

NEXUS 4000 SERIES

Vickers Hardness Tester





NEXUS 4000
LOAD CELL, CLOSED LOOP SYSTEM

FEATURES

High-end Vickers/Knoop/Brinell tester with low and high force ranging from HV0.02 to HV50. Closed Loop, Load Cell, Force Feedback technology for a reliable fast measurement procedure. Modular design, fits to almost any budget.

The NEXUS 4000 series of Micro/Macro Vickers, Knoop & Brinell hardness testers combines a practical design with universal specifications. State-of-the-art closed loop, load cell technology and a - Patent Pending - force feedback system, assure fast test results at the highest possible accuracy.

Unmatched consistency, repeatability and reliability now become affordable.

The closed loop system applies force, calculates, filters and controls digital data in a 32-bits embedded CPU system.

The tester has a 4 position turret which can be customized by using different indentors, objectives, stages or Vision systems, meeting your particular request and budget.

The NEXUS 4000 series meets all applicable EN, ISO and ASTM standards.

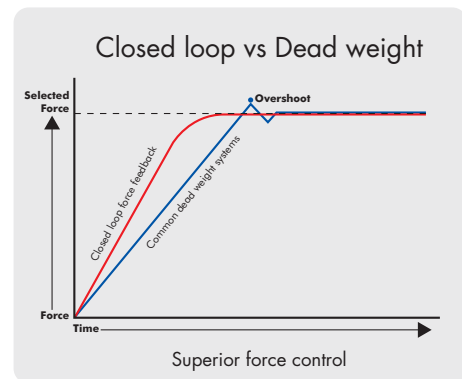
NEXUS

VICKERS 4000 SERIES

TEST PROCEDURE CONTROL

Traditional hardness testing systems use a “dead weight” mechanical design or inaccurate spring force mechanism to apply the test force. Such systems are lacking test control, as there is no feed-back on the actual applied force.

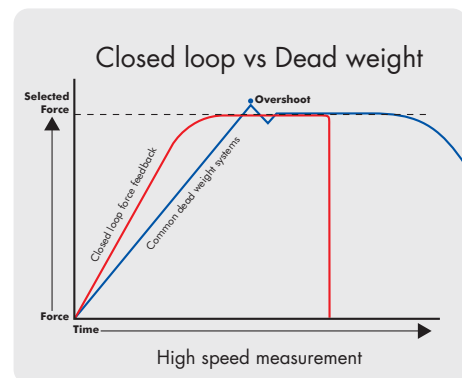
The Closed Loop technology with a force feedback system, as applied in the NEXUS 4000 Series, constantly measures and controls the applied force on the tester’s indenter and tested surface. Consequently, this superior control system offers an almost unlimited selection of test loads and test rates for virtually any test condition imaginable.



ACCURACY, RELIABILITY & EFFICIENCY

Elimination of overshoot due to sophisticated algorithms detecting contact between the indenter and the object’s surface.

The application and removal of the test force is fully automatic, as well as the positioning of the indenter and the positioning of the pre-determined objective. The result is a flawless absolute vibration free operation while reducing the operator’s efforts to a minimum.



UPGRADE YOUR NEXUS LATER

The NEXUS series offers upgrades on request. For instance, your budget and your requirements allow a Vickers tester. Your choice could be a NEXUS Vickers / Knoop tester 4300. At any moment after your purchase you can upgrade your tester from for instance Vickers to Macro, Micro-Vickers or even to Brinell at fixed prices. The upgrades are possible in the 4300 or 4500 range. It requires simply a phone call to your distributor or to INNOVATEST® and the upgrade does not take more than a couple of hours, including calibration. Investing in a NEXUS series tester guarantees access to almost any load application in the Vickers, Knoop and Brinell range up to 62.5kg.

High accuracy, flexibility and pure efficiency are synonyms for the NEXUS 4000 series.



