

uVK-1 Micro Vickers and Knoop Hardness Tester



Video



Contact us

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Features and Applications

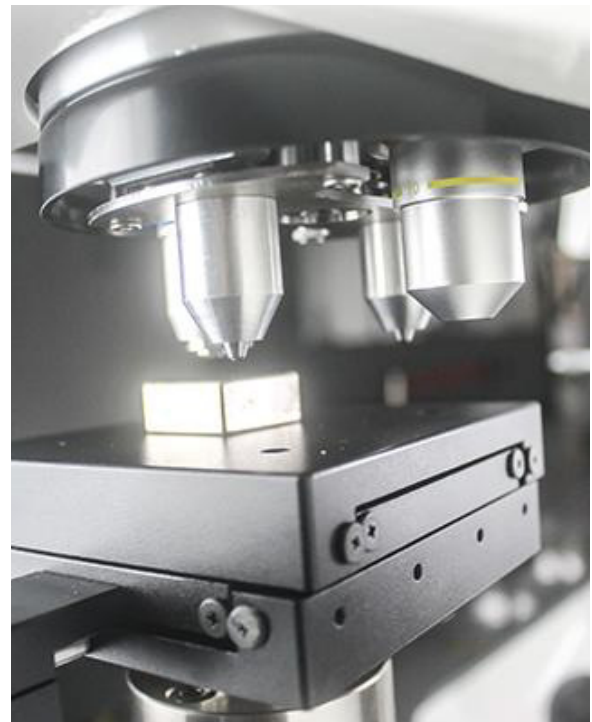
Product Features

- uVK-1 is with HV & HK Vickers and Knoop hardness testing capabilities.
- Advanced machine with lens 5x/10x/20x/40x can used for measurement, suitable to test widely hardness range of materials from most soft to very hard.
- 1 micro vickers indenter, 1 knoop indenter and 4 objective lens totally 6 position hardness testing machine is realized.
- Vickers hardness and Knoop hardness values can be measured simultaneously.
- 8" Touch screen, menu structure, and digital eyepiece with built-in encoder, by clicking encoder button, the diagonal length of indentation D1, D2 and hardness value automatically calculated.
- Lifting mechanism guided by optical cross rail ensures guiding accuracy.
- Rack and pinion force transmission realizes fast and stable force transmission.
- High precision worm gear rod with high transmission ratio ensure more precise force transmission and achieve stable continuous lifting.
- Auto-turret , Auto test point locating accurately.
- Equipped with dual optical path, one optical path for eyepiece system, another path for CCD camera, both path can working in same time.
- LED illumination for long service life and no need to replace the bulb. brightness of the light source can be adjusted infinitely.
- Test setting parameters is protected by password.
- It can be calibrated according to standard hardness blocks or length scales, and the hardness can be corrected automatically according to high, medium and low hardness values, hardness value is more accurate.
- Eyepiece structure with digital encoder, and the touch screen directly displays the hardness value and D1 and D2 values.
- With hardness conversion function, from HV can convert to HRA, HRB, HRC, HBW, etc.
- It can be equipped with a built-in camera (optional) to make the image clearer.
- RS-232 interface connected to computer for data output, testing result can be saved in USB (optional) in EXCEL format. built-in mini-printer to print testing data.
- With micro vickers indenter smart cover to protect indenter collision by test sample or other parts.
- OK/NG judgement function.
- English language operation as standard, other languages can be customized.
- Auto load selection by touch screen instead of manual loading selection. which makes force change more smoothly.(optional)
- Test setting parameters are protected by password.
- Optional maximum test force 2kg.

Features and Applications

Product Applications

- Suitable for ferrous metal, non-ferrous metals, IC thin sections, coatings, ply-metals; glass, ceramics, agate, precious stones, thin plastic sections etc.; hardness testing such as that on the depth and the trapezium of the carbonized layers and quench hardened.



Operation Interface

Touch Screen Interface

Operator

Sample

Range To

Load(kg) Dwell Time(S)

Turret HV 40X 20X

HK 10X 5X

Brightness ↑ ↓

Start

D1 D2

Conversion

Reset
Data
Setting

DATA

No	Hardness-S	Hardness-V	Conversion-S	Conversion-V

Last
Next
Clean
Statistical

MAX	MIN	AVE	VAR

Empty
Print

Return

Calibration

Magnification:

Loda(kg) :

Pulses : X Y

Scale Scale Calibration

Hardness

Save
Calibration

Language
Return

Testing calibration should only be operated under help of professional personnel.

