

EN SERIES STEEL

E.N. No.	Type and Application	Chemical composition & max						Physical Properties min			Limiting Size (diameter or width) Across Plats)	Condition	Brinell No.
		C	Mn	Ni	Cr.	Mo.	Others	T.I t/sq	El %	Izod ft.lbs			
IA	Free cutting machining Steel for low duty bolts, nuts, studs etc	.07/.15	.80/1.20	-	-	-	S. .2/.3 P. .07 Si. .10	32 28 25 23 23	10 14 14 14 26	- - - - -	17/32" and less Over 17/32" to 1-1/2" Over 1-1/2" to 2 1/2" Over 2 1/2" to 4" 4" Other finishes	Cold rolled or Cold drawn	-
3	20 CARBON STEEL for nicraft sockets Plug ends, lightly stres- sed levers, bolts nuts	.25	1.0				S & P .06 Si .05/.35	25/35	25		6"	As rolled	
3B	20 CARBON STEEL Cold drawn	.25	1.0	-	-	-	S & P .06 Si. .35	28	25	-	-	Normalised	-
8	40CARBON STEEL without grain size con- trol. For mothor connect- ing rods, crankshafts, bolts and machine details in general.	.35/.45	.6/10				Si .06/.36 S & P .06	35 Q 40 H 45 35 Q 40 R 45	20 20 20 17 17 17	 10 10 - - - -	6" 2 1/2" 7/8" 6" 2 1/2" 7/8"	Normalized H & T H & T N & CD H & T & CD H & T & CD	152/207 179/229 201/255 152/207 169/229 201/255
8M	40 Carbon Steel. Free cutting	.35/45	.9/1.30	-	-	-	S. .12/.20 P. .06 Si. .25	35 Q 40 R 45 38	20 22 20 12	- 25 40 -	6" 2" 1/2" 1 1/2" max	Normalised H & T H & T Cold drawn	152/207 179/229 201/255 229/ max
16	Manganese-Molybde- num steel. suitable for tensile ranges of 45/75 tons according to the ruling section.	.30/.40	1.3/1.8	-	-	.20/.35	S & P. .05	R. 45 S. 50 T. 55 U. 60 V. 65	22 20 18 17 16	40 40 40 35 35	6" 4" 2.1/2" 1.1/8" 7/8"	H & T H & T H & T H & T H & T	201-255 223-277 248-302 269-321 293-341
18	1 percent Chromium Steel. suitable for ten- sile ranges of 45/65 tons according to the ruling section	.35/.45	.60/.95	-	.85/ 1.15	-	S. & P. .05	R. 45 S. 50 T. 55	22 20 18	40 40 40	4" PS 32 2 1/2" " 36 1.1/8" " 4.1	H & T H & T H & T	201/255 223/277 248/302

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19	1 percent chromium Molybdenum steel Suitable for tensile ranges of 45/80 tons according to the ruling section of the part	.35/.45	.50/.80	-	.90 1.50	.2/4	S & P .05 Si 0.10/.35	R. 45 S. 50 T. 55 U. 60 V. 65 W. 70 Y. 80	22 20 18 17 16 15 10	40 40 40 35 35 30 10	6" PS 32 4" - 36 2 1/2 - 41 2 1/2" - 46 1.1/8" - 50 1. 1/8 - 55 1" - 64		H & T H & T H & T H & T H & T H & T H & T	201/255 223/177 248/302 269/321 293/341 311/375 363/415	
24	1 1/2 percent Nickel-Chromium Molybdenum steel. Suitable for tensile ranges of 50/ 100 tons according to the ruling section of the part.	.35/45	.45/.7	1.3/ 1.8	.9/1.4	.2/35	Si. 10/35 S. P 0.05	S. 50 T. 55 U. 60 V. 65 W. 70 X. 75 Y. 80 Z.100	20 18 17 16 15 14 14 8	40 40 35 35 30 25 25 8	6" PS 36 6" - 41 4" - 46 2 1/2 - 50 1.1/8" - 55 1.1/8" - 59 1.1/8" - 64 1.1/8" - 80		H & T H & T H & T H & T H & T H & T H & T H & T	223/277 248/302 269/321 293/341 311/375 341/388 363/415 444 Min	
31	1 percent Carbon Chromium steel For parts of maximum hardness such as ball races.	.9/1.2	.3/.75	-	1/1.6	-	S.& P. .05 Si. .10/.35	-	-	-	-		-	-	
36A	3 percent Nickel- Chromium	.15	.3/.6	3/3.75	.6/1.1	-	Si .10/.35	55	15	35	-		-	-	
36B	Case- hardening steel	.12/.18	.3/.6	3/3.75	.6/1.1	-	-	65	13	30	-		-	-	
36C	3 percent Nickel Chromium. Molybdenum Case Hardening steel	.12/.18	.3/.6	3/3.75	.6/1.1	.1/.25	Si .10/.35	65	13	30	-		-	-	
41A	1-1/2 percent Chromium aluminium Molybdenum Nitriding steel	.25/.35	.65	.40	1.4/ 1.8	.1/.25	Si .1/.45 AL .9/1.3 S. & P. .05	R 45 S 50 T 55	20 19 17	40 40 35	6" 4" 2 1/2"		H & T H & T H & T	201/255 223/277 248/302	
41B	As above (EN ₁ 41 A)	.35/.45	.65	.40	1.4/ 1.8	.1/.25	Si. .1/.45 S. & P. .05 AL .9/1.3	R. 45 S. 50 T. 55	20 19 17	40 40 35	-		H & T H & T H & T	201/255 223/277 248/302	
42	Carbon spring steel for oil Hardening and tempering. Suitable for laminated and coil springs.	.7/.85	.55/.75	-	-	-	Si. .1/.40 S. & P. .05	-	-	-	-		-	-	
47	1 percent Chromium-Vanadium spring steel for oil hardening and tempering.	.45/.55	.5/.8	-	.8/1.2	-	Va. .15 min Si. .50 S. & P. .05	-	-	-	-		-	-	
353	1.1/4 percent, Nickel Chromium Case Hardening steel	.20	.50/1.0	1.0/ 1.5	.75/ 1.25	.08/ .15	Si. .35 S. & P. .05	65	12	20	-		-	-	
354	1-3/4 percent Nickel-Chromium Molybdenum Case-Hardening steel.	20	.50/1.0	1.5/ 2.0	.75/ 1.25	.10/ .20	Si. .35 S. & P. .05	75	12	20	-		-	-	

SIGNS AND ABBREVIATIONS

H & T	Hardened and Tempered	CD	Cold drawn.
CR	Cold Rolled.	PS	Proof Stress.
N.	Normalised	<	Maximum