



Data Sheet

HTMV 1000MDT

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Digital Micro-Vickers Hardness Tester

- > Micro Vickers hardness tester controlled by touch screen panel computer. With CCD image acquisition system, dynamic indentation image, image lock and hardness automatically displayed with high precision and stability.
- > Windows 7 operating system, can be connected to output devices such as external screen and printer;
- > Automatic recognition and shifting between objective and indenter;
- > Lifting screw worm and gear structure with smooth transmission;
- > Automatic test force loading, dwell and unloading;
- > CCD image acquisition system, clear images;
- > Hardness scale conversion;
- > Automatic data save, hardness-depth curve generation report in
- > Optional digital X-Y test table

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	HTV 1000MDT
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 Automatic - load, dwell, unload, measurement of the indentation, show of the hardness value
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
Accuracy: Repeatability hcf/%	Table 1
Scale conversions available(display)	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HBW - According to ASTM E140
Turret type	Automatic
CCD camera pixel	1.3 Million
Microscope Eyepiece	10x
Objectives	10x, 40x
CCD min. measurement unit	0.025µm (40x objective) (10x objective is for observation purpose only)
CCD max. measurement length	170µm (40x objective) (10x objective is for observation purpose only)
Measurable min. indent/indentation	10µm
Optical path	2 ways eyepiece
Optical function	Optical diaphragm / field aperture / color filter
Illumination	Halogen lamp
Indenters	Diamond Micro-Vickers indenter
N. of indenters	1
Nose cone support diameter	3mm
Indent measure algorithms	Automatic

Model	HTV 1000MDT
Auto reading time	0.3 sec/1 indent
Vertical test capacity	185mm
Horizontal test capacity	130mm
Anvils dimensions	Digital cross test table size: 120x120mm, clamping test table size: 76x80mm, thin specimen test table size: ø 76mm, Filament clamping test table size: ø 60mm
Max. weight on anvils	50kg
X-Y travel	25x25mm
X axis speed	Manual
X axis resolution	0.003mm
Y axis speed	Manual
Y axis resolution	0.003mm
Z axis movement	Manual
Z axis resolution	Manual
Z axis speed	Manual
Display type	Touch screen
Display dimensions	8"
Input mode	By tap touch
Displayed data	Hardness value, D1, D2, dwell time, test number, conversion scale, test force, date and time, indentation, objective
Statistics or functions	Max, min, average value, report, hardness curve
Data storage	Internal SSD 64GB storage
Data output	Word, Excel format
Energy saving mode	Yes
Interfaces	3x USB, 1x VGA, 1x LAN
Safety devices	Emergency switch
Operation temperature	23±5° C
Operation rel. humidity	≤65%
Weight	48kg
Dimensions	560x335x675mm
Power supply	230V, 50Hz
Voltage variance	±10%
Absorbed power	500W

Optional accessories

Model	Description
MVT-KDI	Diamond Knoop indenter
MVT-LTT108	Large plane test table ø 108mm
MVT-VTT40	V-shaped test table ø 40mm
MVT-WB	Work bench
MVT-EXPR	External printer

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

Standard accessories

Model	Description	Q.ty
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
VT-DCTT120120	Digital cross test table 120x120mm	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	Level	1 pc
MVT-TSRC	Touch screen remote control	1 pc
MVT-TP	Touch pen	1 pc
MVT-MSE	Mouse	1 pc
MVT-SKUSB	USB storage key	1 pc
MVT-PC	Power cable	1 pc
MVT-SK	Service keys	2 pc
MVT-6WS	Weights	6 pcs
MVT-WA	Weight axis	1 pc
MVT-ADC	Anti-dust cover	1 pc



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