

NEXUS

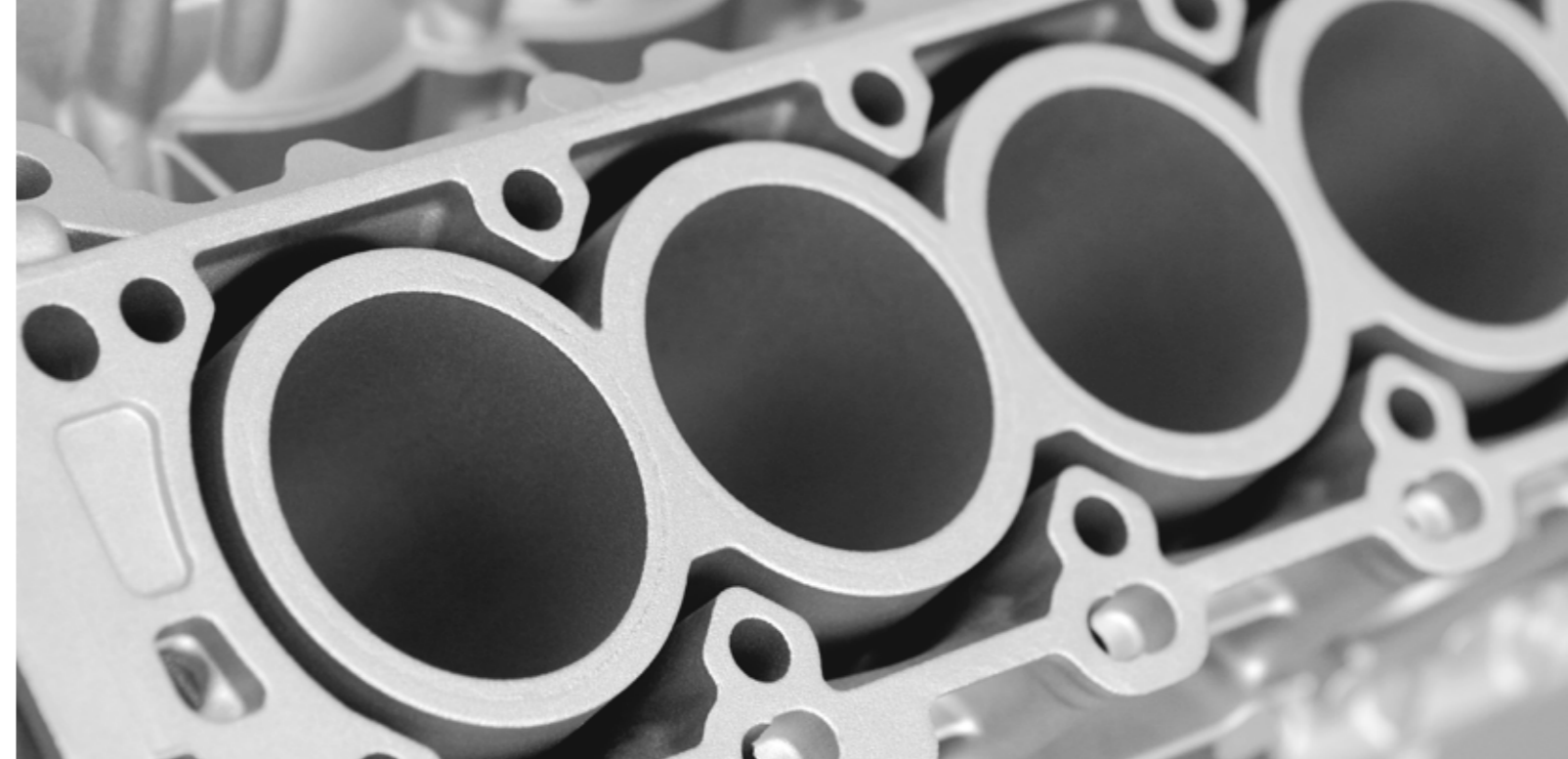
3300 (M)/3400 (M)

Brinell Hardness Testers

WITH **BIOS SYSTEM, MANUAL OR MOTORIZED Z-AXIS**



NEXUS 3300 & 3400



Sturdy, rugged, power-full, for harsh environments

The NEXUS 3300 and its taller and larger equivalent the 3400 are heavy duty hardness testing machines that test metals mostly castings according to the test principle invented in 1900 by Johan August BRINELL.

Both machines incorporate a large sturdy machine body of over 300kg, from 390mm working height (3300) to 530mm working height (3400). With either a manual spindle (3300/3400) or a motorized (3300M/3400M) spindle, the workpiece can be set in height and the full indent procedure will be performed automatically.

The unique BIOS cameras (BIOS 1 or 2) can be placed on the indent which will generate a fully automatic indent image, the automatic following evaluation will display the value in Brinell on the large industrial touchscreen.



