Shaanxi Huatainuo
Metal Co., Ltd.

Titanium has unlimited potential.
Based on quality and innovation, we look forward
to working with you to create brilliance in various fields.

Shaanxi Huatainuo Metal Co., Ltd.

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Innovation Forged in Titanium Shaping the Future of Industry.

We don't just supply titanium
we engineer solutions that push material boundaries

Company Profile

Shaanxi Huatainuo Metal Co., Ltd. specializes in the research, development, and manufacturing of high-performance titanium materials. Our product portfolio includes titanium rods, wires, powders, plates, and precision-machined components. Engineered with advanced production technologies and strict quality control systems, our titanium products deliver exceptional corrosion resistance and mechanical strength.

They are widely trusted in aerospace, medical implants, chemical equipment, and marine engineering applications. With reliable delivery capability and a multilingual international service team, Huatainuo has established itself as a trusted partner for clients worldwide.

CORE COMPETENCIES

Medical-Grade Titanium Products

- ◇ Implant-quality Ti-6Al-4V ELI bars/wires (ASTM F136)
- ◇ Custom surface treatments (sandblasted, acid-etched) for enhanced bio-compatibility
- ◇ Traceable materials for surgical implants, dental components, and orthopedic devices

Industrial-Grade Reliability

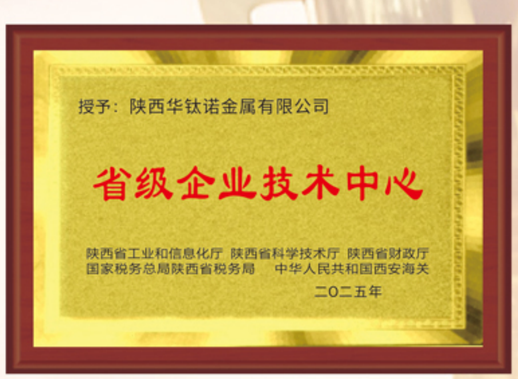
- ◇ Aerospace: Lightweight CP-Ti Grade 1-4 bars/wires (ASTM B348) for aerospace and chemical processing.
- ◇ Marine and Automotive: High-strength Ti-3Al-2.5V bars/wires (ASTM B348) for marine and automotive applications requiring corrosion resistance and durability.
- ◇ Chemical Processing: Corrosion-resistant rods for heat exchangers.
- ◇ Consumer Electronics: Precision-drawn wires for smart device components.

Manufacturing Excellence

- ◇ Vertical Integration: Full-process control from titanium sponge to finished product
- ◇ Advanced Equipment: VAR melting, precision rolling, and cold-drawing technologies
- ◇ Quality Assurance: In-house lab with testing for tensile strength & fatigue resistance and micro-structure analysis

Shaanxi Huatainuo Metal Co., Ltd.

Qualifications and Honors



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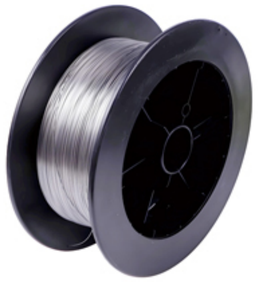
Titanium Wire



Medical & Commercial Titanium Wire is a ductile, high-strength continuous strand made from commercially pure or alloyed titanium. It is valued for its exceptional corrosion resistance, bio-compatibility, and formability, finding applications in medical devices, industrial filtration, and consumer products.

Medical Implant Applications

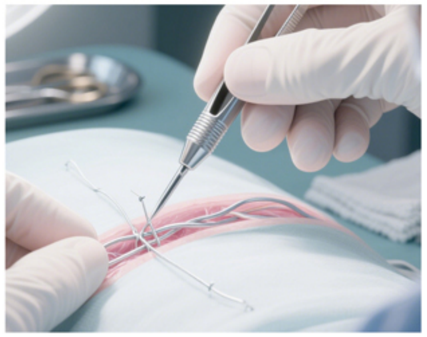
Surgical suture thread

Grade: Gr1, Gr2

Standard: ASTM F67, ISO 5832-2

Size(mm): ∅0.05-∅0.5

Characteristic: Extremely high biocompatibility, excellent flexibility and strength, antibody solution corrosion, non-magnetic, low allergy.



