

Ti-6Al-4V ELI Fasteners: High-Performance Titanium Alloy for Medical Applications

Material Standards: ASTM F468 / ASTM F136 / ISO 5832-3 / AMS 4930 / AMS 4931

Material Code: UNS R56401

Form: Bolts, Nuts, Screws, Custom Shapes (Made to Customer Specifications)

Tensile Strength: 860 MPa (minimum)

Yield Strength: 795 MPa (minimum)

Elongation: 10% (minimum)

Ti-6Al-4V ELI Fasteners, crafted from the Extra Low Interstitial (ELI) version of Ti-6Al-4V titanium alloy, deliver exceptional performance, especially in medical fields like orthopedics and dental applications. Their superior biocompatibility and mechanical properties make them ideal for medical device manufacturing, offering custom solutions to meet precise dimensional requirements and ensuring compatibility with bone and tissue structures for long-term functionality.

Hex Head Bolts (For Medical Implants)

Bolt Size	Thread Diameter (mm)	Thread Pitch (mm)	Bolt Length (mm)	Head Size (mm)	Application Area
M2.5	2.50	0.45	6-20	4.5	Small surgical implants, minimally invasive surgery
M3	3.00	0.50	6-40	5.5	Dental implant fixation, small orthopedic implants
M4	4.00	0.70	10-50	7.0	Fracture repair, joint replacements
M5	5.00	0.80	15-60	8.0	Medium orthopedic fixators, spinal implants
M6	6.00	1.00	20-70	10.0	Large orthopedic implants, hip joint repair
M8	8.00	1.25	30-100	13.0	Orthopedic reconstruction, artificial joint fixation

Hex Nuts (For Medical Use)

Nut Size	Thread (mm)	Diameter	Thread Pitch (mm)	Across Flats (S) (mm)	Thickness (mm)	Application Area
M2.5	2.50		0.45	5.0	2.0	Small implants, orthopedic repairs
M3	3.00		0.50	5.5	2.4	Dental fixation devices, spinal surgery
M4	4.00		0.70	7.0	3.2	Medium orthopedic repairs, joint replacement tools
M5	5.00		0.80	8.0	4.7	Orthopedic surgeries, joint fixation

Nut Size	Thread (mm)	Diameter (mm)	Thread Pitch (mm)	Across Flats (S) (mm)	Thickness (mm)	Application Area
M6	6.00		1.00	10.0	5.2	Fracture repair, spinal implants
M8	8.00		1.25	13.0	6.8	Large orthopedic implants, hip joint replacement

Socket Head Cap Screws (Standard)

Screw Size	Thread Diameter (mm)	Thread Pitch (mm)	Screw Length (mm)	Head Size (mm)	Application Area
M3	3.00	0.50	6-30	5.0	Small bone plate fixation
M4	4.00	0.70	10-50	7.0	Orthopedic joint fixation, hip joint surgery
M5	5.00	0.80	15-60	8.0	Major orthopedic repairs, spinal fixation
M6	6.00	1.00	20-70	10.0	Spinal and pelvic fixation, joint replacement surgery

Note: The above sizes are for reference. For specific size requirements, please contact our sales team.

Surface Treatment Options for Ti-6Al-4V ELI Fasteners

- **Polishing:** Provides a smooth surface finish, reducing friction and wear on fasteners, ideal for medical applications requiring sterile, low-friction components.
- **Passivation:** Enhances corrosion resistance, ensuring that titanium fasteners perform optimally for extended periods, especially in medical implants.
- **Anodizing:** Available in various colors, such as gold, blue, and purple, anodizing increases surface hardness and helps in the easy identification of implants in medical settings.

Why Choose Ti-6Al-4V ELI Fasteners?

When selecting titanium alloy fasteners for your medical devices, the Ti-6Al-4V ELI grade offers unmatched strength, durability, and biocompatibility. Whether you're designing small dental implants or large orthopedic reconstruction devices, these high-performance fasteners deliver the reliability you need.

For more information or to discuss your custom fastener requirements, contact our sales team today.