AVAILABLE FORCE CONFIGURATIONS

NEXUS 4300	1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30kgf
NEXUS 4301	1 - 2 - 2.5 - 3 - 4 - 5 - 6.25 - 10 - 15.625 - 20 - 31.25kgf
NEXUS 4302	0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30kgf
NEXUS 4303	0.02 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30kgf
NEXUS 4304	As 4303 + additional 2.5 - 6.25 - 15.625 - 31.25kgf
NEXUS 4500	1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30 - 50kgf
NEXUS 4501	1 - 2 - 2.5 - 3 - 4 - 5 - 6.25 - 10 - 15.625 - 20 - 31.25 - 62.5kgf
NEXUS 4502	0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30 - 50kgf
NEXUS 4503	0.1 - 0.2 - 0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30 - 50kgf
NEXUS 4504	As 4503 + additional 2.5 - 6.25 - 15.625 - 31.25 - 62.5kgf

STAGES

Manual X-Y-Z stage, Motorized X-Y stage, Motorized X-Y-Z stage
 INNOVAVIEW™ CCD system with Video filar level INV-1, 2 or 3
 INNOVAVIEW™ CCD system with auto focus and Video filar INV-4

TURRET CONFIGURATION

Fully automatic 4 position turret for Micro-Vickers / Macro Vickers, Knoop or Brinell measurements.
 Featuring 3 objectives at choice, all 3 objectives can be used for measuring and observation. Optional, 2 indenter positions.

INDENTORS

Vickers, Knoop or Brinell or 2 of these simultaneously

EYEPIECE

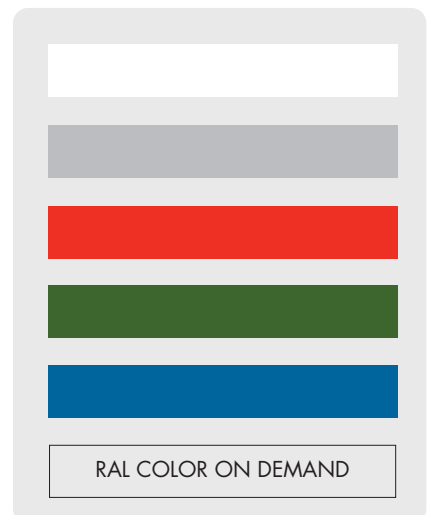
Electronic digital microscope with precision encoder providing 15x magnification

OBJECTIVES

5x for 75x	magnification
10x for 150x	magnification
20x for 300x	magnification
40x for 600x	magnification
60x for 900x	magnification

TESTER COLORS

INC-1LW	Laboratory White
INC-2CGM	Charcoal Grey Metallic
INC-3FR	Ferrari Red
INC-4BRG	British Racing Green
INC-5ABL	Atlantic Blue
INC-RAL XXXX	Any RAL color on demand



TECHNICAL SPECIFICATIONS

Test force selection	Test force selectable over menu operation
Test procedure	Automatic, loading/dwell/unloading
Hardness value	5 digits
Loading speed	Variable, depending on load application
Turret	4 positions over 360°, fully automatic, memorized start position, option for 2 indentors and 2 objectives or 1 indentor and 3 objectives
Test force accuracy	<1% for test force from 100gr to 30kg, < 1.5% for test force below 100gr
User display	Length of diagonals, hardness value, converted value, test force, online statistics
Display resolution	0.1 HV, HK and HB
Hardness conversion	Rockwell, Rockwell Superficial, Brinell, Leeb & Tensile
Standardization	EN, ISO 6507, EN ISO 6506, EN ISO 4545, ASTM E-384, ASTM E-10-08, ASTM E-384
Statistics	Total test, max, min, average, range, standard deviation, all in real time after each test
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 (standard) V2.02, English, Italian, Spanish
Memory	Memory for batch testing results
Data output	RS-232 Bi-Directional
Loading mechanism	Fully automatic, closed loop, force feedback, loading, dwell, unloading
Dwell time setting	Default 10 seconds, user defined 0 to 60 sec.
Printer	Built-in, silent high speed thermal printer
Electronic microscope	Bright Dual line filar eyepiece with 15x magnification, 0.01µm reading
Light source	Halogen 12V, 30 watt, green filter, dimmable
Optical path	2 way, eyepiece / video/ccd/cmos camera
Vertical capacity	160mm (maximum specimen height)
Horizontal capacity	135mm (from center-line)
Stage dimensions	100mm x 100mm, travel 20mm x 20mm, reading 0.01mm
Operating temperature	5°C to 40°C (+/-20° for force 25gr & 50gr)
Humidity	10% to 90% non condensing
Dimensions and weight	220mm x 540mm x 650mm, 51kg
Power requirements	100VAC to 240VAC, 50/60Hz, single phase
Power consumption	390W
Guarantee	3 years limited guarantee

