

NEXUS 7700

Universal Hardness Tester

SEMI - **AUTOMATED**



NEXUS 7700

The icon of Universal hardness testing!

The 7700 is the latest update of the late 60's development matt screen Universal Hardness tester with a swivel system to change from indenter to objective position. Alive as never before!
Due to enhanced camera technology that provides 18 Megapixel 4K full HD images, there isn't much need for exchanging objectives.

Economic, high end, hardness testing machine, easy to use, continuing a long established reputation.
Measures a large number of hardness scales according to the procedures as stated in the ISO & ASTM standards.



HARDNESS SCALES



VICKERS 500gf - 120kgf
also HVD (HVT)



KNOOP 500gf - 5kgf



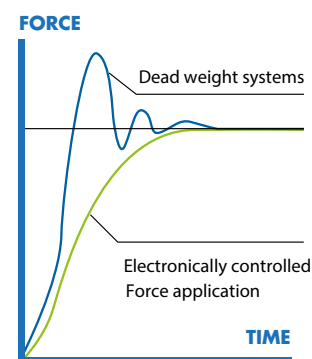
BRINELL 1kgf - 250kgf
also HBD (HBT)



ROCKWELL 3kgf - 150kgf

* For more details on the scales see page 18

TECHNOLOGY OF TODAY



Load cell, closed loop,
force feedback system

CONVENIENT FORCE RANGE

500gf

NEXUS 7700

250kgf

HIGHLIGHTS

- 1 Load cell, closed loop, force feedback, load application system.
- 2 Fully automatic test cycle
- 3 18 Megapixels, 4K+ Full HD camera system, with zoom and autofocus
- 4 12" industrial full color touch screen
- 5 Precision Z-axis displacement by ergonomic handwheel
- 6 Adjustable workpiece illumination
- 7 Integrated high performance system controller i7 processor
- 8 Clamp to protect indenter and fix workpiece to anvil or stage
- 9 Manual, motorized stages and/or anvils at choice
- 10 Workpiece accommodation: 340 mm (H) x 205 mm (D)

Solid performance and lasting reliability

1 INDENTER & OBJECTIVE SWIVEL SYSTEM

The 7700 has an electro-mechanical swivel system that swivels from indenter to objective after each test. It's a proven system that makes it easy to perform a test and requires no operator skills.

Indenters are easy to exchange and are protected by an adjustable and removable clamping system that provides protection to the indenter and holds the workpieces firmly clamped to the anvil.

2 SYSTEM CONTROL

The optical system makes use of top quality objectives that transfer image to an 18 megapixels 4K (Full HD) camera system that on its turn creates crisp images on the 12" industrial touch screen.

The electronic heart of the tester is based around a latest technology system controller running on Windows 10 that includes MSATA hard drives for file storing. The 7700 can be connected to the internet by a wired or wireless connection and if required can be serviced over the internet easily.

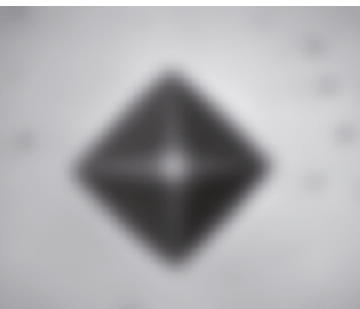
3 Z-AXIS

Vertical workpiece positioning can be obtained by running the solid and ergonomic spindle handwheel. The precision spindle allows a large variety of accessories such as tables or anvils to be mounted or inserted.

It is also possible to install a CNC X-Y motorized stage or manual X-Y stages, please see the accessories page for more explanation.



AUTOMATIC IMAGE EVALUATION



1

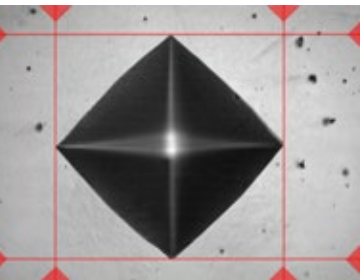
1 AUTO FOCUS

Fast & precise, observe how IMPRESSIONS™ finds focus from a large distance, as far as the travel of the Z-axis allows. Algorithms used for close distance autofocusing set new standards in AF speed.



2 AUTOMATIC MEASUREMENT

Manual positioning of filar lines is no longer required. IMPRESSIONS™ refined measurement algorithms detect indents even on very poor or scratched surfaces and measure the relevant indent dimensions according to standards. Stay in control by switching to manual measure mode and have the option of adjusting measurements by touching the screen or using the mouse. Filar lines can be colored to give the best contrast against the specimen's surface. To assure that measurements meet relevant standards on symmetry, enable the automatic indent check. All hardness values can be converted to other scales according to ISO 18265, ISO 50150, ASTM E140.



2

Evaluate whatever you want, --
because what gets measured, gets produced...



