PRECISION PORTABLE HARDNESS TESTERS

Ames

For Rockwell Hardness Testing

Quick, accurate, on-the-spot tests, reading directly in Rockwell hardness scales

Ames Hardness Testers Are Time And Use Proven Instruments.

For over 30 years thousands of Ames hardness testers have been giving outstanding performance in both large and small plants. Our hardness testers have proven themselves to be not only accurate, precision instruments, but invaluable time and money savers. This double savings is made possible by their lightweight portability and easy handling which allows you to perform hardness tests at the workpiece.

Ames hardness testers are direct reading. Measurements are taken from the barrel dial without extra calculating. Each barrel dial graduation represents two points in the Rockwell scales. The readings are true Rockwell and the penetrations are of correct width and depth. The diamond penetrator and ball penetrator thread into the spindle. The anvil threads into the adapter at the opposite end of the frame, and the position of the anvils and penetrators can be reversed on most models for internal testing.

Rockwell Hardness Testing

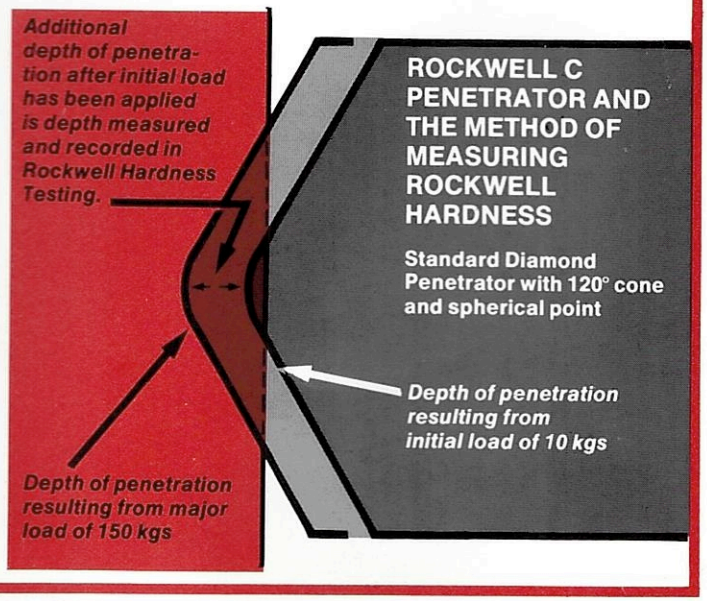
Rockwell Hardness testing is a system for determining the hardness of metals and alloys of all kinds. A sphero-conical diamond penetrator or a hard steel ball penetrator is forced into the part being tested by a predetermined pressure load, and the readings represent hardness numbers.

To overcome errors in measurement due to surface imperfections or distortions at the periphery of the indentation, both minor and major pressure loads are applied. The minor load of 10 kgs. is first applied, then the major load applied while the part being tested is still in fixed position. The major load is removed by turning the hand wheel back until indicator hand is on position "SET" on dial. The reading is then taken from the barrel dial, completing the whole operation in a few seconds.

The hardness readings represent the amount of additional depth to which a sphero-conical diamond penetrator or a hardened steel ball penetrator has been forced by pressure beyond the depth of a previously applied light pressure load.

The sphero-conical diamond penetrator is a 120 degree cone with a polished point with a .008 inch radius. The ball penetrator is tungsten carbide. Only the penetrators contact the work being tested, and the point of contact is always visible.

When testing in the normal Rockwell scales, a minor pressure load of 10 kgs. and major loads of 60, 100 and 150 kgs. are used. When testing in the superficial Rockwell scales, minor load of 3 kgs. and major loads of 15, 30 and 45 kgs. are used. The type of penetrator and amount of major pressure load to use are listed on the conversion chart supplied with each AMES Hardness Tester.

