



## 905M39

Quality 905M39 cut and delivered in round bar.

### 905M39 nitriding steel stockholders and suppliers, delivering to the whole of the UK.

905M39 is a chromium aluminium molybdenum steel specification usually supplied in the hardened and tempered 'R' or 'S' condition. 905M39 'R' condition has a tensile of 700-850 N/mm<sup>2</sup>. 905M39 'S' condition has a tensile of 775-925 N/mm<sup>2</sup>. It offers high wear resistant properties together with toughness and ductility. It is defined by its suitability for nitriding from which 905M39 can give a hard wear resistant case up to 68HRC, better than achievable with the similar nitriding grade 722M24

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

### Alternative [alloy steel](#) grades we supply

[605M36](#) | [708M40](#) | [709M40](#) | [817M40](#) | [826M40](#)  
[535A99](#) | [080A15](#) | [655M13](#) | [722M24](#) | [835M30](#)

### Form of Supply

West Yorkshire Steel are 905M39 steel stockholders and suppliers of round bar. Diameters in 905M39 can be sawn to your required lengths as one offs or multiple cut pieces. 905M39 ground steel bar can be supplied, providing a high tensile engineering steel precision ground bar to tight tolerances.



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

■ Diameter

## Applications

905M39 is suited for applications that required excellent resistance to wear and abrasion. Typical applications include connecting rods, small extruders, valve stems, dies. It is widely used in the automotive, textile and general engineering industries. Suitable for applications requiring a resistance to wear, it is also suitable for other applications such as brick press plates, clutch plates, gudgeon, track and shackle pins.

## Analysis

Carbon	0.35-0.43%	Silicon	0.10-0.40%
Manganese	0.40-0.65%	Nickel	0.40% max
Chromium	1.40-1.80%	Molybdenum	0.15-0.25%
Phosphorous	0.025% max	Sulphur	0.025% max

## Annealing

Heat slowly to 650-700°C. Cool in air.

## Hardening

905M39 is supplied ready heat treated. If further heat treatment is required annealed 905M39 should be heated slowly to 870-930°C and after adequate soaking at this temperature quench in oil/polymer or water. Temper as soon as tools reach room temperature.

## Tempering

Heat carefully to a suitable temperature selected by reference to a tempering chart or table (usually between 580-700°C). Soak at the temperature for 2 hours per 25mm of ruling section, then allow to cool in the air.

## Typical Mechanical Properties\*

Condition	Tensile N/mm <sup>2</sup>	Yield N/mm <sup>2</sup>	Elongation %	Izod KCV J	Hardness Brinell
R	700-850	525	17	80	201-255
S	775-925	585	15	50	223-277

(subject to ruling section\*)

## 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 the type of furnace, quenching medium and work piece transfer facilities. Please consult your heat treatment provider for full guidance on heat treatment of 905M39 alloy nitriding steel.

## Certification

905M39 alloy steel is available with a cast and analysis certificate or BS EN 10204 3.1 mill certificate, please request when placing any orders.

## Quality Assured Supply

905M39 is supplied in accordance with our ISO 9001:2015 registration.