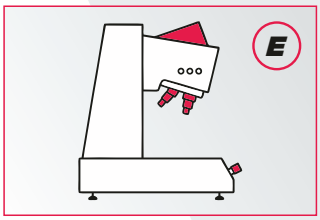
Fully Automatic Hardness Tester / Microhardness Tester

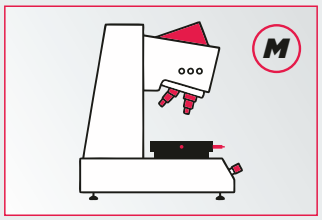
HT V10 / 30 / 60 A

VICKERS KNOOP ROCKWELL BRINELL

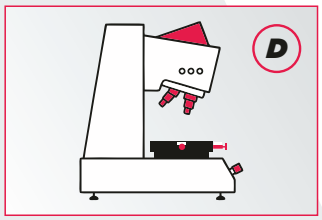
- *Fully automatic operation mode*
- *Made in Slovakia, made in Europe*
- *Automatic X, Y, Z, R axes*
- *Fast, simple, and highly accurate*
- *Automatic revolver head (4–12 positions) for quick indenter/objective change*
- *X,Y cross table – motorized / digital / micrometric*
- *High-quality optical system with sharp, refined image*
- *Innovative software with extensive functions*
- *Automatic indentation evaluation*
- *Autofocus and indenter contact autofocus*
- *Professional Full HD measuring and preview cameras*
- *Measurement of layers, welds, and structures*
- *Reverse functions, archive, modifications, user management, reporting*
- *Wide range of accessories*
- *Custom modifications and tailored solutionsIntegration into production lines or robotic workstations*



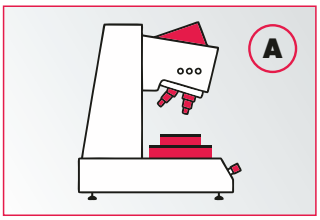
Version E
Without cross table, automatic Z-axis, and automatic revolver head R.



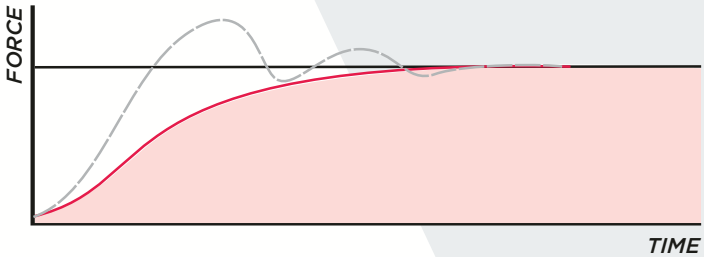
Version M
Manual X,Y cross table, automatic Z-axis, and automatic revolver head R.



Version D
Digital X,Y cross table, automatic Z-axis, and automatic revolver head R.



Version A
Automatic X,Y cross table, automatic Z-axis, and automatic revolver head R.



Electronically controlled load application in a closed loop, ensuring high precision and full automation. Enables fast and accurate hardness testing, quick method changes, and automatic focal plane detection.

Hardness testing methods HT V10 A:

Vickers:
DIN EN ISO 6507 ASTM E-384, ASTM E92

HV 0,00025*	HV 0,0005*	HV 0,001	HV 0,002	HV 0,003
HV 0,005	HV 0,01	HV 0,015	HV 0,02	HV 0,025
HV 0,05	HV 0,1	HV 0,2	HV 0,3	HV 0,5
HV 1	HV 2	HV 2,5	HV 3	HV 5
HV 10	HV 30	HV 50	HV 60*	

Brinell:
DIN EN ISO 6506, ASTM E-10

HBW 1/1	HBW 1/2,5	HBW 1/5	HBW 1/10	HBW 1/30
HBW 2,5/6,25	HBW 2,5/15,625	HBW 2,5/31,25	HBW 2,5/62,5	HBW 5/25
HBW 5/62,5				

Knoop:
DIN EN ISO 4545, ASTM E-384, ASTM E92

HK 0,001	HK 0,002	HK 0,005	HK 0,01	HK 0,015
HK 0,02	HK 0,025	HK 0,05	HK 0,1	HK 0,2
HK 0,3	HK 0,5	HK 1	HK 2	

Rockwell:
DIN EN ISO 6508, ASTM E-18

HRA	HRF	HRH	HR15N	HR30N
HR45N	HR15T	HR30T	HR45T	

Legend:

Standard for HT V10 A	Option Brinell	Option Knoop	Option Rockwell
Option microVickers extra	Option macroVickers extra		

Additional methodologies may be added upon request.

