



Macro Vickers Hardness Tester – Standard Digital, Digital and Digital with CCD Optical Analysis Software

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



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

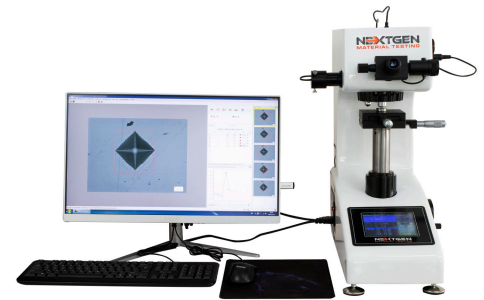
Description

NG-5000 Series Macro Vickers Hardness tester is the most advanced model for accurate measurements and ease of use. The NG5000 - Macro Vickers Hardness tester is equipped with a motorized turret and an optional CCD camera and software to take out all possibilities of human error.

This testers are equipped with a large display and a built in printer. The unit can be connected to a computer with the included USB/RS-232 cord for easy data transfer. The files can be easily exported to either a word or excel format for easy printing.

The NG-5000 CCD series - [Macro Vickers Hardness Tester](#) with CCD Optical Analysis Software has real time focus and the hardness indentation image can be displayed on the computer through the imaging system. This tester can provide the perfect solution for experimental analysis. Learn more about the [Basics of Vickers Hardness Test](#).

The NG-5000 - Macro Vickers 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



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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 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.

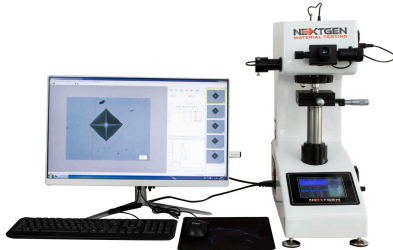
System Features

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 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-5000 Models

Any NG-5000 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 5/10/30/50 CCD

CCD - Digital Macro Vickers Tester with CCD Optical Analysis Software with 5kgf, 10kgf, 30kgf and 50kgf loads, Motorized Turret and Built-In Printer.



NG 5/10/30/50 DGEN

DGEN - Digital Macro Vickers Hardness Tester with 5kgf, 10kgf, 30kgf and 50kgf loads, Motorized Turret and Built-In Printer.



NG 5/10/30/50 AGEN

AGEN - Standard Digital Macro Vickers Hardness Tester with 5kgf, 10kgf, 30kgf and 50kgf load options, Motorized Turret and Built-In Printer.



NG-5/10/30/50CCD SEMI

All of the benefits of the NG-5/10/30/50CCD system with a motorized XY stage



NG-5/10/30/50CCD FA

All of the benefits of the NG-5/10/30/50CCD SEMI with the automated Z axis control



Technical Specifications

	NG-5CCD NG-5DGEN NG-5AGEN NG-5CCD SEMI NG-5CCD FA	NG-10CCD NG-10DGEN NG-10AGEN NG-10CCD SEMI NG-10CCD FA	NG-30CCD NG-30DGEN NG-30AGEN NG-30CCD SEMI NG-50CCD FA	NG-50CCD NG-50DGEN NG-50AGEN NG-30CCD SEMI NG-50CCD FA
Testing Forces	300g (1.96N), 500g (4.9N), 1kg (9.8N), 2kg (19.6N), 3kg (29.4N), 5kg (49N)	0.3kg (2.94N), 0.5kg (4.9N), 1kg (9.8N), 3kg (29.4N), 5kg (49N), 10kg (98N)	1kg (9.8N), 2kg (19.6N), 3kg (29.4N), 5kg (49N), 10kg (98N), 30kg (294N)	1kg (9.8N), 2kg (19.6N), 3kg (29.4N), 5kg (49N), 10kg (98N), 30kg (294N), 50kg (490N)
Vickers Scales	HV0.3, HV1, HV2, HV3, HV5	HV0.3, HV0.5, HV1, HV3, HV5, HV10	HV1, HV2, HV3, HV5, HV10, HV20, HV30	HV1, HV2, HV5, HV10, HV20, HV30, HV50
Conversion	Conversion of Vickers value to: HRA, HRC, HRD, HK, HBS, H15N, H30N, H45N, H15T, H30T, H45T			
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	19.3" x 7.3" x 20.3" / 49 x 18.5 x 51.5 cm (LxWxH)			
Weight	100lbs / 45kg			
Optional Items	15x Eyepiece			



Watch Video

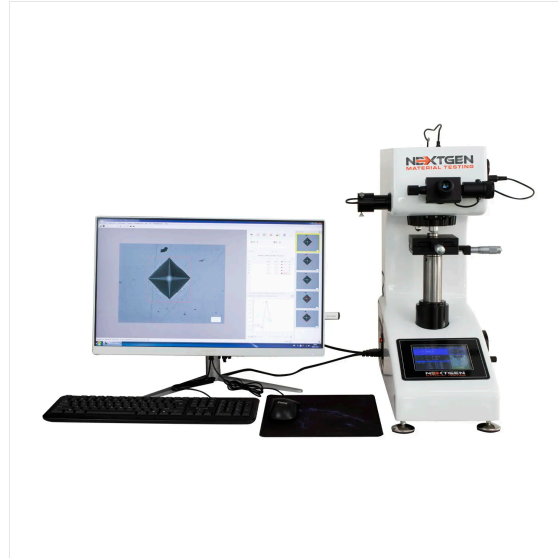


Watch the Macro Vickers Hardness Tester – Standard Digital, Digital and Digital with CCD Optical Analysis Software product video.

