

## uVK-1

### Micro Vickers and Knoop Hardness Tester



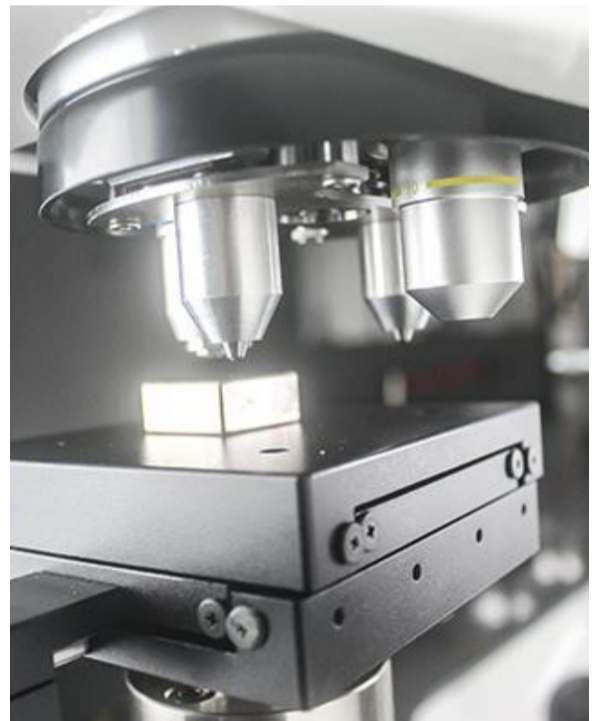
Video



## Product Feature&Application

### 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.



### Product Application

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 layers.

Touch Screen Interface

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.

Operator

Sample

Range  To

Load(kg)  Dwell Time(S)

Turret 

HV40X20X

HK10X5X

Brightness 

↑

↓

Start

D1  D2

Conversion

Reset

Data

Setting

Main Interface

DATA

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

Last

Next

Clean

Statistical

MAX	MIN	AVE	VAR

Print

Empty

Return

Data Interface

Calibration

Magnification:

Loda(kg) :

Pulses : X  Y

Scale 

Scale Calibration

Hardness

Save

Calibration

Language

Return

Hardness Calibration

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

Password:

