

HTV 10 / HTV 10P /
HTV 10Z

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Digital Vickers Hardness tester

> Digital Vickers Hardness Tester adopts load cell control system, improves the accuracy of the test force and the repeatability of the indicating value. Directly shows the test force, indentation length, dwell time, test numbers, conversion scale, date and time. With digital measuring eyepiece after measuring the indentation length, the hardness value is automatically detected and shown on the screen. P Type: built-in printer, Z Type: automatic turret shifting and built-in printer. It can be equipped with LCD video measuring device and CCD image automatic measuring system.



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 E92, 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 10 / HTV 10P HTV 10Z
Test force control	Load cell closed loop - Load electronic controlled
Load selection	Control panel keyboard
Main loads	0.3kgf, 0.5kgf, 1kgf, 2kgf, 2.5kgf, 3kgf, 5kgf, 10kgf
dwelt time	0~60s
Loading time	0.3kgf~5kgf: 8s 10kgf~50kgf: 10s
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	HV0.3, HV0.5, HV1, HV2, HV2.5, HV3, HV5, HV10
Hardness test range	1HV~2967HV
Hardness resolution	0.1HV
Repeatability hef/%	Table 1
Scale conversion	With table, according to ASTM E140
Turret type	HTV 10: Manual HTV 10P: Manual HTV 10Z: Automatic
Microscope eyepiece	10x
Objectives	10x, 40x
Microscope min. measuring unit	0.25µm (10x objective) - 0.0625µm (40x objective)
Microscope max. measurement length	800µm (10x objective) - 200µm (40x objective)
Measurable min. indent/indentation	10µm
Optical path	2 ways eyepiece
Illumination	Halogen lamp
Indenters	Diamond Vickers indenter
N. of indenters	1
Nose bore diameter	6.35mm
Vertical test capacity	170mm
Horizontal test capacity	130mm
Anvils dimensions	Cross test table, size: 100x100mm
Max. weight on anvil	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 speed	Manual
Display type	LCD
Display dimensions	3"
Input mode	Control panel keyboard
Displayed data	Hardness value, D1, D2, test force, dwell time, test number
Data output	Hypertextual session format (.HT)
Energy saving mode	Yes
Printer	HTV 10: no HTV 10P: Built-in printer HTV 10Z: Built-in printer
Interfaces	HTV 10: no HTV 10P: 1xRS232 HTV 10Z: 1xRS232
Safety devices	Emergency switch
Operation temperature	23±5 °C
Operation rel. humidity	≤65%
Weight	35kg
Dimensions	530x280x630mm
Power supply	230V, 50Hz
Absorbed power	500W

Standard accessories

Model	Description	Q.ty
VT-DE10x	10x digital measuring eyepiece	1 pc
VT-10XOB	10x objective	1 pc
VT-40XOB	40x objective	1 pc
VI-136	Diamond Vickers indenter	1 pc
VT-CTT100100	Cross test table 100x100mm	1 pc
HB-700800HV10	Hardness block 700-800 HV10	1 pc
HB-700800HV1	Hardness block 700-800 HV1	1 pc
VT-HL1520	Halogen lamp 12V, 15-20W	1 pc
VT-4RS	Horizontal regulating screw	4 pcs
VT-LV	Spirit level	1 pc
VT-PC	Power cable	1 pc
VT-SK	Service keys	1 set
VT-ADC	Anti-dust cover	1 pc

Optional accessories

Model	Description
VT-DCTT120120	Digital cross test table 120x120mm
VT-FLCTT7680	Flat clamping test table 76x80mm
VT-TSTT76	Thin specimen test table ø76mm
VT-FICTT60	Filament clamping test table ø 60mm
VT-LTT108	Large test table ø 108mm
VT-VTT40	V-shaped test table ø 40mm
VT-CCDMS	CCD measuring system
VT-LCDMD	LCD measuring device
VT-WB	Work bench
VT-APP	Additional printer paper roll

Vickers hardness blocks

Model	Range
HB-V0.3/200-750	200-750 HV0.3
HB-V0.5/200-750	200-750 HV0.5
HB-V1/200-750	200-750 HV1
HB-V2/175-750	175-750 HV2
HB-V3/175-750	175-750 HV3
HB-V5/175-750	175-750 HV5
HB-V10/175-750	175-750 HV10



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