NEXUS 3400M

HARDNESS SCALES



BRINELL 31.25kgf – 3000kgf



NEXUS 3300



Load cell, closed loop, force feedback system

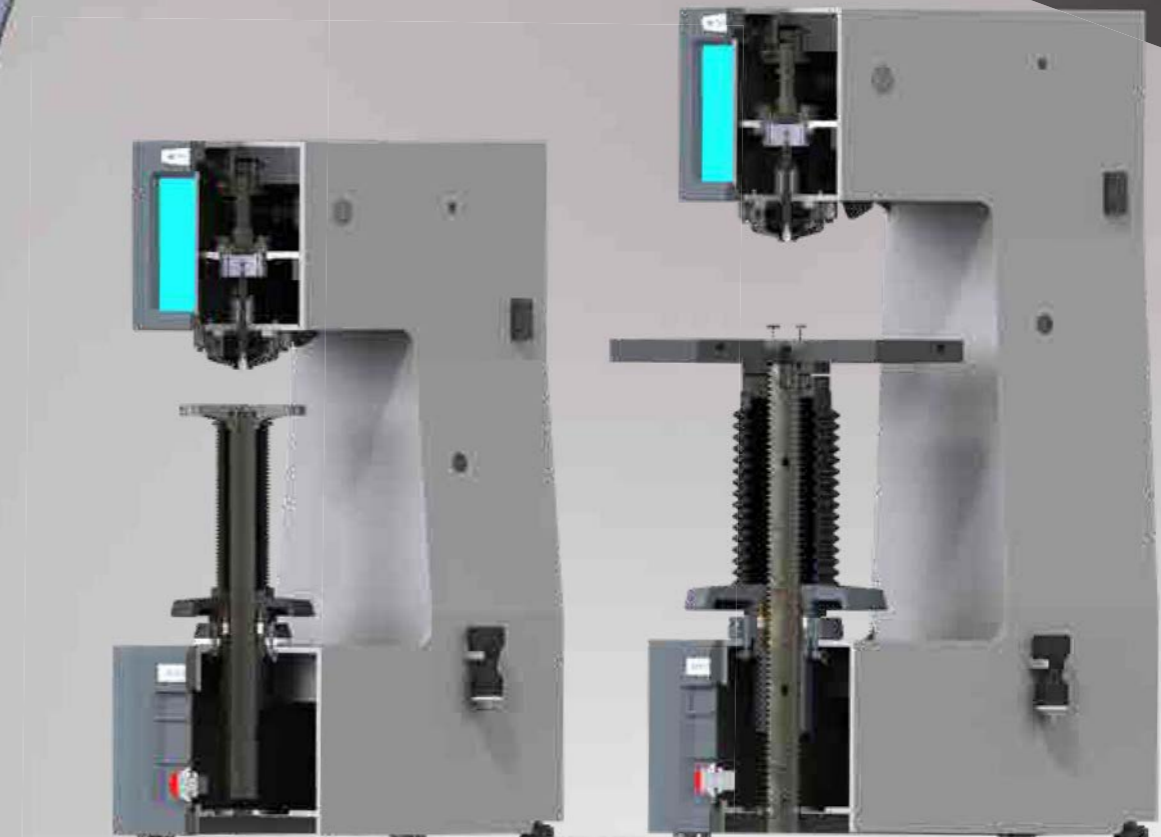
BRINELL FORCE RANGE

62.5kgf	NEXUS 3300/3400	3000kgf
31.25kgf	NEXUS 3300M/3400M	3000kgf

HIGHLIGHTS

- 1 Fully automatic, closed loop, load cell, force feedback system
- 2 BIOS Brinell Indent Optical Scanner (BIOS-1 for large indents), with power LED ring light
- 3 Integrated fanless Windows 10 OS, IMPRESSIONS™ workflow controller
- 4 Full color 10,4" industrial touchscreen for full tester control
- 5 Wear gloves and control tester operation over real feel rubber buttons in dirty environments
- 6 TTL power LED measuring point illumination
- 7 Manual or servo driven motorized Z-axis
- 8 Fully enclosed heavy duty frame with rubber sealings
- 9 Optional over-pressure fan system, avoids machine failure in very dirty environments
- 10 Optional body cover plates in ABS to protect main body against damage

SENSIBLE INNOVATION



NEXUS 3300

NEXUS 3400

A purpose, an intention, a design...

Heavy duty machines with CE and fully concealed IP51 enclosure. Due to use of rubber sealings no metal dust can enter into the machine structure. For very dirty environments the inner side of the tester can be "overpressured" by an air compressing filtered fan.

Excellence is not a single act...

1 FULL COLOUR HD TOUCHSCREEN

Portrait mode 10,4" Industrial quality full color HD LCD touchscreen, mounted in solid aluminum housing. The panel can be used to set up the tester settings and or to operate the machine.

2 SOFT KEYS

Once the tester has been set up properly, the machine can be fully operated by large soft rubber keys, that can be touched with or without gloves, and requires no touchscreen operation.

3 WORKPIECE CLAMP

Order the rigid material clamp as an option to clamp your workpieces firmly against the test table. The clamp keeps irregular shaped workpieces in its right position.

4 MANUAL OR SERVO DRIVEN HIGH SPEED Z-AXIS

Choose from a manual Z-axis (3300-3400 models) or servo driven high speed Z-axis (3300M-3400 models).

5 BRINELL INDENT OPTICAL SCANNER

The BIOS 1 or BIOS 2 optical camera systems are handy ergonomic cameras with integrated ring lights for an optimum bright field/dark field indent illumination. Image and power to the camera and ring light are provided by a USB connection. The cameras can be equipped with various support rings small, large and magnetic. 1 single touch operation. After setting up the machine, all further measurement recordings can be operated with a single button on the camera.

BRINELL		ASTM E10 & ISO 6506	
Brinell scale	Ball mm	Force diameter index $0.102 \times F/D^2$	Recommended Hardness Range HBW
HBW 10/3000	10	30	96 - 650
HBW 10/1500	10	15	48 - 327
HBW 10/1000	10	10	32 - 218
HBW 10/500	10	5	16 - 109
HBW 10/250	10	2.5	8 - 55
HBW 10/125	10	1.25	4 - 27
HBW 10/100	10	1	3 - 22
HBW 5/750	5	30	96 - 650
HBW 5/250	5	10	32 - 218
HBW 5/125	5	5	16 - 109
HBW 5/62.5	5	2.5	8 - 55
HBW 5/31.25	5	1.25	4 - 27
HBW 2.5/187.5	2.5	30	96 - 650
HBW 2.5/62.5	2.5	10	32 - 218
HBW 2.5/31.25	2.5	5	16 - 109

