

WIKI

Micro/Macro Hardness Tester
with extended load range 0.2---31.2Kgf
For Vickers, Knoop and Brinell tests.
With Auto-Measurement and Auto-Focus.

PAT. PENDING

MADE IN ITALY

The measurement head moves in a vertical direction until contact with specimen is made. The operation cycle will commence automatically from there

Innovative optical system with multiple objective turret recessed for mechanical damage protection.

Large sub base able to accommodate any large specimens irrespective of geometrical shape and weight of up to 200kg. In addition, a manual or automatic xy stage can be attached.



Multitest Y axis incorporated on the indenter head no need to move test sample 0,01mm division

Regardless of distance or reflection from specimen, the system will auto focus.

A single start button to initiate the operation cycle, including the auto movement of the focusing head.

Touch screen technology, to view and measure resulting impression with Image Analysis software. Wide load range for Micro & Macro Vickers hardness impressions. One instrument for both ranges saving equipment cost

Exclusive control of loads

A new breakthrough in Vickers Hardness Testing one instrument with a test load from 0.2 to 31.2kgf. Eliminating the need for 2 separate Micro / Macro systems. Saving time, money and bench space.

Vickers 0.2 0.3 0.5 1 2 3 5 10 15 25 30 kgf

Knoop 0.2 0.3 0.5 1 2 3 5 10 15 25 30 kgf

Brinell 10 15.6 30 31.25 kgf

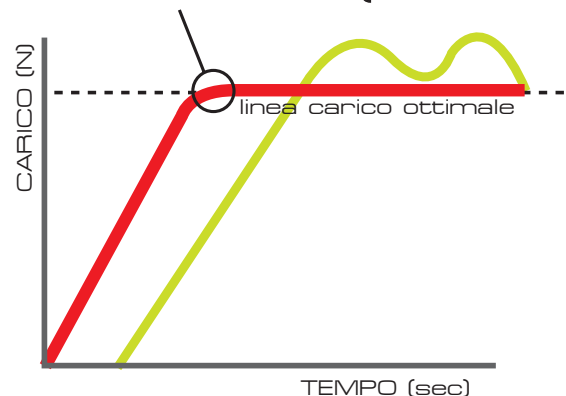
Standards ISO 6507 -6506 –ASTM –JIS

Innovative optical system for Vickers- Knoop & Brinell measurements with a wide selection of microscope objectives. The turret is well recessed for protection against mechanical damage. The intelligent software selects the active magnification for measurement based on the test loads applied. (Available on model WIKI 200)

The measure head also encloses the control system

The control system also regulates with high precision and accuracy the load control through the closed loop cell electronically, thus eliminating the associated dead weight issues of inertia & weight misalignment. WIKI 100 Vickers Hardness tester is non-susceptible to table vibrations.

CLOSED LOOP (PAT AFFRI)



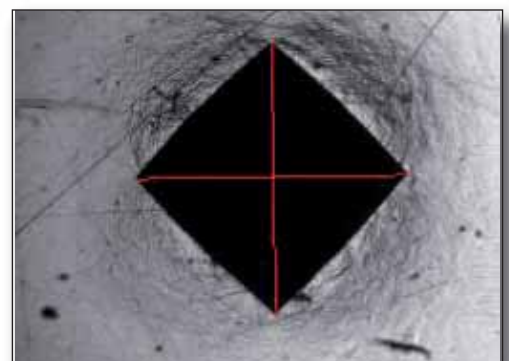
The single start command sets the test sequence automatically, no matter how far the Z (vertical) head is in relation to the specimen surface. The head will lower & focus onto the specimen, rotate the turret to the penetrator position & apply the selected load from the one command. (Patented Affri)



The measurement head moves in a vertical direction. Ergonomic design. The measurement head will travel automatically to the secured specimen on the movable xy specimen vise on the large rigid instrument base.