Enter

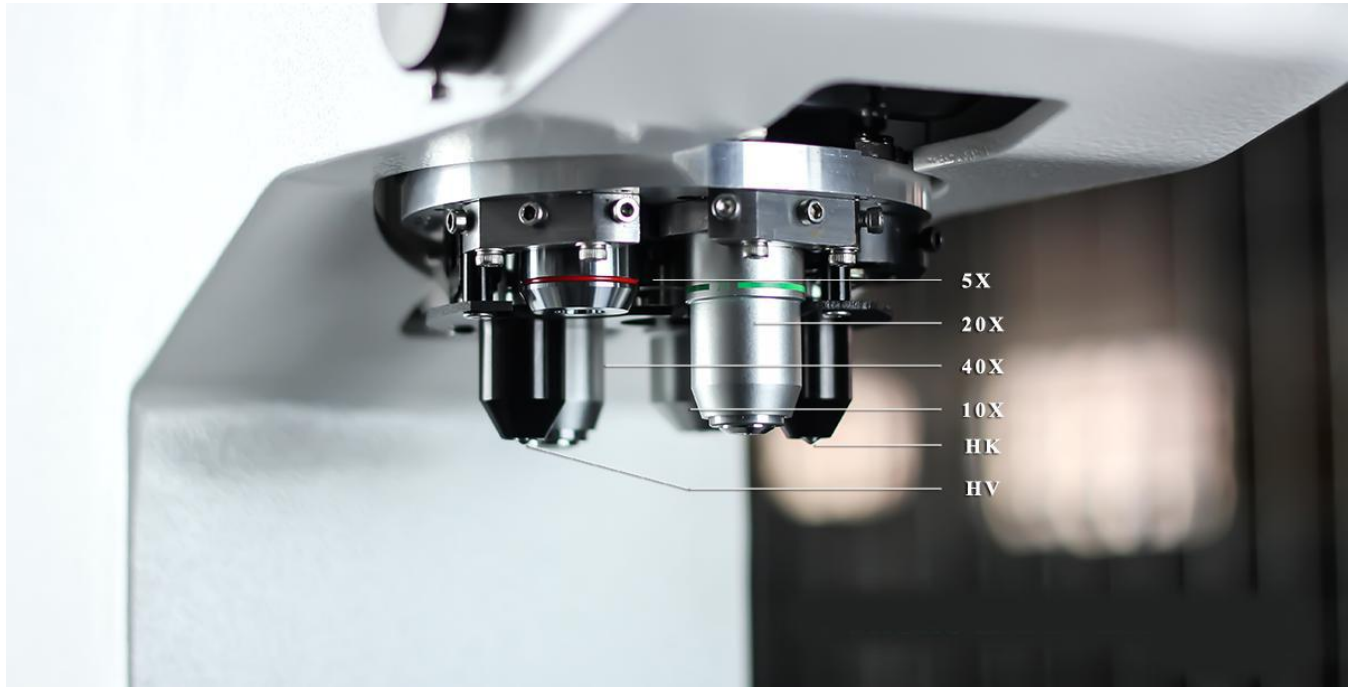
Return

Password Protection



## User Friendly

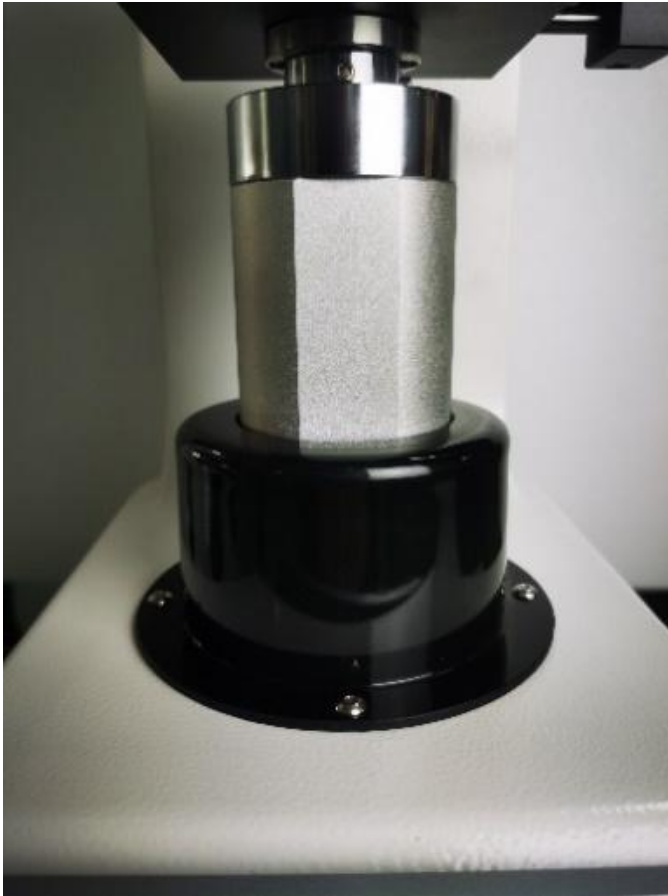
uVicky-2A-4 auto turret micro vickers hardness tester is with 5x/10x/20x/40x objective lens for leasuring,plus micro vickers indenter , totally 5 positions , knoop indenter can be added to realize it as 6 positions micro vickers/knoop hardness tester, advanced design hardness testing machine.





## User Friendly

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



Worm Gear Rod



Handwheel for Worm Gear Rod

## User Friendly

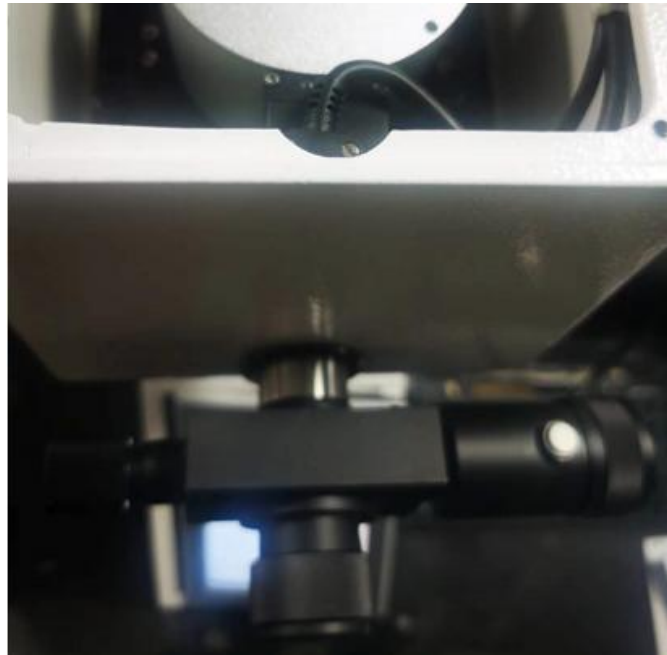
Digital eyepiece with built-in encoder, Auto loading selection is optional in stead of manual type, equipped with dual optical path, one optical path for eyepiece system, another path for CCD camera, both path can working in same time.



Digital Eyepiece



Manual Loading Selection (Auto Type Optional)



Dual Optical Path

## Data Output

It can be equipped with a built-in camera (optional) to make the image clearer or for capturing micro vickers indention 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.



