



ATI HTR

Automatic Rockwell hardness tester



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ONE BUTTON MEASUREMENT

ATI HTR is an automatic Rockwell hardness tester with a fully automatic measurement cycle and automatic recognition of the sample-indenter distance. Just click the START button to get start the entire test cycle and its phases will follow one another in automatic succession without interruption:

- 1- Automatic contact with the sample surface
- 2- Automatic locking and activation of the reference point
- 3- Automatic preload and load
- 4- Automatic measurement
- 5- Automatic return to the programmed distance

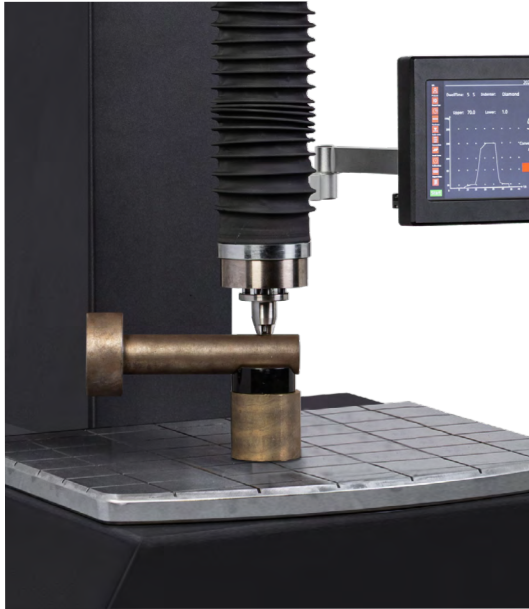
Each phase of the test cycle appears in real time on the display.

MOTORIZED VERTICAL STROKE

The measuring head has a motorized vertical stroke of 300 mm. Once the test cycle has started, the measuring head recognizes the distance between the piece and the indenter and automatically goes down until it comes into contact with the surface to be measured. The head will maintain contact with the sample surface for the entire test cycle, without ever losing contact, ensuring a perfect and absolute measurement in any test condition. Contact is ensured by the piece pressing action exerted by the head, preventing any movement of the sample and ensuring perfect stability during the entire hardness test. With ATI HTR hardness measurements become easy and fast. It is the solution for hardness tests on components of different thickness, size and shape, allowing measurements to be taken without any prior adjustment.

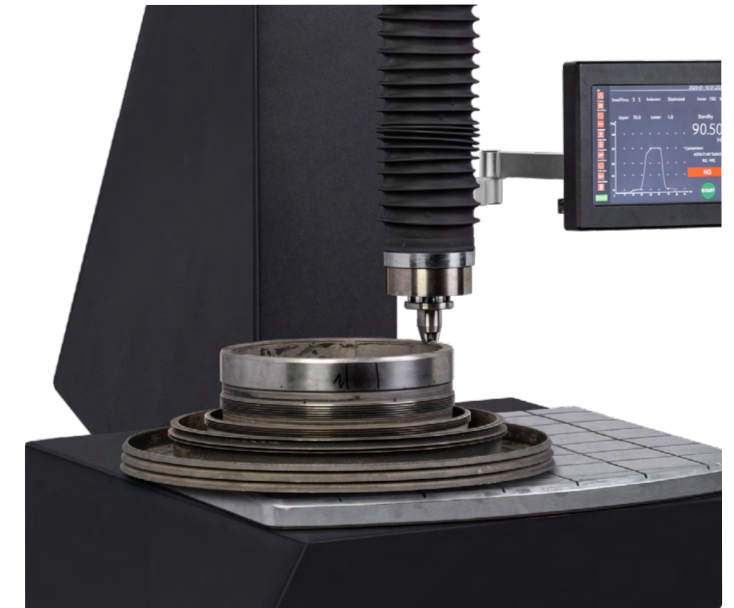
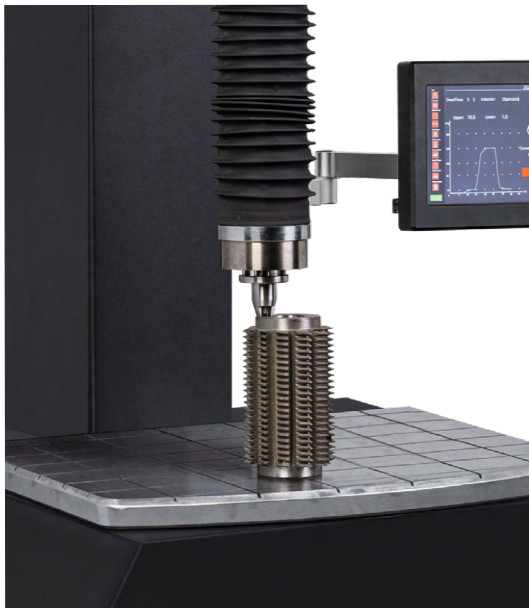
LOAD CELL TECHNOLOGY