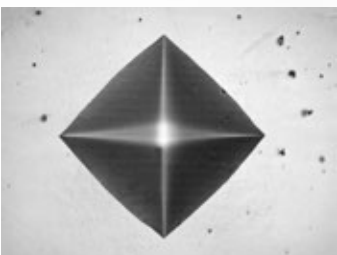
3 ILLUMINATION SETTINGS

IMPRESSIONS™ software automatic illumination system adapts to the correct illumination regardless of the sample surface quality, wherever on the sample, independent from material (steel, carbide, coated or ceramic). Contrast, Brightness and Program, can be set automatically for each measurement or controlled manually. Sharpness can be stored with the pre-determined test.

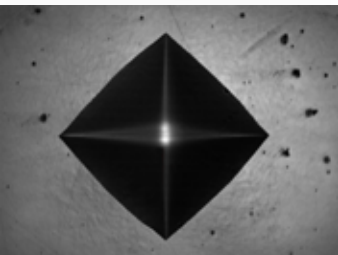
Too bright



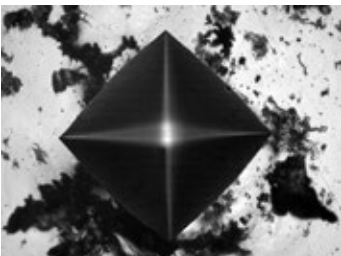
OK



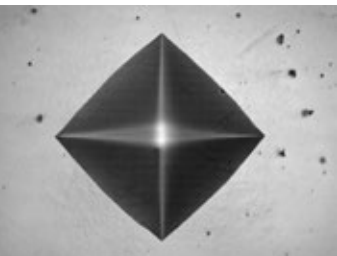
Too dark



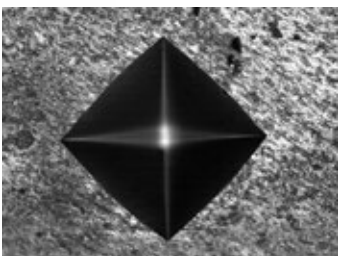
3



Irregular surface



Regular surface



Poor surface

4

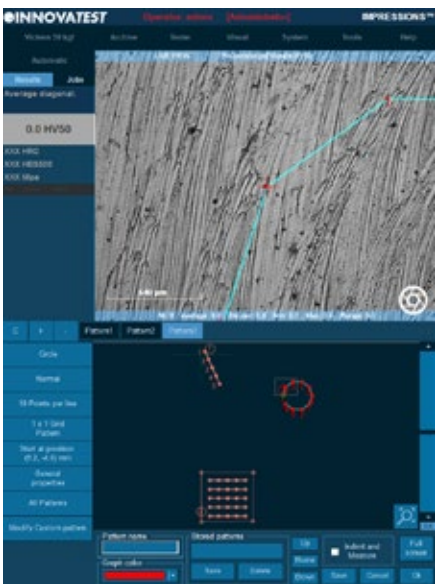
4 REFINED IMAGE DETECTION

Complex, refined algorithms ensure reproducible measurements on different materials and even on scratched and damaged surfaces.

IMPRESSIONS operating comfort guarantees less down time

The Graphical User interface (GUI), contains industry preferred applications and offers easy to learn, advanced workflow control. A simple test can be set up and conducted in about 3 seconds... IMPRESSIONS™ layout & functions will match not only your particular application requirements, but also meet the needs and preferences of your operators. A user level management system maximizes their comfort and efficiency.

The unique in the industry, 12" portrait mode, capacitive touch screen, gives room to all possible applications. With this many options in Hardware and Software configuration, yearly updates and on demand upgrades, IMPRESSIONS™ is truly the leading software in the industry.



1 VIDEO OVERLAY GRAPHIC PATTERN EDITOR

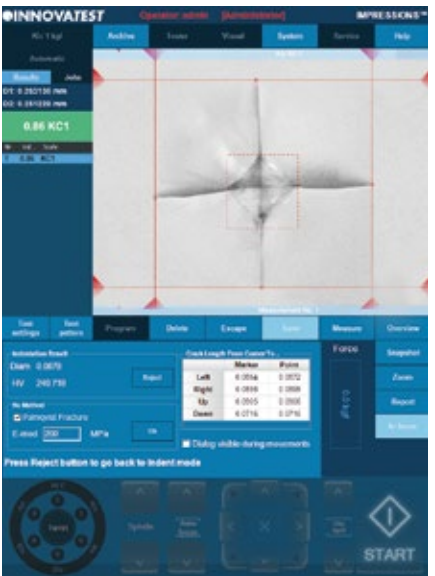
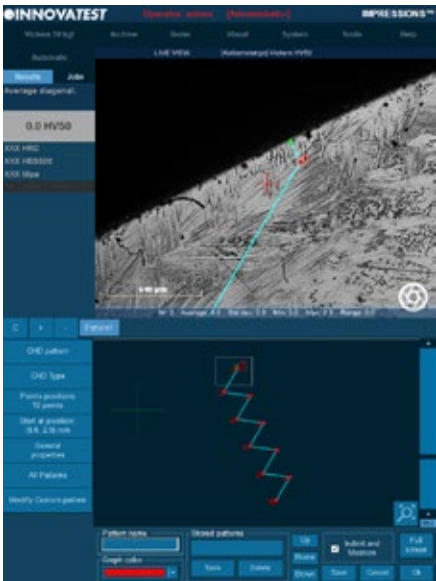
The IMPRESSIONS™ pattern editor allows the user to create any number of test patterns with a large number of variable settings. Create test patterns with great precision and freedom. Verify the settings in the preview mode. Drag & drop patterns from one test sample to another sample. Live vision technique 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 print out. An important function for later sample analyses.

