WIKI JS

Vickers, Knoop, Brinell

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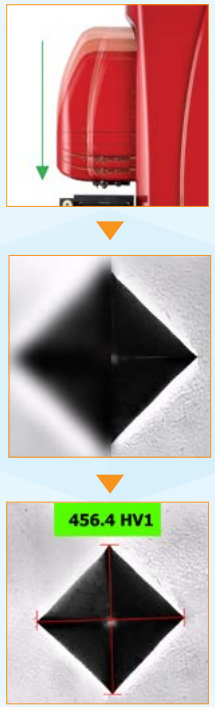
WIKI JS - THE MODELS

WIKI 100 JS



WIKI 200 JS

Motorized turret 6 positions for indenters and objectives.
Motorized Z axis.
Automatic measurement with autofocus.
Software for automatic evaluation of indents.
Automatic lighting.
As optional: Manual XY stage 100x100 mm with 10 µm step.

The automatic measurement minimizes subjectivity associated with human intervention. The tester can be used by different operators.

Top-of-the-line of automation and accuracy for Vickers and Knoop.
Fully motorized system for Case Hardness Depth test **CHD**.
Single or multiple samples in automatic cycle.
Motorized turret 6 positions for indenters and objectives.
Motorized Z axis.
Automatic measurement with autofocus.
Software for automatic evaluation of indents.
Automatic lighting.
Motorized XY stage 100x60 mm or 200x100 mm with 0,5 µm step

Everything is automated, freeing users for other tasks and minimizing subjectivity associated with human intervention.

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Standard | Optional

WIKI JS LOAD FORCE RANGE

0.0098	0.0196	0.049	0.098	0.1471	0.1961	0.2452	0.4903	0.9807	1.961	2.942	4.903	9.807	19.61	29.42	49.03	98.07	196.1	294.2	490.3	980.7	N
0.001	0.002	0.005	0.01	0.015	0.02	0.025	0.05	0.1	0.2	0.3	0.5	1	2	3	5	10	20	30	50	100	kgf

WIKI JS 3 LOAD FORCE RANGE

0.0098	0.0196	0.049	0.098	0.1471	0.1961	0.2452	0.4903	0.9807	1.961	2.942	4.903	9.807	19.61	29.42	49.03	98.07	196.1	294.2	490.3	980.7	N
0.001	0.002	0.005	0.01	0.015	0.02	0.025	0.05	0.1	0.2	0.3	0.5	1	2	3	5	10	20	30	50	100	kgf

VICKERS FEASIBLE TESTS - DIN EN ISO 6507 / ASTM E-384

HV0.001	HV0.002	HV0.005	HV0.01	HV0.015	HV0.02	HV0.025	HV0.05	HV0.1	HV0.2	OHV.3	HV0.5	HV1	HV2	HV3	HV5	HV10	HV20	3HV0	HV50	HV100

KNOOP FEASIBLE TESTS - DIN EN ISO 4545 / ASTM E-384

HK0.001	HK0.002	HK0.005	HK0.01	HK0.015	HK0.02	HK0.025	HK0.05	HK0.1	HK0.2

BRINELL DIN EN ISO 6506 / ASTM E-10 (Optional)

153.2	306.5	N	15.6	31.25	kgf	HBW2.5/15.6	HBW2.5/31.25

SUPERFICIAL R. DIN EN ISO 6508 / ASTM E-18 (Optional)

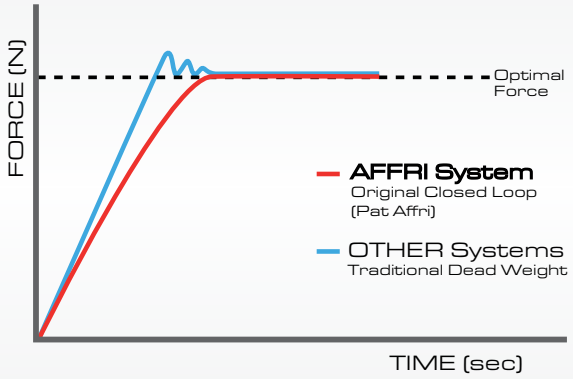
147.1	294.2	441.3	N	15	30	45	kgf
HR15 N/T/S/W/X/Y	HR30 N/T/S/W/X/Y	HR45 N/T/S/W/X/Y					

OPTIONAL TESTS:

Pack 1 HV/HK: HV0.001 - HV0.002 - HV0.005 (0.001 - 0.002 - 0.005 kgf)
Pack 2 HV: HV30 - HV50 (30 - 50 kgf)
Pack 3 HV: HV100 (100 kgf)

LOAD CELL AND CLOSED LOOP TECHNOLOGY

WIKI JS is the top-of-the-line of automation and accuracy for Vickers and Knoop hardness measurements in compliance with ASTM and ISO hardness standards. Load forces are applied through load cells and electronically controlled in "Closed Loop" (Pat. AFFRI) with a frequency of 1 khz. Each load force is automatically programmed and controlled assuring perfect linearity in every range eliminating the problems associated with traditional dead weight system testers. Results are not affected by any structural deflection, misalignment and external vibrations.