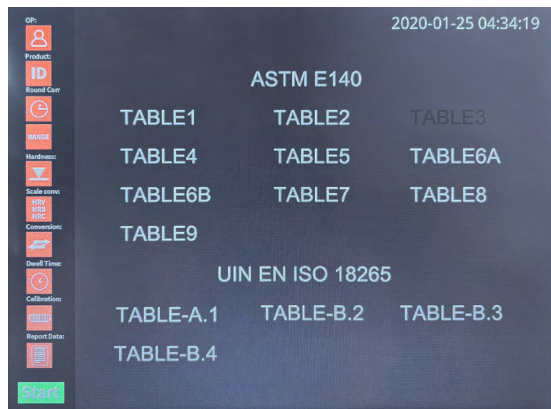
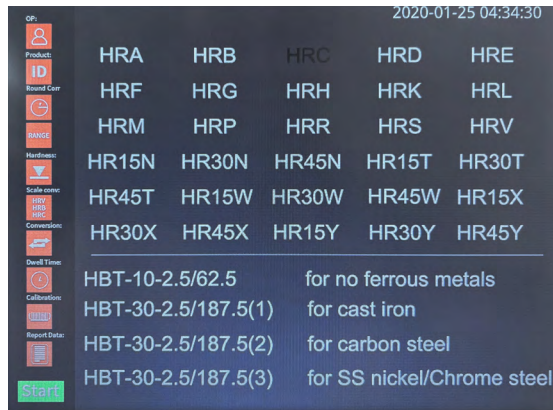
Load forces are applied via load cells and controlled electronically at a frequency of 1 kHz. Each load force is automatically programmed and controlled ensuring perfect linearity. Problems associated with traditional dead weight systems are eliminated. Our results are not affected by any structural deflection, misalignment or external vibration. Accurate measurements from the first measurement, eliminating the need for re-testing. Best-in-class R&R (repeatability and reproducibility) data.



APPLICATIONS

The ATI HTR is designed to accurately measure the hardness of ferrous, non-ferrous and non-metallic materials. It is widely used for hardness testing of heat-treated materials, including processes such as hardening, tempering and tempering. Its versatility makes it suitable for a wide range of industrial applications, ensuring high reliability and accuracy. The system is particularly effective for precise measurements on parallel surfaces, providing consistent and repeatable results. It also provides stable and reliable performance when measuring materials with curved surfaces, offering an advantage in handling more complex geometries compared to traditional hardness testers. Designed for high accuracy, the ATI HTR is the solution for precise hardness measurements in critical conditions. It is ideal for quality control in production environments, ensuring that materials meet the hardness standards required for durability and performance. With its rugged design and comprehensive functionality, the ATI HTR is a key tool for industries focused on metalworking, manufacturing and materials testing, offering unmatched accuracy and versatility.





ADVANCED HARDNESS TESTING SYSTEM INTERFACE

Our hardness testing system offers a comprehensive and intuitive interface, designed for precision and ease of use across a variety of applications. The interface includes five key sections: Setting Interface, Testing Interface, Display Interface, Diagram Interface, and Program Setting Interface. These features allow users to manage and customize their testing experience to meet specific requirements.

STANDARDS AND SCALES

The system supports multiple international standards. Additionally, users can easily choose from various hardness scales, including HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, to suit their testing needs. For conversion scales, the system provides options such as HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HBS, HR15N, HR30N, HR45N, HR15T, HR30T, and HR45T. Adjustable Parameters for Precision. To ensure accuracy, the dwelling time can be adjusted between 0 and 60 seconds, providing flexibility depending on the material and test conditions. The system is also optimized for testing curved surfaces, such as convex cylindrical specimens. By inputting the curvature radius, the system adjusts the test results, correcting for any impact of surface shape, ensuring an accurate reflection of the sample's true hardness.

CUSTOMIZABLE TESTING CONDITIONS

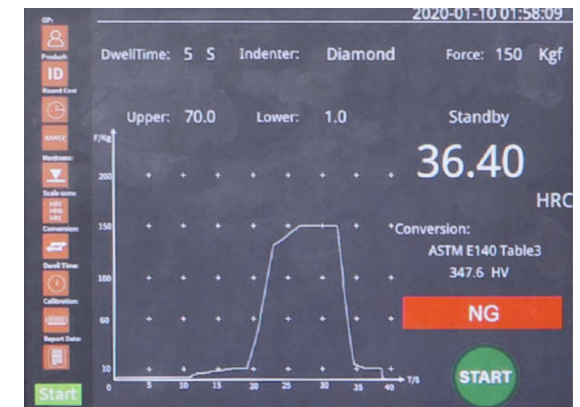
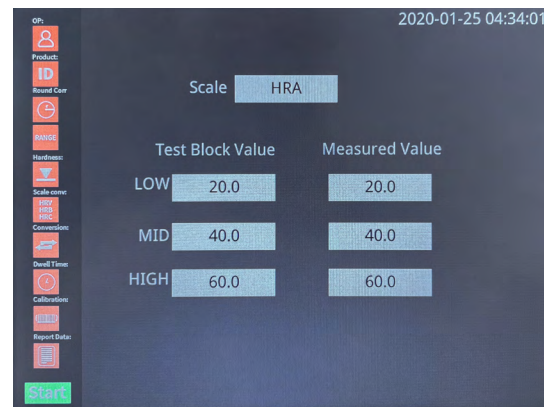
Users can set standard values, along with upper and lower deviation limits, based on their specific product requirements. This allows for quick determination of whether a product passes or fails based on pre-defined thresholds. The Testing Interface automatically matches the test force with the appropriate indenter, while real-time force data is displayed on the X-Y coordinate axis, where X-axis represents time and Y-axis represents force.