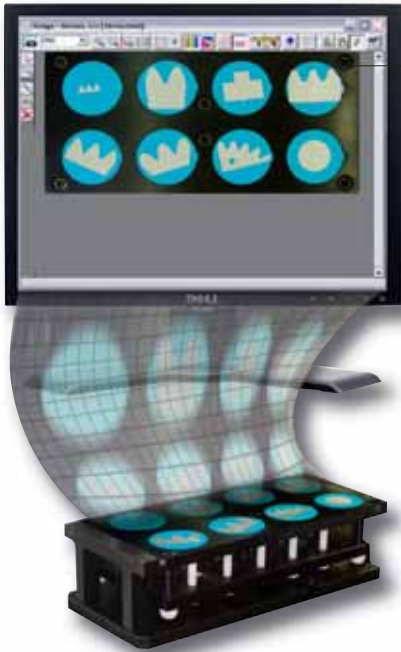
Built in auto image exposure system to ensure correct illumination conditions regardless of specimen optical surface condition. Exposing the impression edges very clearly. Autofocus system is active on every surface.



Computer controlled with Windows based user friendly software. Auto measuring the hardness value and impression diagonals and load display with virtual joystick and touch screen control auto-calculating sample statistics and CHD curves.



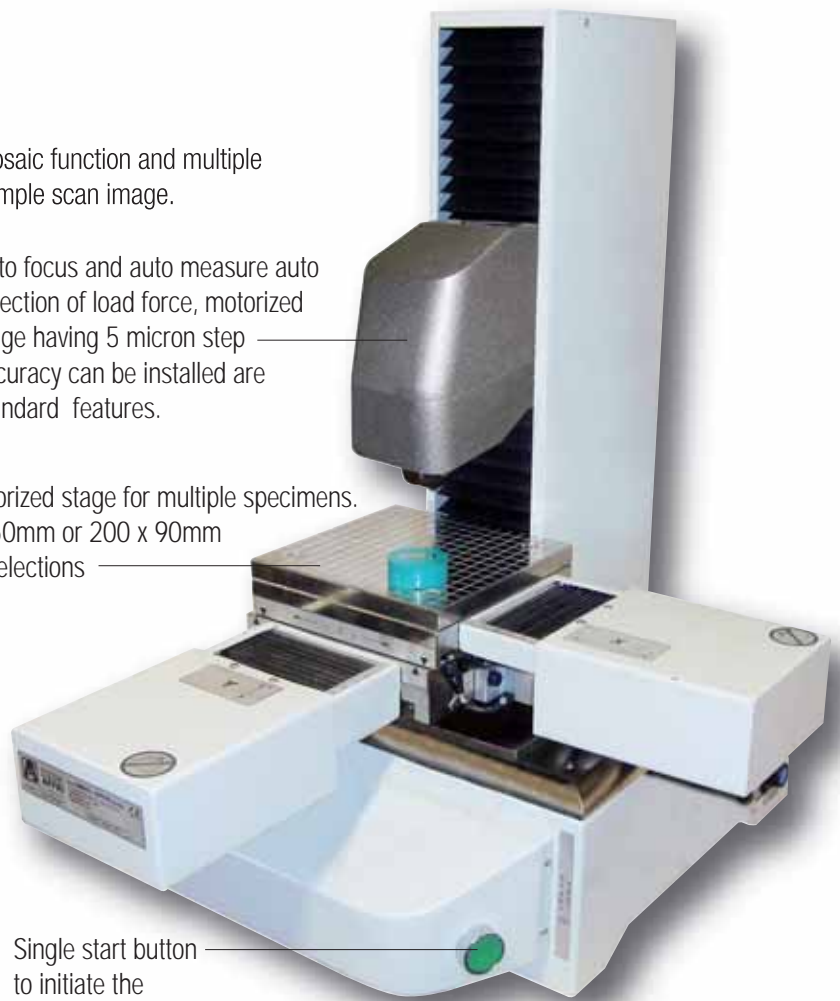
WIKI 200



Mosaic function and multiple sample scan image.

Auto focus and auto measure auto selection of load force, motorized stage having 5 micron step accuracy can be installed are standard features.

