AUTOMATIC HARDNESS CHECK - DRIVE

AUTOMATIC INSTRUMENTS FOR SHORE, IRHD & VLRH HARDNESS MEASUREMENTS
WITH INTERCHANGEABLE MEASURING HEADS

gibitre INSTRUMENTS

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Designed on your needs

The instruments 'Automatic Hardness Check - Drive' are designed for flexible configuration to meet customer-specific testing requirements.
The instrument features a motorized stand with a digital display, capable of supporting interchangeable measuring heads for various hardness scales.
To further customize your setup, software and sample holders tailored to specific testing needs can be added.
The instrument allows for automatic performance of multiple tests at different points on the specimen. Its robust construction and high-quality components make it ideal for both research laboratories and production control environments.

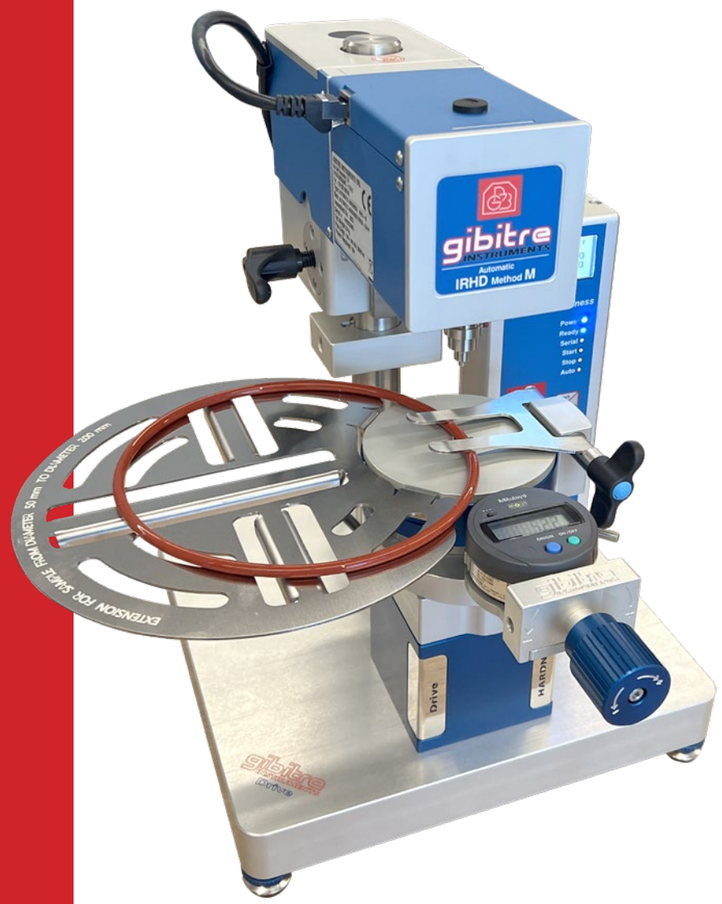
Interchangeable measuring heads:

Shore A
Shore D
Shore A0
Shore 00
Shore AM (micro)
IRHD- Micro
IRHD-Normal
IRHD- Hard
IRHD-Low
VLRH

AUTOMATIC HARDNESS CHECK - DRIVE

Why choose Automatic Hardness Check ?

• Motor-controlled displacement of the measuring head to ensure high repeatability of results
• Motor-controlled specimen rotation for automatic execution of multiple tests at different points.
• Digital display for immediate reading of results
• Full compliance with international standards
• ACCREDIA calibration certificate issued by Gibitre's ISO 17025 accredited laboratory



Universal Centring Device for O-Rings

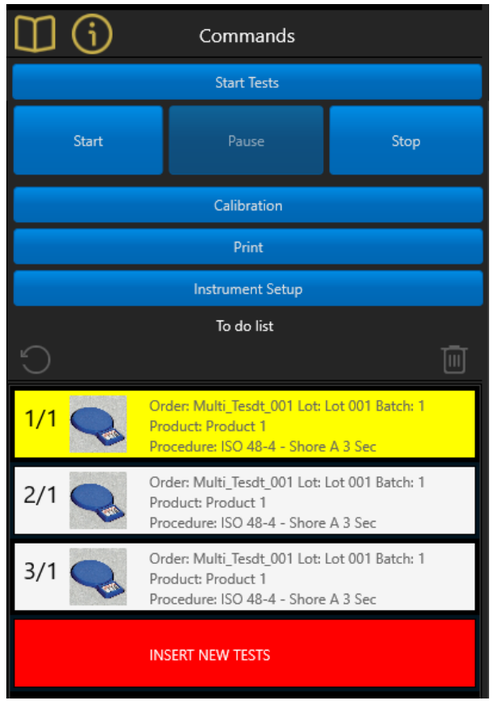
The centering device allows for quick hardness testing on O-rings and technical articles with a chord length between 0.6 and 10 mm and an inner diameter of up to 200 mm.
To conduct the test, the part is positioned between the two adjustable rods.
The adjustment knob enables precise setting of the distance between the rods according to the chord size of the O-ring or workpiece.

This distance is displayed on the integrated centesimal dial indicator for accurate measurement. A retaining clip ensures proper positioning of curved workpieces during testing. The device attaches to the standard instrument plate via magnetic fastening, allowing for quick and easy installation and removal.

Automatic performance of multiple tests on the sample

International standards require the performance of multiple hardness tests on the specimen and the calculation of the median value.
• The specimen holder plate with motorized rotation allows multiple tests to be performed automatically at different points on the specimen.

• The operator can set the number of tests to be performed automatically on the specimen and the angle of rotation between successive tests.



