



Hardness Testing Instruments Product Line Overview





FH-001-0000

Rockwell

- Load cell, closed loop
- Advanced user interface
- Scales A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
- Motorized elevator spindle (optional)
- Automatic testing procedure
- Conversion to all other hardness scales
- Convex and concave test modus
- Database for test programs
- Large workpiece accommodation
- On-line statistics
- USB output

FH-001-0001

Rockwell and Superficial Rockwell

- Scales A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y

FH-001-0002

Rockwell, Superficial Rockwell and Brinell

- Same features as FH-001-0001, but with additional Brinell scales
- Scales A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y, HB1/1, 2.5, 5, 10, 30kgf; HB2.5/6.25, 15.625, 31.25, 62.5, 187.5kgf; HB5/ 25, 62.5, 125, 250kgf; HB10/ 100, 250kgf
- Brinell microscope



FH-001-0003

Rockwell, Superficial Rockwell, Brinell, Vickers, HBT and HVT

- Load cell, closed loop
- Advanced user interface
- Scales A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y; HB1/1, 2.5, 5, 10, 30kgf; HB2.5/6.25, 15.625, 31.25, 62.5, 187.5kgf; HB5/ 25, 62.5, 125, 250kgf; HB10/ 100, 250kgf; HBT2.5/62.5, 187.5kgf; HBT5/250kgf; HV 1, 2, 3, 5, 10, 20, 30, 50, 100, 120; HVT 50, 100kgf
- Motorized elevator spindle (optional)
- Automatic testing procedure
- Conversion to all other hardness scales
- Convex and concave test modus
- Database for test programs
- Built-on electronic digital microscope for Brinell & Vickers indent measurement
- Objectives 37.5x, 75x, 150x magnification
- Adjustable LED illumination
- LED Ringlight (optional)
- Precision workpiece sliding table
- Large workpiece accommodation
- On-line statistics
- USB output



FH-002-0000

Rockwell, Superficial Rockwell, HBT and HVT

- Full color multi function touch screen, embedded PC
- Load cell, closed loop
- Advanced user interface
- Scales A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y; HBT2.5/62.5, 187.5kgf; HBT5/250kgf; HVT 50, 100kgf
- Motorized elevator spindle (optional)
- Automatic testing procedure
- Conversion to all other hardness scales
- Convex and concave test modus
- Database for test programs
- Built-in electronic digital microscope for Brinell & Vickers indent measurement
- Objectives 37.5x, 75x, 150x magnification
- Adjustable LED illumination
- LED Ringlight (optional)
- Precision workpiece sliding table
- Large workpiece accommodation
- On-line statistics
- USB output



FH-002-0001

Rockwell, Superficial Rockwell, Brinell, Vickers, Knoop, HBT and HVT

Touch screen, embedded PC, CCD USB Video system, manual and automatic measurement of Brinell & Vickers/ Knoop indentations, indent Video zoom function

- Load cell, closed loop
- Advanced user interface
- Scales A, B, C, D, E, F, G, H, K, L, M, P, R, S, V, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y; HB1/1, 2.5, 5, 10, 30kgf; HB2.5/6.25, 15.625, 31.25, 62.5, 187.5kgf; HB5/ 25, 62.5, 125, 250kgf; HB10/ 100, 250kgf; HBT2.5/62.5, 187.5kgf; HBT5/250kgf; HV 1, 2, 3, 5, 10, 20, 30, 50, 100, 120; HVT 50, 100kgf
- Motorized elevator spindle (optional)
- Automatic testing procedure
- Conversion to all other hardness scales
- Convex and concave test modus
- Database for test programs
- Built-in electronic digital microscope for Brinell and Vickers indent measurement
- Objectives 37.5x, 75x, 150x magnification
- Adjustable LED illumination
- LED Ringlight (optional)
- Precision workpiece sliding table
- Large workpiece accommodation
- On-line statistics
- USB output



