Grade 2 Titanium Fasteners

Type: Bolts, screws, nuts, etc.
Standards: ASTM B381, DIN 912, DIN 931, DIN 933, etc.
Size: M3-M50
Length: 5mm-300mm
Customized according to customer-provided drawings
Production Lead Time: approximately 15 days after order confirmation
Shipping Methods: sea freight, air freight
Grade 2 commercially pure titanium fasteners are widely recognized for their excellent balance of light weight, corrosion resistance, and economical performance. When ultra-high strength is not your primary requirement, Grade 2 titanium fasteners are an ideal choice, offering a yield strength of up to 50 ksi (≈345 MPa).

Gr2 Titanium Fasteners Parameters

Material	Pure Titanium
Density	4.51 g/cm³
Finish	Anodizing, Pickling, Electroplating
Condition	Aging treatment, Solution treatment,Annealing condition
Tensile Strength,min	50ksi, 345MPa
Yield Strength, min	40ksi, 275MPa
Elongation in 4D, min	20%
Reduction of Area, min	30%
Application Areas	Aerospace, Medical equipment, Marine engineering, Petrochemicals

Gr2 Titanium Fastener Product Range
Grade 2 Titanium Bolts
Externally threaded fasteners typically used with nuts, suitable for detachable connections requiring reliable tensile strength. Ideal for structural assemblies and industrial equipment.
Grade 2 Titanium Screws
Designed to be driven directly into threaded holes, commonly used for fixing or joining components. Available in various types, including machine screws, self-tapping screws, and custom designs.
Grade 2 Titanium Nuts
Internally threaded fasteners used together with bolts or screws to complete secure assemblies. Common options include hex nuts, lock nuts, and special-purpose nuts.
Grade 2 Titanium Washers
Installed under bolt heads or nuts to distribute load, protect contact surfaces, prevent loosening, or improve sealing performance.

Typical Applications
Aerospace
low-load and non-structural components

Medical & Dental

Orthopedic fixation screws, spinal systems, dental implants, prosthetic components, and high-end surgical instruments

Oil & Chemical Processing

Reactors, pipelines, pumps, valves, and flange connections, especially where corrosive media are present.

Marine & Offshore Engineering

Ship structures, seawater desalination systems, offshore platforms, and coastal facilities,

Quality Assurance & Certifications

You can rely on consistent quality backed by internationally recognized certifications:

- ISO 9001 Certified – Comprehensive quality management system
- AS9100 Certified – Aerospace industry quality management standard
- All Gr2 titanium fasteners can be supplied with material test reports (MTR) upon request.

Customer Case Study: Marine Offshore Application

Challenge

A critical seawater pipeline system on an offshore platform experienced severe pitting corrosion and stress corrosion cracking within six months when using 316 stainless steel bolts. This led to frequent unplanned shutdowns, high maintenance costs, and increased safety risks.

Our Solution

We supplied a full range of Grade 2 titanium hex head bolts and nuts with surface passivation treatment. All products complied with ASTM B381 requirements and were delivered with complete material certification.

Customer Feedback

"After switching to Zecheng's Grade 2 fasteners, the system has operated flawlessly for over four years. Inspections show no signs of corrosion, and the fasteners remain in excellent condition. Reliability has exceeded our expectation

1. What advantages do Grade 2 titanium have over stainless steel or aluminum fasteners?

Compared with stainless steel and aluminum fasteners, Grade 2 titanium offer a superior combination of light weight, exceptional corrosion resistance, and excellent biocompatibility, making them ideal for harsh environments and medical applications.

2. What is the difference between Grade 2 and Grade 5 (Ti-6Al-4V) titanium fasteners, and how should you choose?

Grade 5 titanium fasteners provide much higher strength (tensile strength ≈ 895 MPa) and are suitable for high-load structural applications.

Grade 2 titanium fasteners offer better ductility, formability, and improved resistance to stress corrosion in certain aggressive media (such as hot chloride environments), while also being more cost-effective.

3. Can you customize Grade 2 titanium fasteners?

Yes. You can customize diameter, length, thread type, head style, and other specifications according to your application requirements.