UniGen – Universal Hardness Tester (Rockwell, Vickers, Brinell)

Standards: ASTM E-18, ASTM E10-12, ASTM E92, EN ISO 6508, GB/T 230.2, GB/T 231.2, GB/T 4340.2, ISO 6506, ISO 6507, JIS Z 2243, JIS Z 2244, JIS Z 2245

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE



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Description

The UniGen is an all-in-one universal hardness tester: Vickers and Knoop, Rockwell and Brinell on one machine. That matters when a laboratory has to answer for several methods but has bench space and a calibration budget for one instrument.

It comes with an 8" LCD touchscreen, a CCD camera and automatic measuring software, and with the NIST certified consumables for all three methods, so the machine arrives ready to produce traceable results rather than needing a second order first. Continue reading in our blog publication.



UniGen with its measuring software.



The turret carries the indenters and the objectives.

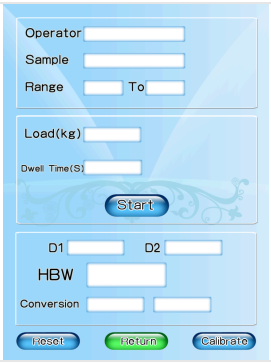
UniGen in operation.

UniGen Features

Three methods on one frame only works if the load system is honest across all of them:

Three methods	Brinell, Rockwell and Vickers test methods on one machine.
Closed loop load cell	A closed loop system with a high accuracy load cell removes the dead weights a classic tester needs.
Force correction	Test force correction and compensation run automatically, which is what holds accuracy across the load range.
Curvature correction	Rockwell testing carries automatic correction for the curvature radius of the part.
Touchscreen	A large touchscreen interface, with password protection on the setup parameters.
Standards and conversions	Current industry standards and the conversions between the methods are built in.
Data capacity	Large sample and test information capacity, with a disc supplied to save data in Excel format.
Modular design	The machine is modular, which keeps maintenance to the module that needs it.

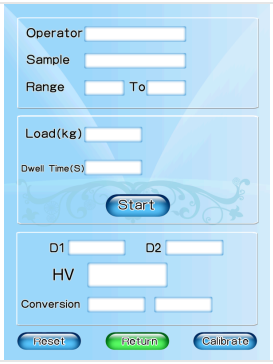
The interface carries a separate main screen and scale list for each method, plus the calibration routines:



Brinell main interface.

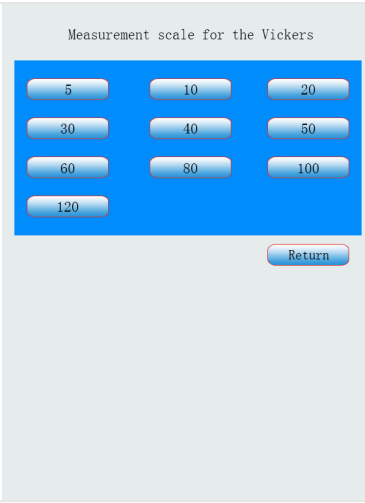


Rockwell main interface.

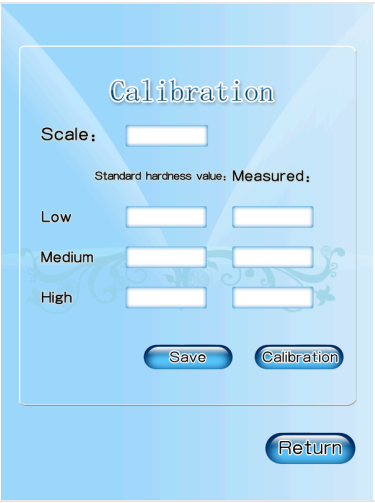


Vickers main interface.

Each method has its own calibration routine against a certified block:



Brinell and Vickers calibration.



Rockwell calibration.

Watch Video



Watch the UniGen – Universal Hardness Tester (Rockwell, Vickers, Brinell) product video.

WATCH ON YOUTUBE

UniGen Technical Specifications

Check the test space against your parts, and the scale lists against the methods you are accredited for. The machine is built to ISO 6508 / ASTM E-18, ISO 6506 / ASTM E10-12 and ISO 6507 / ASTM E92, with the JIS and GB equivalents.

