

NEXUS

3300FA / 3400FA

Brinell Hardness Testers

FULLY **AUTOMATIC**



NEXUS 3300FA & 3400FA



The game has changed...

The NEXUS 3300FA and its larger equivalent the 3400FA are heavy duty, fully automatic hardness testing machines to test metals, mostly castings, according to the principle invented in 1900 by the Swedish engineer Johan August BRINELL.

Both machines incorporate a large sturdy machine body of over 300 kg, from 365 mm working height (3300) to 485 mm working height (3400).

Pushing the START button will put the fully automatic procedure in motion. The motorized z-axis lifts the work stage with workpiece to the correct focus/test height, the 6 position turret with 3 indenters, 2 objectives with ring lights and positioning laser, will turn to the correct position corresponding with the chosen test load and ball indenter.

An impression is being made after which the turret will turn to the objective corresponding to the settings and the IMPRESSIONS™ Software conducts an automatic measurement.

One touch on the screen or start button, provides you the actual Brinell hardness value of your workpiece.

BRINELL FORCE RANGE

1gf	31.25kgf	NEXUS 3300FA	3000kgf
1gf	31.25kgf	NEXUS 3400FA	3000kgf

HARDNESS SCALES



BRINELL

31.25kgf – 3000kgf



NEXUS 3400FA



NEXUS 3300FA

HIGHLIGHTS

- 1 Fully automatic, closed loop, load cell, force application system
- 2 High speed, 6 position turret with 3 indenters and 2 objectives
- 3 11 Megapixel 4K+ full HD industrial CCD camera
- 4 Laser positioning system
- 5 Objectives include power LED ring lights for excellent dark/brightfield illumination
- 6 Heavy duty, servo driven, motorized Z-axis lifts parts up to 500kg
- 7 Operation over Industrial 15" full color touchscreen, or real feel rubber buttons for casting workshop environment.
- 8 Integrated high speed CPU i7, Windows 10 OS, IMPRESSIONS™ workflow controller
- 9 Fully enclosed heavy duty frame with rubber sealings between interior access covers
- 10 Optional Motorized CNC X-Y stage suitable for total loads up to 4000kg(f).
- 11 Optional over-pressure fan system, avoids machine failure in very dirty environments
- 12 Body cover plates in ABS to protect main body against damage
- 13 Optional floor type operation console for remote tester operation

SENSIBLE INNOVATION



A purpose, an intention, a design...

Heavy duty machines with CE and fully concealed IP51 enclosure. Thanks 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.

Match fixing...

1 MACHINE STRUCTURE

Fully enclosed machine body with rubber sealings between machine body and access plates. Can be used in dirty environments. For very dirty environments like metal grinding workshops or inside casting grinding workshops the tester can be equipped with a filtered fan interior overpressure system, with pollution (filter replacement) indication.

2 MOTORIZED TURRET

6 position turret, 3 ball indenters (2.5mm / 5mm / 10mm) can be installed simultaneously. 2 high quality objectives with power LED ring lights combined with an 11 megapixel 4k+ Full HD camera and a laser positioning system, provide that any indentation with the range of the machine can be displayed and measured according to the requirements as set forth in the applicable ASTM/ISO/ JIS standards.

3 COLLISION PROTECTION

Collision protection safeguard, protects the turret mechanism from unwanted / accidental collision with workpieces.

4 MOTORIZED SERVO DRIVEN HIGH SPEED Z-AXIS

Power-full servo driven motorized Z-axis provides excellent and reliable stage lifting capacity of 500kg as a maximum load.

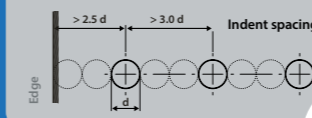
5 SYSTEM CONTROL

A powerful i7 Windows 10 OS controller is standard on-board of these machines. The 15" full color touchscreen gives excellent comfort on operating the IMPRESSIONS™ work flow and tester control software. Recordings can be operated with a single touch of the camera button.

6 SOFT KEYS

More controls can be found on the base of the machine. The front panel features rubber buttons that allowing operators wearing gloves to control the Z-axis and start/stop the machine to conduct a test. Since data is stored automatically, the tester can be set up from the touch panel, but operated in conducting actual tests from either the touchscreen or the glove-proof front panel buttons.

