

NOVA 330/360 SERIES



NOVA 330/360

Micro Vickers & Knoop hardness tester



NOVA 330/360 series

Micro/Macro Vickers & low force Brinell hardness tester

The new NOVA 330 & 360 series, Load Cell, Closed Loop, Vickers, Knoop & Brinell (optional) hardness testing instruments offer a versatile and user friendly solution for a wide range of Vickers, Knoop & Low Force Brinell hardness testing.

Load selection:

Electronic Force Sensor technology (Load Cell) closed loop system, offers an unparalleled wide range of test forces and supersedes any traditional dead weight system in test load range and test load accuracy. Setting wrong test forces and over-shoot of test forces is something that now belongs to the past.

The test range, depending on the model, varies from 20gf up to 62,5kgf.
Unique & unparalleled specifications at this cost level.

Optics:

- Analogue or Digital/Electronic eyepiece
- Eyepiece with 15X magnification
- Standard objectives 5X, 10X and 40X installed (NOVA 330)
- Standard objectives 5X, 10X and 20X installed (NOVA 360)
- Optional High Resolution CCD camera system can be integrated, directly or afterwards
- High quality objectives providing maximum viewing comfort
- Vertical LED Illuminator
- Laser adjusted optical path
- Dual Channel optical system
- Measuring confirmation button on digital eyepiece

Turret:

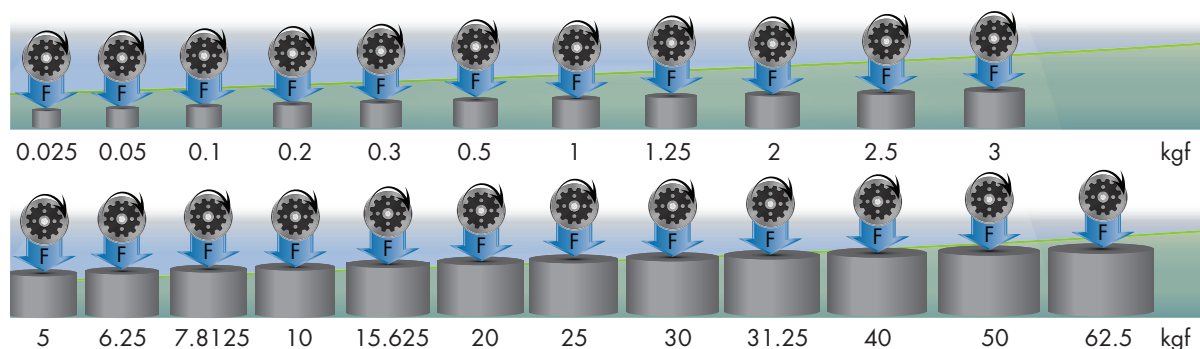
- Automatic, high speed, motorized multi position turret
- "Shortest path" program with anti-back lash positioning

Interface & connectivity

- 6,5" Full color high resolution touch screen, tablet type
- Language selectable interaction dialog system
- Graphic tester motion control interface
- Easy operation, no expert skills required, short training time
- Save and load test programs, tester settings
- Limit settings, real time statistics
- Shape correction settings for testing on round parts
- Host and Device USB connectivity
- Integrated high speed thermal printer

Others:

- Prepared for optional remote operation
- Prepared for optional IMPRESSIONS HD Camera & auto measurement systems
- Prepared for optional motorized CNC, X-Y stages
- Prepared for optional motorized Z axis / auto-focus



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Overview of test force configurations

Test force versus model number

20g	NOVA 330	31.25kg	62.5kg
20g	100g	NOVA 360	62.5kg

Scales and testing methods, depending on force configuration

Vickers - DIN EN ISO 6507, ASTM E-384



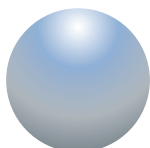
HV0.020	HV0.025	HV0.050	HV0.1	HV0.2	HV0.3
HV0.5	HV1	HV2	HV2.5	HV3	HV4
HV5	HV10	HV20	HV25	HV30	HV40
HV50					

