



Micro Vickers and Knoop Hardness Tester – Digital and Digital with CCD Optical Analysis Software

Standards: [ASTM E384](#), [ASTM E92](#), [ISO 6507](#), [ISO 4545-2](#)



ULTIMATE USER-FRIENDLINESS



LEADING DEPENDABILITY AND RELIABILITY



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LIFETIME PRODUCT SUPPORT ADVANTAGE



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Description

The NG-1000 - Micro Vickers and Knoop Hardness tester is the most advanced hardness tester for accurate measurements and ease of use. The NG-1000 - Micro Vickers and Knoop Hardness tester comes standard with a motorized turret and is available in three (3) different configurations to suit all requirements. The series includes the NG-1000 - Micro Vickers and Knoop Hardness tester AGEN - Standard Digital Vickers Hardness Tester, DGEN - Digital Vickers Hardness Tester and CCD - Digital Vickers Hardness Tester with CCD Optical Analysis Software. You can learn more about the basics of Vickers Hardness Test.

The NG-1000 - Micro Vickers and Knoop Hardness testers are equipped with a large LCD display and a user friendly interface for controlling all aspects of your test. It features a built in printer to allow the operator to print and document the series of hardness readings. The motorized turret automatically controls the changing of the objective lenses and indenter positions for the quickest analysis. The loading and unloading of the test force is fully automated as well and is held for the specified dwell time (1-99 seconds). Our most advanced NG-1000CCD - Micro Vickers and Knoop Hardness tester system includes a high quality CCD Camera and is packaged with our VickSoft Vickers Hardness Test Software. The software will use the indentation image from the CCD camera to detect your Vickers hardness value. Our



user friendly VickSoft software allows you to categorize your hardness results by part number/IDs and can then be further exported into a testing report.

System Features

1. Guided by optical cross rails to ensure the highest guiding accuracy
2. Fast and smooth force transmission can be achieved by using the secondary transmission force of the rack and pinion.
3. This machine is equipped with our most advanced high transmission ratio high precision worm gear rod which can achieve stable continuous lifting, and greatly improved the accuracy and repeatedly of the testing process. This update is in the improved working performance and working efficiency.
4. Equipped with dual optical path, one optical path for eyepiece system, another path for CCD camera, both paths can work at the same time without the need to switch the optical path rod. This greatly extend the service life of the optical system, and make the testing process much simpler.
5. High definition 8" touch screen interface with menu structure and digital eyepiece with a built-in encoder. One-push encoder button provides the diagonal length of indentation D1, D2 and hardness value will display on touch screen directly for easiest and most optimal operation.
6. With hardness conversion function, the system can easily convert HV to HRA, HRB, HRC, HBW, and other scales.
7. Standard with (HV & HK) Vickers and Knoop hardness testing capabilities.
8. OK/NG judgement
9. Includes (10X & 40X) lenses for measurement suitable to test wide hardness range of materials from the softest to the hardest of materials.



NG-1000 Models

Any NG-1000 model can be upgraded to a Semi Automatic Hardness Testing System. The Semi-automatic system only has XY stage movement, therefore requires manual focus work for each of the plotted indentations. Once the manual focus is completed measurement process of indentation, measuring, and hardness curve plotting is completed with a click of a button.



NG-1000CCD

CCD - Micro Vickers and Knoop Hardness tester measurements are performed through a CCD Camera combined with an Analytical Software



NG-1000DGEN

DGEN - Digital Micro Vickers and Knoop Hardness tester measurements are made through the eyepiece



NG-1000AGEN

AGEN - Standard Digital Micro Vickers and Knoop Hardness tester measurements are made through the eyepiece.



NG-1000CCD SEMI

All of the benefits of the NG-1000CCD system with a motorized XY stage



NG-1000CCD FA

All of the benefits of the NG-1000CCD SEMI with the automated Z axis control



Technical Specifications

	NG-1000CCD	NG-1000DGEN	NG-1000AGEN	NG-1000CCD SEMI	NG-1000CCD FA
Testing Forces	8 Testing Forces 10g(0.098N), 25g (0.245N), 50g (0.49N), 100g (0.98N), 200g (1.96N), 300g (2.94N), 500g (4.9N), 1000g (9.8N)				
Vickers Scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1, HV2 (Optional)				
Conversion	The unit can convert your Vickers value to HRA, HRC, HRI15N, HR30N, HR45N, HB				
Minimum Measuring Unit	0.01µm				
Vickers Value Range	1HV - 4000HV				
Eyepiece	10x Magnification Eyepiece				
Objectives	10x (Observation) and 40x (Measurement)				
Vickers Value	Displayed on the instruments display as well as the computer software (CCD)				
Magnification	100X (Observation), 400X (Measurement), (Can be extended to 150X or 600X)				
Loading Method	Automatically - Load, dwell and unload the testing force				
Duration	1-99 seconds				
Turret	Automatic Motorized Turret - Objective Lenses and Indenter				
Maximum Height of Specimen	8.5cm				
Maximum Depth of Specimen	12cm				
Light Source	LED Cold light source (no heat generated from light source - service life of light source can reach 100,000 hours)				
Stage	Dimensions of the X-Y Testing table are 10cmx10cm Maximum Travel Range 2.5cm x 2.5cm Moving Resolution Ratio 0.1mm				
Warranty	12 Months				
Power Source	110V/60Hz/1Ph				
Overall Dimensions	19.29" x 7.28" x 20.28" / 49 x 18.5 x 51.5 cm (LxWxH)				
Weight	100lbs / 45kg				
Optional Items	15x Eyepiece, 2000gf Load, Dual Vickers/Knoop Indenter				



Watch Video



Watch the Micro Vickers and Knoop Hardness Tester – Digital and Digital with CCD Optical Analysis Software product video.