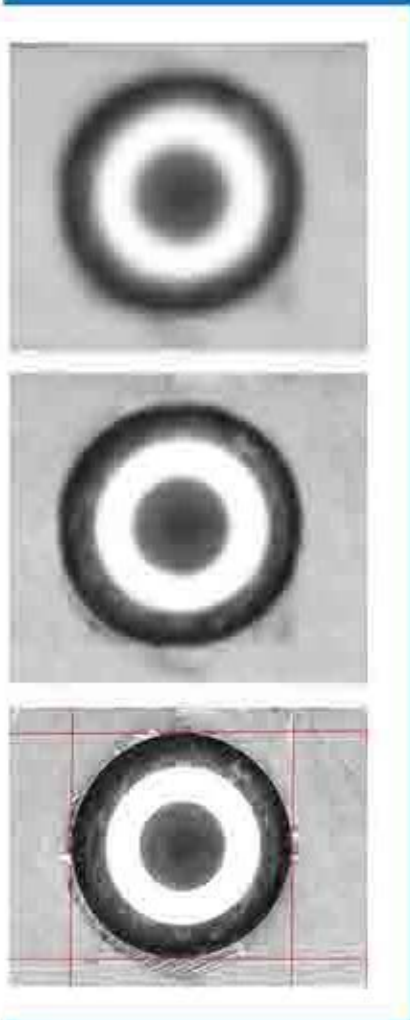


NEXUS 3300



NEXUS 3400M

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

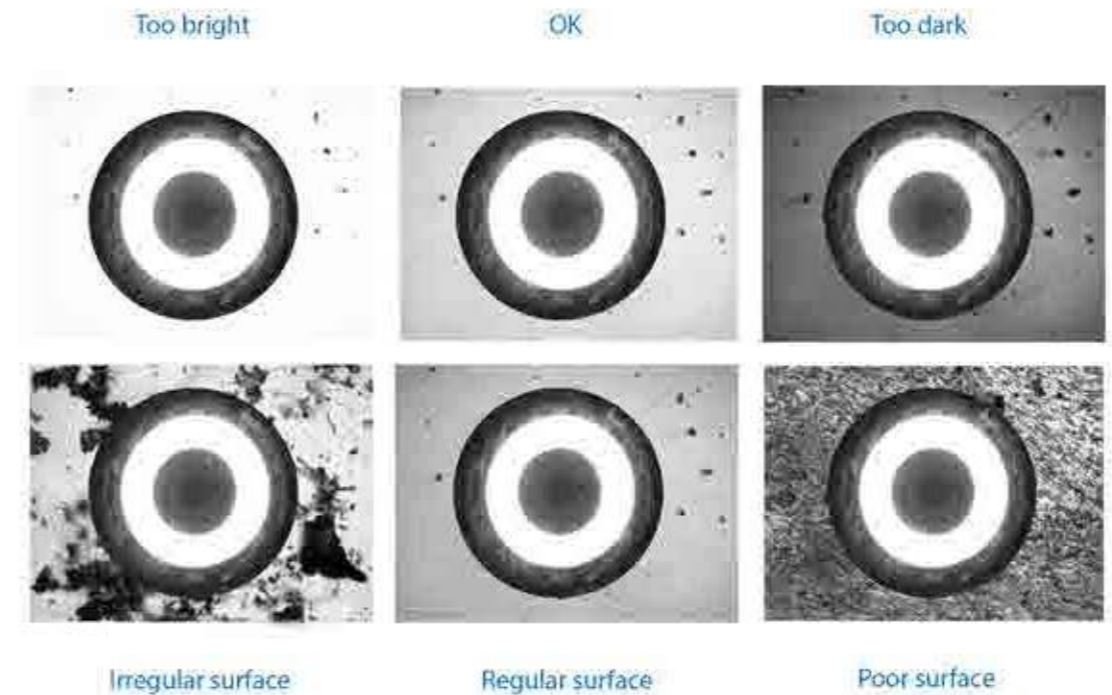
2 AUTOMATIC MEASUREMENT

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.

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.



4 REFINED IMAGE DETECTION

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

Semi Automatic Brinell hardness testing

IMPRESSIONS™ delivers Automated Hardness Testing solutions for a wide field of applications. The software is comprehensive, flexible, and a customizable solution for measuring hardness testing indents of any shape. It offers machine automation to the most comprehensive level.

The amount of automation and functionality can be defined by the user and ranges from standard functionality for manual, semi-automated and fully automated operation processes to a single push-button operation.

Designed to enhance the capabilities of a standalone tester, simply & easy-to-use, delivering a new kind of hardness testing user experience with excellent wired and wireless connectivity. In the 3300 and 3400 Brinell hardness testing machines IMPRESSIONS™ provides an easy to use automatic (and manual) indent measuring system. Measuring Brinell at a fingertip.

FEATURED BY IMPRESSIONS v2

ADVANCED SOFTWARE APPLICATIONS



A 10,4" touchscreen provides easy tester set up and general operation. The soft buttons on the front panel allow tester operation with gloves in very dirty environment.

1 OPERATOR CONTROL

The standard set up screen switched to camera mode directly after a test has been conducted or manually by pushing the measure button. All test results will line up on the screen and the list can be modified to request. All machine settings are available at your finger tips.



2 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.





MAGNETIC NON-MAGNETIC NON-MAGNETIC XL

SENSIBLE POSSIBILITIES

Explore the wide range of applications with the NEXUS 3300-3400 series Brinell hardness testers. We provide solutions for nearly any size of parts or components, due to the extensive range of accessories and corresponding software options. Solutions for every requirement, solutions for every need.





