



# FORCE-TECH CALIBRATION SYSTEM



CC-3610

Deals in Sales, Service and calibration in all types of  
material testing machines

(NABL Accredited Calibration Laboratory vide certificate No. CC-3610)

KW-09, British Park Phase-2, Indore-453771

E-Mail: -[info@forcetechcalibration.com](mailto:info@forcetechcalibration.com), [forcetechcalibration@gmail.com](mailto:forcetechcalibration@gmail.com)

Contact No. 9958852392, 07312996229

## Our Services

- Sales, Service (Repairing) & Calibration of Material Testing Machines as below:
  - a) Universal Testing Machines-Digital/Analogue/Computerized etc.
  - b) Rockwell/Brinell/Vicker/Micro-Vicker Hardness Tester-Digital/Analogue/Computerized etc.
  - c) Impact Testing Machines-Digital/Analogue/Computerized etc.
  - d) Stereo/Metallurgical Microscopes.
  - e) Profile Projectors.
  - f) Compression testing Machine-Digital/Analogue/Computerized etc.
  - g) Extensometer-Analogue/Digital/Video.
  
- NABL Consultancy for Testing and Calibration Laboratory.
  
- **Specializations**
  - a) **Updation of Universal Testing Machines Analogue to Digital/Servo/Computerized.**
  - b) **Updation of Hardness Testing Machines Analogue to Digital /Computerized.**
  - c) **Updation of Compression Testing Machines Digital/Servo/Computerized.**

# Our Products Range

## ➤ **Material Testing Machines**

- a) Universal Testing Machine upto 1200 kN-Analogue/Digital/Servo/Computerized.
- b) Tensile Testing Machine upto 50N to 50 kN-Analogue/Digital/Servo/Computerized.
- c) Hardness Testing Machines-Rockwell/Brinell/Vicker/Micro-Vicker (Analogue/Digital/Semi-Automatic/Fully Automatic).
- d) Impact Testing Machine-Analogue/Digital/Automatic.
- e) Metallurgical Microscopes with Image Analysis Software with all metallurgical studies.

## ➤ **Sample Preparations Equipments.**

- a) Polishing Machine-Single Disc/Double Disc/Variable Speed/Auto Polishing etc.
- b) Sample Moulding Machine-Manual/Automatic.
- c) Abrasive Cutting Machine for samples.

## ➤ **Civil Lab Equipments**

- a) Concrete Testing Equipments.
- b) Cement Testing Equipments.
- c) Soil Testing Equipments.
- d) Bitumen Testing Equipments.

# Computerized Touch Screen Control Universal Testing Machine (UTES-HGFL-TS)

- Open type cross head
- Hydraulic wedge action grips
- Long test stroke and test space
- Loading accuracy as high as + 1%.
- Servo controlled Motorized Valve incorporating of control modes
- Standard manual control, Load rate control, Elongation rate control, Load hold mode, Auto start & initial valve open start.
- Motor driven threaded columns for quick effortless adjustment of lower cross-head-to facilitate rapid fixing of test specimen
- Load Capacity : 100 kN, 200 kN, 400 kN, 600 kN & 1000 kN.



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# Electro-Mechanical UTM (UNITEK 1600-ST)

1. Precision AC servo motor & drive with ball lead screw gives an advanced drive system with 1 to 500 standard speed range.
2. Provision for load cell interchangeability & thereby automatic selection of load full scale & Units (kN or N).
3. Speed selection through data entry.
4. Facility for mounting different load cells & clamping devices to suit different tests & materials such as thin wires, metal sheets, fiber glass, leathers, springs, card boards etc.
5. Built-in parallel interface to connect Dot matrix printer for data & curve print-out.
6. Safety interlock for overload & limit switch sensing to ensure protection during test.
7. Universal applications in R& D, Education, Quality control & Production for test like, Tensile, Compression, Bending etc.



# Automatic Brinell Hardness Tester (B-3000 TSFA)

1. Fully automatic machine for production testing.
2. Direct and accurate measurement of Brinell hardness number using 'State of the Art' image processing technology.
3. Wide testing range : From soft metal such as lead up to hardest, like tempered steel.
4. High accuracy and repeatability of measurement at all loads.
5. Advanced Window based software:
6. Faster measurement yielding to higher productivity.
7. Small size of indentation makes it a non destructive testing on finished components.
8. Electrical loading & unloading cycle.
9. Inbuilt branded touch screen laptop.
10. Front panel touch screen display.
11. Single phase fully electrical machine with no hydraulics.
12. Fully automatic operating cycle.
13. Safety guard for weights.