FH-004-0001
DIGITAL MICROSCOPE, 2KGF TEST FORCE

Micro-Vickers and Knoop

- Motorized turret, 3 objectives
- Test loads 10gr-2kgf
- Electronic microscope, digital value transfer
- Large LCD display shows measured values, on-line statistics, memory overview, tester settings
- Large workpiece accommodation
- RS-232 output
- Built-in printer





FH-5 SERIES

CLOSED LOOP 20GF TO 31.25KGF

Micro-Vickers, Vickers, Knoop and low force Brinell

- Load cell, closed loop, force feed back system
- Motorized turret with 2 or 3 objectives
- Test loads 20gr-31.25kgf
- Conversion to other hardness scales including Tensile Strength
- Digital eyepiece and camera adaptor
- Large LCD display shows measured values, on-line statistics, memory overview, tester settings
- Large workpiece accommodation
- RS-232 output
- Built-in printer

Available force configurations:

- **FH-005-0000**
1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30kgf
- **FH-005-0001**
1 - 2 - 2.5 - 3 - 4 - 5 - 6.25 - 10 - 15.625 - 20 - 31.25kgf
- **FH-005-0002**
0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30kgf
- **FH-005-0003 (most common)**
0.02 - 0.025 - 0.05 - 0.1 - 0.2 - 0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30kgf
- **FH-005-0004**
As FH-005-0003 + additional 6.25 - 15.625 - 31.25kgf



FH-5 SERIES

CLOSED LOOP 100GF TO 62.5KGF

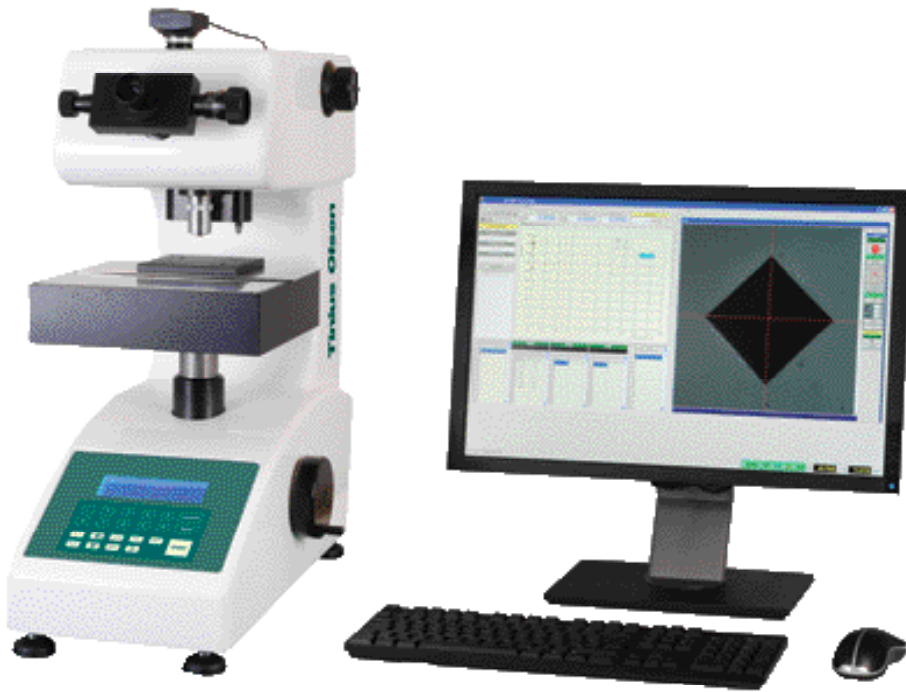
Micro-Vickers, Vickers, Knoop and low force Brinell

- Load cell, closed loop, force feed back system
- Motorized turret with 2 or 3 objectives
- Test loads 100gr-62.5kgf
- Conversion to other hardness scales including Tensile Strength
- Digital eyepiece and camera adaptor
- Large LCD display shows measured values, on-line statistics, memory overview, tester settings
- Large workpiece accommodation
- RS-232 output
- Built-in printer

