ATI MRS

Motorized and Automatic Hardness Tester
for Rockwell and Superficial Rockwell Tests

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AUTOMATIC ROCKWELL MEASUREMENTS

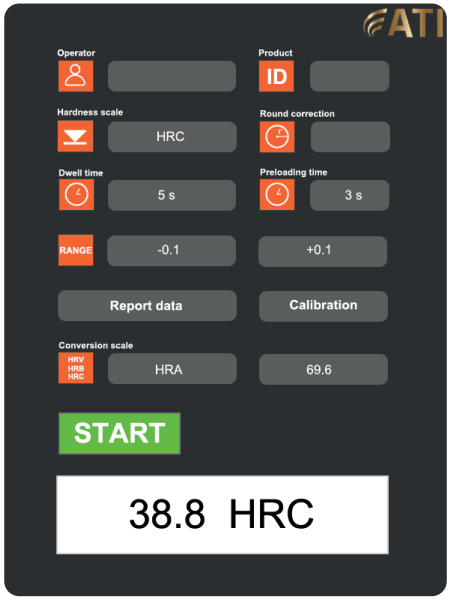
ATI MRS is the new generation of hardness testers by AFFRI TESTING INSTRUMENTS. ATI MRS is automatic Rockwell, Superficial and Brinell hardness measurements, designed to meet the most stringent standards ASTM E-18, ISO 6508, ISO 2039-2. Equipped with a new high-precision load cell and closed-loop electronic control with a 1 KHz scanning frequency, they guarantee high-performance accuracy and reliability in all measurement conditions. It is resistant to external vibrations, eliminating the need for leveling, and can be operated in production environments. Designed for immediate use, it is ready to operate with a simple plug-and-play configuration. Provided with direct ISO ILAC MRA certification from our ISO IEC 17025 accredited calibration laboratories. The test cycle is automatic; it is activated with a single command, simplifying the test process and improving efficiency. The intuitive operator interface is equipped with a multicolor touch screen. The software is compatible with Windows systems, making it easy to manage and analyze data. ATI RS offers a complete selection of Rockwell hardness scales, including HRA, HRD, HRC, HRF, HRB, HRG, HRH, HRE, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HRN, HRT, HRX and HRS. And Brinell automatic HBWT from 62.5-187.5-250. In addition, it provides conversion capabilities to various hardness scales, such as HV, HK and multiple Rockwell scales (HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HBW), ensuring versatility in materials testing. Results are readily available for printing, allowing for efficient documentation and reporting of hardness test results. At ATI MRS we have studied ergonomics even in ease of installation, it does not require any through holes as in common durometers equipped with a height screw. ATI MRS is a broad-based instrument indispensable for quality control and materials characterization in various industrial applications.

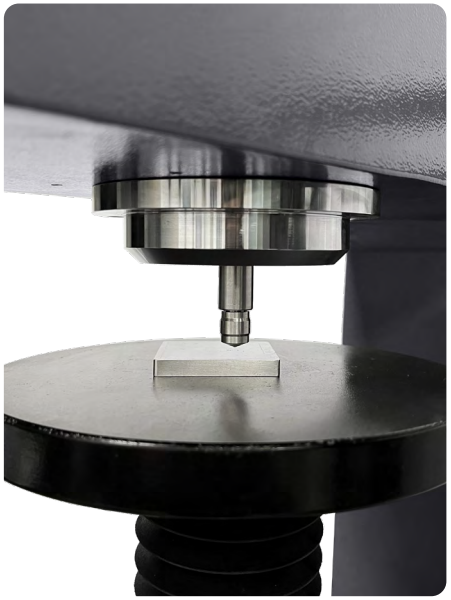
APPLICATIONS

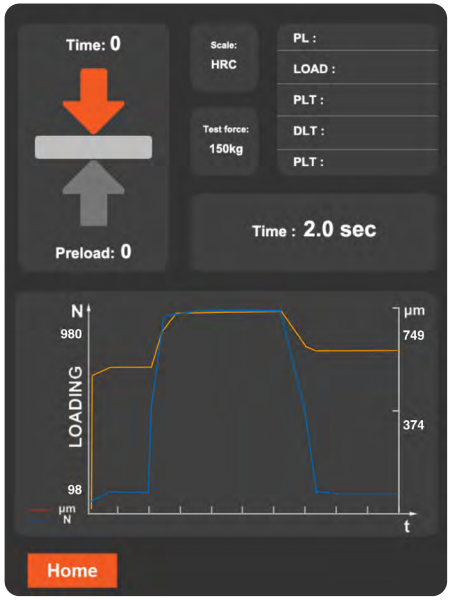
The ATI MRS is designed to accurately measure the hardness of ferrous, non-ferrous and non-metallic materials. It is used for hardness testing of heat-treated materials, such as hardening, tempering, carburizing. Its versatility makes it suitable for a wide range of industrial applications, ensuring high reliability and accuracy. The ATI MRS hardness tester has a large working area, offering an advantage in handling more complex geometries compared to traditional hardness testers. Designed for high accuracy and ease of use, it is ideal for quality control in production environments, ensuring that materials meet the required hardness standards. With its robust design and comprehensive functionality, it is a key tool for industries focused on metalworking, manufacturing and materials testing, offering unmatched accuracy and versatility.