# Brinell Hardness Tester (B 3000)

1. These machines are designed to measure hardness of castings, forgings, other metals and alloys of all kinds, hard or soft, whether flat, round or irregular in shape.
2. Machine designed with a motorized mechanism and control circuit for effortless loading unloading operation.
3. A dial gauge in front measure depth of ball penetration.
4. Basic machine design & operation similar to B-3000 (E). In addition 'Optical Device' with 14 x magnification provided in front of project dia of ball impression on glass screen with a micrometer measuring system with 0.01mm accuracy.
5. The indenter swivels & projects dia of ball impression immediately after unloading operation which avoids additional time for measurement of ball impression.
6. For measurement of ball impression provision of D1 & D2 keys are provided to measure it digitally & give the hardness number directly on the screen.



## Brinell Hardness Tester (B-3000 PC)

1. Fully computerized (PC based) Brinell Hardness Tester.
2. Direct and accurate measurement of Brinell hardness number using 'State of the art' image processing technology.
3. 'Wide testing range' from soft metal to medium hardness steels.
4. High accuracy and repeatability of measurement at all loads
5. Faster measurement yielding to higher productivity.
6. Hydraulic loading and unloading cycle.
7. Advanced window based software.



# Brinell Hardness Tester B-3000 (o)

1. SAROJ Hardness Testers, Model : B-3000 (H) & Model : B-3000 (O) are precision engineered confirming to IS:1500-2, however B-3000 (H) & Model : B-3000 (O) are most suitable for production testing.
2. These machines are designed to measure hardness of castings, forgings, other metals and alloys of all kinds, hard or soft, whether flat, round or irregular in shape.
3. Basic machine design & operation similar to B-3000 (H). In addition 'Optical Device' with 14 x magnification provided in front of project dia of ball impression on glass screen with a micrometer measuring system with 0.01mm accuracy. The indenter swivels & projects dia of ball impression immediately after unloading operation which avoids additional time for measurement of ball impression.



**SAROJ**

Make

# Vicker Hardness Tester (VM-50-TS)

1. Fully Computerized Touch Screen Vickers Hardness Testing Machine.
2. Accurate Measurement of Vickers Hardness number using "State of the art" image processing technology.
3. Wide testing range: from soft metal up to hardest.
4. High accuracy & repeatability of measurement at all loads.
5. Faster measurement yielding to higher productivity.
6. Small size of indentation makes it a non destructive testing on nished components.
7. Motorised loading and unloading cycle.
8. Small loads allow testing of thin sheet metals.
9. Advanced windows based software.
10. PLC based system.
11. Inbuilt branded touch screen laptop.
12. Front panel touch screen display.



**Optional -**  
Auto Turret Mechanism  
for indexing indenter &  
objective from loading  
station to measurement  
station.

# Vicker Hardness Tester (VM-50)

For Auto Turret Machine after clicking on cycle start button indexing mechanism will operate automatically & loading mechanism starts, once loading finishes again indexing mechanism will be positioned at measuring station.



**Optional -**  
Auto Turret Mechanism  
for indexing indenter &  
objective from loading  
station to measurement  
station.

# Automatic Rockwell Hardness Tester (RASN-TSSA)

1. Suitable for Rockwell tests.
2. Motorized loading unloading.
3. Touch screen display.
4. With Built-in Thermal printer.
5. Data Storage on USB.
6. PC Software Optional.
7. USB Connectivity.

## ➤ RASN-TSFA

1. Suitable for Rockwell tests.
2. Fully automatic Motorized operation.
3. Touch screen display.
4. With Built-in Thermal printer.
5. Auto load & scale selections.
6. Data Storage on USB.
7. PC Software Optional
8. Low cycle time.
9. USB Connectivity.