- **FH-005-0005**
1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30 - 50kgf
- **FH-005-0006**
1 - 2 - 2.5 - 3 - 4 - 5 - 6.25 - 10 - 15.625 - 20 - 31.25 - 62.5kgf
- **FH-005-0007**
0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30 - 50kgf
- **FH-005-0008 (most common)**
0.1 - 0.2 - 0.3 - 0.5 - 1 - 2 - 2.5 - 3 - 4 - 5 - 10 - 20 - 30 - 50kgf
- **FH-005-0009**
As FH-005-0008 + additional 6.25 - 15.625 - 31.25 - 62.5kgf

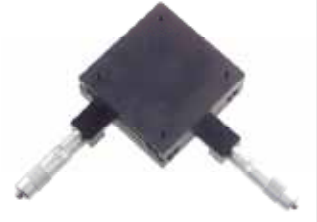
Available force configurations:

MICRO-VICKERS

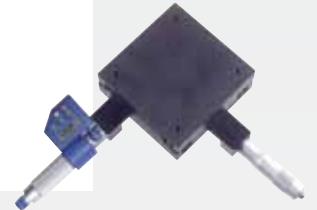


FH-4, SHOWN WITH OPTIONAL MOTORIZED X-Y STAGE

Analog



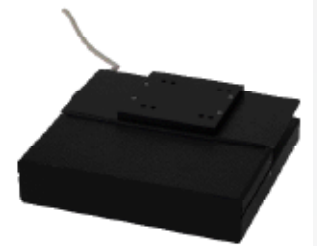
Digital



Motorized, small



Motorized, large



REGULAR VICKERS



FH-5, SHOWN WITH OPTIONAL MOTORIZED X-Y STAGE



BRINELL OPTICAL SCANNING SYSTEM FH-20

Portable video scanning system to automatically measure Brinell indentations and determine the Brinell hardness value.

Excellent solution for quick and easy measurement of Brinell hardness values with ball diameters 1, 2, 2.5, 5 and 10 mm and for applied loads of 1 to 3000 kg.

- Including (removable) magnetic base for accurate and precise measuring
- Easy to use: Position the scanning system on the indentation made in a flat or curved surface, press the button to determine the relative hardness and diameter of the indentation
- Accuracy of the measured diameter is up to 0.001 μ m
- Possibility to set tolerance value Yes/No (upper and lower limits)
- Possibility to show the last 5 hardness measurements taken
- Automatic storage of images and accompanying measurement data files
- Storage of operator ID, date/hour, hardness parameters, measured hardness values, location of stored image

Software Features

- Measures the indentation automatically or by hand
- Saves the image of the indentation in a dedicated format and folder
- Test results can be imported into Excel
- Each measurement is filed with information about the ball diameter, applied load, load duration
- The 5 last measurements can be shown on screen
- Images taken can be copied



FH-009-0000
WITH ANALOG OR ELECTRONIC
DIGITAL MICROSCOPE

Brinell and Vickers

- Load cell, closed loop system
- Test loads 30 kgf - 3000 kgf
- LCD display showing Brinell and Vickers value, statistics and tester settings
- Simultaneous conversion to Rockwell, Vickers, Brinell and Leeb
- External microscope with analogue scale for indentation measurement or external electronic digital microscope for automatic indentation measurement
- Brinell video microscope system (optional)



FH-009-0001
WITH ANALOG OR ELECTRONIC
DIGITAL MICROSCOPE

Brinell and Vickers

- Load cell, closed loop system
- Test loads 30 kgf - 3000 kgf
- LCD display showing Brinell and Vickers value, statistics and tester settings
- Simultaneous conversion to Rockwell, Vickers, Brinell and Leeb
- External microscope with analog scale for indentation measurement or external electronic digital microscope for automatic indentation measurement
- Brinell video microscope system (optional)
- XL version, 450 mm workpiece height, 250 mm throat depth