XY Motorized stage for multiple specimens. 100 x 50mm or 200 x 90mm stage selections



External stage control via user friendly joystick control



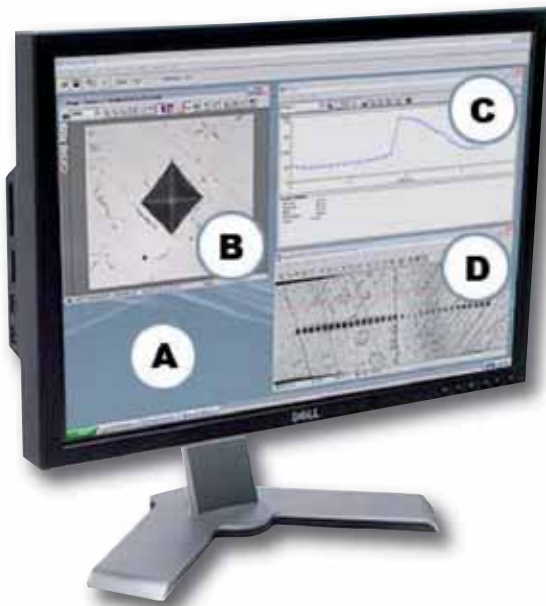
Single start button to initiate the analysis cycle

Saving time and Saving Money. Wiki 200 is the top-of-the-line automated Vickers hardness tester. Micro + macro Vickers combined completely controlled by internal high resolution load cell system (Affri patent) only one start input to perform the

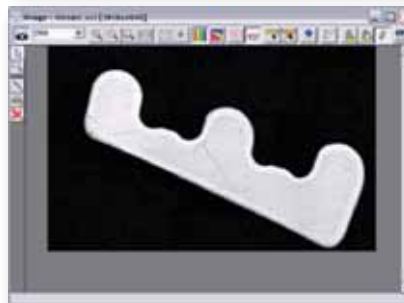
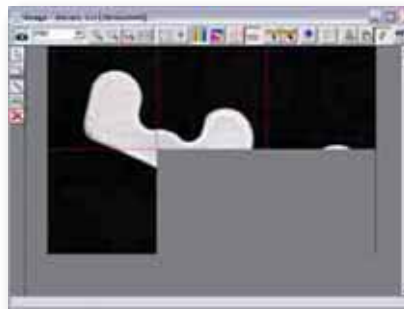
programmed test cycle it provides added precision when positioning indents thanks to its integrated image stitching technique and its layout tools. By visualizing the complete sample, no matter its size, traverses and/or patterns can now be mapped-out with unequalled precision. Auto focusing, and automatic measuring and reporting, allow this system to function unattended, thus increasing throughput and productivity.

Intelligent Workspace Layout

- A. **HD Resolution monitor** - It optimizes the desktop space in high resolution 1900 x 1200 pixels, or better the depth of superficial hardness CHD.
- B. **Ambient Window** - The intuitive interface in Windows environment it allows an easy view of the surface of the samples. Also displays user friendly instruction icons.
- C. **Window with hardness vs depth graph**, it allows to create or to modify of Measurement of the sample and its position therefore to visualize in real time the movement of the auto stage.
- D. **View of all impression** results clearly indicated and linked back to the results table and hardness vs depth graph.

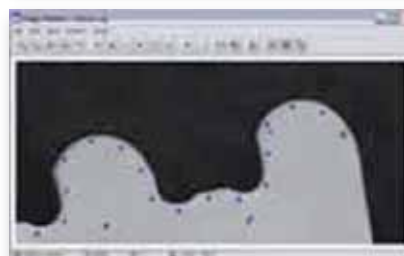
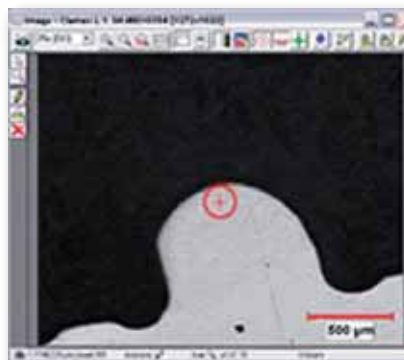


Intelligent Mosaic feature, offers a complete, high definition image of a sample, no matter its size. This innovative feature provides an “aerial view” of the sample, offering sharp close-ups as well as global views. The Mosaic Image makes it possible to position as many as 99 traverses – to within a few microns. Indentation patterns can then be placed within the area of interest more accurately.