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

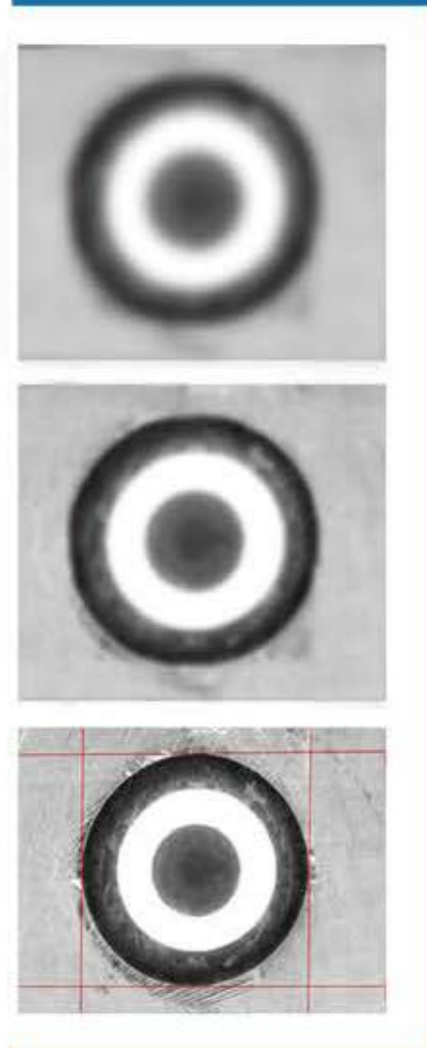


NEXUS 3300FA

NEXUS 3400FA

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

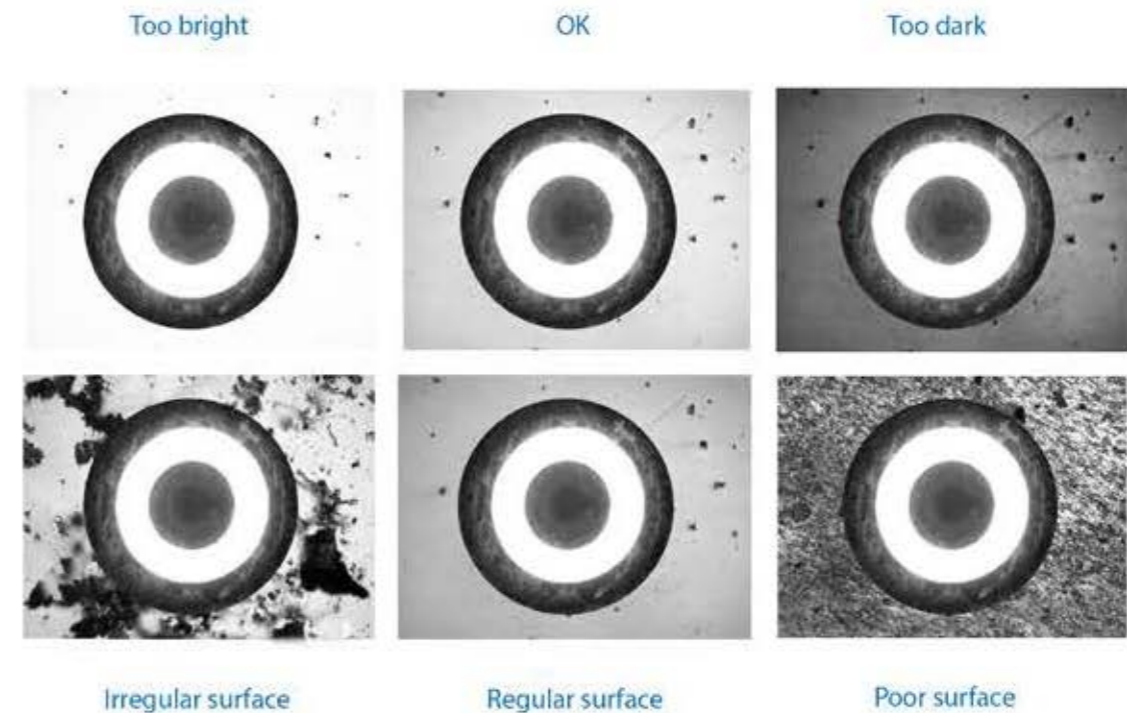
2 AUTOMATIC MEASUREMENT

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.

