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**Yesino Metal Co., Ltd**

Changing the world better  
with Titanium

## Company introduction

Yesino Metal Co., Ltd is a professional manufacturer & exporter of all kinds of titanium materials in China since 2008, which has 10 patents for invention, 3000 square meters factory and 45 employees, including 14 supervisory engineering staffs.

Enhanced with advanced melting furnaces, forging, rolling and equipped CNC center, we provide reliable services according to your procurement, processing and logistic needs by supplying a huge range from raw material to fine processing products within short time and no Minimum order quantities.

Our main products are titanium ingot, titanium bar, titanium forging, titanium wire, titanium plate/sheet and fastener, titanium pipe/tube/fitting, and MMO/DSA titanium anode for water/offshore wastewater treatment, chlor-alkali industry, cathodic protection and copper foil electrodeposition.

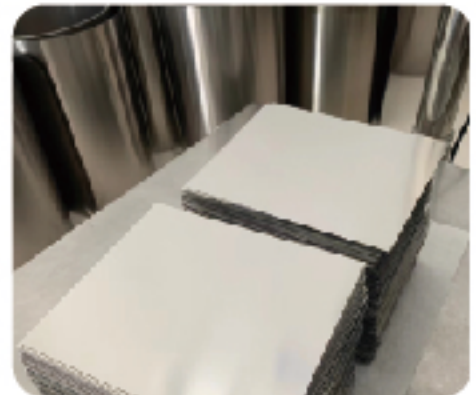
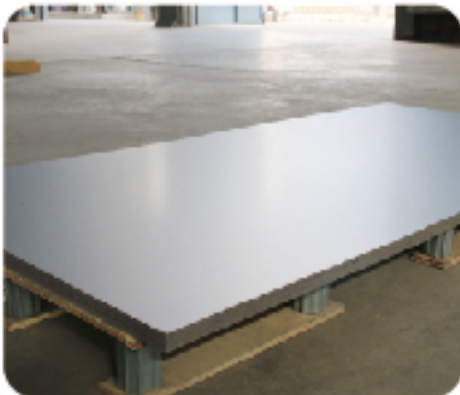


## CP titanium and titanium alloy foil, strip, sheet & plate

Item	CP titanium	Titanium alloys
Standard	ASTM B 265, ASME SB265, AMS 4900, AMS 4901, AMS 4902, ASTM F67, DIN 17860, ISO 5832-2	ASTM B 265, ASME SB265, AMS 4907, AMS 4910, AMS 4911, ASTM F136; DIN 17860, ISO 5832-3, ISO 5832-11
Grade	Grade 1, Grade 2, Grade 3, Grade 4; UNS R50250, UNS R50400, UNS R50550, UNS R50700; 3.7025, 3.7035, 3.7055, 3.7065	Grade 5, Grade 7, Grade 7H, Grade 9, Grade 11, Grade 12, Grade 23; Ti6Al4V; Ti6Al4V ELI (UNS R65401); 3.7225, 3.7235, 3.7255, 3.7105, 3.7175, 3.7165, 3.7110, 3.7115, 3.7185; Ti-6Al-7Nb
Size	Thk 0.025~4.75mm / Thk 4.75~120mm x Width x Length	

### Application:

1. Aircraft structural part, engine components, satellites and rockets instruments and equipment.
2. Pressure vessel, tanks, pipes, heat exchangers, reactors and condensers.
3. Joint replacement, dental implants, fracture repair, artificial eyeballs and pacemakers.
4. Automotive engine, chassis and frame components.