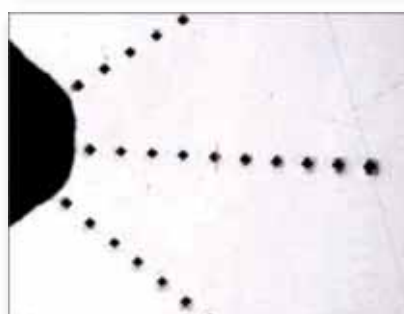
Unique Reference Circle Tool

This exceptional tool allows indents to be positioned at precise distances from the sample's edge. The Reference Circle is the ideal tool for irregular or curved samples, where indents need to be at a given distance from the edge. Used as a visual guide in conjunction with the Stage Pattern Window.



Multidirectional Traverses

Thanks to the powerful stage control interface, Affri WIKI 200 single or multiple traverses/patterns can be rapidly created. Save, copy, or paste traverses/patterns to predefined locations with a simple click of the mouse. The T-Bar tool rotates traverses to any angle to ensure it is perpendicular with the sample edge or to accommodate sample tilt.



4 Simple operation steps in order to execute the entire operation cycle

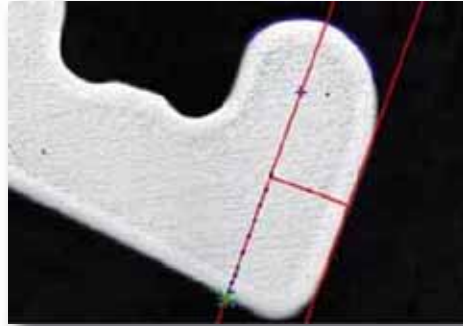
1. See the Entire Sample

Place the sample in the sample-holder and, with one click, build a mosaic image of the sample and set reference points for one or more traverses using the annotation tools.



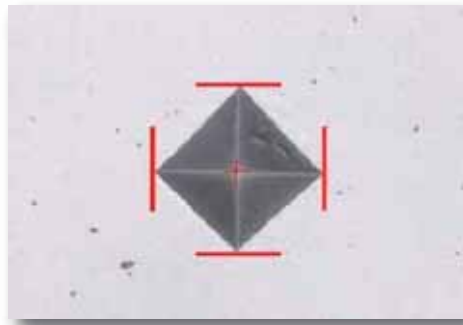
2. Set-Up Traverses/Patterns

Open, modify, or create new traverses/patterns using reference points or lines. Traverses and patterns can be individually adjusted.



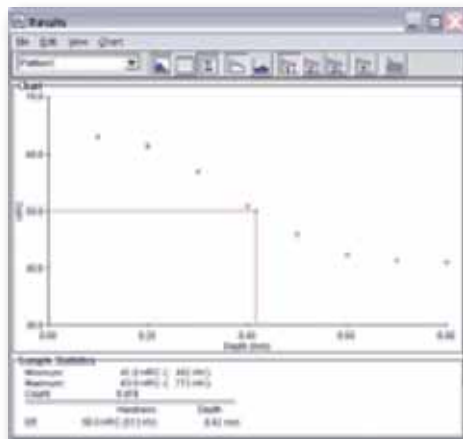
3. Click & Walk Away

The software intelligently follows the predefined patterns, indents the sample, focuses when needed, measures, and generates data dynamically. Everything is automated, freeing users for other tasks.



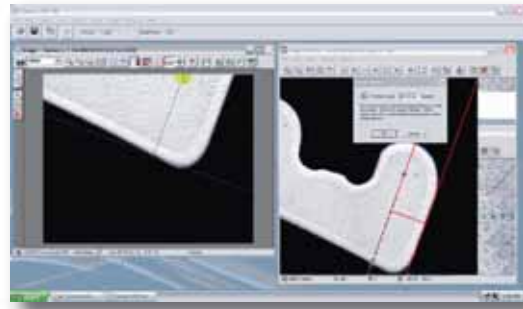
4. Get Results

Review results in graphical and/or tabular format. Export results to the spreadsheet application of your choice, or simply print standard or customized reports.