Knoop - DIN EN ISO 4545, ASTM E-384



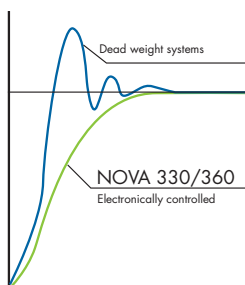
HK0.02	HK0.025	HK0.05	HK0.1	HK0.2
HK0.3	HK0.5	HK1	HK2	

Brinell - DIN EN ISO 6506, ASTM E-10



HB1/1kgf, HB1/1.25kgf, HB1/2.5kgf, HB1/5kgf, HB1/10kgf, HB1/30kgf;
HB2.5/6.25kgf, HB2.5/7.8125kgf, HB2.5/15.625kgf, HB2.5/31.25kgf, HB2.5/62.5kgf
HB5/25kgf, HB5/31.25, HB5/62.5kgf

Stunning force range

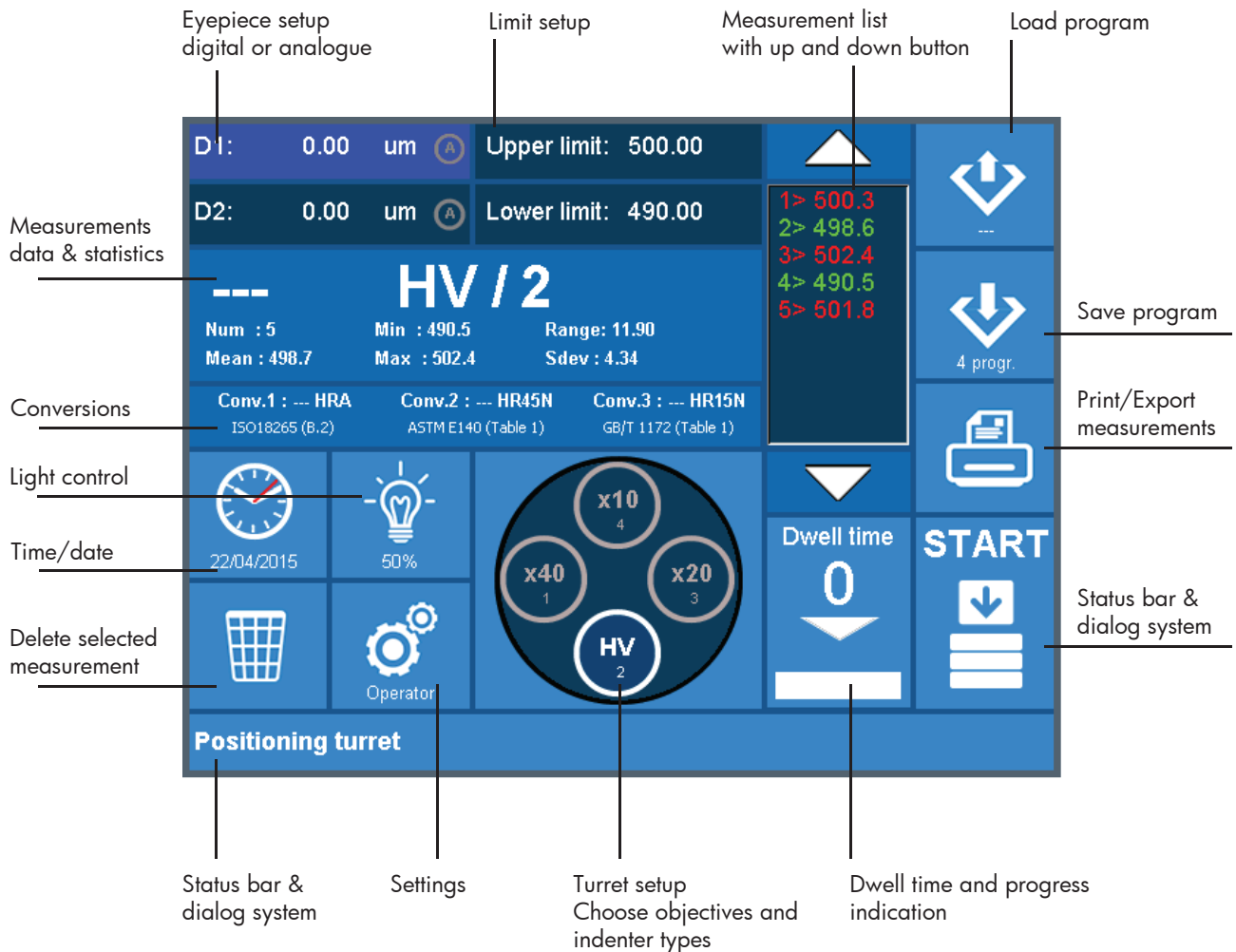


Stunning force range:
0.02Kgf up to 62.5Kgf over load cell, closed loop system.

Electronically controlled loads secure a quick and precise load application as well as a quick method change. A touch on the screen makes the correct setting and expedites automatic Z-axis positioning to the focus level, for any of the objectives or indentors chosen.

NOVA 330/360

User interface



Measurement within limits



Measurement outside limits



