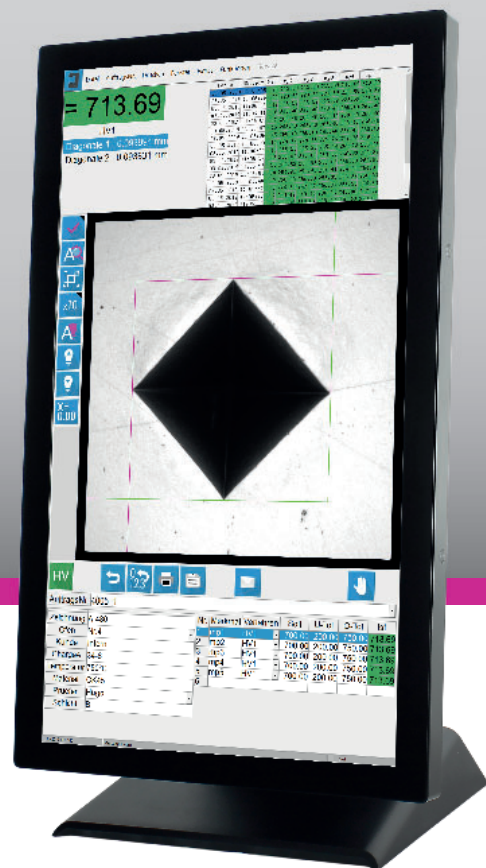
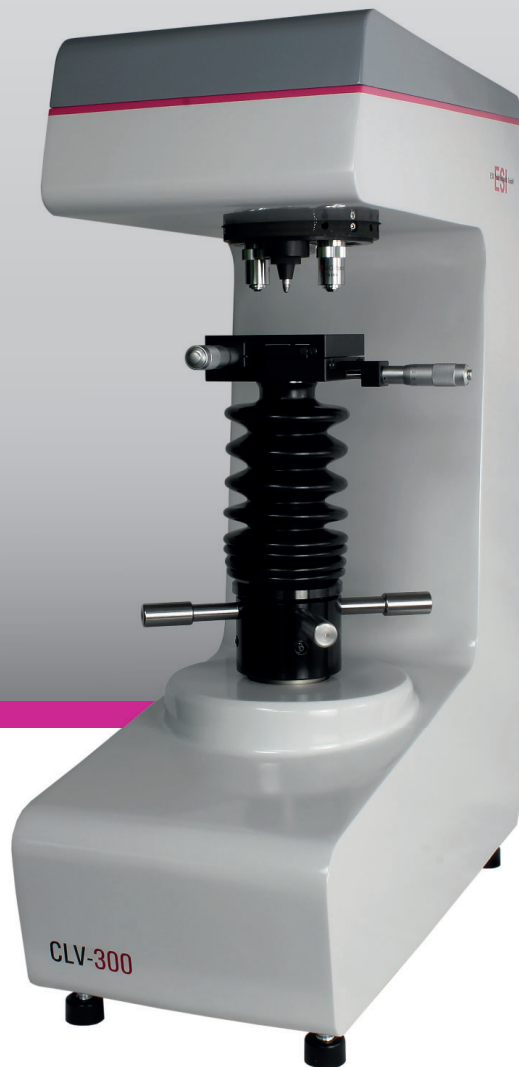


CLV 100/300/500-series

Vickers

Hardness testing machine



The hardness tester CLV-100/300/500 is a sturdy and reliable Vickers hardness tester with controlled load application. The load application by Closed-Loop-System allows contact measurement without manual changing of the test force. The CLV-300 is perfectly applicable in quality control as well as in metallography and convinces by its versatility and usability.

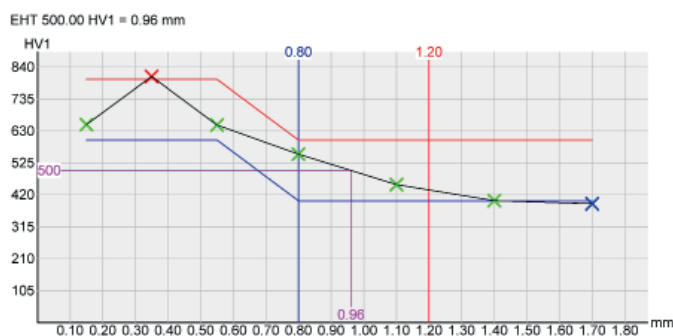
In the machine frame integrated you will find a LED-lighting system, a CCD-camera and a powerful PC with Windows 10. A Full-HD touch screen is connected.

The securely installed optical components LED-lighting and high definition CCD-camera with 3-fold zoom build together with the motoric turret head with 2 objectives and one indenter a function unit that especially with regard to picture quality and total magnification allows standardized measurements with few objectives.

Besides a manual measurement of the indentation there is also an integrated fully automatic picture evaluation of the measured indentation available. In combination with the fully automatic brightness control external influences caused by the user will be reduced to a minimum.

The new software HmeWin-Touch with its clear user interface allows a quick and user-friendly handling and data entry.

Options:



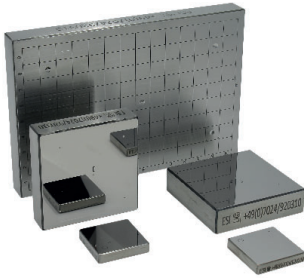
Semi-automatic CHD-measuring by manual XY-table with digital micrometer:
Travel path 25 x 25 mm

Alternative:
Fully automatic CHD-measuring with motoric XY-table:
Travel path 150 x 100 mm

The different HmeWin-Touch components allow the automatic CHD-, SHD- and NHD-measurement. The connection to higher-level quality management systems such as Q-DAS is easily possible by the LAN-interface.