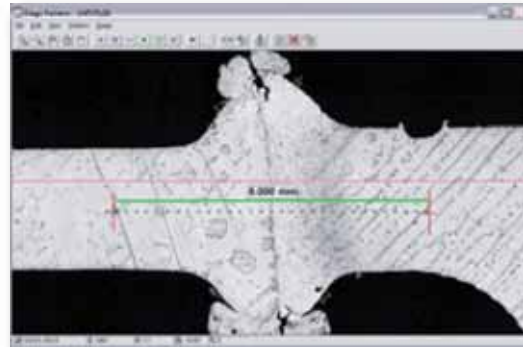
Intelligent positioning

With one simple click of the mouse the line is determined, the angle and the point of departure of the impressions. Zoom up to look at the entire sample in order to identify the pattern direction.



Linear measurements

Traverse centered on a weld sample. The entire indentation distance can be simply measure in one complete view and added to your final report.



Multi-sample support

Sample holders have unique designs, allowing users to analyze mounted or un-mounted samples. Samples are easily removed or inserted with a simple slide-in drawer system. Various type holders are available for 100 x 50 or 200 x 90mm auto-stages.



Incorporated validation test block

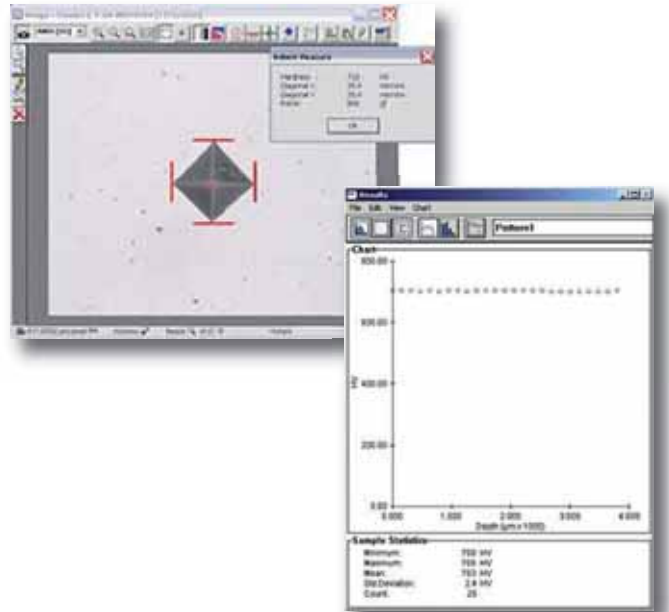
Some holders accommodate a test block, allowing users to validate the calibration of the micro-hardness tester at any time without having to remove the sample.



The WIKI 200 Image resolution

Uses a high-resolution digital camera acquires images with a resolution of 1.3 megapixels. Producing the sharpest images and finest details ever seen in micro-hardness testing. This means precise and repeatable results. Additionally, indent diagonals are measured from tip to tip for both Vickers & Knoop measurements.

The graph is demonstrating the reproducibility & repeatability of a Vickers test block with a known hardness of 703HV with a +/- of 5 HV. Even with over 25 indentations the variation is well within the allowable 1% as per ASTM & ISO standards.

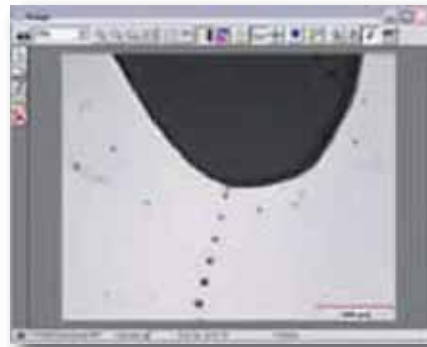


Auto control of the illumination system

The software is constantly monitoring the light intensity and provide perfect illumination intensity via the camera auto-exposure.

Background- independent detection

From perfectly polished to rough & etched samples the software will measure indents on any sample surface, regardless of the contrast level.

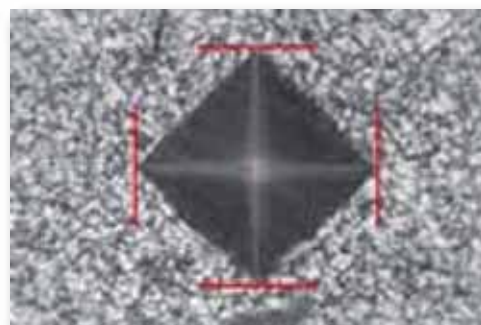


Multiple Conversion Tables

Native hardness measurements are in HV or HK. Conversion tables for HRA, HRB, and HRC scales are in compliance with ASTM E-140 standards. Up to six additional custom conversion tables can be defined.