Smart graphical user interface

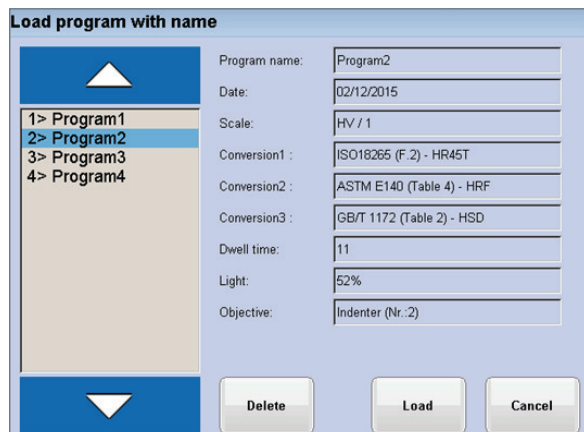
Smart graphical user interface with dialog system and color indication support

The clearly structured full color High Definition Touch Screen Tablet can be simply operated through finger touch or a screen pen. The ridged screen cover is made out of solid aluminum.

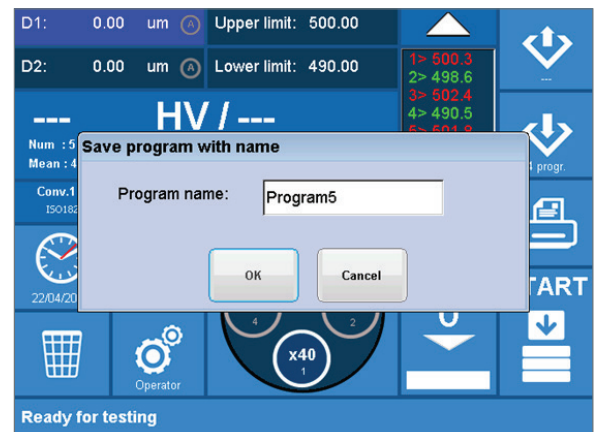
The software functions are advanced, the screen is graphical and most of the functions or tester actions are visibly supported with live animations. Color Screen and measured values change from green to red depending on test limit settings and values recorded. The user interface also supports set up, save and recall of test programs and has a large memory for test readings. At a finger touch data can be send to the USB-2 printer or a USB storage device.



