

NEXUS 8100G2-8100XLM G2

AUTOMATIC HARDNESS TESTER

UNIVERSAL | ROCKWELL, VICKERS, KNOOP & BRINELL



NEXUS 8100G2-8100XLM G2

Built for Heavy-Duty Industrial Hardness Testing and laboratories

The NEXUS 8100 and 8100XLM Generation 2 (G2) hardness testers from INNOVATEST are engineered specifically for heavy-duty industrial environments. Designed to meet the toughest demands of modern manufacturing, these universal hardness testing systems combine rugged mechanical construction with high-end automation and precision to deliver reliable results in the most challenging settings.

Heavy-Duty Frame Construction, large Sample Capacity, work piece clamp with load cell clamp force control, extended Load Range: from 200 gf up to 3000 kgf suitable for regular and testing large steel parts, castings, coatings, welds, and heat-treated components. A motorized 8-position turret with multiple indenters and objectives allows for fast, repeatable testing across multiple methods—easy to use, time efficient.



HARDNESS SCALES



VICKERS 200gf - 150kgf
also HVD (HVT)



KNOOP 200gf - 5kgf



BRINELL 1kgf - 3000kgf
also HBD (HBT)



ROCKWELL 3kgf - 150kgf

* For more details on the scales see page 5

Select your required test force range...

200gf	500gf	250kgf	NEXUS 8100G2 / A	3000kgf
200gf	3kgf	750kgf	NEXUS 8100G2 / B	3000kgf
200gf	5kgf		NEXUS 8100G2 / C	3000kgf

Upgrade now, later, at any moment, during order or online!

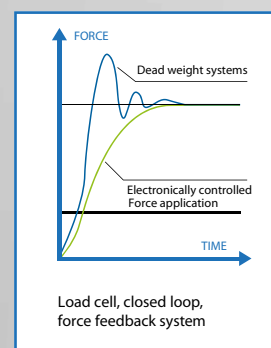
OPTIONAL	200gf - 3kgf
OPTIONAL	200gf - 5kgf

HIGHLIGHTS

- 1 Multi Load Cell, Closed Loop force application system, error <0,25%
- 2 Descending test head, with fixed work piece position
- 3 8-position turret with standard built-in laser positioning system
- 4 3 indenter positions, 3 LWD objectives installed (included)
- 5 20 megapixels, 4K+, full color, integrated camera system
- 6 CNC motorized XY-stages, variable stage dimensions and travel ways
- 7 Overview camera, optical zoom system, with variable field of view
- 8 TTL power LED, Dual source power LED bank, stage illumination
- 9 Z-axis with ball bearing spindle, also available in a motorized version
- 10 Integrated high performance system controller, i7 processor, 512GB mSSD storage



SUPPORTED METHODS & SCALES



ROCKWELL

EN-ISO 6508, ASTM E-18, JIS Z 2245

Regular Rockwell scales; Pre Load 10kgf, Main Load 60kgf | 100kgf | 150kgf

A	B	C	D	E	F	G	H	K	L	M	P	R	S	V
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Superficial Rockwell scales; Pre Load 3kgf, Main Load 15kgf | 30kgf | 45kgf

15N	30N	45N	15T	30T	45T	15W	30W	45W	15X	30X	45X	15Y	30Y	45Y
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



VICKERS

DIN EN ISO 6507, ASTM E-92, ASTM E-384

HV0.2	HV0.3	HV0.5	HV1	HV2
HV2.5	HV3	HV4	HV5	HV10
HV20	HV25	HV30	HV40	HV50
HV60	HV100	HV120	HV150	



KNOOP

DIN EN ISO 4545, ASTM E-92, ASTM E-384

HK0.2	HK0.3	HK0.5	HK1	HK2
HK3	HK4	HK5		



BRINELL

DIN EN ISO 6506, ASTM E-10

HBW1/1	HBW1/1.25	HBW1/2.5	HBW1/5	HBW1/10
HBW1/30	HBW1/31.25	HBW2.5/6.25	HBW2.5/7.8125	HBW2.5/15.625
HBW2.5/31.25	HBW2.5/62.5	HBW2.5/187.5	HBW5/25	HBW 5/31.25
HBW 5/62.5	HBW5/125	HBW5/250	HBW5/750	HBW10/100
HBW10/125	HBW10/250	HBW10/500	HBW10/1000	HBW10/1500
HBW10/3000				



CONVERSIONS

DIN EN ISO 18265, DIN EN ISO 50150, ASTM E140

Crossing all boundaries...

1 8 POSITION PRECISION TURRET & LASER POSITIONING

The 8 position turret is supplied as a standard feature on all 8100 models and allows to install indenters for Rockwell, Vickers, Knoop and Brinell testing. With the standard built-in Class 2 Laser positioning has never been so easy.

The innovative turret protection workpiece clamp allows for precise control over the clamping force of the workpiece on the table or stage.

Moreover, the clamping force can be adjusted and set to different levels, offering flexibility and adaptability for various applications.

2 STAGE OVERVIEW CAMERA (OPTIONAL)

Create magnified sample overview with the optional integrated auto focus optical & digital zoom, overview camera. The field of view of this sophisticated full color camera system does not limit you to one field of view, but gives a ZOOM range without the need to use time-consuming scan and stitch functions.

Once the viewing area needs to be larger than the zoom range, scanning and stitching can be selected to create full stage overview. Click and go is one of the standard testing features of the overview camera. Just click randomly on designated area's and push "start". All tests run automatically. The pattern video overlay function eases positioning of multiple test rows or patterns across the specimen. The pattern video overlay scales automatically with every magnification, stepless, while the zoom camera decreases or enlarges the overview.

3 DYNAMIC Z-AXIS CONTROL & COLLISION DETECTION

A high end ball bearing Z-axis spindle is one of the very unique functions. Z-axis displacement at an accuracy of microns supports ultra-fast auto focus. Z-axis controls are nearly limitless; CNC as a result from a test program, by touch screen indicators, by the scroll wheel of the mouse and by fast up and down buttons. Positioning has never been this easy. To avoid any collision between the work piece and the turret, the Z-axis is controlled by a flawless collision detection and Z-axis retraction system. So neither the tester nor the workpiece are exposed to any damage.

4 HIGH SPEED CNC MOTORIZED XY-STAGE (OPTIONAL)

Save time and improve efficiency with one of the high speed, highly accurate motorized XY-stages. Available in variable sizes from standard, to large and extra-large. Enable automated sequencing of multiple samples. The ultra-high accuracy and repeatability guarantee precise positioning of indents and allow re-evaluation of any measurement points in batch or single view. Repeatability within 3 micron.

NEW CLAMPS WITH
ADJUSTABLE FORCE AVAILABLE

AI ACCURACY
FOR BRINELL & VICKERS

CONNECTIVITY, CONTROL & QUALITY ASSURANCE

The system has bi-directional in and output channels. Tester control can be conducted remotely and supports for instance, but not limited to robotic systems. Test values can be exported as single values or as string of data to be handled by 3rd party quality evaluation software.

Q-DAS certified. (Optional)



5 22" HD TOUCH SCREEN OPERATOR INTERFACE

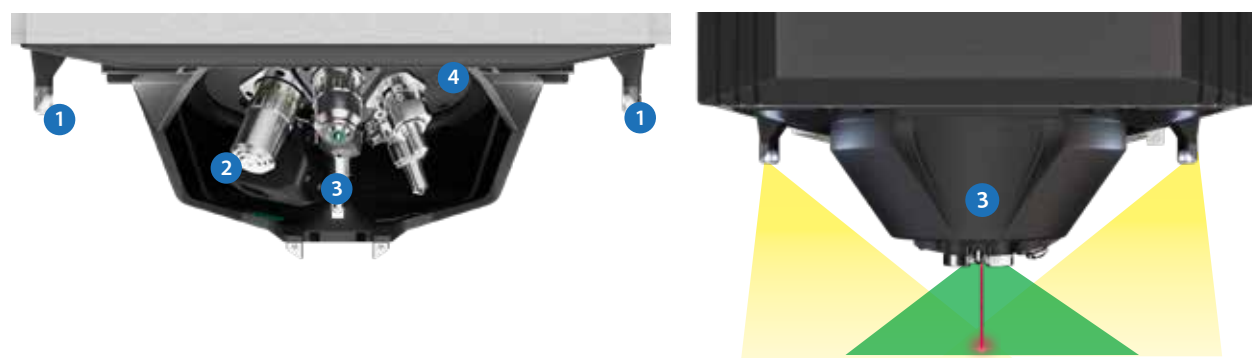
All machine control and workflow process can easily be operated from the 22" industrial capacitive touch screen. At choice a second 22" or larger screen can be connected.

TURRET TECHNOLOGY

The high speed 8 position turret or revolver is the main center of performance of the NEXUS 8100 series.

Designed for test forces up to 3000kgf in the NEXUS 8100 configuration, this masterpiece of mechanics and optics also incorporates load cells and electronics to handle all force application and force system feedback.

It's also the home base of the high definition overview camera equipped with optical zoom system and autofocus, at indenter position. The technology of this camera provides a variable field of view of the overview, not seen in the industry before. Time consuming image stitching is therefore not required for most common samples.



1 POWER LED BANKS

On the side of the turret, two power LED banks, mounted at a distance, provide cross surface illumination, assuring that the overview system has excellent viewing performance under all circumstances and on all materials.

2 3 OBJECTIVES

The three long working distance objectives mounted on the turret as a standard accessory, channel images to the built in 20 megapixels, full color, 4k+ camera system. The result is a bright, sparkling image of your indent, the start of a successful precise automatic measurement function.

