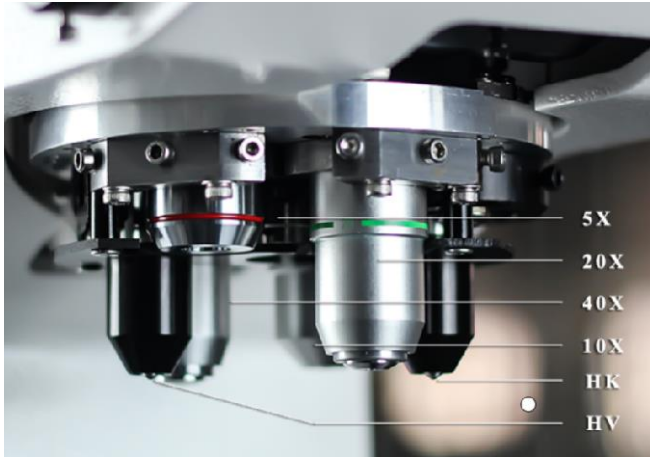




AUTOMATIC DIGITAL MICRO VICKERS - KNOOP HARDNESS TESTER



- **Double Indenter + 4 pcs objective lens:**
Vickers indenter + Knoop indenter; 5X / 10X / 20X / 40X lens.
- Automatic Turret
- Digital eyepiece + 8" touch screen
- Advanced optical focusing system



- **VALUE**
- **VERSATILITY**
- **PERFORMANCE**

BDVK-1AT-6

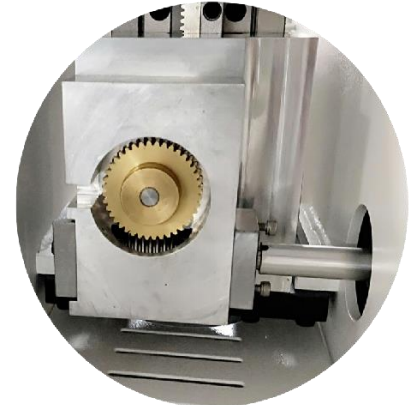


DESCRIPTION:

BDVK-1AT-6 digital microhardness tester is equipped with double indenter (diamond Vickers indenter and diamond Knoop indenter) and 5X, 10X, 20X, 40X objective lens. It is a 6 positions automatic turret Micro Vickers hardness tester. It can test Vickers hardness value and Knoop hardness value directly & easily. The traditional Micro hardness tester has poor precision and can barely meet the needs of visual observation & measurement. If connect with camera and software, the indentation image of traditional Micro hardness tester always out of central position. It is very big problem of measuring and analysis process. Fortunately, this machine perfectly solved above problems.

FEATURES:

- Guided by optical cross rails to ensure high guiding accuracy; Fast and smooth force transmission can be achieved by using the secondary transmission force of the rack and pinion.
- This machine equipped with most advanced High transmission ratio high precision worm gear rod, can achieve stable continuous lifting, and greatly improved the accuracy and repeatedly of the testing process. This update is very important to improve working performance and working efficiency.
- Equipped with dual optical path, one optical path for eyepiece system, another path for CCD camera, both paths can work in same time, no need switch optical path rod. Greatly extend the service life of the optical system, and make test easier.
- Adopted 8" touch screen, menu structure, and digital eyepiece with built-in encoder, just click button on encoder, the diagonal length of indentation D1, D2 and hardness value will display on touch screen directly, very easy operate.
- With hardness conversion function, from HV can convert to HRA, HRB, HRC, HBW, etc scales.
- With (HV & HK) Vickers and Knoop hardness testing capabilities.
- Maximum test force can extend to 2kg (optional purchase)
- OK/NG judgement function.
- All lens (5X, 10X, 20X & 40X) can used for measurement, suitable to test widely hardness range of materials from most soft to very hard.



**MAIN PURPOSE AND APPLICATION:**

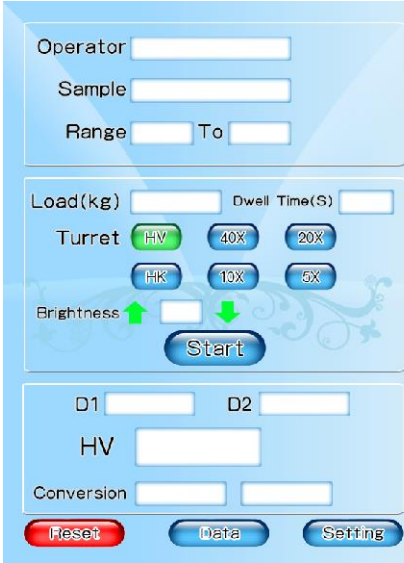
1. Steel, nonferrous metals, tinsel, cemented carbide, sheet metal, metallographic structure.
2. Carburization, nitriding and decarburization layer, surface hardening layer, galvanized coating, coating.
3. Glass, chip and ceramic material.