WIKI JS - MAIN FEATURES

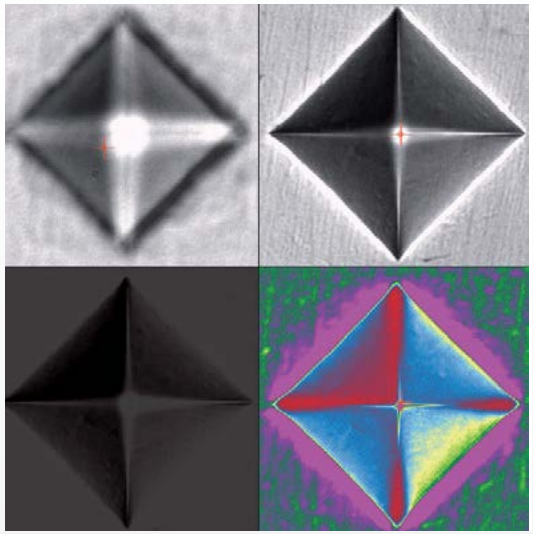
MOTORIZED HEAD AND AUTOFOCUS

Up to 300 mm electronically controlled height capacity for fast or slow vertical movements.
Very rapid and ultra-sensitive drive for a perfectly accurate autofocus.
The autofocus combined with the automation of the whole software avoids human influence and gives repeatability even when used by different people.

6 SLOTS ROTATING TURRET

Horizontally rotating turret with four slots for magnification lenses and two for indenters. All optical microscope objectives can be pre-installed and combined with indenters for every Vickers and Knoop hardness scales.
Optical objectives selection of 2.5x – 5x – 10x – 20x – 40x – 50x – 100x.

IMAGE AUTO-ANALISYS



With software controlled focus, image cleaning, shading correction and regulated light source, reproducible results are obtained regardless of the number of indents measured. From perfectly polished to rough and etched samples, the auto-detection capabilities of WIKI JS allow measurements on a variety of sample surfaces.

LARGE AND STABLE BASE

The wide work table base is capable of bearing masses beyond 1000 kg which allows for steady hardness measurements on bulky or irregular pieces. It also offers a comfortable working base for small pieces.

X/Y MANUAL TABLE

Manual XY table 100x100 mm with 10 µm step. This table is a perfect solution for not-daily multi indentation test cycles. The table allows manual CHD case depth tests and can be provided with digital micrometers for automatic CHD graph generation.

X/Y FULLY MOTORIZED

XY motorized table with an accuracy of +/- 0.5 µm steps. Reference points for indentation patterns can be positioned precisely where they are required. The table allows automatic multi-indentation CHD test cycles on multiple samples with perfect positioning on the entire area, no matter the indentations amount.

WIKI 100 JS SOFTWARE

High definition monitor 24”

Clean vision of the indent

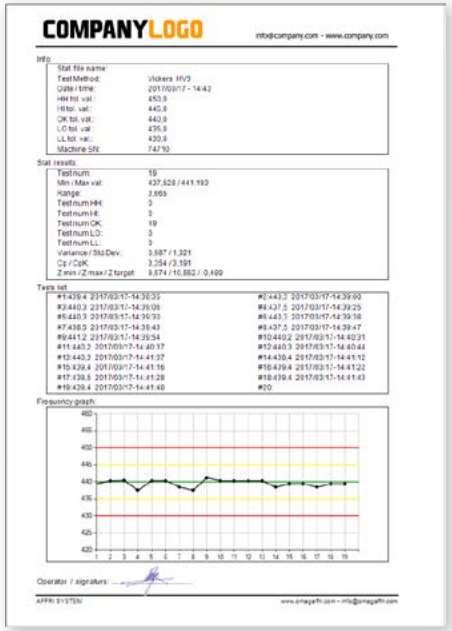
Visual control of all results and live statistics

Direct conversion in HR, HB, HK and any other hardness scale.

Print results from template or save/ import tests cycles from archive.

Control the whole instrument with the mouse.

Customizable test report with client logo, specimen information, statistics and graphs or export as CSV file.



The AFFRI Vickers measuring software has been studied to fulfill any client need and to be accessible to every operator.
This is a **“SMART SOFTWARE”** which results extremely easy to be used and can be customized to display only needed testing procedures.

ONLY 5 ICONS TO GET RESULTS:

1 - MAGNIFICATION

2 - AUTOFOCUS

3 - AUTO-LIGHT

4 - TEST METHOD

5 - AUTOMITIC MEASURE

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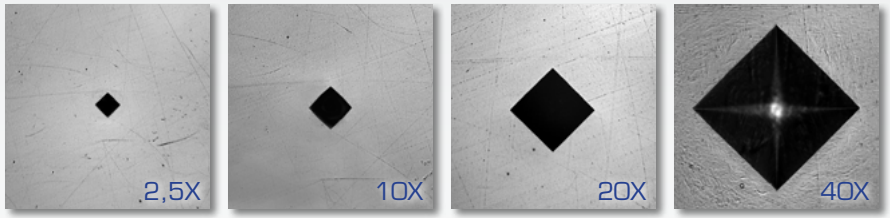
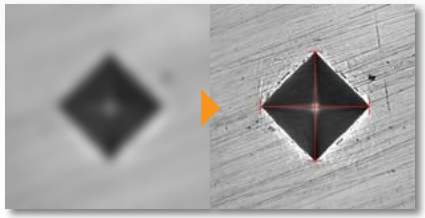
SMART SOFTWARE - MAIN FEATURES

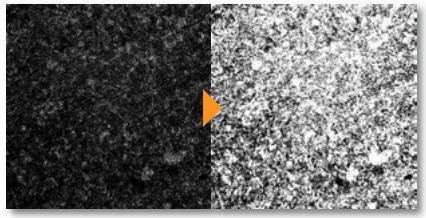
REAL MAGNIFICATION - Tanks to the motorized turret, different lenses can be selected with a simple click. Digital zoom is also available.