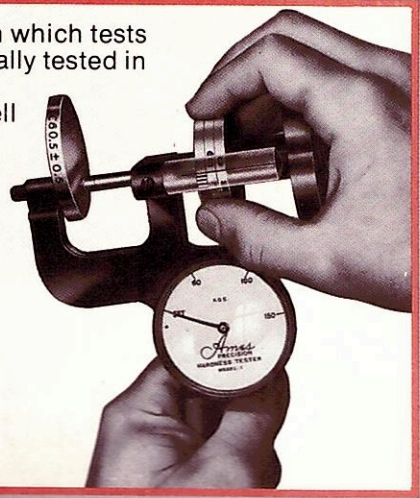


Testing Is QUICK & EASY With The Ames Hardness Tester

1

Select the penetrator and test block for the Rockwell Scale on which tests are to be made (See conversion chart). Soft materials are usually tested in the Rockwell B Scale, using $^1/_{16}$" ball penetrator and 100 kg. load. Hardened steel and hard alloys are tested in the Rockwell C Scale, using diamond penetrator and 150 kg. load as shown in illustrations. The ball penetrator should not be used with the steel test block or when testing hard steel because it will be damaged and tests will be wrong.

At the beginning of each test the indicator hand should rest directly on the dot on the indicator dial before pressure is applied to the penetrator. The dial may be turned by means of the bezel to locate the dot. Hand wheel is turned slowly to bring the indicator hand to the line marked "SET." This applies minor pressure load to the penetrator. The barrel dial is then turned on the spindle to bring the pin against the top side of the lucite magnifier and the top line beneath the center line on the magnifier .



2

Pressure is then applied to the penetrator by turning the hand wheel until the indicator hand rests on the major pressure load on the dial indicated by the chart. (Fig. 2 shows pressure load of 150 kgs. being used for reading in the Rockwell C scale.) With the Model S Tester, the lines are marked 15, 30, and 45 for kg. pressures indicated in the Rockwell N and T scales.

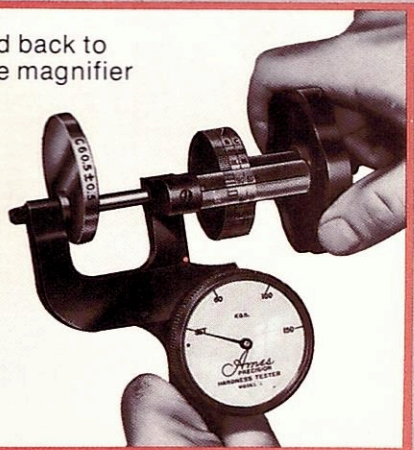
Care should be taken to bring the indicator hand exactly to the graduations on the dial. If the hand passes beyond the dial markings a new test should be started; otherwise accurate tests will not result.

3

The hand wheel is then turned back to bring the indicator hand back to "SET" and the reading is taken on the barrel dial thru the lucite magnifier (See Fig. 3). Each graduation on the barrel dial indicates two points in the Rockwell scale. Column C on the barrel dial is read when the diamond penetrator is used and column B when the ball penetrator is used.

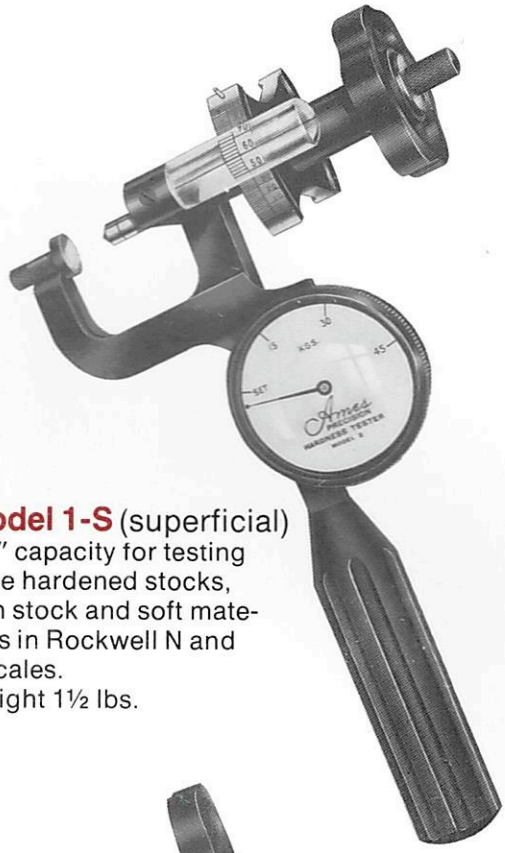
NOTE: All AMES Hardness Testers, whether in constant use or not, require accuracy checks. Test blocks are supplied for that purpose and assure that the testers are reading correctly.

