

## uVK-1 Micro Vickers and Knoop Hardness Tester



Video



### Contact us

**Mikrosize Precision Instrument Co.,Ltd**

A-4035 RuiFeng Business Expo, Wuhu City, China , 241000.

Web: [www.mikrosize.com](http://www.mikrosize.com)

Email: [mikrosize@mikrosize.com](mailto:mikrosize@mikrosize.com)



## Features and Applications

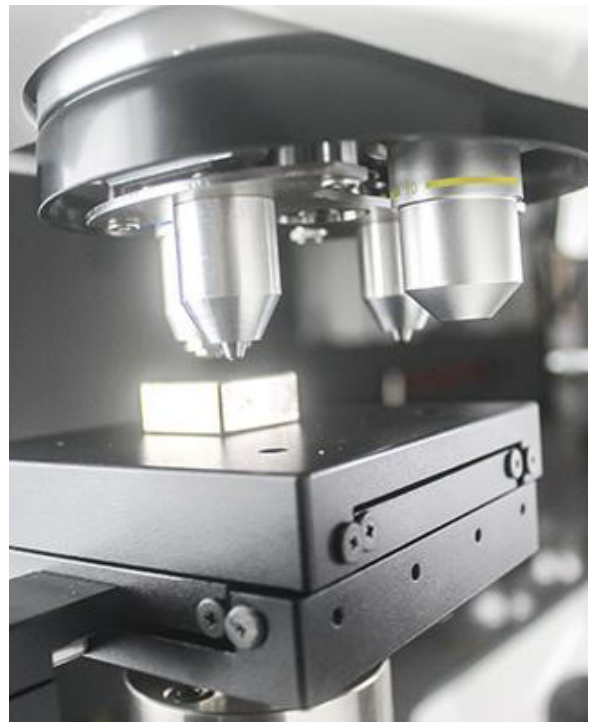
### Product Features

- 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.