Built-in Camera (Optional)



RS-232 Interface



RS-232 Interface & USB (Optional)



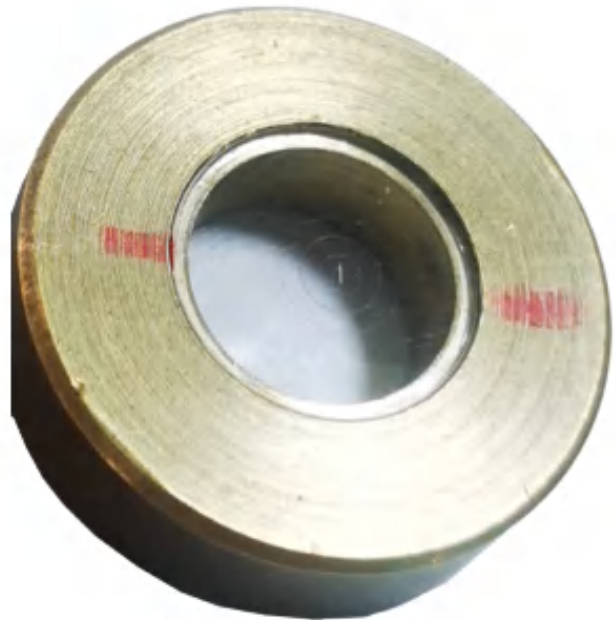
RS-232 Interface & Mini-Printer

## 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 testing data.

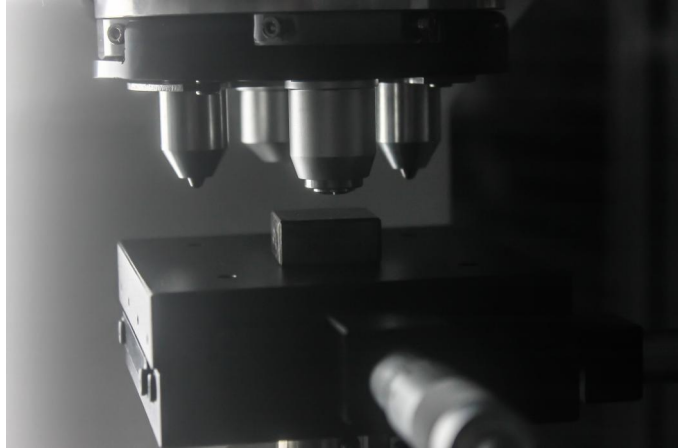
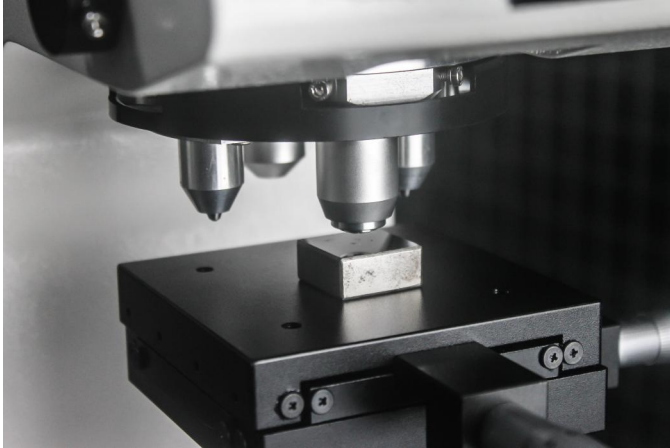


Standard Block



Length Scale

## More Detailed Photos



## 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)**

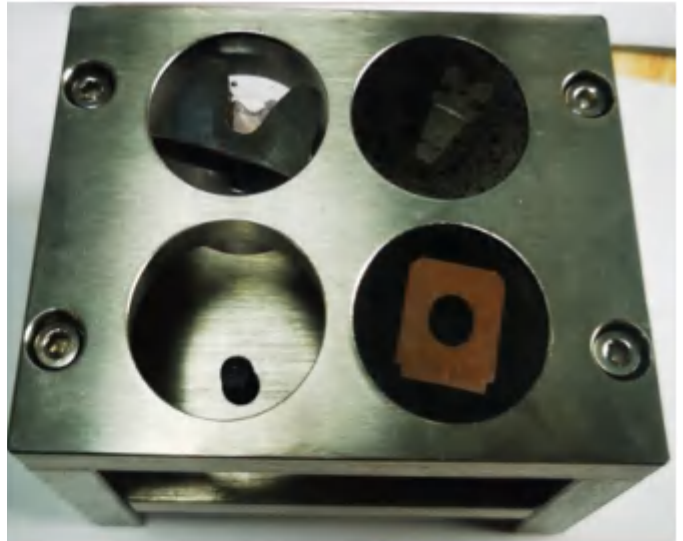
**uVK-1A-6 Micro Vickers & Knoop Hardness Tester  
(5x/10x/20x/40x Objective Lens For Measuring)**

