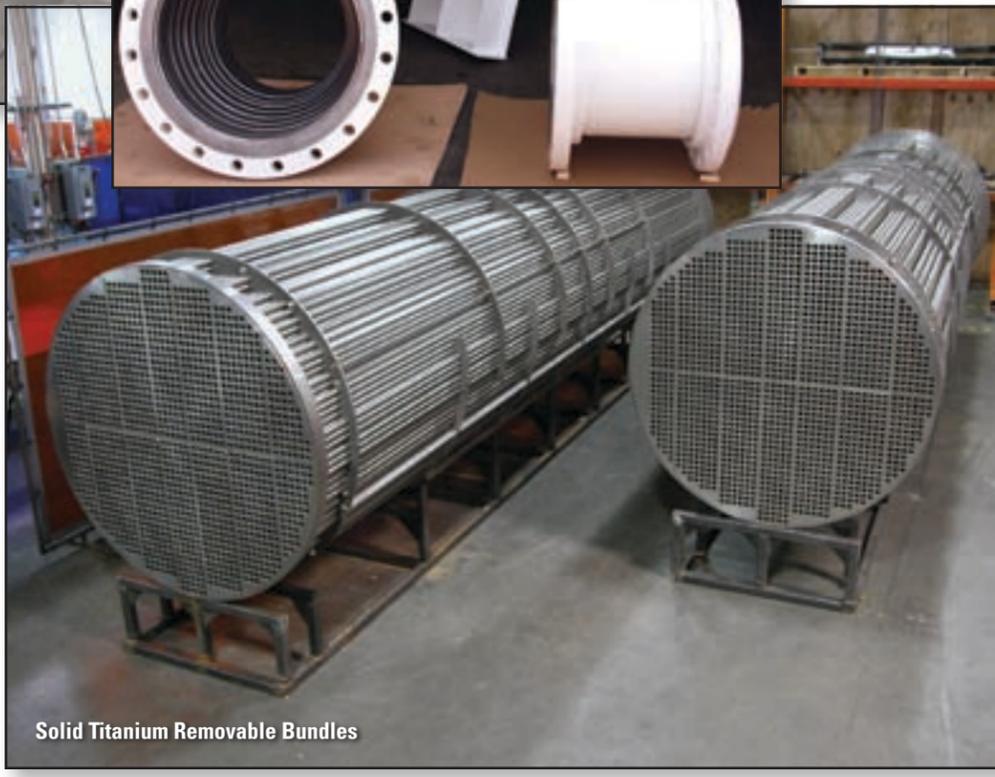
Hastelloy Heat Exchanger



6" Thick Solid Titanium Tube Sheet



Tantalum Heat Exchanger



Solid Titanium Removable Bundles

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 . . . . . 14 feet
- Length . . . . . 150 feet
- Weight . . . . . 75 tons
- Pressure . . . . . 2000 PSI
- Temperature . . . 700°F

Design codes and standards:

- ASME
- PED
- Chinese
- AD2000
- JIS
- TEMA

# TANTALUM ZIRCONIUM TITANIUM HASTELLOY



EMD Titanium Anodes



Titanium Grade 7 Columns and Reboilers



Zirconium Cooler Condenser



125,000 lb Titanium Heat Exchanger



90' Tantalum Lined Carbon Steel Column

### DESIGN EXPERTISE

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

### APPLICABLE PROCESSES

Titan Metal Fabricators' dedication to only the reactive metals has led us to become experts in process equipment 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

# TANTALUM ZIRCONIUM TITANIUM HASTELLOY



Zirconium Column



Tantalum Bayonet Heat Exchanger



### 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.



82" Diameter Titanium Heat Exchanger



Titanium Heat Exchanger with Clad Heads



CNC Drilling up to 10' x 10'



### 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.

### TITAN METAL FABRICATORS, INC.

835 Flynn Road • Camarillo, CA 93012 • PHONE 805.487.5050 • FAX 805.487.5047 • www.titanmf.com

# TANTALUM ZIRCONIUM TITANIUM HASTELLOY

## EP

Corrosion resistant process equipment for the **Chemical Processing, Pharmaceutical and Steel Industries**



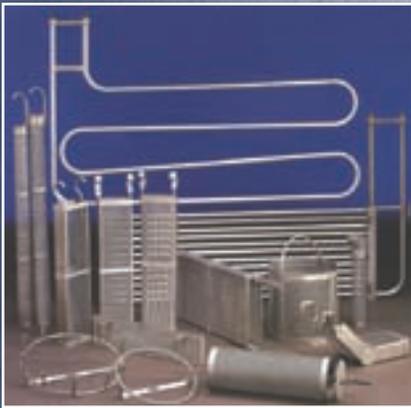
## OIL & GAS

Nickel Alloys, Stainless and Titanium Heat Exchangers and Vessels for **Refinery and LNG Applications**



## P & A

Anodes, Baskets, Steam Immersion Coils and Auxiliary Anodes for the **Plating and Anodizing Industry**



## EMD

Anodes and immersion coils for use in **EMD Production**



## MARINE

Corrosion resistant and high performance Titanium products for the consumer and industrial **Marine Industry**



# THE TITAN FAMILY

**TITAN Metal Fabricators** was created

to bring innovative reactive metal products to industry to solve corrosion problems.

**TITAN** designs and fabricates corrosion resistant products using the reactive metals—Tantalum, Titanium, Zirconium, Niobium and Hastelloy—in order to reduce or eliminate corrosion in highly aggressive applications.