Take a few tests on the test block to make certain that the readings on the barrel dial agree with the marking on the test block. The first two or three tests may be low, until the penetrator and anvil have become firmly seated. Tests should be taken on one side of the test block only.

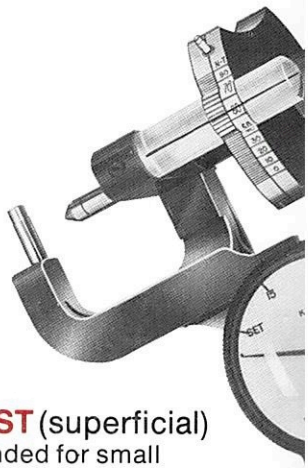


The Ames Line Of Hardi

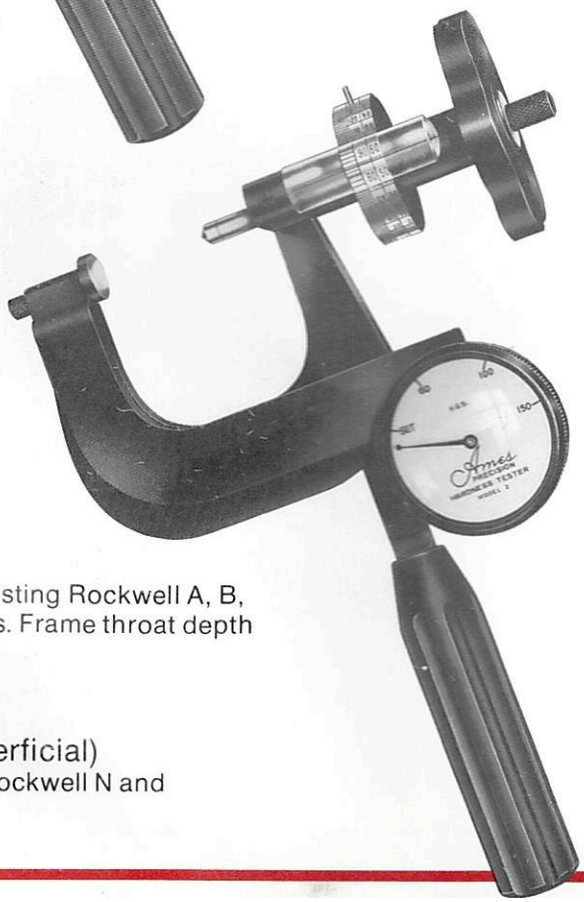
Model 1
0-1″ capacity for testing Rockwell A, B, C, and other scales. Frame throat depth one inch.
Weight 1½ lbs.



Model 1-S (superficial)
0-1″ capacity for testing case hardened stocks, thin stock and soft materials in Rockwell N and T scales.
Weight 1½ lbs.



Model 1-ST (superficial)
Recommended for small diameter tubing with thin walls. Anvil fits into $^{3}/_{16}$″ I.D. and larger. Reads on Rockwell 15-T scale only.