* not according to standard

Hardness testing methods HT V30 A:

Vickers:
DIN EN ISO 6507 ASTM E-384, ASTM E92

HV 0,00025*	HV 0,0005*	HV 0,001	HV 0,002	HV 0,003
HV 0,005	HV 0,01	HV 0,015	HV 0,02	HV 0,025
HV 0,05	HV 0,1	HV 0,2	HV 0,3	HV 0,5
HV 1	HV 2	HV 2,5	HV 3	HV 5
HV 10	HV 30	HV 50	HV 60*	

Brinell:
DIN EN ISO 6506, ASTM E-10

HBW 1/1	HBW 1/2,5	HBW 1/5	HBW 1/10	HBW 1/30
HBW 2,5/6,25	HBW 2,5/15,625	HBW 2,5/31,25	HBW 2,5/62,5	HBW 5/25
HBW 5/62,5				

Knoop:
DIN EN ISO 4545, ASTM E-384, ASTM E92

HK 0,001	HK 0,002	HK 0,005	HK 0,01	HK 0,015
HK 0,02	HK 0,025	HK 0,05	HK 0,1	HK 0,2
HK 0,3	HK 0,5	HK 1	HK 2	

Rockwell:
DIN EN ISO 6508, ASTM E-18

HRA	HRF	HRH	HR15N	HR30N
HR45N	HR15T	HR30T	HR45T	

Legend:

Standard for HT V30 A	Option Brinell	Option Knoop	Option Rockwell
Option microVickers extra	Option macroVickers extra		

Additional methodologies may be added upon request.

* not according to standard

Hardness testing methods HT V60 A:

Vickers:
DIN EN ISO 6507 ASTM E-384, ASTM E92

HV 0,00025*	HV 0,0005*	HV 0,001	HV 0,002	HV 0,003
HV 0,005	HV 0,01	HV 0,015	HV 0,02	HV 0,025
HV 0,05	HV 0,1	HV 0,2	HV 0,3	HV 0,5
HV 1	HV 2	HV 2,5	HV 3	HV 5
HV 10	HV 30	HV 50	HV 60*	

Brinell:
DIN EN ISO 6506, ASTM E-10

HBW 1/1	HBW 1/2,5	HBW 1/5	HBW 1/10	HBW 1/30
HBW 2,5/6,25	HBW 2,5/15,625	HBW 2,5/31,25	HBW 2,5/62,5	HBW 5/25
HBW 5/62,5				

Knoop:
DIN EN ISO 4545, ASTM E-384, ASTM E92

HK 0,001	HK 0,002	HK 0,005	HK 0,01	HK 0,015
HK 0,02	HK 0,025	HK 0,05	HK 0,1	HK 0,2
HK 0,3	HK 0,5	HK 1	HK 2	

Rockwell:
DIN EN ISO 6508, ASTM E-18

HRA	HRF	HRH	HR15N	HR30N
HR45N	HR15T	HR30T	HR45T	

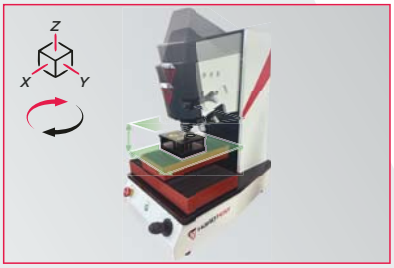
Legend:

Standard for HT V60 A	Option Brinell	Option Knoop	Option Rockwell
Option microVickers extra	Option macroVickers extra		

Additional methodologies may be added upon request.

* not according to standard

Main description of the device:



Fully automatic hardness tester / microhardness tester

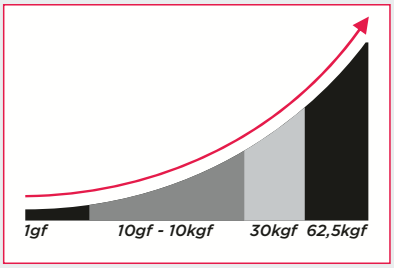
Fully automatic system with all motorized axes X, Y, Z and R (turret head). Ensures high accuracy, speed and repeatability of measurements.

Turret head with 20° tilt

Automatic turret (4–12 positions) for quick change of indentors and objectives. 20° tilt ensures a better view of the measurement site.

Precision X-Y cross stage

Choice of manual, digital or fully automatic stage for precise positioning of samples and measurement points.

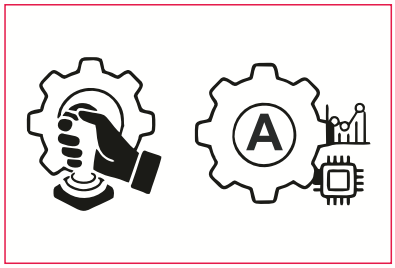


Wide range of test loads

Range 1 gf – 62.5 kgf with the possibility of customization according to customer requirements.