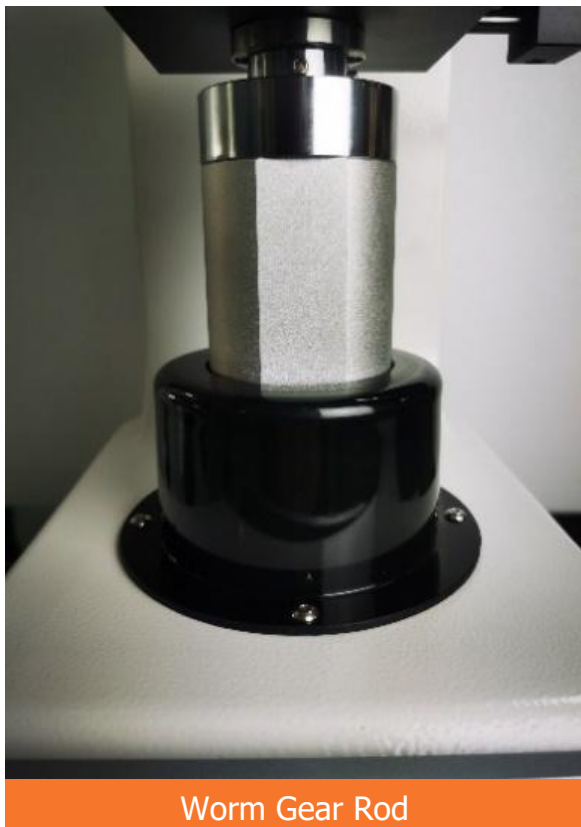


## Product Details

### 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

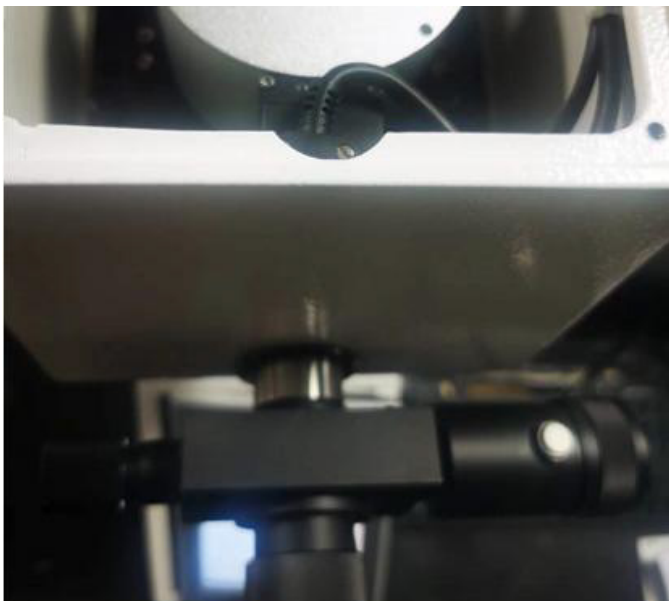
### User Friendly



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

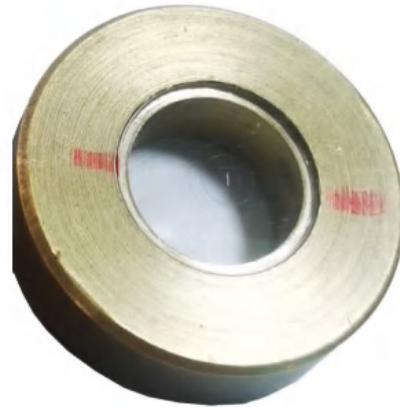


RS-232 Interface & Mini-Printer

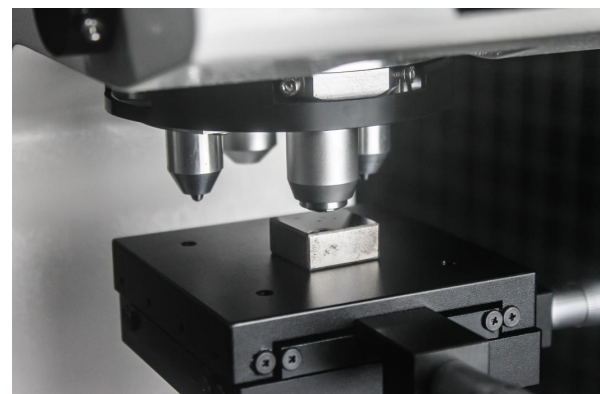
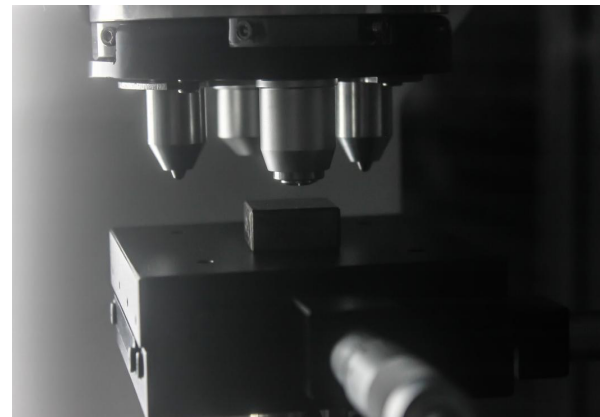
- It can be equipped with a built-in camera (optional) to make the image clearer or for capturing micro vickers indentation to software. RS-232 interface connected to computer for data output, testing result can be saved in USB (optional) in EXCEL format or built-in mini-printer to print testing data.

## 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



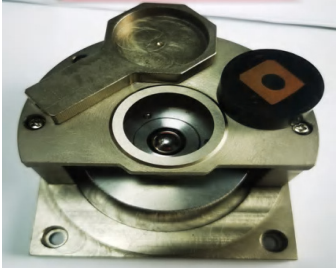
**uVK-1A-4 Micro Vickers & Knoop Hardness Tester  
(10x/40x Objective Lens For Measuring)**

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

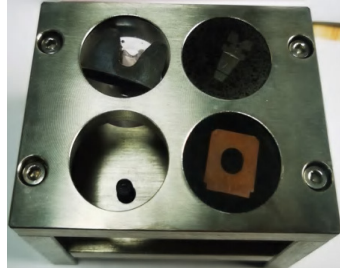
**uVK-1A-6 Micro Vickers & Knoop Hardness Tester  
(5x/10x/20x/40x Objective Lens For Measuring)**

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

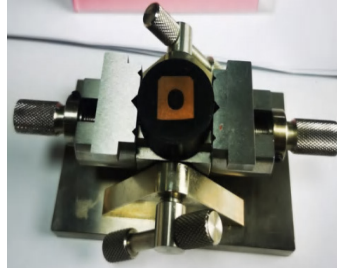
## Variable Test Sample Clamping Vice Optional



Single Inlay Sample Clamping



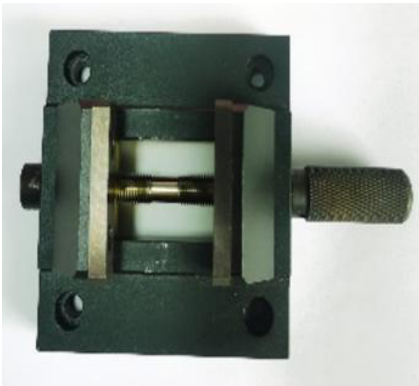
4 Pcs Inlay Samples Clamping



Universal Tilt Clamping



Pencil Clamping (For Pencil Hardness Tester)