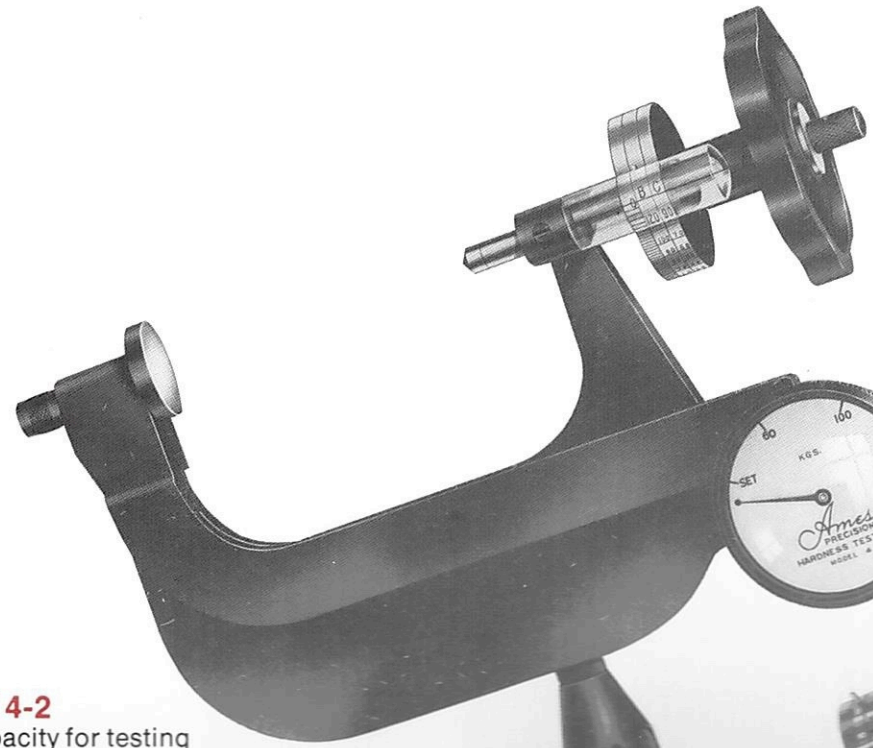
Model 2
0-2″ capacity for testing Rockwell A, B, C, and other scales. Frame throat depth two inches.
Weight 2½ lbs.

Model 2-S (superficial)
0-2″ capacity for Rockwell N and T scales

Model 1-4
0-1″ capacity for testing Rockwell A, B, C, and other scales. Frame opening one inch, throat depth four inches.
Weight 3¼ lbs.

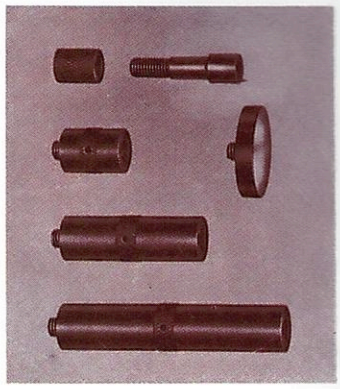
Model 1-4-S (superficial)
0-1″capacity and four inch throat depth for Rockwell N and T scales.