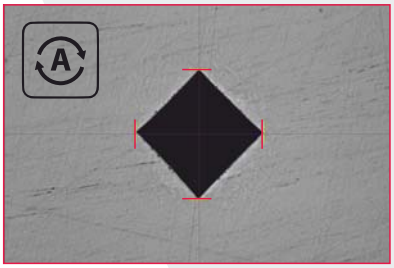
Fast and accurate measurement according to standards

Measurement in accordance with ISO, DIN and ASTM standards. Guaranteed quality, accuracy and international comparability of results.



Automatic and manual control

Fully automatic control of movements and tests with the possibility of manual intervention via software or joystick.

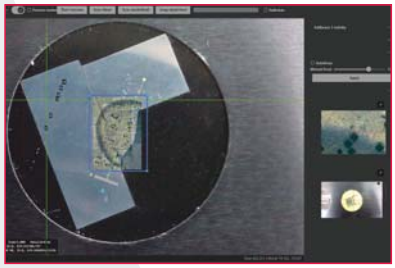


Automatic evaluation of impressions

Automatic recognition and evaluation of impressions with the possibility of manual fine-tuning using tangents.

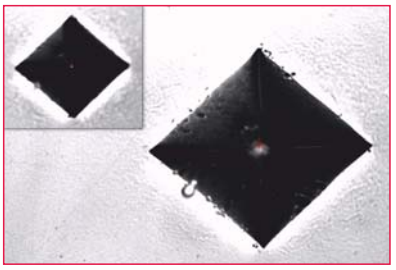
Full HD measuring camera

High-resolution camera for sharp images and precise analysis of impressions and material structure.



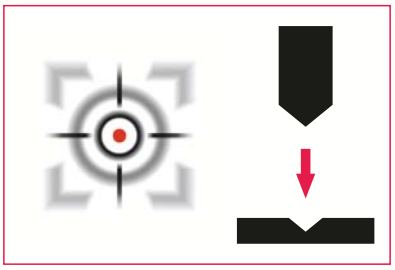
Full HD preview camera

Panoramic sample overview, selection of measuring points, visualization of templates, series and layers (optional).



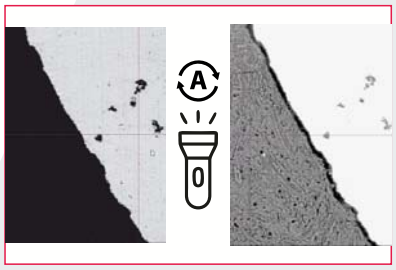
Automatic image focusing (AutoFocus)

The function automatically focuses on the sample surface without the need for manual adjustment.



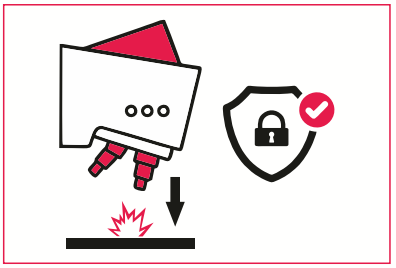
AutoFocus by touch via indentor

Fast and accurate autofocus after touching the indenter to the sample surface – ideal after changing samples.



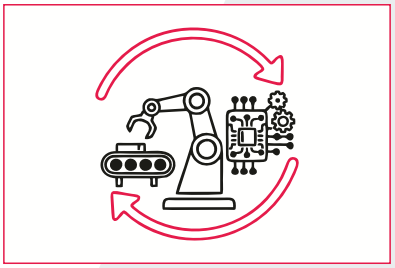
Smart lighting

Automatic adjustment of brightness, contrast and lighting intensity using a special optical and light path.



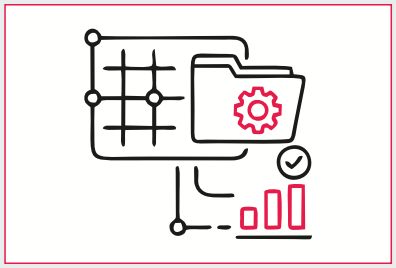
Safety and protection features

Automatic indenter collision protection and closed load system for safe and reliable operation.



Modular design and integration

Possibility to adapt the device to specific needs – implementation into lines, robotic workplaces or customer solutions.



Template creation, formulas and measurement manager

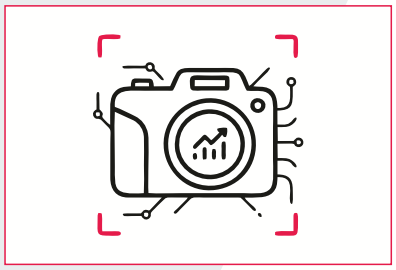
Creation of measurement patterns and templates, their archiving, history and reuse. Measurement and protocol manager for efficient data management.