Specification	UniGen Series
Scales	
Brinell Scale	HBW1/5, HBW2.5/6.25, HBW1/10, HBW2.5/15.625, HBW1/30, HBW2.5/31.25, HBW2.5/62.5, HBW10/100, HBW5/125, HBW2.5/187.5
Rockwell Scales	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV
Vickers Scale	HV5, HV10, HV20, HV30, HV40, HV50, HV60, HV80, HV100, HV120
Hardness Range	Brinell 8-650 HBW; Rockwell 20-100 HR; Vickers 8-2900 HV
Forces and accuracy	
Test Force	Rockwell: 60 kgf (588 N), 100 kgf (980 N), 150 kgf (1471 N), initial 10 kgf (98 N) Brinell: 5 kgf (49 N), 6.25 kgf (61.25 N), 10 kgf (98 N), 15.625 kgf (153.125 N), 30 kgf (294 N), 31.25 kgf (306.25 N), 62.5 kgf (612.5 N), 100 kgf (980 N), 125 kgf (1225 N), 187.5 kgf (1837.5 N) Vickers: 5 kgf (49 N), 10 kgf (98 N), 20 kgf (196 N), 30 kgf (294 N), 40 kgf (392 N), 50 kgf (490 N), 60 kgf (588 N), 80 kgf (784 N), 100 kgf (980 N), 120 kgf (1176 N)
Force Error	< 0.5%
Indication Accuracy	Brinell 8-650 HB (δ/%): ±2.5; Rockwell ±0.1 HR; Vickers ±2
Repeatability	Brinell 8-650 HB (Hcf/%): ≤3.0; Rockwell 0.5 HR; Vickers ≤2.5
Holding Time	0-60 s

Specification	UniGen Series
Optics and capacity	
Magnification	Eyepiece 15X; 2.5X for Brinell, 5X for Vickers (10X and 20X optional). Total magnification 37.5X and 75X
Minimum Measuring Unit	0.1 μm
Allowed Maximum Sample Size	Vertical 8.7″ (220 mm) for Rockwell, 5.9″ (150 mm) for Vickers and Brinell; horizontal 7.9″ (200 mm)
Hardness Read	Touch screen LCD display, USB flash disk
Machine and services	
Power Supply	AC220V, 50-60 Hz
Implementation of the Standards	ISO 6508, ASTM E-18, JIS Z2245, GB/T 230.2 ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2 ISO 6507, ASTM E92, JIS Z2244, GB/T 4340.2
Machine Size	22 × 13.8 × 31.5″ (560 × 350 × 800 mm)
Packing Size	28.75 × 17.7 × 35.8″ (730 × 450 × 910 mm)
Weight	Net 155 lbs (70 kg), gross 219 lbs (99 kg)

Standard Accessories

The UniGen ships with the indenters, optics and blocks for all three methods:

Part	Quantity
15X eyepiece	1
Brinell indenter, 2.5 mm and 5 mm carbide ball	1 each
Vickers indenter	1
Rockwell 1.588 mm carbide ball indenter	1
Rockwell diamond indenter (NIST certified)	1
Objective lens 2.5X, 5X	1 each
Hardness blocks: Vickers ×1, Rockwell ×3, Brinell ×2	5 pcs
Exterior lighting	1
Power line	1
Large, medium and V test sets	1 each
Sliding test sets	1
U disk with the operations manual	1
Fuse 2 A	2
Adjustable level screws	4

Part	Quantity
Dust proof cover	1
Accessory box	1

Tell us which methods you are accredited for and the largest part you test, and we will confirm the UniGen build and the certified blocks to order with it.

For Laboratories

Need Additional Quality Control Equipment to Build Your Laboratory?

Multi-scale hardness testing is only one part of a complete quality control laboratory. NextGen can help you equip your entire lab with impact testers, notching and broaching systems, cooling chambers, tensile testers, hardness testers, specimen preparation equipment, and other supporting solutions, all coordinated as one complete project.

- One partner to equip your complete laboratory
- Installation, training, calibration
- Support for the life of the equipment

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