

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



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



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



HEATERS
Electric
Immersion
Heaters for the
**Plating and
Anodizing
Industry**

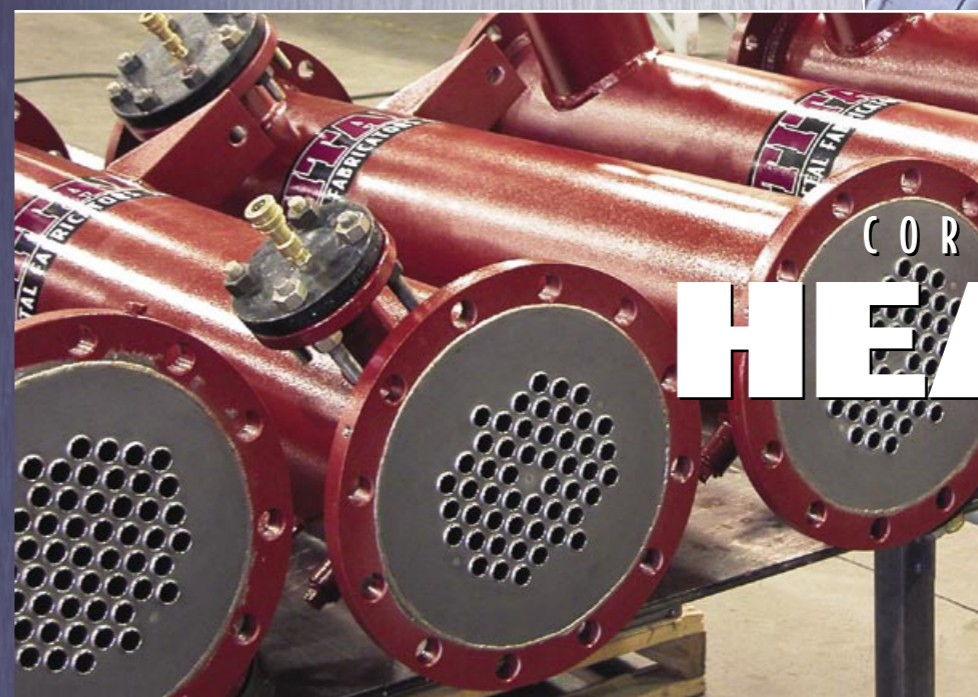


MARINE
Corrosion
resistant and high
performance
Titanium
products for
the consumer
and industrial
Marine Industry

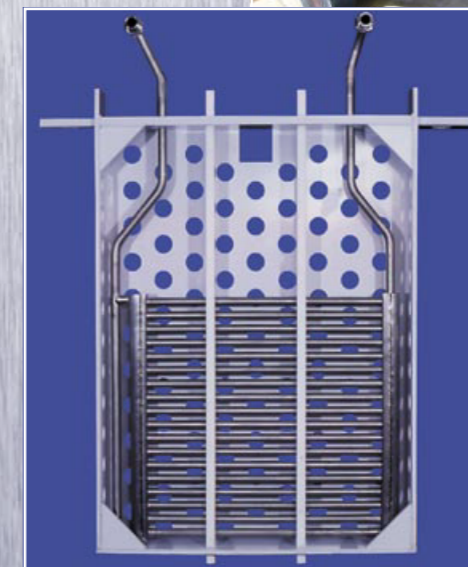


THE TITAN FAMILY

TITAN Metal Finishing, TITAN Marine, and TITAN Heaters were 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.



