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Micro Hardness Tester

Product Image



Description

Description

The instrument comprises of a microscope along with a filar micrometer eye piece of 10X and objective of 40X. The instrument is mounted on a stand having loading and unloading mechanism attached to the microscope. A standard weight of 10gms to 200gms is loaded on the indenter assembly. An indentation, with the help of a diamond indenter, is caused on the material of the surface (whose hardness is to be measured). The system employs a high precision rotating specimen table (fitted with micrometer screw gauges) to turn the sample under the microscope along X and Y axis.

Principle

The principle of operation of the instrument is based on pressing a diamond indenter into the specimen under test with a certain load in gms and consequently measuring linear value (d) of the diagonal of the indenter print obtained. The hardness number (H) is calculated by dividing the load (P in Kg) by the surface area (S in sq mm) of the indenter print and is expressed as $H = P/S$ or $1.854 P/d^2$.

Features

1. First ever Indian instrument (Import Substitute) designed in collaboration with the Central Scientific Instruments Organisation, Chandigarh
2. Low cost Opto-Mechanical instrument
3. Micro hardness measurement in vickers
4. Easy to operate
5. Repeatability in results

Specification

Micro Hardness Measurement Range:

20 to 1500 vickers at different weights.

Viewing System:

Objective: 40X

Micrometer Eye piece: 10X

Total Magnification: 400X

Working Distance (approx.): 1mm

Illumination System:

Halogen Lamp 6V, 20W

Condenser:

Condenser, Iris Diaphragm, Power Supply through Transformer from 230 volts, AC, 50Hz

Indentation System:

Loading/Unloading Mechanism: Manual

Weights: 10 to 200gm

Indenter: Diamond Pyramid

Specimen Table:

Angle of turn: 0 to 180°

Longitudinal travel: 0 to 10mm

Crosswise travel: 0 to 10mm

Micrometer feedscale: 0.01mm/div

Total weight of the system: 20Kgs. (approx.)

Dimensions: 340x290x380mm (approximately)

Accuracy: ±20 vickers (for 100 to 1500 vickers)

Accuracy: ±10 vickers (for less than 100 vickers)

Applications

1. The system would be used for measuring micro hardness in vickers of metals/alloys, various phases/ micro-constituents present in metal matrix, thin wires & sheets, diffusion coatings and case depth of carburised/nitrided components etc.
2. Micro-hardness of ceramic materials like human tooth and jaw for Anthropological studies.

Model	Catalog No.
Micro Hardness Tester	7005

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