

## Product Information

### ZHV30 Micro and Macro Vickers Hardness Tester with Knoop and Brinell Capability



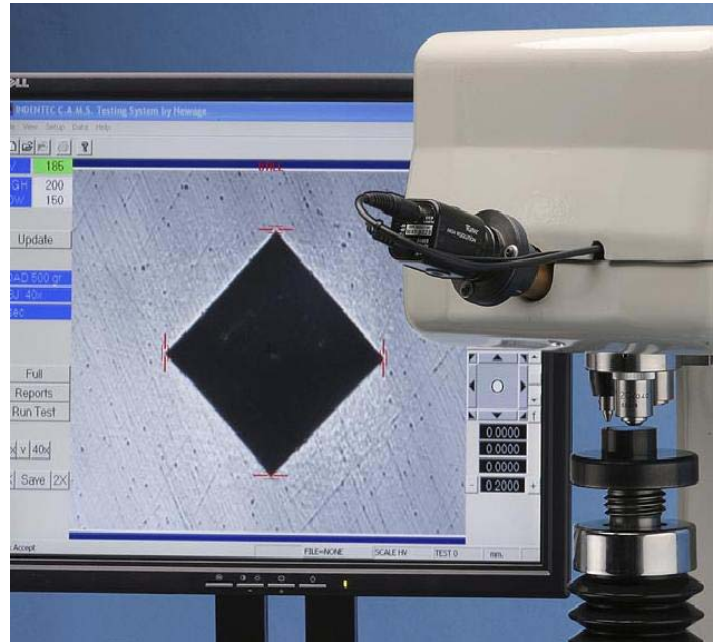
**ZHV30 micro and macro Vickers hardness tester. Supplied as standard with measuring microscope for manual measurement of Vickers impression.**

#### Range of applications

- Vickers testing to ISO 6507, ASTM E92 & E384
- Knoop testing to ISO 4545 & ASTM E384
- Brinell testing to ISO 6506 & ASTM E10
- Test Scales:  
HV0.2, HV0.5, HV1, HV3, HV5, HV10, HV30  
HK0.2, HK0.5, HK1  
HBW1/1, HBW1/5, HBW1/10, HBW1/30
- UKAS accredited tester, test blocks & indenter
- Knoop and Brinell indenters are optional extras

#### Special Characteristics

- Capable of performing tests using loads of: 0.2, 0.5, 1, 3, 5, 10, 30 kgf.
- Automatic turret allows one touch operation when changing between indenter and lens position.
- Fully automatic timing cycle, eliminates operator influence of the dwell times.
- Fully CE compliant.



**ZHV30 with automated Vickers indentation measurement. Adding a CCD camera, PC and frame grabber card in place of the measuring microscope removes operator influence when measuring a Vickers impression. Measurement uncertainty and gauge R & R (repeatability and reproducibility) are significantly reduced. The hardness tester is controlled via a 2 button mouse. Impressions are measured instantly. Results are stored to a file with average, range, standard deviation, Cp and Cpk indices calculated automatically. Average & range charts along with histograms are provided.**

- RS232C and USB data output.
- Dead weight load application provides long term test force stability.
- Variable dwell times, 5-60 seconds.
- Automatic conversion to alternative scales, eliminating the requirement for conversion tables.
- Horizontal and vertical indentation diagonal measurements displayed.
- Supplied as standard with 70 mm  $\varnothing$  flat and V shaped anvils for testing cylindrical parts.
- Visual indication of "out of tolerance" results, eliminating operator decisions.
- Full range of standard accessories.
- Design of special purpose fixtures available.
- Optional CCD camera and monitor for displaying impressions when measuring manually.
- Optional upgrade for automatic Computer Assisted Measurement System (CAMS), see above.

# Specification

Type	Test forces (kgf)	Display	Data Entry	Resolution ( $\mu$ )
ZHV30-M	0.2, 0.5, 1, 3, 5, 10, 30	2 x 20 Vacuum fluorescent	Membrane keyboard	0.1 e.g. 156.4 $\mu$

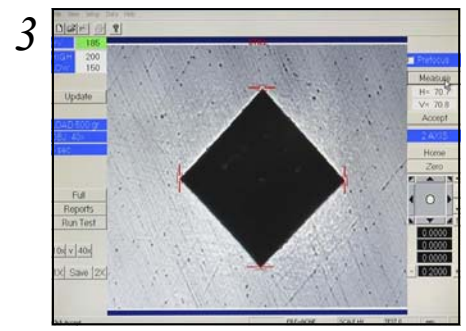
## Measurement Optical Options *(options 1 & 2 show other Indentec Vickers machines)*



The standard measuring microscope with a x200 magnification. The clearly defined indentation is measured by adjusting two lines controlled by large diameter thumb wheels. The lines enable the corners of the diamond shaped indentation to be precisely located. The diagonal measurements and the hardness reading are displayed and can be down loaded to a PC.



A video camera can be fitted to the standard eyepiece lens. The indentation and measuring shutters are displayed on a 9" monitor.



A Computer Aided Measurement System (CAMS) enables the indentation to be measured automatically without any operator influence. This greatly improves the gauge repeatability and reproducibility (R&R) results. Other features include automatic focus, motorised X-Y tables and case depth determination. The ability to measure Brinell impressions and calculate grain size are also available.

### Standard features

Automatic Test Cycle	✓
Measuring Resolution 0.1 $\mu$	✓
Scale Designation e.g. HV 0.5, HK0.2, HBW1/30	✓
Motorised Turret	✓
Manual Load Change with Scales Designation	✓
Automatic Scale Conversion e.g. to HRC	✓
$\pm$ Tolerance and Warning Limits	✓
Average (X Bar) and Range (R)	✓
Adjustable Illumination light level	✓
RS232C and USB data output ports	✓
Programmable Dwell Times 5 to 60 s	✓

### Standard upgrade options

Automatic Indentation Measurement software	✓
Manual & Motorised X-Y stages	✓
Automatic Effective Case Depth Software	✓
Automatic Focus	✓
100% Fully Automatic Operation, Zero Influence of the Results by the Operator	✓

Indentec Hardness Testing Machines Limited,  
Lye Valley Industrial Estate,  
Bromley Street, Lye, Stourbridge,  
West Midlands, United Kingdom.  
Telephone: 00 44 (0) 1384 896949  
Fax: 00 44 (0) 1384 424470  
Email: mail@indentec.demon.co.uk  
Web page: www.indentec.com

### Standard accessories

Model	ZHV30
70 mm $\varnothing$ flat anvil	✓
Vee shaped anvil	✓
Standard UKAS Test Block	✓
Vickers Diamond UKAS Indenter	✓
Measuring Microscope	✓
Objective Lens X 20	✓
Instruction Manual	✓
Accessory Box	✓
Light Source Bulb	✓

*Knoop and Brinell indenters and test blocks are available as optional extras*

**Calibration** ISO 6507  
ASTM E92 & E384

**Optional Brinell and Knoop calibration if appropriate indenters are ordered with the instrument**

**Standard Specimen Accommodation** Vertical 250 mm  
Throat 150 mm

**Services** 3 A single phase  
240/120 V switchable

**Machine Dimensions** Height 770 mm  
Width 220 mm  
Depth 580 mm

**Weight** 50 kg

**INDENTEC**  
HARDNESS TESTING MACHINES LIMITED