Model		CLV-100	CLV-100X	CLV-300	CLV-300X	CLV-500	CLV-500X
Hardness scale	Vickers HV according to DIN EN ISO 6507, ASTM E92	HV0,1 - HV0,2 - HV0,3 - HV0,5 - HV1 - HV2 - HV3 - HV5 - HV10		HV0,3 - HV0,5 - HV1 - HV2 - HV3 - HV5 - HV10 - HV20 - HV30		HV0,5 - HV1 - HV2 - HV3 - HV5 - HV10 - HV20 - HV30 - HV50	
	Hardness conversion	Conversion according to DIN EN ISO 18265					
Test forces	Test forces [gf]	100gf - 200gf - 300gf - 500gf - 1000gf - 2000gf - 3000gf - 5000gf - 10kgf		300gf - 500gf - 1000gf - 2000gf - 3000gf - 5000gf - 10kgf - 20kgf - 30kgf		500gf - 1000gf - 2000gf - 3000gf - 5000gf - 10kgf - 20kgf - 30kgf - 50kgf	
	Test forces [N]	0,9807N - 1,961N - 2,452N - 4,903N - 9,807N - 19,61N - 29,42N - 49,03N - 98,07N		2,452N - 4,903N - 9,807N - 19,61N - 29,42N - 49,03N - 98,07N - 196,1N - 294,2N		4,903N - 9,807N - 19,61N - 29,42N - 49,03N - 98,07N - 196,1N - 294,2N - 490,3N	
	Accuracy	According to DIN EN ISO and ASTM					
	Increase time	From 5 - 99s with 1s subdivision according to DIN EN ISO and ASTM					
	Contact velocity	According to DIN EN ISO and ASTM					
	Test force application	Closed Loop System					
	Test force selection	Adjustable via software					
Testing height		223mm	200mm	223mm	200mm	223mm	200mm
Jib length		168mm	168mm	168mm	168mm	168mm	168mm
Turret	Motorized 3-fold turret (1 indenter, 2 objectives)	✓	✓	✓	✓	✓	✓
Optics	Objectives	Standard objectives 5-fold and 20-fold (optional 10-fold and 40-fold)					
	Image capturing	Integrated CCD camera (6,4 MP, 420 MB/s, USB 3.1)					
	Zoom levels	3					
Illumination	Built-in LED illumination	✓	✓	✓	✓	✓	✓
	Fully automatic brightness control	✓	✓	✓	✓	✓	✓
Spindle	Z-Axis	Manual	Manual	Manual	Manual	Manual	Manual
EHT (CHD)	Manual EHT testing	✗	✓ Manual 25x25mm	✗	✓ Manual 25x25mm	✗	✓ Manual 25x25mm
Hardware	PC	Built-in Windows PC, Control communication via CAN-Bus					
	Interfaces	4 x USB3.1, 1 x Displayport, 1 x Gigabit LAN (RJ45)					
	Monitor	External 21.5" Full HD Capacitive 10-point Multi-Touch Monitor					
Software	Operating system	Windows 10 Professional 64bit					
	Hardness testing software	HmeWin-Touch					
	Data export	CSV format , QDAS, String, Customized versions possible on request					
General data	Dimensions (width x depth x height)	240 x 560 x 730 mm					
	Weight	69 kg					
	Electrical connection	100 - 230V, 50-60Hz					

✓ = Standard equipment
✗ = Not available



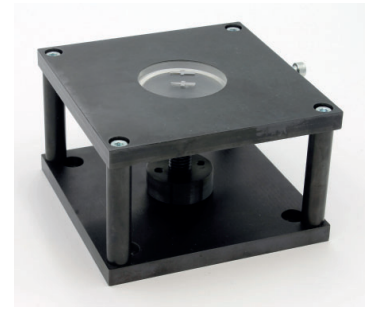
Hardness reference blocks with DAKS calibration certificate

All hardness reference blocks are calibrated according to DIN EN ISO 6507-3 and/or ASTM E92 by an accredited calibration laboratory and are delivered with DAKS calibration certificate. Hardness range from 80 - 1500 HV, depending on Vickers test scales.



Indenters Vickers / Knoop with DAKS calibration certificate

All indenters are calibrated according to DIN EN ISO 6507-2 and/or ASTM E92 and are delivered with DAKS calibration certificate.



Specimen holder for mounted samples

Specimen holders are available in 3 different types (1-, 4-, or 6-fold) for different diameters.



High-quality objectives 20-fold / 5-fold (optional)

Achromatic incident light objectives together with high definition CCD-camera for standard-conform illustration.



High-quality objectives 40-fold / 10-fold (standard)

Achromatic incident light objectives together with high definition CCD-camera for standard-conform illustration.



Holder for test specimens

In addition to stand holders, we also offer customer-specific holders for test specimens.



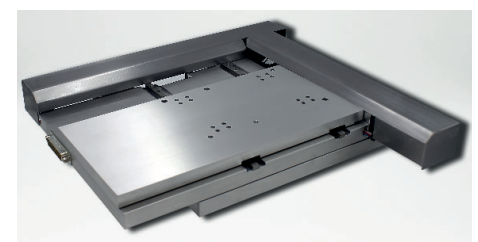
Cross table 100 x 100 mm

Manual XY-table to position specimens. The XY-table has a travel path of 25 x 25 mm.



Micrometer gauge for cross table 100 x 100 mm

Digital X-axis allows semi-automatic CHD-measuring. The cross table has a travel path of 25 x 25 mm.



Motoric X-Y-table

Motoric XY-table to facilitate specimen holders with integrated X-Y-motors for fully automatic CHD-, SHD- and NHD-measurement. The cross table has a travel path of 150 x 100 mm.