# Vaiśeshika® Digital Micro Hardness Tester:7005 B&C

## Description


**'Vaiseshika'** Digital Micro Hardness Tester also referred as Vickers Hardness Tester, **Type: 7005 B&C** are precision hardness testing machines which integrate the technology of optics, mechanics and computer. Hardness is a characteristic of a material and is determined by measuring the permanent depth of the indentation. More simply, when using a fixed force (load) with indenter, the smaller the indentation, the harder the material. Hardness value is obtained by measuring the depth or area of indentation.

## Application & Uses

- High precision hardness testing of small and/or thin specimens such as sheet, foil, coatings, ceramic products
- Hardness measurement of Steel, ferrous-nonferrous metals, cemented carbide, sheet metal, metallographic structure.
- Carburization, nitriding and decarburization layer, surface hardening layer, galvanized coating, coating.
- Glass, chip and ceramic material, agate, precious stone, human tooth & jaws for anthropological studies.
- Measurement of case hardness & case depth by sectioning a part and making a series of indentations to describe a profile of change in hardness

## Features & Function:

1.0 Micro Hardness Tester with Digital Filar Micrometer Eyepiece of 0.01 µm resolution and Data computing system enables operator to obtain hardness value directly on screen by pressing the click button.

2.0 Intensity of the illuminator can be adjusted according to different requirement of the operators, to avoid the visual fatigue.

3.0 Testing force can be extended to 2KG (HV2). By measuring the diagonal length of indentation, the hardness and conversion hardness will automatically display on screen, no need to check hardness table.

4.0 Automatic loading and unloading operations, a very precise loading mechanism and robust lever system.

5.0 Industrial digital screen display with direct hardness value, conversion hardness, testing method, testing force, dwell time, test number and testing process, The built-in printer print testing time, hardness value, average value, Max. Value, Min. Value, Xmax-Xmin directly. Easy for operator to save the data.

6.0 The complete testing data can be transferred to computer via RS232 port through data transfer software (Optional). Operator can edit and save the data in computer.

7.0 Single-piece casting aluminum molding shell ensure more stable structure, powder coated color gives decent look, high scratch resistance capability.

8.0 Fully synchronized with Digital Image Capturing device and measurement software.

**The specification given in this literature are broad details. We can customize & supply these Hardness Testers as per your requirement & application**

# Vaiśeshika®

# Digital Micro Hardness Tester

## Specification:

| Model | 7005 B | 7005 C |
|---|---|---|
| **Hardness Range** | 1 HV-4000 HV<br>Read Out: On Digital LCD Screen | |
| **Hardness scale** | HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1,(HV2-Optional) | |
| **Conversion Scale** | HRA, HRB, HRC, HRD, HK, HBS, H15N, H30N, H45N, H15T, H30T, H45T | |
| **Testing Force** | 10gm (0.098N), 25gm (0.245N), 50gm (0.49N), 100gm (0.98N ), 200gm (1.96N), 300gm (2.94N), 500gm (4.9N), 1000gm (9.8N) ,(2000gm (19.6N)-Optional)<br>Test force error: ±1.0% | |
| **Loading speed** | ≤50μm/sec | |
| **Indenter** | Standard Rectangular pyramid diamond indenter (136º±0.5º) | |
| **Eye Piece** | Digital Filar Micrometer Eyepiece 10X<br>Resolution: 0.01μm<br>Maximum Travel: 200 μm | |
| **Objective** | 10X & 40X | |
| **Magnification** | 100X (For Observation) & 400X (For Measurement)<br>(Optional -Can be extended to 150X or 600X) | |
| **Loading method** | Automatic (Loading, dwell and unloading) | |
| **Dwell Time** | Adjustable 1-99s (In increment of 1 second) | |
| **Turret** | Manual | Auto |
| **Objective lens center and indenter center** | Coincidence accuracy error < 1um (objective lens center position can be adjusted) | |
| **Maximum Sample height** | 85mm | |
| **Throat depth** | 115mm | |
| **X-Y Testing Table** | Dimensions:100×100 mm, Travel : 25×25 mm,<br>Resolution : 0.01 mm | |
| **Illuminator** | LED Cold light source (can be continuous used for 24 hours without heat generation, ensuring stable working, Life: 1,00,000 hours) , adjustable brightness control | |
| **Power Supply** | 220V AC ± 10%, 50-60 Hz | |
| **Instrument size and Net weight** | ~490×185×515mm (L×W×H) , 43kg | |
| **Packing size and Gross weight** | ~625x430x900mm ( LxWxH) , 57kg | |
| **Data Output** | Built-in Printer, Built-in RS -232 interface | |
| **Executed Standard** | ASTM E384 & E92, JIS B-7734, EN-ISO 6507 & GB/T4340 | |
| **Standard Accessories** | • Digital Filar Micrometer Eyepiece 10X:1 piece<br>• Diamond indenter-01 piece<br>• Clamp or Fixture: Flat Precision Clamp, Thin-Piece Clamp, Filament Clamp: 01 each<br>• Standard Hardness Block-1 piece<br>• X-Y Testing Table • Dust cover | • Objective lens -10X and 40X :01 piece each<br>• Horizontal adjusting screw: 4 pieces<br>• Instruction Manual<br>• Accessory case |
| ***Optional Accessories*** | • Image Capturing Device • Hardness measuring software • Hardness blocks<br>• 15X micrometer eyepiece • Digital X-Y Testing Table | |

**Vaiseshika Electron Devices**
38, Industrial Estate, Ambala Cantt-133001 (Haryana)
E-mail: vaiseshika@gmail.com website: www.vaiseshika.com