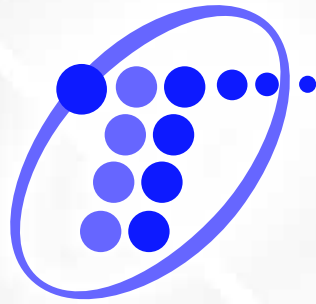


Tantalum

Monel

Nickel

Hastalloy  
'B' & 'C'



***Tinita***  
ENGINEERING PRIVATE LIMITED

Stainless  
steel

Niobium

Zirconium

Titanium

Exotic Metal Fabrication

Tinita Engineering Private Limited established in 1996 with the motto "Customer Satisfaction Through Quality" is an ISO 9001 : 2008 accredited company located in TTC Industrial Area, Rabale, Navi Mumbai.

This dramatic development in this highly competitive field is attained by the dedication to work, immediate response to all kinds of customers and through timely delivery of the products.

Equipped with latest machineries and having a working area up to the mark pays way to fabricate equipments out of exotic metals like Titanium, Tantalum, Nickel, Hastelloy 'B' & 'C', Monel, Inconel, Zirconium, Niobium, Alloy 20, Alloy 904L, Stainless Steel & other special alloys.

Good qualified engineers and experienced technocrats never compromise for quality in tailoring the products. This has been maintained positively for all our product ranges.

## COMPANY PROFILE



- [In-House Manufacturing / Fabrication Facility](#)

Tinita Machine shop has a sprawling Shop floor area of 20000 sq. ft. in TTC industrial area Rabale, Navi Mumbai. The Factory area is well connected by road, rail & other direct commuting facilities to Mumbai and Maharashtra. Tinita ensures the best usage of good engineering practice in manufacturing and follows stringent ASME, ASTM, TEMA, BS & ISO standards which result in good quality products.

### Capacity

Heat exchanger - Max. area : 300 sq. m

Pressure vessel & Reactor up to 75mm Thickness

We are having expertise in Titanium & Tantalum fabrication and have qualified welders for the same.

### Manpower

We have qualified engineers, welders and other skilled personnel to carry out all manufacturing & fabrication work with high precision and error free procedures laid out by our quality control engineers complying to ISO 9001-2008 guidelines

### Handling Facility

We are having EOT cranes & chain pulleys to take care of material handling.

### Approvals

We have approval from consultants / TPI agencies like UDHE , HPCL , LRIS Jacobs,, Bureau Veritas, SGS & others

## Quality Policy

We in Tinita Engineering Pvt. Ltd. are committed to excel and fulfill highest quality standards through technical innovation in the fabrication of equipments as per customers requirements by effectively implementing quality management system based on ISO 9001: 2008

Our policy is non compromise in quality and supply products to the complete satisfaction of customers by observing stringent quality control methods and work for continual improvement.



## Special Metal Fabrication

### Chemical Process Equipments & Components made out of.....

- TITANIUM
- TANTALUM
- NICKEL
- ALLOY 904L
- HASTELLOY 'B' & 'C'
- MONEL
- ALL GRADES OF STAINLESS STEEL
- INCONEL
- ALLOY 20
- ZIRCONIUM
- CUPRONICKEL
- 17-4PH
- DUPLEX STEEL
- SUPER DUPLEX

## Our Range of Products

Tinita with its governance over Exotic metals like Titanium, Tantalum, Nickel, Hastelloy 'B' & 'C', Monel, Inconel, Zirconium, Niobium, Alloy 20, Alloy 904L, Stainless Steel & other special alloys offers a wide range of products for various process Industries.