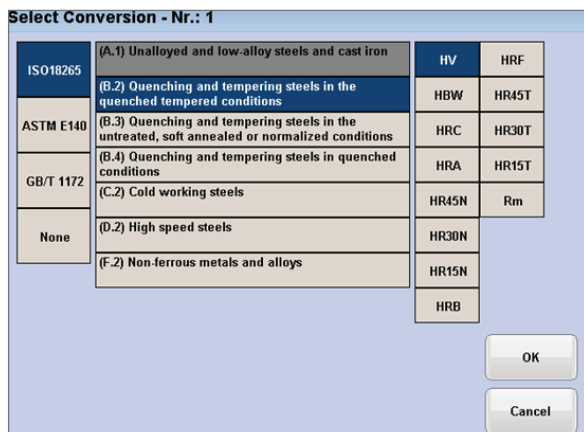
Example: Recall saved test program



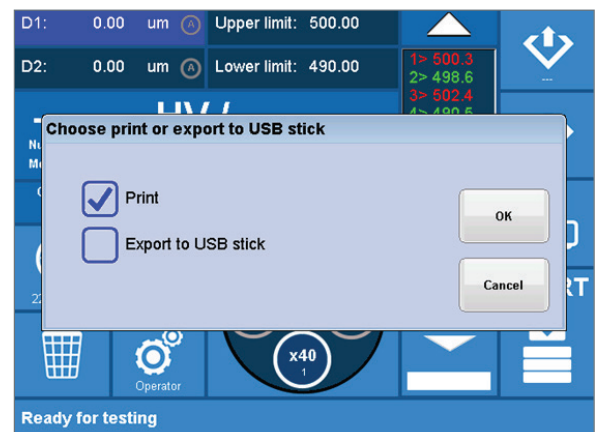
Example: Save test program



Example: Advanced conversions selection



Example: Print or export to USB



Technical specifications

NOVA 330/360

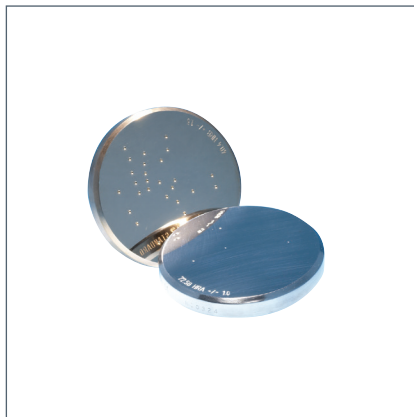
Hardness scale	(Micro) Vickers, Knoop, optional Brinell
Load application	Load cell, force feedback, closed loop system
Load range	20gf up to 62.5Kgf
Test procedure	Automatic, loading/dwell/unloading proces
Motorized turret	Automatic, high speed, motorized multi position turret, with anti-back lash system
Objectives	5x, 10x, 40x (NOVA 330) 5x, 10x, 20x (NOVA 360)
Eyepiece	At choice electronic digital or analogue
Hardness value	5 digits
Test force tolerance	<0.5%
Test loads	20gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, 1kgf, 1.25kgf, 2kgf, 2.5kgf, 3kgf, 4kgf, 5kgf, 6.25kgf, 7.812kgf, 10kgf, 15.625kgf, 20kgf, 25kgf, 30kgf, 31.25kgf, 40kgf, 50kgf, 62.5kgf
Vickers	HV0.020, HV0.025, HV0.050, HV0.1, HV0.2, HV0.3, HV0.5, HV1, HV2 HV3, HV4, HV5, HV10, HV20, HV25, HV30, HV40, HV50
Knoop	HK0.02, HK0.025, HK0.05, HK0.1, HK0.2, HK0.3, HK0.5, HK1, HK2
Brinell test range	HB1/1kgf, HB1/1.25kgf, HB1/2.5kgf, HB1/5kgf, HB1/10kgf, HB1/30kgf; HB2.5/6.25kgf, HB2.5/7.8125kgf, HB2.5/15.625kgf, HB2.5/31.25kgf, HB2.5/62.5kgf HB5/25kgf, HB5/31.25kgf, HB5/62.5kgf
User display	6,5" Full color high resolution touch screen, tablet type
Display resolution	0.1 HV, HK, HB
Hardness conversion	Vickers, Rockwell, Rockwell Superficial, Brinell, Leeb, Tensile & Shore
Standards	Meets or exceeds, ISO, ASTM, JIS standards & Nadcap requirements
Statistics	Limit settings, real time statistics
Control panel	Start test, stop test, light intensity, dwell time, print, clear. Menu operation for date, time, scale and load settings, language
Firmware	V2.01 German, English, French
Memory	Save and load test programs, tester settings , save up to 50 results
Connectivity	USB
Dwell time setting	Default 10 seconds, user defined 1 to 99 seconds (1 sec increments)
Printer	Integrated high speed thermal printer
Light source	LED dual channel vertical Illuminator
Optical path	Laser adjusted optical path
Workpiece accommodation	Vertical capacity 165mm (maximum workpiece height), Horizontal capacity 140mm (from center-line)
Stage dimensions	Stage 100mm x 100mm, Travel 25mm x 25mm, Reading 0.01mm
Operating temperature	10°C to 35°C, non-condensing
Humidity	10% to 90% non-condensing
Machine dimensions	250mm x 610mm x 650mm
Machine weight	51kg
Power consumption	25W
Power supply	100VAC to 240VAC, 50/60Hz, single phase