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 90 x 70 cm
UN-STAND/955 71 x 90 x 57 cm

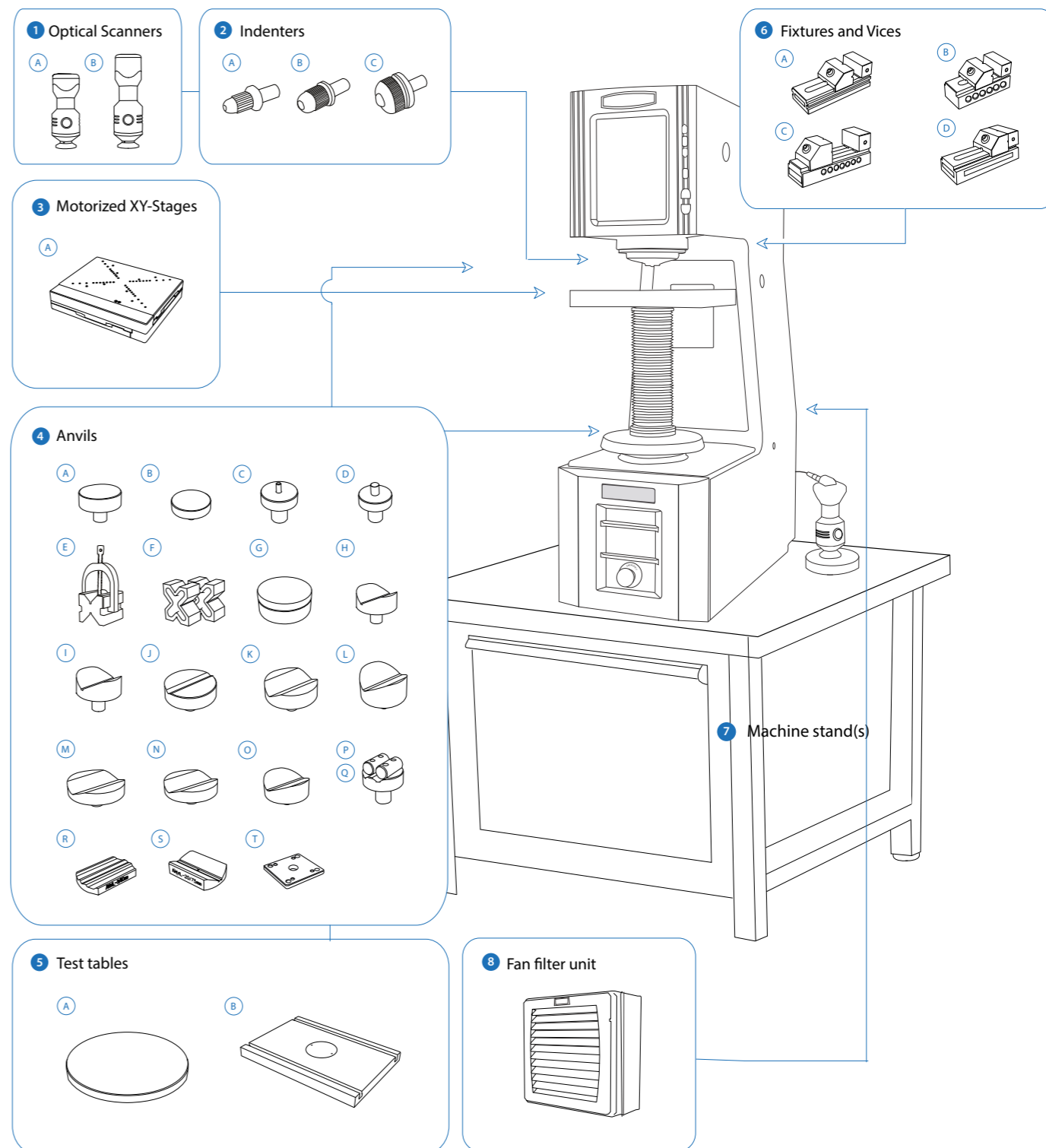


UN-STAND/956 71 x 90 x 42 cm

ACCESSORIES

NEXUS 3300 & 3400

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

3300(M) - 3400(M)



Brinell hardness tester, 62.5kgf - 3000kgf, BIOS system	NEXUS 3300	
Brinell hardness tester, 31.25kgf - 3000kgf, BIOS system, Motorized Z-Axis	NEXUS 3300M	
Brinell hardness tester, 62.5kgf - 3000kgf, BIOS system, Heavy Duty Frame	NEXUS 3400	
Brinell hardness tester, 31.25kgf - 3000kgf, BIOS system, Heavy Duty Frame, Motorized Z-Axis	NEXUS 3400M	
Plug & Play prepared, calibration, sea & airworthy packing in "non coniferous wood" material	P&PSEAPACK110	