Password:

Enter
Return

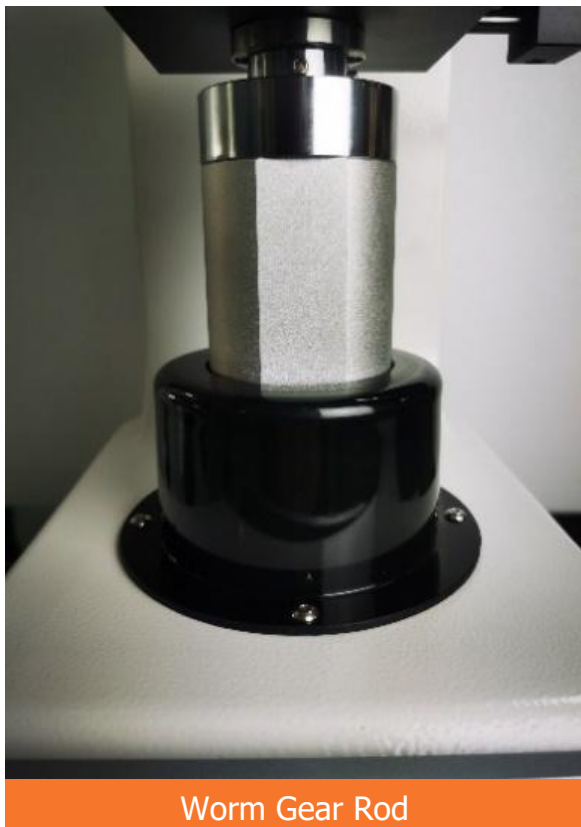
- 8" Touch screen, menu structure, the diagonal length of indentation D1, D2 and hardness value automatically calculated. test setting parameters is protected by password. Brightness adjustment, calibration operation system, Data saving and printing function. Data Statistical function for Max,Min,Average and Variance values of testing results on data sheet.

Product Details

User Friendly



● uVicky-2A-4 auto turret micro vickers hardness tester is with 5x/10x/20x/40x objective lens for leasuring, plus micro vickers indenter , totally 5 positions , knoop indenter can be added to realize it as 6 positions micro vickers/knoop hardness tester, advanced design hardness testing machine.



Worm Gear Rod



Handwheel for Worm Gear Rod

● High precision worm gear rod with high transmission ratio ensure more precise force transmission and achieve stable continuous lifting.

Product Details

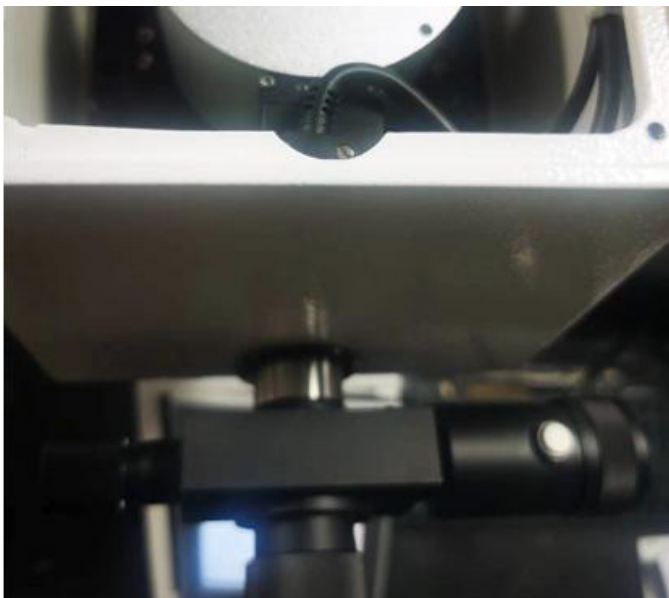
User Friendly



Digital Eyepiece



Manual Loading Selection (Auto Type Optional)



Dual Optical Path

- Digital eyepiece with built-in encoder, Auto loading selection is optional in stead of manual type, equipped with dual optical path, one optical path for eyepiece system, another path for CCD camera, both path can working in same time.