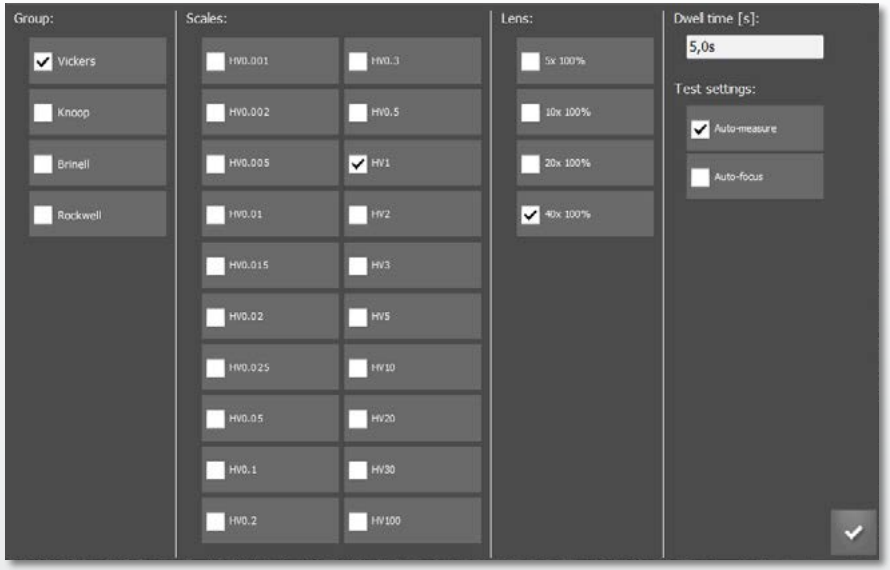
AUTOFOCUS - Motorized focus is always at the right linear quote.



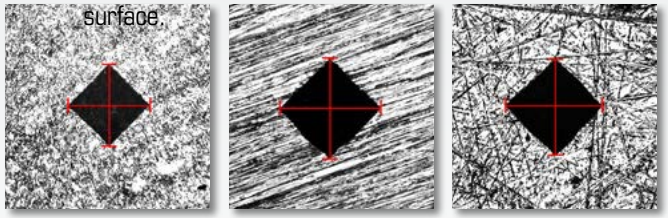
AUTO-LIGHTING - Automatic light regulation on any surface.



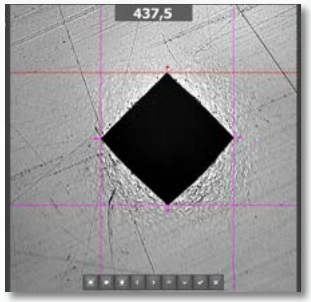
TEST METHOD SELECTION
Only one window for the selection of everything you need for the test.



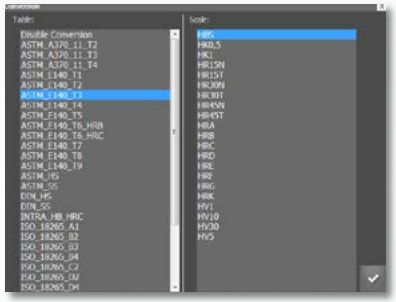
AUTO MEASURE ON CRITICAL SURFACES
From perfectly polished to rough & etched samples, the software will automatically measure indents on any sample surface.



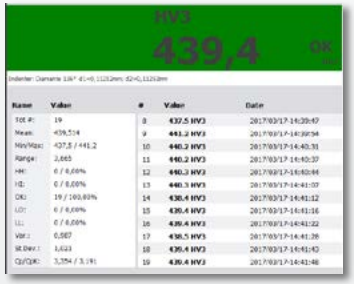
MANUAL MEASURE
Manual indent evaluation.



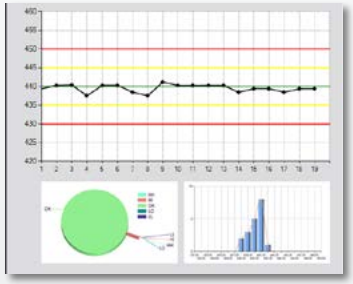
AUTOMATIC CONVERSION
From standards to hardness scale.



DYNAMIC RESULTS
Color highlighted results and live statistics. Watch result list and edit or modify single tests.



LIVE GRAPHS
Choose between 4 graphs. Print results from template or save and import tests cycles from archive.



