



NEW



**Metaltester
MKII**

**Conform with standard
ASTM B-724 - DIN 50157**

 **MICROPROCESSOR CONTROLLED DIGITAL DUROMETER**



When easiness of transport and reliability count ...

With the METALTESTER portable durometer it is possible to perform quick and precise Rockwell, Brinell and Vickers hardness measurements as well as determine ultimate strength anywhere, inside or outside your production department. METALTESTER can be used to test almost all metals: chromed surfaces, nitrided surfaces, aluminum, brass, copper, bronze, metal wire and hard and soft steel starting from a thickness of 0.08 mm. A diamond indenter ensures precise hardness readings on all surfaces.

Three interchangeable test accessories allow the user to run tests on differently shaped samples or on finished items. A variety of accessories to facilitate testing on small or oddly shaped items is available upon request.

METALTESTER's limited weight and the compact size make it an extremely efficient durometer to test any surface, any large or unwieldy item or any already assembled product.

The narrow and elongated head is ideal to measure hard to reach surfaces such as the inner parts of castings or of finished housings.

It is extremely easy to use: simply choose the desired hardness scale, put the test probe on the surface and apply a light pressure to start the entire test cycle.

At the end of the test, the instrument lets out a sound signal and the result immediately appears on the wide graphic display. At this point METALTESTER is once again ready for a new measurement. It's that easy!

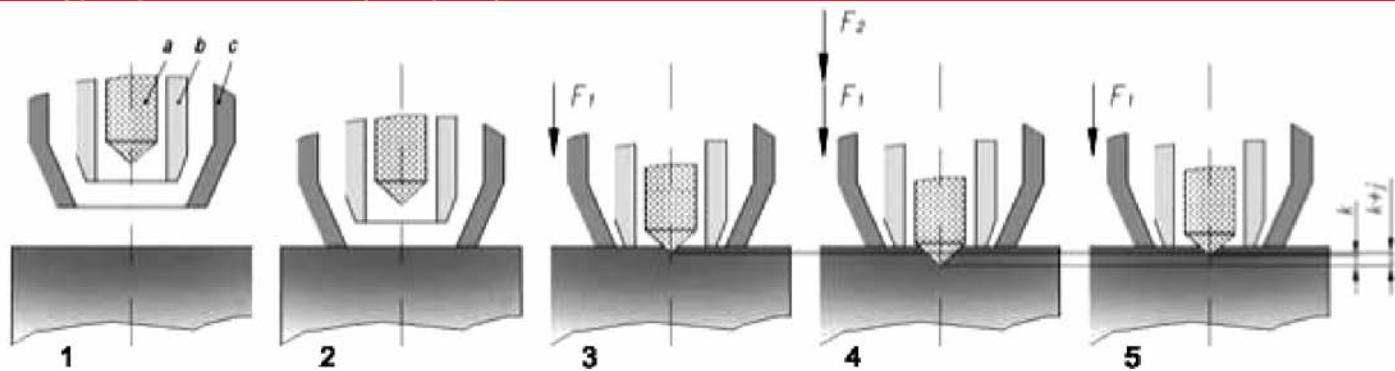
Data simultaneously shown on the LCD graphic display: detected values in various simultaneous scales, average of the values with automatic updating, battery level, findings according to the tolerance limits expressed both numerically and graphically, programmable test preload and load timer, sound signal to indicate the end of the cycle.

It is also possible to display the temperature and the date, to set data memory up to 3500 values and various files with alphanumerical codes, to display statistics and Gauss diagram.

Data output, to connect a printer or a computer, with an RS232C connection or USB connection upon request.



Working principle for Rockwell tests (AFFRI patent)



1- instrument at rest

2- clamping the test item

3- applying the preload

4- applying the test load

5- reading of the value of the actual residual penetration converted in hardness values, uninfluenced by possible vibrations, springing or subsidence of the underlying surface.

It works neither by rebound nor by means of ultrasounds, it works with a static load and it measures the penetration.

It can test hardness of coatings or of foil as thin as 0.08 mm.

Field of application for Microtester AFFRI®

	soft	hard	
HRA - Rockwell A	20	92	For hard steel, nitriding, cementation, roller, steel for tools, soft and hard materials
HK - Knoop	25	97	For soft steel, non ferrous metals
HRC - Rockwell C	0	80	For hard steel, nitriding, cementation, roller, steel for tools
HRB - Rockwell B	26	100	For soft steel, non ferrous metals
HR30T - Rockwell 30T	16	83	For soft steel, non ferrous metals
HB5 - Brinell 5	5	205	For aluminium, soft aluminium alloy cast iron, bronze, brass
HB30 - Brinell 30	66	884	For head treatable steel, annealed steel, drawn products, deep-drawing strip
HV - Vickers	13	1865	For all material
R - Tensile module N mm ²	226	2898	For head treatable steel, annealed steel, drawn products, deep-drawing strip
HR15N - Rockwell HR15N	69	93	For hard steel, nitriding, cementation, roller, steel for tools