Case depths are calculated automatically by selecting a case hardness value.

A total of 4 case depths can be displayed simultaneously on the same graph.



Define Hardness Table

Identification: HV, Value: 703

Indent: Puchard 137

Unit Symbol: HV0.05

Indent: All Test HV0.05

Description:

Valid For:

Thickness: [] μm

Temperature: [] μm

Recommended Range:

Minimum: [] HV

Maximum: [] HV

1 HV	Rockwell B (HRB)
1 240	92.1
2 274	92.8
3 309	93.5
4 343	94.2
5 378	94.9
6 412	95.6
7 447	96.3
8 481	97.0
9 516	97.7
10 550	98.4
11 585	99.1
12 619	99.8
13 654	100.5
14 688	101.2
15 723	101.9
16 757	102.6

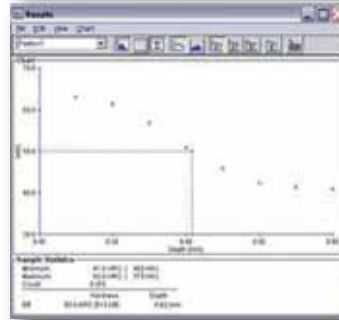
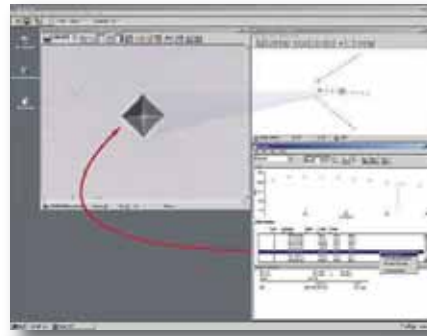
Results

Instantaneous Data Review

Following an automated run, individual indents can be tracked by clicking on the numbered impression. Intelligent software accurately remembers where the impression was made and automatically moves the stage to the chosen indent.

You can choose to not include or re-measure the impression manually with the movable gridlines. When excluded or re-measured, statistics are updated on the fly.

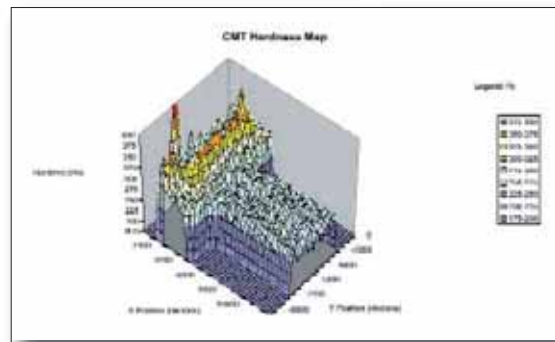
Instant graphical view of Effective Case Depth.



Report Creation

Print results directly from Clemex CMT or export data to the spreadsheet program of your choice for further statistical analysis. Images and histograms can easily be copied and laid out in a standard or customized MS Word report or MS Excel template.

The 3-D graph demonstrates hardness based on color gradient.



Report with integrated sample images and the indentation traverses.

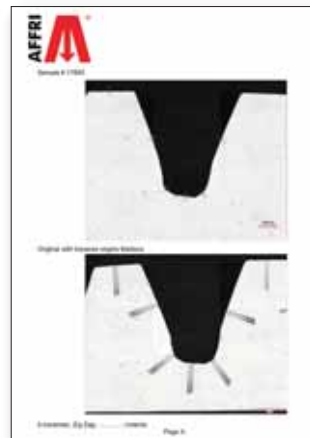
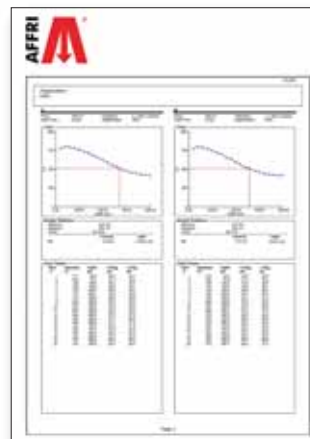


Diagram with CHD with outlined depth.