ACCESSORIES

		Manual with large handwheel 3300, 3400		
		Motorized high power servo drive 3300M, 3400M		
		Rubber sealings for cover plates		STANDARD
1	Optical Scanners	A 18mpx USB3 Brinell Indent Optical Scanner (BIOS-1) for indents from 1.6 to 6mm made with 5mm or 10mm ball indenter	SA-12-0009	STANDARD
		B 18mpx USB3 Brinell Indent Optical Scanner (BIOS-2) for indents from 0.5 to 1.5mm made with 1 mm or 2.5 mm ball indenter	SA-12-0010	
2	Indenters	A Brinell Indenter 2.5mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7005	
		B Brinell Indenter 5mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7010	
		C Brinell Indenter 10mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/7015	
		2.5mm carbide ball, ISO & ASTM certified only for ø6.35mm	UPI/2010	
		Brinell Indenter 10mm. Includes 1 carbide ball. Ø6.35mm. ISO & ASTM certified	UPI/2015	
		10.0mm carbide ball, ISO & ASTM certified only for ø6.35mm	UPI/2020	
3	Motorized X-Y Stages	A 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	
	Cable sets, Mounting & Connectivity for Motorized Stages	Lock flange	AS3000-21-01	NEXUS 3300
		Lock flange	AS8000XL-16-01	NEXUS 3400
		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	NEXUS 3400
		Cable set for connecting CNC stage to embedded driver (1 set for 2-axis) 105cm	UN-XY2CABLENBS	NEXUS 3300
4	Anvils	A Flat anvil 60mm	AS3000-19-04	NEXUS 3300
		B Flat anvil 80mm	UN-TESTTABLE/002	NEXUS 3300
		C Spot anvil 5mm	UN-ANVIL/010	NEXUS 3300
		D Spot anvil 10mm	UN-ANVIL/011	NEXUS 3300
		E V block with bracket 40x40x50mm (LxBxH)	UN-VBLOCK404050	
		F Steel, cross type, (X) V-block 60x120x100mm 8-90mm pair	UN-CROSSBLOCK01	
		G Irregular part table support, ø150mm, requires flat anvil ≥150mm	UN-ANVIL/020	
		H V-anvil ø40mm 6-60mm	UN-ANVIL/005	NEXUS 3300
		I V-anvil ø63mm 10-100mm	UN-ANVIL/006	NEXUS 3300

		J V-Anvil ø80mm 3.3-20mm	UN-ANVIL/040	NEXUS 3300
		K V-Anvil ø80mm 15-80mm	UN-ANVIL/045	NEXUS 3300
		L V-Anvil ø80mm 23-140mm	UN-ANVIL/050	NEXUS 3300
		M V-anvil ø120mm 15-100mm	UN-ANVIL/060	NEXUS 3400
		N V-anvil ø120mm 3.3-20mm	UN-ANVIL/065	NEXUS 3400
		O V-anvil ø120mm 30-200mm	UN-ANVIL/070	NEXUS 3400
		P Cylindrical V anvil 6-80mm	UN-CVANVIL680	NEXUS 3300
		Q Cylindrical V anvil 50-200mm	UN-CVANVIL50200	NEXUS 3300
		Test table 100x100mm, V groove 20mm wide, 10mm deep	UN-TESTTABLE/040	NEXUS 3300
		R Small V-Anvil 3-20mm requires base plate (Requires Manual/Autom. X-Y stage)	UN-ANVILSV/105	
		S Large V-Anvil 20-75mm requires base plate (Requires Manual/Autom. X-Y stage)	UN-ANVILLV/106	
		T Base plate for V-anvils un-anvilsv/105 & 106	UN-VANVILBASEPL	
5	Test tables	A Testing table ø200mm	UN-TESTTABLE/011	NEXUS 3300
		Testing table ø235mm	UN-TESTTABLE/013	NEXUS 3300
		B Large flat surface testing table 350x250mm, thickness 30mm with 2 T-slots, for large components	UN-TESTTABLE/015	NEXUS 3300
		Large flat surface testing table 450x350mm, thickness 35mm with 2 T-slots, for large components	UN-TESTTABLE/016	NEXUS 3300
		Large flat surface testing table 600x300mm, thickness 25mm, with 2 T-slots, for large light components	UN-TESTTABLE/019	NEXUS 3300
		Large flat surface testing table 600x500mm, thickness 45mm, with 2 T-slots, for large light components	AS8000XL-16-02	NEXUS 3400
	Clamping, Locking & Fixing Adapters	Lock flange	AS3000-21-01	NEXUS 3300
		Lock flange	AS8000XL-16-01	NEXUS 3400
6	Fixtures and 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	
7	Machine Stands	A Cabinet test table with drawer for hardness testers 71x75x70cm	UN-STAND/950	NEXUS 3300
		Cabinet test table with drawer for hardness testers 71x90x57cm	UN-STAND/955	NEXUS 3400
		B Cabinet test table with drawer for hardness testers 71X90X42cm	UN-STAND/956	
		Seaworthy packing box for 950/960	PACK/100	
		Seaworthy packing box for 955/956	PACK/150	
8	Fan Filter Unit	Dust Protection System	SA-16-0001	
	Printer	Laser Printer	UN-PRINT	
	ISO / ASTM Verification	BRINELL direct and indirect verification/calibration & certification in compliance with ISO & ASTM, NADCAP. Includes direct force and indirect verification report (block readings), GR & R report, flat fee for selected common scales, per scale.	CALCEFRDW/1B	
	Machine Cover	Machine cover 600x700x1100mm	UN-COVER5	NEXUS 3300
		Machine cover 800x800x1450mm	UN-COVER7	NEXUS 3400

ORDER DETAILS

SOFTWARE

	Automatic measurement	UN-AUTOM	STANDARD
	Report configurator	UN-REPORTA	STANDARD
	Snapshot function	UN-SNAPSH	STANDARD
Additional Software	Advanced 3 axis coordinate & free style indent pattern configurator, for motorized stage only	UN-TESTPAT01	
	Drawing and measuring (distance & angles) application	UN-DRMEAS	
	Automatic edge detection	UN-EDGEDTC	
	User level management	UN-LEVMAN	STANDARD
	Manual & automatic on-screen measurement	UN-MANM	STANDARD
	Q-DAS Certified connectivity protocol	UN-QDAS	
	Advanced 3-axis communication protocol for robotic systems	UN-REMC	
Connectivity Plus	Bluetooth 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