Example of a printed report

AFFRI www.affri.com info@affri.com	
Date: 2006/05/23 Time: 17:41 Temperature: 27.3°C Test Scale:HRC K: DISABLED MemUse: 10/358 Folder Name: 01-0P12	
HI tol: 65.8 LO tol: 65.0 Total test n.: 10 Test OK : 4-40.0% Test HI : 4-40.0% Test LO : 2-20.0% Max Val.: 65.8 Min Val.: 64.8 Mean Val.: 65.4 Range: 1.0 Std.Dev : .399 Std.Dev-1 : .420 Cp : .316 Cpk : .242 Var : .176 Z-Minus : 1.173 Z-Plus : .728	
@ 1:65.8 Tol:HI - MAX @ 2:65.5 Tol:HI - MAX @ 3:65.8 Tol:HI - MAX @ 4:64.8 Tol:LO - MIN @ 5:64.8 Tol:LO - MIN @ 6:65.3 Tol:OK @ 7:65.3 Tol:OK @ 8:65.8 Tol:HI - MAX @ 9:65.6 Tol:OK @ 10:65.6 Tol:OK	
6 6 6 6 6 6 6 6 6 6 5 5 5 5 5 5 5 5 5 5 0 0 1 2 3 4 4 5 6 7 8	
AFFRI www.affri.com info@affri.com	

Technical characteristics

Model	2102 (Load 50N) minimum measurable thickness 0,08 mm at 65HRC-840HV 2102/2 (Load 20N) minimum measurable thickness 0,05 mm at 65HRC-840HV
Working principle	Rockwell
Field of application	All types of metals
Reading scales	Rockwell HRA (20...92); HRB (26...100); HRC (0...80); HR15N (69...93); HR30T (16...83) Brinell HB5 (5...205); Hb30 (66...884) Knoop (25...97) Vickers (13...1865)
Instrument's resolution	Tensile Module R (226...2898) HZA(0...250)
Instrument's repeatability	0,1 HRC ± 0,2 HRC
Types of electronics	16 bit microprocessor, can be interfaced with external units
Data output	standard RS232 or USB upon request
Test functions	Scale, timer with sound signal, tolerances, correction coefficient, statistics
System functions	Calendar, contrast, data processing speed, lighting mode, integrated temperature sensor (range from -10°C [14°F] to +45°C [113°F]), battery level, calibration graphic display, 128x64 points, backlit and user-friendly graphic interface up to 3500 tests
LCD	10 available folders
Results memory	Tolerance limits, maximum value. Minimum value, value averages, temperature, date, time. with optional printer (see an example of a complete statistics report on the side)
File management	13 columns, available upon request
Statistical information	Rechargeable Ni-Mh batteries. The battery charger comes with the instrument.
Test report printing	10 hours of continuous use
Printer	stand-by after 5 minutes the instrument is not used
Power supply	Probe: Ø 53x90mm without accessories applied to it;
Duration	Electronic panel: 120x180x55; Carrying case: 470x350x150
Energy saving	Weight Probe: 400g, Electronic panel: 600g, Overall with case: 2 Kg
Overall dimensions	

Examples of applications



Standard accessories

- n.1 Instrument with 16 bit electronic unit
- n.1 automatic battery charger
- n.1 diamond indenter
- n.1 reference
- n.1 squared item-pressing base for round items (from Ø10 to Ø100)

- n.1 registration gauge
- n.2 reference blocks
- n.1 use manual
- n.1 carrying case



The instrument comes with a carrying case which contains everything that's necessary, so that it can be easily transported.

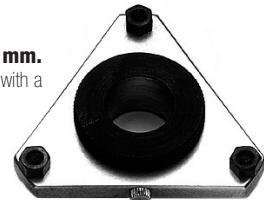
Optional accessories



Oversized base for round items up to Ø200

Base obtained from a solid piece with a 120° V notch to test on round surfaces up to a maximum diameter of 200 mm

Art. A015.0.000



Oversized base for round items with a diameter greater than 200 mm.

Base obtained from a solid piece with three equidistant points to test round items with a diameter from a minimum 200 mm to a maximum of 2000 mm

Art. A015.1.000



Base for extruders (Ø10 up to Ø110)

Base obtained from a solid piece with a 120° V notch to test extruders or items with helical surfaces (i.e.: drills, trapezoid screws) with diameters ranging from 10 mm to 110 mm.

Art. A015.2.001

Clamp like portable support

Very useful instrument especially for hard-to-test items or for items with odd shapes (i.e. tests on spring wires).

It comes with anvil and various accessories.

(For further information ask for the explicative brochure)

Art. 077.0.000



Sliding support

Very useful accessory in a laboratory, where it is necessary to test small sized items. It comes with an anvil and various accessories.

(For further information ask for the explicative brochure).

Art. 073.0.000



Vice like support

Useful accessory to test pipes or round items with a diameter up to 80. It comes with one fixed anvil with a 120° V notch.

Art. 072.0.000

Data cable (Art. A015.2.001)

13 column printer (Art. A001.0.000)

Instrument's menu in French, German or Spanish Statistics software for PC (Art.A011.0.001)

Probe holding belt and cover

Please note: Custom made accessories are also available on request.



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