FH10 AND FH12 SERIES OF HARDNESS TESTERS



FH-010-0000 1KGF TO 250KGF

Rockwell, Superficial Rockwell, Brinell, Vickers and HVT, HBT

- Load cell, force feedback, closed loop system
- Test loads 1 kgf-250 kgf
- Complies to all applicable EN/ISO and ASTM standards
- Optical system high precision optical path, mat screen diameter 135 mm
- Shape correction for curved surfaces
- High accuracy depth measuring system (Rockwell, HBT, HVT)
- Large LCD display shows measured values, online statistics, memory overview, tester settings
- User-friendly, low training requirements
- Possibility to store 20 batch files with 50 measuring results
- Direct printer and/or PC connections via RS-232 and USB-2
- Large workpiece accommodation (H=300 mm)



FH-12 SERIES HEAVY DUTY

Brinell, Vickers, Rockwell, HVT and HBT

FH-12 is a universal hardness tester most suitable for heavy duty testing. It is based on the technology of the FH-11, built for tough environments and extra large workspace accommodation, suitable for parts up to 500 kgf. The floor type frame reaches a height of 2 meters and offers a workspace of not less than 650 mm height and a throat depth of 300 mm. Rockwell, Vickers and Brinell, but also pure depth test methods such as H, HVT and HBT are part of the standard test procedures of the FH-12. Three models cover a range of test loads

either up to 250, 750 kgf or 3000 kgf. The FH-12 has a motorized elevator spindle and a descending test head, allowing each test piece to be tested on an ergonomic working height. The test head is equipped with a 6 position modular turret (indentors and objectives) and an optical zoom video system with 5 mp HD camera. High performance PC driven automatic and manual indent measurement with automatic filing and storage functions. Refined algorithms for automatic measurement on materials normally less suitable for automatic measurement.

PORTABLE HARDNESS TESTERS



Ultrasonic Contact Impedance system (Vickers)

- Ultrasonic Contact Impedance test principle, fast, accurate, easy to use in confined spaces
- Suitable for hardness tests on metals, plastics, ceramics
- Direct reading in Vickers HV, and direct conversion to HRC, HRB, HB and UTS
- High reproducibility, tolerance within $\pm 1\%$

FH-26

- Extensive range of application at locations difficult to access
- Large memory, statistics and multiple data outputs
- Optional dynamic rebound hardness impact devices available
- Windows software for testing, remote control, data processing and file storing



Portable hardness tester

- The FH-23 hardness method is ideal for sheet metal, sheet aluminum and other thin materials
- Test is made by simply applying pressure to the handles until "bottom" is felt

FH-23

- Easy-to-read dial indicator with 20 graduations, permits use of the tester as "Go" and "No-Go" gauge
- Tests materials up to 13 mm in thickness



Portable hardness tester

- This unit is also known as the "Impressor"
- Complies with ASTM B648-2000
- Used to test the hardness of all kinds of aluminum, from very soft aluminum to very hard aluminum alloys

FH-21

- High sensitivity
- Featured with 100 segments scale



Rockwell

- Magnetic base hardness tester designed according to the principle of Rockwell hardness testing
- The test head can be fixed to the surface of iron and steel components by magnetic force

FH-22

- Support to the test piece is not required as the 350 kg+ magnetic base will hold the unit firmly in position
- The testing accuracy complies with ISO6508 or ASTM E18

PORTABLE HARDNESS TESTERS



FH-25

Brinell

- Permanence Impression can be checked and rechecked anytime
- Accuracy Calibrated to 0.5 of 1% of load;
Can be used for higher loads up to 3000 kg;
Breaks through surface heat treatment to get to the core of the material
- Versatility Can be used in virtually any position;
right-side up, upside down or sideways
- Durability Some portable Brinell testers have been working over 60 years

Includes:

- Microscope with LED illumination
- Testblock

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