WIKI 30

- A new breakthrough in Vickers Hardness Testing Portable one instrument with a test load from 0.2 to 31.2 kgf.
- Eliminating the need to cut sample and perform test on laboratory, saving time, money and more accuracy on result.

Automatic instrument created for Brinell e Vickers hardness testing (simple and stitch) on tubes with a diameter of 100mm up to almost 700mm (by using the hook – chain system).

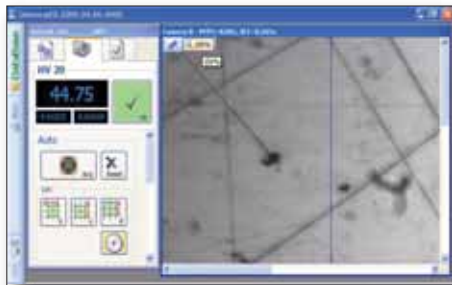
The instrument is portable and designed for being light and resistant; the stand's particular shape allows to have both a plate supporting surface for testing details with parallel sides and a "V" plate for centering tubular details. Designed for housing a hook-chain system, it allows to anchor it to large dimension tubes, thus giving precise tests under optimal stability conditions.

This instrument peculiar quality resides in its simplicity and user friendliness. "Wiki" family (Wiki30- Wiki100) is fully automatic; thanks to the autofocus, once the measuring cycle is started, the instrument will perform the test, later analyse the mark and display the hardness value, duly calculated, on the palmtop PC screen supplied with the instrument.

The powerful analysis and mark optical recognition software (by Easydur System), gives large possibilities for changing the parameters both testing and visual in order to allow valuable tests and perfect optical recognitions under any circumstance. The software is equipped with statistics, data export and cataloguing of the testing sessions.



Pc with included software



Automatic mark recognition, the whole testing cycle is activated and finished just pushing a button

Handles

Pc with software



"V" Stand

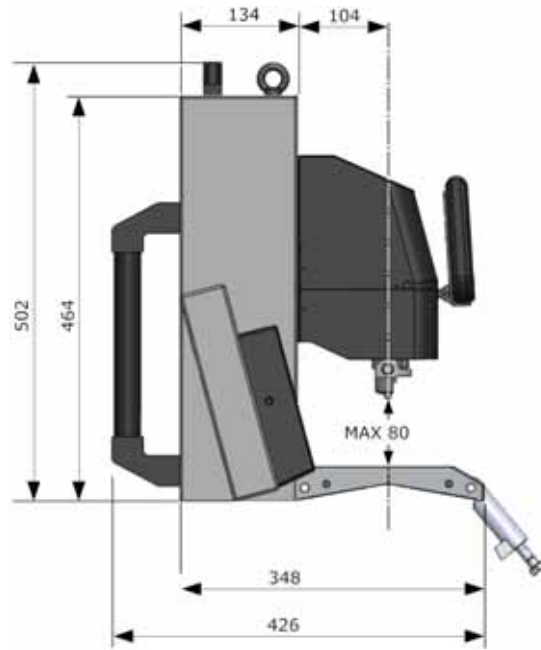
Electronic

Chain Hook

Tubes support Ø100



Detail of the chain – hook system



Standard accessories WIKI 30

- Diamond Penetrator 136° Vickers
- Reference Test Block HV
- Microscope Objectives 5,10,20,40X
- Auto-Measurement Vickers, Brinell
- Auto-Focus
- Auto Z Axis Movement
- Software Control: Built-in touch screen programmable Icon driven system with Easydur measurement system
- Camera System: Built –in CCD auto exposure high resolution camera 840 X 680 pixels B/W
- Illumination system: energy efficient cold LED light source
- Battery auto charging

Standard accessories WIKI 100

- Diamond Penetrator 136° Vickers
- Reference Test Block HV
- Microscope Objectives 5,10,20,40X
- Auto-Measurement Vickers, Brinell
- Auto-Focus
- Auto Z Axis Movement
- Multiple Sample Holder
- XY Specimen Stage Manual 100x100mm with micrometer 25 Div.
- Software Control: Built-in touch screen programmable Icon driven system with Easydur measurement system
- Camera System: Built –in CCD auto exposure high resolution camera 840 X 680 pixels B/W
- Illumination system: energy efficient cold LED light source
- Battery auto charging