HEAVY

DUTY MACHINES

ACCESSORIES

OPTICAL SCANNERS



INDENTERS



MOTORIZED XY-STAGES



TEST TABLES

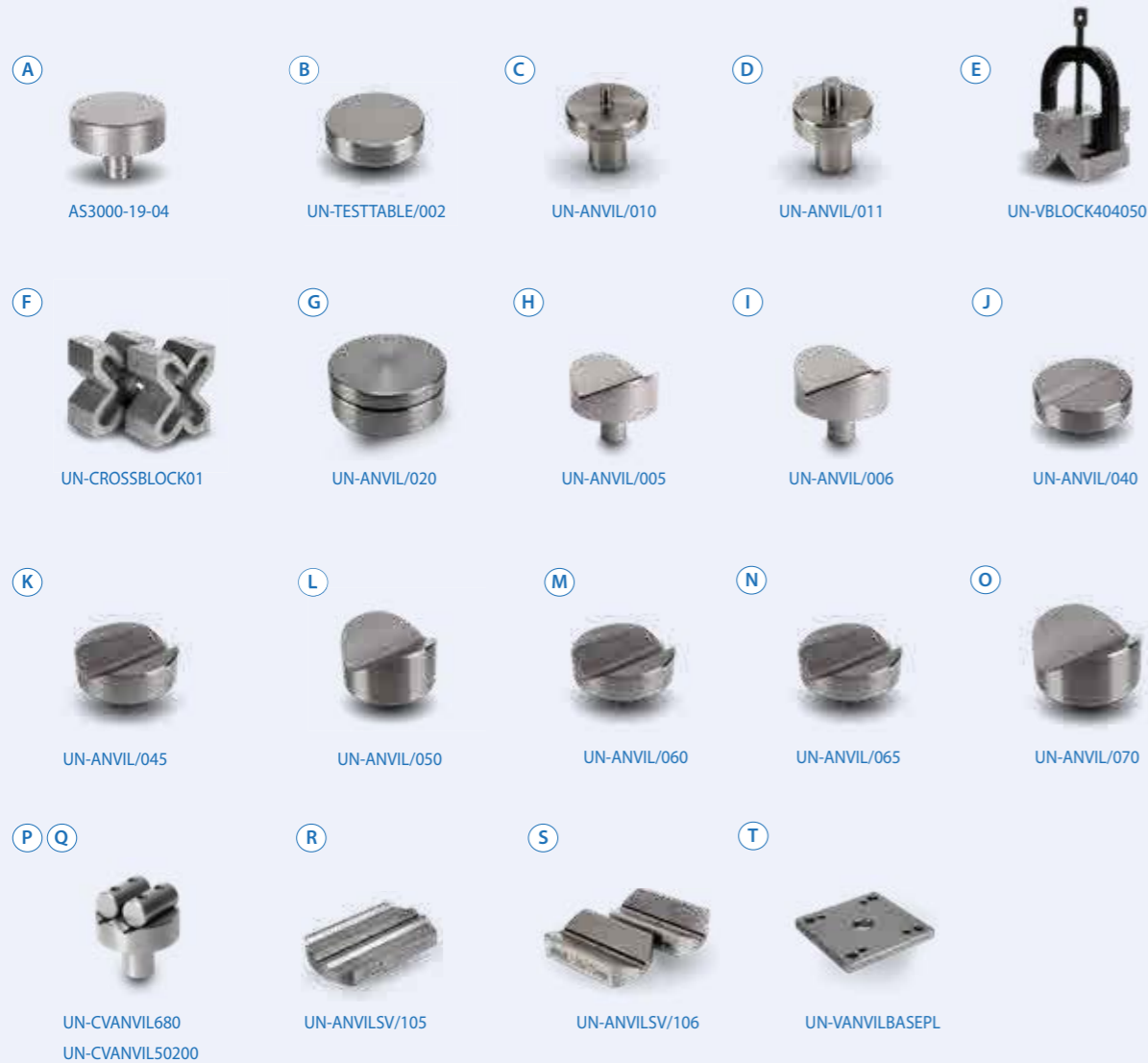


UN-TESTTABLE/011
UN-TESTTABLE/013



UN-TESTTABLE/015 UN-TESTTABLE/019
UN-TESTTABLE/016 AS8000XL-16-02

ANVILS



FIXTURES AND VICES



UN-VICE/210



UN-VICE/215



UN-VICE/220



UN-VICE/230

MACHINE STANDS

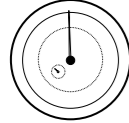


FAN FILTER UNIT

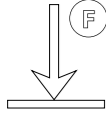


SPECIFICATIONS

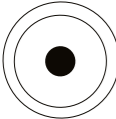
HARDNESS SCALES

	BRINELL ISO 6506, ASTM E10 JIS Z 2243	HBW 2.5/62.5, HBW 2.5/31.25, HBW 2.5/187.5, HBW 5/62.5, HBW 5/31.25, HBW 5/125, HBW 5/250, HBW 5/750, HBW 10/100, HBW 10/125, HBW 10/250, HBW 10/500, HBW 10/1000, HBW 10/1500, HBW 10/3000
	CONVERSIONS	Rockwell, Vickers, Brinell, Leeb and Tensile 5 scales simultaneously

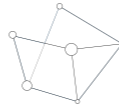
TEST FORCE

	Force application	Fully automatic, closed loop, force feedback, loading, dwell, unloading
	Test forces	31.25kgf – 3000kgf
	Force range per model	NEXUS 3300 & 3400 62.5kgf – 3000kgf NEXUS 3300M & 3400M 31.25kgf – 3000kgf
	Test force tolerance	< 0.5%
	Dwell time settings	Default 10 seconds, user defined 1 to 999 seconds
	Indenters	Certified indenters (ISO / ASTM) available at choice

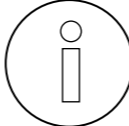
MICROSCOPE

	Microscope	Brinell Indent Optical Scanner (BIOS-1, standard, field of view Hor. 8mm; Ver.6,5mm) Brinell Indent Optical Scanner (BIOS-2, optional, field of view Hor. 2.4mm; Ver.1.8mm)