ess Testers & Accessories

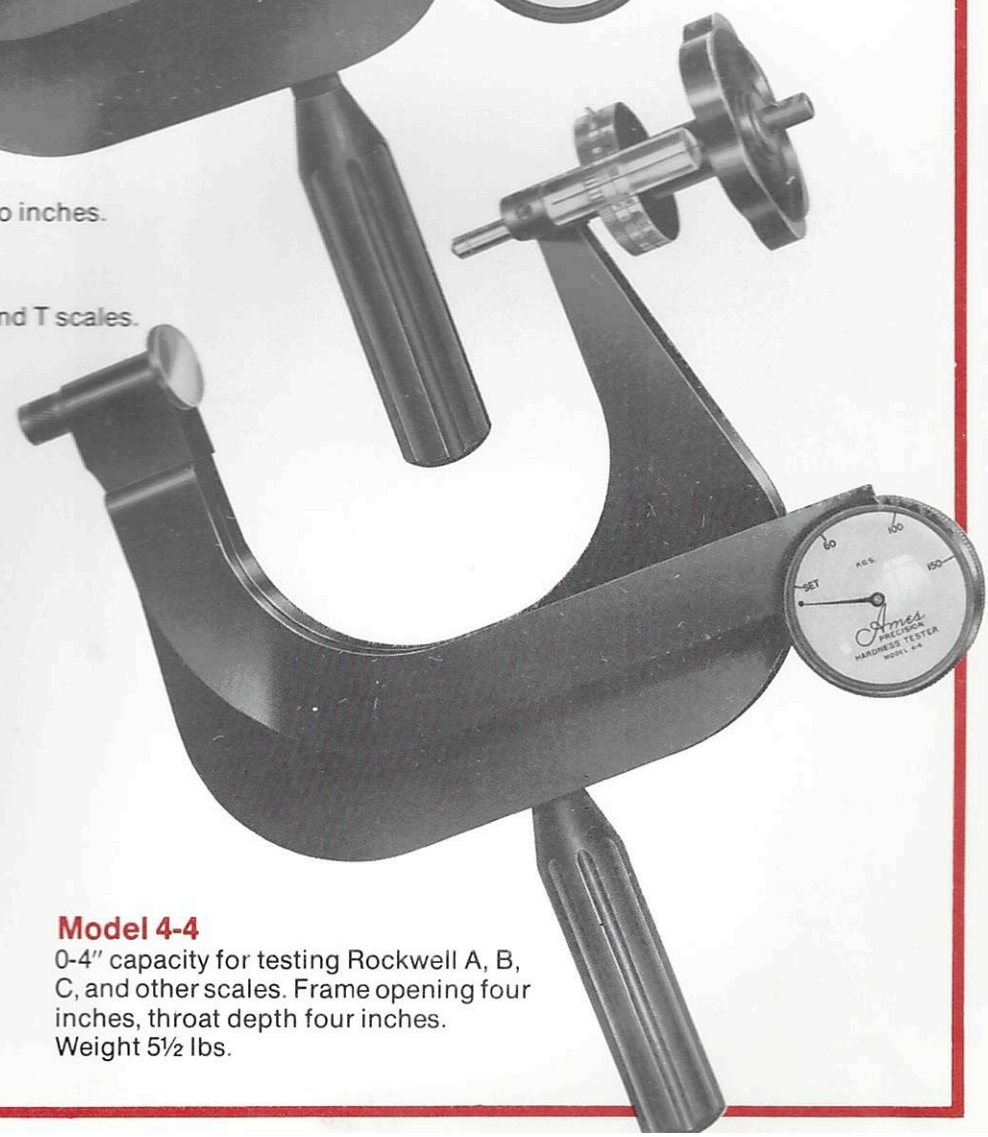


Model 4-2
0-4″ capacity for testing Rockwell A, B, C, and other scales. Frame throat depth two inches. Weight 3¼ lbs.

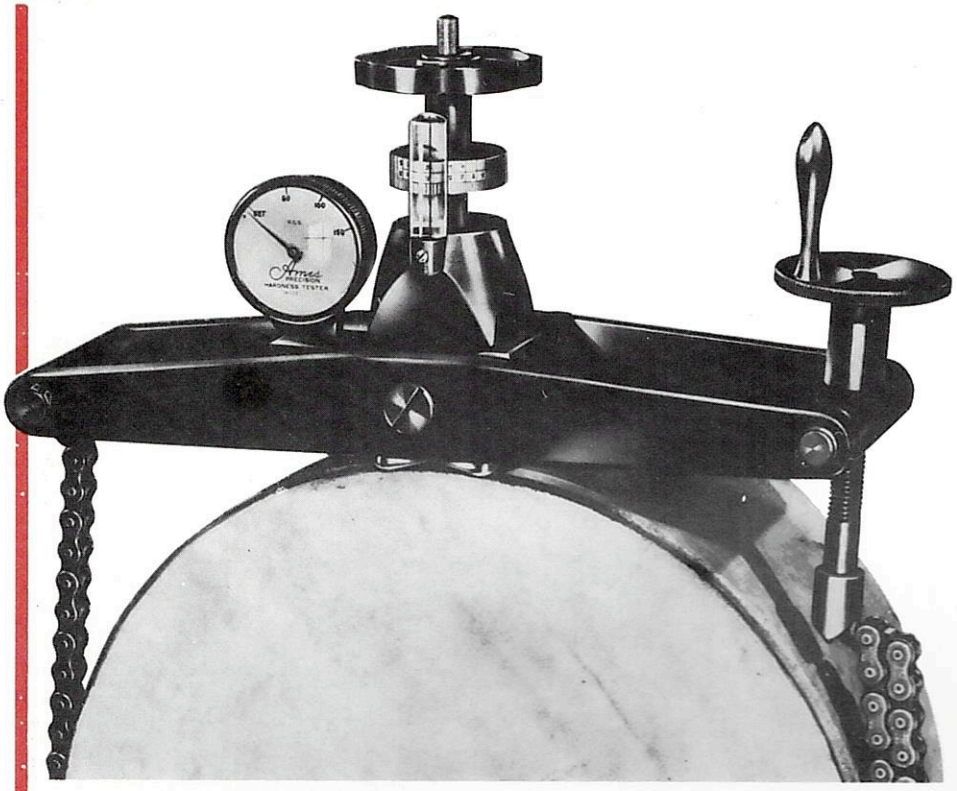
Model 4-2-S (superficial)
0-4″ capacity for Rockwell N and T scales. Weight 3½ lbs.