3 LASER POSITIONING SYSTEM

Another feature, not seen before in this class of instruments, is the standard, Class 2 laser positioning system. Position parts with great precision at the exact indent position. Provides operator comfort without limitations.

4 PROTECTION SYSTEM

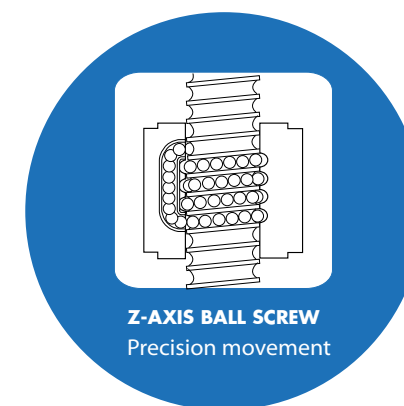
Protecting the turret, load cells, optics and other parts, but also the workpiece against collisions caused by operator failure or program failure, the turret has a highly sensitive collision detection and retraction system. Broken indenters or damaged optics are simply history.

The system also recognizes unintended resistance that could be caused from hands or fingers and will retract the test head in any suspect situation instantly.

The turret also has a ridged protection parts for possible hits caused by positioning of the to be tested. The skirt mounted on the rotating center of the turret protects each individual turret position against accidental damage.

The innovative turret protection workpiece clamp allows for precise control over the clamping force of the workpiece on the table or stage. Moreover, the clamping force can be adjusted and set to different levels, offering flexibility and adaptability for various applications.

Vertical force actuator with position reading system



Z-AXIS BALL SCREW
Precision movement

Servo Drive System for low force models

MULTI LOAD CELL SYSTEM

To cover the wide range of test forces the low force models have three load cells installed. Each with its specific force range. Only in this way, high force accuracy and repeatability are always guaranteed.

POSITION READING SYSTEM

The force actuator has a linear reading system (glass scale) manufactured by HEIDENHAIN Germany. This top quality system with ABS position reading, provides a constant loop of information on the position of the test head and communicates details of the position that are used for rapid autofocus. This system enables you to conduct comprehensive depth measurement methods such as HVD (HVT) and HBD (HBT) normally not available on Micro Vickers / Vickers hardness testing machines.

SERVO DRIVE SYSTEM

The actuator is driven by a high quality servo drive system. The system provides constant feedback on load, speed, resistance and other parameters that influence the operating process and tester integrity. At a central position in the force actuator, a ball bearing spindle translates the servo rotation to the operator desired direction or test cycle. Tester control and performance at the highest level.

SPINDLE

Highly accurate manual or motorized Z-axis (at choice).



The purpose of software is to control complexity...

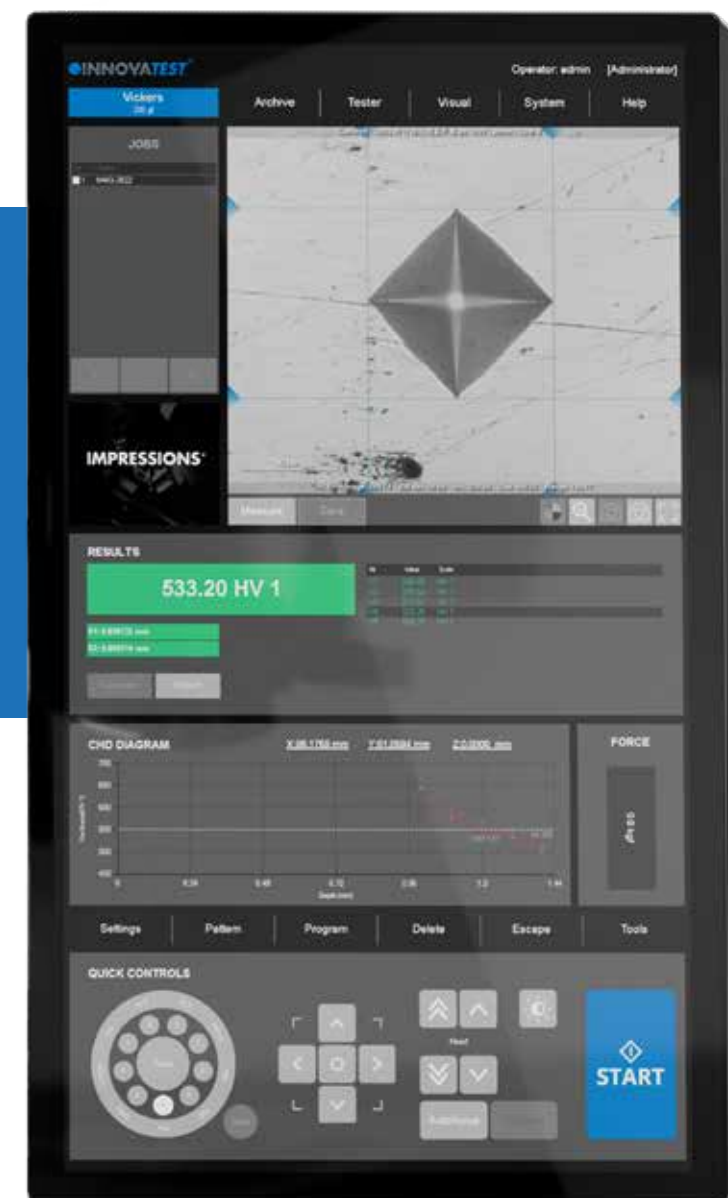
For the more advanced users, for whom the standard applications would not be sufficient, IMPRESSIONS™ 4 has an unmatched level of optional “apps” that can be installed as plugins, later, at any moment. During the purchase of your tester, decide on what you need at that moment. Widen your options at any moment by a simple e-mail and a few mouse clicks, to install optional functionality. As easy or simpler than installing an app on your mobile phone.

POWERED BY IMPRESSIONS v4

Next gen workflow & tester control...

Just buy a software release ticket, and your tester has added functionality, regardless where it is located. A revolutionary system taking care of all your needs.

In this way we keep the learning curve, the process to work efficiently with our software limited to the level of “need to have” and “need to know”. The proportion of installed and activated software never needs to be more than your requirements.



On the higher end, IMPRESSIONS 4 connects flawlessly with quality control systems such as QDAS, exports files in CVS, XML or other formats and if your requirement is not standard, our team of engineers will efficiently find ways to handle your data properly. Bespoke solutions such as connectivity to robotic systems are standard solutions for INNOVATEST™.

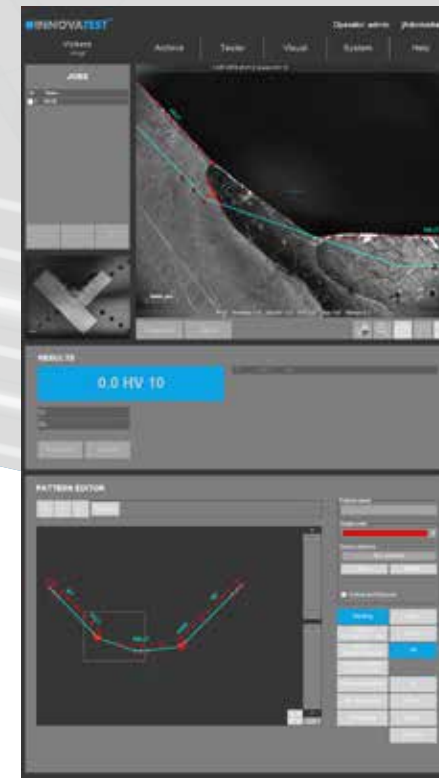
TIME REDUCING SOFTWARE SOLUTIONS...



1 PATTERN EDITOR

The IMPRESSIONS™ pattern editor allows the user to create any number of test patterns with a large number of variable settings. Create test patterns with great precision and freedom. Verify the settings in the preview mode. Drag & drop patterns from one test sample to another sample. Live vision technique over zoom overview camera, no image stitching required.

Combine different patterns and even different test forces in one program, and run them fully automatically. All test points can be identified individually or to customer specifications. The label is shown in the test result list and in the test results overview and in the results print out. An important function for sample analyses at the end of a test and in the future for review of previous tests.



3 WELD INSPECTION (ISO 9015)

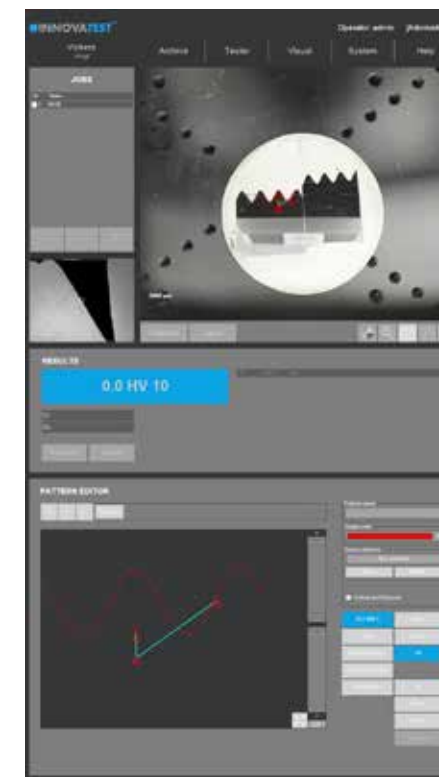
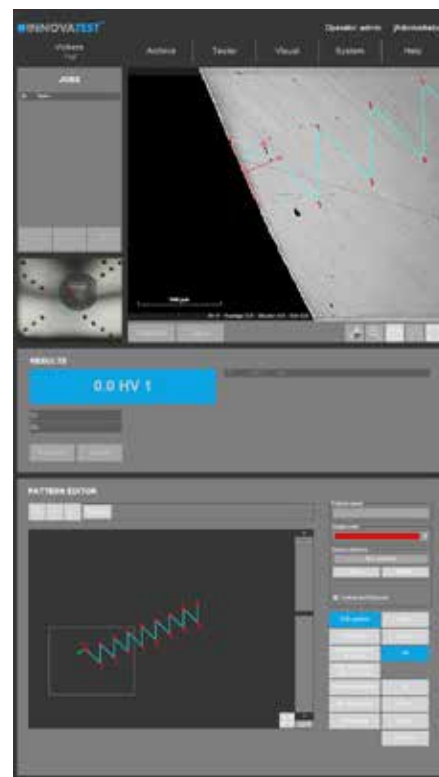
This especially developed tool enables you to conduct hardness testing on welded parts or segments according to ISO standard. Setting up the pattern according to the requirements becomes "easy-to-do", due to pre-set test points in the different zones of the weld and automatic correlation between test points. The system will run a fully automatic test procedure and display and record the results accordingly.