FEATURED BY IMPRESSIONS v2

ADVANCED SOFTWARE APPLICATIONS

2 CHD, SHD, NHD

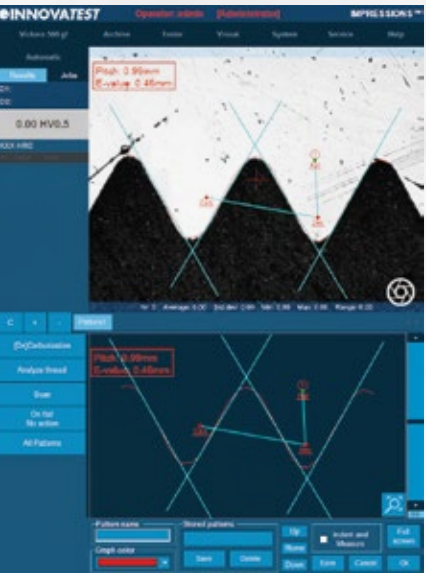
For the performance of test series for CHD/SHD/NHD data of specimens according to standard. The test can be started directly from the surface view or from the overview. Additional core points of hardness can be defined separately for NHD measurements. The distances of test points are automatically set 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.



3 Kic CRACK MEASUREMENT

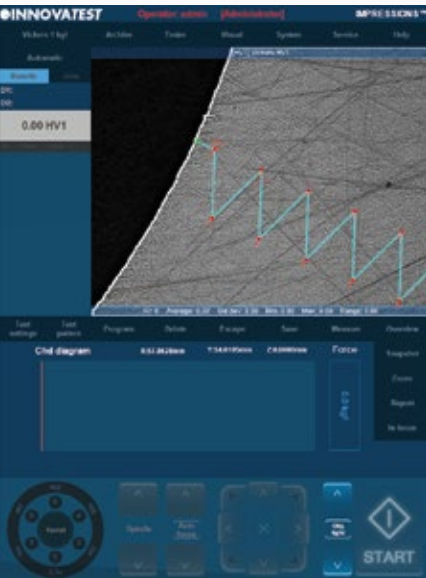
For those requiring more in depth knowledge on materials behavior, and wish to study on fracture and fatigue, crack growth can be predicted (and measured) by using the Kic application. The software supports Kic crack detection under load. At choice, one of both methods, Palmqvist or Median / Radial fracture toughness can be selected.

Easy to operate, time reducing solutions...



4 HARDNESS OF SCREW THREAD DECARBONIZED ZONE (ISO-898-1)

A specialized software tool of IMPRESSIONS™ allows you to set up and conduct fully automatic testing as per ISO 898-1 for screw thread measurement of (de)-carbonized part.



5 AUTOMATIC 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.

6 SNAPSHOT FUNCTION

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

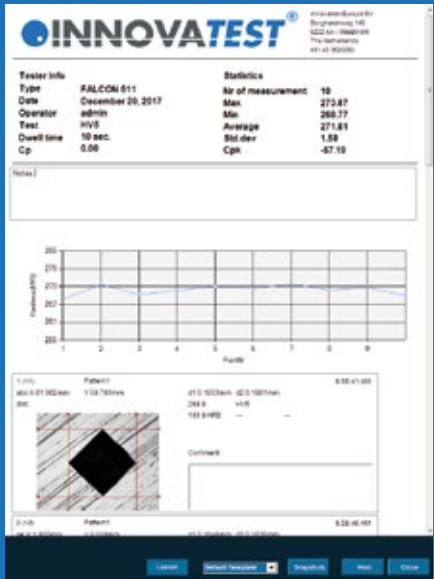


7 USER DEFINED PROGRAMS

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, like hardness scale, force, dwell-time, pattern, conversion and the report template are stored in the same program.

8 REPORT GENERATOR

The report generator offers to design customized testing reports, including your company’s details and logo and include testing results, graphics and pictures of indentations in an easy to edit environment. The file can be printed straight to a connected laser printer for further distribution. Alternatively the file can be exported as a CSV file, to be used in MS Office applications or 3rd party quality assurance software.



