

### Description



'Vaiseshika' Economical Micro Hardness Tester also referred as Vickers Hardness Tester, **Type: 7005 AE** is precision hardness testing machines which integrate the technology of optics, mechanics. 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 Low Cost opto-mechanical instrument(Integrated technology of optics, mechanics, computer with precision).
- 2.0 Micro hardness measurement in Vickers.
- 3.0 Easy to operate.
- 4.0 First ever Indian Hardness Testing Machine successfully accepted as import substitute.
- 5.0 Intensity of the illuminator can be adjusted according to different requirement of the operators, to avoid the visual fatigue.
- 6.0 Complete PC Interface & hardness measurement software for exact analysis of material hardness.
- 7.0 High resolution camera for quality photographs fully synchronized with hardness tester & PC with software.
- 8.0 Excellent Import substitute at 1/4<sup>th</sup> the cost of Imported Hardness Machine.
- 9.0 Reliable after sales services for atleast 10 years of operation.
- 10.0 Single-piece casting aluminum molding shell ensure more stable structure, powder coated color gives decent look, high scratch resistance capability.

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

### Specification:

<b>Model</b>	<b>7005 AE</b>
<b>Hardness Range</b>	1 HV-4000 HV Read Out: Digital LCD Screen
<b>Hardness scale</b>	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1,(HV2-Optional)
<b>Conversion Scale</b>	HRA, HRB, HRC, HRD, HK, HBS, H15N, H30N, H45N, H15T, H30T, H45T
<b>Testing Force</b>	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) Test force error: ±1.0%
<b>Loading speed</b>	≤50µm/sec
<b>Indenter</b>	Standard Rectangular pyramid diamond indenter (136°±0.5°)
<b>Eye Piece</b>	Manual Filar Micrometer Eyepiece 10X Resolution: 0.01µm Maximum Travel: 200 µm
<b>Objective</b>	40X
<b>Magnification</b>	400X (For Measurement) (Optional -Can be extended to 150X or 600X)
<b>Loading method</b>	Automatic (Loading, dwell and unloading)
<b>Dwell Time</b>	Adjustable 1-99s (In increment of 1 second)
<b>Turret</b>	Manual
<b>Objective lens center and indenter center</b>	Coincidence accuracy error < 1µm (objective lens center position can be adjusted)
<b>Maximum Sample height</b>	200 mm
<b>Throat depth</b>	159 mm
<b>X-Y Testing Table</b>	Dimensions:100×100 mm, Travel : 25×25 mm, Resolution : 0.01 mm
<b>Illuminator</b>	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
<b>Power Supply</b>	220V AC ± 10%, 50-60 Hz
<b>Instrument size and Net weight</b>	~560×186×635mm (L×W×H) , 42kg
<b>Packing size and Gross weight</b>	~625×430×900mm ( LxWxH) , 55kg
<b>Executed Standard</b>	ASTM E384 & E92, JIS B-7734, EN-ISO 6507 & GB/T4340
<b>Standard Accessories</b>	<ul style="list-style-type: none"> <li>• Filar Micrometer Eyepiece 10X:1 piece</li> <li>• Diamond indenter-01 piece</li> <li>• Horizontal adjusting screw: 4 pieces</li> <li>• Instruction Manual ,Dust cover</li> <li>• Objective lens - 40X :01 piece</li> <li>• X-Y Testing Table</li> <li>• Standard Hardness Block-1 piece</li> <li>• Accessory case</li> </ul>
<b>Optional Accessories</b>	<ul style="list-style-type: none"> <li>• Image Capturing Device</li> <li>• 15X micrometer eyepiece</li> <li>• Clamp or Fixture: Flat Precision Clamp, Thin-Piece Clamp, Filament Clamp</li> <li>• Hardness measuring software</li> <li>• Digital X-Y Testing Table</li> <li>• Hardness blocks</li> </ul>