

X100CrMoV5 Steel

X100CrMoV5 steel suppliers delivering to the whole of the UK. West Yorkshire Steel are suppliers of X100CrMoV5 in round bar and cut rectangular block. This is a steel which, after heat treatment, offers a high abrasion resistance coupled with toughness. Wear resistant properties are not as great as those to be found in high carbon, high chromium steels but is easier to machine than the latter qualities and can be ground to give a cutting edge which is less liable to crumble in service.

We welcome export enquiries for tool steel. Contact our sales office and consult our [shipping policy](#) for further details.

Form of Supply

West Yorkshire Steel are suppliers of fully annealed X100CrMoV5 in round and flat bar which can be sawn cut to your required sizes. Ground bar can be supplied, providing a high quality precision ground steel bar to tight tolerances.

Contact our experienced sales team who will assist you with your enquiry.

- Flat
- Diameter

Applications

X100CrMoV5 steel is used for cold forging dies, coining dies, cold heading dies, shear blades, knurling tools and as paper cutting knives.

Analysis

Carbon	0.95-1.05%	Chromium	4.80-5.50%
Manganese	0.40-0.80%	Silicon	0.10-0.40%
Molybdenum	0.90-1.20%	Phosphorous	0.03% max
Vanadium	0.15-0.35%	Sulphur	0.03% max

Ground Flat Stock

Precision ground flat stock / gauge plate can be produced. Subject to size suitability and availability X100CrMoV5 ground pieces can be produced in approximately 2 to 3 weeks. Standard and non-standard sizes can be made.

Forging

Preheat to 650-680°C before raising the temperature to 1050-1100°C and soak until the steel is uniformly heated. Initial hammer blows should be light and the forging temperature must be maintained above 1000°C until the metal begins to yield. Final forging should not be done below 900°C. To avoid the possibility of cracking slow cooling after forging is essential.

Annealing

X100CrMoV5 is supplied annealed. Re-annealing will only be necessary if the steel has been forged or if a hardened component has to be re-machined or re-hardened. Heat the steel slowly to 850-870°C. After a minimum of approximately two hours at this temperature, the furnace temperature should be lowered to 730-750°C and held there for about four to six hours. Allow the steel to cool very slowly in the furnace to 600°C or below before removing the work to air cool.

Stress Relieving

When heavy machining or grinding of X100CrMoV5 steel has been carried out, it is advisable to stress relieve to minimise the danger of distortion or cracking during heat treatment. To stress-relieve, heat the tools slowly to 670-700°C, soak for a minimum of two hours per 25mm of steel section and allow to cool down in the furnace.

Hardening

Pre-heat the steel slowly to 790-820°C and thoroughly soak at this temperature. Continue heating to the hardening temperature of 950-980°C. Allow enough time for the components to become evenly heated through. Air cool or oil quench. Temper as soon as the tools are hand warm.

Tempering

Temper after hardening. Heat the steel slowly to the required tempering temperature. Soak for one hour per 25mm of section (one hour minimum) and allow to air cool. Double tempering is recommended.

Temperature [°C]	150	200	250	300	350	400
Hardness [HRC]	62-61	61-60	60-59	59-58	58-57	58-57

Final Grinding

When grinding hardened X100CrMoV5 steel select the correct grade of wheel in consultation with a grinding wheel manufacturer. Keep the grinding wheel in good condition by means of a suitable dressing tool. Wet grinding is preferable using a copious supply of coolant. If dry grinding is resorted to, use a soft wheel.

Heat Treatment

Heat treatment temperatures, including rate of heating, cooling and soaking times will vary due to factors such as the shape and size of each component. Other considerations during the heat treatment process include type of furnace, quenching medium and work piece transfer facilities. Please consult a heat treatment specialist for full guidance on heat treatment.

Quality Assured Supply

X100CrMoV5 steel is supplied in accordance with our ISO 9001:2008 registration.