TECHNICAL SPECIFICATIONS:

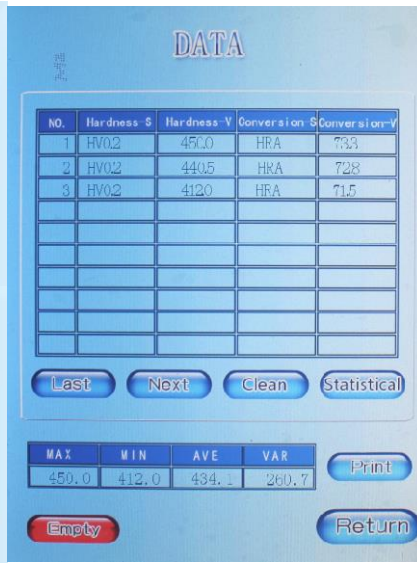
Model No.	BDVK-1AT-6
Turret	Automatic Turret
Test mode	HV / HK
Testing force	10g (0.098N), 25g (0.245N), 50g (0.49N), 100g (0.98N), 200g (1.96N), 300g (2.94N), 500g (4.9N), 1000g (9.8N)
Hardness scale	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Conversion scale	HRA, HRB, HRC, HRD, HRF, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HV, HK, HBW
Test range	8HV-2900HV
Loading Method	Automatic (Loading/Dwell/Unloading)
Objective	5X, 10X, 20X, 40X (observe + measure)
Eyepiece	10X digital eyepiece with built-in encoder
Total Magnification	50X, 100X, 200X, 400X (measure)
Hardness reading	8" touch screen, data can be saved
Data output	Inbuilt printer
Data statistic function	Testing data, max - Min data, average data, etc all can display on screen
RS 232 port	Used for software (transfer test data to computer or software control machine); Software for optional purchase.
Loading speed	≤50 μ m/sec
Min. measuring unit	0.01μm
Duration time	1-99s (each step is 1 second)
Objective lens center and indenter center	Coincidence accuracy error < 1μm (objective lens center position can be adjusted)
X-Y Testing Table	Dim.:100×100 mm, Max. Travel Range: 25×25mm, Moving Resolution Ratio: 0.01mm
Test space	Maximum height: 100mm (vertical); Throat depth: 130mm (horizontal)
Light Source	LED Cold light source (can be continuous use for 24 hours, no heat generates ensure stable working, servicing life can reach 100,000 hours)
Machine size and N/W	540*260*650mm 50kg
Packing size and G/W	710*420*627mm 68kg
Power Supply	220V ± 5%, 50/60 Hz (110V is available)
Executed Standard	GB/T4340, ASTM E384 & E92, EN-ISO 6507, JIS B-7734



8 Inch touch screen in menu structure, easy operate:



Main interface



Data storage



Calibration



- 1 - Inbuilt printer
- 2 - RS232 port, software control machine needs this port
- 3 - Inbuilt camera data line out port
- 4 - Power switch key
- 5 - Power port

The most advanced High transmission ratio high precision worm gear rod, can achieve stable continuous lifting, and greatly improved the accuracy and repeatedly of the testing process.





Flexible & foldable design of hand wheel, during shipping more safe; Traditional handwheel is Unfoldable type, it will be big problem once during shipping damage this position.

This machine perfectly solved these potential problems.



10X digital eyepiece with built-in encoder, just click button on encoder, the diagonal length of indentation D1, D2 will display on touch screen directly, and make hardness test very easy; Avoid errors in human readings, greatly improved test accuracy.

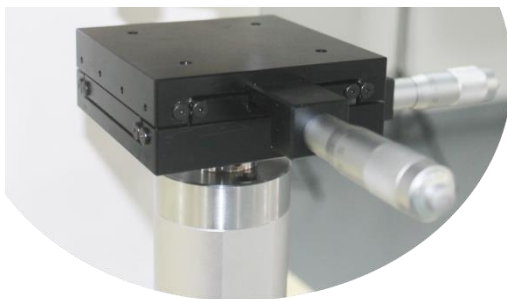
LED Cold light source (can be continuous use for 24 hours, no heat generates ensure stable working, servicing life can reach 100,000 hours); Lightness can be adjusted, avoid visual fatigue of operator.





Equipped with **dual optical path**, one optical path for eyepiece system, another path for CCD camera, both paths can work in same time, no need switch optical path rod. Greatly extend the service life of optical system, and make test more easy.

Camera also support built-in design



Advanced optical system, over 10 years continuous improved, indentation display more clear;

AT model with motorized turret;

MT model with manual turret;

X-Y precise work table manual micrometer head, also can change to digital micrometer head



Equipped with 10 / 25 / 50 / 100 / 200 / 300 / 500 / 1000gf test force (precise weights structure), switch test force by this hand wheel; can be extend to 2kgf.