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, i9, mSSD 120 GBxx, MS Windows® 10 operated, 1 year factory warranty
	CNC support	CNC controller (for motorized stages) or stage accessories (optional)
	Screen(s)	10.4" portrait mode capacitive touchscreen
	Display resolution	0.01HB
	Statistics	Total tests, 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™ V2, 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	4 x USB, UTP-RJ45-LAN, W-LAN, RS232	
Printer	A4, A3 full color laser printer (optional)	

GENERAL

	Machine dimension	NEXUS 3300(M) L400 x W 710 x H 1100mm NEXUS 3400(M) L 400 x W 800 x H 1295mm
	Machine weight	NEXUS 3300(M) 276 kg NEXUS 3400(M) 345 kg
	Power supply	100VAC to 240VAC, 50/60Hz, single phase
	Operating temperature	5°C to 45°C, non-condensing
	Power consumption	100W
	Humidity	10% to 90%, non-condensing
	Noise	< 70 db(A)

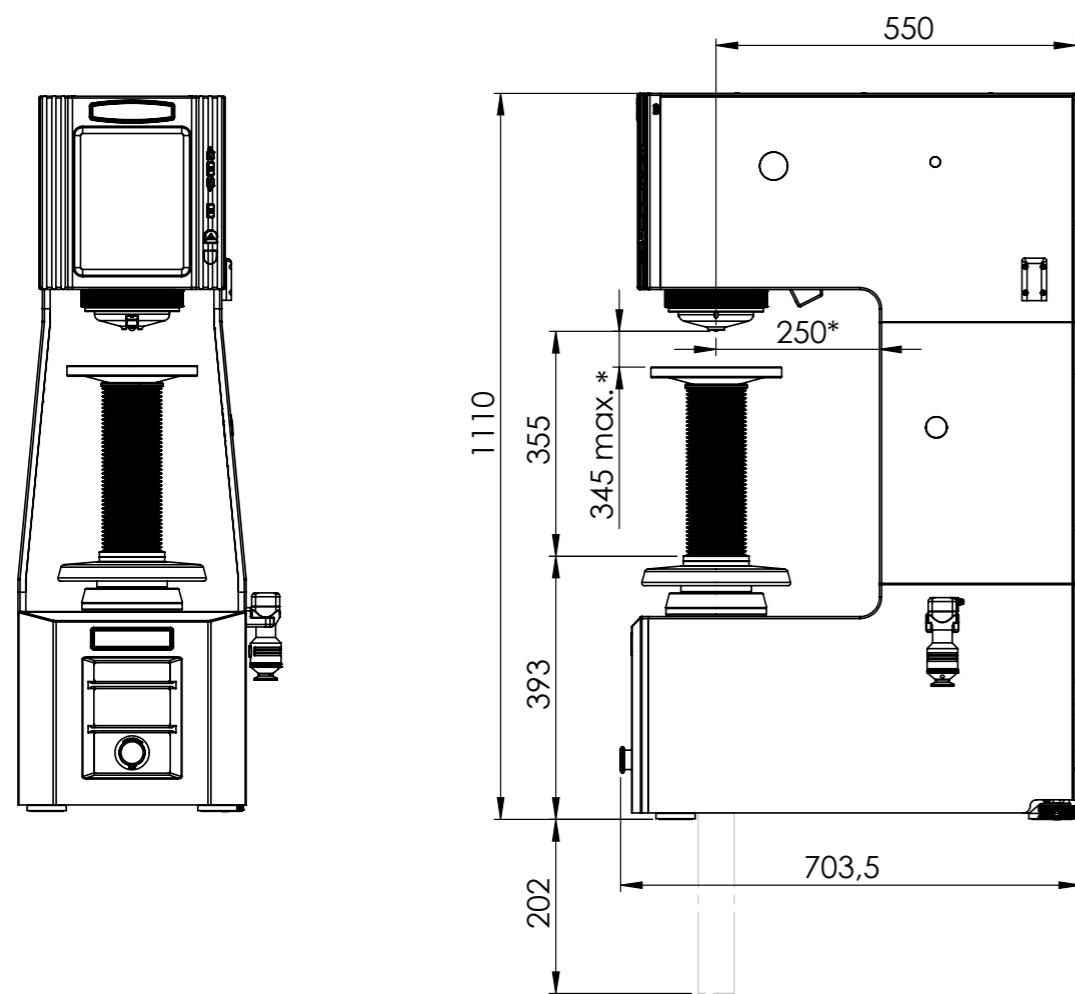
* Check individual warranty conditions

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.