**Surface processes equipment:  
Water Grinding and Sanding Equipment**



**Surface roughness:**  
Ra 32 micro inches (Ra  
0.8 micro meters) or  
better in all directions

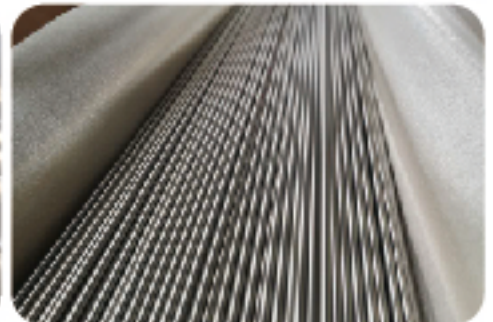
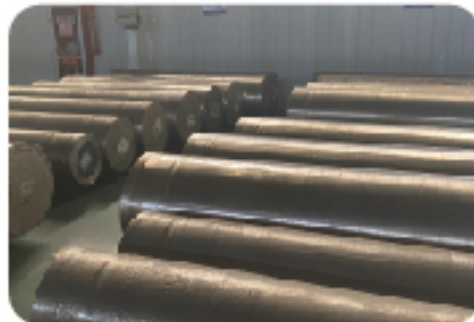
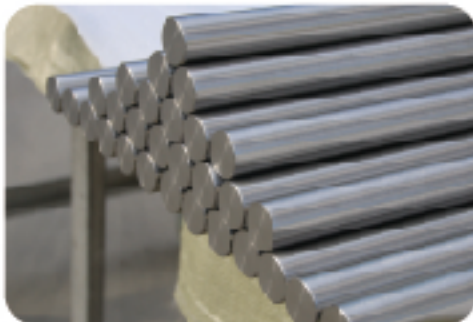


## CP titanium and titanium alloy ingot and bar

Item	CP titanium	Titanium alloys
Standard	ASTM B348, ASME SB348, AMS 4921, ASTM F67, DIN 17862, ISO 5832-2	ASTM B348, ASME SB348, AMS 4924, AMS 4926, AMS 4928, AMS 4930, ASTM F136; DIN 17862, ISO 5832-3,
Grade	Grade 1, Grade 2, Grade 3, Grade 4; UNS R50250, UNS R50400, UNS R50550, UNS R50700; 3.7025.1, 3.7035.1, 3.7055.1, 3.7065.1	Grade5, Grade7, Grade7H, Grade9, Grade11, Grade12, Grade23; Ti5Al2.5Sn ELI; Ti6Al4V; Ti6Al4V ELI; 3.7225.1, 3.7235.1, 3.7255.1, 3.7105.1, 3.7165.1, 3.7165.7
Size	Dia 6~500mm x Length (Dia. Tolerance: $\pm 5$ )	

### Application:

1. In aerospace, fuel tubes for jet engines, propellers and other components, small satellites, missiles, rockets and other high-pressure space vehicles.
2. Automotive manufacturing field, body, chassis and wheels, exhaust and silencer systems for automobiles, load-bearing springs, connecting rods and bolt screens.
3. All kinds of reactors, towers, autoclaves, heat exchangers, pumps, valves, centrifuges, pipes, fittings, electrolyzers, etc.
4. Artificial joints, artificial dental implants and orthodontic teeth, cardiac pacemakers, cardiovascular stents, surgical instruments, etc.
5. Golf head, tennis racket, badminton racket, pool cue, hiking stick, ski pole, skate blade, etc.



**Centerless  
grinding**



**Centerless  
polisher**



**Diameter  
caliper**

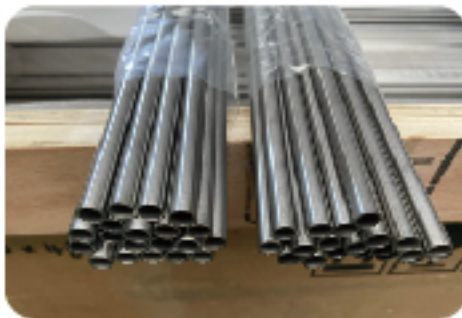


## CP titanium and titanium alloy tube, pipe and fitting

Item	CP titanium	Titanium alloys
Standard	ASTM B338, ASTM B363, ASTM B861, ASTM B862, AMS 4941, AMS 4942, DIN 17861, DIN 17866	ASTM B338, ASTM B363, ASTM B861, ASTM B862, AMS 4943, DIN 17861, DIN 17866
Grade	Grade1, Grade2, Grade2H, Grade3; 3.7025, 3.7035, 3.7055	Grade5, Grade7, Grade7H, Grade9, Grade12; Ti3Al2.5V; 3.7225, 3.7235, 3.7255, 3.7165
Size	OD 1.5~1200mm x Thk 0.2~22mm x Length	

### Application:

1. Aircraft engine compressor parts, followed by rockets, missiles and high-speed aircraft structural parts.
2. Electrodes for the electrolysis industry, condensers for power stations, heaters for petroleum refining and seawater desalination, and environmental pollution control devices.
3. Heat exchange equipment, tubular heat exchangers, coil heat exchangers, serpentine tube heat exchangers, condensers, evaporators and conveying pipelines.
4. Nuclear power industries: standard tubes for their units.
5. High quality golf clubs, bicycle frames, automobile exhaust pipe, textile machinery parts, electronic components support.
6. Artificial joints, dental implants, skull repair materials, internal scaffolds, etc.