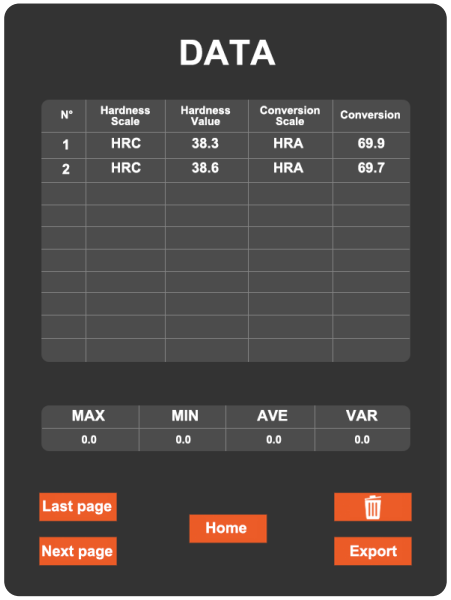
PROGRAMMING INTERFACE

Our ATI MRS hardness testing system offers a comprehensive and intuitive interface, designed for accuracy and ease of use. The interface is composed of 4 key sections. These features allow you to manage and customize the testing experience based on your specific requirements.









1- CUSTOM TEST SETTINGS

The user can set standard measurement values with customized acceptance limits based on specific product requirements. This allows you to quickly determine whether a product passes or fails the control based on predefined thresholds. You can also set the operator name, product codes, dwell times in measurement phases, conversion of values to other scales, as well as correction values for measurements on cylindrical surfaces. In addition, statistics can be requested and data can be stored.

2- AUTOMATED MEASUREMENT CYCLE

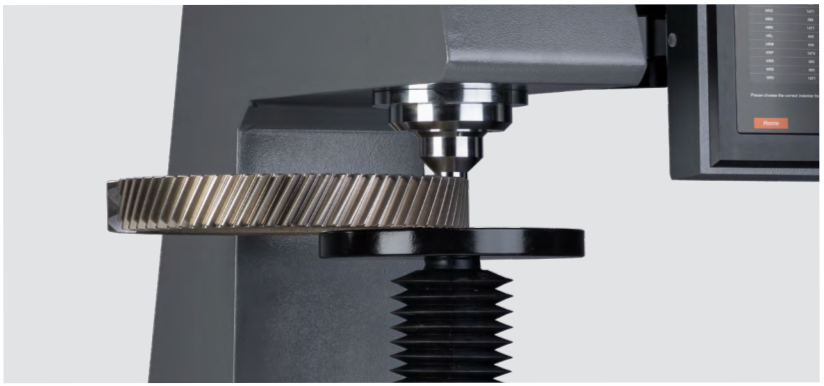
To perform the hardness test, rotate the elevation screw until the indenter is approximately 1-2 mm from the surface to be measured and press the START button. The contact, preload, load and measurement cycle occurs automatically. During the process, the operator can monitor the diagram on the screen in real time, displaying the forces, time and penetration. At the end, the result is provided automatically, simplifying the hardness assessment.

3- REAL TIME VIEW

The operator has full control of the process. The large, high-definition, multicolor graphic display shows the measurement phases in real time through a graph representing the preload cycle, the load and the dwell times. At the end of the test, the result appears, changing color based on the set acceptance thresholds: green, red, yellow. In this way, it is possible to verify whether the hardness measurement is within the established limits. A diagram representing the relationship between the applied forces and the penetration is also available.

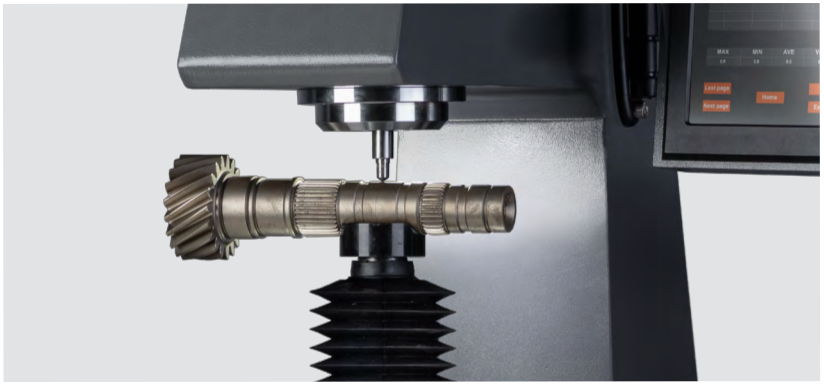
4- DATA CONVERSION AND STATISTICS

In addition to the measurement result, you can consult the conversion values in the various selected scales, view statistics and manage the data. Before performing the tests, you can insert a flash memory into the USB port, which will record all the data collected during the measurements and sort them in XML format. The data can then be exported, saved on an external PC, sent to a printer or transmitted over the network.



CLAMPING HOOD

Thanks to the Clamping-hood, it is possible to perform measurements in complete safety, even on particularly unstable samples, ensuring optimal stability during the testing process. Furthermore, the hood allows precise visibility of the measurement point, ensuring that each operation is carried out correctly and without risks for the operator or the sample.



