

SPRING STEEL STRIP	SINGLE THICKNESS	SINGLE THICKNESS	SINGLE THICKNESS	SINGLE THICKNESS	(1)DOUBLE THICKNESS
	.040" & THICKER	THICKNESS .039" TO .025"	THICKNESS .024" TO .015"	.014" TO .007"	.006" &
Black Oil Tempered (Scaleless)-.70-.80C	C-Scale	C-Scale	30N-Scale	15N-Scale	15N-Scale
Blue Tempered Spring Steel-.90-1.03 C	C-Scale	C-Scale	30N-Scale	15N-Scale	15N-Scale
Cold Rolled Annealed- .48-1.03 C	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
Hard Rolled-High Carbon-.70-1.03 C	C-Scale	C-Scale	30N-Scale	15N-Scale	15N-Scale
High Carbon-Flat Wire-.70-.80 C Ann'ld	B-Scale	30T-Scale	15T-Scale		
Thickness Gage Steel Strip- Tempered	C-Scale	C-Scale	30N-Scale	15N-Scale	15N-Scale
<b>STAINLESS STRIP</b>					
Types 302, 304, 410 & 430 Annealed, also 17/7 PH Cond. A	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
Types 301 & 302 - 1/4 Hd. To Ex. Hd. Inc'l Tempered Type 410	C-Scale	C-Scale	30N-Scale	15N-Scale	15N-Scale
17/7 PH Cond. C	C-Scale	C-Scale	30N-Scale	15N-Scale	15N-Scale
<b>LOW CARBON SHEET &amp; STRIP</b>					
Cold Rolled Strip- All Tempers	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
Cold Rolled Sheet- All Tempers	B-Scale	30T-Scale	15T-Scale	15T-Scale	
Electrolytic Tin Coated Sheet		30T-Scale	15T-Scale	15T-Scale	
Flat Wire- 1/4 & 1/2 Hard	B-Scale	30T-Scale			
Shim Steel- 1/2 Hard & Full Hard	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
<b>COPPER BASE ALLOY STRIP</b>					
Beryllium Copper- Annealed & 1/2 Hard	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
Brass Strip- All Tempers	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
Nickel Silver- All Tempers	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale
Phosphor Bronze Strip- Spring Temper	B-Scale	30T-Scale	15T-Scale	15T-Scale	15T-Scale

Reference- Rockwell Scales  
Used  
**Instructions**

**B-Scale.** Use the A, B, C Standard Rockwell Hardness Tester with a 100kg. load, the 1/16" steel ball penetrator & the steel anvil.

**C- Scale.** Use the A, B, C Standard Rockwell Hardness Tester with a 150kg. load, the diamond point brale penetrator & the steel anvil.

**15N-Scale.** Use the Superficial Rockwell Hardness Tester with a 15kg. load, the diamond point N-Brale penetrator & the steel anvil.

**30N-Scale.** Use the Superficial Rockwell Hardness Tester with a 30kg. load, the diamond point N-Brale penetrator & the steel anvil.

**15T-Scale.** Use the Superficial Rockwell Hardness Tester with a 15kg. load, the 1/16" steel ball penetrator & the diamond anvil.

**30T-Scale.** Use the Superficial Rockwell Hardness Tester with a 30kg. load, the 1/16" steel ball penetrator & either the diamond or the steel anvil.

**ROCKWELL HARDNESS CONVERSION CHART FOR HARDENED STEEL & HARD ALLOYS** Approximate Relationships Between Hardness Values  
Determined on "ROCKWELL Superficial" Hardness Testers & Values Determined on Other Testers.

C. 150 Kg "Brale"	A. 60Kg N "Brale"	15-N 15Kg N "Brale"	30-N 30Kg N "Brale"	45-N 45Kg N "Brale"	Brinell Hardness 3000 Kg	Tensile Strength
"ROCKWELL"	"ROCKWELL"	"ROCKWELL" Superficial	"ROCKWELL" Superficial	"ROCKWELL" Superficial	HULTGREN 10MM Ball	Thousand Lbs. per sq. in.
70	86.5	94.0	86.0	77.5	-	TENSILE STRENGTH INEXACT & ONLY FOR STEEL
69	86.0	93.5	85.0	76.5	-	
68	85.0	-	84.5	75.5	-	
67	85.0	93.0	83.5	74.5	-	
66	84.5	92.5	83.0	73.0	-	
65	84.0	92.0	82.0	72.0	-	
64	83.5	-	81.0	71.0	-	
63	83.0	91.5	80.0	70.0	-	
62	82.5	91.0	79.0	69.0	-	
61	81.5	90.5	78.5	67.5	-	
60	81.0	90.0	77.5	66.5	614	314
59	80.5	89.5	76.5	65.5	600	306
58	80.0	-	75.5	64.0	587	299
57	79.5	89.0	75.0	63.0	573	291
56	79.0	88.5	74.0	62.0	560	284
55	78.5	88.0	73.0	61.0	547	277
54	78.0	87.5	72.0	59.5	534	270
53	77.5	87.0	71.0	58.5	522	263
52	77.0	86.5	70.5	57.5	509	256
51	76.5	86.0	69.5	56.0	496	250
50	76.0	85.5	68.5	55.0	484	243
49	75.5	85.0	67.5	54.0	472	236
48	74.5	84.5	66.5	52.5	460	230
47	74.0	84.0	66.0	51.5	448	223
46	73.5	83.5	65.0	50.0	437	217
45	73.0	83.0	64.0	49.0	426	211
44	72.5	82.5	63.0	48.0	415	205
42	71.5	81.5	61.5	45.5	393	194
40	70.5	80.5	59.5	43.0	372	182
38	69.5	79.5	57.5	41.0	352	171
36	68.5	78.5	56.0	38.5	332	162
34	67.5	77.0	54.0	36.0	313	153
32	66.5	76.0	52.0	33.5	297	144
30	65.5	75.0	50.5	31.5	283	136
28	64.5	74.0	48.5	29.0	270	129
26	63.5	72.5	47.0	26.5	260	123
24	62.5	71.5	45.0	24.0	250	117
22	61.5	70.5	43.0	22.0	240	112
20	60.5	69.5	41.5	19.5	230	108

