Titanium Grade 1 | 3.7025

Titanium Grade 1 offers the highest ductility and corrosion resistance.

Mechanical properties

Ultimate tensile strength	310 - 350 MPa
Yield strength	220 - 240 MPa
Young's modulus (modulus of elasticity)	103 - 105 GPa
Elongation at break	28 -32 %
Hardness	120 HB

Physical properties

Corrosion resistance	Excellent
Magnetism	Non-magnetic
Weldability	High

Thermal properties

Maximum service temperature	320 - 400 °C
Thermal expansion coefficent	8.35 - 8.6 10^-6/ºC
Thermal conductivity	16 - 21 W/(m·°C)

Electrical properties

Electrical resistivity	42 - 45 µΩ*cm

Post treatments

Post-Processing	Cold & hot working, annealing. Not harden-able by heat treatment.
Anodizing compatibility	Suitable

Common applications

Airframe components	
Cryogenic vessels	
Heat exchangers	
CPI equipment	
Condenser tubing	
Pickling baskets	

Titanium Grade 1 CNC Machining Applications & Parts

Titanium Grade 1 is the softest and most ductile commercially pure titanium grade, offering exceptional formability and the highest corrosion resistance among unalloyed titanium grades. While possessing lower strength than other grades, its superior malleability makes it ideal for applications where forming is required. Our precision machining handles this soft material with exceptional care.

Typical Parts We Machine from Titanium Grade 1:

- **Chemical Industry:** Anodizing racks, chemical processing equipment, cathodic protection anodes
- **Architectural Applications:** Decorative panels, roofing systems, architectural fasteners
- **Medical Field:** Pacemaker cases, implantable mesh, surgical staple components
- **Marine Engineering:** Heat exchangers, seawater piping, offshore platform components

Our Machining Advantage:

We utilize sharp, positive-rake tooling and optimized parameters to prevent material pulling and galling when machining Grade 1 titanium, ensuring clean cuts, burr-free edges, and maintaining the material's excellent surface quality.

Get an Instant Quote for your custom Titanium Grade 1 parts today.