Product Details

Data Output



Built-in Camera (Optional)



RS-232 Interface



RS-232 Interface & USB

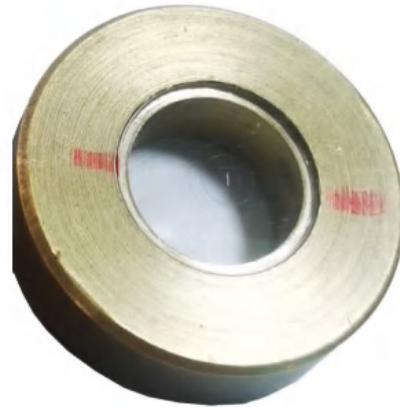


RS-232 Interface & Mini-Printer

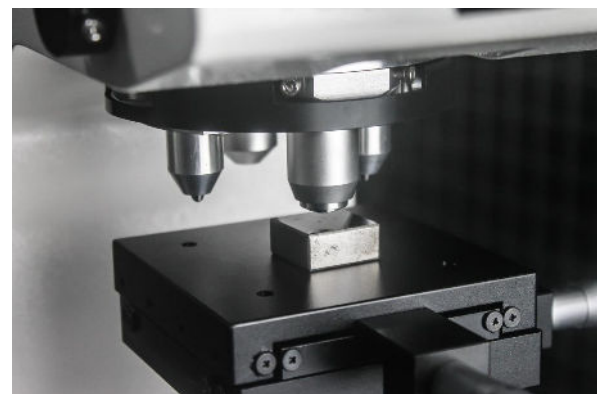
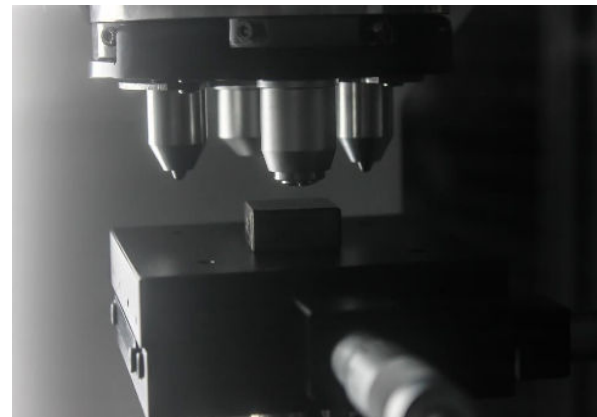
- It can be equipped with a built-in camera (optional) to make the image clearer or for capturing micro vickers indentation to software. RS-232 interface connected to computer for data output, testing result can be saved in USB (optional) in EXCEL format or built-in mini-printer to print testing data.

Product Details

Calibration Method



- It can be calibrated according to the standard hardness block or length scale to make hardness value more accurately.
- RS-232 interface connected to computer for data output, testing result can be saved in USB (optional) in EXCEL format. built-in mini-printer to print.



Ordering Information



**uVK-1A-4 Micro Vickers & Knoop Hardness Tester
(10x/40x Objective Lens For Measuring)**

**uVK-1A-5 Micro Vickers & Knoop Hardness Tester
(10x/20x/40x Objective Lens For Measuring)**

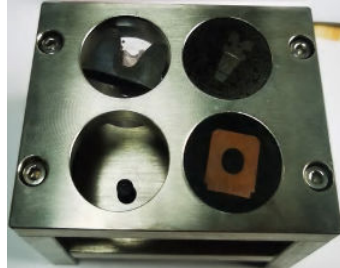
**uVK-1A-6 Micro Vickers & Knoop Hardness Tester
(5x/10x/20x/40x Objective Lens For Measuring)**

**Optional : 2kg Micro Vickers & Knoop Hardness Tester
(uVK-2A-4、uVK-2A-5、uVK-2A-6)**

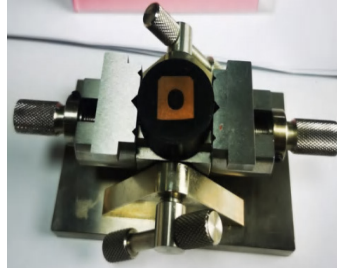
Variable Test Sample Clamping Vice Optional