- |                                  |   |
|----------------------------------|---|
| HEAT EXCHANGER                   | THERMO WELLS                            |
| REACTOR VESSELS                  | SHAFT SLEEVES                           |
| CHEMICAL MIXERS                  | PUMPS & BLOWERS                         |
| COLUMNS AND TOWERS               | ANODE BASKETS, JIGS & FIXTURES          |
| HEATING & COOLING COILS          | TANTALUM CRUCIBLE FOR DIAMOND POLISHING |
| PIPES & PIPE FITTING             | BAYONET HEATER                          |
| IMMERSION HEATERS                | EVAPORATION BOATS                       |
| PLUG SCREW CONVEYORS             | THERMO TIPS                             |
| TANTALUM REPAIR KITS             | SPECIAL METALS LINING ON TANKS          |
| VALVES                           | SPECIAL METALS MACHINED COMPONENTS      |
| AGITATORS                        | TITANIUM ANODE WITH PLATINUM COATING    |
| BOLT, NUTS AND SPECIAL FASTENERS | TITANIUM ANODE WITH DOUBLE/TRIPLE       |

## Services

In addition to fabrication, Tinita lends a helping hand to our esteemed customers in field of maintenance. Exotic metals components & equipments being much expensive have to be repaired and maintained at times. Tinita provides the following services as and when required.

- Repair work in Titanium Lined high pressure multi layered - urea Reactor, stripper, condensers
- Re-tubing on Heat Exchangers.
- Site Fabrication & Welding of Titanium & other Exotic Metals Pipe Lines.
- Repair work on Titanium & other Exotic Metals Pipes Lines.
- Repair work of Exotic Metal Equipments at our Works.



## Our Products

### Heat Exchanger

They are device for transfer of heat or removing heat from one medium to another and maintain a required temperature in the system without allowing medium to mix. Heat gets transferred through tube wall. Two fluids at different temperature flow through Heat Exchanger one fluid flows through the tube side and the other flow through outside the tube but inside the shell. Heat gets transferred from one fluid to another through tube wall. Such a device used to transfer heat from one fluid to another without direct contact of the fluids. Heat exchangers usually maximize the transfer of heat by maximizing the contact surface area between fluids, as when the warmer fluid is passed through a series of coils or thin plates. [Heat Exchangers](#) are extensively used in Industry for cooling & heating in large scale process and systems. If there is waste of energy which can be recovered it can be used to recover and be used to heat different process without phase change. [Heat Exchanger](#) includes boilers, evaporators, super heaters, condensers, and coolers.

**Material of Construction :** Titanium, Tantalum, Nickel, Hastelloy, Inconel, Nickel Alloy Grades & Stainless Steel Grades

**Types :** Shell & Tube Heat Exchanger, U Tube Bundle, Coil Type Heat Exchanger, Double Pipe Heat Exchanger, Double Tube Heat Exchanger, Floating Heat Exchanger, Lined , Cladded Heat Exchanger, Process Heat exchanger.

**Shell and tube Heat Exchangers :** The device has series of tubes. One set of tubes contains the fluids that are heated or cooled. The other fluid passes over the tubes that is heated or cooled so that they give heat or absorb the heat. A set of such tubes is called tube bundle. They are used for high pressure application..

**Double pipe Heat Exchanger :** They have the inner pipes and the outer pipes. The outer pipe is dented forming various projection such as conical shape, cylindrical shape, elliptic etc. It is possible to increase flow of fluid between inner pipe and the outer pipe which results in transfer of heat from fluid flowing in the inner pipe to fluid flowing between the inner pipe and outer pipe.

**Floating Heat Exchanger:** It is a device wherein plate block provide cross flow channels between two fluid. It consists of a stack of consecutive rectangular plates.

**Floating Heat Exchanger :** It is a device wherein plate block provide cross flow channels between two fluid. . It consists of a stack of consecutive rectangular plates

**Coil Type Heat Exchanger :** Coil can be used for gas and liquid flows. Coil type exchangers are more efficient as they are almost working like counter flow type exchangers. For the shell side it is optional to use baffles or an inner tube to achieve a special flow pattern.

**Cladded Heat Exchanger :** This type of Heat Exchangers is assembled together by suitable joining techniques such as mechanical assemblies. In this method one or more of the components of the heat exchangers such as baffles, end tanks, tubes, fins are attached using brazing . There are various techniques. Most commonly used is Controlled atmosphere brazing. It employs a brazing alloy for attaching components wherein the components are formed of material with higher melting points. The brazing alloy is positioned between components or surface of the components to be joined the brazing alloy is heated and melted.