Automatic configuration and test management

Automatic test method selection, machine configuration, result back-correction and dynamic parameter changes during the test.

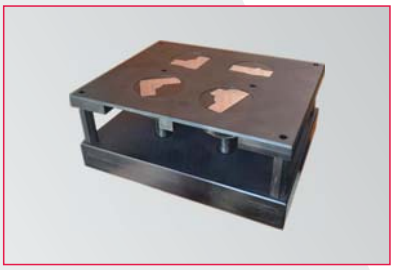
Statistics, analysis and data export

Advanced statistical functions, graphical evaluation of results, data export to CSV, PDF, Word and Excel, printing reports with company logo.



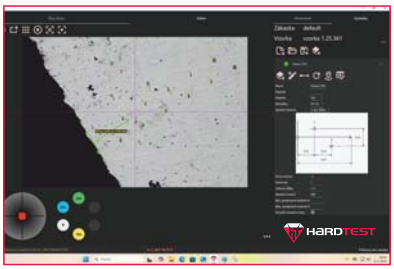
Processing and measuring images from cameras

Extended image processing capabilities from the measuring and preview camera – measurement of lengths, angles, geometry of shapes, panoramic display and impression databases.



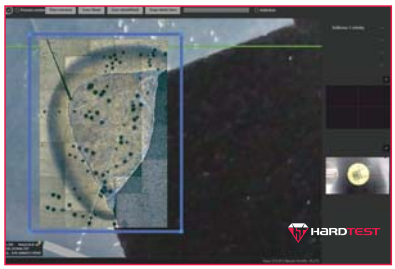
Various expansion and accessory options

Possibility of implementing various fixtures, holders for different numbers of samples, prismatic V tables, straight tables, vices, clamps, etc.



Layer measurement

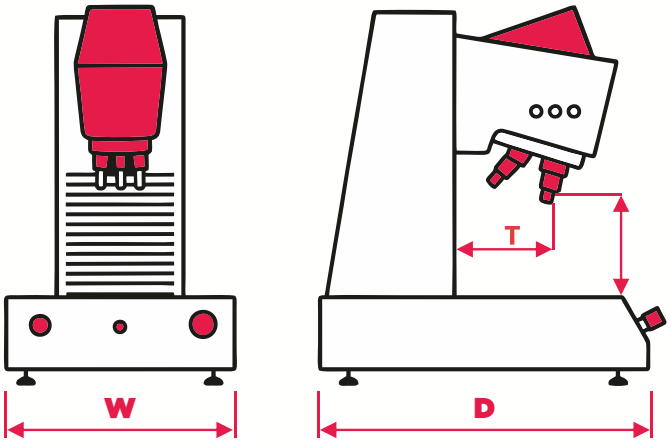
Automatic measurement of layer thickness (CHD, NHD, SHD). Graphical representation of layers and calculation of multiple layers at once.



Weld measurement

Standardized measurement and evaluation of welds according to the standard. Measurement of hardness of individual areas, report, measurement of weld dimensions.

	Version M	Version L	Version XL
H [mm]	720	850	910
W [mm]	420	420	420
D [mm]	630	630	680
Z [mm]	220	350	410
T [mm]	186	186	220
Weight [kg]	57	70	110



Test force range	*1 gf - 62,5 kgf (0,0098 - 612,92 N)*
Axis - Z - moving head	*Dynamic, automated, travel distance Z 220 - 410 mm (optional: possible adjustment after agreement)*
Turret head	*4-12 - position, rotating turret. Indentor / objective replacement*
Camera system / image transmission	*6 Mpx – color, USB 3.0*
Lenses	*2x, 2,5x, 5x, 10x, 20x, 50x, 100x*
Lens types	*Standard (achromatic) and high-quality (semi-apochromatic) display for hardness measurement and microscopy. LED illumination for Brinell hardness measurement.*
Preview camera	*6 Mpx – color, USB 3.0*
XY cross stage	*Manual / Digital / Automatic*
Table size	*150 x 120 mm*
Controls	*Emergency stop, Start button, X/Y/Z joystick*
Max. workpiece weight	*80kg*
Weight of the basic device	*55kg*
Test sequence	*Fully automated/electronic force application*
Hardness testing methods	*Vickers, Knoop, Brinell, Rockwell (optional)*
Optical system	*Upright microscope with Koehler illumination*
Interfaces	*2 x USB 3.0*
Power supply	*100 – 240 V – 1/N/PE, 45 – 65 Hz*