AUTOMATED TESTING PROCESS

To begin testing, users simply rotate the handwheel, raising the screw until the standard block makes contact with the indenter, confirmed by the system's buzzer and "OK" status on the display. At this point, the initial test force is applied, and the motor automatically initiates the application of the main test force. Once the dwelling time reaches zero, the system automatically releases the main test force, retaining the initial force for final measurement.

REAL-TIME DISPLAY AND RESULTS

During testing, the display provides a force curve and a countdown of the dwelling time. After the test, results are shown on the Display Interface, where users can verify if the hardness measurement falls within the set deviation limits. If the result is acceptable, the interface will display "PASS"; otherwise, it will show "NG" (not good).





EXTRA FEATURES

ATI HTR is equipped with a joystick through which the operator can easily control the movement of the measuring head and have full control over it. Simply move the joystick up or down to raise or lower the measuring head respectively.

ATI HTR is an automatic Rockwell hardness tester: by clicking the START button, located on the side of the hardness tester, the entire measuring cycle starts, without interruption between one phase and the next and ends with the hardness test result on the display.

The X-Y table, with dimensions of 400 mm x 330 mm, can support samples up to 2000 kg. The useful height of 300 mm allows measurements to be carried out on samples of any shape and size. The motorized head, together with the essential design of the indenter, allows even the most difficult areas of the specimen to be easily reached, such as grooves, recesses, grooves, etc. The absolute precision of the ATI HTR system ensures extremely accurate hardness measurements, even on dirty or rough surfaces, without the need for preliminary preparation.



X-Y WORKBENCH

Dimensions:	350 x 250 mm
X-Y Travel:	X-axis: 200 / Y-axis: 90 mm
Min steps:	0,01 mm
Max weight of specimen:	100 Kg
Movement:	X-Y automatic motorized working table
Camera:	High-resolution overview camera for precise edge identification and accurate detection of the origin point.



TECHNICAL DATA

Model:	ATI HTR
Compliance standards:	ISO 6508, ASTM E18, JIS Z2245:2021 and GB/T 230.2
Hardness scales:	HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Pre-load:	3 Kg (29.4 N), 10 Kg (98.1 N)
Test force:	Superficial Rockwell: 15Kg (147.1N), 30Kg (294.2N), 45Kg (441.3N) - Rockwell: 60Kg (588.4N), 100Kg (980.7N), 150Kg (1471N)
Test force accuracy:	±1%
Measuring range:	Superficial Rockwell: 71<HR15N<94, 42<HR30N<86, 20<HR45N<77, 67<HR15TW<93, 29<HR30TW<82, 10<HR45TW<72 - Rockwell: 20<HRA<95, 10<HRB<100, 10<HRC<70
Indenter type:	Rockwell diamond indenter, Ø1/16" ball indenter
Data output:	USB interface, RS 232 interface and in-built bluetooth interface
Height capacity:	300 mm (ordinary workbench) and 180mm (X-Y automatic workbench) (customizable)
Depth capacity:	200 mm
Vertical stroke:	300 mm
X-Y table:	400 x 330 mm
Dwell time:	Initial test force: 0.1-50sec - Total test force: 0.1-50sec
MAX weight of specimen:	2000 Kg
Power supply:	110V / 220V , 50 Hz / 60 Hz
Dimensions:	669 x 477 x 877 mm - Weight: 130 Kg

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ASSISTANCE AND CALIBRATION SERVICE

ATI offers technical assistance to its customers, intervening in real time, to help you to work in a better way. Our technicians are available for remote technical and software diagnoses. We offer remote software updates to keep our products always up to date. Connect to www.affri.com for more details. ATI is accredited for calibration and certification service. Our ANAB certifications are ILAC-MRA / ISO 17025. Our scope of accreditation includes direct and indirect calibration of ATI and most competitors Rockwell, Brinell, Vickers, Knoop, Shore hardness testers, differential indentation hardness, tension and compression testing machines, extensometers, torque machines, machine displacement and speed, calipers, microscopes, stop watches. Contact us for a quote whatever the brand of equipment you may have.



ATI is a ® trademark of
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