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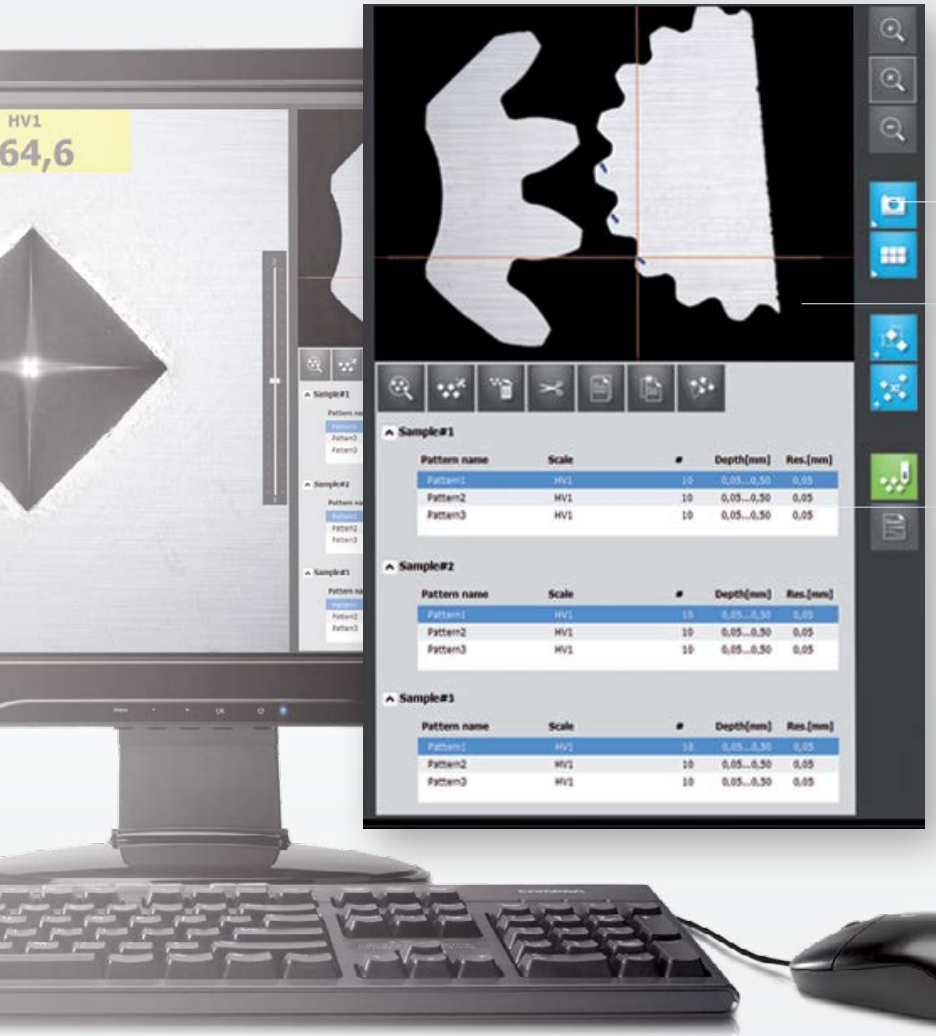
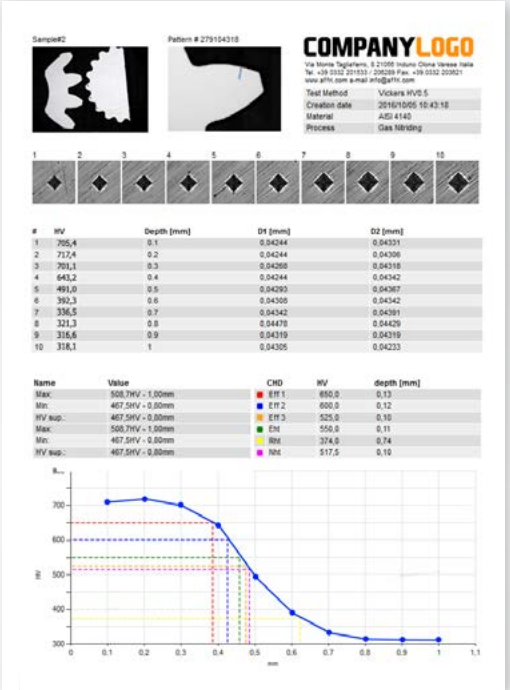


Get real and detailed images of each sample.

Visual control of each sample and patterns.

See a list of each sample and each pattern.
Save or import traverses, edit, move, copy and paste.

Control the whole instrument with the mouse including dynamic movements on X/Y/Z axis at fast or slow speed.



Customizable test report with client logo and information. Put as many sample information as you need, including pictures of the specimen and test area. See the pattern and each indentation at a glance. Examine results, statistics and CHD diagram with outlined depth. Results can be exported also as CSV file.

SINGLE OR MULTIPLE SAMPLES IN AUTOMATIC CYCLE: Just map out indentation traverses where they are required, set the load and press START, the hardness tester intelligently follows the predefined patterns, indents the sample, focuses when needed, measures, and generates data dynamically.

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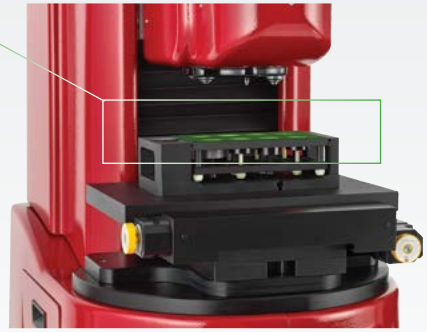
The software is designed for an intuitive and simple use. With three easy steps, it provides added precision when positioning indents thanks to its integrated macro view technique and layout tools. By visualizing the complete sample or a single sample, traverses and/or patterns can now be mapped out with unequaled precision.