The Report Generator is enhanced with reporting features for this application.

2 CHD, SHD, NHD

How do you increase throughput in your lab? Make the most common testing design as easy to set up as possible to perform automatically and still adhere to the applicable standards. CHD/SHD/NHD testing can be started directly from the surface view or from the overview. Additional core points of hardness can be defined separately for NHD measurements.

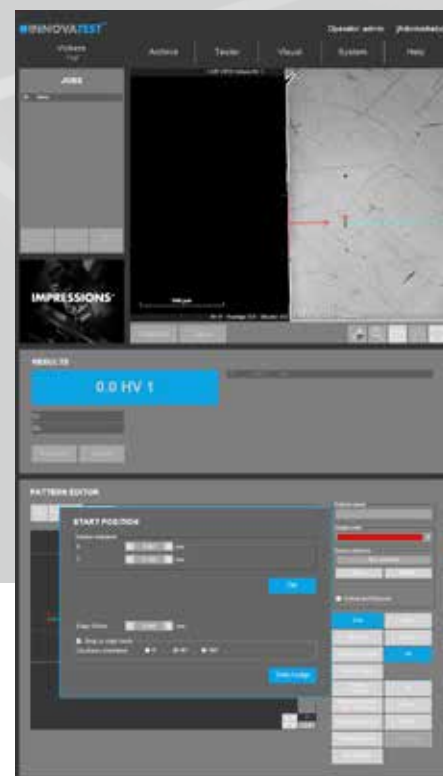
The distances of test points are automatically set to a minimum distance, following the standard, to assure correct testing is conducted. Time saving test mode "complete all indentations – then evaluate" and "auto-stop" to complete test series as soon as the lower hardness limit has been reached. Report Generator is enhanced with reporting features for this application.



4 HARDNESS OF SCREW THREAD DECARBONIZED ZONE (ISO898-1)

A specialized software tool of IMPRESSIONS™ allows you to set up and conduct fully automatic testing as per ISO898-1 for screw thread measurement of (de)-carbonized part.

The Report Generator is enhanced with reporting features for this application.

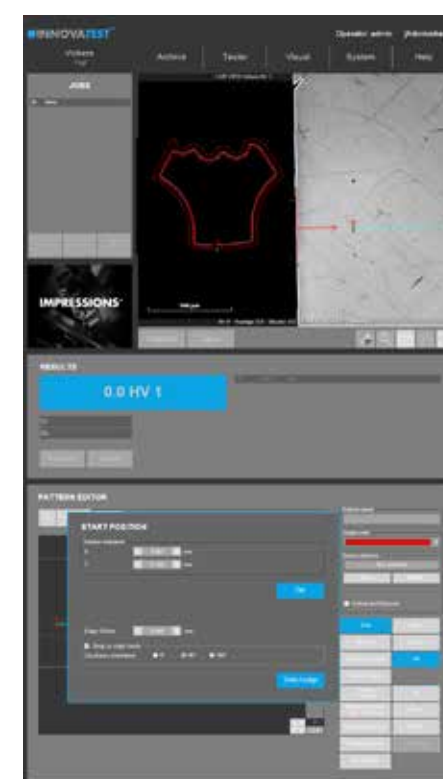
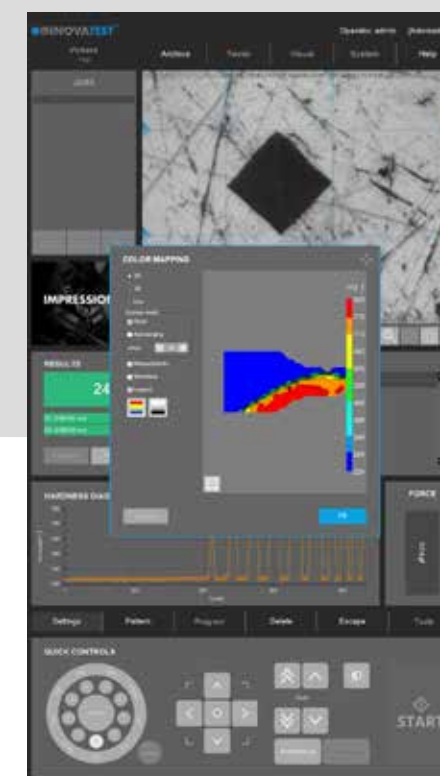


5 EDGE DETECTION

Technology that automatically or at a mouse click recognizes the edge of your sample. This helps to determine and fix the desired starting position for CHD or other pattern testing jobs.

7 2D HARDNESS CHART

The application „Plane hardness chart“, is also referred to as Color Mapping happens to be the perfect tool for securing the detail of the effective hardness distribution over the total sample cross section of heat treated samples. An important feature in material exploration, weld testing or in damage analysis.

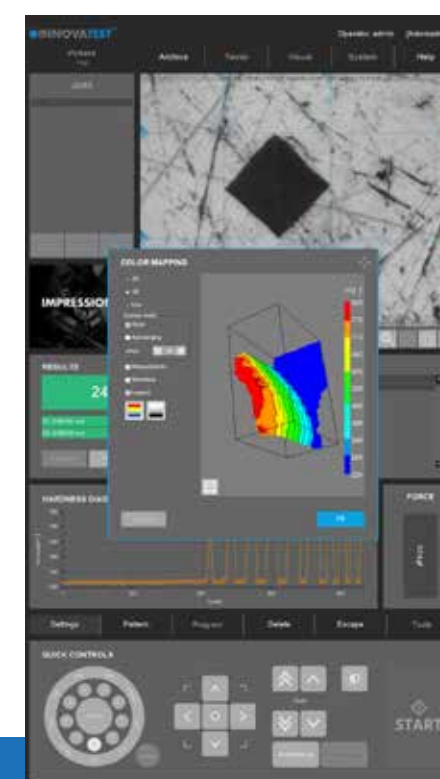


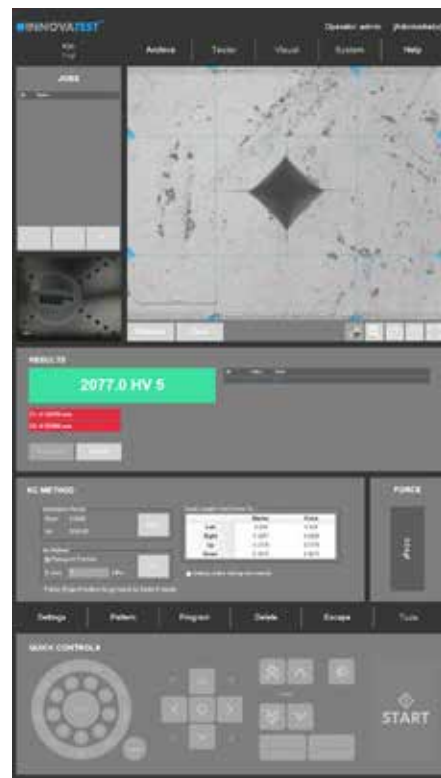
6 AUTOMATIC CONTOUR SCANNING

This application scans the entire outline (or partial) area of a sample. The function can be used with an objective by using the overview zoom camera for high speed scanning. The system scans the entire outline defined and stores all relevant data in the test program.

8 3D HARDNESS CHART

In addition to 2D graphic diagrams, the system can also automatically generate 3D diagrams. 2D and 3D hardness charts are included in one application.





9 Kic CRACK MEASUREMENT

For those requiring more in depth knowledge on materials behavior, wishing to study material fracture and fatigue, crack growth can be predicted and measured by using the Kic application.

The software supports Kic crack detection under load with customized Kic result reporting. By way of one or both methods, Palmqvist or Median / Radial, fracture toughness is now a repeatable and reproducible test across multiple operators.

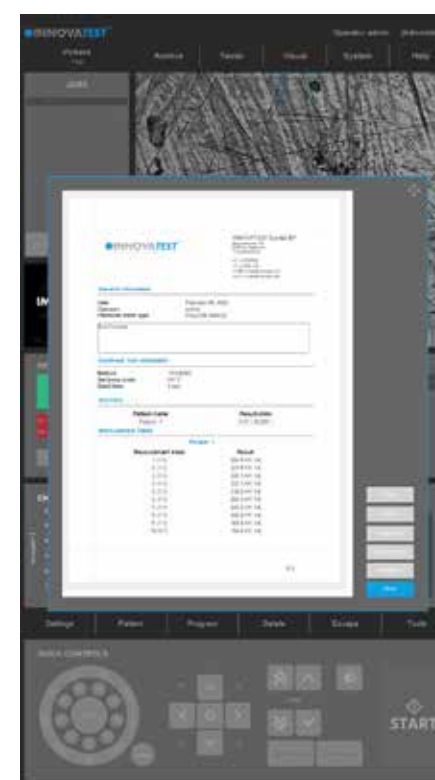
11 USER DEFINED PROGRAMS

For repeating jobs, IMPRESSIONS™ utilizes the option of setting up and storing custom test programs. For each task, a "job" can be created. All application specific parameters, such as hardness scale, force, dwell-time, pattern, conversion and the report template are stored in the same program.