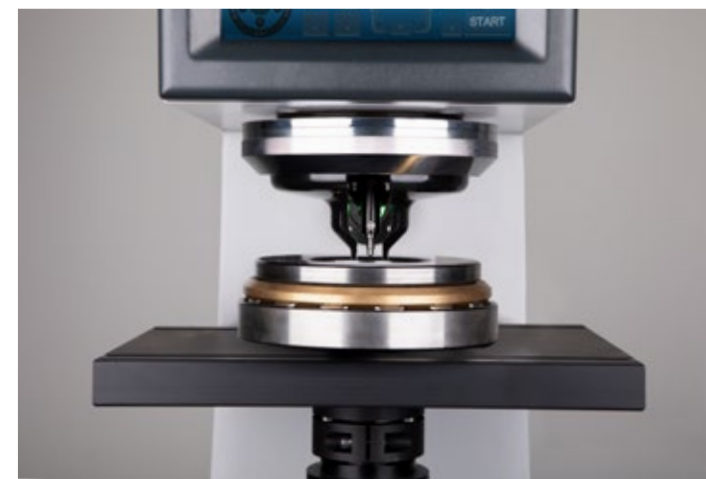


WORKPIECE CLAMP & INDENTER COVER

The NEXUS 7700 is standard equipped with a workpiece clamp that provides adjustable pressure on the workpiece surface and presses the workpiece firmly to the stage or anvil. The clamp also protects the indenter against unwanted damage.

INCOMPREHENSIBLE POSSIBILITIES

The 7700 has the option to install a wide variety of anvils, fixtures, flat stages, manual micrometer stages or CNC X-Y motorized stages. In combination with a load application system that ranges from 0.5kgf up to 250kgf the machines can be seen as unique in its class. The very competitive price is justified from a large sales number and an install base of many thousands of machines.





SUPPORT YOUR BEST TESTING RESULTS

With our rigid designed Bench stands

- Rock solid bench stands
- 100% retractable drawer, bearing guidance, max 100kg load. Rubber anti slip bottom
- Lockable cabinet, 300mm high
- Adjustable feet, (+/- 50mm height adjustable to reach ergonomic working position)
- Made of corrosion resistant zinc plated steel with RAL powder coating
- Carrying capacity of 400kg
- Top surface made of 50mm Plywood with 1.5mm chemical resistant plastic plating, edges made of shock resistant 3mm ABS side liner
- Industrial quality, for workshop or laboratory

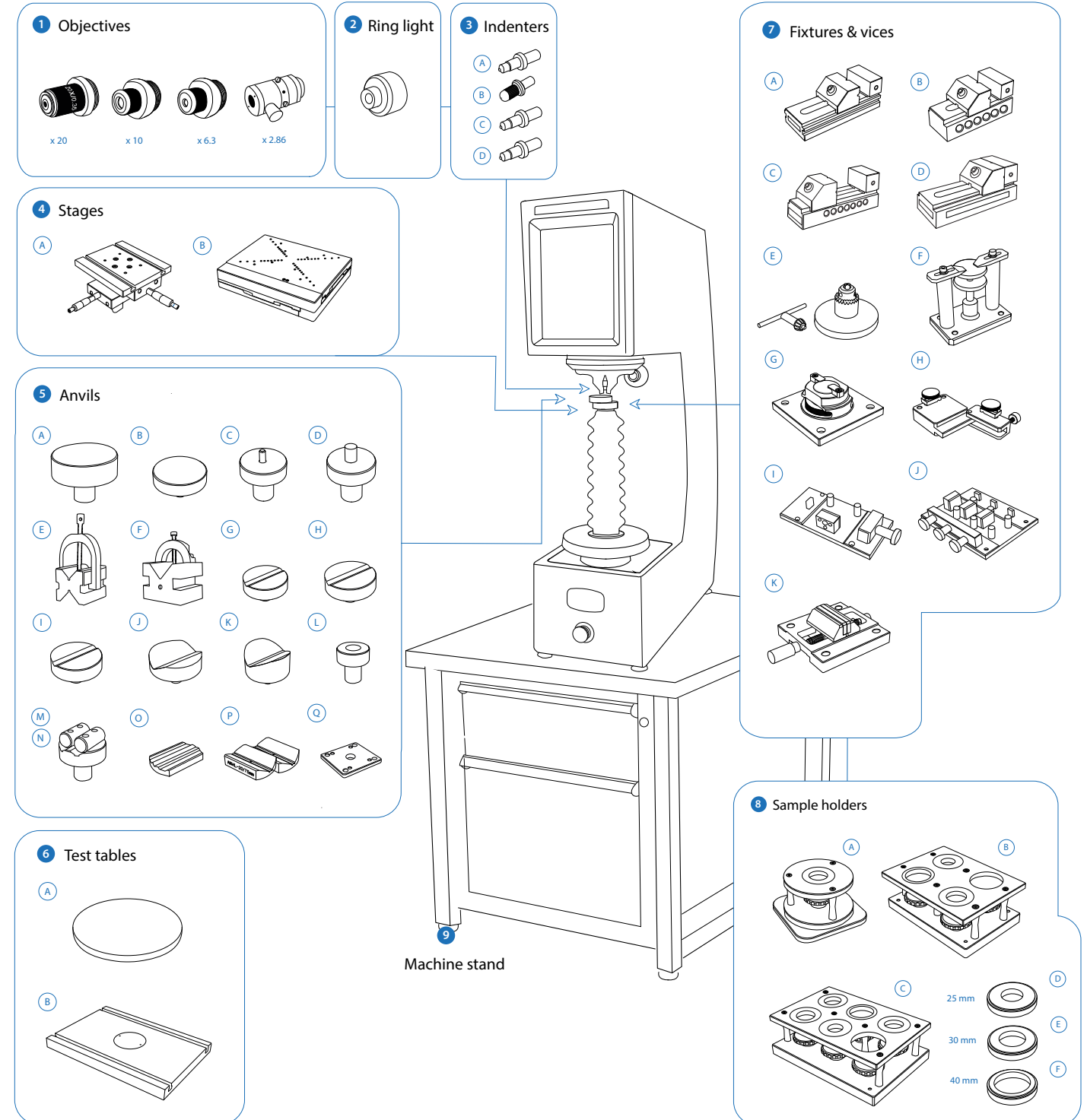
Designed for hardness testing instruments, painted in INNOVATEST® RAL colors matching our testers.