Single Inlay Sample Clamping



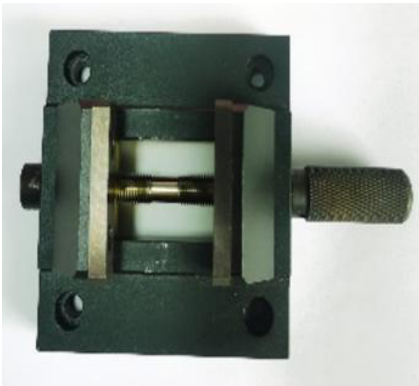
4 Pcs Inlay Samples Clamping



Universal Tilt Clamping



Pencil Clamping (For Pencil Hardness Tester)



Flat Clamp



Filament Clamp

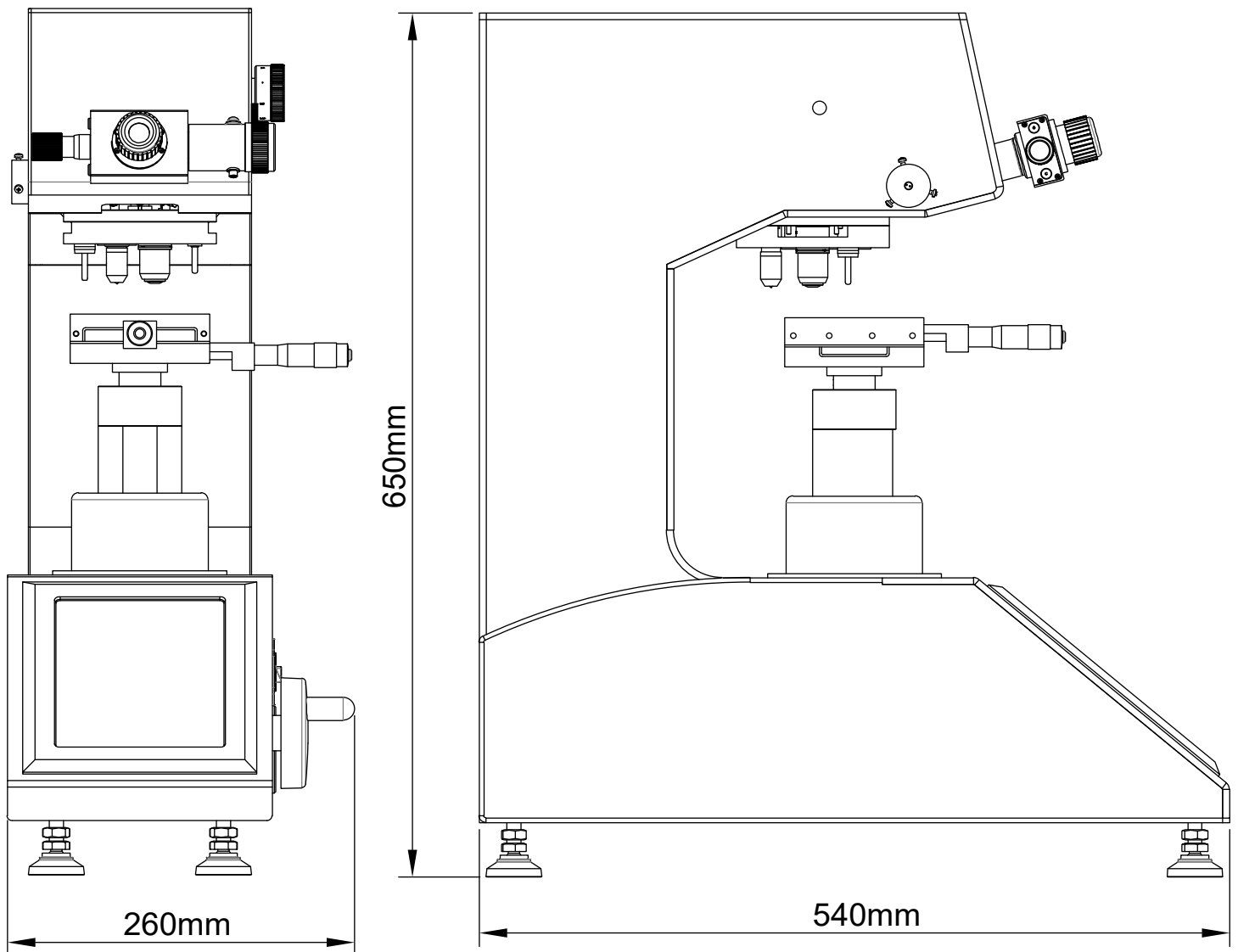


Thin Specimen Clamp



Balance Support (For Long Test Sample)

