Stainless steel 303 | 1.4305 | X8CrNiS18-9

Stainless Steel 303 is a free-machining grade for high-volume CNC parts.

Mechanical properties

Ultimate tensile strength	580 - 700 MPa
Yield strength	205 - 350 MPa
Young's modulus (modulus of elasticity)	192 - 200 GPa
Elongation at break	40 - 50 %

Physical properties

Corrosion resistance	Moderate
Magnetism	Non-magnetic
UV resistance	Excellent
Weldability	Very Poor

Thermal properties

Maximum service temperature	750 - 925 °C
Thermal expansion coefficent	16.2 - 17.9 10^-6/ºC
Thermal conductivity	15.8 - 16.5 W/(m·°C)

Electrical properties

Electrical resistivity	75 - 85 µΩ*cm
ESD Safety	Yes

Post treatments

Post-Processing	Not suitable
Anodizing compatibility	Not suitable

Common applications

Aircraft applications including fittings	
Shafts and spindles	
Automatic screw machine applications	
Drilled or tapped holes	
Medical devices with screw threads	
Pump and valve parts	
Nuts and bolts	
Architectural applications	

Stainless Steel 303 CNC Machining Applications & Parts

Stainless Steel 303 is the quintessential "free-machining" austenitic stainless steel, modified with sulfur to significantly improve machinability while maintaining good mechanical properties and corrosion resistance. It is ideal for high-volume CNC production.

Typical Parts We Machine from Stainless Steel 303:

- **Automated Machinery:** Shafts, gears, nuts, bolts, fittings
- **Food & Beverage Equipment:** Valve components, fittings, pump parts
- **Medical & Surgical:** Instrument housings, non-implant surgical tool components

Our Machining Advantage:

We leverage the free-machining properties of 303 to achieve high production rates, exceptional surface finishes, and extended tool life, making it a cost-effective choice for complex parts.

Get an Instant Quote for your custom Stainless Steel 303 parts today.