One accurate measurement is worth more than 1000 expert opinions...

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.

FEATURED BY IMPRESSIONS v2

ADVANCED SOFTWARE APPLICATIONS

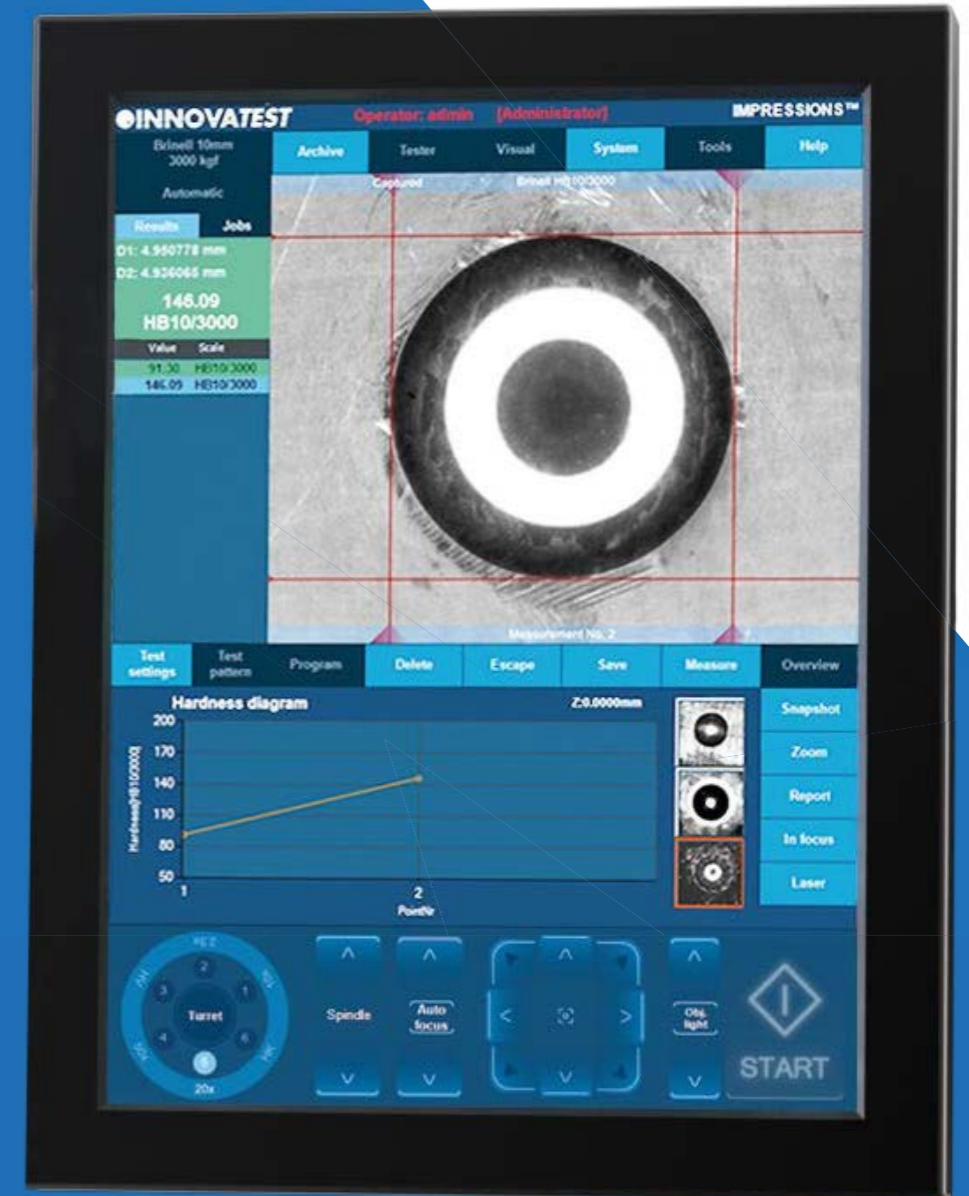
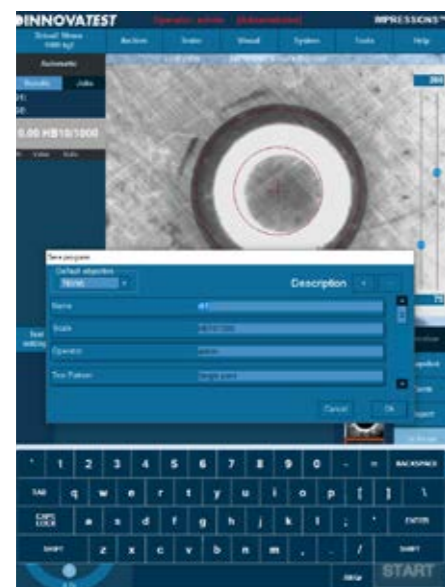
The Graphical User interface (GUI), contains Industry preferred applications, and offers easy to learn, advanced workflow control. A simple test can be set up and conducted in about 3 seconds...IMPRESSIONS™ layout & functions will match not only your particular application requirements, but also meet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

