

# VICKERS Series 401/402 MVA/MVD

## Microhardness testers for HV0.01 to HV2

The Series 400 Vickers and Knoop testers are versatile, user-friendly, and provide an affordable, reliable solution for accurate Vickers and Knoop hardness scale testing, both for quality assurance or metallurgical research. The 400 Series is available with manual or automatic turrets and comes equipped with crisp optics that have a total magnification of 100x and 400x for microhardness and 100x and 200x for macro Vickers readings. The systems feature eight dial selectable test forces ranging from 10g to 50kg (see table). For easy sample mounting, models are equipped with a 100x100mm precision XY stage with 25mm movement in each direction.



HV0.01 up to HV2, and HK0.01 to HK2  
Direct load selection automatically changes  
in test settings

Solid eyepiece with analogue reading or  
automatic encoder

Two optical paths,  
for eyepiece and ccd-camera

Manual or motorized turret operation  
enabling automated test cycle  
by the push of start button

Smooth XY-stage 100x100mm,  
travel 25x25mm, motorised versions available

HV0.3 up to HV50, and HK0.3 to HK50  
Direct load selection automatically changes  
in test settings

Hardness diagonals, value, statistics and  
conversions on backlit display

Easy WOLPERT+ menu for safe & sound  
operation. Language selection

Built-in thermal printer on all models  
MVD/SVD

Adjustable halogen light source,  
with green or blue filter, for crisp images

WHV-CCD system for semi- and full-  
automatic traverse and pattern testing by  
pc support and motorised XY stage

# VICKERS Series 430/432/450/452 SVA/SVD

Micro/Macro hardness testers for HV0.3 to HV50

## Applications Series 400

- Steels, non ferrous metals, IC wafer
- Thin plastic, metallic foils, plating, coating, surface layers, laminated metals
- Effect of heat treatment
- Hardness depths of carburized layer and flame hardened layer
- Cemented carbide, ceramics, steels, non-ferrous metals
- Thin plates, metallic foils, plating, miniature objects
- Hardness resulting from welding or deposition

Technical specs

## Accessoires

*Check with your WOLPERT agent for specified packages of standard delivery equipment included with the hardness tester.*

Vickers and Knoop indenters  
Objectives 10x, 20x, 40x and 50x  
XY-stage with analogue or digital micrometers  
Analogue or digital eyepiece 10x  
Built-in thermal printer  
RS232 data output  
Four adjustable feet  
Level gauge  
Hardness reference blocks HV/HK  
Spare halogen lamp  
Fuse  
Precision vices  
CCD-Video test systems Level 1-4  
Motorised XY-stages

# VICKERS Series 401/402 MVA/MVD

## Microhardness testers for HV0.01 to HV2



Model	401-MVA	401-MVD	402-MVA	402-MVD
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.3, HV0.5, HV1 (HV2)			
Test loads	10 - 25 - 50 - 100 - 200 - 300 - 500 - 1000gf			
Test force selection	Dial			
Accuracy conform to	EN-ISO 6507, ASTM and JIS			
Load control	Automatic (loading/dwell/unloading)			
Load duration (Dwell time)	5 to 99 sec			
Turret	Manual		Motorized	
Eye-piece magnification	10x			
Analog encoder	■	-	■	-
Digital encoder	-	■	-	■
Resolution	0.5µm	0.1µm	0.5µm	0.1µm
Objectives	10x, 40x (for MVD 20x, 50x, 60x optional)			
Total magnification	400x (for measurement) 100x (for observation)			
Measuring range	200µm			
Optical path	2-way switchable : eyepiece/camera			
Light filter	Green and Blue			
Light source	Halogen lamp			
Display	Length of diagonal, hardness converted value, test force N, kg			
Hardness value	5-digit			
Diagonal length	4-digit (D1, D2)			
Built-in printer (values & statistics), RS232 serial	-	■	-	■
No., average, S.dev., range, real time after each test	-	■	-	■
Conversion: Brinell, Tensile, Rockwell, Superficial Rockwell	-	■	-	■
Maximum specimen height	85mm (2.55")			
Depth from the centreline	120mm(3.35")			
XY stage	100 x 100mm			
Dimensions	25 x 25mm			
Travel range	0.01mm			
Minimum reading	Range: 10 to 38°C (50 to 100F)			
Operating temperature	10% to 90% non condensing			
Humidity	513 x 320 x 470 mm			
Dimensions	36 kg			
Weight	110-220V AC, 60/50Hz			
Power supply				

