

# We use **Ames** Hardness Testers . . .



*Over fifty years of excellence*

Our portable instruments for measuring Rockwell hardness have been manufactured continuously under the Ames name for over fifty years. Ames Precision joined forces with Electro Arc Manufacturing Company in 1975.

Ames testers are still built one at a time with the same attention to detail and high quality standards our customers have come to respect. Over 15,000 Ames testers are in use worldwide.

## ROCKWELL-BRINELL CONVERSION TABLE

These tables of Rockwell & equivalent Brinell hardness numbers can only be approximate. The U.S. Bureau of Standards has established formulas for determining these relationships.

Hardened Steel, Hard Alloys								Soft Steel, Non-Ferrous Metal, Gray & Malleable Iron Casting																																						
D I A M O N D PENETRATOR 150 Kg. LOAD	D I A M O N D PENETRATOR 60 Kg. LOAD	D I A M O N D PENETRATOR 100 Kg. LOAD	10 M.M. BALL 3 0 0 0 K g .	D I A M O N D PENETRATOR 15 Kg. LOAD	D I A M O N D PENETRATOR 30 Kg. LOAD	D I A M O N D PENETRATOR 45 Kg. LOAD	B R I N E L L	S O F T S T E E L , N O N - F E R R O U S M E T A L , G R A Y & M A L L E A B L E I R O N C A S T I N G																																						
								C	A	D	15-N	30-N	45-N	B	E	F	G	B R I N E L L			15-T	30-T	45-T	B	E	F	B R I N E L L																			
R O C K W E L L S C A L E								R O C K W E L L S C A L E																																						
80	92.0	86.5		97.0	92.0	87.0		100	114.5	114.0	82.0	242	93.0	82.0	72.0	50	89.0	86.0	93	77.0	49.5	23.0																								

### CHOOSING HARDNESS SCALES

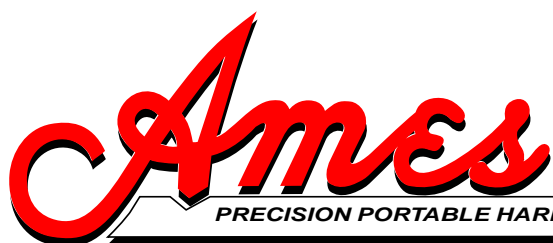
MATERIAL TO BE TESTED	PENETRATOR	SCALE	MAJOR LOAD (Kg)	BARREL DIAL
Extremely hard materials, tungsten carbide, thin steel low case hardened steel	Diamond	A	60	C
Medium hard materials, low and medium hardened steels, brass, bronze, aluminum alloys, malleable iron, etc.	1/16" ball	B	100	B
Hardened steels, hardened and tempered alloys, hard cast iron, pearlitic malleable iron, titanium and other materials harder than B100	Diamond	C	150	C
Medium case hardened steel, thin steel, and pearlitic malleable iron	Diamond	D	100	C
Cast iron, aluminum and magnesium alloy bearing metals	1/8" ball	E	100	B
Annealed brass and copper alloys; thin soft sheet metals	1/16" ball	F	60	B
Beryllium copper, phosphor bronze, malleable irons, etc.	1/16" ball	G	150	B
Aluminum sheet, zinc, lead	1/8" ball	H	60	B
Cast iron, aluminum alloys, bearing materials	1/8" ball	K	150	B
Plastics; thin materials, soft metals such as lead	1/4" ball	L	60	B
	1/4" ball	M	100	B
	1/4" ball	P	150	B
	1/2" ball	R	60	B
	1/2" ball	S	100	B
	1/2" ball	V	150	B
Hardened steels, shallow case hardened steels, hardened strip steels down to about .006 thick or where minimum surface distortion is desirable.	Diamond	15N	15	N
	Diamond	30N	30	N
	Diamond	45N	45	N
Soft steels, copper and aluminum alloys, etc., or where minimum surface distortion is desirable.	1/16" ball	15T	15	T
	1/16" ball	45T	45	T

TABLE II  
CORRECTIONS TO BE ADDED TO ROCKWELL C, A, AND D, VALUES  
OBTAINED ON CYLINDRICAL SPECIMENS OF VARIOUS DIAMETERS.

Dial Readings	1/4 in.	3/8 in.	1/2 in.	5/8 in.	3/4 in.	7/8 in.	1 in.	1-1/4 in.	1-1/2 in.
20	6.0	4.5	3.5	2.5	2.0	1.5	1.5	1.0	1.0
25	5.5	4.0	3.0	2.5	2.0	1.5	1.5	1.0	1.0
30	5.0	3.5	2.5	2.0	1.5	1.5	1.0	1.0	0.5
35	4.0	3.0	2.0	1.5	1.5	1.0	1.0	0.5	0.5
40	3.5	2.5	2.0	1.5	1.0	1.0	1.0	0.5	0.5
45	3.0	2.0	1.5	1.0	1.0	1.0	0.5	0.5	0.5
50	2.5	2.0	1.5	1.0	1.0	0.5	0.5	0.5	0.5
55	2.0	1.5	1.0	1.0	0.5	0.5	0.5	0	0
60	1.5	1.0	1.0	0.5	0.5	0.5	0.5	0	0
65	1.5	1.0	1.0	0.5	0.5	0.5	0.5	0	0
70	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0	0
75	1.0	0.5	0.5	0.5	0.5	0.5	0	0	0
80	0.5	0.5	0.5	0.5	0.5	0	0	0	0
85	0.5	0.5	0.5	0	0	0	0	0	0
90	0.5	0	0	0	0	0	0	0	0

TABLE III  
CORRECTIONS TO BE ADDED TO ROCKWELL 15N, 30N, AND 45N  
VALUES OBTAINED ON CYLINDRICAL SPECIMENS OF VARIOUS DIAMETERS.

Dial Readings	1/8 in.	1/4 in.	3/8 in.	1/2 in.	3/4 in.	1 in.
20	6.0	3.0	2.0	1.5	1.5	1.5
25	5.5	3.0	2.0	1.5	1.5	1.0
30	5.5	3.0	2.0	1.5	1.5	1.0
35	5.0	2.5	2.0	1.5	1.5	1.0
40	4.5	2.5	1.5	1.5	1.5	1.0
45	4.0	2.0	1.5	1.0	1.0	1.0
50	3.5	2.0	1.5	1.0	1.0	0.5
55	3.5	2.0	1.5	1.0	1.0	0.5
60	3.0	1.5	1.0	1.0	1.0	0.5
65	2.5	1.5	1.0	0.5	0.5	0.5
70	2.0	1.0	1.0	0.5	0.5	0.5
75	1.5	1.0	0.5	0.5	0.5	0
80	1.0	0.5	0.5	0.5	0.5	0
85	0.5	0.5	0.5	0.5	0.5	0
90	0	0	0	0	0	0



PRECISION PORTABLE HARDNESS TESTERS from

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**. . . because "pretty close" is no longer close enough.**