

3R-Type Hardness Tester

with Automatic Dial Weight Selection



Order No. 639-2030

- Designed for measuring hardness of metals and alloys of all kinds, hard or soft whether flat, round or irregular in shape.
- Simple in design and easy to operate, yet sensitive and accurate testing results can be obtained with these testers.
- They are ideally suitable for schools, laboratories, tool rooms, inspection and heat treatment departments and factories.
- Conforms to ISO 33804-1966 and BS: 891-1962 Part I and Part II for Rockwell test.

Loads and Indicators

Description	
Maximum Load (kgf)	150
Load Range (kgf)	60,100,150
Initial Range Load (kgf)	10
Maximum Test Height	4-1/4"
Depth of Throat	5-1/4"
Max. Depth of Spindle Below Base	2"
Size of Base	7x18"
Machine Height	24-1/2"
Approximate Net Weight (lbs)	150

Standard Accessories Included:

Description	Order No.
5-3/4" Testing Table	HARD-100
2-3/16" Testing Table	HARD-101
2-3/16" Testing Table with "V" groove	HARD-102
120° Diamond Penetrator	HARD-103
1/16" Steel Ball Penetrator	HARD-104
Rockwell Test Block HRA80-88	HARD-106
Rockwell Standard Block HRB 85-95	HARD-107
Rockwell Test Block HRC60-70	HARD-108
Rockwell Standard Block HRC35-55	HARD-109
Rockwell Standard Block HRC20-30	HARD-110
Large Screw Driver	HARD-111
Small Screw Driver	HARD-112
Accessory case	HARD-113

Different Rockwell Hardness Scales

Scale	Penetrator	Loading (kgf)	Applications	Brinell value	Working Range
A	Diamond 120°	60	Carbide, Thin steel, Shallow Case-Hardened steel, Case-Carbonized surfaces	Over HB400	40-91 for hardness greater than C65
B	1/16" Ball	100	Aluminum alloys, Copper alloys, Unhardened steel etc. In rolled, Draw, Extruded or Cast metal	HRB 100-240	30-100 for hardness lower than C20
C	Diamond 120°	150	Hard cast irons, Pearlitic malleable iron, Steel, Deep case hardened steel, Titanium	Over HRB230	20-70 for hardness lower than HRB100
D	Diamond 120°	100	Pearlitic malleable iron, Thin steel & Medium case-hardened steel	Over HRB400	40-77 for intermediate load between A & C scale
E	1/8" Ball	100	Cast iron, Aluminum and magnesium alloys, Bearing metal	Below HRB125	50-100 for hardness lower than HRB0
F	1/16" Ball	60	Thin soft sheet metals, Annealed copper alloys	HRB 50-120	30-100 for hardness lower than HRB0
G	1/16" Ball	150	Copper-Nickel-Zinc and Cupro-Nickel alloys, Malleable irons	HRB 120-280	30-90 for hardness slightly > than HRB 100 upper limit G92
H	1/8" Ball	60	Lead, Zinc, Aluminum, Magnesium alloys	HRB 30-50	70-100
K	1/8" Ball	150	Bearing metals, very soft or thin material	HRB 100-200	40-100

Bench Centers



- Used for accurate concentricity inspection.
- Accuracy: less than 0.00015" runout.
- MT2 Centers are hardened and ground.
- Indicator holder included, Indicator not included.
- Hand scraped ways, adjustable gibs.
- Head stock can be adjusted lengthwise and locked securely in any position by special lever type handle.

Distance Between Center	Swing	Overall Length	Order No.
16"	12	30	640-2001
32"	19	48	640-2002

3R Type Hardness Tester

Features:

Optimized mechanical frame. Manual testing process, no need for electric controlling.
It is steady and reliable for testing of curved surface.
Precision conforms to ISO 6508-2 and ASTM E18.
Suitable to determine the Rockwell hardness of ferrous, non ferrous metals and non-metal materials. It can be widely applied in the Rockwell hardness testing for heat treatment materials, such as quenching, hardening and tempering, etc.