Standard accessories WIKI 200

- Diamond Penetrator 136° Vickers
- Reference Test Block HV
- Microscope Objectives 5,10,20,40X
- Auto-Measurement Vickers, Brinell
- Auto-Focus
- Auto Z Axis Movement
- Multiple Sample Holder
- XY Specimen Stage Automatic 100x100mm or 240x100 mm
- Software Control: Clemex driven software with auto-threshold & mosaic function
- Camera System: Built-in 1.3 mega pixel USB2 B/W camera with auto-expose
- Illumination system: energy efficient cold LED light source
- Battery auto charging

Options for WIKI 200:

- CL-07-210 Self Level Vise Base, 240x100 mm
- CL-07-215 Self Level Vise Drawer 16 x 1" Dia. Samples
- CL-07-220 Self Level Vise Drawer 8 x 40mm Dia Samples
- CL-07-222 Self Level Vise Drawer 3 x Test Block Holder
- Knoop Test Block 700K
- Knoop Penetrator
- Penetrator 1mm Dia For Brinell
- Brinell Test Block

TECHNICAL DATA

	WIKI 30	WIKI 100	WIKI 200
Conforms with Standards	Vickers- Brinell - Knoop ISO 6507- 6506.-ISO 4545-ASTM E 92 - ASTM 384 –JISZ2251		
Operation	Automatic		
Objective/Indenter Turret	Automatic Motorized		
Magnification Selection	Manual	Manual or Automatic-Motorized on request	
Microscope Objectives	Manual 75x 150x 225 300x 400x	Automatic 75x 150x 225 300x 400x	
Auto-Reading Measurements	automatic Easydur system		Automatic Mosaic Auto-threshold
Computer	Removable/ Tilt able	Touch Screen	Full PC Computer with 24" Monitor
Software Operating System	Windows XP Professional		
Camera System	860 x 640 Pixels HD CCD B/W		1.3 MP USB2 B/W HD
Illumination System	Energy Efficient Cool LED Light Source		
Measurement Resolution	0,1 HV – 0,1 HB		
Working Distance Z Axis	80 mm		104 mm
Focusing System	Auto-Motorized		
Stage Base	open V under face X Y table upper face removable	100 X 100 - 0,01mm div.	250 x 150mm
Moveable Stage	Manual XY		Multiple Sizes
X - Y table	100x100 mm manual		100x100mm - 240x100mm Motorized
Stage Resolution	0,01mm		1 μm
Start	One start input to take contact with test surface, generate indentation and come back without interruption and auto focus		
Contact indenter - test surface	automatic contact and test cycle from every distance		
Visible area for multisample (mosaic)			100x50 or 200x90 mm
Multitest Y axe	incorporate on the indenter head no need to move test sample 0,01 mm		
Portable Employment	Portable employment for round and flat surface no limit on round dimension it can be converted to bench use with X Y table	on request	
Program Console	User Friendly Icon Driven Program touch screen pen		
Loading Mechanism	Incremental Load Cell Without Inertia no Friction no Vibration		
Load Selection	0,2 - 0,3 - 0,5 - 1 - 2 - 3 - 6.25 - 10 - 15 - 15.625 - 25 - 30 - 31.25 kgF 1.961 - 2.942 - 4.903 - 9.81 - 19.61 - 29.4 - 61.3 - 98.1 - 147.1 - 153 - 245.2 - 294.3 - 306.5 N		
Load Selection on request	10g - 20g - 30g - 50g - 100g - 200g - 500g - 1KgF - 2KgF - 2,5KgF - 3KgF - 5KgF 10KgF 0,098 - 0,196 - 0,294 - 0,49 - 0,981 - 1,962 - 4,905 - 9,81 - 19,62 - 24,52 - 29,43 - 49,05 - 98,1 N		
Data Communication	USB – BT - RS 232 C		
Weight	20 kg	38 Kg	70 - 90kg
Power Supply	115—240 VAC 50/60 HZ		
CE Conformance	Yes		
Country of Origin	Italy		



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