Standard delivery

- Flat anvil, hardened, $\varnothing 60\text{mm}$
- Vickers test block (2 pcs)
- Manual X-Y-Z stage
- Objectives 5x, 10x & 40x (NOVA 330)
Objectives 5x, 10x & 20x (NOVA 360)
- Set of workpiece fixtures, vice, clamp
- Built-in thermal printer
- Fuse
- Four adjustable feet
- Power cable
- INNOVATEST® certificate
- Installation & user manual

Optional accessories

- Analogue eyepiece 15x
- Electronic eyepiece 15x
- Certified indenters (ASTM, DIN, ISO)
- Certified reference hardness blocks (ASTM, DIN, ISO)
- Custom testing tables
- 40x, 20x, 10x, 5x & 2.5x Objectives
- IMPRESSIONS™ XT Video indent measuring software
- Motorized X-Y stage (small or large)
- Motorized Z-Axis stage (auto focus)
- Solid tester table and storage cabinet
- High Resolution CCD camera system



Order details

NOVA 330 (Micro) Vickers & Knoop, 3 objectives for measuring/observation, test forces 20gf to 31.25kgf

NOVA 360 (Micro) Vickers & Knoop, 3 objectives for measuring/observation, test forces 100gf to 62.5kgf

NOVA 330/360 IMPRESSIONS™ Video indent measuring system



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. IMPRESSIONS™ offers machine automation to the most comprehensive level.

The amount of automation and functionality can be defined by the customer / user and ranges from standard functionality for manual, semi-automated and fully automated operation processes to a single push-button operation for the most advanced, multiple indent, multiple pattern or CHD system.

Designed to enhance the capabilities of a standalone tester, simply & easy-to-use, delivering a new kind of hardness testing user experience.

IMP-2 (Standard)

IMPRESSIONS XT V1.01 license (for manual X-Y stage). (CCD camera and C-mount included)

Software for manual and automatic measurement of Vickers / Knoop, Indent ZOOM function, automatic light adjustment, LCD industrial DVI touch screen included.

Advanced test report generator & CSV export.

IMP-3 (With one digital stage micrometer)

IMPRESSIONS XT V1.01 license (manual 1 axis digital X-Y stage). (CCD camera and C-mount included)

Software for manual and automatic measurement of Vickers / Knoop, Indent ZOOM function, digital micrometer (1) on X-Y stage, automatic light adjustment, LCD industrial DVI touch screen included.

Advanced test report generator & CSV export.

