Tool steel O1 | 1.2510 | 100MnCrW4 - Annealed state

Tool Steel O1 is oil-hardening tool steel for cutting tools and dies.

Mechanical properties

Ultimate tensile strength	700 MPa
Yield strength	400 MPa
Young's modulus (modulus of elasticity)	190 GPa
Elongation at break	21 %

Physical properties

Magnetism	Magnetic
Weldability	Poor

Thermal properties

Maximum service temperature	165 - 215 °C
Thermal expansion coefficent	11.3 - 11.8 10^-6/ºC
Thermal conductivity	37 W/(m·°C)

Electrical properties

Electrical resistivity	24.5 - 30.2 µΩ*cm

Post treatments

Post-Processing	Hardening & Annealing
Anodizing compatibility	Not suitable

Common applications

Cutting tools	
Cold-forming dies	

Shearing tools	
Die casting and molding dies	

Tool Steel O1 CNC Machining Applications & Parts

Tool Steel O1 is an oil-hardening tool steel known for its excellent machinability, good dimensional stability during heat treatment, and balanced wear resistance. This versatile cold work tool steel is widely used for applications requiring precise edges and good overall performance.

Typical Parts We Machine from Tool Steel O1:

- **Cutting Tools:** Knives, blades, cutting dies, shearing tools
- **Woodworking Tools:** Plane blades, chisels, carving tools
- **Stamping Dies:** Blanking dies, piercing punches, stamping tools

Our Machining Advantage:

We expertly machine O1 tool steel in its annealed condition, achieving sharp edges and precise geometries, followed by controlled oil quenching to deliver components with excellent hardness and edge retention.

Get an Instant Quote for your custom Tool Steel O1 parts today.