UN-STAND/950 71 x 75 x 70 cm

ACCESSORIES NEXUS 7700


Schematic overview of the configuration options, standard and optional accessories



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

ORDER DETAILS

NEXUS 7700

		Universal hardness tester, 500gf - 250kgf	NEXUS 7700	
		Plug & Play prepared, calibration, sea & airworthy packing in "non coniferous wood" material	P&PSEAPACK120	

ACCESSORIES

1	Objectives		Objective for 20x (total magnification 140x)	AS7000-08-05	
			Objective 10x (total magnification 70x)	AS7000-08-06	STANDARD
			Objective 6.3x (total magnification 44x)	AS7000-08-07	STANDARD
			Objective 2.86x (total magnification 20x)	AS7000-08-08	
2	Ringlight		Ring light for 7501 and 7700 (suitable for as7000-08-08 only)	UN-RINGLIGHT 7700	
3	Indenters	A	Rockwell diamond indenter, ASTM/ISO certified	IN/6005	
		B	1mm Carbide Ball Indenter Ø6.35mm, ASTM/ISO certified	IN/7000	
			2.5mm Carbide Ball Indenter Ø6.35mm, ASTM/ISO certified	IN/7005	
			5mm Carbide Ball Indenter Ø6.35mm, ASTM/ISO certified	IN/7010	
			10mm Carbide Ball Indenter Ø6.35mm, ASTM/ISO certified	IN/7015	
			1/16" Carbide Ball Indenter, ASTM/ISO certified	IN/7506	
			1/8" Carbide Ball Indenter, ASTM/ISO certified	IN/7606	
			¼" Carbide Ball Indenter, ASTM/ISO certified	IN/7706	
			½" Carbide Ball Indenter, ASTM/ISO certified	IN/7806	
		C	Macro Vickers Indenter Ø6.35mm, ASTM/ISO certified	IN/8010	
			Micro Knoop Indenter Ø6.35mm, ASTM/ISO certified	IN/8220	
4	Stages	A	Manual X-Y stage with analogue metric micrometers, 180x160mm Displacement: 25x25mm, scale 0.01mm, max load 300kg	UN-TESTTABLE/030	
			Lock flange	UN-XYZ BUSH55	
			Mounting plate for lock flange	UN-XYZ30FP50-55	
		B	Motorized CNC X-Y stage, 257x188mm, total load up to 400Kgf max. Displacement: 170x120mm, repeatability +/-0.003mm	UN-XY571210	
			Motorized CNC X-Y stage, 307x208mm, total load up to 400Kgf max. Displacement: 170x120mm, repeatability +/-0.003mm	UN-XY571712	
			Motorized CNC X-Y stage, 337x188mm, total load up to 400Kgf max. Displacement: 200x100mm, resolution +/- 0.001mm, repeatability +/-0.003mm	UN-XY572010	
			Motorized CNC X-Y stage, 357x208mm, total load up to 400Kgf max Displacement: 220x120mm, repeatability better then 0.003mm	UN-XY572212	
			Motorized CNC X-Y stage, 337x238mm, total load up to 450Kgf max. Displacement: 200x150mm, resolution 0.001mm, repeatability better then 0.003mm	UN-XY902015	
			Motorized CNC X-Y stage, 437x238mm, total load up to 450Kgf max. Displacement: 300x150mm, resolution 0.001mm, repeatability better then 0.003mm	UN-XY903015	
			Motorized CNC X-Y stage, 630x238mm, total load up to 450Kgf max. Displacement: 400x150mm, resolution +/- 0.001mm, repeatability +/-0.003mm	UN-XY904015	
			Motorized CNC X-Y stage, 630x238mm, total load up to 4000Kgf max. Displacement: 400x150mm, resolution 0.001mm, repeatability better then 0.003mm	UN-XY934015	
	Clamping, locking & fixing adapters		Lock flange	AS3000-21-01	