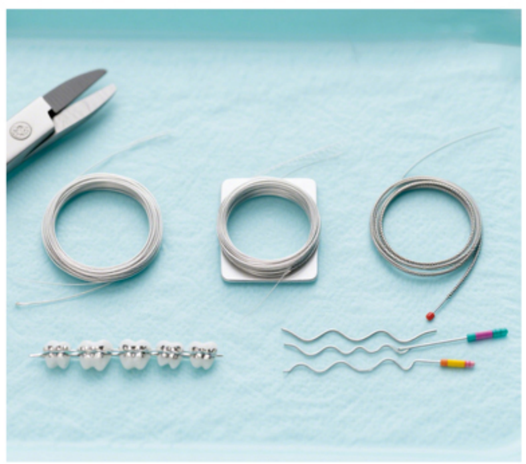
Dental orthodontic wire

Grade: Gr4, Gr5

Standard: ISO 5832-2，ISO5832-3

Size(mm): ∅0.3-∅1.5

Characteristic: High strength, low elastic modulus (producing gentle and sustained corrective force), shape memory effect (superelasticity), corrosion resistance.



Bone needles, bone nails, and fixation wires

Grade: Ti-6Al-4V ELI (Gr23)

Standard: ASTM F136, ISO 5832-3

Size(mm): ∅1.0-∅5.0

Characteristic: Ultra high strength, excellent fatigue life and fracture toughness, excellent biocompatibility, used for load-bearing implants

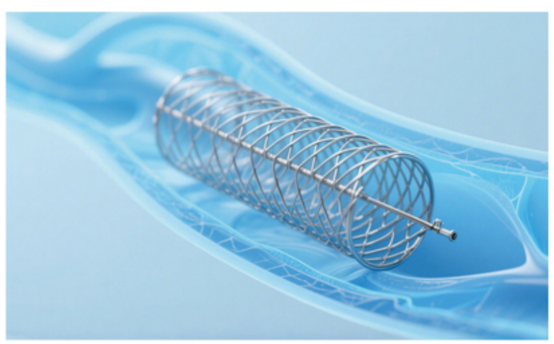
Medical guide wires and connectors

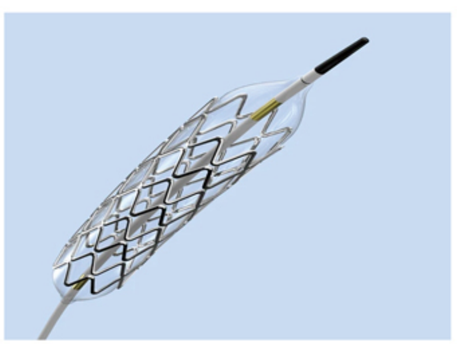
Grade: Gr4, Gr5 (Gr23)

Standard: ASTM F136, ISO 5832-3

Size(mm): ∅0.5-∅2.0

Characteristic: High strength, high rigidity, smooth surface, good wear resistance, used for guiding or connecting medical device components.





Titanium Wire

Industrial & Civilian Applications

Chemical filler wire (woven mesh)

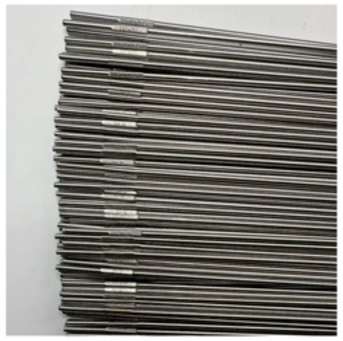
Grade: Gr1, Gr2

Standard: ASTM B863, ASME SB863

Size(mm): ∅0.5-∅2

Characteristic: Excellent acid, alkali, chloride corrosion resistance, high strength, long service life, used for filtration and separation.

Welding wire



Grade: Gr1, Gr2, Gr5

Standard: AWS A5.16, ASTM B863

Size(mm): ∅0.8-∅3.2

Characteristic: Match the composition with the base material, have good flowability after melting, high weld strength, and corrosion resistance consistent with the substrate.

Wire electrode

Grade: Gr1, Gr2

Size(mm): ∅0.5-∅3

Characteristic: Good conductivity, high stability in specific electrolytes, and corrosion resistance.

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Eyeglasses frame jewelry thread

Grade: Gr1, Gr2

Size(mm): ∅1.0-∅4.0

Characteristic: Lightweight, hypoallergenic, sweat resistant, elegant color, easy to bend and weld.