1 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.

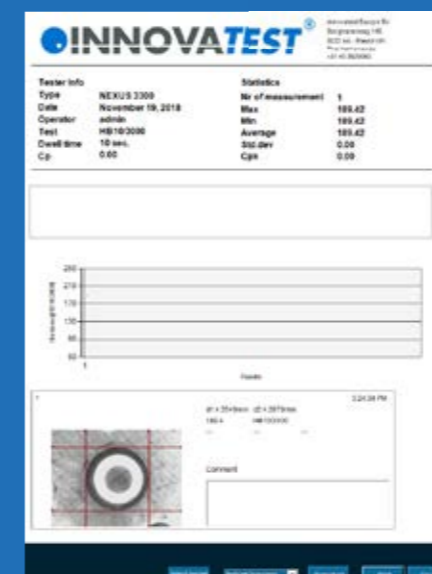
2 SNAPSHOT FUNCTION

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



3 THE 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.





DESIGNED FOR **PURPOSE**

Convert your wishes into real experiences. The 3300FA and 3400FA fully automatic Brinell hardness testers conduct fast tests on nearly all samples regardless of their shape. The large flat work stage with removable center plate, provides excellent workpiece support while keeping the flexibility of using anvils for particular shaped components or installing a CNC X-Y stage.





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

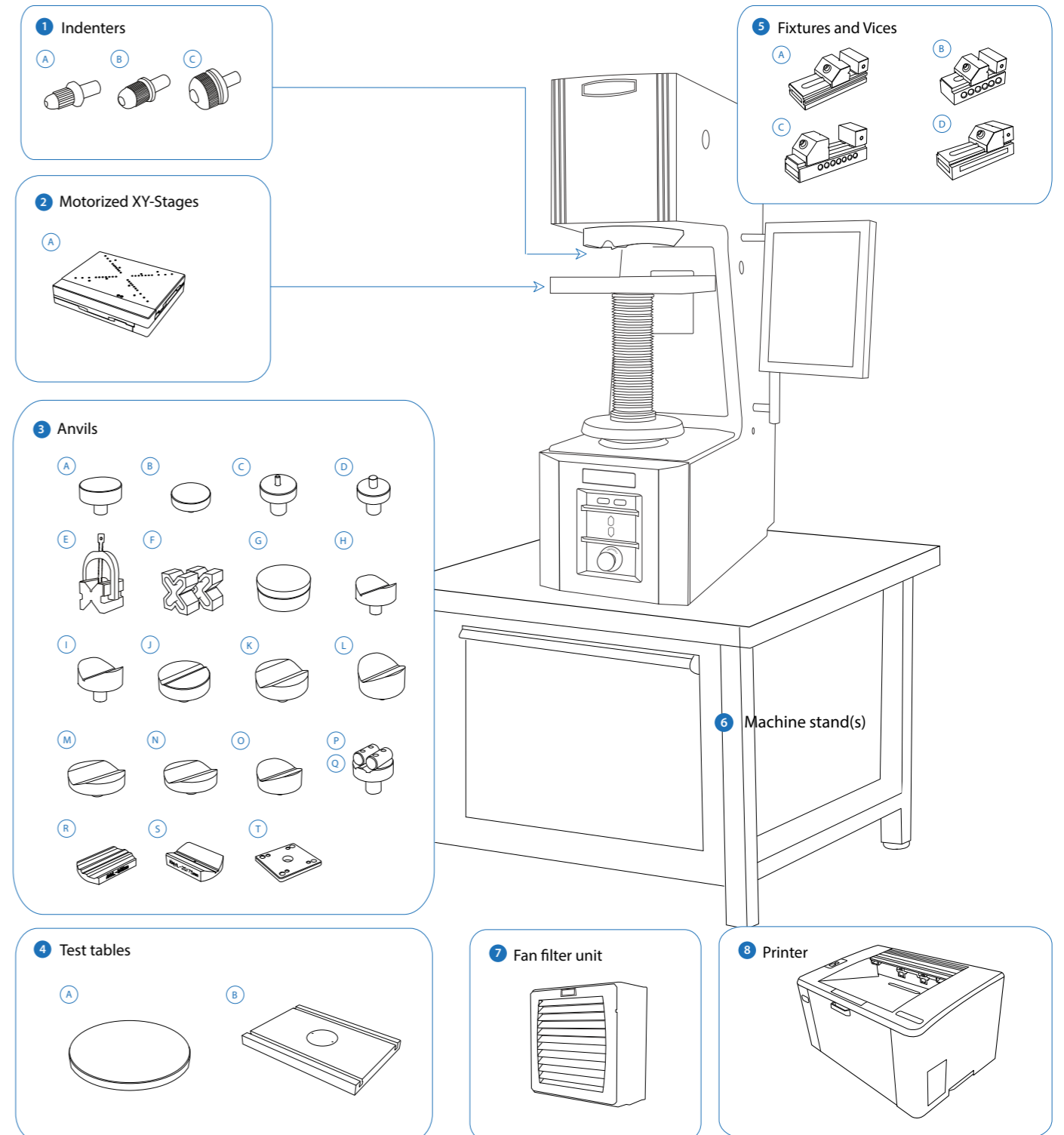


UN-STAND/956 71 x 90 x 42 cm

ACCESSORIES

NEXUS 3300FA/3400FA

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

3300FA-3400FA



NEXUS 3300FA Brinell hardness tester, 31.25kgf - 3000 kgf	NEXUS 3300FA	
NEXUS 3400FA Brinell hardness tester, 31.25kgf - 3000 kgf	NEXUS 3400FA	
Plug & Play prepared, calibration, sea & airworthy packing in "non coniferous wood" material	P&PSEAPACK110	

ACCESSORIES

		Motorized High Power Servo Drive Z-Axis 3300,3400		STANDARD
		Objective for small Brinell indents with power LED ringlight	SA-05-0058	STANDARD
		Objective for large Brinell indents with power LED ringlight	SA-05-0057	STANDARD
		Laser positioning system		STANDARD
		Rubber sealings for cover plates		STANDARD
1	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	UPI2010	
		5.0mm carbide ball, ISO & ASTM certified only for ø6.35mm	UPI/2015	
		10.0mm carbide ball, ISO & ASTM certified only for ø6.35mm	UPI/2020	
2	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	
	Cable sets, Mounting & Connectivity for Motorized Stages	Lock flange	AS3000-21-01	
		Lock flange	AS8000XL-16-01	
		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	
		Cable set for connecting CNC stage to embedded driver (1 set for 2-axis) 105cm	UN-XY2CABLENBS	

3	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 12-80mm	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		
		4	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		

5	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	
6	Machine Stands		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
			Cabinet test table with drawer for hardness testers 71X90X42cm	UN-STAND/956	
7	Fan Filter Unit		Dust Protection System	SA-16-0001	
8	Printer		Laser Printer	UN-PRINT	
	Remote Console		Floor type operation console for remote tester operation	UN-REMCN	
	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

SOFTWARE

Additional Software		Manual on-screen measurement	UN-MANM	STANDARD	
		Automatic measurement	UN-AUTOM	STANDARD	
		Automatic focussing	UN-AUTOFOC	STANDARD	
		Report configurator	UN-REPORTA	STANDARD	
		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	
		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 MACHINE