[WATCH ON YOUTUBE](#)



NG-1000CCD



Description

CCD - Micro Vickers and Knoop Hardness tester measurements are performed through a CCD Camera combined with an Analytical Software. The measurements can be made through the eyepiece or it can be done through the analysis software and CCD camera. The advanced accuracy of this Vickers hardness testing system, the Motorized Turret and the Built-in-Printer make this machine the top pick for quality control laboratories.



NG-1000DGEN



Description

DGEN - Digital Micro Vickers and Knoop Hardness tester measurements are made through the eyepiece. This system is equipped with an encoder. After using the micrometers to measure the diagonals, the system will transmit your readings from the eyepiece into the system through a single click of a button. The system will generate your hardness reading and display it on the LCD.



NG-1000AGEN



Description

AGEN - Standard Digital Micro Vickers and Knoop Hardness tester measurements are made through the eyepiece. After using the micrometers to measure the diagonals, you must enter your measurements manually into the tester through the numbered keypad to generate your hardness reading on the LCD.



NG-1000CCD SEMI



Description

All of the benefits of the NG-1000CCD system with a motorized XY stage! Bring your sample into focus using the manual Z axis hand wheel and use your software for boundary scans as well as automatic hardness indentation plotting, testing and reporting!

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NG-1000CCD FA



Description

All of the benefits of the NG-1000CCD SEMI with the automated Z axis control. Your NG-1000CCD FA can automatically control your focus for complete automation in hardness Vickers and Knoop testing!

NG1000 CCD FA Series – Fully Automatic Micro Vickers and Knoop Hardness Tester

Software Features: Compatible with NG-1000-CCD Only

Main Functions:

1. **Auto hardness measurement:** With a single click of a button, the software automatically measures the diagonals of the indentation, calculates the hardness value and the statistics (also support manual measurement);
2. **Hardness curve:** With the depths of test points by user input, the software automatically plots the hardness curve(s). User may save and load the depths in a depth template file for later testing for convenience;



- 3. **Hardness Conversion:** Converts HV to other hardness scales (HRA, HRB, HRC, HBW, HK, and others).
- 4. **Data memory / Store function:** All data in the process of measurement will be saved in the right bottom sheet.
- 5. **Statistics:** Automatically updates the statistical values such as average, min and max, standard deviation.
- 6. **Test report:** Automatically generates WORD report with customizable template;
- 7. **Data archiving:** Measurement data and images can be saved in one file for later retrieval;
- 8. **Knoop Scale:** Can be configured for Knoop Scale measurement.
- 9. **Other Functions:** Includes the basic functions of imaging system such as image capture, camera calibration, image processing, etc.
- 10. Inbuilt camera design, the Software can do indentation image Measure and analysis work; THVS-A software can control Machine turret and adjust lightness.

Main Application Purpose

- 1. Steel, nonferrous metals, tinsel, cemented carbide, sheet metal, metallographic structure.
- 2. Carburization, nitriding and decarburization layer, surface hardening layer, galvanized coating, coating.
- 3. Glass, chip and ceramic material.

Standard Configuration

Item	QTY
Weights Shaft	1
X-Y Cross Clamping Testing Table	1
Gradienter	1



Item	QTY
Micro Vickers Hardness Block	2
Dust-proof Cover	1
Power Cable	1
Software	1 Set
Manual	1
Weights	6
Level adjustment screw	4
Objective 10X, 40X	1 of Each
Eyepiece 10X	1
Screw Driver	2
Fuse (2A)	2
Camera	1
Product Certificate	1

Spare Parts and Consumables



Part #	Description of Part #
NG-VKI	<p>Dual Indenter Motorized Turret for Knoop and Vickers Testing Upgrade</p> <p>The addition of a 4th position on the motorized turret for a Knoop indenter. This allows the user to test either Vickers or Knoop without having to change any indenters.</p>
NG-VDI	<p>NIST Certified Vickers Diamond Indenter according to ISO 17025</p>
NG-KI	<p>NIST Certified Knoop Indenter according to ISO 17025</p>
NG-860	<p>NIST Certified Micro-Vickers Test Block according to ISO 17025 Certified and NIST traceable. All loads and ranges available.</p>
NG-860	<p>NIST Certified Knoop Test Block according to ISO 17025 Certified and NIST traceable. All loads and ranges available.</p>
NG-XY-MICRO	<p>XY Stage with Digital Micrometer Upgrade</p>
NG-FLS2000	<p>Universal Leveling Fixture for Sample to Help Meet Parallelism Requirements for Hardness Testing</p>
NGFixture1000	<p>Full Set of Fixtures for your NG-1000DGEN Model Includes: • Flat clamping test table • Thin specimen test table • Filament clamping test table</p>
NG-AutoSoft	<p>Automatic Software (to be purchased with NG-1000CCD) – Software automatically measures indentation</p>
NG-USB- 1000DGEN	<p>Upgrade your NG-1000DGEN model to a USB Interface instead of built-in printer USB interface instead allows to store hundreds of results. The data will be saved in the U-flash in Excell format. This way you can save thousands of readings without the need for printer.</p>
NG-2kgf	<p>Add 2kgf Load to your NG-1000 Series Vickers Hardness Tester</p>