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

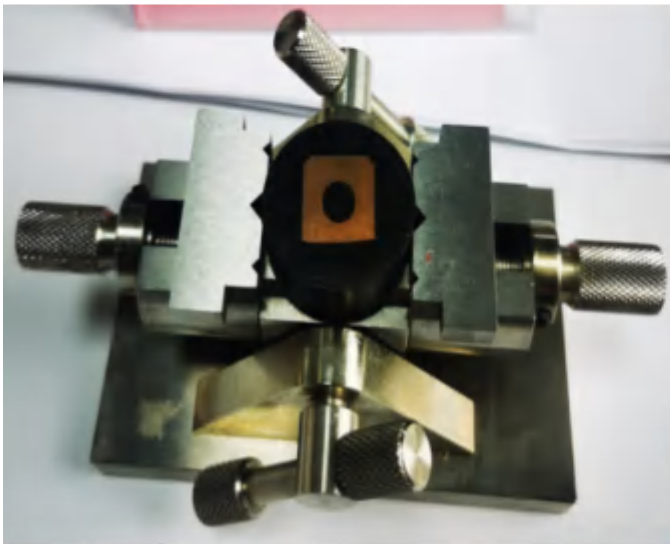
## Variable Test Sample Clamping Vice Optional



Single Inlay Sample Clamping



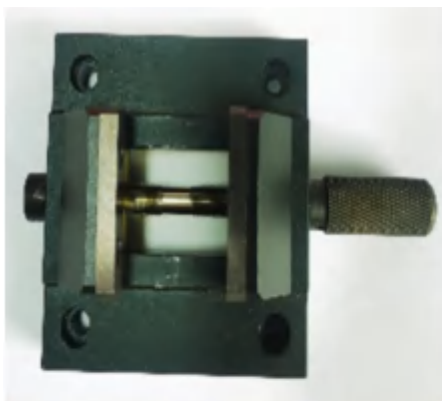
4 Pcs Inlay Samples Clamping



Universal Tilt Clamping



Pencil Clamping (For Pencil Hardness Tester)



Flat Clamp



Filament Clamp



Thin Specimen Clamp



Balance Support (For Test Sample)

## Technical Specification

Product 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(Observe&Measure) 40X(Observe&Measure)	10X(Observe&Measure) 20X(Observe&Measure) 40X(Observe&Measure)	5X(Observe&Measure) 10X(Observe&Measure) 20X(Observe&Measure) 40X(Observe&Measure)
Eyepiece	10X digital eyepiece with built-in encoder		
Total Magnification	100X(Observe&Measure) 400X(Observe&Measure)	100X(Observe&Measure) 200X(Observe&Measure) 400X(Observe&Measure)	50X(Observe&Measure) 100X(Observe&Measure) 200X(Observe&Measure) 400X(Observe&Measure)
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		
Indentor	HV: Rectangular Pyramid Diamond Indentor(136°±0.5°) HK: Rectangular Pyramid Diamond Indentor(172°30'/130°)		
Objective lens center and indenter center	Coincidence accuracy error< 1um (objective lens center position can be adjusted)		
Measurement Resolution	0.01μm		
Data Display /Output	8 "Touch Screen Display, Can Store 20 Test Results, Built-in Printer and RS-232 Interface, Optional USB Flash Drive		
Hardness Test Range	8~2900 HV/HK		
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		

## Packing List

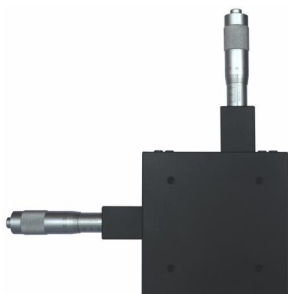
Item	Quantity
Weight Shaft	1pc
Eyepiece	1 pc
X-Y Test Anvil	1 pc
Gradienter	1 pc
Power Cord	1 pc
Product Certificate, Warranty Card	Each 1 Copy
Printing Paper	1 pc
Screwdriver	2 pc
Item	Quantity
Weight	6 pcs
Micro Hardness block (high & medium)	Each 1 pc
Spare Fuse (2A)	2 pcs
Dust Cover	1 pc
Instruction Manual	1 pc
Touch Pen	1 pc
Level adjustment screw	4 pcs



HV0.2 Hardness Block



HV1 Hardness Block



X-Y Test Anvil



Digital Eyepiece

## Optional Accesaries



Flattening Device (Used With Universal Tilt Clamping Fixture)



Built-in Camera



Micro Vickers  
Measuring Software



USB Interface