



## Advanced Touch Screen Digital Macro Vickers Hardness Testing System

### Description:

The NG-5000 - Macro Vickers Hardness tester is the most advanced hardness tester for accurate measurements and ease of use. The NG-5000 - Macro Vickers 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-5000 - Macro Vickers Hardness tester AGEN - Analogue Vickers Hardness Tester, DGEN - Digital Vickers Hardness Tester and CCD - Digital Vickers Hardness Tester with CCD Optical Analysis Software.



**AGEN** - Analogue Macro Vickers Hardness tester measurements are made through the eyepiece. The operator must first rotate the dial on the microscope to align the micrometers with the diagonals of the indentation. Once aligned, the user must manually read the lengths of the diagonals on the ruler visible through the eyepiece. You then enter the diagonal lengths into the tester through the numbered keypad and the tester will automatically convert the diagonal lengths to your hardness value and display it on the LCD screen.

**DGEN** - Digital Macro Vickers 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.

**CCD** - Macro Vickers 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.

### Application Range:

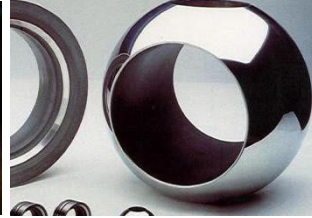
1. Widely used to test the hardness of all kinds of metal materials (steel, nonferrous metals, tinsel, cemented carbide, sheet metal, etc.)
2. Surface layer / coating (Carburization, nitriding, decarburization layer, surface hardening layer, galvanized coating, etc.)
3. Glass, chip, ceramic, plastic and rubber, etc.



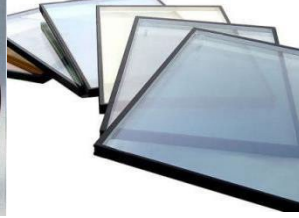
## METAL MATERIAL



## SURFACE COATING



## GLASS MATERIAL



## CERAMIC MATERIAL



## PLASTIC



### 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.



## Technical Specification:

	NG-5CCD	NG10CCD	NG30CCD	NG50CCD
<b>Testing Forces</b>	300g (1.96N), 500g (4.9N), 1kg (9.8N), 2kg (19.6N), 3kg (29.4N), 5kg (49N)	500g (4.9N), 1kg (9.8N), 2kg (19.6N), 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)
<b>Vickers Scales</b>	HV0.3, HV1, HV2, HV3, HV5	HV1, HV2, HV3, HV5, HV10	HV1, HV2, HV3, HV5, HV10, HV20, HV30	HV1, HV2, HV5, HV10, HV20, HV30 HV50
<b>Conversion</b>	Conversion of Vickers value to: HRA, HRC, HRD, HK, HBS, H15N, H30N, H45N, H15T, H30T, H45T			
<b>Minimum Measuring Unit</b>	0.01µm			
<b>Vickers Value Range</b>	HV1 - HV4000			
<b>Vickers Value</b>	Displayed on the instruments on the LCD screen			
<b>Magnification</b>	100X (for observation), 200X (for measurement), and can be extended to 400X			
<b>Loading Method</b>	Automatically - Load, dwell and unload the testing force			
<b>Duration</b>	1-99 seconds			
<b>Turret</b>	Automatic Motorized Turret - Objective Lenses and Indenter			
<b>Maximum Height of Specimen</b>	8.5cm		16cm	
<b>Maximum Depth of Specimen</b>	11cm		30cm	
<b>Light Source</b>	LED Cold light source (no heat generated from light source - service life of light source can reach 100,000 hours)			
<b>Stage</b>	Dimensions of the X-Y Testing table are 10cmx10cm Maximum Travel Range 2.5cm x 2.5cm Moving Resolution Ratio 0.1mm			
<b>Data Output</b>	Built-in Printer: Hardness Value, the max, and min value, testing time, and average value			
<b>Power Source</b>	110V/60Hz/1Ph			
<b>Overall Dimensions (LxWxH)</b>	15.94x11.41x18.9" 40.5x29x48 cm		20.87x8.67x22.83" 53x22x58 cm	
<b>Weight</b>	99lbs / 45kg			
<b>Warranty</b>	12 Months			



8-Inch Touch Scree within the Menu Structure for Ease of Operation:  
Operation Interface of Hardness Tester :

### Main interface

The main interface includes input fields for Load(kg) and Dwell Time(S), Turret selection (10X, Indenter, 20X), a Brightness slider, and a Start button. Below this are fields for D1, D2, HV, and Conversion, along with Reset and Setting buttons.