5	Anvils	A	Mounting plate for lock flange	UN-XYZ30FP50-100	
			Cable set for connecting CNC stage to embedded driver (1 set for 2-axis) 155cm	UN-XY2CABLENBL	
			Flat anvil 60mm	AS3000-19-04	
			Flat anvil 80mm	UN-TESTTABLE/002	
			Spot anvil 5mm	UN-ANVIL/010	
			Spot anvil 10mm	UN-ANVIL/011	
			V block with bracket 40x40x50mm (LxBxH)	UN-VBLOCK404050	
			Steel, cross type, (X) V-block 60x120x100mm 8-90mm pair	UN-CROSSBLOCK01	
			V-anvil ø40mm 6-60mm	UN-ANVIL/005	
			V-anvil ø63mm 6-60mm	UN-ANVIL/006	
			V-Anvil ø80mm 3.3-20mm	UN-ANVIL/040	
			V-Anvil ø80mm 12-80mm	UN-ANVIL/045	
			V-Anvil ø80mm 20-140mm	UN-ANVIL/050	
			Anvil for round specimen dia. 6-25,4mm	UN-ANVIL/200	
			Cylindrical V anvil 6-80mm	UN-CVANVIL680	
			Cylindrical V anvil 50-200mm	UN-CVANVIL50200	
			Test table 100x100mm, V groove 20mm wide, 10mm deep	UN-TESTTABLE/040	
			Small V-Anvil 3-20mm requires base plate (Requires Manual/Autom. X-Y stage)	UN-ANVILSV/105	
6	Test tables	P	Large V-Anvil 20-75mm requires base plate (Requires Manual/Autom. X-Y stage)	UN-ANVILLV/106	
			Base plate for V-anvils un-anvilsv/105 & 106	UN-VANVILBASEPL	
			Testing table ø200mm	UN-TESTTABLE/011	
			Testing table ø235mm	UN-TESTTABLE/013	
			Large flat surface testing table 350x250mm, thickness 30mm with 2 T-slots, for large components	UN-TESTTABLE/015	
			Large flat surface testing table 450x350mm, thickness 35mm with 2 T-slots, for large components	UN-TESTTABLE/016	
			Large flat surface testing table 600x300mm, thickness 25mm, with 2 T-slots, for large light components	UN-TESTTABLE/019	
7	Fixtures & vices	A	Polished precision vice with lock down system, jaw width 25mm, opens 20mm	UN-VICE/210	
			Polished precision vice with lock down system, jaw width 36mm, opens 42mm	UN-VICE/215	
			Polished precision vice with lock down system, jaw width 48mm, opens 75mm	UN-VICE/220	
			Polished precision vice with lock down system, jaw width 75mm, opens 100mm	UN-VICE/230	
			Axle chuck 500 series for cylinder parts, dia. 0.4mm to 5mm	UN-AXLECHUCK	
			Universal Clamp & Leveling Device	UN-CLAMP/105	
			Thin metal clamp	UN-CLAMP/115	
			V groove clamp for small round parts dia.0.8-5mm (not suitable for test forces over 62.5kg)	UN-VGROOVE- CLAMP	
			Wire Testing Fixture	UN-WIRE/105	
			JOMINY Fixture, for 1 quench end test sample, quick release function	UN-JOMFIX1	
			JOMINY Fixture, for 3 quench end test sample, quick release function	UN-JOMFIX3	
			Small parts vice jaw width 55mm, open 50mm, self centering	UN-VICE/115	

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 insert reduction ring 25mm	UN-ESHI25	
		E	1 insert reduction ring 30mm	UN-ESHI30	
		F	1 insert reduction ring 40mm	UN-ESHI40	
			1 insert reduction ring 1	UN-ESHI1	
			1 insert reduction ring 1 1/4	UN-ESHI125	
9	Machine stand		1 insert reduction ring 1,5	UN-ESHI15	
			Cabinet test table with drawer for hardness testers 71x75x70cm	UN-STAND/950	
			Seaworthy packing box for 950/960	PACK/100	
	Printer		Laser Printer	UN-PRINT	
	ISO / ASTM Verification		Direct and Indirect Verification/Calibration & BRINELL Certification in compliance with ISO & ASTM, NADCAP.	CALCEFRDW/1B	
			Direct and Indirect Verification/Calibration & ROCKWELL Certification in compliance with ISO & ASTM, NADCAP.	CALCEFRDW/1R	
			Direct and Indirect Verification/Calibration & VICKERS Certification in compliance with ISO & ASTM, NADCAP.	CALCEFRDW/1V	
			Direct and Indirect Verification/Calibration & VICKERS Certification in compliance with ISO & ASTM, NADCAP.	CALCEFRDW/1K	
	Cover		Anti Static machine cover 450x700x1100mm	UN-TESTERCOVER01	