Flat Clamp



Filament Clamp

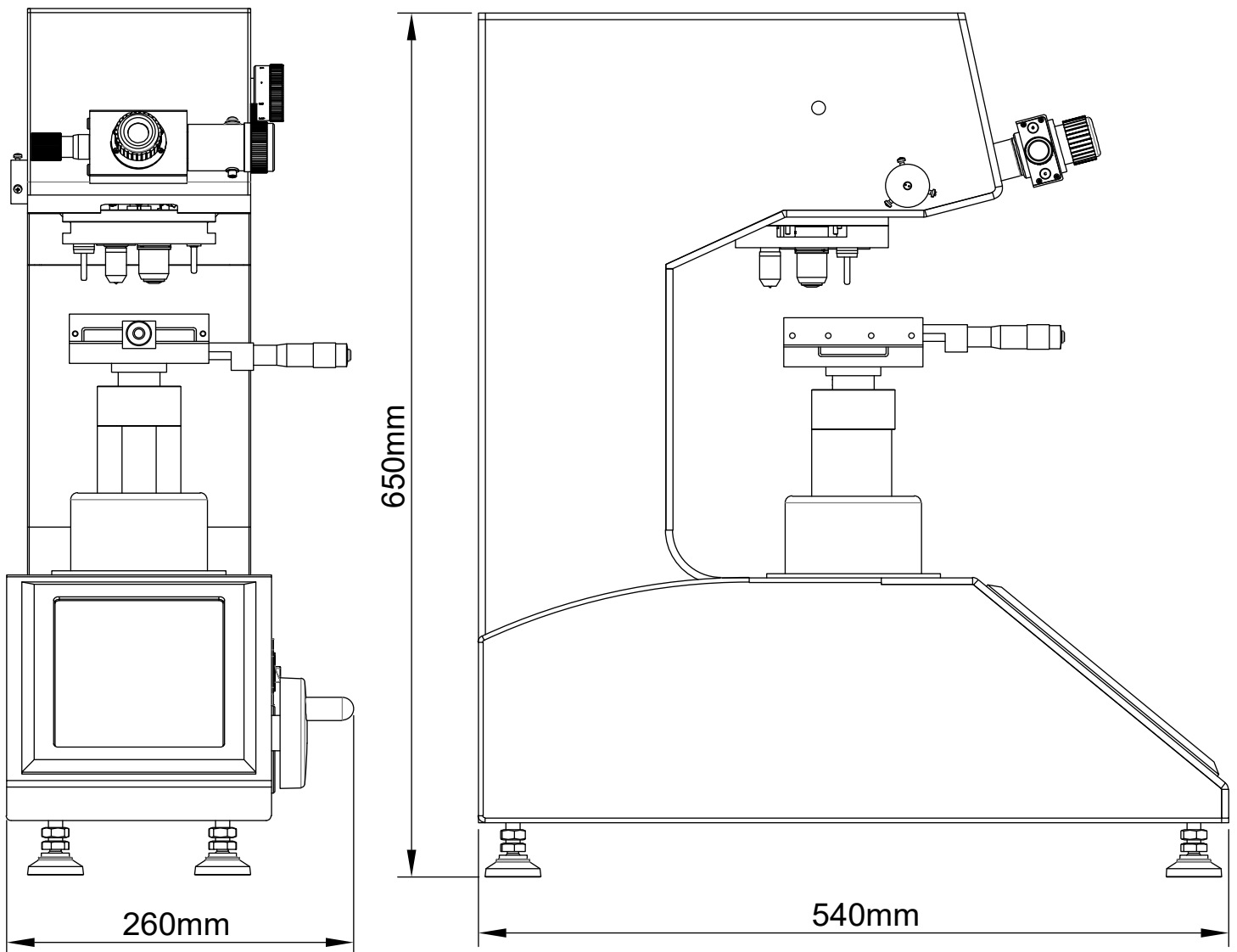


Thin Specimen Clamp



Balance Support (For Long Test Sample)

## Instrument Dimension



# Technical Specification

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




# Technical Specification

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


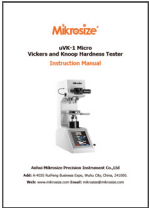
## Technical Specification

|                             |  |
|-----------------------------|--|
| <b>Loading Method</b>       | Automatic (loading, dwell, unloading)  |
| <b>Dwell Time</b>           | 1-99s(each step is 1 second)   |
| <b>Test Space</b>           | Test height: 100mm□(Vertical), Test Throat: 130mm(Horizontal)  |
| <b>X-Y Test Anvil</b>       | Dimension: 100*100mm, Movement:25*25mm,Moving Resolution Ratio:0.01mm  |
| <b>Illumination</b>         | LED Cold light source (can be continuous use for 24 hours, no heat generate ensure stable working, servicing life can reach 100,000 hours) |
| <b>Machine Size&amp;N/W</b> | 540*260*650mm; 50kg  |
| <b>Package Size&amp;G/W</b> | 710*420*627mm; 68kg  |
| <b>Power Supply</b>         | AC220V+5%, 50-60Hz(110V is available)  |
| <b>Executive Standards</b>  | 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  |
|---|--|
| <b>Flattening Device(Used With Universal Tilt Clamping Fixture)</b> |    |
| <b>Built-in Camera</b>  |   |
| <b>Micro Vickers Measuring Software</b>                             |  |
| <b>USB Interface</b>  |  |