

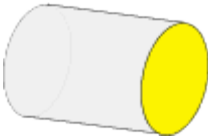
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1045 Induction Hardened Hard Chrome Plated Bar

1045 is a medium tensile carbon steel supplied in the turned, induction hardened and straightened, precision ground, polished, chrome plated and final polished condition, with a typical base metal tensile strength of 670 Mpa, an induction hardened case of 3.2mm thick approx. to Rc55-65, plus a typical hard chrome plated surface hardness of HV 1000 - 1150.

Characterised by an extremely smooth surface finish with excellent wear and corrosion resistance, supported by an induction hardened case offering greater strength and resistance to mechanical damage, coupled with good core strength.

1045 induction hardened hard chrome plated bar is used extensively by the hydraulic and pneumatic industries, for those applications utilising its high surface hardness and excellent resistance to surface impact.

 Colour Code Yellow End Caps	Stocked Sizes	Metric	20mm - 105 mm Dia
		Imperial	3/4" - 5"Dia

Related Specifications (Base Metal)

Australia	AS 1443 - 1994 1045
Germany	W.Nr 1.0503 C45 W.Nr 1.1191 CK45
Great Britain	BS970 - Part 3 - 1991 080A47 BS970 - Part 1 - 1972 080M46 BS970 - 1955 EN43B
Japan	JIS G 4051 S45C
USA	AISI C1045 ASTM A29/A29M - 91 1045 SAE 1045 UNS G 10450

Chemical Composition (Base Material)

	Min. %	Max. %
Carbon	0.43	0.50
Silicon	0.10	0.35
Manganese	0.60	0.90
Phosphorous	0	0.04
Sulphur	0	0.04

Typical (Base Metal) Mechanical Properties - As Supplied Condition

Manufacturing Process	Tensile Strength Mpa	Yield Strength Mpa	Elongation In 50mm %	Hardness Brinell HB
Turned	670	470	20	200

Typical Properties Induction Hardened Case

Thickness	Hardness
3.2mm	Rc 55-65

Hard Chrome Plating

Typical Surface Hardness	HV 1000 - 1150
Typical Surface Smoothness	0.10 - 0.30 umRa (Microns)
Typical Surface Deposit*	0.025 - 0.050 mm (0.001") - (0.002")

*Note: Can be supplied up to 0.125 mm against order, subject to minimum quantity requirements.

Diameter and Straightness Tolerance

Diameter		Tolerance	
mm	inches	mm	inches
Up to 51mm Dia	Up to 2.0	+0.00	+0.00
		-0.025	-0.001
Over 51 - 102mm Dia	Over 2.0 - 4.0	+0.00	+0.00
		-0.050	-0.002
Over 102mm Dia	Over 4.0	+0.00	+0.00
		-0.075	-0.003
Straightness	Below 50mm 0.25mm/1000mm Over 50mm 0.30mm/1000mm		

Typical Bar Lengths

Over 25 mm Dia 6000mm

Bar lengths are approximates only.
NB. Bars have 100mm approx. unchromed surface at each end.

Packaging

Supplied in cardboard tubes for protection.

Sawing

1045 induction hardened hard chrome plated bar, due to the extreme hardness of the induction hardened case, requires special cutting blades or grinding equipment.

Machining

1045 induction hardened hard chrome plated bar, due to the extreme hardness of the induction hardened case, requires *ceramic tipped machine tools. Having removed the induction hardened case, the core has very good machinability, similar to 1045 standard bar. To protect the polished chrome surface, soft materials such as copper, aluminium or mild steel should be used as clamping materials and any particles of hard chrome should be removed immediately to avoid scratching. Otherwise all machining operations may be carried out satisfactorily.

*Please consult your machine tool supplier.

Welding

Welding of 1045 induction hardened hard chrome plated bar is not generally recommended.

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