10 SNAPSHOT FUNCTION

This handy function in IMPRESSIONS™ allows you to make screen captures of the viewing area by way of objective view and/or Overview camera. It gives the opportunity to store such images with comments or to paste them into the report generator for further processing.



12 REPORT GENERATOR

Imagine having a report created for you that includes: Your company name, address, contact information, labeled results related to patterns or sequential, pictures of your optical measurements, stitched images, notes section for each result or pictures, rendition of the pattern performed, overview picture of your pattern on your sample, full statistics, summary of your results, go no-go results, Pass or fail...

All this information or having the ability to only have what you need reported, we call this our Report Configurator. You decide how much or how little you report by PDF or laser printer. We even keep it simple by choosing export to CSV file, to a thumb drive or network file location. Data management at its best!



STEP 1: Select machine type



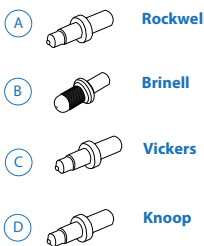
STEP 2: Additional force range

OPTION 1 200gf - 3kgf

OPTION 2 200gf - 5kgf

STEP 3: Indenters

1 Indenters

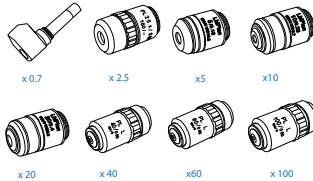


STEP 4: Optical

2 Overview camera



3 Objectives

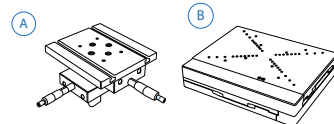


4 Ringlights

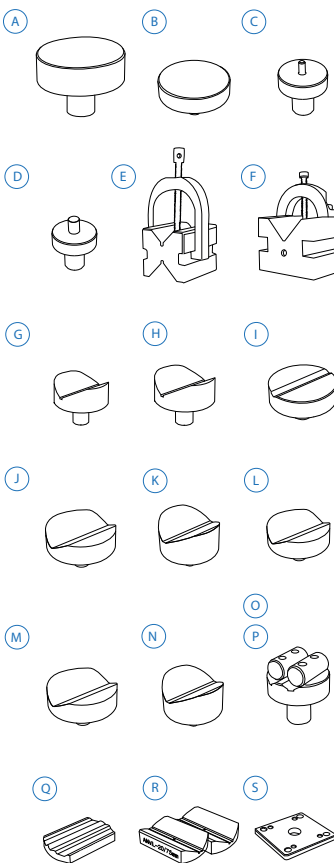


STEP 5: Stages/Anvils

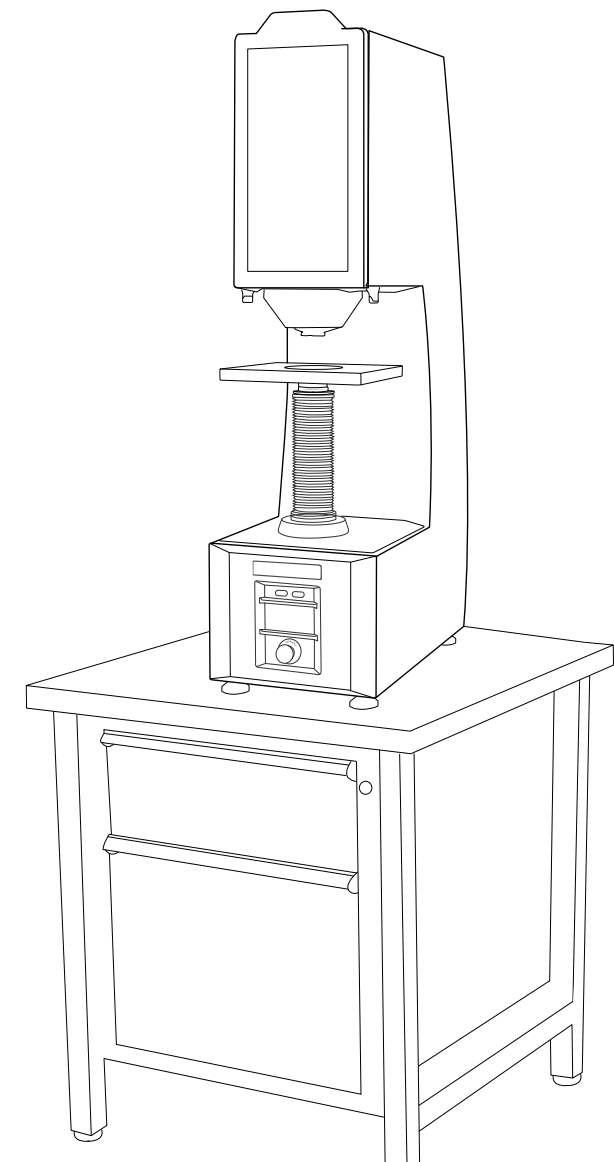
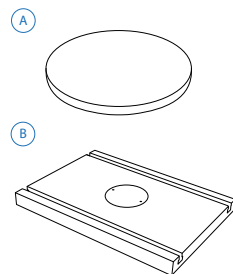
5 Stages



6 Anvils

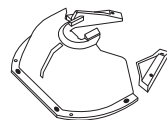


7 Test tables

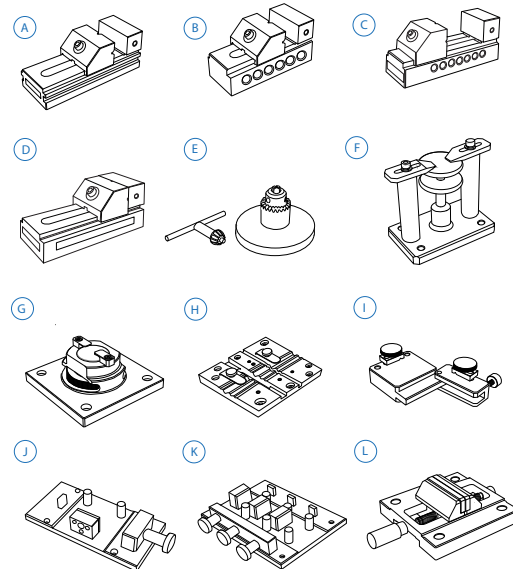


STEP 7: Fixtures, vices & clamp

9 Clamp

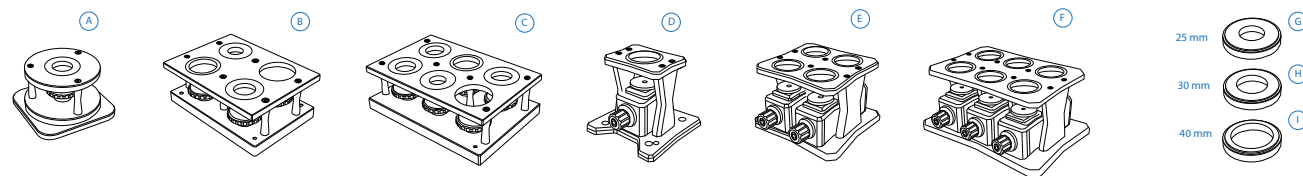


10 Fixtures & Vices

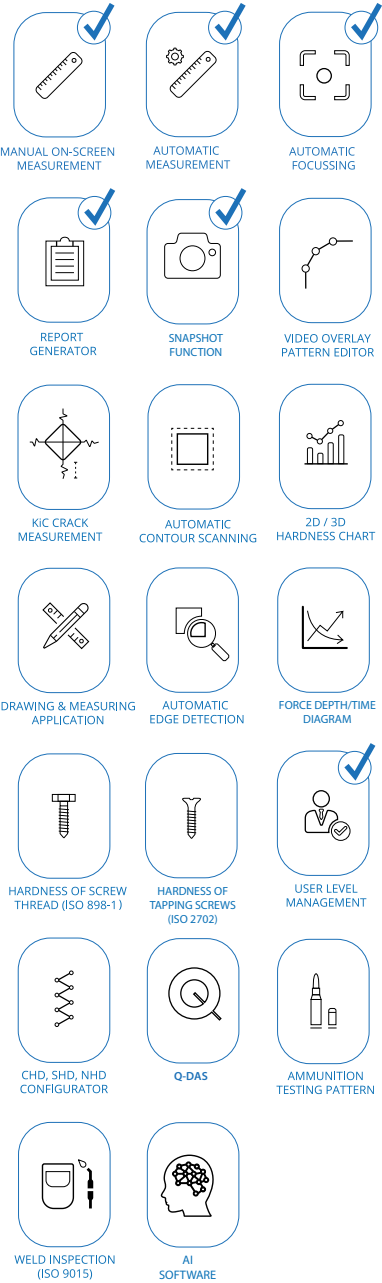


STEP 6: Sample holders

8 Sample holders



STEP 8: Software



✓ = Standard included

Not all accessories are displayed on this page. Full details can be found on the Order details page.