ACCESSORIES

INDENTERS

- A**  Brinell indenter 2,5mm ISO/ASTM certified
- B**  Brinell indenter 5mm ISO/ASTM certified
- C**  Brinell indenter 10mm ISO/ASTM certified

MOTORIZED XY-STAGES



UN-XY904015 UN-XY933015
UN-XY932015 UN-XY934015

TEST TABLES






















UN-TESTTABLE/011
UN-TESTTABLE/013



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

ANVILS

- A**  AS3000-19-04
- B**  UN-TESTTABLE/002
- C**  UN-ANVIL/010
- D**  UN-ANVIL/011
- E**  UN-VBLOCK404050
- F**  UN-CROSSBLOCK01
- G**  UN-ANVIL/020
- H**  UN-ANVIL/005
- I**  UN-ANVIL/006
- J**  UN-ANVIL/040
- K**  UN-ANVIL/045
- L**  UN-ANVIL/050
- M**  UN-ANVIL/060
- N**  UN-ANVIL/065
- O**  UN-ANVIL/070
- P Q**  UN-CVANVIL680
UN-CVANVIL50200
- R**  UN-ANVILSV/105
- S**  UN-ANVILSV/106
- T**  UN-VANVILBASEPL

FIXTURES AND VICES



UN-VICE/210



UN-VICE/215



UN-VICE/220



UN-VICE/230

REMOTE CONSOLE



MACHINE STANDS



A



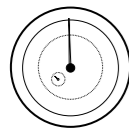
B

FAN FILTER UNIT

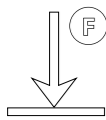


SPECIFICATIONS

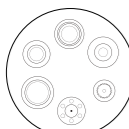
HARDNESS SCALES

	BRINELL ISO 6506, ASTM E10 JIS Z 2243	HBW 2.5/31.25 HBW 2.5/62.5 HBW 2.5/187.5 HBW 5/31.25 HBW 5/62.5 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 2 scales simultaneously

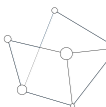
TEST FORCE

	Force application	Fully automatic, closed loop, force feedback, loading, dwell, unloading
	Test forces	31.25kgf – 3000kgf
	Test force tolerance	< 0.5%
	Dwell time settings	Default 10 seconds, user defined 1 to 500 seconds
	Indenters	Certified indenters (ISO / ASTM) available at choice

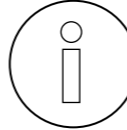
TURRET

	Motorized turret	6 position turret, 3 indenter positions, laser positioning system
	Objectives	2 special objectives including power LED ring lights
	Indenters	Certified indenters (ISO/ASTM) available at choice
	Camera 1 (objective)	11 Mpx, HD, 4K, Machine vision system

SYSTEM

	Electronic system	Integrated high speed CPU i7, Windows 10 OS, IMPRESSIONS™ workflow controller
	CNC support	CNC controller (for motorized stages) or stage accessories
	Screen(s)	15" portrait mode capacitive touchscreen
	Display resolution	0.01HB
	Statistics	Total tests, max, min, average, range, standard deviation, all in real time after each test
	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