IMP-4 (With two digital stages micrometers)

IMPRESSIONS XT V1.01 license (manual 2 axis digital X-Y stage). (CCD camera and C-mount included)

Software for manual and automatic measurement of Vickers / Knoop, Indent ZOOM function, digital micrometers (2) on X-Y stage, automatic light adjustment, LCD industrial DVI touch screen included.

CHD/Nht/ Rht measurement. Advanced test report generator & CSV export.

IMP-5V (With motorized XY stage)

IMPRESSIONS XT V1.01 license (motorized X-Y stage). (CCD camera and C-mount included)

Software for manual and automatic measurement of Vickers / Knoop, Indent ZOOM function, automatic light adjustment, coordinate multi pattern testing module, motorized X-Y stage, LCD industrial DVI touch screen included, virtual mouse function. CHD/Nht/ Rht measurement. Advanced test report generator & CSV export.

IMP-6V (With motorized XY stage & AF)

IMPRESSIONS XT V1.01 license (motorized X-Y stage and motorized Z-axis, auto focus).

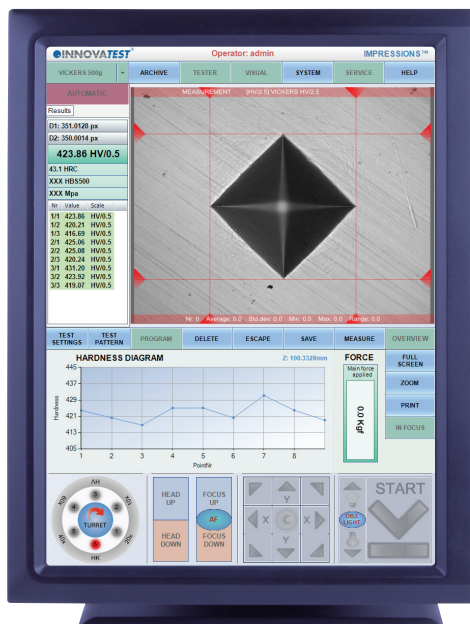
(CCD camera and C-mount included)

Software for manual and fully automatic measurement of Vickers / Knoop, Indent ZOOM function, automatic indent focus, automatic light adjustment, coordinate multi pattern testing module, motorized X-Y stage, LCD industrial DVI touch screen included, virtual mouse function.

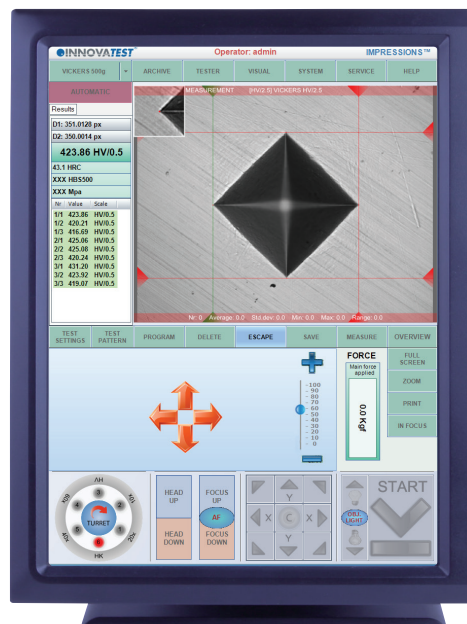
CHD/Nht/ Rht measurement. Advanced test report generator & CSV export.

