**Micro-Vickers Hardness Tester**

**FH-4 Series**

**Fig. 1.** FH-4 Digital Micro-Vickers and Knoop

**Fig. 2.** Digital electronic microscope

**Fig. 3.** FH-4 Series with PC based HORIZON indent vision system

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**KEY FEATURES**

- Motorized turret
- High resolution electronic microscope, digital value transfer
- Conversion to other hardness scales
- Motorized load control
- Statistics and conversions
- X-Y stage with 0.01 mm (.00039") resolution
- Built-in high speed printer
- Second optical or video path

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**FH-4 Series — Force Ranging from 10 g up to 2 kg Without Changing Weights**

The FH-4 series allows testing workpieces of a wide variety. The test force can be selected with the help of an easy-to-operate selector knob on the side of the tester. Replacing any weights is not necessary. The tester does the full range up to 2 kg (4.4 lbs) by just turning the selector knob to the required force position. The test range of the FH-4 series is quite unique for a traditional micro-hardness tester and is distinguished by high accuracy, flexibility, and operational efficiency.

**Digital Eyepiece Reading**

The FH-4 series also has a digital electronic microscope which enables enhanced functionality and high resolution readings. Obtained diagonal measurements can be transferred automatically and calculated to the actual Vickers or Knoop value.

The system shows real time statistic values and converts to Rockwell, Brinell, Leeb and UTS (tensile strength), making the FH-4 one of the most advanced traditional Micro-Vickers systems currently available.
Technical Specifications

Test force selection  Manual
Test procedure  Automatic, loading/dwell/unloading
Hardness value  5 digits
Turret  4 positions over 360°, fully automatic, memorized start position, 1 indentor and 3 objectives with an option for 2 indentors and 2 objectives.
Test force accuracy  <1% for test force 200 g to 2 kg (.44 to 4.4 lbs), <1.5% for test force below 100 g (.22 lbs)
User display  Length of diagonals, hardness value, converted value, test force, online statistics
Display resolution  0.1 HV, HK
Hardness conversion  Rockwell, Rockwell Superficial, Brinell, Leeb & Tensile (D models)
Standardization  EN, ISO 6507, EN ISO 6506, ASTM E-384, ASTM E-10-08
Statistics  Total test, max, min, average, range, standard deviation, all in real time after each test
Control panel  Start test, stop test, light intensity, dwell time, print, clear. Menu operation for date, time, scale and load settings, language
Firmware  V2.01, German, English, French (standard)  V2.02, English, Italian, Spanish
Memory  Memory for batch testing results (20 results)
Data output RS-232  Bi-Directional
Dwell time setting  Default 10 seconds, user defined 1 to 60 seconds (1 sec increments)
Printer  Built-in, silent high speed thermal printer
Eyepiece microscope  Bright Dual line filar eyepiece with 15x magnification, 0.1μm reading
Light source  Halogen 12V, 30 Watt, green filter, dimmable
Optical path  2 way, eyepiece / CCD camera
Vertical capacity  90 mm/3.54" (maximum specimen height)
Horizontal capacity  120 mm (from center-line)
Stage dimensions  100 mm x 100 mm (3.93" x 3.93"), travel 25 mm x 25 mm (.98” x .98"), reading 0.01 mm (.00039")
Operating Temperature Range  5° to 40°C (41° to 104°F)
Operating Humidity Range  10% to 90% non-condensing
Weight  38 kg (83.8 lbs)
Power requirements  100VAC to 240VAC, 50/60Hz, single phase

STANDARD ACCESSORIES
• Manual X-Y stage
• Objectives according to model (10x and 40x or 10x, 20x and 40x)
• Digital electronic microscope 15x
• Built-in silent thermal printer
• RS-232 data output
• Set of workpiece fixtures, vice, chuck, clamp
• Level gauge
• 4 adjustable feet
• Spare halogen lamp
• Installation and user manual
• Certificate

OPTIONAL ACCESSORIES
• Objectives at choice
• HORIZON - manual or automatic measuring and filing systems
• Motorized X-Y stage (small or large)
• Motorized X-Y-Z stage (auto focus)
• Certified indentors and hardness test blocks
• Solid tester table & storage cabinet
• Manual X-Y stage with digital micrometers

Power consumption  390W

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