Specifications:

Measuring Range.....20-88HRA, 20-100HRB, 20-70 HRC
Test Force.....588.4, 980.7, 1472N(60,100, 150kgf)
Max Height of Test Piece..... 210mm
Depth of throat.....165mm
Min Scale Valuej-0.5HR
Dimensions.....522x293x729mm
Weight.....98kgs

Standard Accessories:

Large Flat Anvil: 1pc
Small flat anvil: 1pc
V-notch Anvil: 1pc
Diamond penetrator: 1pc
1/16j± steell ball penetrator: 1pc
Rockwell standard blocks: 5pcs

Order No.639-2035



Digital Rockwell Hardness Tester

Automatic Load

- Automatic load and release control
- An advanced frictionless loading shaft mechanism is adopted. It can ensure the accurate and reliable test.
- LED digital reading..

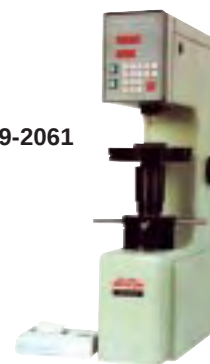
Standard

Measuring Range.....20-88HRA, 20-100HRB, 20-70HRC
Test Force.....588.4, 980.7, 1471N (60, 100, 150kgf)
Max. Specimen Height.....170mm
Depth of Throat.....130mm
Grad. of Hardness Display..... 0.1HR
Power Supply..... 220V AC or 110V AC, 50/60Hz
Dimensions..... 500 x 250 x 700mm
Weight..... 75kg

Accessories(included):

Large Flat Anvil: 1 pc.
Small Flat Anvil: 1 pc.
Large V-Notch Anvil: 1 pc.
Diamond Cone Penetrator: 1 pc.
1/16" Steel Ball Penetrator: 1 pc.
Rockwell Standardized Block: 5 pcs.
Printer: 1 pc.

Order No.639-2061



Superficial

Measuring Range.....70-94HR/15N,42-86HR/30N,20-77HR/45N,
67-93HR/15T,29-82HR/30T,10-72HR/45T
Test Force.....147.1, 294.2, 441.3N (15, 30, 45kgf)
Max. Specimen Height.....150mm
Depth of Throat.....120mm
Grad. of Hardness Display..... 0.1HRN(T)
Power Supply.....220V AC or 110V AC, 50/60Hz
Dimensions.....500 x 240 x 700mm
Weight..... 68kg

Accessories(included):

Large Flat Anvil: 1 pc.
Small Flat Anvil: 1 pc.
Large V-Notch Anvil: 1 pc.
Diamond Cone Penetrator: 1 pc.
1/16" Steel Ball Penetrator: 1 pc.
Superficial Rockwell Standardized Block:
4 pcs.
Printer: 1 pc.

Order No.639-2062



Electronic Brinell Hardness Tester

Features:

Automatic test process, no manual operating error
Large LCD screen, menu displaying, easy operation
Precision conforms to ISO6506-2 and ASTM E10.
It is suitable to measure the Brinell hardness of unquenched steel, cast iron, non-ferrous metals and soft bearing alloys, etc.

Specifications:

Measuring Range.....4-650HBW
Test Force.....612.9, 980.7, 1225.9, 1838.8, 2451.8, 4903.5, 7355.3, 9807,
14710.5 and 29421N(62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500 and
3000kgf)
Max Height of Test Piece..... 240mm
Depth of throat.....150mm
Power supply.....220V AC or 110V AC, 50 or 60 Hz
Dimensions.....630x250x1000mm
Weight.....250kgs

Standard Accessories:

Large Flat Anvil: 1pc
Small flat anvil: 1pc
V-notch Anvil: 1pc
Tungsten Carbide Ball Penetrator: Dia 2.5, 5,
10mm, 1pc each
Brinell standard blocks: 2pcs
20X readout microscope: 1pc

Order No.639-2050



Digital Vickers Hardness Tester

- Computer and angular displacement sensor are adopted so that the test procedure, hardness value display and data-printing are performed automatically.
- An advanced frictionless loading shaft mechanism is adopted. It can ensure the accurate and reliable test.
- The operating system can be changed between Chinese and English.
- LCD Screen .