Adapter and Nut, Flat Anvil and Extensions for Models 2, 4, 4-S and 4-4

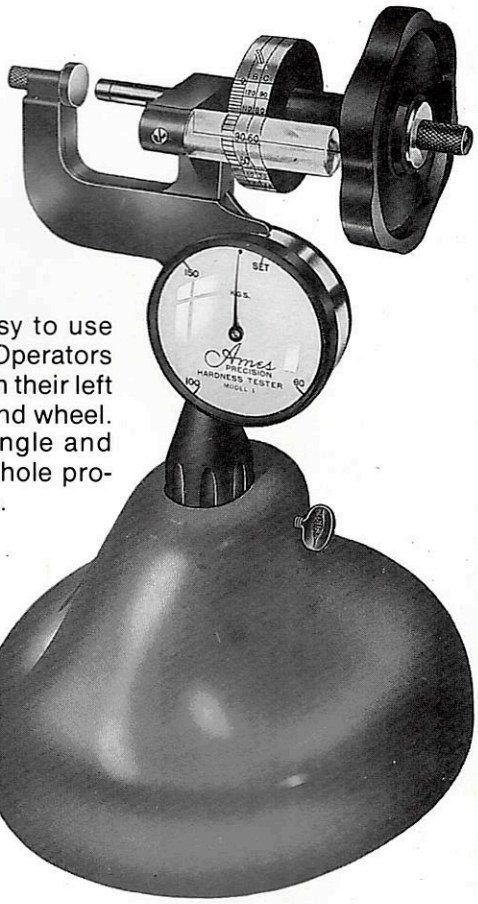


Model 4-4
0-4″ capacity for testing Rockwell A, B, C, and other scales. Frame opening four inches, throat depth four inches. Weight 5½ lbs.



Model 36 Chain

Checks rounds cylinders, and rolls up to 16″ diameter. Comes with 36″ long chain. Not recommended for flat or square stock. Can be purchased for reading normal or superficial Rockwell scales. Measuring head is removable. Weight 17 lbs.



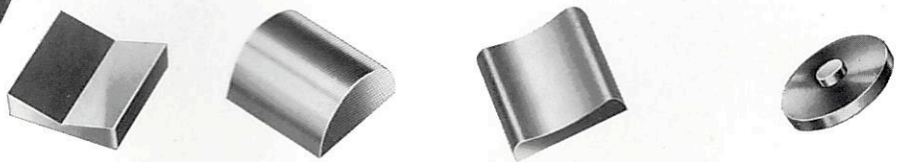
THE AMES BENCH STAND

AMES Portable Hardness Testers are easy to use when held in the Cast Iron Bench Stand. Operators can handle test blocks and small pieces with their left hand and use the right hand to turn the hand wheel. The Tester is inclined at a convenient angle and rigidly supported. The Fibre sleeve in the hole protects the handle of the Tester. Weight 11 lbs.

Model 8

0-8″ capacity for testing Rockwell A, B, C, and other scales. Frame throat depth four inches. Measuring head is independent of clamp and may be removed for mounting on any machine tool holder of your own design.
Weight 18 lbs.