## Air Preheater

It is a device used in steam boilers to transfer heat from the flue gases to the combustion air before it enters the furnace. Air Preheater recovers the heat from the boiler flue gas and increases the thermal efficiency of the boiler. The Flue gases are sent to the fuel gas stack at a lower temperature It allows control over the temperature of gases.

**Material of Construction :** Incoloy, Stainless Steel, Inconel

**Types :** Tubular Type, Regeneration Type.

**Industrial Application :** Oil & Gas Extraction, Pollution Control, Waste Processing, High temperature application, Chemical, Food Processing.

## Bayonet Heaters

Bayonet Heater is a device used for heating liquids in huge storage tanks with volume in large quantity. The heaters is mounted inside a pressure tight Bayonet pipe which is sealed pipe with an end cap. Immersion heaters are directly immersed in the fluid to heat like water, oil, viscous material and solvents. Each sheath of Bayonet Heat Exchangers is provided with spacer extending inwardly from inner wall surface

## Falling Film Evaporator

Falling Film Evaporator : It is used to concentrate solution using heating components which works like heat exchanger or evaporator. The process takes place inside the tubes which flows as a continuous film downward. The fluid creates film along the inner tube wall as it flows downwards.





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## Pressure Vessels & Reactor, Mixer, Column & Tower, Tanks

### Reactor

Both types can be used as continuous reactors or batch reactors. Most commonly, reactors are run at steady-state, but can also be operated in a transient state. When a reactor is first brought back into operation (after maintenance or inoperation) it would be considered to be in a transient state, where key process variables change with time. Both types of reactors may also accommodate one or more solids (reagents, catalyst, or inert materials), but the reagents and products are typically liquids and gases. A chemical reactor, typically tubular reactor, could be a packed bed. The packing inside the bed may have catalyst to catalyze the chemical reaction. A chemical reactor may also be a fluidized bed; see Fluidized bed reactor.

### Chemical Mixer

Mixers are device having set of rotating blades which is driven by motor within a tank. They are used in Industries to mix industrial raw material for a given process in tank or vessels. There are different type of mixtures for different industrial purpose. They generally consist of shaft, blades, impellers to help easy mixing. The mixers find wide application in the industry and are more useful as it gives more accuracy and homogeneity and relives labors . They can also be used for mixing toxic and hazardous compounds which are dangerous to human health. They offer greater effectiveness compared to any other method to mix . It consist of mechanical device which is placed in a tank. The use of Titanium and Hastelloy mixtures .

### Columns & Tower

These are used in process such as distillation, adsorption, separating fractioning columns. Towers are water circulation devices to cool water by evaporation through devices.

**Material of Construction :** Titanium, Nickel, Hastelloy, All Nickel Grades, Stainless Steel Grades

**Types :** Solid Metal, Cladded Metal, Packing Grid.

### Plug Screw Conveyor

**Plug Screw Conveyor** is a device having conveyor system to transport materials from one location to another. The system consists of revolving shafts which operate on power. In a screw conveyor the conveyor screw is arranged in a casing where there is at least one support fastened to the casing between the end s of the conveyor screw. The conveyor screw being mounted in the support via a bearing which is sealed. Included in the seal there are two sealing devices which are unrotatably but axially displaceably mounted on the screw shaft, and which are urged axially from opposite direction to press with a respective sealing portion against a corresponding sealing portion on the support. The sealing portions are situated radially outside the bearing. Each sealing device at its ends facing away from the support engages against a sealing element, which in turn connects to the screw shaft.

### Condenser

The coil responsible for dissipating heat to the surrounding outside air are called condenser coils.

**Material of Construction :** Titanium, Tantalum, Stainless Steel

**Types :**

Horizontal In-Shell Condenser, Vertical in-shell condenser, Horizontal in tube condenser, Vertical in tube condenser.

## Ventuary

Ventuary is a device for mixing fine spray of liquid with gas or measuring a flow rate of a gas. It consists of two tapered section of pipe joined by a narrow throat. The liquid velocity in the throat is increased and the pressure is reduced. Air flows through a Venturi channel at whose throat vapor enters through an opening drawn in by the low pressure. The pressure differential can also be used to measure fluid flow.