ORDER DETAILS

- NEXUS 4300** Vickers / Knoop, 30kgf
- NEXUS 4301** Brinell, 31.25kgf
- NEXUS 4302** Macro Vickers / Knoop, 30kgf
- NEXUS 4303** Micro/Macro Vickers / Knoop, 30kgf
- NEXUS 4304** Micro/Macro Vickers / Knoop / Brinell, 31.25kgf
- NEXUS 4500** Vickers / Knoop, 50kgf
- NEXUS 4501** Brinell, 61.5kgf
- NEXUS 4502** Macro Vickers / Knoop, 50kgf
- NEXUS 4503** Micro/Macro Vickers / Knoop, 50kgf
- NEXUS 4504** Micro/Macro Vickers / Knoop / Brinell, 61.5kgf

STANDARD DELIVERY

- Manual X-Y-Z stage
- Flat anvil 60mm
- Objectives 5x, 10x, 20x or 10x, 20x, 40x
- Electronic digital eyepiece 15x
- Vickers test block
- Set of workpiece fixtures, vice, chuck, clamp
- Built-in thermal printer
- RS-232 data output
- 4 adjustable feet
- Spare halogen lamp
- Fuse
- Installation & user manual
- Quality certificate
- Color: Laboratory White

OPTIONAL ACCESSORIES

- Objectives 5x, 40x, 60x
- INNOVAVIEW™ Vision measuring and filing systems
- Motorized X-Y stage (small or large)
- Motorized X-Y-Z stage (auto focus)
- Indentors & hardness test blocks
- Certified indentors
- Reference hardness blocks
- Solid tester table & storage cabinet
- Color according to demand





REGULAR VICKERS



INV VISION SYSTEM



TABLE OPTION 1
ANALOGUE STAGE MICROMETERS

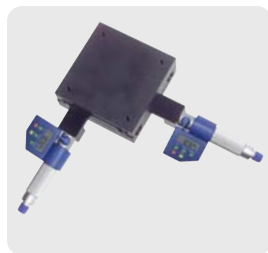


TABLE OPTION 2
DIGITAL STAGE MICROMETERS



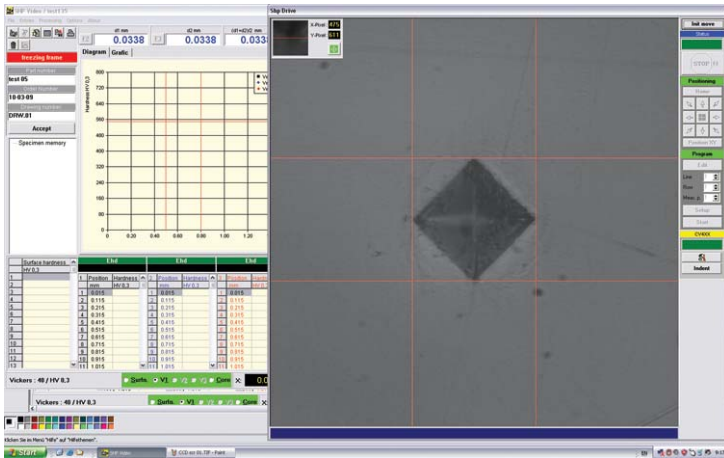
TABLE OPTION 3
SMALL MOTORIZED STAGE



TABLE OPTION 4
LARGE MOTORIZED STAGE

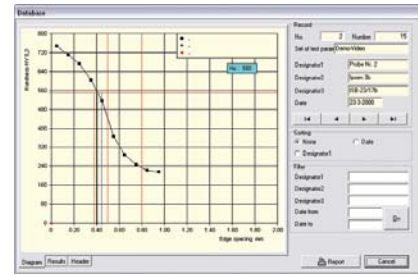
FEATURES

- High resolution 5 mega pixels video camera allowing crisp indent images
- Manual & automatic image measuring mode
- Save, print and store image
- Report generator
- Data export to Excel or other MS applications
- Pattern programming, saving and recall
- Return to position and re-measure option
- Variable distance point plotting



INV-1

PC-based camera indent measuring system.
Manual measurement of the indent on the LCD screen.
Store, file, handle images and data on the hddisk.