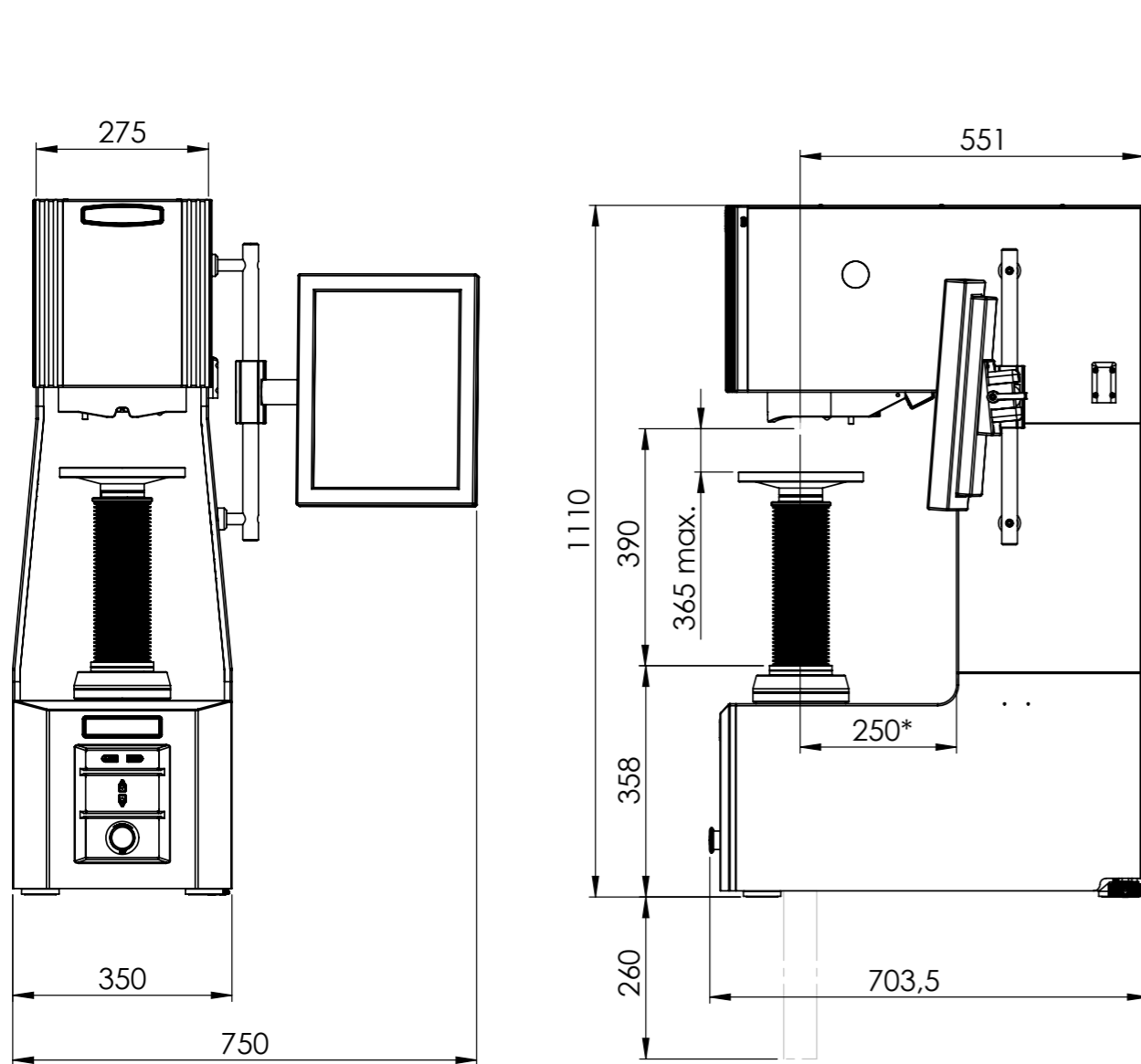
	Machine dimension	NEXUS 3300FA L 703 x W 350 x H 1110mm NEXUS 3400FA L 773 x W 380 x H 1295mm
	Machine weight	NEXUS 3300FA 301 kg NEXUS 3400FA 380 kg
	Power supply	100VAC to 240VAC, 50/60Hz, single phase
	Operating temperature	10°C to 50°C, non-condensing
	Power consumption	100W
	Humidity	10% to 90%, non-condensing
	Noise	< 70 db(A)

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.