NOVA 330/360 IMPRESSIONS™ Video indent measuring system

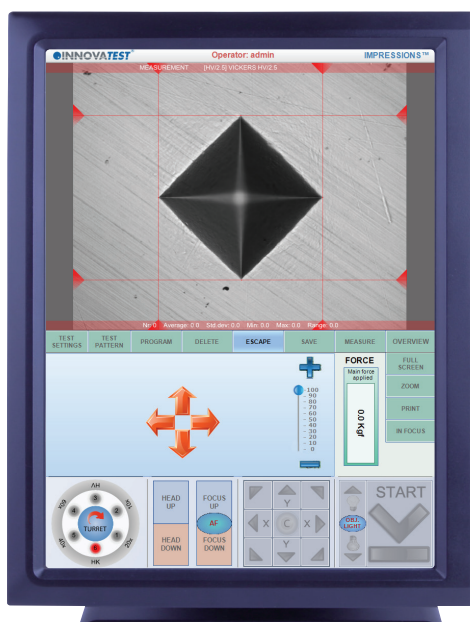
AUTOMATIC MEASUREMENT



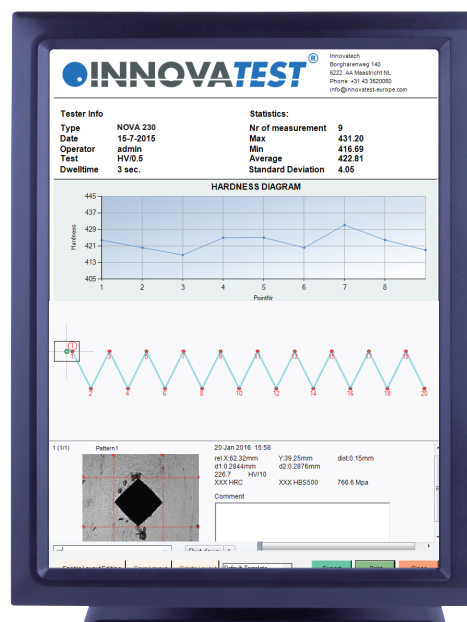
MAGNIFIED, FINE ADJUSTMENT



FULL SCREEN, ZOOM



REPORT GENERATOR



Features

- High resolution USB video camera for crisp indent images
- Manual & automatic indent measuring mode
- Indent ZOOM function for fit to screen indent magnification
- Automatic illumination setting
- Save, store and print files and images
- Report generator
- Data export to Excel or other MS applications
- Pattern programming, saving and recall (Optional)
- Variable distance point plotting
- CHD, RHT, NHT (Optional)

