

## BRINELL HARDNESS TESTING MACHINE



Brinell hardness tester, are designed for Brinell hardness measurement on steels and other ferrous materials and also on non ferrous materials like Brass, Bronze, Aluminum, etc. the material can be cast, forged or rolled and the shape can be flat, round irregular.

The actual load application system is of dead weight type combined with mechanical lever system. The supporting hydraulic system is for initial of load before each test and damping the load application system for smooth application of load.

A separate hydraulic power pack, positioned in the bottom part of the machine increase the machine stability.

Design of a floating fulcrum lever system ensures high accuracy and dependability.

The machine accuracies confirm to IS: 2281-2005 & BS: 240

### TECHNICAL SPECIFICATION

Loads (kgf)	500 to 3000 in steps of 250
Initial load (kgf)	250
Max. test height x throat (mm)	380 x 200
Max. depth of elevating screw below base (mm)	180
Machine height (mm) approx.	1145
Size of base (mm) approx.	400 x 740
Net weight (kg)	325
Drive motor (hp)	0.50
Mains supply	3 Phase, 415V, 50Hz, A.C
Indentation measurement	By separate Or Built in Microscope

### STANDARD ACCESSORIES

Testing table dia 200 mm	1 No.
Testing table dia 70 mm with "V" groove for round jobs dia 10 to 80 mm	1 No.
Ball holder dia 5 mm	1 No.
Ball holder dia 10 mm	1 No.
Test block HBW – 5 / 750	1 No.
Test block HBW – 10 / 3000	1 No.
Brinell microscope (25 x magnification)	1 No.
Allen key set	4 pieces

## AUTOMATIC OPTICAL BRINELL HARDNESS TESTERS

- The machine has a robust,C-type load frame & has been designed for production testing of cast or forged components like leaf springs, cam shafts, etc. for Brinell hardness value. This machine is suitable for foundries, engineering industry on production line.
- Since most of the operations are fast and automatic, the test speed is high with less operator fatigue.
- The cycle time (except loading / unloading) is about 12 seconds per test.
- Load stages – 750 kgf and 3000 kgf.
- Optical measuring equipment with 14 X magnification.
- Job loading / unloading, push button operation, pushing cycle start, de-clamp buttons are only manual operations & rest all is automatic.
- A push button is pressed for cycle start & hydraulic operations. After cycle time, impression is visible on screen, which (Diameter) is to be measured with the help of microscope of least count 0.01mm.
- Computerized model is available .Computerized model has built in CCD and suitable advanced software. Hardness will be displayed On computer monitor automatically. Results printout can be taken.
- Accuracy conforming to IS:2281.

### Test Cycle -

- a)Start machine by ON push button. The clamping piston goes to bottom position and loading piston with indenter goes to the top position and the indenter shifts to indexed (fitted) position.
- b)Push the cycle start button. The bottom piston moves up and the job is clamped against the clamping cone with a force of 500 kg.Then the loading piston moves down. The indenter shifts to its vertical position and the set load is applied on the test piece a light signal is provided which glows when the load is applied. The applied load is kept constant for a pre set time. Then the loading piston moves up and the indenter is indexed so that the impression is visible on the screen. Measure the impression by the micrometer.
- c)Push the de-clamp button.
- d)Unload the job and machine is ready for next test.



## DIGITAL BRINELL MICROSCOPE



### Scope of Supply

1. One hand held unit containing CCD Camera, Optics and illumination system with connecting cable.
2. PCI Video capture card with driver software.
3. Brinell image Analysis System Software.
4. PC and Windows 98 / 98 SE operating system is to be procured by customer.

It is found that measuring Brinell Indentations can result in measurement errors between operators. This can virtually eliminate operator influence on test results.

With this handy instrument entire test sequence is simple. Place the scan hand on the work piece and move it so the impression appears near the middle of the screen. Just click mouse on "Auto" in tool bar on computer screen. Instrument automatically measures the diameter of indentation with resolution of 0.01 mm and displays Brinell value with diameter measurement. All data storage functions are automatically performed according to batch parameters.

An unlimited number of batches can be created each with its own test parameters and certificates. The operator can select test load and indenter size with party name, address, certificate No, date batch No. and description, high and low limits for readings etc. The previous batches can be reopened for viewing and address change etc.

The range of measurement is from 1 mm to 6 mm of diameter with resolution of 0.01 mm

1. Facility for Auto / Semi Auto / Manual modes of operation.
2. Well managed database saves readings W.r.t batch and certificate.
3. Report generation in the form of certificate and graph as per customer requirements
4. Facility for calibration and check of calibration.

(Dimensions and Photographs are for reference purpose only there may be variation at the time of supply due to constant R &D)

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