VARIOUS ANVILS AVAILABLE



V ANVIL

CONVEX ANVIL

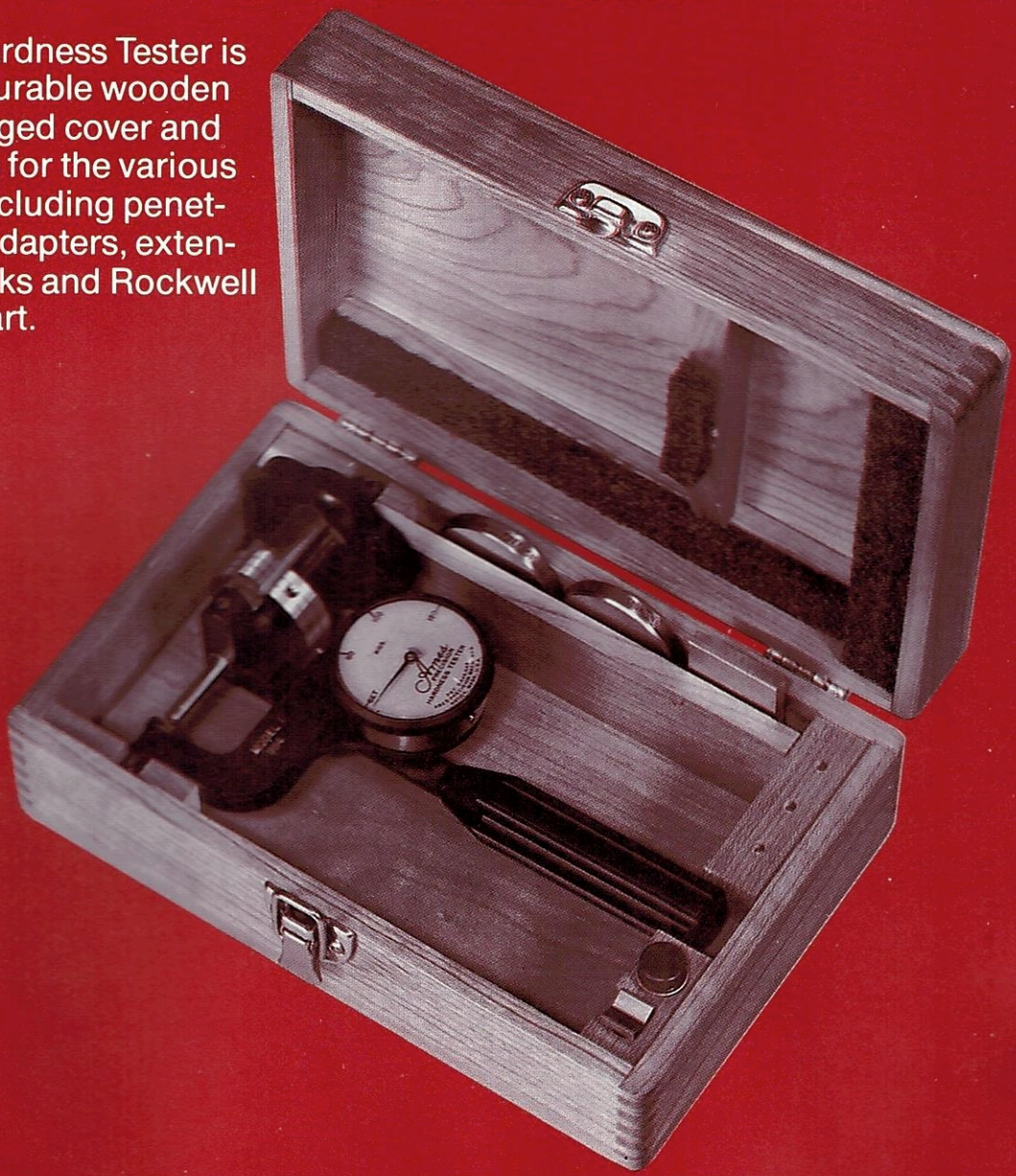
CYLINDRICAL ANVIL

RAISED FLAT ANVIL

Ames Quality and Precision

Even To The Case You Receive With Each Precision Hand Tester

Each AMES Hardness Tester is supplied in a durable wooden case with a hinged cover and storage spaces for the various accessories, including penetrators, anvils, adapters, extensions, test blocks and Rockwell conversion chart.



The Ames guarantee: Ames Portable Hardness Testers are guaranteed to be free from defects in material or workmanship.

For more information call or write:

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