ORDER DETAILS

NEXUS 8100G2

	NEXUS 8100G2/A Universal hardness tester, 500gf - 250kgf	NEXUS 8100G2/A	
	NEXUS 8100G2/B Universal hardness tester, 3kgf - 750kgf	NEXUS 8100G2/B	
	NEXUS 8100G2/C Universal hardness tester, 5kgf - 3000kgf	NEXUS 8100G2/C	
	Optional: Force range extension 200gf - 3kgf, for 8100G2/B only	F8100G2O1	
	Optional: Force range extension 200gf - 5kgf, for 8100G2/C only	F8100G2O2	
	Plug & Play prepared, calibration, sea & airworthy packing in "non coniferous wood" material	P&PSEAPACK150	

NEXUS 8100XLM G2

	NEXUS 8100XLMG2/A Universal hardness tester, 500gf - 250kgf, XL frame, motorized Z-Axis	NEXUS 8100XLMG2/A	
	NEXUS 8100XLMG2/B Universal hardness tester, 3kgf - 750kgf, XL frame, motorized Z-Axis	NEXUS 8100XLMG2/B	
	NEXUS 8100XLMG2/C Universal hardness tester, 5kgf - 3000kgf, XL frame, motorized Z-Axis	NEXUS 8100XLMG2/C	
	Optional: Force range extension 200gf - 3kgf, for 8100XLMG2/B only	F8100G2O1	
	Optional: Force range extension 200gf - 5kgf, for 8100XLMG2/C only	F8100G2O2	
	Plug & Play prepared, calibration, sea & airworthy packing in "non coniferous wood" material	P&PSEAPACK160	

ACCESSORIES

STEP 3	Indenters				
1	Rockwell	A	Rockwell C Diamond Indenter, ISO & ASTM certified	UPI/6005	
			Rockwell Ball Indenter 1/16". Includes 1 carbide ball, ISO & ASTM certified	UPI/7506	
			Rockwell Ball Indenter 1/8". Includes 1 carbide ball, ISO & ASTM certified	UPI/7606	
			Rockwell Ball Indenter 1/4". Includes 1 carbide ball, ISO & ASTM certified	UPI/7706	
			Rockwell Ball Indenter 1/2". Includes 1 carbide ball, ISO & ASTM certified	UPI/7806	
	Brinell	B	Brinell Indenter 1mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7000	
			Brinell Indenter 2.5mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7005	
			Brinell Indenter 5mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7010	
			Brinell Indenter 10mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7015	
	Vickers	C	Macro Vickers Indenter Ø6.35mm, ASTM/ISO certified	UPI/8010	
Knoop	D	Macro Knoop Indenter Ø6.35mm, ISO & ASTM certified	UPI/8220		
STEP 4	Optical				
2	Overview camera	Overview / Full view zoom camera + software functionality, includes overview lights	UN-OVCAM2C		
	3	Objectives	BRILIGHT objective 0,7x	SA-05-0046	STANDARD
2.5x Long Working Distance objective			ASSUN-OBJ2.5X	STANDARD	
5x Long Working Distance objective			ASSUN-OBJ5X		
10x Long Working Distance objective			ASSUN-OBJ10X	STANDARD	
20x Long Working Distance objective			ASSUN-OBJ20X		
40x Long Working Distance objective			ASSUN-OBJ40X		
60x Long Working Distance objective			ASSUN-OBJ60X		
100x Long Working Distance objective			ASSUN-OBJ100X		
4			Ring lights	Crystal™ Clear LED ring light, multi use for 2.5x objectives	SA-05-0021
	Crystal™ Clear LED ring light, multi use for 5x objectives	SA-05-0022			

STEP 5	Stages/Anvils				
5	Stages	A	Manual X-Y stage with analogue metric micrometers, 180x160mm Displacement: 25x25mm, scale 0.01mm, max load 300kg	UN-TESTTABLE/030	NEXUS 8100G2
	Clamping, locking & fixing adapters		Lock flange	UN-XYZ BUSH55	NEXUS 8100G2
			Mounting plate for lock flange	UN-XYZ30FP50-55	NEXUS 8100G2
		B	Motorized CNC X-Y stage, 410X280mm, total load up to 4000Kgf max. Displacement: 200x150mm, resolution 0.001mm, repeatability +/- 0.008mm	UN-XY932015	
	Motorized CNC X-Y stage, 510x280mm, total load up to 4000Kgf max. Displacement: 300x150mm, resolution 0.001mm, repeatability +/- 0.008mm		UN-XY933015		
	Motorized CNC X-Y stage, 630x238mm, total load up to 4000Kgf max. Displacement: 400x150mm, resolution 0.001mm, repeatability +/- 0.008mm		UN-XY934015		
	iSMART™ stage, 410x265mm, total load up to 4000Kgf max. Displacement: 200x150mm, resolution 0.001mm, repeatability+/-0.0015mm		MA-XY2015S		
	iSMART™ stage, 510x265mm, total load up to 4000Kgf max. Displacement: 300x150mm, resolution 0.001mm, repeatability+/-0.0015mm		MA-XY3015S		
	iSMART™ stage, 560x265mm, total load up to 4000Kgf max. Displacement: 400x150mm, resolution 0.001mm, repeatability+/-0.0015mm		MA-XY4015S		
	Clamping, locking & fixing adapters			Lock flange	AS3000-21-01
		Lock flange	AS8000XL-16-01	NEXUS 8100XLM G2	
		Mounting plate for lock flange	UN-XYZ30FP50-100		
Cable sets, mounting & connectivity for motorized stage		Cable set for connecting CNC stage to embedded driver (1 set for 2-axis) 155cm	UN-XY2CABLENBL		
		Smart XY stage connection cable long	CE-99-0031		
6	Anvils	A	Flat anvil 60mm	AS3000-19-04	NEXUS 8100G2
		B	Flat anvil 80mm	UN-TESTTABLE/002	NEXUS 8100G2
		C	Spot anvil 5mm	UN-ANVIL/010	NEXUS 8100G2
		D	Spot anvil 10mm	UN-ANVIL/011	NEXUS 8100G2
		E	V block with bracket 40x40x50mm (LxBxH)	UN-VBLOCK404050	
		F	Steel, cross type, (X) V-block 60x120x100mm 8-90mm pair	UN-CROSSBLOCK01	
		G	V-anvil ø40mm 6-60mm	UN-ANVIL/005	NEXUS 8100G2
		H	V-anvil ø63mm 10-100mm	UN-ANVIL/006	NEXUS 8100G2
		I	V-Anvil ø80mm 3.3-20mm	UN-ANVIL/040	NEXUS 8100G2
		J	V-Anvil ø80mm 15-80mm	UN-ANVIL/045	NEXUS 8100G2
		K	V-Anvil ø80mm 23-40mm	UN-ANVIL/050	NEXUS 8100G2
		L	V-anvil ø120mm 17-100mm	UN-ANVIL/060	NEXUS 8100XLM G2
		M	V-anvil ø120mm 3.3-20mm	UN-ANVIL/065	NEXUS 8100XLM G2
		N	V-anvil ø120mm 33-200mm	UN-ANVIL/070	NEXUS 8100XLM G2
		O	Cylindrical V anvil 6-80mm	UN-CVANVIL680	NEXUS 8100G2
		P	Cylindrical V anvil 50-200mm	UN-CVANVIL50200	NEXUS 8100G2
			Test table 100x100mm, V groove 20mm wide, 10mm deep	UN-TESTTABLE/040	NEXUS 8100G2
		Q	Small V-Anvil 3-20mm requires base plate (Requires Manual/Autom. X-Y stage)	UN-ANVILSV/105	
		R	Large V-Anvil 20-75mm requires base plate (Requires Manual/Autom. X-Y stage)	UN-ANVILLV/106	
		S	Base plate for V-anvils un-anvilsv/105 & 106	UN-VANVILBASEPL	
7	Test tables	A	Testing table Ø200mm (61-65HRC) requires lock flange	CA-08-0194	NEXUS 8100G2
	Clamping, locking & fixing adapters		Lock flange	AS3000-21-01	
			Lock flange	AS8000XL-16-01	
			Testing table ø200mm	UN-TESTTABLE/011	NEXUS 8100G2
		B	Testing table ø235mm	UN-TESTTABLE/013	NEXUS 8100G2