Distance	Hardness	Distance	Hardness	Distance	Hardness	Surface Hardness
1	0.000	0.000	740.0	1	0.000	740.0
2	0.100	0.100	710.0	2	0.100	710.0
3	0.200	0.200	670.0	3	0.200	670.0
4	0.300	0.300	630.0	4	0.300	630.0
5	0.400	0.400	590.0	5	0.400	590.0
6	0.500	0.500	560.0	6	0.500	560.0
7	0.600	0.600	530.0	7	0.600	530.0
8	0.700	0.700	500.0	8	0.700	500.0
9	0.800	0.800	470.0	9	0.800	470.0
10	0.900	0.900	440.0	10	0.900	440.0
11	1.000	1.000	410.0	11	1.000	410.0
12	1.100	1.100	380.0	12	1.100	380.0
13	1.200	1.200	350.0	13	1.200	350.0
14	1.300	1.300	320.0	14	1.300	320.0
15	1.400	1.400	290.0	15	1.400	290.0
16	1.500	1.500	260.0	16	1.500	260.0
17	1.600	1.600	230.0	17	1.600	230.0
18	1.700	1.700	200.0	18	1.700	200.0
19	1.800	1.800	170.0	19	1.800	170.0
20	1.900	1.900	140.0	20	1.900	140.0
21	2.000	2.000	110.0	21	2.000	110.0
22	2.100	2.100	80.0	22	2.100	80.0
23	2.200	2.200	50.0	23	2.200	50.0
24	2.300	2.300	20.0	24	2.300	20.0
25	2.400	2.400	0.0	25	2.400	0.0
26	2.500	2.500	0.0	26	2.500	0.0
27	2.600	2.600	0.0	27	2.600	0.0
28	2.700	2.700	0.0	28	2.700	0.0
29	2.800	2.800	0.0	29	2.800	0.0
30	2.900	2.900	0.0	30	2.900	0.0
31	3.000	3.000	0.0	31	3.000	0.0
32	3.100	3.100	0.0	32	3.100	0.0
33	3.200	3.200	0.0	33	3.200	0.0
34	3.300	3.300	0.0	34	3.300	0.0
35	3.400	3.400	0.0	35	3.400	0.0
36	3.500	3.500	0.0	36	3.500	0.0
37	3.600	3.600	0.0	37	3.600	0.0
38	3.700	3.700	0.0	38	3.700	0.0
39	3.800	3.800	0.0	39	3.800	0.0
40	3.900	3.900	0.0	40	3.900	0.0
41	4.000	4.000	0.0	41	4.000	0.0
42	4.100	4.100	0.0	42	4.100	0.0
43	4.200	4.200	0.0	43	4.200	0.0
44	4.300	4.300	0.0	44	4.300	0.0
45	4.400	4.400	0.0	45	4.400	0.0
46	4.500	4.500	0.0	46	4.500	0.0
47	4.600	4.600	0.0	47	4.600	0.0
48	4.700	4.700	0.0	48	4.700	0.0
49	4.800	4.800	0.0	49	4.800	0.0
50	4.900	4.900	0.0	50	4.900	0.0
51	5.000	5.000	0.0	51	5.000	0.0
52	5.100	5.100	0.0	52	5.100	0.0
53	5.200	5.200	0.0	53	5.200	0.0
54	5.300	5.300	0.0	54	5.300	0.0
55	5.400	5.400	0.0	55	5.400	0.0
56	5.500	5.500	0.0	56	5.500	0.0
57	5.600	5.600	0.0	57	5.600	0.0
58	5.700	5.700	0.0	58	5.700	0.0
59	5.800	5.800	0.0	59	5.800	0.0
60	5.900	5.900	0.0	60	5.900	0.0
61	6.000	6.000	0.0	61	6.000	0.0
62	6.100	6.100	0.0	62	6.100	0.0
63	6.200	6.200	0.0	63	6.200	0.0
64	6.300	6.300	0.0	64	6.300	0.0
65	6.400	6.400	0.0	65	6.400	0.0
66	6.500	6.500	0.0	66	6.500	0.0
67	6.600	6.600	0.0	67	6.600	0.0
68	6.700	6.700	0.0	68	6.700	0.0