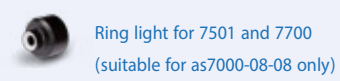
SOFTWARE				
	Additional Software	Automatic measurement		STANDARD
		Manual & automatic on-screen measurement	UN-MANM	STANDARD
		Automatic focussing	UN-AUTOFOC	STANDARD
		Report configurator	UN-REPORTA	STANDARD
		Snapshot function	UN-SNAPSH	STANDARD
		Advanced 3 axis coordinate & free style indent pattern 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 micro-meter stages only)	UN-TESTPAT02	
		KiC crack detection under load. Palmqvist & Median / Radial fracture toughness	UN-CRKPAR	
		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	UN-ISO898/1	
		ISO-2702 tap screw thread measurement	UN-ISO2702	
		User level management	UN-LEVMAN	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	
		Q-DAS Certified connectivity protocol	UN-QDAS	
		Virtual joystick, on-screen		STANDARD
		Advanced 3-axis communication protocol for robotic systems	UN-REMC	
		ISO bullets casings pattern configurator and reporting system	UN-SHELLCONF	
	Connectivity Plus	Blue Tooth connectivity	UN-BTADAPT	
		Utility software; Import test results in MS applications like Excel	UN-SW/905	
		USB to USB null modem cable 2.5M	BE-99-0025	
		Wireless system Keyboard & wireless mouse	UN-SKBSET	STANDARD

ACCESSORIES

OBJECTIVES



RING LIGHT



INDENTERS



STAGES



ANVILS



TEST TABLES



FIXTURES AND VICES



SAMPLE HOLDERS



MACHINE STAND



SPECIFICATIONS

HARDNESS SCALES

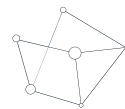
	ROCKWELL EN-ISO 6508 ASTM E-18 JIS Z 2245	Regular Rockwell scales; Pre Load 10kgf, Main Load 60kgf 100kgf 150kgf A B C D E F G H K L M P R S V Superficial Rockwell scales; Pre Load 3kgf, Main Load 15kgf 30kgf 45kgf 15N 30N 45N 15T 30T 45T 15W 30W 45W 15X 30X 45X 15Y 30Y 45Y
	VICKERS ISO 6507 ASTM E384,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

TEST FORCE

	Force application	Loadcell closed loop, force feedback system
	Test forces	0.5kgf – 250kgf
	Test force tolerance	< 0.5%
	Dwell time settings	1 - 250 seconds

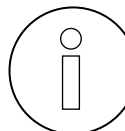
TECHNICAL DRAWINGS

SYSTEM

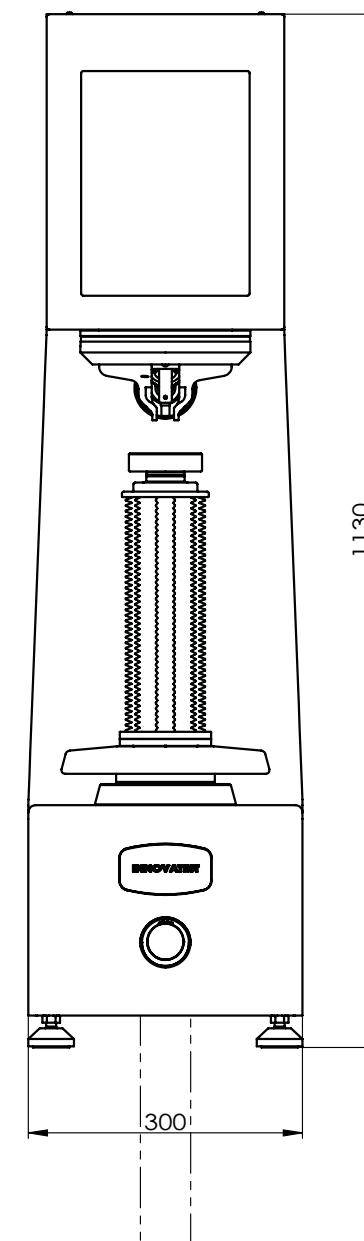


Electronic system Standard (Recommended)	High performance embedded controller, i7, mSSD 120 GBxx, MS Windows® 10 operated , up to 8 years* INNOVATEST warranty
Electronic system (Optional)	High performance external controller, i7, mSSD 120 GBxx, MS Windows® 10 operated, 1 year factory warranty
Screen(s)	12" full colour touch screen
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	No. of tests, Mean, St. Deviation, Min., Max., Range, CP, CPk, individual readings list, storage memory, Dwell time, test force setting, scale selection, calibration etc.
Data output	XML, CSV, Certified for Q-DAS (Optional)
Connectivity	4 USB ports, RJ45 Ethernet LAN, W-LAN, RS-232, Blue Tooth