			Large flat surface testing table 350x250mm, thickness 30mm with 2 T-slots, for large components	UN-TESTTABLE/015	NEXUS 8100G2
			Large flat surface testing table 450x350mm, thickness 35mm with 2 T-slots, for large components	UN-TESTTABLE/016	STANDARD NEXUS 8100XLM G2
			Large flat surface testing table 600x300mm, thickness 25mm, with 2 T-slots, for large light components	UN-TESTTABLE/019	
			Large flat surface testing table 600x500mm, thickness 45mm, with 2 T-slots, for large light components	AS8000XL-16-02	
			Lock flange	AS3000-21-01	NEXUS 8100G2
			Lock flange	AS8000XL-16-01	STANDARD NEXUS 8100XLM G2
STEP 6	Sample holders				
8	Sample holders	A	1 position sample holder, for 1 embedded sample, diameter 50mm or 2"	UN-ESH1	
		B	4 position sample holder, for max. 4 embedded samples, diameter 50mm or 2"	UN-ESH4	
		C	6 position sample holder, for max. 6 embedded samples, diameter 50mm or 2"	UN-ESH6	
		D	1 position sample holder, for 1 embedded sample, diameter 50mm or 2" with front operation elevator knob	BM-08-0052	
		E	4 position sample holder, for max. 4 embedded samples, diameter 50mm or 2" with front operation elevator knob	BM-08-0053	
		F	6 position sample holder, for max. 6 embedded samples, diameter 50mm or 2" with front operation elevator knob	BM-08-0054	
		G	1 insert reduction ring 25mm	UN-ESHI25	
		H	1 insert reduction ring 30mm	UN-ESHI30	
		I	1 insert reduction ring 40mm	UN-ESHI40	
			1 insert reduction ring 1"	UN-ESHI1	
			1 insert reduction ring 1,5"	UN-ESHI15	
			1 insert reduction ring 1 1/4"	UN-ESHI125	
STEP 7	Fixtures, vices & clamp				
9			Clamping nose kit	SA-02-0166	NEXUS 8100G2
			Clamping nose assembly	SA-02-0140	NEXUS 8100XLM G2
10	Fixtures & vices	A	Polished precision vice with lock down system, jaw width 25mm, opens 20mm	UN-VICE/210	
		B	Polished precision vice with lock down system, jaw width 36mm, opens 42mm	UN-VICE/215	
		C	Polished precision vice with lock down system, jaw width 48mm, opens 75mm	UN-VICE/220	
		D	Polished precision vice with lock down system, jaw width 75mm, opens 100mm	UN-VICE/230	
		E	Axle chuck 500 series for cylinder parts, dia. 0.4mm to 5mm	UN-AXLECHUCK	
		F	Universal Clamp & Leveling Device	UN-CLAMP/105	
		G	Thin metal clamp	UN-CLAMP/115	
		H	V Groove clamp for small round parts dia 0.8-5mm (not suitable for test forces over 62.5 kg)	UN-VGROOVE-CLAMP	
		I	Wire Testing Fixture	UN-WIRE/105	
		J	JOMINY Fixture, for 1 quench end test sample, quick release function	UN-JOMFIX1	
		K	JOMINY Fixture, for 3 quench end test sample, quick release function	UN-JOMFIX3	
		L	Small parts vice jaw width 55mm, open 50mm, self centering	UN-VICE/115	
STEP 8	Software		Automatic measurement	UN-AUTOM	STANDARD
	Additional software		Automatic focussing	UN-AUTOFOC	STANDARD
			Report configurator	UN-REPORTA	STANDARD
			Snapshot function	UN-SNAPSH	STANDARD
			Advanced 3 axis coordinate & free style indent pattern configurator, for motorized stage only	UN-TESTPAT01	
			Advanced 3 axis coordinate & free style indent pattern configurator, + CHD, SHD, NHD and edge detection,(supports manual & digital micrometer stages only)	UN-TESTPAT02	
			KiC crack detection under load. Palmqvist & Median / Radial fracture toughness	UN-CRKPAP	
			Automatic Contour scanning	UN-CSCAN	

			2D / 3D hardness scanning (mapping, includes automatic contour scanning)	UN-CSCAN2D3D	
			Drawing and measuring (distance & angles) application	UN-DRMEAS	
			Automatic edge detection	UN-EDGEDTC	
			Force depth/time diagram	UN-FDDIAGR	
			ISO 898-1 screw thread measurement of (de)-carbonized part. Requires UN-CSCAN	UN-ISO898/1	
			ISO-2702 tap screw thread measurement	UN-ISO2702	
			Artificial Intelligence Deep Learning Brinell module	UN-AIDLB01	STANDARD
			Artificial Intelligence Deep Learning Vickers module	UN-AIDLVO1	STANDARD
			User level management	UN-LEVMAN	STANDARD
			Manual & automatic on-screen measurement	UN-MANM	STANDARD
			CHD, SHD, NHD configurator & graphic interface for analogue and digital micro meter stage only (not including full pattern editor)	UN-MCHD	
			CHD, SHD, NHD configurator & graphic interface requires: indent pattern configurator (TESTPAT01)	UN-PATCHD	
			Virtual joystick, on-screen		STANDARD
			Q-DAS Certified connectivity protocol	UN-QDAS	
			Advanced 3-axis communication protocol for robotic systems	UN-REMC	
			ISO bullets casings pattern configurator and reporting system	UN-SHELLCONF	
			ISO 9015 Weld pattern configurator (automatic weld pattern configurator), requires overview camera or BRILIGHT objective 0,7x	UN-WELDPAT	
			Seaworthy packaging box for 955/956	PACK/150	
	Connectivity Plus		Powerful external intel core i7 pc, with 16GB ram, and 512GB SSD drive Windows 11 pre-installed including wiring and integration with tester.	UN-SYSPCIMP01	
			Powerful external intel core i9 pc, with 16GB ram, and 512GB SSD drive Windows 11 pre-installed including wiring and integration with tester.	UN-SYSPCIMP02	
			Bluetooth connectivity	UN-BTADAPT	
			USB to USB null modem cable 2.5M	BE-99-0025	
			Wireless system Keyboard & wireless mouse	UN-SKBSET	
	Additional items				
	Printer		Laser Printer	UN-PRINT	
	Fan filter unit		Dust Protection System	SA-16-0001	
	Remote console		Floor type operation console for remote test operation	UN-REMCON	
	Machine stands		Cabinet test table with drawer for hardness testers 71x90x57cm	UN-STAND/955	NEXUS 8100G2
			Cabinet test table with drawer for hardness testers 71X90X42cm	UN-STAND/956	NEXUS 8100XLM G2
	ISO 17025 ISO / ASTM Calibration	A B	BRINELL direct & indirect calibration & certification in compliance with ISO & ASTM, NADCAP, (ILAC-MRA)	DID17025CERT B	
	ISO 17025 ISO / ASTM Calibration		VICKERS direct & indirect calibration & certification in compliance with ISO & ASTM, NADCAP, (ILAC-MRA)	DID17025CERT V	
	ISO 17025 ISO / ASTM Calibration		KNOOP direct and indirect calibration & certification in compliance with ISO & ASTM, NADCAP, (ILAC-MRA)	DID17025CERT K	
	ISO 17025 ISO / ASTM Calibration		ROCKWELL direct & indirect calibration & certification in compliance with ISO & ASTM, NADCAP, (ILAC-MRA)	DID17025CERT R	
	Cover		Machine cover 800x800x1450mm	UN-COVER7	NEXUS 8100G2
			Machine cover 800x1050x1700mm	UN-COVER8	NEXUS 8100XLM G2

ACCESSORIES

INDENTERS

Indenters



OPTICAL

Overview camera



Objectives



Ringlights



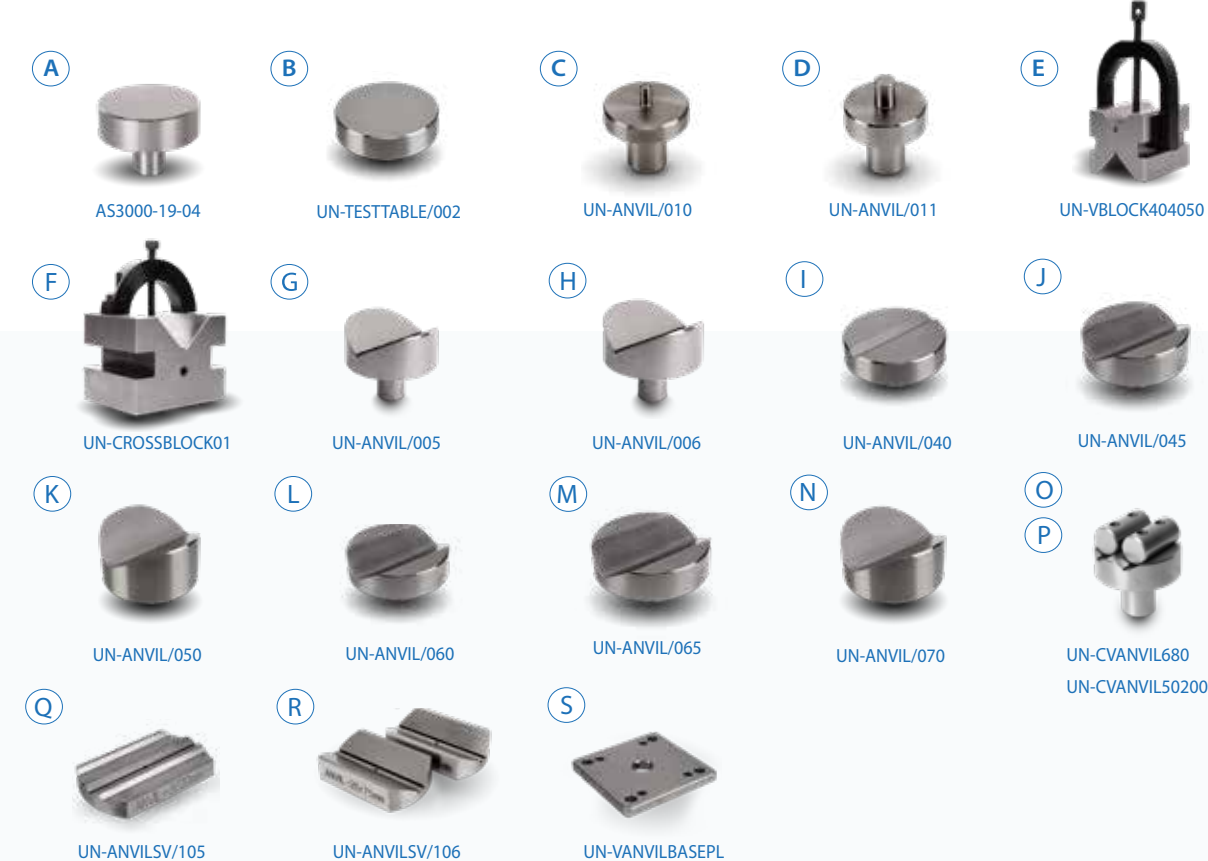
STAGES/ANVILS

Stages



STAGES/ANVILS

Anvils



TEST TABLES

Stages



SAMPLE HOLDERS

Sample holders - Regular model

A

B

C

UN-ESH1
UN-ESH4
UN-ESH6

G

H

I

UN-ESHI25
UN-ESHI30
UN-ESHI40

Sample holders - Front operation

D

E

F

BM-08-0052
BM-08-0054
BM-08-0056

UN-ESHI1

UN-ESHI125

UN-ESHI15

UN-ESHI1
UN-ESHI125
UN-ESHI15

FIXTURES & VICES

Fixtures & vices

A

B

C

D

UN-VICE/210

UN-VICE/215

UN-VICE/220

UN-VICE/230

E

F

G

H

UN-AXLECHUCK

UN-CLAMP/105

UN-CLAMP/115

UN-VGROOVE-CLAMP

I

J

K

L

UN-WIRE/105

UN-JOMFIX1

UN-JOMFIX3

UN-VICE/115

CLAMP

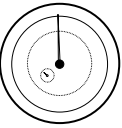
SA-02-0166
SA-02-0140

ADDITIONAL ITEMS

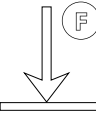
Fan Filter Unit SA-16-0001	Remote Console	Machine stands A B
---	------------------------------	--