Instrument Dimension



Technical Specification

Name	uVK-1 Micro Vickers and Knoop Hardness Tester		
Model	uVK-1A-4	uVK-1A-5	uVK-1A-6
Turret	Auto	Auto	Auto
Built-in Mini Printer	Yes	Yes	Yes
Data Statistic Function	Yes	Yes	Yes
Objective	10X(Observable&Measure) 40X(Observable&Measure)	10X(Observable&Measure) 20X(Observable&Measure) 40X(Observable&Measure)	5X(Observable&Measure) 10X(Observable&Measure) 20X(Observable&Measure) 40X(Observable&Measure)
Eyepiece	10X digital eyepiece with built-in encoder		
Total Magnification	100X(Observable&Measure) 400X(Observable&Measure)	100X(Observable&Measure) 200X(Observable&Measure) 400X(Observable&Measure)	50X(Observable&Measure) 100X(Observable&Measure) 200X(Observable&Measure) 400X(Observable&Measure)




Technical Specification

Test Force	10gf (0.098N), 25gf (0.245N), 50gf (0.49N), 100gf (0.98N), 200gf (1.96N), 300gf (2.94N), 500gf(4.9N), 1000gf (9.8N)
Hardness Scale	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Conversion Scale	HRA, HRB, HRC, HRD, HRF, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HV, HK, HBW
Loading Speed	≤50μm/sec
Conversion Scale	HV: Rectangular Pyramid Diamond Indentor(136°±0.5°) HK: Rectangular Pyramid Diamond Indentor(172°30'/130°)
Indentor	Coincidence accuracy error < 1μm (objective lens center position can be adjusted)
Objective Lens Center And Indenter Center	0.01μm
Measurement Resolution	8 "Touch Screen Display, Can Store 20 Test Results, Built-in Printer and RS-232 Interface, Optional USB Flash Drive
Data Display /Output	8~2900 HV/HK


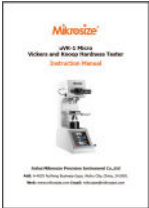
Technical Specification

Loading Method	Automatic (loading, dwell, unloading)
Dwell Time	1-99s(each step is 1 second)
Test Space	Test height: 100mm□(Vertical), Test Throat: 130mm(Horizontal)
X-Y Test Anvil	Dimension: 100*100mm, Movement:25*25mm,Moving Resolution Ratio:0.01mm
Illumination	LED Cold light source (can be continuous use for 24 hours, no heat generate ensure stable working, servicing life can reach 100,000 hours)
Machine Size&N/W	540*260*650mm; 50kg
Package Size&G/W	710*420*627mm; 68kg
Power Supply	AC220V+5%, 50-60Hz(110V is available)
Executive Standards	GB/T4340.2, GB/T 18449.2, ASTM E92




Standard Delivery

Name	Qty	Photo
Weight Shaft	1 pc	
Eyepiece	1 pc	
X-Y Test Anvil	1 pc	
Gradienter	1 pc	
Power Cord	1 pc	
Product Certificate, Warranty Card	each 1 copy	
Printing Paper	1 pc	
Screwdriver	2 pcs	

Standard Delivery

Name	Qty	Photo
Weight	6 pcs	
Micro Hardness block	each 1	
Spare Fuse (2A)	2 pcs	
Dust Cover	1 pc	
Instruction Manual	1 pc	
Touch Pen	1 pc	
Level Adjustment Screw	4 pcs	

Optional Delivery

Name	Photo
Flattening Device(Used With Universal Tilt Clamping Fixture)	
Built-in Camera	
Micro Vickers Measuring Software	
USB Interface	