Microhardness

Features:

Automatic turret switching between penetrator and objective lens, RS232 data interface, built-in printer.

Hardness conversion between different hardness scales

Precision conforms to ISO6507-2 and ASTM E384.

Used for determining the microhardness of steel, non-ferrous metals, ceramics, treated layers of metal surface, and the hardness grads of carburized, nitrided and hardened layers of metals, and also suitable to determine the microhardness of micro and super thin parts.

Specification:

Measuring Range.....5-3000HV
 Test Force.....0.09807, 0.2452, 0.4904, 0.9807, 1.961, 2.942, 4.904, 9.807N (10, 25, 50, 100, 200, 300, 500, 1000kgf)
 Hardness scale.....HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
 Magnifications of measuring system.....400x(measuring), 100x (observing)
 Min Scale value of micrometer.....0.01um
 Max measuring length of micrometer.....200um
 Max Height of test piece.....75mm
 Depth of throat.....110mm
 Power supply..... 220V or 110V AC, 50 or 60 Hz
 Dimensions.....470x 320x500mm
 Weight.....40kgs

Accessories(included):

Coordinate Anvil, 1pc
 Thin shaft Anvil: 1pc
 Thin plate anvil: 1pc
 Flat nose pliers: 1pc
 Large V notch anvil: 1pc
 Small V notch anvil: 1pc
 Diamond Penetrator: 1pc
 Micro-Vickers standardized blocks: 2pcs

Order No.639-2066



Low Load

Measuring Range.....5-3000HV
 Test Force.....1.961, 2.942, 4.903, 9.807, 19.61, 24.52, 29.42, 49.03N (0.2, 0.3, 0.5, 1, 2, 2.5, 3, 5kgf)
 Magnifications.....500x, 125x
 Grad. of Microscope.....0.00025mm
 Max. Specimen Height.....130mm
 Depth of Throat.....100mm
 Power Supply..... 220V AC or 110V AC, 50/60Hz
 Dimensions.....410 x 200 x 620mm
 Weight.....Approx. 50kg

Accessories(included):

Coordinate Anvil: 1 pc.
 Thin Shaft Anvil: 1 pc.
 Thin Plate Anvil: 1 pc.
 Flat Nose Pliers: 1 pc.
 Large V-Notch Anvil: 1 pc.
 Small V-Notch Anvil: 1 pc.
 Diamond Pyramid Penetrator: 1 pc.
 Vickers Standardized Block: 2 pcs.
 Micro-Vickers Standardized Block: 1 pc.
 Printer: 1 pc.

Order No.639-2064



Standard

- The test result can be converted into various hardness values automatically.

Measuring Range.....5-2900HV
 Test Force.....9.807, 49.03, 98.07, 196.1, 294.2, 490.3N (1, 5, 10, 20, 30, 50kgf)
 Max. Specimen Height.....180mm
 Depth of Throat.....125mm
 Magnifications.....125x, 50x
 Grad. of Microscope.....0.001mm
 Power Supply.....220V AC or 110V AC, 50/60Hz
 Dimensions..... 580 x 260 x 730mm
 Weight.....90kg

Accessories(included):

Large Flat Anvil: 1 pc.
 Small Flat Anvil: 1 pc.
 V-Notch Anvil: 1 pc.
 Diamond Pyramid Penetrator: 1 pc.
 Vickers Standardized Block: 3 pcs.
 Printer: 1 pc.

Order No.639-2065



Portable Brinell Hardness Tester

Features:

Small size and lightweight

Precision conforms to ISO6506-2 and ASTM E10.