ERGONOMICS OF THE OPERATING AREA

ATI MRS is the result of a study aimed at improving the testing experience. We have designed a work area lighting that ensures excellent visibility of the most difficult measuring points, thus facilitating the operator and reducing the probability of measurement errors or breakage of the penetrators, helping to extend their life. The lighting is rechargeable directly on board the machine via a USB port. We have also designed an nnovative work area, with a maximum test height of up to 270 mm and a depth of 205 mm.

TOUCH-SCREEN CONTROL PANEL

The control panel is positioned laterally and can be easily moved using an adjustable articulated arm support, which allows it to be moved backwards or forwards according to the specific movement needs during use of the instrument. This feature offers great versatility, allowing the operator to optimize the visibility of the screen and, at the same time, adapt the position of the panel to facilitate access and management of the parts. In addition, by moving the panel, it is possible to increase the work area to accommodate larger parts, improving the overall efficiency during operations.

FUNCTIONAL BASE

The structure of the ATI MRS has been developed to maximize hardness testing: the buttons at the base make the measurement automatic and motorized. This simplifies the operator's work, increasing accuracy and reducing the risk of errors. Furthermore, no preparation of holes in the support table is necessary, since the lifting screw is entirely contained within the base, avoiding the need to drill holes in the support bench. Thus, the hardness tester can be freely positioned where most convenient, without compromising the stability of the system.

TECHNICAL DATA

Model:	ATI MRS
Standards:	ASTM E18, ISO 6508 and ISO 2039-2
Hardness scale:	HRA, HRD, HRC, HRF, HRB, HRG, HRH, HRE, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HRX, HRS, ISO 2039-2, HBWT 2,5/62,5- HBWT 2,5/187,5- HBWT 5/250
Conversion scale:	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS, HBW
Initial load force:	3 Kg (29.42 N), 10 Kg (98.07 N)
Rockwell load force:	15 Kg (147.1 N), 30 Kg (294.2 N), 45 Kg (441.3 N), 60 Kg (588.4 N), 100 Kg (980.7 N), 150 Kg (1471 N)
Brinell load force:	62.5 Kg (613N), 187.5 Kg (1839.4 N), 250 Kg (2452 N) (at request)
Vickers load force:	3 Kg (29.41 N), 5 Kg (49.03 N), 10 Kg (98.07 N), 30 Kg (294.2 N), 60 Kg (588.4 N), 100 Kg (980 N) (at request)
Dwell time:	From 2 to 60 secondi
Height capacity:	270 mm
Depth capacity:	205 mm
Power supply	110-220V / 50-60 Hz
Dimensionions:	475 x 200 x 700 mm
Weight:	70 Kg
Data output:	USB 2

ANVILS

A014.0.001 - Flat anvil Ø 60 mm
A014.0.002 - Flat anvil Ø 150 mm
A014.0.003 - V anvil Ø 60 mm for Ø 8 to 220 mm
A014.0.004 - Anvil Ø 25 mm flat + V for Ø from 5 to 30 mm
A014.0.005 - Self-aligning reclining spherical anvil
A014.0.006 - Diamond point anvil for thin slabs
A014.0.011 - Spherical anvil Radius 10 mm
A014.0.012 - Spherical anvil Radius 15 mm
A014.0.013 - Spherical anvil Radius 40 mm

INDENTERS

700.1.3.009 - Rockwell ball indenter W Ø 1/2"
700.1.3.007 - Rockwell ball indenter W Ø 1/4"
700.1.3.005 - Rockwell ball indenter W Ø 1/8"
700.1.5.018 - Rockwell ball indenter W Ø 1/16"
700.1.3.004 - Brinell ball indenter W Ø 2.5"
700.0.0.006 - Brinell ball indenter W Ø 5"
700.1.3.011 - Diamond Vickers Indenter 136°
700.1.3.014 - Diamond Rockwell Indenter 120° C-N

AFFRI TESTING INSTRUMENTS Laboratory Accredited ISO/IEC 17025

AFFRI TESTING INSTRUMENTS Laboratory, accredited by ANAB ISO/IEC 17025 n. AC 3026.01, provides certified precision test blocks for calibrating hardness instruments, meeting ASTM and ISO standards. Our specimens cover all hardness scales (Rockwell, Brinell, Vickers, Knoop) with a wide range of values. With ILAC-MRA accreditation, each specimen ensures high accuracy and reliability.

CLAMPING

ATI.022.0.000 Clamping piece

ASSISTANCE AND CALIBRATION SERVICE

ATI AFFRI TESTING INSTRUMENTS offers real-time technical support, with remote diagnosis for technical and software issues. We provide remote software updates to ensure our products are always up to date. We are accredited for calibration and certification service with ANAB ILAC-MRA / ISO-IEC 17025 certifications. Our scope of accreditation includes calibration of ATI and many other brands, for instruments such as Rockwell, Brinell, Vickers, Knoop, Shore hardness, tensile esting machines, compression testing machines, and much more. Contact us for a quote, regardless of the brand of equipment.

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