

HTMV I1000 /
HTMV I1000M

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Digital Micro-Vickers Hardness Tester

> Digital Micro-Vickers Hardness Tester adopts precision optics, high mechanical features and perfect indentation for high accuracy measurements. With digital measuring eyepiece directly shows the hardness value and show on the screen, moreover test mode, test force, indentation length, dwell time, test numbers and conversion scale can be displayed. Optional Knoop indenter can be installed. Optional LCD video measuring device and CCD image automatic measuring system compatible.

Application

> Suitable for ferrous metal, non-ferrous metals, IC thin sections, coatings, ply-metals, glass, ceramics, agate, precious stones, thin plastic sections etc.

Reference standard

> ISO 6507, ASTM E384, JIS Z2244



Table 1

Standard hardness range	Displayed value repeatability %		
	HV5~HV100	HV0.2~ HV5	<HV0.2
≤225HV	≤3	≤6	≤9
>225HV	≤2	≤4	≤5

Table 2

Hardness	Displayed value tolerance %															
	Hardness HV															
	50	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1500
HV 0.01																
HV 0.015	10															
HV 0.02	8															
HV 0.025	8	10														
HV 0.05	6	8	9	10												
HV 0.1	5	6	7	8	8	9	10	10	11							
HV 0.2		4		6		8		9		10	11	11	12	12		
HV 0.3		4		5		6		7		8	9	10	10	11	11	
HV 0.5		3		5		5		6		6	7	7	8	8	9	11
HV 1		3		4		4		4		5	5	5	6	6	6	8
HV 2		3		3		3		4		4	4	4	4	5	5	6
HV 3		3		3		3		3		3	4	4	4	4	4	5
HV 5		3		3		3		3		3	3	3	3	3	4	4
HV 10		3		3		3		3		3	3	3	3	3	3	3
HV 20		3		3		3		3		3	3	3	3	3	3	3
HV 30		3		3		2		2		2	2	2	2	2	2	2
HV 50		3		3		2		2		2	2	2	2	2	2	2
HV 100				3		2		2		2	2	2	2	2	2	2

1: When the indentation diagonal length is less than 0.020 mm, the table does not display the value.
 2: For intermediate values, the maximum allowable error can be obtained by interpolation.
 3: About the Micro Hardness Tester value in the table is 0.001mm or indentation diagonal length of the average of 2% of the maximum permissible error given, please select the bigger.



Model	HTMV I1000 / HTMV I1000M
Test force control	Weights - Load electronic controlled
Load selection	Right side handle
Main loads	10gf, 25gf, 50gf, 100gf, 200gf, 300gf, 500gf, 1000gf
Dwell time	0-60s
Loading time	12s
Load applying speed (indenter descending speed)	0.04mm/s
Test force tolerance	±1%
Test cycle type	Semi-automatic type: Manual - focus, measure of indentation Automatic - load, dwell, unload, show of the hardness value (after measure step)
Hardness scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1 Optional: HK0.01, HK0.025, HK0.05, HK0.1, HK0.2, HK0.3, HK0.5, HK1
Hardness test range	1HV~2967HV
Hardness resolution	0.1HV
Repeatability hef/%	Table 1
Scale conversion	HK, HRA, HRB, HRC, HRD, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HBW - According to ASTM E140
Turret type	HTMV I1000: Manual HTMV I1000M: Automatic
Microscope eyepiece	10x
Objectives	10x, 40x
Microscope min. measurement unit	0.0625µm (40x objective) (10x objective is for observation purpose only)
Microscope max. measurement length	200µm (40x objective) (10x objective is for observation purpose only)
Measurable min. indent/indentation	10µm
Optical path	2 ways eyepiece
Illumination	Halogen lamp
Indenters	Diamond Micro-Vickers indenter
N. of indenters	1
Nose cone support diameter	3mm
Measurable min. indent/indentation	0.01mm

Code	Standard Accessories	Qty
MVT-DE10X	10x digital measuring eyepiece	1 pc
MVT-10XOB	10x objective	1 pc
MVT-40XOB	40x objective	1 pc
MVI-136	Diamond Micro-Vickers indenter	1 pc
MVT-CTT100100	Cross test table 100x100 mm	1 pc
MVT-FLCTT7680	Flat clamping test table 76x80mm	1 pc
MVT-TSTT76	Thin specimen test table ø 76mm	1 pc
MVT-FICTT60	Filament clamping test table ø 60mm	1 pc
HB-700800HV1	Hardness block 700-800 HV1	1 pc
HB-400500HV0.2	Hardness block 400-500 HV0.2	1 pc
MVT-HL1520	Halogen lamp 12V, 15-20W	1 pc
MVT-4RS	Horizontal regulating screw	4 pcs
MVT-LV	Spirit level	1 pc
MVT-PC	Power cable	1 pc
MVT-SK	Service keys	1 set
MVT-6WS	Weights	6 pcs
MVT-WA	Weight axis	1 pc
MVT-ADC	Anti-dust cover	1 pc

Model	HTMV I1000 / HTMV I1000M
Vertical test capacity	100mm
Horizontal test capacity	98mm
Anvils dimensions	Cross test table, size: 100x100mm, fork-shaped test table size: 76x80mm, Thin specimen test table size: ø 76mm, Fine wire test table size: ø 60mm
Max. weight on anvils	10kg
X-Y travel	25x25mm
X axis speed	Manual
X axis resolution	0.01mm
Y axis speed	Manual
Y axis resolution	0.01mm
Z axis movement	Manual
Z axis resolution	Manual
Z axis speed	Manual
Display type	LCD
Display dimensions	3"
Input mode	Control panel keyboard
Displayed data	Hardness value, D1, D2, dwell time, test number, conversion scale
Data output	Hyperterminal format session file (.HT)
Energy saving mode	Yes
Printer	Built-in printer
Interfaces	1x RS232
Safety devices	Emergency switch
Operation temperature	23±5° C
Operation rel. humidity	≤65%
Weight	31kg
Dimensions	480x325x545mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Optional accessories	
Model	Description
MVT-KDI	Diamond Knoop indenter
MVT-DCTT120120	Digital cross test table 120x120mm
MVT-LTT108	Large plane test table ø 108mm
MVT-VTT40	V-shaped test table ø 40mm
MVT-CCDMS	CCD measuring system
MVT-LCDMD	LCD measuring device
MVT-WB	Work bench
MVT-APP	Additional printer paper roll

Vickers hardness blocks	
Model	Range
HB-V0.05/200-750	200-750 HV 0.05
HB-V0.1/200-750	200-750 HV 0.1
HB-V0.2/200-750	200-750 HV 0.2
HB-V0.3/200-750	200-750 HV 0.3
HB-V0.5/200-750	200-750 HV 0.5
HB-V1/200-750	200-750 HV 1

Knoop hardness blocks	
Model	Range
HB-K0.05/200-750	200-750 HK 0.05
HB-K0.1/200-750	200-750 HK 0.1
HB-K0.2/200-750	200-750 HK 0.2
HB-K0.3/200-750	200-750 HK 0.3
HB-K0.5/200-750	200-750 HK 0.5
HB-K1/200-750	200-750 HK 1



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