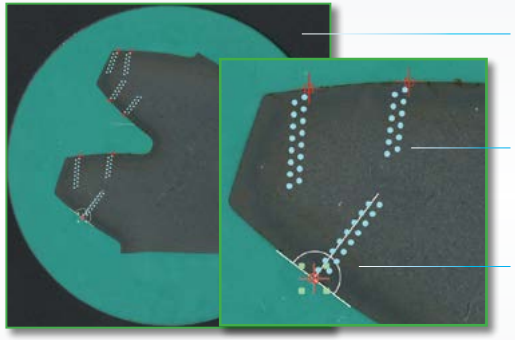
01 SURFACE MAPPING

Obtain a perfect, detailed, high resolution view of the whole sample holder offering sharp close-ups as well as global views. Multi sample vision offers a complete image of a sample without any distortion, no matter its size. No need for a second camera.



02 SETUP PATTERNS

Save, open, modify, copy and paste or create new patterns to predefined locations with a simple click. Traverses and patterns can be individually adjusted. Create case depth traverses or fill a surface with indentation points to control sample uniformity.



Samples can be mapped separately. Singular identification allows to group patterns regarding only one sample. Results storing and reporting will be well organized.

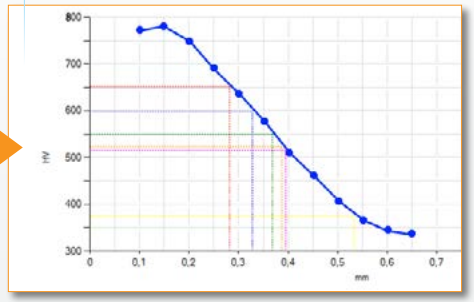
Traverse's indents can be modified at any time: delete, move or place a new one. Set where to perform autofocus and choose a different test load for each pattern if needed.

Rotate traverses with T-Bar tool.

Reports are automatically generated and archived during the test cycle.
Just click on one plot to check the indentation.

03 PRESS START GET RESULTS

The software follows the patterns, indents the sample, measures, and generates data dynamically. Review results in graphical and/or tabular format. Export results to any spreadsheet application, or simply print standard or customized reports.



EVERYTHING IS AUTOMATED, FREEING USERS FOR OTHER TASKS: Auto focusing, automatic measuring and reporting, allows this system to function unattended for hours without interruption, saving time and money, thus increasing output and productivity.

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AUTOMATIC MEASUREMENT CYCLE ON MULTIPLE SAMPLES

CHD TRAVERSES AND PATTERNS
Single or multiple traverses/patterns can be rapidly created. With one simple click of the mouse the line, the angle and the starting point of the indentations are determined.

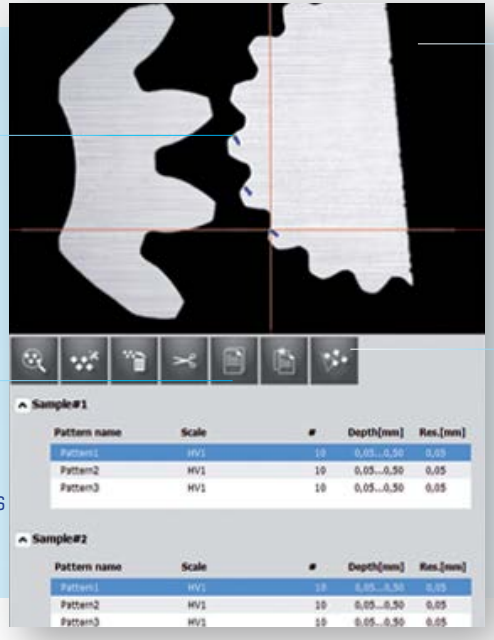
CREATE, SAVE AND RELOAD
No need to create the same pattern over and over again. This feature is extremely useful for users who analyze the same kind of areas repeatedly. Once a pattern has been created, you can save it and re-load it later to duplicate the analysis on a new sample.

EDIT, MOVE OR DELETE
Select the pattern from preview image and modify direction, position, hardness scale, number and distances of indent, pattern name and point of focus.

ZOOM IN AND OUT
Zoom out to look at the entire sample in order to identify the pattern position and direction. Zoom in to verify pattern distances and spot surface imperfections.

Traverse layouts and test points can be programmed by simply clicking on the desired test point locations.

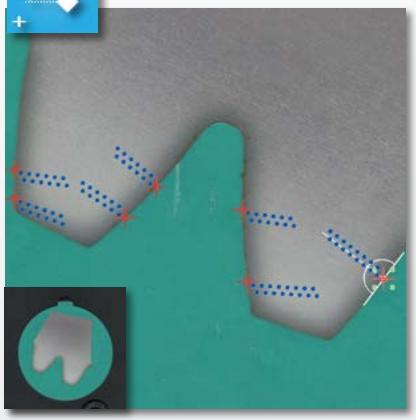
Save, cut, copy, or paste traverses/ patterns to predefined locations with a simple click of the mouse.



Use image preview to control the whole sample patterns. Identify the test zone and place patterns with a simple mouse click.

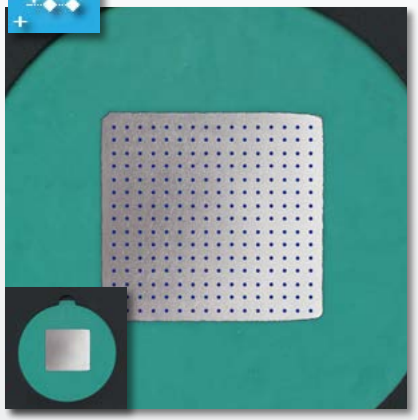
The T-Bar tool rotates traverses to any angle to ensure its perpendicularity to the sample edge or to accommodate sample tilts.