69	6.800	6.800	0.0	69	6.800	0.0
70	6.900	6.900	0.0	70	6.900	0.0
71	7.000	7.000	0.0	71	7.000	0.0
72	7.100	7.100	0.0	72	7.100	0.0
73	7.200	7.200	0.0	73	7.200	0.0
74	7.300	7.300	0.0	74	7.300	0.0
75	7.400	7.400	0.0	75	7.400	0.0
76	7.500	7.500	0.0	76	7.500	0.0
77	7.600	7.600	0.0	77	7.600	0.0
78	7.700	7.700	0.0	78	7.700	0.0
79	7.800	7.800	0.0	79	7.800	0.0
80	7.900	7.900	0.0	80	7.900	0.0
81	8.000	8.000	0.0	81	8.000	0.0
82	8.100	8.100	0.0	82	8.100	0.0
83	8.200	8.200	0.0	83	8.200	0.0
84	8.300	8.300	0.0	84	8.300	0.0
85	8.400	8.400	0.0	85	8.400	0.0
86	8.500	8.500	0.0	86	8.500	0.0
87	8.600	8.600	0.0	87	8.600	0.0
88	8.700	8.700	0.0	88	8.700	0.0
89	8.800	8.800	0.0	89	8.800	0.0
90	8.900	8.900	0.0	90	8.900	0.0
91	9.000	9.000	0.0	91	9.000	0.0
92	9.100	9.100	0.0	92	9.100	0.0
93	9.200	9.200	0.0	93	9.200	0.0
94	9.300	9.300	0.0	94	9.300	0.0
95	9.400	9.400	0.0	95	9.400	0.0
96	9.500	9.500	0.0	96	9.500	0.0
97	9.600	9.600	0.0	97	9.600	0.0
98	9.700	9.700	0.0	98	9.700	0.0
99	9.800	9.800	0.0	99	9.800	0.0
100	9.900	9.900	0.0	100	9.900	0.0
101	10.000	10.000	0.0	101	10.000	0.0
102	10.100	10.100	0.0	102	10.100	0.0
103	10.200	10.200	0.0	103	10.200	0.0
104	10.300	10.300	0.0	104	10.300	0.0
105	10.400	10.400	0.0	105	10.400	0.0
106	10.500	10.500	0.0	106	10.500	0.0
107	10.600	10.600	0.0	107	10.600	0.0
108	10.700	10.700	0.0	108	10.700	0.0
109	10.800	10.800	0.0	109	10.800	0.0
110	10.900	10.900	0.0	110	10.900	0.0
111	11.000	11.000	0.0	111	11.000	0.0
112	11.100	11.100	0.0	112	11.100	0.0
113	11.200	11.200	0.0	113	11.200	0.0
114	11.300	11.300	0.0	114	11.300	0.0
115	11.400	11.400	0.0	115	11.400	0.0
116	11.500	11.500	0.0	116	11.500	0.0
117	11.600	11.600	0.0	117	11.600	0.0
118	11.700	11.700	0.0	118	11.700	0.0
119	11.800	11.800	0.0	119	11.800	0.0
120	11.900	11.900	0.0	120	11.900	0.0
121	12.000	12.000	0.0	121	12.000	0.0
122	12.100	12.100	0.0	122	12.100	0.0
123	12.200	12.200	0.0	123	12.200	0.0
124	12.300	12.300	0.0	124	12.300	0.0
125	12.400	12.400	0.0	125	12.400	0.0
126	12.500	12.500	0.0	126	12.500	0.0
127	12.600	12.600	0.0	127	12.600	0.0
128	12.700	12.700	0.0	128	12.700	0.0
129	12.800	12.800	0.0	129	12.800	0.0
130	12.900	12.900	0.0	130	12.900	0.0
131	13.000	13.000	0.0	131	13.000	0.0
132	13.100	13.100	0.0	132	13.100	0.0
133	13.200	13.200	0.0	133	13.200	0.0
134	13.300	13.300	0.0	134	13.300	0.0
135	13.400	13.400	0.0	135	13.400	0.0