GENERAL

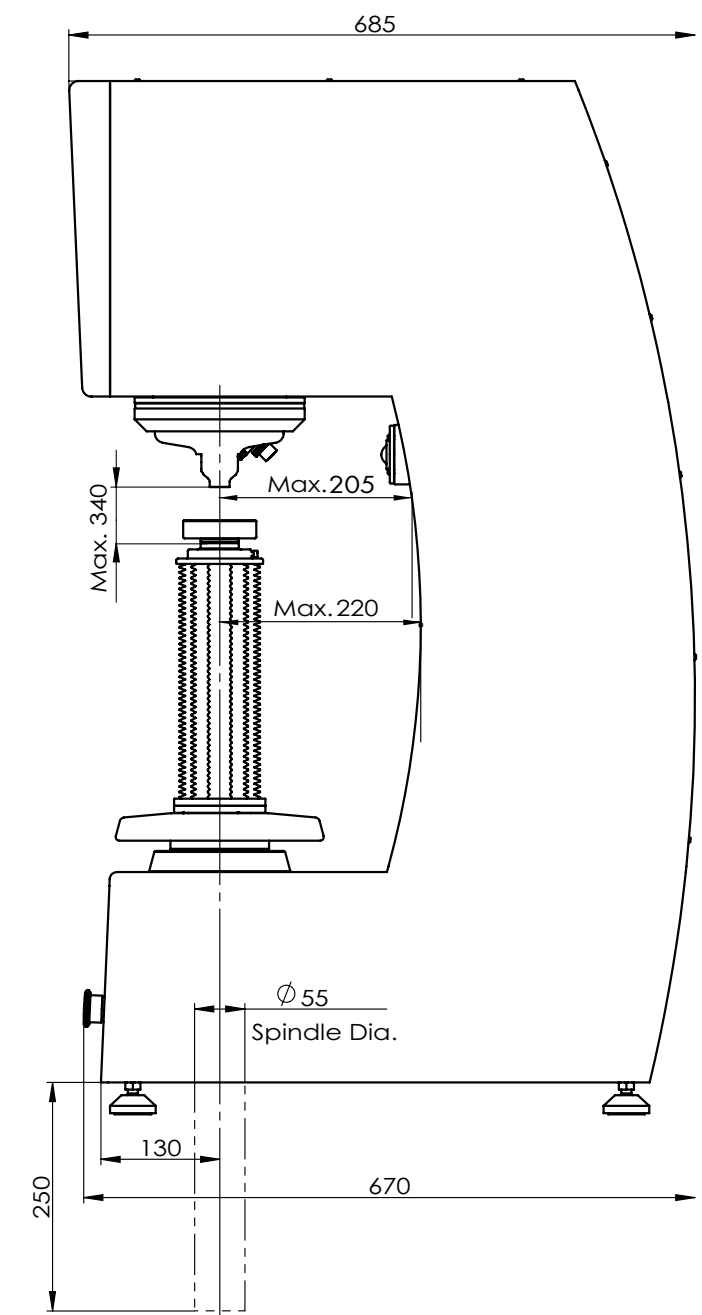


Machine dimension	300mm x 670mm x 1130mm
Machine weight	178 kg
Power supply	100VAC to 240VAC, 50/60Hz, single phase
Operating temperature	10°C to 35°C, non-condensing
Power consumption	100W
Humidity	10% to 90%, non-condensing



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.



OTHER MODELS IN THE UNIVERSAL RANGE



NEXUS 605U

Fully automatic, load cell, closed loop, force feedback universal hardness tester with electronic micrometer or analogue eyepiece. i-Touch, 6.5" full color touch screen.
See brochure B19N605U/XX



VERZUS 750CCD

Fully automatic, load cell, closed loop, force feedback universal hardness tester with electronic micrometer or analogue eyepiece. IMPRESSIONS™ 8.5" full color touch screen.
See brochure B19V750CCD/XX



NEXUS 8100

Heavy duty fully automatic, load cell, closed loop, force feedback universal hardness tester with full HD optical zoom stage overview camera, IMPRESSIONS™ 15" full color touch screen.
See brochure B19N8100/XX



NEXUS 8100XL

Heavy duty fully automatic, load cell, closed loop, force feedback universal hardness tester with full HD optical zoom stage overview camera, IMPRESSIONS™ 15" full color touch screen.
See brochure B19N8100/XX



NEMESIS 9600

Heavy duty fully automatic, load cell, closed loop, force feedback universal hardness tester with full HD optical zoom stage overview camera, IMPRESSIONS™ 15" full color touch screen.
See brochure B19N9600/XX



NEMESIS 5100

Multi Load Cell, Closed loop Fully automatic, 8 position turret Rockwell, Superficial Rockwell, Micro/Macro Vickers, Knoop & Brinell Hardness testers Descending test head, fixed work piece position
See brochure B18N5100/XX



NEMESIS 9100

Multi Load Cell, Closed loop Fully automatic, 8 position turret Rockwell, Superficial Rockwell, Micro/Macro Vickers, Knoop & Brinell Hardness testers Descending test head, fixed work piece position
See brochure B18N9100/XX

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