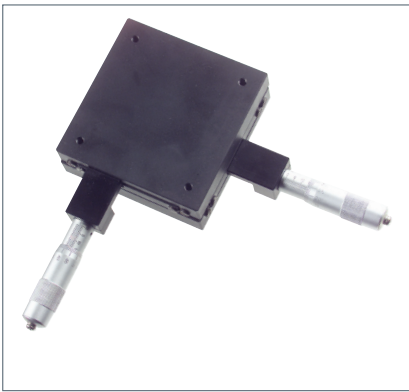


Table option 1
Analogue stage micrometers

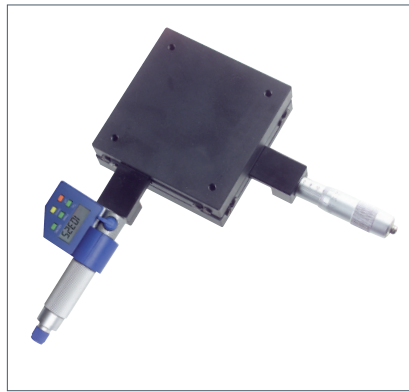


Table option 2
Digital stage micrometers



Table option 3
Large motorized stage

Order details

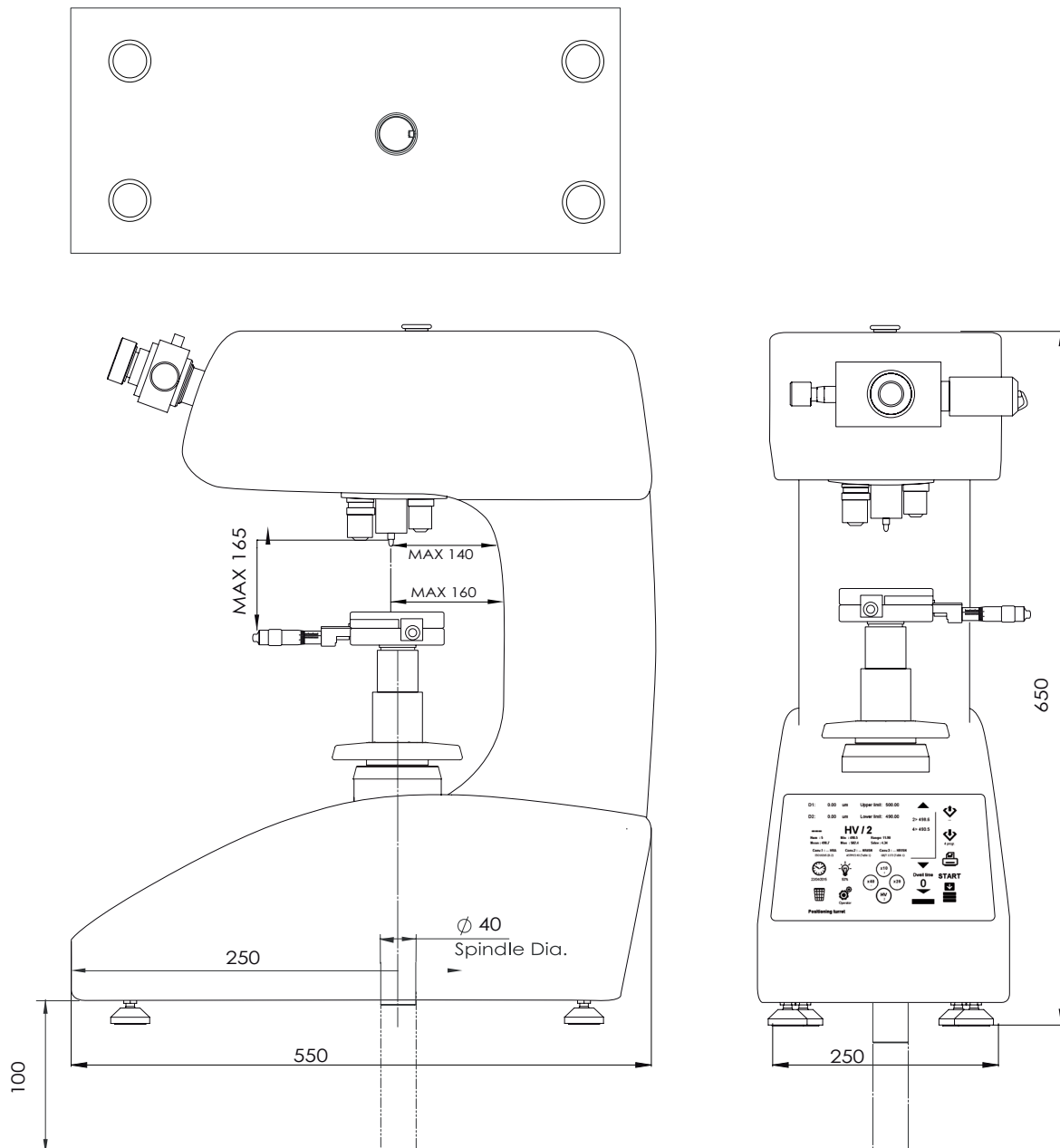
IMP-2	Indent measuring software, included CCD camera and DVI 15" touch screen (see above specifications)
IMP-3	Indent measuring software, included CCD camera and DVI 15" touch screen (see above specifications)
IMP-4	Indent measuring software, included CCD camera and DVI 15" touch screen (see above specifications)
IMP-5V	Indent measuring software, included CCD camera and DVI 15" touch screen (see above specifications)
IMP-6V	Indent measuring software, included CCD camera and DVI 15" touch screen (see above specifications)



INNOVATEST®

Technical drawing NOVA 330/360

All dimensions are in mm



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