



NEW



Metaltester MKII

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.

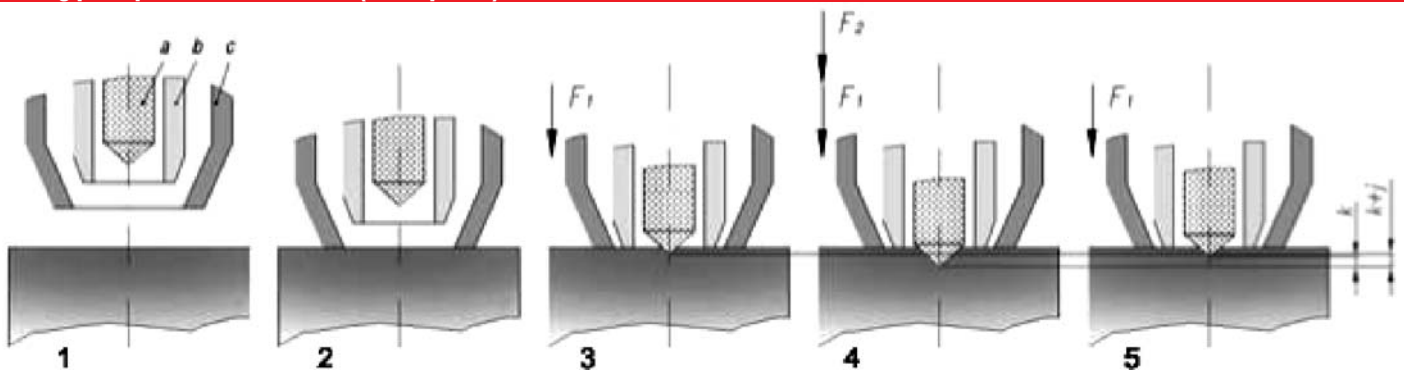
At this point METALTESTER is once again ready for a new measurement. It's that easy!

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

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AFFRI
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Date: 2006/05/23
Time: 17:41
Temperature: 27.3C
Test Scale:HRC
K: 01588LED
MemUse: 10/350
Folder Name:
01-0P12
HI tol: 65.8
LO tol: 65.8
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
@ 2:65.8 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 6
5 5 5 5 5 5 5 5 5 5 5
0 0 1 2 3 4 4 5 6 7 8

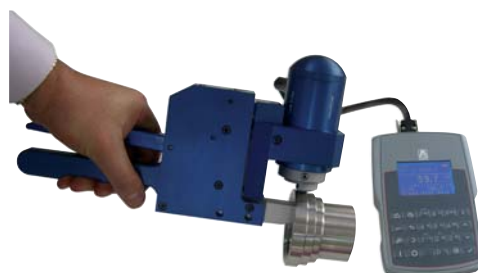
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Technical characteristics

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) 0,1 HRC
Instrument's repeatability	± 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
LCD	graphic display, 128x64 points, backlight and user-friendly graphic interface
Results memory	up to 3500 tests
File management	10 available folders
Statistical information	Tolerance limits, maximum value. Minimum value, value averages, temperature, date, time.
Test report printing	with optional printer (see an example of a complete statistics report on the side)
Printer	13 columns, available upon request
Power supply	Rechargeable Ni-Mh batteries. The battery charger comes with the instrument.
Duration	10 hours of continuous use
Energy saving	stand-by after 5 minutes the instrument is not used
Overall dimensions	Probe: Ø 53x90mm without accessories applied to it; Electronic panel: 120x180x55; Carrying case: 470x350x150 Weight Probe: 400g, Electronic panel: 600g, Overall with case: 2 Kg

Examples of applications



Standard accessories

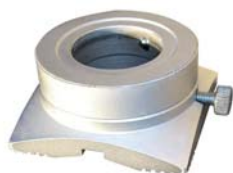
- n.1 Instrument with 16 bit electronic unit
- n.1 automatic battery charger
- n.1 diamond indenter
- n.1 reference
- n.1 squared item-pressing base for round items (from Ø10 to Ø100)
- n.1 round item-pressing base for flat items
- n.1 extended item-pressing base for flat items

- n.1 indenter extension
- n.1 long reference
- n.1 registration gauge
- n.2 reference blocks
- n.1 shoulder strap
- 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.

AFFRI

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