

# Tinius Olsen

## Rockwell and Universal Hardness Testers FH-1 Series

**Fig. 1.** Model FH-1-1 Rockwell/  
Model FH-1-2 Superficial  
Rockwell and Brinell



### KEY FEATURES

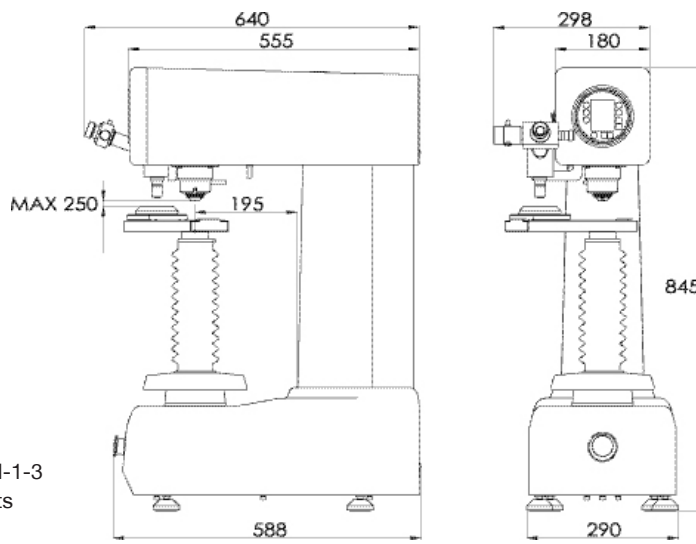
- Load cell, force feedback, closed loop system
- Unparalleled rigidity
- Unmatched gauge repeatability and reproducibility
- Load range 1 kgf up to 250 kgf (2.2 lbf up to 551 lbf) depending on model
- Complies with all applicable EN/ISO, ASTM, and JIS standards
- Shape correction settings for curved surfaces
- Optical depth measuring system (Rockwell, HBT, HVT, Hb)
- OLED full color user-friendly interface, easy to operate
- Go / No Go function with visual and acoustic warning
- Large memory for measurements with statistic results
- Easy calibration function
- Testing program storage
- Standard nose cone clamping attachment
- Printer and USB-2 output
- External Brinell microscope with LED ring light (FH-1-2 model)
- Built-on Vickers / Brinell microscope with LED ring light (FH-1-3 model)
- Work piece sliding table (FH-1-3 model)
- Large work piece accommodation
- Motorized spindle (optional)



**Fig. 2.** Model FH-1-3 with built-on microscope

## Technical Specifications

Load application	Load cell, force feedback, closed loop system
Hardness scales FH-1-1	Rockwell / Superficial Rockwell, HVT, HBT, Hb
Hardness scales FH-1-2	Rockwell / Superficial Rockwell, Brinell, HVT, HBT, Hb
Hardness scales FH-1-3	Rockwell / Superficial Rockwell, Brinell, Vickers, HVT, HBT, Hb
Load range FH-1-1	1 kgf to 187.5 kgf (2.2 lbf to 413 lbf)
Load range FH-1-2	1 kgf to 250 kgf (2.2 lbf to 551 lbf)
Load range FH-1-3	1 kgf to 250 kgf (2.2 lbf to 551 lbf)
Test loads	1, 2, 2.5, 3, 5, 10, 15, 15.625, 20, 30, 31.25, 45, 50, 60, 62.5, 100, 125, 150, 187.5, 250 kgf (2.2, 4.4, 5.5, 5.51, 6.6, 11, 22, 33, 34, 44, 66, 69, 79, 110, 132, 138, 220, 276, 331, 413, 551 lbf) depending on model
Vickers test range	HV1, HV 2, 3, 5, 10, 20, 30, 50, 100, 120 kgf (4.4, 6.6, 22, 44, 66, 110, 220 lbf) HVT 50, 100 kgf (110, 220 lbf)
Brinell test range	HB1/2.5, 5, 10, 31.25 kgf (5.5, 11, 22, 69 lbf) HB2.5/6.25, 15.625, 31.25, 62.5, 187.5 kgf (14, 34, 69, 138, 413 lbf) HB5/25, 62.5, 125 kgf (55, 138, 276 lbf) HB10/100 kgf (220 lbf) HBT2.5/62.5, 187.5 kgf (138, 413 lbf)
Rockwell scales	A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Rockwell superficial scales	15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y
Scale resolution (depth)	0.1 micron
Display	Full color OLED display, testing results, statistics, built-in hardness calculator, program overview, settings, calibration, and many more
Standards	Complies with, or exceeds, EN/ISO, ASTM, and JIS standards
Test cycles	Fully automatic, Load, Dwell, Unload
Force control	1 - 99 seconds
Data output	USB-2 (RS-232)
Specimen accommodation	Height 300 mm (11.81") Throat 200 mm (7.87")
Operating Temperature Range	5° to 40°C (41° to 104°F)
Operating Humidity Range	10% to 90% non-condensing
Weight	110 kg (243 lbs)



**Fig. 3.** Model FH-1-3  
All measurements  
are in mm

### Contact Your Local Representative:

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### STANDARD ACCESSORIES

- Brinell microscope with LED ring light for dark field illumination (FH-1-2) or Built-on microscope with LED ring light for dark field illumination (FH-1-3)
- Objectives for 2.5x, 5x and 10x magnification (FH-1-3)
- Sliding testing table (FH-1-3)
- Flat anvil, hardened,  $\varnothing 60$  mm (2.36")
- Testing table, hardened,  $\varnothing 180$  mm (7.09")
- V-anvil hardened  $\varnothing 40$  mm (1.57")
- Fuse 3A slow (2 pcs)
- Power cable
- Certificate
- Installation and user manual

### OPTIONAL ACCESSORIES

- Certified hardness test block  $\pm 450$ HV (FH-1-3)
- Certified hardness test block  $\pm 200$ HB (FH-1-2/ FH-1-3)
- Certified hardness test block  $\pm 60$ HRC
- Certified hardness test block  $\pm 30$ HRC
- Certified hardness test block  $\pm 85$ HRB
- Rockwell diamond cone 120°
- Vickers diamond cone 136° (FH-1-3)
- Rockwell ball indenter 1/16" (1.6 mm)
- Brinell balls indentors 1 mm, 2.5 mm, 5 mm, 10 mm (.04, .10, .20, .39") (FH-1-2/FH-1-3)
- V-Anvil 60 mm (2.36")
- Long indentors
- Goose neck indenter holder
- Large testing table 300 x 200 mm (11.81 x 7.87") with T-slot
- Custom testing tables
- Precision vices, V-blocks, and special clamps



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