**Welded tube**  
**Max. O.D. 1200mm**



**Capillary tube**  
**Min. O.D. 1.5mm**



**Mannesmann  
piercing mill**



**Max Length 16m**

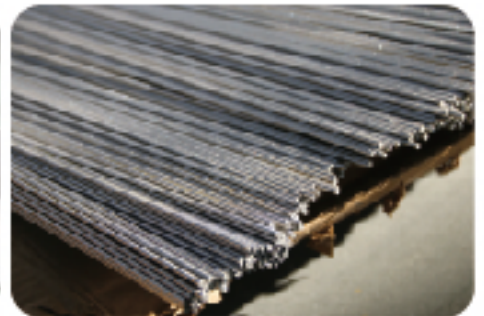


## CP titanium and titanium alloy wire

Item	CP titanium	Titanium alloys
Standard	AWS A5.16, ASTM B863, ASTM B348, ASTM F67, AMS 4951, DIN17863	AWS A5.16, ASTM B863, ASTM B348, ASTM F136, AMS 4954, AMS 4956, DIN17863
Grade	ERTi-1, ERTi-2, ERTi-3, ERTi-4; Grade 1, Grade 2, Grade 3, Grade 4; 3.7035, UNS R50550	Ti6AL4V ELI, ERTi-5, ERTi-7, ERTi-9, ERTi-12, ERTi-23; Grade 5, Grade 7, Grade 9, Grade 12, Grade 23; 3.7165; UNS R56400, Ti15333
Size	Dia.0.8-6.35mm Wires in Straight: length: 1000mm & 915mm Wires in coil: D300-D500; 30kgs-200kgs Wires in spool: D300-D500; 30kgs-200kgs	

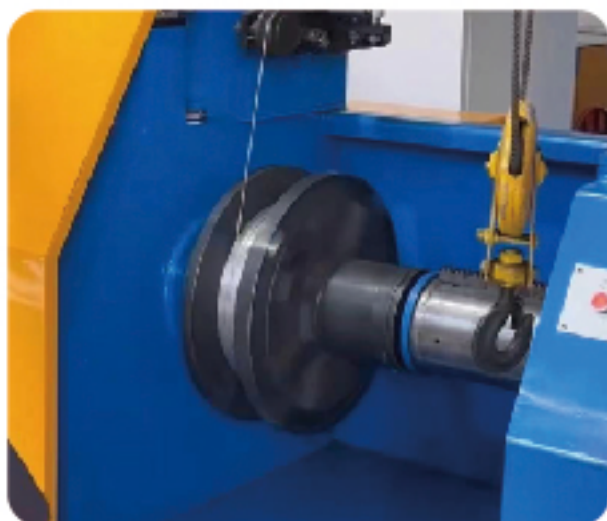
### Application:

1. Welding wires, such as welding of various titanium equipment, welding pipes, repair welding of turbine discs and blades of aircraft jet engines, and welding of casings.
2. 3D printing titanium wire.
3. Powder metallurgy, a process for preparing metal parts, which usually involves pressing metal powder into the desired shape.
4. Manufacture fasteners, load-bearing members, springs, etc. due to their good overall performance.
5. Manufacture medical devices, skull fixation, etc.
6. Make satellite antennas, and eyeglass frames.





**Electricity straightening equipment**



**Coil equipment**



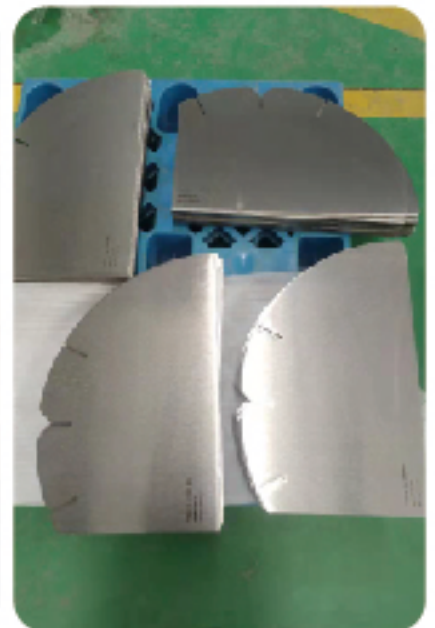
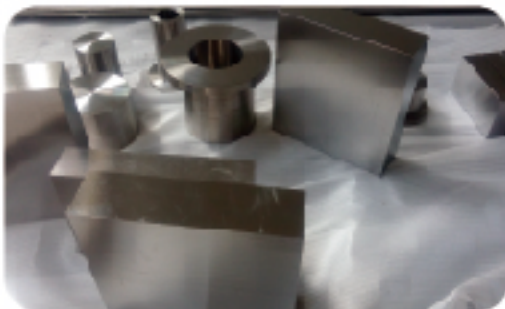
**Spool equipment**

