

Steel Hardness Tester



The **Model 316** Portable Steel Hardness Tester is designed for accurate, rapid in place measurement of the hardness of steel and steel alloys in the range from 20 to 65 on the equivalent Rockwell C Scale.

The unit consists of two major components: a calibrated indenter and a direct reading microscope. The hand-held impact indenter drives a 1/16" diameter tungsten carbide ball into the sample being tested. The resulting indentation diameter - which is a function of the hardness - is measured with the 60X microscope. The calibrated reticle in the microscope reads C Scale directly in the range of 20 HRC to 65 HRC with an accuracy of ± 1.5 points. The illumination system features a MagLite® flashlight with a fiber optic pipe that directs the light to the focus of the microscope.

The instrument is fully portable and easy to use. Flat or curved surfaces of virtually any configuration may be measured. The instrument's portability makes it particularly useful where the test piece is too large or too heavy to test on a bench-type tester.

Model 316 includes a hand-held impact indenter assembly; an illuminated, fixed focus, 60X magnification measuring microscope; a marked and calibrated hardness test block; test instructions; a convenient hardness conversion chart; and a carrying case.

Model	Description	Price
316	Portable Steel Hardness Tester	\$1072

Metal Hardness Tester

These testers are designed for use by: inspection and quality control personnel, tool and die makers, heat treaters, mechanics, welders, and metallurgists.

These unique instruments are the handiest and most economical way of grading and checking various metals in the equivalent Rockwell B Scale range for the **Model 415B** and the equivalent Rockwell C Scale Range for the **Model 415C**. The upper end of the instrument is the gripping area for insertion into a milling machine, drill press, or lathe. The lower end is the load cell. It extends up into the body of the hardness tester and houses a centerless ground precision spring which preloads the diamond tip indenter. The diamond tip indenter has been polished to a 0.004" radius and has an included angle of 60°. The total force required to move the indenter through its full travel of 0.025" (6.35 mm) is 85 pounds. The movement of the indenter causes the gauge pointer to read the corresponding Rockwell C scale. (The chromoly steel indenter of the **Model 415B** has been polished to a spherical radius of 0.012" and ground to an included angle of 30°). Each unit comes complete with test block (high and low range test blocks for **Model 415C**), conversion calculator and carrying case.



Specifications:

Ranges:

Model 415B: 40 to 100 HRB equivalent Rockwell B scale

Model 415C: 20 to 67 HRC equivalent Rockwell C scale

Accuracy: ± 1.5 points

Sample Thickness: Minimum 0.025"

Dimensions: 6-3/4" x 1-1/16" x 1-9/16" diameter

Model	Description	Price
415B	Rockwell B Scale Hardness Tester	\$1372
415C	Rockwell C Scale Hardness Tester	\$1534



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Features:

- Digital durometer for Shore A hardness testing
- Designed to measure the penetration hardness of rubber, elastomers and other rubber like substances such as neoprene, silicone and vinyl
- Pocket-sized model with integrated probe
- Meets DIN 53505, ASTM D2240, ISO 7619 and JISK 7215
- RS232 serial interface
- Measures maximum value
- Calculates average value
- Push button zero calibration
- Bright, clear, 4-digit, 10mm high LCD readout
- Auto power off conserves battery life

Specifications:

Measuring Range: 0 to 90 HA
 Resolution: 0.1 HA
 Deviation: ±1 HA
 Power Supply: 4 x 1.5V "AAA" batteries
 Dimensions: 162 x 65 x 38mm
 Weight: 173 g

Model	Description	Price
HT-6510A	"A" Scale Durometer	\$495
VM-USB	USB/RS232 Cable & Software	\$129
VW3USB11A	RS232 Converter Cable to USB	\$40

Durometers



These instruments feature a heat-treated, high carbon steel main-spring that is precision and centerless ground. Each spring is calibrated to meet or exceed ASTM Specification D2240-81. A special cam permits a scale deflection of 100 points when the indenter is displaced exactly 0.100 inch. The dial scale is extended over 240 circular degrees to provide reading accuracy to within ±0.5 divisions. A threaded mounting knob at the top of each durometer permits permanent test stand emplacement. An ancillary pointer will register the highest durometer reading against all vibrations met in normal use. Each durometer comes complete with carrying case and test block.

Model 306L - "A" Scale Durometer measures the penetration hardness of rubber, elastomers, and other rubber-like substances such as neoprene, silicone, vinyl and butyl. It can also be used for soft plastics, felt leather and similar materials.

Model 307L - "D" Scale Durometer is designed for hard plastics - polystyrenes, vinyls, Formica, Plexiglas - hard rubbers and phenolic molded materials.

Specifications:

Range: 0 to 100 points
 Accuracy: ±1 point
 Dimensions (HWD): 4" x 2.25" x 1.75"
 Weight: 8 oz.

Model	Description	Price
306L	"A" Scale Durometer	\$654
307L	"D" Scale Durometer	\$654

Durometers



Features:

- These durometers measure the hardness of rubber, elastomers and plastic products
- Available in ASTM D2240 durometer types (Shore hardness): A, D and Asker C scales
- Type D features a cone point indenter and is ideal for hard rubber and plastics
- Type A is suitable for normal rubber and features a flat point indenter
- Type Asker C measures soft rubber and sponge with a hemispherical indenter
- As the durometer is pressed against the sample, the material resistance force and indenter spring balance
- The depth of the indenter provides a measure of the materials' hardness
- Values are based upon a 100 point scale (Accuracy ± 1 point)

Model CL-150:

- Constant load test stand for critical applications
- Test weight is constant
- Test speed is adjustable with air damper
- Unique flexible joint system automatically aligns to surface of sample

Model	Description	Price
EX-A	Durometer, Type A	\$439
EX-D	Durometer, Type D	\$427
EX-C	Durometer, Type Asker C	\$427
CL-150L	Type A and Asker C, 1000g	\$2954
CL-150H	Type D, 5000g	\$2954
CL-150M	Type A, D and Asker C, 1000g/5000g	\$3795

Durometer

Model 302SL Foam and Sponge Rubber Durometer measures the hardness of soft materials such as foam rubber, sponge rubber, jells and doughs. It classifies cellular rubbers of the sponge and foam type as "x-soft", "soft", "medium" and "firm", and then further divides these ranges into smaller increments so that much closer and accurate tolerances can be established. This instrument can perform comparative hardness tests without the cost of using an indentation load deflection (ILD) test machine.

Model 302SL offers a cost-effective means of checking foam or sponge rubber with speed, portability and accuracy.

Values of the **302SL** scale are based on the force of a variable load over an area of one square centimeter. When making hand-held tests, the gauge is simply placed on the material to be checked. No external force is needed, the weight of the instrument itself is sufficient to bring the base of the gauge flush with the material's surface. When using with a test stand, the material and the stage are lifted up to the durometer until the load cell of the stand separates. The resettable ancillary hand records the peak reading.

Accurate readings require that the sample be at least 3/4 of an inch thick. Thinner materials should be stacked to equal this thickness. Several readings should be made and the results averaged. *Each instrument comes complete with carrying case and test block.*



Model	Description	Price
302SL	Sponge Rubber Durometer	\$707