## VICKERS INDENTERS AND VICKERS REFERENCE BLOCKS

With calibration certificates UKAS, DKD or NVLAP/ASTM

WOLPERT Group offers a wide range of indenters & reference blocks. All certified indenters and reference blocks will be issued with a certificate traceable to internationally recognised standards such as UKAS, DKD or ASTM. We also offer factory certified indenters and reference plates.

Indenters type WOLPERT with UKAS, DKD, ASTM  
 Vickers Pyramid 136° (≥HV5)  
 Low load Vickers Pyramid 136° (HV0,2 to < HV5)  
 Micro Vickers Pyramid 136° (HV0,01 to < HV0,2)  
 Knoop



# VICKERS Series 430/432/450/452 SVA/SVD

## Micro/Macro hardness testers for HV0.3 to HV50

Model	430-SVA	430-SVD	432-SVA	432-SVD	450-SVA	450-SVD	452-SVA	452-SVD
Vickers scales	HV0.3, HV0.5, HV1, HV3, HV5, HV10, HV20, HV30				HV1, HV2, HV3, HV5, HV10, HV20, HV30, HV50			
Test loads	0.3 -0.5- 1- 3- 5- 10- 20- 30kgf				1 - 2 - 3 - 5 - 10 - 20 - 30- 50kgf			
Test force selection	Dial							
Accuracy conform to	EN-ISO 6507, ASTM and JIS							
Load control	Automatic (loading/dwell/unloading)							
Load duration (Dwell time)	5 to 99 sec							
Turret	Manual		Motorized		Manual		Motorized	
Eyepiece magnification	10x							
Analog encoder	■	-	■	-	■	-	■	-
Digital encoder	-	■	-	■	-	■	-	■
Resolution	0.5µm	0.1µm	0.5µm	0.1µm	0.5µm	0.1µm	0.5µm	0.1µm
Objectives	10x, 20x (for SVD 40x, 50x, 60x optional)							
Total magnification	100x,200x							
Measuring range	100x:800µm;200x:400µm							
Optical path	2-way switchable : eyepiece/camera							
Light filter	Green and Blue							
Light source	Halogen lamp							
Display	Length of diagonal, hardness converted value, test force N, kg							
Hardness value	5-digit							
Diagonal length	4-digit (D1, D2)							
Built-in printer (values & statistics), RS232 serial	-	■	-	■	-	■	-	■
No., average, S.dev., range, real time after each test	-	■	-	■	-	■	-	■
Conversion: Brinell, Tensile, Rockwell, Superficial Rockwell	-	■	-	■	-	■	-	■
Maximum specimen height	210mm,							
Depth from the centreline	160mm							
XY stage	Optional							
Dimensions	Optional							
Travel range	Optional							
Minimum reading	Optional							
Operating temperature	Range: 10 to 38°C (50 to 100F)							
Humidity	10% to 90% non condensing							
Dimensions	566 x300 x 710mm							
Weight	55 kg							
Power supply	110-220V AC, 60/50Hz							

WOLPERT hardness reference blocks are used for annual verification and calibration of hardness testing machines, as well as for periodical check and sometimes for overtaking of hardness scales on a hardness testing machine. That's why hardness reference blocks are a necessary help of industrial Quality Management. Only the use of high quality, precise hardness reference blocks calibrated to applicable standards can ensure the functionality and relative reliability and accuracy of measurement of a hardness testing machine. A hardness reference block shall only be used as according to the standards to that method and test condition for which it was calibrated.

All WOLPERT hardness reference block certificates for Vickers are based on following international standards:

Vickers DIN-EN-ISO 6507-3 or ASTM E 92/ E 384  
 Knoop ISO 4545-3 or ASTM E 384

Order your blocks based on nominal values. Please ask for our separate hardness block list of nominal hardness values available per hardness scale and type of certificate. Of course WOLPERT can also supply certified indenters and reference blocks for other Hardness scales such as Brinell and Rockwell.

