Inconel 718

Inconel 718 is difficult to CNC machine but offers high strength and heat resistance.

Mechanical properties

Ultimate tensile strength	900 - 930 MPa
Yield strength	490 - 510 MPa
Young's modulus (modulus of elasticity)	190 - 200 GPa
Elongation at break	40 - 45 %
Hardness	40 HRC

Physical properties

Corrosion resistance	Excellent
Magnetism	Non-magnetic
Weldability	Excellent

Thermal properties

Thermal conductivity	11 - 11.4 W/(m·°C)

Electrical properties

Electrical resistivity	125 μΩ*cm

Post treatments

Post-Processing	Cold & hot working, annealing and aging
Anodizing compatibility	Not suitable

Common applications

Jet engines	
Rocket motors	

Spacecraft	
Space shuttles	
Tooling	
Nuclear reactors	
Pumps & turbo pumps	

Inconel 718 CNC Machining Applications & Parts

Inconel 718 is a high-strength, nickel-chromium superalloy renowned for its exceptional corrosion resistance, excellent tensile and fatigue strength, and ability to perform in extreme temperatures up to 1300°F (700°C). Our advanced CNC machining capabilities are specifically tailored to handle this challenging material for critical applications.

Typical Parts We Machine from Inconel 718:

- **Aerospace & Jet Engines:** Turbine blades, engine mounts, afterburner components, heat shields
- **Oil & Gas Exploration:** Downhole tools, wellhead components, valve parts, drilling equipment
- **Nuclear Reactors:** Core components, reactor vessel internals, control rod mechanisms
- **Chemical Processing:** Pump shafts, valve trim, fasteners for corrosive environments

Our Machining Advantage:

We utilize specialized carbide tooling, high-pressure coolant systems, and rigid machining setups to effectively cut through Inconel 718's work-hardening tendency, maintaining tight tolerances and preventing tool deflection and premature wear.

Get an Instant Quote for your custom Inconel 718 parts today.