Sports equipment (golf head)

Grade: Gr5

Standard: ASTM F136, ISO 5832-3

Size(mm): Bar or wire billet

Characteristic: High strength and lightweight, used as raw materials for forging or precision casting, for manufacturing high-end sports equipment components

Anti corrosion fasteners

Grade: Gr2

Standard: ASTM B863 (wire), ASTM F467 (fasteners)

Size(mm): ∅3.0-∅8.0

Characteristic: Resistant to corrosion from atmospheric, seawater, and chemical media, with high strength, used for bolts and nuts in the fields of ships, chemicals, and marine engineering

Product Advantages

Comparison of Huatainuo Titanium Rod with Similar Products from Foreign Competitors

Table 1: Chemical Composition Comparison of Titanium Rod for Surgical Implants

Serial number	Orginal	Grade	Size	Al	V	Fe	C	N	H	O
1	HuatainuoTitanium	TC4	14mm	5.95	4.06	0.187	0.019	0.017	0.003	0.11
2	HuatainuoTitanium	TC4	10mm	6.01	4.10	0.169	0.016	0.019	0.001	0.09
3	HuatainuoTitanium	TC4	6.0mm	6.06	3.94	0.115	0.015	0.024	0.001	0.09
4	HuatainuoTitanium	TC4ELI	14.5mm	6.27	4.23	0.152	0.014	0.025	0.001	0.13
5	US	Ti-6Al-4V	14mm	6.07	4.06	0.104	0.029	0.013	0.002	0.12
6	US	Ti-6Al-4V	6.0mm	6.41	3.72	0.085	0.021	0.03	0.006	0.15
7	US	Ti-6Al-4VELI	10mm	5.93	3.97	0.122	0.02	0.012	0.002	0.12
8	US	Ti-6Al-4VELI	6.0mm	5.94	4.02	0.168	0.015	0.008	0.002	0.10
9	TW	Ti-6Al-4V	13mm	6.04	4.05	0.171	0.007	0.009	0.005	0.10
10	Ru	Ti-6Al-4V	6.0mm	5.69	4.08	0.290	0.038	0.008	0.008	0.11

Table 1 shows:

All chemical compositions meet the standard requirement GB/T 3620.1, but for Huatainuo No.1,2,3, US No.5 & TW No.9, the chemical composition can reach the TC4 ELI. It shows the requirement for ELI and the control of the impurity has reach the high level.

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Table 2: Comparison of Mechanical Properties of Titanium Bars for Surgical Implants

Serial number	Orginal	Grade	Size	Tensile strength MPa	Yield strength MPa	Elongation	Reduction of area	Metallographic
1	HuatainuoTitanium	TC4	14mm	1052	941	17	54	A1
2	HuatainuoTitanium	TC4	10mm	1041	994	16.5	52	A1
3	Huatainuo Titanium	TC4	6.0mm	1002	895	16.4	54	A1
4	HuatainuoTitanium	TC4ELI	14.5mm	1081	1001	15.5	46	A1
5	US	Ti-6Al-4V	14mm	1002	953	17.5	54	A1
6	US	Ti-6Al-4V	6.0mm	959	842	17	44	A1
7	US	Ti-6Al-4VELI	10mm	1060	915	15	54	A1
8	US	Ti-6Al-4VELI	6.0mm	980	855	14	32	A1
9	TW	Ti-6Al-4V	13mm	1060	995	18	45	A1
10	Ru	Ti-6Al-4V	6.0mm	1094	923	16.5	51	A1

Table 2 shows:

All mechanical properties meet and exceed the standard requirements GB/T13810, but the tensile strength of Huatainuo is relatively concentrated and better uniformity.

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Product Control Procedure

Autonomous control program

The company's production process control capability								
Rod/wire								
Rod/wire	Electrode Pressing	Ingot Melting	Ingot Forging	Blank Rolling	Finished Product Drawing	Straightening Annealing/Grounding	Annealing	Finished Product Inspection
Control Status	Automatic Control	Automatic Control	Automatic Control	Automatic Control	Automatic Control	Automatic Control	Automatic Control	Automatic Control
Plate								
Rod/wire	Electrode Pressing	Smelting	Ingot Forging	Blank Rolling	Finished Product Drawing	Finished Product Precision Rolling		Finished Product Inspection
Control Status	Automatic Control	Automatic Control	Automatic Control	Subcontracted	Automatic Control	Automatic Control		Automatic Control

Inspection control process

The company's production process control capability						
Finished Product Inspection Items for Bars/Wires	Straightness	Ferrule Inspection	Dimension Inspection	Ultrasonic Flaw Detection	Eddy Current Detection	Surface Inspection
GB/T13810 - 2017	100%	None	100%	> 7.0mm, 100% flaw detection	None	100%
Shaanxi Huatainuo Metal	Platform inspection	100% ferrule passed inspection	100% laser diameter measurement	⩾ 6.0mm, 100% manual/four - channel automatic flaw detection	⩽ 10.0mm, 100% eddy current detection	100% optical inspection + manual inspection

