



709M40 - (EN19)

BS970 Pt 1, 1983. AS ROLLED/FORGED OR HEAT TREATED

1% CHROME MOLY STEEL

Properties minima unless stated

BS970 of 1955	EN19
BS970 Pt 1 of 1983	709M40
W.Stoff (German)	1.7225
AISI (American)	4140
Carbon	= 0,36 - 0,44
Silicon	= 0,10 - 0,35
Manganese	= 0,70 - 1,00
Chromium	= 0,90 - 1,20
Molybdenum	= 0,25 - 0,35
Sulphur	= 0,035 max
Phosphorus	= 0,040 max

Heat Treatment	Tensile Strength R _m MPa	Yield Stress R _e MPa	A min on 5,65 √ S ₀	Impact		Limiting Ruling Section mm
				Izod ft.lb	KCV J	
R	700/850	495	15	25	28	201/255
S	775/925	555	13	20	22	223/277
	775/925	585	15	40	50	223/277
T	850/1000	680	13	40	50	248/302
U	925/1075	755	12	35	42	269/331
V	1000/1150	850	12	35	42	293/352
W	1075/1225	940	12	30	35	311/375

Size Range

Diameter Millimeters	Theoretical Mass kg/m	Diameter Millimeters	Theoretical Mass kg/m
20	2,466	140	120,834
25	3,853	150	138,713
26	4,168	160	157,824
28	4,833	165	167,842
30	5,549	170	178,169
32	6,313	180	199,746
35	7,552	190	222,557
40	9,864	203	254,053
45	12,484	215	284,977
50	15,413	230	326,129
55	18,649	240	355,104
60	22,194	245	370,054
65	26,047	250	385,313
70	30,209	260	416,754
75	34,678	270	449,429
80	39,456	280	483,336
85	44,542	300	554,850
90	49,937	320	631,296
95	55,639	330	671,369
100	61,650	340	712,674
108	71,909	350	755,213
115	81,532	360	798,984
120	88,776	370	843,989
130	104,189	405	1 011,214

N.B. 1) Sizes above limiting ruling section will be heat treated to a hardness only, with no guarantee on mechanical properties.

- 2) Actual mass will vary from theoretical mass due to manufacturing tolerances.
- 3) A 6% allowance should always be made for removal of surface defects during machining.
- 4) For sizes not listed please contact our sales department - we may be able to assist you.
- 5) Condition "W" may not always be obtained by bulk heat treatment, but the properties can be achieved by appropriate heat treatment of components.

Typical Uses

Axles, crankshafts, connecting rods, gears, high tensile bolts and studs, propeller shaft joints, rifle barrels and breech mechanisms for small arms and induction hardened track pins.