136	13.500	13.500	0.0	136	13.500	0.0
137	13.600	13.600	0.0	137	13.600	0.0
138	13.700	13.700	0.0	138	13.700	0.0
139	13.800	13.800	0.0	139	13.800	0.0
140	13.900	13.900	0.0	140	13.900	0.0
141	14.000	14.000	0.0	141	14.000	0.0
142	14.100	14.100	0.0	142	14.100	0.0
143	14.200	14.200	0.0	143	14.200	0.0
144	14.300	14.300	0.0	144	14.300	0.0
145	14.400	14.400	0.0	145	14.400	0.0
146	14.500	14.500	0.0	146	14.500	0.0
147	14.600	14.600	0.0	147	14.600	0.0
148	14.700	14.700	0.0	148	14.700	0.0
149	14.800	14.800	0.0	149	14.800	0.0
150	14.900	14.900	0.0	150	14.900	0.0
151	15.000	15.000	0.0	151	15.000	0.0
152	15.100	15.100	0.0	152	15.100	0.0
153	15.200	15.200	0.0	153	15.200	0.0
154	15.300	15.300	0.0	154	15.300	0.0
155	15.400	15.400	0.0	155	15.400	0.0
156	15.500	15.500	0.0	156	15.500	0.0
157	15.600	15.600	0.0	157	15.600	0.0
158	15.700	15.700	0.0	158	15.700	0.0
159	15.800	15.800	0.0	159	15.800	0.0
160	15.900	15.900	0.0	160	15.900	0.0
161	16.000	16.000	0.0	161	16.000	0.0
162	16.100	16.100	0.0	162	16.100	0.0
163	16.200	16.200	0.0	163	16.200	0.0
164	16.300	16.300	0.0	164	16.300	0.0
165	16.400	16.400	0.0	165	16.400	0.0
166	16.500	16.500	0.0	166	16.500	0.0
167	16.600	16.600	0.0	167	16.600	0.0
168	16.700	16.700	0.0	168	16.700	0.0
169	16.800	16.800	0.0	169	16.800	0.0
170	16.900	16.900	0.0	170	16.900	0.0
171	17.000	17.000	0.0	171	17.000	0.0
172	17.100	17.100	0.0	172	17.100	0.0
173	17.200	17.200	0.0	173	17.200	0.0
174	17.300	17.300	0.0	174	17.300	0.0
175	17.400	17.400	0.0	175	17.400	0.0
176	17.500	17.500	0.0	176	17.500	0.

Represented by:

CORPORATE HEAD OFFICE

MANUFACTURING, DISTRIBUTION & SERVICE

INNOVATEST Europe BV

Borgharenweg 140
6222 AA Maastricht (The Netherlands)
Phone: +31 43 3520060
Fax: +31 43 3631168
Email: info@innovatest-europe.com

INNOVATEST Benelux BVBA

SALES & SERVICE

Phone: +32 12 779002
Fax: +32 12 779003
E-mail: info@innovatest-benelux.com

INNOVATEST Shanghai Co., Ltd.

DISTRIBUTION, SALES & SERVICE

101, Bld. 7, No. 59 Shennan Road,
Minhang District, Shanghai, P.R. China
Zip code: 201108
Phone: +86 21 34635955
Fax: +86 21 34635269
E-mail: info@innovatest-shanghai.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 products without prior notice. We recommend you to contact our sales office for up-to-date information.

© All rights reserved

www.innovatest-europe.com