SPECIFICATIONS

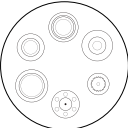
HARDNESS SCALES

	ROCKWELL	Regular Rockwell scales; Pre Load 10kgf, Main Load 60kgf 100kgf 150kgf A B C D E F G H K L M P R S V
	EN-ISO 6508 ASTM E-18 JIS Z 2245	Superficial Rockwell scales; Pre Load 3kgf, Main Load 15kgf 30kgf 45kgf 15N 30N 45N 15T 30T 45T 15W 30W 45W 15X 30X 45X 15Y 30Y 45Y
	VICKERS	HV0.2 HV0.3 HV0.5 HV1 HV2 HV3 HV4 HV5 HV10 HV20 HV25 HV30 HV40 HV50 HV60 HV100 HV120 HV150
	ISO 6507 ASTM E384, E92 JIS B 7725	
	Kic Fracture toughness	All Vickers forces & scales
	KNOOP	HK0.2 HK0.3 HK0.5 HK1 HK2 HK3 HK4 HK5
	ISO 4545 ASTM E92 JIS Z 2251	
	BRINELL	HBW1/1 HBW1/1.25 HBW1/2.5 HBW1/5 HBW1/10 HBW1/30 HBW2.5/6.25 HBW2.5/7.8125 HBW2.5/15.625 HBW2.5/31.25 HBW2.5/62.5 HBW2.5/187.5 HBW5/25 HBW5/31.25 HBW5/62.5 HBW5/125 HBW5/250 HBW5/250 HBW5/750 HBW10/100 HWB10/125 HBW10/250 HBW10/500 HBW10/1000 HBW10/1500 HBW10/3000.
	ISO 6506, ASTM E10 JIS Z 2243	
	HVD (HVT)	All Vickers test forces, above 10kgf
	VDI/VDE 2616-1	
	HBD (HBT)	All Brinell test forces, above 10kgf
	VDI/VDE 2616-1	
	PLASTIC	49 N, 132 N, 358 N, 961 N
	ISO 2039	
	CARBON	HR 2.5/7 HR 5/7 HR 5/15 HR 5/20 HR 5/40 HR 5/60 HR 5/100 HR 5/150 HR 10/20 HR 10/40 HR 10/60 HR10/100 HR 10/150
	CONVERSIONS	Conversion to other hardness scales according to ASTM E140, ISO 18265, GB/T 1172

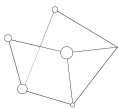
TEST FORCE

	Force application	Multi-load cell, closed loop, force feedback system
	Test forces	0.2kgf – 3000kgf
	Force range per model (Also applies to XLM)	NEXUS 8100G2/A 500gf – 250kgf
		NEXUS 8100G2/B 3kgf – 750kgf
		NEXUS 8100G2/C 5kgf – 3000kgf
	Optional force ranges (Also applies to XLM)	NEXUS 8100G2/B 200gf - 3kgf NEXUS 8100G2/C 200gf - 5kgf
	Test force tolerance	< 0.25% for test force 1kgf to 250kgf < 0.5% for test force below 1kgf
	Dwell time settings	Default 10 seconds, user defined. Up to 250 seconds

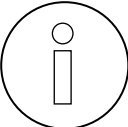
TURRET

	Motorized turret	Ultra-fast, 8 position turret, 3 indenter positions, 3 objective positions, laser positioning & overview camera
	Objectives	Long working distance 0.7x, 2.5x, 5x, 10x, 20x, 40x, 60x, 100x
	Indenters	Certified indenters (ISO/ASTM) available at choice
	Camera 1 (objective)	20 Mpx, HD, 4K+, Machine vision system
	Camera 2 (overview)	Full HD, Full Color, Optical zoom system

SYSTEM

	Electronic system Standard (Recommended)	High performance embedded controller, i7, mSSD 512 GB, MS Windows® 11 operated , up to 8 years* INNOVATEST warranty
	Electronic system (Optional)	High performance external controller, i9, mSSD 512 GB, MS Windows® 11 operated, 1 year factory warranty
	CNC support	CNC controller (for motorized stages) or stage accessories
	Screen(s)	22" portrait mode capacitive touchscreen
	Display resolution	0.01 HV, HK, HB
	Statistics	Total test, max, min, average, range, standard deviation, All in real time after each test
	Hardness conversion	Rockwell, Rockwell Superficial, Vickers, Brinell, Knoop, Leeb & Tensile
	Software	IMPRESSIONS™ V4, work flow system & tester control
	Data storage capacity	Internal and external mSSD, SSD or HDD
	Data output	XML, CSV, Certified for Q-DAS (Optional)
	Connectivity	5 USB ports, RJ45 Ethernet LAN, W-LAN, RS-232, Bluetooth, 5 Axis CNC & motorized XY-stage connector
	Printer	A4, A3 full color laser printer (optional)

GENERAL

	Machine dimension	NEXUS 8100G2 : 348mm x 745mm x 1466mm NEXUS 8100XLM G2 : 380mm x 845mm x 1720mm
	Power supply	100VAC to 240VAC, 50/60Hz, single phase
	Operating temperature	10°C to 35°C, non-condensing
	Power consumption	100W
	Humidity	10% to 90%, non-condensing
	Noise	< 70 db(A)