# Digital Rockwell Hardness Tester (RAS-D)

FIE Hardness Testers, Model : RAS-D, RAB-1-D, RAB-250-D & TWIN-D are manually operated. All these models are suitable for testing hardness of metals & alloys of all kinds hard or soft, whether flat, round & irregular shape. These testers are simple in design & easy to operate, yet sensitive and accurate. Various models from the wide range are suitable for Tech Institutes, Laboratories, Tool-rooms, Inspection, Heat treatment departments, Factories etc.



# Analogue Rockwell Hardness Tester

1. Suitable for Rockwell Tests.
2. Manually operated.
3. Preliminary Test Force: 98.07 N(10 kgf).
4. Additional Test Force: 490.3, 882.6, 1373 N (50,90,140 kgf).
5. Total Test Force: 588.4, 980.7, 1471 N (60,100,150 kgf).
6. Test Force Selection by external dialing.
7. Auto zero setting dial gauge.



# Automatic Impact Testing Machine

1. In Auto Impact Tester, the pendulum will lift, the specimen will get loaded and the pendulum will release automatically. Once specimen breaks, the result will display on the digital panel, and auto brakes will apply immediately.
2. The pendulum is mounted on antifriction bearings. It has two starting positions, the upper one for Charpy and the lower one for Izod testing. On auto release, the pendulum swings down to break the specimen and the energy is absorbed. While doing so, the energy is measured as the difference between the height of drop before rupture and height of rising after rupture of the test specimen and is read on a digital panel in Jules.



# Automatic Compression Testing Machine (CTE-3000 PRO)

1. Result directly saved in excel file.
2. Graph also saved in excel file.
3. Capable to save customers name, other details of customer ageing of cube moulds, identification mark of the cube mould, Date and time of the testing.
4. Capable to print direct report from the computer.
5. Capable to select different test parameters like pace rate, sample size and area from computer (software).
6. Capable to select different type of tests, like flexural, CTM, aggregate crushing etc.
7. Emergency stop button.



# Broching Machine for Impact Sample

Our motorized broaching machine is a self-contained floor mounted unit, specially designed for cutting Charpy and Izod 'V' and 'U' notches in pre-machined standard 10mm square



# Metallurgical Microscope (IMM-1000 A)

1. Trinocular Observation Head (TOH)
2. Siedentopf observation head inclined at 45° .
3. Diopter adjustment ring on ocular tube ( $\pm 5$ ).
4. Inter-pupillary distance is from 53mm to 75mm
5. Focusable vertical tube for Digital Microphotography.
6. Eye piece (Anti fungus)
7. Wide field 10X (paired) F.O.V. 22mm.
8. Objectives (Infinity corrected)
9. M Long working distance plan 5X
10. M Long working distance plan 10X
11. M Long working distance plan 20X
12. M Long working distance plan 50X



# Metallurgical Microscope (IMM-1000 A)

1. Trinocular Observation Head (TOH)
2. Siedentopf observation head inclined at  $45^{\circ}$  .
3. Diopter adjustment ring on ocular tube ( $\pm 5$ ).
4. Inter-pupillary distance is from 53mm to 75mm
5. Focusable vertical tube for Digital Microphotography.
6. Eye piece (Anti fungus)
7. Wide field 10X (paired) F.O.V. 22mm.
8. Objectives (Infinity corrected)
9. M Long working distance plan 5X
10. M Long working distance plan 10X
11. M Long working distance plan 20X
12. M Long working distance plan 50X
13. M Long working distance plan 100X (S.L.) Dry



# Advance Computerized Touch Screen Microvickers Hardness Testers

Highly precise hardness tester suitable for test of widely hardness ranges from softest to hardest materials. This machines available with Manual & automatic turret system guided by optical cross rail to achieve highly accurate & precise results. This machine is equipped with built-in encoder with click button on encoder to avoid human errors. Equipment is also featured with a DATA storage & calibration. Most compact in size (540\*260\*650mm) & light weight (50kg).