[WATCH ON YOUTUBE](#)



NG 5/10/30/50 CCD



Description

CCD - Digital Macro Vickers Tester with CCD Optical Analysis Software with 5kgf, 10kgf, 30kgf and 50kgf loads, Motorized Turret and Built-In Printer.

CCD - Digital Macro Vickers Tester with CCD Optical Analysis Software measurements can be made through the eyepiece or it can be done through the analysis software and CCD camera. This Macro Vickers tester allows for the most accurate measuring and result reading options.

Standard Configuration Includes: Vickers Hardness Tester, 10X Digital Micrometer eyepiece, 10X and 20X Objective Lenses, Vickers Diamond indenter, NIST Traceable Vickers Test Block, Motorized Turret, X-Y Testing Stage, 3-Stage Fixtures, Power Cable, Dust Proof Cover, Instruction Manual, Hardness Conversion Table, Certificate of Quality, Warranty Card and Accessory Case, CD with Image Analysis Software, Digital CCD Camera, USB Drive with Software and USB Data cable.



NG 5/10/30/50 DGEN



Description

DGEN - Digital Macro Vickers Hardness Tester with 5kgf, 10kgf, 30kgf and 50kgf loads, Motorized Turret and Built-In Printer.

DGEN - Digital Macro Vickers Hardness Tester The 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.

Standard Configuration Includes: Vickers Hardness Tester, 10X Digital Micrometer eyepiece, 10X and 20X Objective Lenses, Vickers Diamond indenter, NIST Traceable Vickers Test Block, Motorized Turret, X-Y Testing Stage, 3-Stage Fixtures, Power Cable, Dust Proof Cover, Instruction Manual, Hardness Conversion Table, Certificate of Quality, Warranty Card and Accessory Case.



NG 5/10/30/50 AGEN



Description

AGEN - Standard Digital Macro Vickers Hardness Tester with 5kgf, 10kgf, 30kgf and 50kgf load options, Motorized Turret and Built-In Printer.

AGEN - Standard Digital Macro Vickers 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.

Standard Configuration Includes: Vickers Hardness Tester, 10X Digital Micrometer eyepiece, 10X and 20X Objective Lenses, Vickers Diamond indenter, NIST Traceable Vickers Test Block, Motorized Turret, X-Y Testing Stage, 3-Stage Fixtures, Power Cable, Dust Proof Cover, Instruction Manual, Hardness Conversion Table, Certificate of Quality, Warranty Card and Accessory Case.



NG-5/10/30/50CCD SEMI



Description

All of the benefits of the NG-5/10/30/50CCD 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!



NG-5/10/30/50CCD FA



Description

All of the benefits of the NG-5/10/30/50CCD SEMI with the automated Z axis control. Your NG-5/10/30/50CCD FA can automatically control your focus for complete automation in hardness Vickers testing!

NG-5/10/30/50CCD FA Series - Fully Automatic Macro Vickers Hardness Tester

Software Features: Compatible with NG-5/10/30/50-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
Micro Vickers Hardness Block	2



Item	QTY
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>



Part #	Description of Part #
NG-VDI	NIST Certified Vickers Diamond Indenter according to ISO 17025
NG-KI	NIST Certified Knoop Indenter according to ISO 17025
NG-860	NIST Certified Micro-Vickers Test Block according to ISO 17025 Certified and NIST traceable. All loads and ranges available.
NG-860	NIST Certified Knoop Test Block according to ISO 17025 Certified and NIST traceable. All loads and ranges available.
NG-XY-MICRO	XY Stage with Digital Micrometer Upgrade
NG-FLS2000	Universal Leveling Fixture for Sample to Help Meet Parallelism Requirements for Hardness Testing
NGFixture1000	Full Set of Fixtures for your NG-5/10/30/50DGEN Model Includes: <ul style="list-style-type: none"> • Flat clamping test table • Thin specimen test table • Filament clamping test table
NG-AutoSoft	Automatic Software (to be purchased with NG-5/10/30/50CCD) – Software automatically measures indentation
NG-USB- 1000DGEN	Upgrade your NG-5/10/30/50DGEN 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.
NG-2kgf	Add 2kgf Load to your NG-5/10/30/50 Series Vickers Hardness Tester