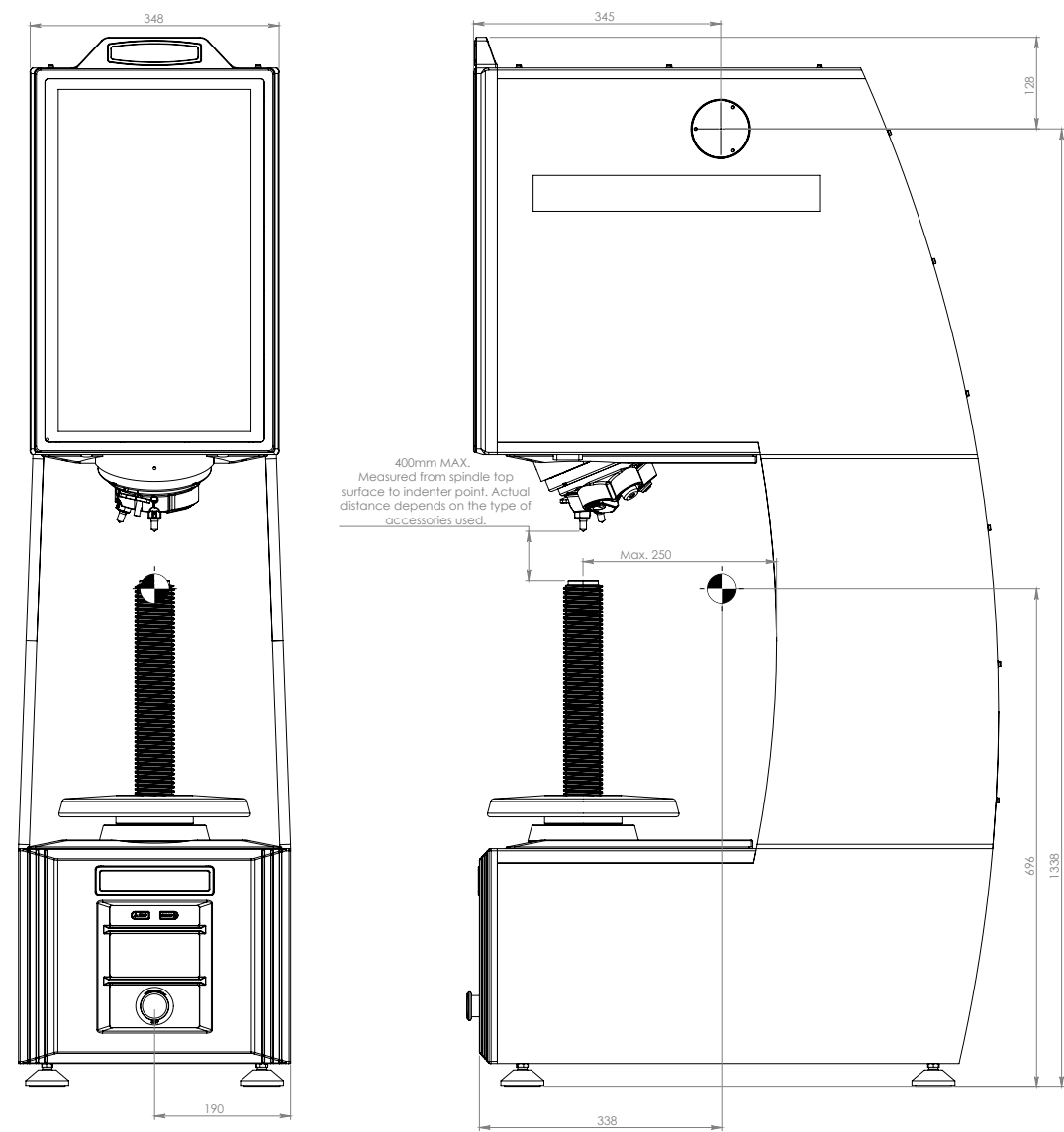
* Check individual warranty conditions

TECHNICAL DRAWINGS

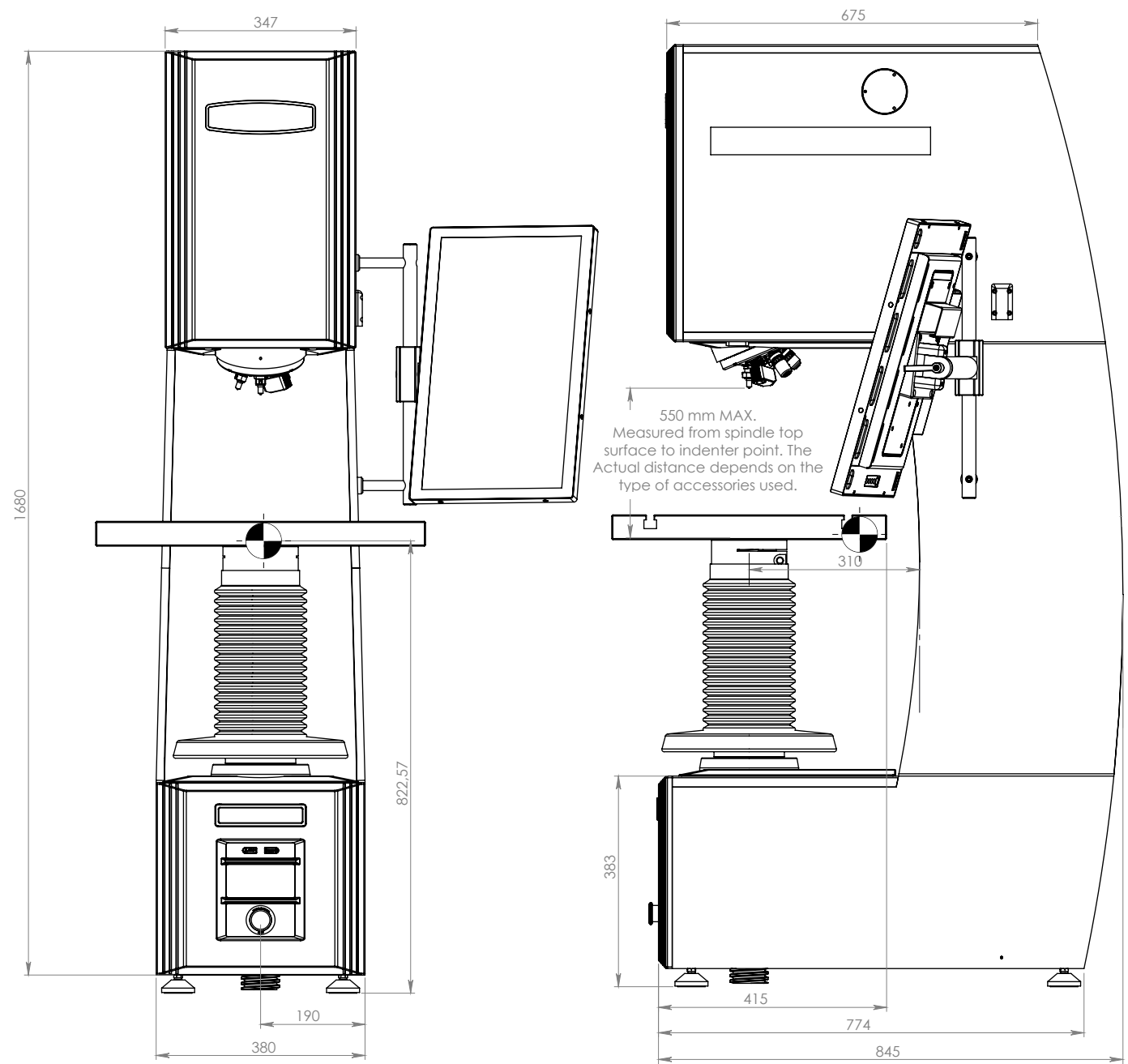
All dimensions in these drawings are in mm, approximate. Working heights and or workpiece accommodation varies depending on the stages and stage accessories used.

Please contact our sales department for more details.

NEXUS 8100G2



NEXUS 8100XLM G2



OTHER MODELS IN THE UNIVERSAL RANGE



FENIX 300U

Load Cell, Closed loop, force feedback, test force application system Universal hardness tester with I-TOUCH™ system.
See brochure B20F300/XX



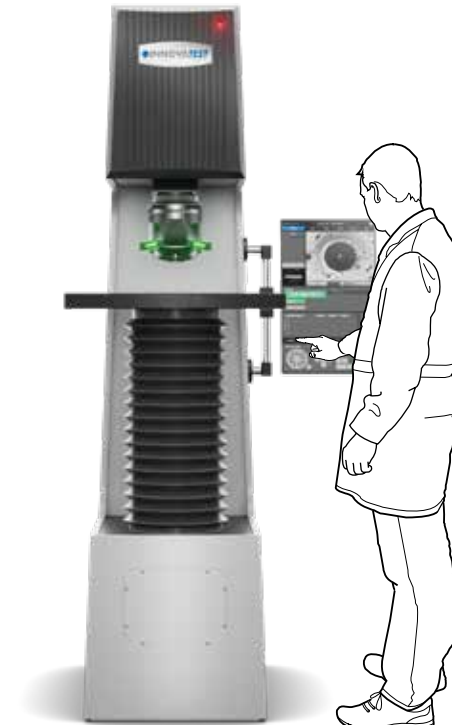
VERZUS 750U

Fully automatic, load cell, Closed loop, force feedback universal hardness tester with electronic micrometer or analogue eyepiece. IMPRESSIONS™ 8.5" full color touchscreen.
See brochure B19V750U/XX



NEXUS 7700G2

Fully automatic, load cell, closed loop, force feedback universal hardness tester with full HD optical zoom stage overview camera, IMPRESSIONS™ 22" full color touchscreen.
See brochure B19N7700G2/XX



NEMESIS 9600G2

Heavy duty fully automatic, load cell, closed loop, force feedback universal hardness tester with full HD optical zoom stage overview camera, IMPRESSIONS™ 22" full color touchscreen.
See brochure B19N9600G2/XX



NEMESIS 5100G2

Multi Load Cell, Closed loop Fully automatic, 9 position turret Rockwell, Superficial Rockwell, Micro/Macro Vickers, Knoop & Brinell Hardness testers Descending test head, fixed work piece position.
See brochure B22N5100G2/XX



NEMESIS 9100G2

Multi load cell, Closed loop Fully automatic, 8 position turret Rockwell, Superficial Rockwell, Micro/Macro Vickers, Knoop & Brinell Hardness testers Descending test head, 300 mm fixed work piece position.
See brochure B23N9100G2/XX

www.innovatest-europe.com

Changes in products and/or product specifications can emerge due to new technologies and continuous development.

We reserve the right to change or modify specifications of the products without prior notice. We recommend you to contact our sales office for up-to-date information.

Brochure B25N8100G2/03/EN
© All rights reserved, 2025

EUROPE

INNOVATEST Deutschland GmbH.
Sales & Service
Phone: +49 245 670 59 500
info@innovatest-deutschland.com
www.innovatest-deutschland.com

INNOVATEST France SARL
Sales & Service
Phone: +33 1 848 88038
commercial@innovatest-france.com
www.innovatest-france.com

INNOVATEST UK Ltd.
Sales & Service
Phone: +44 (0) 121 824 4775
info@innovatest-uk.com
www.innovatest-uk.com

INNOVATEST Polska sp. z o.o.
Sales & Service
Phone: +48 697 099 826
info@innovatest-polska.pl
www.innovatest-poland.com

MIDDLE EAST

INNOVATEST Middle East LLC
Sales & Service
Phone: +971- 4- 880 0875
info@innovatest-mideast.com
www.innovatest-mideast.com

NORTH-AMERICA

INNOVATEST USA Inc.
Sales & Service
Phone: +1 267 317 4300
info@innovatest-usa.com
www.innovatest-usa.com

ASIA

INNOVATEST Shanghai Co., Ltd.
Sales & Service
Phone: +86 21 60906200
Fax: +86 21 60912595
info@innovatest-shanghai.com
www.innovatest-shanghai.com

INNOVATEST Japan K.K.
Sales & Service
Phone: +81 3 6667 0554
Fax: +81 3 6667 0556
info@innovatest-japan.com
www.innovatest-japan.com

INNOVATEST South East Asia
Sales & Service
Phone: +65 6451 1123
Fax: +65 6452 1011
info@innovatest-singapore.com
www.innovatest-singapore.com

Distributor :

CORPORATE HEAD OFFICE

INNOVATEST Europe BV
Manufacturing, Distribution & Service
Borgharenweg 140
6222 AA MAASTRICHT
The Netherlands

Phone: +31 43 3520060
info@innovatest-europe.com
www.innovatest-europe.com