1. Automatic Turret System.
2. Multifunctional 8 inch LCD touch screen panel.
3. Flexible & Foldable design of hand wheel.
4. 10X digital Encoder with built in encoder.
5. 8P Data Storage system with store up to 300 Test reports.
6. LED cold light source (can use continuously for 24 hrs.)
7. Easy conversion of hardness scales.
8. Can print results data Min & Max values with graph facility



# Advance Computerized Touch Screen Microvickers Hardness Testers With Motorized X-Y-Z Stage

1. Fully Automation: With click of a button, system starts automatic test and measurement process in indentation, auto-focusing, measuring, and hardness curve plotting;
2. Motorized XYZ Sample Stage : System provides motorized XYZ sample stage, with XYZ stage table dimensions 110mmX110mm, travel lengths 50mmX50mm, and position precision 2  $\mu\text{m}$  as standard. Can be controlled by joystick and by software. Table dimensions and travel lengths can be customized.
3. Test Pattern and Path Setup: Sets up test paths with various patterns such as line, lineset, arc, gear top parallel, gear center, and matrices etc;
4. Automatic Sample Boundary Scan: Automatically scans along the sample boundary to obtain the sample overview image which is necessary in many test cases to set up test loadpaths;



5. Hardness curve, Statistics, Auto-alarm: Automatically detects and plots multiple hardness curves and calculates the hardness case depths. Automatically updates the statistics such as average, min and max, standard deviation, Cp, and Cpk; Automatically marks data that are out of specification limits; May load the depth template file for convenience.
6. Conversion, compensation, and validation: Converts HV to other hardness scales, simultaneously; Validates the test results with sample dimensions; Compensates the test results with respect to sample cylindrical/spherical diameters;
7. Data archiving: Measurement data and images can be saved in one file for later processing;
8. Test report: Automatically generates WORD, EXCEL or PDF report with customizable template; May enter user additional information in report.
9. Data output by network: Sends data to TCP/IP server in network to enterprise database.
10. Knoop Scale, Fracture Toughness: Can be configured for Knoop Scale measurement; Also, for Fracture Toughness measurement by indentation;
11. Other functionalities: Image/Video capture/save; Geometric measurements; Document entries, etc;
12. Stable Structure design: Adopted one time casting aluminum machine body and car painting technology, structure more stable and appearance more decent;
13. Multi-functions: Support automatic measuring with computer and software, also support manual test by machine independently. Double optical path design. Both eyepiece and CCD camera path can work at same time. No need switches optical path;

# Touch Screen Manual Mounting Machine

1. Model HMF-30S & HMF-45S
2. Mould Diameter 30 mmn & 45 mm
3. Temperature Adjusting Range 90-200° C
4. Cooling Method Air Cooling Fan  
Pressure Manually by hand wheel
5. Mould Preparation Capacity Single Mould
6. Electric Power 650W, 220V, 50Hz  
Dimension / Net Weight 440 X 253 X 310 mm, 32kg



# Double Disc Polishing Machine

1. Model FP-M2(VD)
2. Disc Diameter 200 mm
3. Grinding/Polishing Speed 50-1500 RPM
4. Power 550W, 220 Volt
5. Head Rotating Speed 50 RPM
6. Sample Force 0-40 N
7. Sample Capacity 1-3 Nos.  
Dimension/Net Weight 700 X 600 X  
278 mm, 45kg



# Metallographic Specimen Cutting Machine

- metallographic sample cutting machine is widely used to cut the various types of metal materials. These machines are equipped with cooling system which clear up the heat produced during sample cutting and avoid deformation of metal structure because of heating influence.
- Model FC-100B
- Display LCD Display with high resolution backlight
- Cutting Capacity 100mm
- Cutting Method Manual & Automatic Way of infeed Arbitrary adjustment
- Infeed distance Arbitrary Set, Adjustment and fixture position Reset Mode Automatic Cooling System Water Cooling with 3 ways Effective workpiece Length 200 mm
- Spindle Speed 2800 RPM
- Coolant Tank Capacity 65 liters Cutting wheel dimension 350mm X 2mm X 32mm
- Motor 4 HP (3 kw), 380V, 50Hz Dimension / Net Weight 1650 X 680 X 740 mm, 150kg





## **FORCE-TECH CALIBRATION SYSTEM**

Quality & Service is Our First Priority

Head Office & Registered Office

Office ;- KW-09 British Park Phase -02 Indore Mdhaya Pradesh-  
453771,India

- Branch Offices -

I DELHI I LUDHIYANA I

Mail ID- [Info@forcetechcalibration.com](mailto:Info@forcetechcalibration.com)

Web. : [www.forcetechcalibration.com](http://www.forcetechcalibration.com)

Contact - 9958852392

## Our Some Valued Customers



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