CHD TRAVERSES
Case Hardness Depth

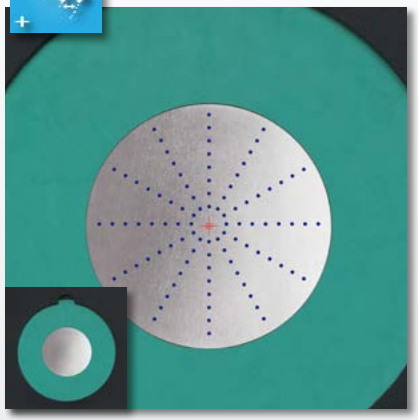


FREE PATTERNS
Create the shape you want

SURFACE PATTERN
Study sample uniformity



RADIUS PATTERN
Study uniformity per radius



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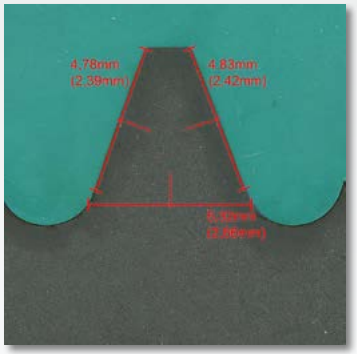
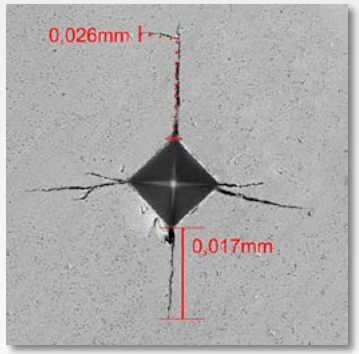
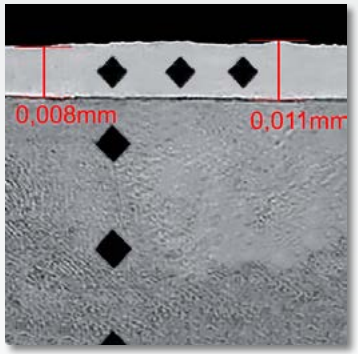
LENGTH AND DRAWING TOOLS

Use this feature to place reference points, find the middle, text some notes and measure the length of anything.







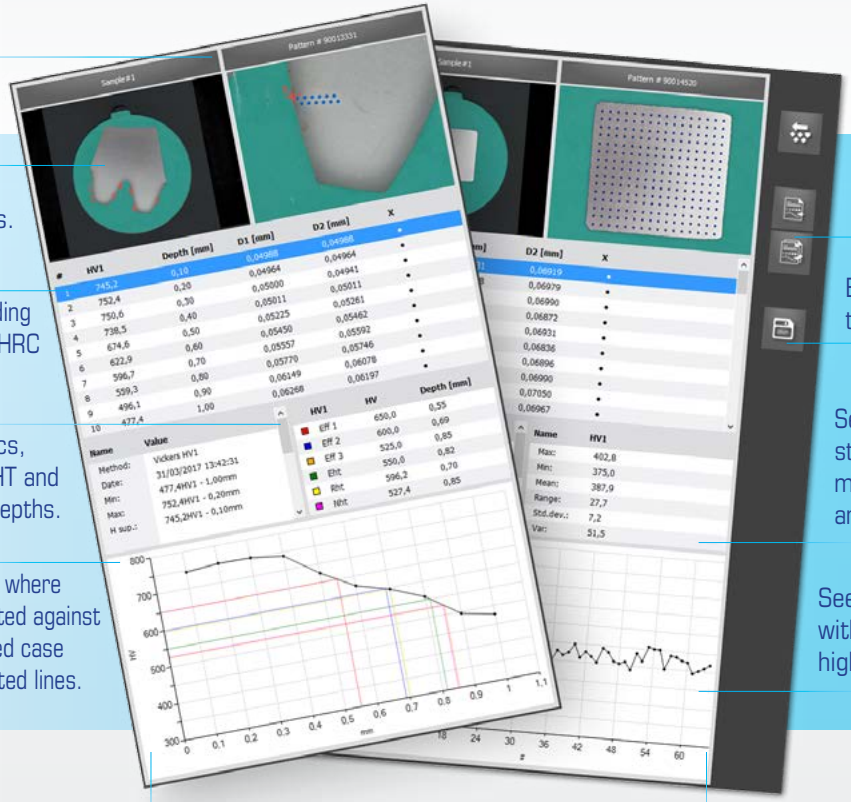
No matter the complexity of the pattern layout, combining intelligent macro views with drawing and length tools allows traverses and/or patterns to be positioned precisely where they are needed.
These features also help finding the center of the sample or the center of a gear tooth flank and the pitch point. Placing traverses and pattern is made easy.
Use this tool to draw straight and/or parallel lines, add text notes and measure lengths for report purposes.

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, re-measure the impression manually with the movable gridlines or make a new indent. When excluded or re-measured, statistics are updated on the fly.
Instant graphical view of Effective Case Depth.

REPORT CREATION

Print results directly from the software or export data to the spreadsheet program of your choice for further statistical analysis.



Select the sample and the pattern.

Spot tested zone from number labels.

See each result including depth, diagonals and HRC conversion or others.

See dynamic statistics, define CHD, RHT, NHT and three custom case depths.

See Case Depth chart where hardness value is plotted against depth. Identify specified case depth values from dotted lines.