## Storage Tank

A large metal containers or vessel for storing and holding large volume of liquids or gases is called storage tank

Material of Construction : Stainless Steel

Types : Anolyte tank, Catholyte tank, Nickel storage tank, Hydrochloric storage Tank, Brine recovery tank, Sulphuric Acid tank, Mixing tank, Hazardous liquid Tank, Corrosive liquid storage tank, Sodium Hydroxide tank, Brine.

Industrial Application : Fertilizer, Dyes & Intermediates, Acid storage .





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## Other Special Products & Components

### Equipment

- **Special Metal Lining on Tanks**

Special Metal Lining on Tanks is an improved composite construction and method for fabrication of equipment. They have corrosion resistant liner and erosion resistant liner in critical areas. Generally wall assembly consists of a base metal layer along with a layer of corrosion resistant material with intermediate filler base metal fusion which is welded to original base metal. The fusion of weld joining the layer of corrosion resistant material provide smooth surface in the corrosion resistant layer.

- **Evaporation Boats**

Evaporation boat is a device which provides corrosion resistance from different metals. They are used to hold a small sample while it is being heated, to drive off vapors that will be analyzed by a spectrometer on gas chromatography. The electrically heated evaporation boat helps in evaporation of powder material . It has thin folded sheet of tantalum which forms a container and holds large volume of powder . The flat end of the boat is clamped to vacuum evaporation apparatus. The temperature variation of the boat are avoided by mainitaing uniform wall thickness . The evaporation boat consists of upper and lower sheet. The upper sheet has a convexed central section and the lower sheet includes convexed central section with side section bent inwardly . The upper and lower sheets gets superposed wherein central sections have substantially closed chamber to accommodate material to be evaporated. The vapor passage are formed between upper and lower sheets. Any straight line drawn between any point on the surface of the material and any point in the passages intersects the inner wall of the upper or lower sheets.

- **Vapor Duct**

It is a device wherein forced air system send heated air through duct work. In a boiler fed or radiant heating system pumps circulate the water and ensure an equal supply of heat to all the radiators. The forced air system send heated air through duct work to be distributed.

- **Seal Pot**

Seal Pots are designed to maintain the pressure with the gas holder. The shell drain allows condensate within the gas holder to drain away in seal potand to prevent air flow through the system



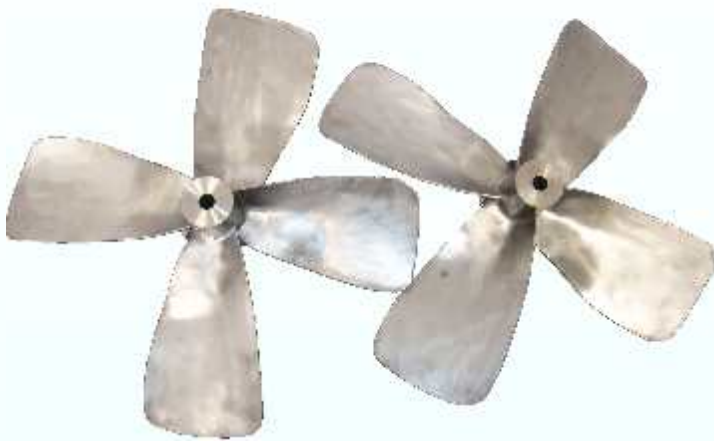
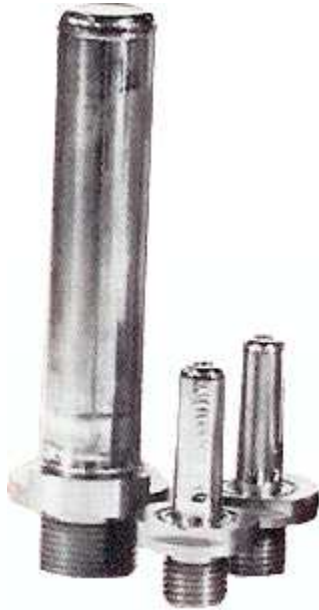
## Other Special Products





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### Other Special Products





## MATERIAL

### The Exotic Metals We Handle

When it comes to exotic materials, such as Titanium, Tantalum, Nickel, Hastelloy, 'B' & 'C', Monel, Inconel, Zirconium, Niobium, Alloy 20, Alloy 904L, Stainless Steel SS304, SS316, SS309, SS310, SS321, SS347 & other Special Alloys, Tinita with its sophisticated machineries and well technocrats handles these materials with ease and tailor the materials towards demanding specifications.