CORROSION RESISTANT
HEATING
FOR HCL PICKLING



TITAN
METAL FINISHING

CORROSION RESISTANT HEATING FOR HCL PICKLING APPLICATIONS

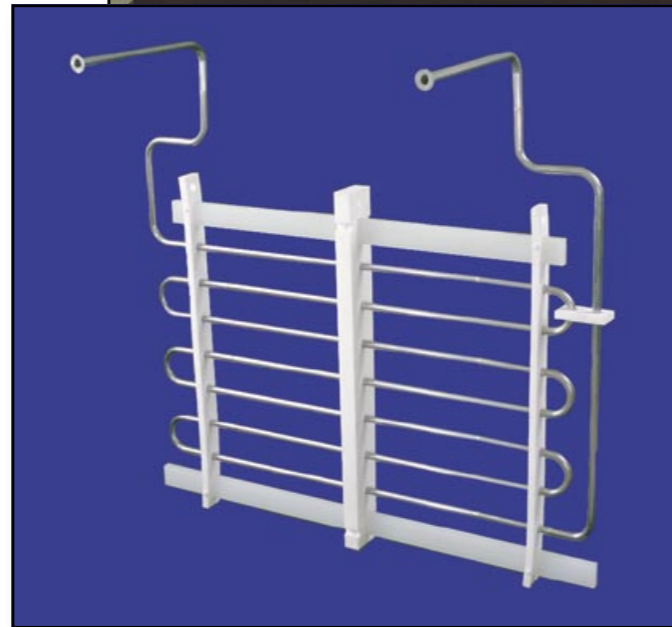
The steel industry has traditionally used PTFE immersion coils and direct steam spargers to heat its pickle baths. Continuous maintenance and the elimination of deep welling of its spent HCL pickle liquor due to its environmental impact has forced the steel industry to look for alternative ways to heat their pickle baths. The use of metal immersion coils has proved itself to eliminate all of the potential problems associated with PTFE immersion coils and direct steam sparging. Some of the benefits include:

- Cost competitive with PTFE Heaters
- Easily retrofittable into existing equipment footprint
- Elimination of downtime due to equipment failure
- No spare parts to keep in inventory
- Superior corrosion resistance
- Indirect heating eliminates pickle liquor dilution
- High heat transfer
- High steam pressures to reduce required surface area

TITAN offers a full line of custom designed in-tank immersion coils for the indirect steam heating of pickle bath operation. One of the most inert materials for complete corrosion resistance in pickle bath chemistries, TANTALUM offers better heat transfer characteristics and higher pressure capabilities than alternative materials (i.e. PTFE), therefore maximizing the total heat transfer area possible in a given dimensional space. The life expectancy of a tantalum unit is far superior to that of the alternative materials, which reduces downtime and maintenance costs.

SERPENTINE, GRID AND U-SHAPED COILS

We set the standard for the industry with our extensive experience in sizing and designing the most innovative and efficient immersion coil for the customer's specific requirements. Our units are designed to be located on the side wall of the pickle tank and tuck tightly against it to allow for maximum tank space. U-shaped and Serpentine coils will be for applications with smaller heat transfer requirements, while Grid-style coils can be used to achieve greater heat transfer area in the least amount of dimensional in-tank space.



SHELL & TUBE HEAT EXCHANGERS

Carbon block heat exchangers have traditionally been used to heat shallow tank, high turbulence pickle baths. The multi-gasketed designs and fragile nature of graphite heat exchangers still requires continuous maintenance and repair which results in expensive downtime and spare parts. This has forced the industry to look for alternatives. Metal shell and tube heat exchangers virtually eliminate all of the problems associated with carbon block heat exchangers while producing benefits such as these:

- Cost competitive with Carbon Block Heat Exchangers
- Easily retrofittable into existing equipment footprint
- Elimination of downtime due to equipment failure
- No spare parts to keep in inventory
- Superior corrosion resistance
- High heat transfer
- High steam pressures to reduce required surface area
- Fully-welded metal design eliminates breakage during handling, installation and operation
- Elimination of acid leaks into steam condensate

TITAN offers a full line of standard and custom designed shell and tube heat exchangers for the indirect steam heating of pickle bath operations. Completely inert and offering total corrosion resistance when exposed to pickle bath chemistries, TANTALUM offers better heat transfer characteristics and higher pressure capabilities than Graphite, allowing smaller sized heat exchangers. The life expectancy of a Tantalum heat exchanger is far superior to its Graphite counterparts, further reducing downtime and maintenance costs.



Through our experienced technical support, our commitment to service and our manufacturing quality, TITAN is dedicated to being the number one supplier of corrosion resistant equipment for the metal finishing industry. We have extensive experience in the design and manufacture of heat transfer equipment such as immersion coils as well as shell and tube heat exchangers. Our technical experts are always available to assist you with heat transfer calculations and custom design engineering for all sizes of accessory equipment.