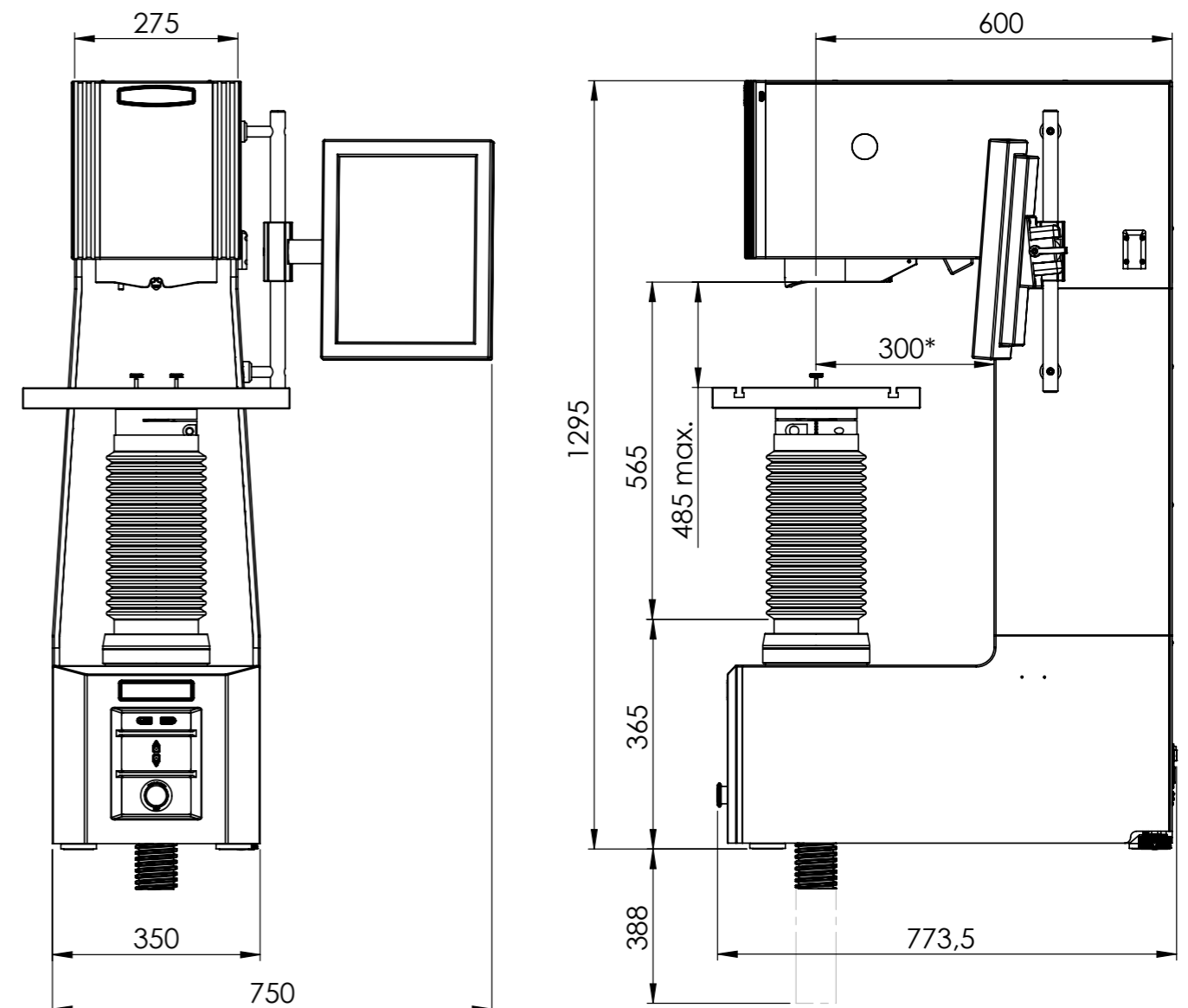
Please contact our sales department for more details.

NEXUS 3300FA



* If optional covers are present then this value is 230 mm.
Motorized spindle \varnothing 55mm

NEXUS 3400FA



* If optional covers are present then this value is 280 mm.
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 3001XLM-IMP

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



NEXUS 8100XL

Fully automatic, Load Cell,
closed loop Brinell, Rockwell,
Superficial Rockwell Hardness
Testers with manual or motorized
Z-Axis & Brinell Indent Optical Scanner.
See brochure B198100/XX



NEMESIS 9600RSB

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



NEXUS 3300(M)

Load Cell, closed loop
Brinell Hardness tester
With manual or motorized Z-axis
& BIOS Brinell Indent Optical
Scanner
See brochure B19N3300M-3400M/XX



NEXUS 3400(M)

Load Cell, closed loop
Brinell Hardness tester
With manual or motorized Z-axis
& BIOS Brinell Indent Optical
Scanner
See brochure B19N3300M-3400M/XX



NEXUS 8100

Fully automatic, Load Cell,
closed loop Brinell, Rockwell,
Superficial Rockwell Hardness
Testers with manual or motorized
Z-Axis & Brinell Indent Optical Scanner.
See brochure B198100/XX

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or product specifications
can emerge due to new
technologies and continuous
development.

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or modify specifications of the
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