

# MATERIAL DATA SHEET



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## 835M15 [EN39B]

Condition of supply:-	<i>As Rolled/Forged, Annealed, Quenched &amp; Tempered</i>
Surface Condition:-	<i>Black, Bright, Proof machined, Machined to Requirements</i>

### Description:

**835M15 Material** is a 4 1/4% Nickel Chromium Molybdenum carburising steel, generally supplied annealed. Carburised and heat treated it develops a hard wear resistant case and a tough strong core with a typical tensile strength range 1000-1400MPa, in small to quite large sections.

### Typical Applications:

Widely used in the automotive and Armaments Industries 835M15 is used in Heavy Duty Gears, Clutch plates, Fly Wheels, Cam Shafts & Rocker Valves, Heavy Roller Bearings, Breach Mechanisms and Small Arms components.

### Typical Chemical Composition:

	C	Si	Mn	S	P	Cr	Ni	Mo
Min	0.12	0.10	0.25			1.00	3.90	0.15
Max	0.18	0.35	0.50	0.040	0.035	1.40	4.30	0.30

### Mechanical properties annealed condition

Yield	Tensile strength	Elongation	Hardness
			<b>277HB</b>

### Mechanical Properties – Quenched at 830C and Tempered at 200C

Section	Tensile Strength Mpa	Yield Strength	Elongation %	Impact Izod J	Hardness HB
25mm	1350	1150	13	50	400
50mm	1300	1100	15	72	380
100mm	1180	920	17	82	350

### Machining

835M15 is readily machinable allowing processes such as Sawing, Turning, Drilling, Boring and Milling to be relatively easily achieved.

### Welding

835M15 is readily weldable in the annealed condition with correct procedure, but welding in the case hardened or through condition is not recommended.

### Welding procedure

Low hydrogen electrodes recommended. Pre-heat at 250°C - 350°C and maintain during welding. Cool slowly in ashes, warm dry lime or sand etc, followed when possible with a stress relieve.

***Form of supply:***

Material can be supplied, Black Annealed - Rolled/Forged Bar, Proof Machined, Bright Turned or Ground Bar, Cut Pieces or Machined to customer specification.

***Size ranges from:***

40mm diameter - 380mm diameter