Table 3: Comparison of Straightness, Dimensional Deviation, Surface, and Necking Test of Titanium Bars for Surgical Implants

Serial number	Orginal	Grade	Size	Bend test (mm/m)	Diameter tolerance (mm)	Shrinkage test	
						1	2
1	Huatainuo Titanium	TC4	14mm	0.3	0，−0.027	−0.03	−0.03
2	Huatainuo Titanium	TC4	10mm	0.25	0，−0.022	/	/
3	Huatainuo Titanium	TC4	6.0mm	0.2−0.25	0，−0.018	/	/
4	Huatainuo Titanium	TC4ELI	14.5mm	0.23	0，−0.020	−0.03	−0.03
5	US	Ti−6Al−4V	14mm	0.20	0，−0.02	−0.05	−0.06
6	US	Ti−6Al−4V	6.0mm	0.23	0，−0.024	/	/
7	US	Ti−6Al−4VELI	10mm	0.21	0，−0.03	/	/
8	US	Ti−6Al−4VELI	6.0mm	0.22	0，−0.023	/	/
9	TW	Ti−6Al−4V	13mm	0.25	0，−0.03	−0.04	−0.05
10	Ru	Ti−6Al−4V	6.0mm	0.20	0，−0.02	/	/

Table 3 shows:

The diameter deviation and external quality of the ten groups of sample rods are controlled at the same level.For high-precision medical small -mouth products, Huatainuo unique production process can control the shrinkage of the products within 0.03mm.

Remark:

The above data shows that Huatainuo titanium bars’ quality is equal to that of those from America, Taiwan (China) and Russia, but with more stable quality and more attractive price.

Production Equipment

■ ALD vacuum melting furnace imported from Germany

■ 4500T hydraulic machine

■ Vacuum annealing oven

■ Polishing machine

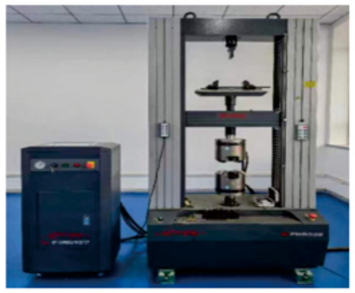
■ 25MN fast hydraulic forging machine

■ Grinding machine

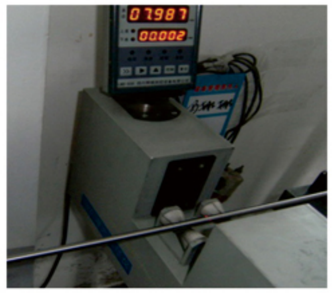
■ Precision Wire Mill

■ Cold Rolling Mill

Inspection Equipment

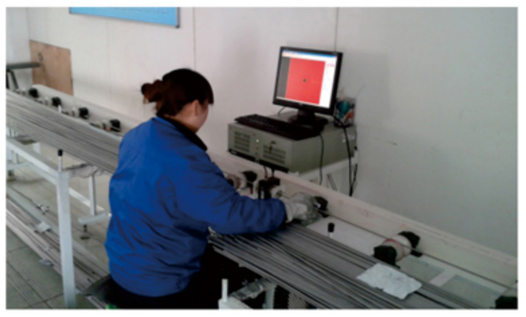


■ Microcomputer control electronic universal testing machine



■ Infra-ray diameter gauge

■ ODE optical surface detector



■ Eddy current flaw detector

■ Automatic Rotating Head Ultrasonic Flaw-detecting Machine

Spot Inventory

Huatainuo's Strategic Objective

Strategic Goals

1. Global Expansion – Strengthen our presence in Europe, North America, and Southeast Asia through local partnerships, international trade fairs, and digital marketing.

2. Technology Leadership – Continuously invest in advanced titanium processing and R\&D to meet the demanding requirements of aerospace, medical, and renewable energy sectors.

3. Quality Excellence – Ensure compliance with ASTM, ISO, and CE standards, supported by robust in-house testing and third-party certifications.

4. Customer Partnership – Provide tailored solutions, fast response, and reliable delivery, supported by multilingual teams for seamless global communication.

5. Sustainability – Commit to eco-friendly production practices and actively explore additive manufacturing and clean energy applications for long-term growth.

Global Business: Centered on product quality and professional technical support, we adhere to international standards and collaborate with global industry partners to deliver traceable, reliable titanium solutions for aerospace, medical, energy and other critical sectors—continuously strengthening our global brand recognition.

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