### Data storage

The data storage screen shows a table with columns: NO., Hardness-S, Hardness-V, Conversion-S, and Conversion-V. Below the table are buttons for Last, Next, Clean, and Statistical. At the bottom, there are fields for MAX, MIN, AVE, VAR, and a Print button, along with Empty and Return buttons.

NO.	Hardness-S	Hardness-V	Conversion-S	Conversion-V

### Magnification and Hardness Automatic Correction

The calibration screen features input fields for Magnification, Load(Kg), Pulses (X and Y), and Hardness. It includes Save, Load(Kg), and Return buttons.

### Load automatic correct


The force calibration screen has input fields for STD and Test, both followed by 'kg'. It includes Save and Return buttons.




## Standard Accessories :

Item	Quantity
Main Instrument	1 set
10X Digital Micro Eyepiece	1 piece
10X Objective lens	1 piece
20X Objective lens	1 piece
Vickers diamond indenter	1 piece
Large testing table	1 piece
Middle testing table	1 piece
V shape testing table	1 piece
Horizontal Regulating Screw	4 pieces
Weights	4 pieces
Level	1 piece
Power Cable	1 piece
Fuse 2A	2 pieces
Dust cover	1 piece
Warranty card	1 piece
Manual book	1 piece

## Spare Parts and Consumables

Part Number	Description of Part #
<b>NG-VKI</b>	<b>Dual Indenter Motorized Turret for Knoop and Vickers Testing Upgrade</b> The addition of a 4 <sup>th</sup> 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.
<b>NG-VDI</b>	<b>NIST Certified Vickers Diamond Indenter according to ISO 17025</b>
<b>NG-KI</b>	<b>NIST Certified Knoop Indenter according to ISO 17025</b>
<b>NG-860</b>	<b>NIST Certified Micro-Vickers Test Block according to ISO 17025</b> Certified and NIST traceable. All loads and ranges available.
<b>NG-860</b>	<b>NIST Certified Knoop Test Block according to ISO 17025</b> Certified and NIST traceable. All loads and ranges available.
<b>NG-XY-MICRO</b>	<b>XY Stage with Digital Micrometer Upgrade</b> 
<b>NG-FLS2000</b>	<b>Universal Leveling Fixture for Sample to Help Meet Parallelism Requirements for Hardness Testing</b>



	
<b>NG-Fixture1000</b>	<b>Full Set of Fixtures for your NG-1000DGEN Model</b> Includes: <ul style="list-style-type: none"> <li>• Flat clamping test table</li> <li>• Thin specimen test table</li> <li>• Filament clamping test table</li> </ul>
<b>NG-AutoSoft</b>	<b>Automatic Software (to be purchased with NG-1000CCD)</b> – Software automatically measures indentation
<b>NG-USB-1000DGEN</b>	<b>Upgrade your NG-1000DGEN model to a USB Interface instead of built-in-printer</b> 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.

### Lead Time

3-6 Weeks Depending on when the PO is placed

### Price

Model	Description
<b>NG-5000AGEN</b>	<b>Digital Display Vickers Tester with Automatic Turret and Built-In Printer according to ASTM E384 &amp; E92, EN-ISO 6507, JIS B-7734 and GB/T4340</b>  <b>NOTE:</b> System is not compatible with CCD Camera and Optical Analysis Software
<b>NG-5000DGEN</b>	<b>Advanced Vickers Hardness Tester with Intuitive 8” Touch Screen Panel, Motorized Turret and Built-in-Printer according to ASTM E384 &amp; E92, EN-ISO 6507, JIS B-7734 and GB/T4340</b>  <b>NOTE:</b> System is not Supplied with CCD Camera and Optical Analysis Software
<b>NG-5000CCD</b>	<b>Advanced Vickers Hardness Tester with Intuitive 8” Touch Screen Panel 1kgf with CCD Camera, Analytical Automated Software, Motorized Turret and Built-in-Printer according to ASTM E384 &amp; E92, EN-ISO 6507, JIS B-7734 and GB/T4340</b>  <b>NOTE:</b> System Supplied with CCD Camera and Automatic Optical Analysis Software

\* Request a [formal quotation](#) or send an e-mail to [sales@nextgentest.com](mailto:sales@nextgentest.com) for the most up-to-date pricing and applicable discounts and incentives