## CP titanium and titanium alloy forging and customized drawing

Item	CP titanium	Titanium alloys
Standard	ASTM B381, ASME SB381, AMS 4921, ASTM F67, DIN 17862, ISO 5832-2	ASTM B381, ASME SB381, AMS 4924, AMS 4926, AMS 4928, AMS 4930, ASTM F136; DIN 17862, ISO 5832-3,
Grade	F-1,F-2,F-2H,F-3,F-4 UNS R50250-R50400 R50550-R50700 3.7025.1, 3.7035.1, 3.7055.1,3.7065.1	F-5, F-7, F-7H, F-9, F-11, F-12,F-23; Ti5Al2.5Sn ELI; Ti6Al4V; Ti6Al4V ELI; 3.7225.1, 3.7235.1, 3.7255.1, 3.7105.1, 3.7165.1, 3.7165.7
Types	Disc, Block, Ring and Customized drawing	

### Application:

1. Aerospace Industry: aircraft structures, engine parts, and critical components.
2. Medical Devices: artificial joints, bone implants, surgical instruments, and dental devices.
3. Chemical Industry: reactors, storage tanks, heat exchangers, and pipelines.
4. Energy Industry: nuclear power plant parts, oil and gas drilling equipment, nuclear reactor components, and gas turbine parts.





**Forging equipment**



**Melting furnace**



**CNC**

## Mixed Metal Oxide Anode

The MMO anodes are composed of a titanium substrate coated with a mixed-metal-oxide catalyst. Because the titanium substrate is naturally passivated by an oxidizing film, the anode remains dimensionally stable over time. Direct current transfer is accomplished through the mixed-metal-oxide catalyst, which is highly conductive, and fully oxidized so that the higher current outputs are possible.

### Cathodic Protection

#### MMO Tubular anode

O.D. (mm)	Length (mm)	output current (A)	expected life (years)
16	1200	7.2	20-30
19	500	4	20-30
25	1000	8	20-30
25	1200	10	20-30
32	1500	12	20-30
32	1200	12	20-30

\*Accept customized

#### MMO Ribbon Anode&Titanium Conductor Bar

Anode Dimension & Properties			
Size	0.635mm*6.35mm		
Standard Coil Length	152m		
Surface Area of Ribbon	0.014 m <sup>2</sup> per/m		
Operating Characteristics			
Fine Sand	Current output	42mA per m(12.8mA/ft)	17mA per m(5.18mA/ft)
	Expected life	25 years	50 years
Titanium Conductor Bar Dimensions			
Size	12.7mm*0.9mm		
Standard Coil Length	152m		



## Water treatment

As long as there is water and the electrodes contain a certain concentration of chlorine ions effective chlorine can be produced on-site by electrolysis (including HClO, ClO, Cl<sub>2</sub>). Effective chlorine is a broad-spectrum biocide that can kill bacteria or algae in the water. The electrolytic chlorine production process, which can be widely used in drinking water, industrial circulating water, sewage, seawater sea water and other types of water quality disinfection and sterilization.

### Main chemical reactions involved

Anode	$2\text{Cl} \rightarrow \text{Cl}_2 + 2\text{e}$
Cathodic	$2\text{H}_2\text{O} + 2\text{e} \rightarrow 2\text{OH}^- + \text{H}_2 \uparrow$
Electrolyte	$\text{Cl}_2 + \text{H}_2\text{O} \rightarrow \text{HCl} + \text{HOCl} \rightarrow \text{H}^+ + \text{ClO}^-$

### Application

Sea water Treatment    Ballast Water Treatment    Drinking Water Disinfection    Other water disinfection