STANDARD ACCESSORIES:

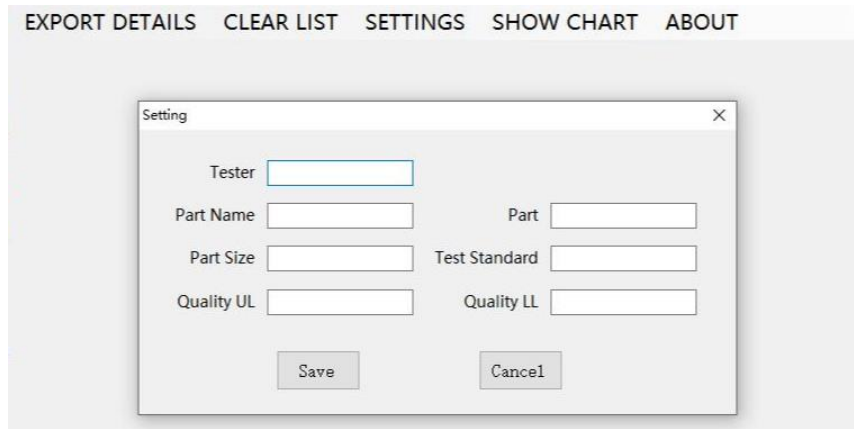
Item Name	Q'ty	Item Name	Q'ty
Weights shaft	1	Weights	6
Diamond Vickers indenter	1	Diamond Knoop indenter	1
X-Y Cross clamping testing table	1	Level adjustment screw	4
Level bubble	1	Objective 10X, 40X	1+1
Micro Vickers hardness block	2	Eyepiece 10X	1
Dust-proof cover	1	Screw driver	2
Power cable (cord)	1	Fuse (2A)	2
Touch screen pen	1	Printing paper	1
Manual	1	Product Certificate	1

Mark: Gradienter (level bubble) including liquid, will be removed if ship by air.





Option 1: Data Transfer software:



EXPORT DETAILS CLEAR LIST SETTINGS HIDE CHART ABOUT

HV Details

NO	HARDNESS(HV)	PRESSURE(kgf)	DwellTime(s)	AVERAGE D(μm)
1	462	30	10	347.013
2	482	30	10	339.737
3	480	30	10	340.444
4	460	30	10	347.767
5	465	30	10	345.892
6	475	30	10	342.231
7	476	30	10	341.872
8	462	30	10	347.013

Chart

Option 2: Professional HV-HK Hardness Measurement Software

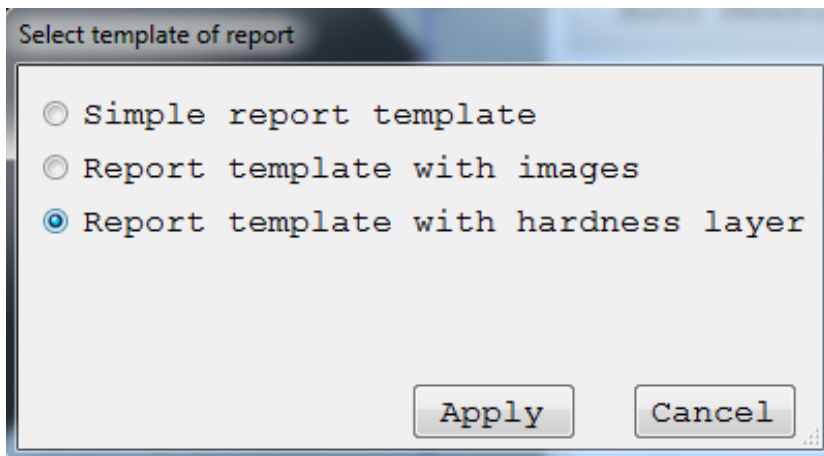
#	Hardness	Hardness Type	Qualified	D1(um)	D2(um)	Davg
1	742.4	HV	YES	50.047	49.909	49.971
2	740.5	HV	YES	49.665	50.418	50.041
3	744.6	HV	YES	49.772	50.039	49.901
4	757.0	HV	YES	49.771	49.220	49.491
5	732.8	HV	YES	49.879	50.733	50.301

System Status: Normal Camera Status: Off



MAIN FUNCTIONS:

1. **Auto hardness measurement:** With a click of a button, the software automatically measures the diagonals of the indentation, calculates the hardness value and the statistics (also support manual measurement);
2. **Hardness curve:** With the depths of test points by user input, the software automatically plots the hardness curve(s); User may save and load the depths in a depth template file for later testing for convenience;
3. **Hardness Conversion:** Converts HV to other hardness scales (HRA, HRB, HRC, HBW, HK, etc.) ;
4. **Data remember / Store function:** All data in the process of measurement will be saved in the right bottom sheet.
5. **Statistics:** Automatically updates the statistical values such as average, min and max, standard deviation;
6. **Test report:** Automatically generates WORD report with customizable template;



7. **Data archiving:** Measurement data and images can be saved in one file for later retrieval;
8. **Knoop Scale:** Can be configured for Knoop Scale measurement;
9. **Other Functions:** Includes the basic functions of imaging system such as image capture, camera calibration, image processing, etc.