Export single or all reports in PDF.

Export data as text file or CSV.

See preselected statistics including max, min, mean and deviation.

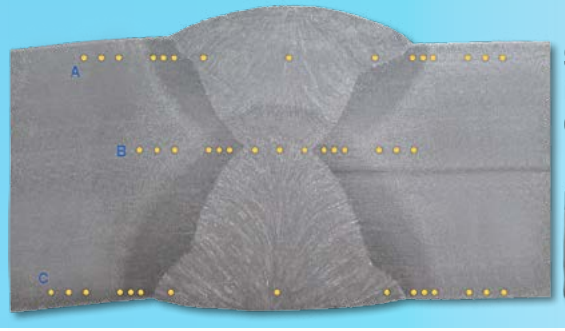
See uniformity chart with high and low highlighted tolerances.

Detect unexpected results, click the plot to go to indent. Verify, measure again or replace with a new indent.

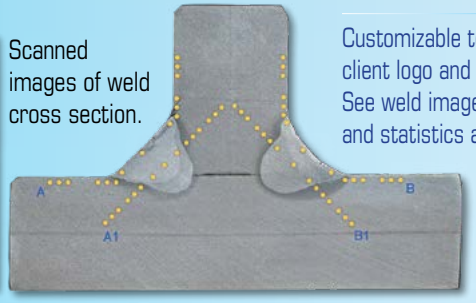
AUTOMATIC MEASUREMENT CYCLE ON WELDS

TESTING ON WELDS

After scanning the whole sample, the fusion zones and the HAZ are clearly visible and distinguishable from the base material, even with a scratched surface.
Using software's tools it is easy to draw different indentation patterns lines with correct and precise positioning. In less than one minute add pattern positions with determined spacing between indents, defined distance from the border, from inside and outside surface, from fusion line or weld centerline.
The entire indentation distance can be simply measure in one complete view and added to your final report.

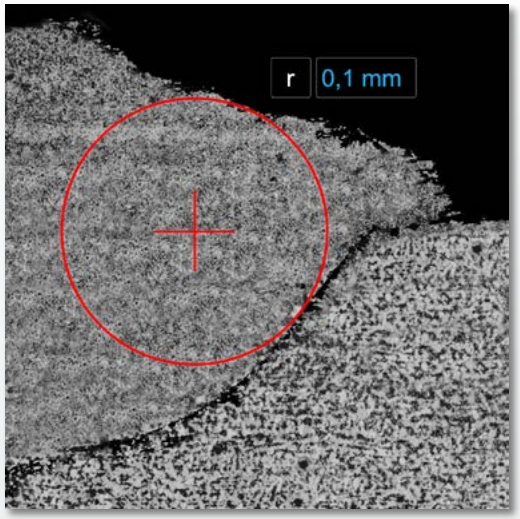


Scanned images of weld cross section.



Customizable test report with client logo and sample information. See weld image, pattern, results and statistics at a glance.

See hardness curves grouped all together.



REFERENCE CIRCLE TOOL

Ideal for irregular or curved samples, where indents need to be at a given distance from the edge. This exceptional tool allows indents to be positioned at precise distances from the sample's edge. Once a radius is specified, the software shows a red circle around the indent position. Use this reference to go across a border and/or zone and add the indent position.
This visual guide is the fastest way to create a defined pattern on a multi-zoned or irregular sample.

CUSTOM STEP TOOL

When the tool is active, the virtual Joystick commands move the stage for the distance defined by step instead of a continuous movement.
Use this feature to create a pattern line where groups of spaced indents are placed in base material, HAZ and fusion. Define and fix a custom stage movement in X, Y or Z axis. Move on the point of interest (e.g. fusion line) and add an indent position for each spacing distance step.

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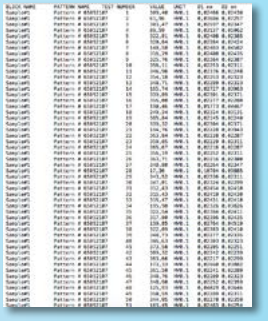
REAL TIME SUPPORT:

The remote control connects AFFRI's testers from anywhere in the world with AFFRI's engineers. Our experts can remotely diagnose any technical issue, provide additional operator training and update the software version.

CUSTOMIZABLE REPORT TEMPLATES

Report are created directly by Affri team. Templates can be 100% customized basing on any need. Not only company logo, sample map and indentation images, the report layout can be filled with any test information. Time by time, after the test cycle, choose what to export in final report by flagging or unflagging simple options.



TABULAR AND TXT DATA EXPORT

Print the results directly from the Affri software or export data in txt, csv and tabular format to the spreadsheet program of your choice for further statistical analysis. Images and statistics can be saved or copied easily and laid out in a standard, or customized, MS Office templates. Use "paste as link" native tool to update your data sheet with exported results and build a well organized database.

WIKI JS

ACCESSORIES

Affri provides a large variety of accessories to fulfill any purpose of test.
Customized solution based on your needs can be made for perfect tests on rough pieces. A series of different anvils is available to test every size of test piece.
Variety of accessories to facilitate testing on small or oddly shaped items.
All AFFRI's accessories are customizable according to customers specifications, depending on dimensions and geometry of the samples and finished products.