#### Titanium

Titanium is a silver grey, light weight, strong metallic element. Combination of high strength and low density results in results in making Titanium superior to almost all other metals and become a standard metal for diverse applications. Titanium is immune to corrosive attack by salt water or marine atmosphere. It also exhibits exceptional resistance to a broad range of acids, alkalis, and industrial chemicals. It offers superior resistance to erosion, cavitations or impingement attack.

Titanium is at least twenty times more erosion resistant than the Copper-Nickel alloys. Titanium has proven to be technically superior, highly reliable and cost effective In a wide variety of chemical industries, paper & pulp, marine and aerospace applications. Titanium is utilized in many critical services due to its unique set of properties.

#### Tantalum

Tantalum is a grey, heavy and very hard metal, Tantalum is almost completely immune to chemical attack. Tantalum with its exquisite properties and having a melting point of 2996 C make it possible to be used in various specialized applications. Having good ductility and malleable properties make it easier to be worked into intricate forms. It can be welded by using inert-gas shielded techniques. Crucibles made out of Tantalum are used in Diamond Polishing Process. Tantalum Evaporation Boats Sources like Multi-stand Filament, Wire Baskets, Baskets and Crucibles are ideal solutions to many Thin Film Coating Processes.

Tantalum with its high heat transfer quality makes it feasible to be used as thermo Tips and Thermometer Pocket lining. Tantalum with its peculiar properties finds its applications in Heating & Cooling Coils, Condensers and Bayonet Heaters etc.

Tantalum is almost completely immune to attack by acids and metals, it equals glass in corrosion resistance to acids liquid metals and find its way to be used as Repair Parts for Glass Lined Vessels such as Set Screws, Studs, Bolts, Nuts, Doomed Washers & Sleeves etc.

#### Nickel

Nickel is one of the very common material of construction for major chemical process equipments used in chemical industries. Nickel has an outstanding corrosion characteristic of resistance to caustic soda and other alkalis. Nickel shows excellent resistance to all concentrations of caustic soda at temperatures up to including the molten state.

#### Zirconium

Zirconium is special metal with a unique property of withstanding alternating acidic and basic environments. Zirconium solves the most difficult corrosion problems and hence used in many of the reactor vessels and tanks. Zirconium is used in piping to handle hot corrosive acids and liquids.

#### Special Alloy

Tinita with its awesome effort to meet the wide range of customer demands, have developed its techniques to handle variety of alloy materials especially.

HASTELLOY 'B' & 'C'

ALLOY 20

Stainless Steel

ALLOY 904 L

CUPRO NICKEL

Stainless Steel with its variety of grades (SS304, SS316, SS316L, SS309, SS310, SS321, SS321 Ti, SS347 etc.) and cheaper cost make its inevitable to be used in all kinds of industries. Tinita with its sophistication and outstanding quality than other traditionalista.

MONEL

17-4PH

INCONEL

DUPLEX STEEL etc.





## Third Party Inspection

Our Equipment Have Been Inspected By Following Engineering Consultants & Third Party Inspection Agencies :



Lloyd's Register



ThyssenKrupp



Shroff  
Steel & Alloy Pipe Pvt. Ltd.



Aker Solutions



TOYO INDIA



TOYO  
ENGINEERING



JE JACOBS



SGS



CHEMTEX



# Clientle



DEEPAK FERTILISERS  
AND PETROCHEMICALS  
CORPORATION LIMITED



**Hastalloy 'B' &'C'**

**Tantalum**

**Monel**

**Niobium**

**Quality, Performance &  
Committed Delivery**

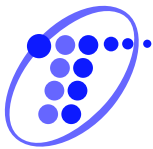
**Zirconium**

**Inconel**

**Titanium**

**Nickel**

**Stainless steel**



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