Specifications:

Measuring Range:-100-400HBS

Impact capacity:-4.9J

Diameter of steel Ball:-dia 10mm

Dimensions:-Dia55x370mm

Weight:-3.3kgs

Standard Accessories:

Portable Brinell standard block: 1pc

20X readout microscope: 1pc

Order No.639-2022

Mfr#HBX-0.5



Brinell Portable Hardness Tester

Designed to determine the Brinell Hardness value of different metals by measuring the diameter of the indentations left on the piece being tested. This tester is especially suited for the technician to use wherever portability and simplicity are a requirement.

Designed for use on non austenitic steels only. Furnished complete with standardized block, 20x microscope, instructions in a fitted case.

Measuring range: 450 H.B.S.

Diameter of steel ball: 3/8"

Dimensions: 1" dia x 5" high

Weight: 1-1/4" lbs

Order No.639-2021

Mfr#HBC



Digital Multifunctional Portable Hardness Tester

This multifunctional portable hardness tester is capable of measuring the surface hardness and tensile properties of a board variety of metals on flat and round surfaces. This instrument comes with an integrated hardness impact probe and digital display meter. Users can quickly print test data using the integrated, removable dot matrix printer.

Reliable hardness property measures of steel and cast steel, alloy steel, gray cast iron, cast aluminum alloy, brass, bronze, and copper, and tensile property measurements of carbon alloys, steel alloys, super strength alloys and stainless steel alloys are easily attained with this compact instrument.

Display test results in all various hardness scales: HRB, HRC, HB, HV, HSD, HL, HRD

Test at any angle, even upside down

Conversion to ultimate tensile strength

Immediate conversion between hardness scales, and print-out if desired.

Input and print out of test number and date

Input and print out of material type and test direction

Print out of test results via integral printer

Low battery indication

Comes complete with protective carrying case, test block and battery charger.



Model D

Suitable for most of hardness testing.

Specifications:

Hardness Measuring Range.....330-890HL

Impact Capacity.....11Nmm

Weight.....75g

(Total 670g including impact device and printer)

Operating Temp.....1-40Degree C

Dia of tungsten carbide ball.....3mm

Mass of impact body.....5.5g

Dimensions.....270x86x47mm

Operating Voltage.....6V DC

Standard Accessories:

Small positioner: 1pc

Binder: 1 bottle

Lee Standardized block: 1pc

Battery Charger: 1pc

Order No.639-2076

Model DC

Suitable for hardness measuring of inner holes and small place.

Specifications

Hardness Measuring Range.....330-890HL

Impact Capacity.....11Nmm

Weight.....50g

(Total 670g including impact device and printer)

Operating Temp.....1-40Degree C

Dia of tungsten carbide ball.....0.3mm

Mass of impact body.....5.5g

Dimensions.....270x86x47mm

Operating Voltage:-6V DC

Standard Accessories:

Small positioner: 1pc

Binder: 1 bottle

Lee Standardized block: 1pc

Battery Charger: 1pc

Order No.639-2077

Model D+15

Suitable for hardness measuring of gear face, column inner surface and concave surface.

Specifications

Hardness Measuring Range.....346-890HL

Impact Capacity.....11Nmm

Weight.....80g

(Total 670g including impact device and printer)

Operating Temp.....1-40Degree C

Dia of tungsten carbide ball.....0.3mm

Mass of impact body.....5.5g

Dimensions.....270x86x47mm

Operating Voltage.....6V DC

Standard Accessories:

Small positioner: 1pc

Binder: 1 bottle

Lee Standardized block: 1pc

Battery Charger: 1pc

Order No.639-2078

Model G

Suitable for hardness measuring of steel, cast steel, gray cast iron, nodular cast iron and non-ferrous metals.

Specifications

Hardness Measuring Range.....330-650HLG

Impact Capacity.....11Nmm

Weight.....80g

(Total 670g including impact device and printer)

Operating Temp.....1-40Degree C

Dia of tungsten carbide ball.....0.3mm

Mass of impact body.....20g

Dimensions.....270x86x47mm

Operating Voltage.....6V DC

Standard Accessories:

Small positioner: 1pc

Binder: 1 bottle

Lee Standardized block: 1pc

Battery Charger: 1pc

Order No.639-2079