**ROCKWELL HARDNESS CONVERSION CHART For SOFT STEEL & MOST NON-FERROUS METALS** Approximate Relationships Between Hardness Values Determined on "ROCKWELL" & "ROCKWELL Superficial" Hardness Testers & Values Determined on Other Testers.

B. 100 Kg 1/16" Ball	15-T 15 Kg 1/16" Ball	30-T 30 Kg 1/16" Ball	45-T 45 Kg 1/16" Ball	Br'l 500 Kg 10M M Ball	Tensile Strength	B. 100 Kg 1/16" Ball	15-T 15 Kg 1/16" Ball	30-T 30 Kg 1/16" Ball	45-T 45 Kg 1/16" Ball	Br'l 500 Kg 10M M Ball
"ROCKWELL"	"ROCKWELL" Superficial	"ROCKWELL" Superficial	"ROCKWELL" Superficial	Standard BRINELL	Thousand Lbs. Per sq.	"ROCKWELL"	"ROCKWELL" Superficial	"ROCKWELL" Superficial	"ROCKWELL" Superficial	Standard BRINELL
100	93.0	82.0	72.0	201	116	66 64	82.0	60.5	39.5	104
99 98	92.5	81.5	71.0	195	112	62	81.5	59.5	37.5	101
	...	81.0	70.0	189	109		80.5	58.0	35.5	98
97 96	92.0	80.5	69.0	184	106	60 58	80.0	56.5	33.5	95 92
95	...	80.0	68.0	179	103	56	79.5	55.0	31.0	90
	91.5	79.0	67.0	175	101		79.0	54.0	29.0	
94 93	...	78.5	66.0	171	98 96	54 52	78.0	52.5	27.0	87 85
92	91.0	78.0	65.5	167	93	50	77.5	51.0	25.0	83
	90.5	77.5	64.5	163			77.0	49.5	23.0	
91 90	...	77.0	63.5	160	91 89	48 46	76.0	48.5	20.5	81 79
89	90.0	76.0	62.5	157	87	44	75.5	47.0	18.5	78
	89.5	75.5	61.5	154			75.0	45.5	16.5	
88 87	...	75.0	60.5	151	85 83	42 40	74.0	44.0	14.5	76 74
86	89.0	74.5	59.5	148	81	38	73.5	43.0	12.5	73
	88.5	74.0	58.5	145			73.0	41.5	10.0	
85 84	...	73.5	58.0	142	80 78	36 34	72.0	40.0	8.0	71 70
83	88.0	73.0	57.0	140	77	32	71.5	38.5	6.0	68
	87.5	72.0	56.0	137			71.0	37.5	4.0	
82 81	...	71.5	55.0	135	75 74	30 28	70.5	36.0	2.0	67 66
80	87.0	71.0	54.0	133	72	24	69.5	34.5	...	64
	86.5	70.0	53.0	130			68.5	32.0	...	
79 78	...	69.5	52.0	128	Tensile Strength Inexact & ONLY for Steel	20 16	67.0	29.0	...	62 60
77	86.0	69.0	51.0	126		12	66.0	26.0	...	58
	85.5	68.0	50.0	124			64.5	23.5	...	
76	...	67.5	49.0	122		8.0	63.5	20.5	...	56 55
75 74	85.0	67.0	48.5	120		4.0	62.0	18.0	...	53
	...	66.0	47.5	118		0	61.0	15.0	...	
72 70	84.0	65.0	45.5	114						
68	83.5	63.5	43.5	110						
	83.0	62.0	41.5	107						

*Even for steel, Tensile Strength relation to hardness is inexact, unless determined for specific material.*

*The 15N, 30N, 45N, and the 15T, 30T, and 45T scales pertain to our "ROCKWELL" Superficial Hardness Testers which apply exceedingly light minor and major loads for very shallow indentations, as required for testing nitrided steel or thin sheet metal.*

*"All relative values on this card are averages of tests on various metals whose differences in coldworking and other properties prevent establishment of exact mathematical conversion. Hardness values here given were carefully determined in our own Standard Laboratory."*