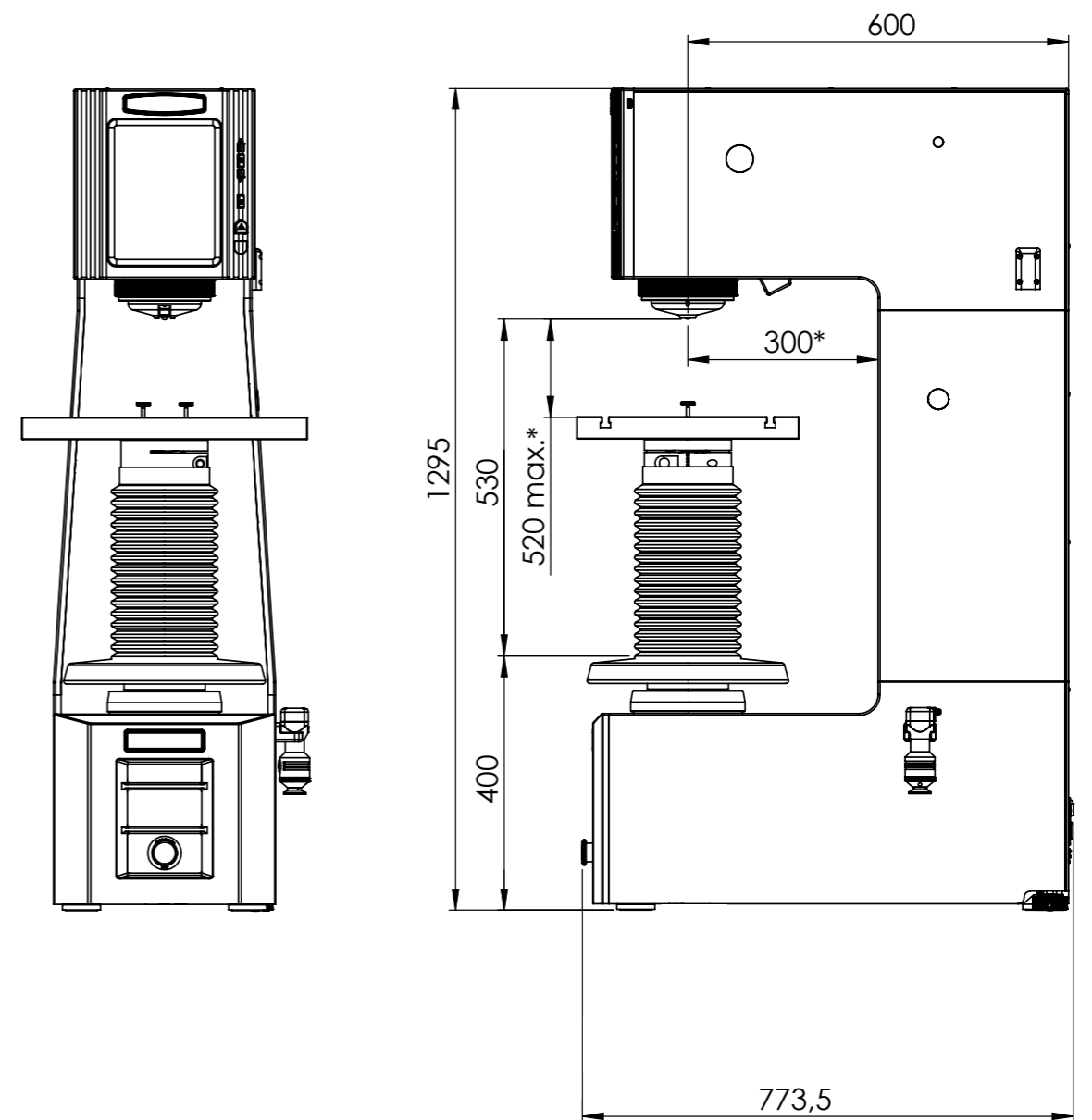
NEXUS 3300



* The NEXUS 3300 with manual spindle is shown above.
The workpiece height differs for the NEXUS 3300M and is 365mm max.

* If optional covers are present the workpiece depth for both machines is 230mm.
Motorized spindle \varnothing 55mm.

NEXUS 3400



* The NEXUS 3400 with manual spindle is shown above.
The workpiece height differs for the NEXUS 3400M and is 485mm max.

* If optional covers are present the workpiece depth for both machines is 280mm.
Motorized spindle \varnothing 70mm.

OTHER MODELS IN THE BRINELL RANGE



NEXUS 3100

Load Cell, closed loop
Brinell Hardness tester
With analogue microscope
See brochure B19N3100/XX



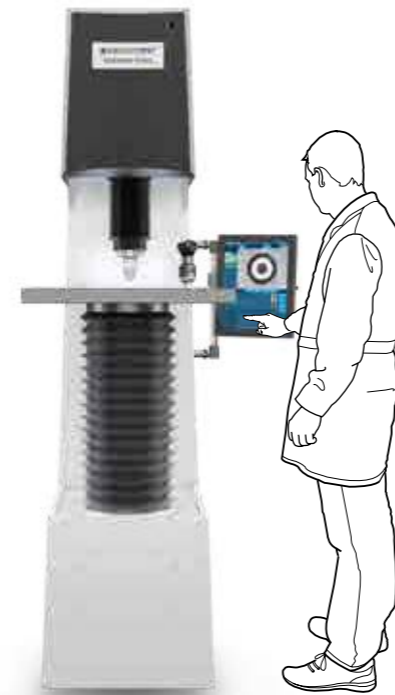
NEXUS 3200

Load Cell, closed loop
Brinell Hardness testers
With BIOS Brinell Indent
Optical Scanner
See brochure B19N3200/XX



NEXUS 3001 XLM-IMP

Fully automatic, Load Cell,
closed loop Hardness Tester.
With fine adjustable Z-Axis
(manual or motorized).
See brochure B19N3001XLM/XX



NEMESIS 9600RSB

Load Cell, closed loop
Brinell, Rockwell, Superficial
Rockwell Hardness tester
With motorized Z-axis & BIOS
Brinell Indent Optical Scanner
See brochure B19N9600/XX



NEXUS 3300FA

Fully automatic,
Load Cell, closed loop
Brinell Hardness tester.
With motorized fine
adjustable Z-axis.
See brochure B19N3300-3400FA/XX



NEXUS 3400FA

Fully automatic,
Load Cell, closed loop
Brinell Hardness tester.
With motorized fine
adjustable Z-axis.
See brochure B19N3300-3400FA/XX



NEXUS 8103RSB

Fully automatic, Load Cell,
closed loop Brinell, Rockwell,
Superficial Rockwell Hardness
Testers with manual or motorized
Z-Axis & Brinell Indent Optical Scanner.



NEXUS 8103RSB-XLM

Fully automatic, Load Cell,
closed loop Brinell, Rockwell,
Superficial Rockwell Hardness
Testers with manual or motorized
Z-Axis & Brinell Indent Optical Scanner.

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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 B19N3300-3400M/07/EN

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