BENCH SUPPORT TABLE
Side table suitable right or left
Art. A010.0.024

INDENTERS
Vickers Art. 700.1.5.027
Knoop Art. 700.1.5.028
Dual indenter shaft Art. 700.1.5.029

TEST BLOCKS
Micro Vickers Art. A004.0.008
Knoop Art. A004.0.010
Test blocks with specific values are available.

OBJECTIVES
2,5X W001.0.006 / 5X W001.0.000 / 10X W001.0.001 / 20X W001.0.002 / 40X W001.0.003 / 50X W001.0.004 / 100X W001.0.005

MOTORISED TABLE 200x200mm
Travel 200x100mm with 0,5µm step
Art. A055.0.001

MOTORISED TABLE 150x150mm
Travel 100x60mm with 0,5µm step
Art. A055.0.002

MANUAL TABLE
100x100mm with 10µm step
Art. A009.0.001

CLAMPING VICE
Adjustable from 0 to 50mm
Art. A049.1.001

SINGLE SAMPLE HOLDER
Self level sample holder
Art. A.055.0.006 (Insert ring is needed)
Art. A.055.0.014 (All sample diameter)

MUTLI SAMPLE HOLDER
Up to 10 samples per time
Art. A055.0.003 (Base 200x100 mm)
Art. A055.0.004 (Drawer 10x30mm)
Art. A055.0.005 (Drawer 8x40mm)
Other drawer are available

AFFRI®

EXCLUSIVE DESIGN

The innovative design of WIKI JS is AFFRI's unique and exclusive.
Comfortable and ergonomic working station built for facilitate operator's movements, allowing an organized and well-ordered work. Built-in side case to preserve tester's accessories.

WORKING STATION

Solid and compact workbench with a large locker to accommodate computer, console and cables.
Wide side table, suitable right or left, to have all within operator's reach.

WIKI JS

FORCE RANGE

Vickers/Knoop:	0.0098 - 0.0196 - 0.049 - 0.098 - 0.1471 - 0.1961 - 0.2452 - 0.4903 - 0.9807 - 1.961 - 2.942 - 4.903 - 9.807 - 19.61 - 29.42 - 49.03 - 98.07 - 196.1 - 294.2 - 490.3 - 980.7 N (0.001 - 0.002 - 0.005 - 0.01 - 0.015 - 0.02 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2 - 3 - 5 - 10 - 20 - 30 - 50 - 100 kgf)
Brinell:	153.2 - 306.5 N (15.6 - 31.25 kgf)
Superficial Rockwell:	147.1 - 294.2 - 441.3N (15 - 30 - 45 kgf)

WIKI 100/200 JS FEASIBLE TESTS

Vickers:	HV0.01 - HV0.015 - HV0.02 - HV0.025 - HV0.05 - HV0.1 - HV0.2 - HV0.3 - HV0.5 - HV1 - HV2 - HV3 - HV5 - HV10
Knoop:	HK0.01 - HK0.015 - HK0.02 - HK0.025 - HK0.05 - HK0.1 - HK0.2 - HK0.3 - HK0.5 - HK1 - HK2

WIKI 100/200 JS 3 FEASIBLE TESTS

Vickers:	HV0.1 - HV0.2 - HV0.3 - HV0.5 - HV1 - HV2 - HV3 - HV5 - HV10 - HV20 - HV30
Knoop:	HK0.1 - HK0.2 - HK0.3 - HK0.5 - HK1 - HK2

OPTIONAL TESTS (Applicable to all models)

Superficial Rockwell:	HR15N - HR30N - HR45N - HR15T - HR30T - HR45T - HR15S - HR30S - HR45S - HR15W - HR30W - HR45W - HR15X - HR30X - HR45X - HR15Y - HR30Y - HR45Y
Brinell HBW / HBWT:	2.5/15,6 - 2.5/31.25

TECHNICAL DATA

Accuracy:	Better than 0.1 %
Principle of Operation:	Load Cell and Closed Loop (Affri patent)
Standards:	EN-ISO 6506 / EN-ISO 6507 / EN-ISO 6508 / ASTM-E384 / EN-ISO 4545 / ASTM-E92 / ASTM E10 / ASTM E08 / ASTM E103 / JIS
Vertical Stroke:	Motorized 240 mm / 9.4" (as optional 300 mm / 12" or 700 mm / 27.5")
Depth Capacity:	135 mm / 5.5"
Turret:	Automatic and motorized - 6 positions
Indenter:	Vickers - As option Knoop and Brinell
Camera:	1.3 MP USB2 B/W HD
Focus and Reading:	Automatic and manual
Lighting:	Energy Efficient Cool LED Light Source
Network:	Wire connection for technical assistance and auto-diagnosis
X-Y Table:	Motorized with 0.5 ?m steps 100 x 60 mm / 3.9 x 2.3" or 200 x 100 mm / 7.8 x 3.9"
Tolerable weoght:	50 kg
Dwell Time:	From 5 to 60 seconds programmable
Temperature Range:	From 10 °C to 35 °C
Data Output:	USB / Ethernet
Power Supply:	110 or 220 V / 50÷60 Hz
Software:	Affri - OMAG
Fields Of Use:	For micro and macro Vickers and case depth test on every metals: iron, steel, tempered steel, cast iron, brass, aluminium, copper and metal alloys. Heat treatment, hardening, nitriding, cementation and hardfacing. Knoop test on ceramic and glass materials.
Packaging:	120 x 120 x 160 cm / 47 x 47 x 65" - 160/200 kg

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