

**Specification for Vickers cum Brinell hardness testing machine along with computerised Brinell impression measurement system.**

**Description:-** The unit shall be used for determination of hardness of ferrous & non ferrous components in Vickers & Brinell unit by in built optical system with graduated read-out with micrometer. The provision should also be made for computerised Brinell image measurement software (BIMS) for hardness in Brinell unit. The BIMS eliminates the measurement error on test results. The BIMS should have in built statistical capabilities with graph and certificate for report generation and printing.

**Technical Specification:-**

1. Load stages adjustable by means of push button switch for testing the hardness in Brinell.  
250 187.5 62.5 31.25 15.625 Kgf.
2. Load stages adjustable by means of push buttons switch for hardness in Vicker unit.  
150 100 60 50 40 30 20 15 10 5Kgf.
3. Maximum test height 250mm.
4. Depth of throat Appx. 150mm.
5. Size of base Appx. 330 x 660mm.
6. Machine height Appx. 990m.
7. Weight less than 200Kg.
8. Attachment for measuring the impression by means of scale & micrometer for Vicker & Brinell.
9. Brinell hardness also through computerised Brinell image measurement software ( BIMS)

**A (BIMS)**

- i. One high mega pixel CCD camera optics & illumination system with connecting cable.
- ii. PCI video capture card with driver software.
- iii. Brinell image analysis system software.

**B. Laptop for BIMS**

- i. Minimum intel core I 5 processor.
  - ii. Minimum 14" wide screen display.
  - iii. Minimum 2 GB RAM
  - iv. Minimum 160GB Hard Disc.
  - v. Window XP operating system with original software.
  - vi. HP Laser Printer ( Black & White) or equivalent.
10. Least count of optical system 0.001mm.
  11. Clamping core for clamping the work piece to be tested.
  12. Connection of 220 volts, 1 phase AC 50Hz.

### **Standard Accessories**

1. V Block for specimen	01
2. Flat table 100mm dia	01
3. Vicker indenter	01
4. Brinell indenter	01
5. Objectives (35x, 70x, 140x)	01 each
6. Vicker hardness test block	01
7. Brinell hardness test block	01
8. Electric cord	01
9. 2.5mm T.C. Ball	01
10. 5.0mm T.C. Ball	01
11. Instruction manual	01

### **Additional Accessories**

1. Flat table 200mm dia	01
2. Vicker indenter	01
3. Brinell indenter	01
4. 2.5 mm T.C. ball	04Nos.

**A.M.C. Requirement :-** The supplier shall provide after sale service on expiry of warranty period on payment basis.

### **Warranty Requirement :-**

- a. The equipment shall be under warranty/ guaranteed for one year from the date of successful commissioning of the equipment at ELS/TKD.
- b. The decision of Railway in regard to the cause of failure or nature of rectification to be carried out by the supplier during guarantee period shall be final and binding on the part of contract.
- c. The transportation will be at the supplier cost during warranty/guarantee repairs.
- d. **Technical literature :-** The supplier has to supply 02 copies of technical literature / operating manual.
- e. **Training :-** The supplier shall provide training for operating/ maintenance and trouble shooting of problems generally arises in handling of equipment.
- f. **Inspection:-** Inspection by Sr.DEE (TRS)/ELS/TKD or his authorised representative.
- g. **Commissioning of equipment:-** Commissioning of equipment at consignee place without any obligation.

**CMS (I) Lab  
ELS/TKD**

**Sr. DEE(TRS)/ELS/TKD  
New Delhi-44.**