

METROLOGY®

Webster Hardness Tester



WHT-W20

Hardness indicator

Webster hardness tester is a portable hardness tester that is small in size, light in weight, and has a fast test speed. The hardness value can be tested immediately by simply pressing the workpiece and easy operation.

Webster hardness tester can test finished products, semi-finished products or material profiles, pipes and plates. The test process does not damage the workpiece. It is suitable for the hardness inspection of the production site, material inspection and quality control.

Webster hardness tester series products can provide hardness testing of aluminum alloy, copper, cold-rolled steel plate and stainless steel, etc. The test standard complies with the American ASTM B647 standard

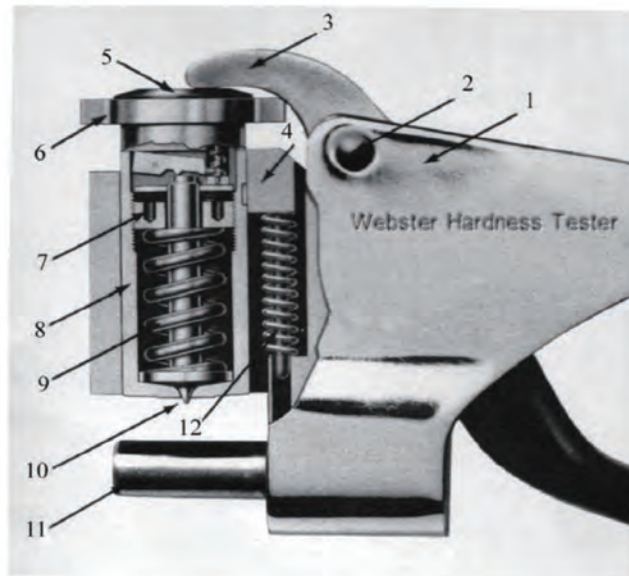
WEBSTER HARDNESS TESTER

Operation principle — a certain shape of hard steel indenter determines the hardness of the material at the indentation depth of the standard spring. The indentation depth of 0.01mm is defined as a Webster hardness unit, expressed in HW

Applications —

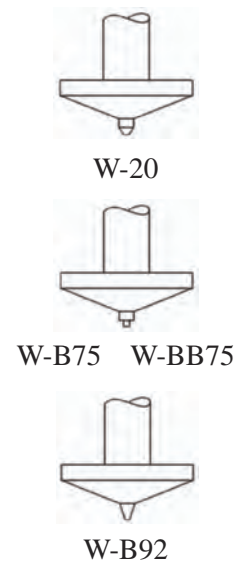
1. Heat treatment: can distinguish the materials before and after heat treatment, which is convenient for checking the most suitable heat treatment conditions
2. Hardness status: It can be distinguished whether the material is hard or soft to avoid product failure caused by mixed use
3. Material testing: mainly used to test the hardness of aluminum, copper and steel materials, which can be converted into other hardness values such as: HV, HB, HRB, HRE, HRF, HRH, HBa

Instrument Structure



- 1 — Frame
- 2 — Pivot screw
- 3 — Handle
- 4 — Reset key
- 5 — Adjusting screw
- 6 — Dial head
- 7 — Adjusting nut
- 8 — Indenter cylinder
- 9 — Load spring
- 10 — Indenter
- 11 — Anvil
- 12 — Return spring

Indenter Shapes



Technical Parameters

Item	Type	Applicable Materials	Hardness Range	Specimen Size/mm
1	W-20	Aluminum alloy	25-110 HRE 58-131 HV	Thickness 0.4-6 Inner diameter ≥ 10
2	W-20a			Thickness 0.4-13 Inner diameter ≥ 10
3	W-20b			Thickness 0.4-8 Inner diameter ≥ 6
4	W-B75	Hardened brass Hardened Aluminum alloy	20-100 HRB 63-105 HRF	Thickness 0.4-6 Inner diameter ≥ 10
5	W-BB75	Soft brass pure copper	18-100 HRE	Thickness 0.4-6 Inner diameter ≥ 10
6	W-B92	Cold-rolled steel sheet stainless steel	50-92 HRB	Thickness 0.4-6 Inner diameter ≥ 10

Tester specification: Testing Range:0~20HW Accuracy:0.5HW Weight:0.5kg Size:L190*W80*T25mm

Operating Method

Put the specimen between the anvil and the indenter and press down the handle until the bottom is felt. At the time the dial indicator will point at a reading which is the hardness value obtained.



Standard Package

Tester, standard hardness block, spare indenter, wrench, small screwdriver, instruction manual, carrying case

Optional Accessories spare indenter, standard hardness block, spare dial glass



Webster & Barcol hardness conversion table

Barcol HBa	Brinell 10mm 500kg HB	Vicktrs 5kg HV	Webster HW	Rockwell HR			
				B	E	F	H
35		21					32
36		22					35
37		23					37
38		24					40
39		25					42
40	25	26					45
41	25	27					47
42	26	28					49
43	27	29					51
44	27	30					54
45	28	30					56
46	29	31					58
47	30	32					60
48	30	33	0.7		23		62
49	31	34	1.3		26		64
50	32	35	1.9		28		66
51	33	36	2.5		31		68
52	34	38	3.1		34		70
53	35	39	3.6		36		72
54	37	40	4.2		39	30	73
55	38	41	4.7		41	34	75
56	39	43	5.3		44	37	77
57	40	44	5.8		46	40	78
58	42	45	6.3		48	43	80
59	43	47	6.8		50	46	82
60	45	49	7.3		53	48	83
61	46	50	7.8		55	51	85
62	48	52	8.3		57	54	86
63	50	54	8.8		59	56	88
64	51	56	9.2		61	59	89
65	53	58	9.7		63	61	90
66	55	60	10.1		65	63	92
67	57	62	10.6		67	66	93

Barcol HBa	Brinell 10mm 500kg HB	Vicktrs 5kg HV	Webster HW	Rockwell HR			
				B	E	F	H
68	60	65	11.0				71
69	62	67	11.4				72
70	64	70	11.8	17	75	74	97
71	67	72	12.2	23	76	75	98
72	69	75	12.6	28	78	77	99
73	72	78	12.9	33	80	79	100
74	75	81	13.3	38	81	80	101
75	78	85	13.7	42	83	82	102
76	80	88	14.0	47	84	83	103
77	84	92	14.3	51	86	85	104
78	87	95	14.7	55	87	86	105
79	90	99	15.0	59	89	88	106
80	94	103	15.3	63	90	89	106
81	97	108	15.6	66	91	90	107
82	101	112	15.9	70	92	91	108
83	105	117	16.2	73	94	92	109
84	109	121	16.4	76	95	93	109
85	113	126	16.7	79	96	94	110
86	117	131	16.9	81	97	95	111
87	121	137	17.2	84	98	96	111
88	126	142	17.4	86	99	97	112
89	130		17.6	88	100	98	112
90	135		17.8	90	101	98	113
91	140		18.0		102	99	114
92	145		18.2		103	100	
93			18.4		103	100	
94			18.6		104	101	
95			18.7		105	102	
96			18.9		106	102	
97			19.0		106	103	
98			19.2		107		
99			19.3		107		
100			19.4		108		

Test standard : ASTM-B647 & B-648 Standard Test Method For Webster & Barcol Hardness Tester