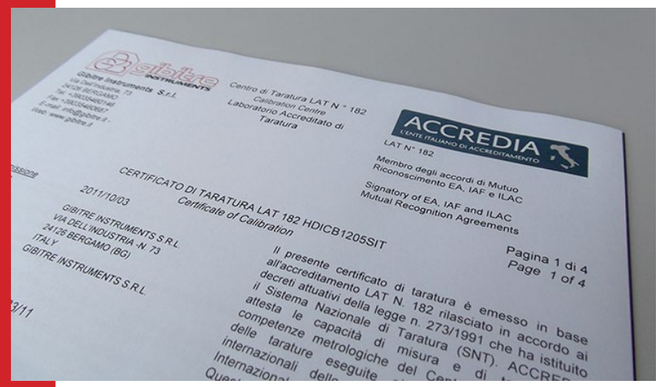
DO YOU NEED TO AUTOMATE YOUR HARDNESS TESTS?

AUTOMATIC HARDNESS CHECK - DRIVE

Accredia Calibration of the instrument

The instrument can be supplied with an ACCREDIA Calibration Certificate issued by the Accredia laboratory of Gibitre instruments.
The calibration is carried out according to the Technical Procedure approved by Accredia and in compliance with the requirements of the ISO 48-2 (IRHD), ISO 48-4 (Shore A) and ISO 868 (Shore D) standards.
The Calibration refers to:

- Dimensions of the Indentor and Annular foot
- Forces applied by the indentor and the annular foot
- Displacement of the indenter
- Duration of the test



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Many instruments in one

The solid quick coupling system allows the head to be replaced in seconds while ensuring its perfect pependicularity with respect to the support base.
To replace the measuring head:

- Remove the connecting cable
- Unscrew the locking screw
- Replace the head with the desired one
- Screw the locking screw
- Insert the connection cable

The instrument automatically recognizes the applied head and is immediately ready for testing

AUTOMATIC HARDNESS CHECK - DRIVE

Your testing needs

Do you need to test different products according to a specific hardness scale?
Do you need to evaluate incoming compounds and finished parts across multiple scales?
Do you require the flexibility to switch between various hardness scales without notice?
Whatever your needs, we offer the ideal setup to meet your requirements.

Versatility in one instrument

The Universal Support for Automatic Hardness Testers in the Drive version accommodates all available Shore, IRHD, and VLRH hardness units. Swapping measuring heads offers a versatile solution for research centers that require measurements across various scales, as well as for companies that primarily use one scale but need occasional checks against others.

Complete hardness testing for simultaneous use

For companies conducting systematic production checks using different measurement scales (e.g., Shore A and Micro-IRHD), dedicated hardness units for each required scale are essential. The optimal setup, based on our experience, involves installing independent hardness testers connected to the same PC. This configuration allows multiple operators to use the instruments simultaneously without any interruptions.

SEE THE VIDEO PRESENTATION

SHORE Type AM

SHORE Type D

SHORE Type 00

SHORE Type A

IRHD Method M

IRHD Method H

AUTOMATIC HARDNESS CHECK - DRIVE

LCD display

The Display shows the hardness of the test being performed. And the keypad located in the front permits to control the status of the instrument and to perform basic operations (Start, Stop, up and down displacement of hardness unit, instrument setups, etc).

Software Gibitre-Hardness

The automatic durometer control through the Software Hardness-Check allows to exploit all the potential of the instruments:

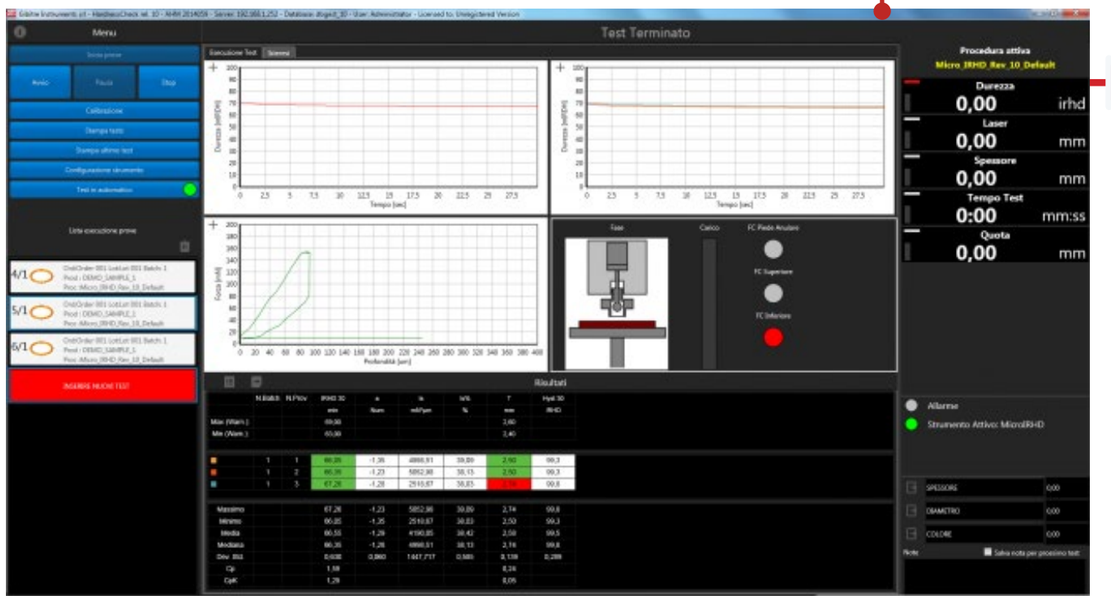
• Perform multiple tests automatically on the specimen

• Save all test results in the SQL database

• Compare the results with the tolerance limits

• Produce test reports

The PC control software allows multiple instruments to be used simultaneously. Each instrument is connected to the PC via the supplied USB cable.

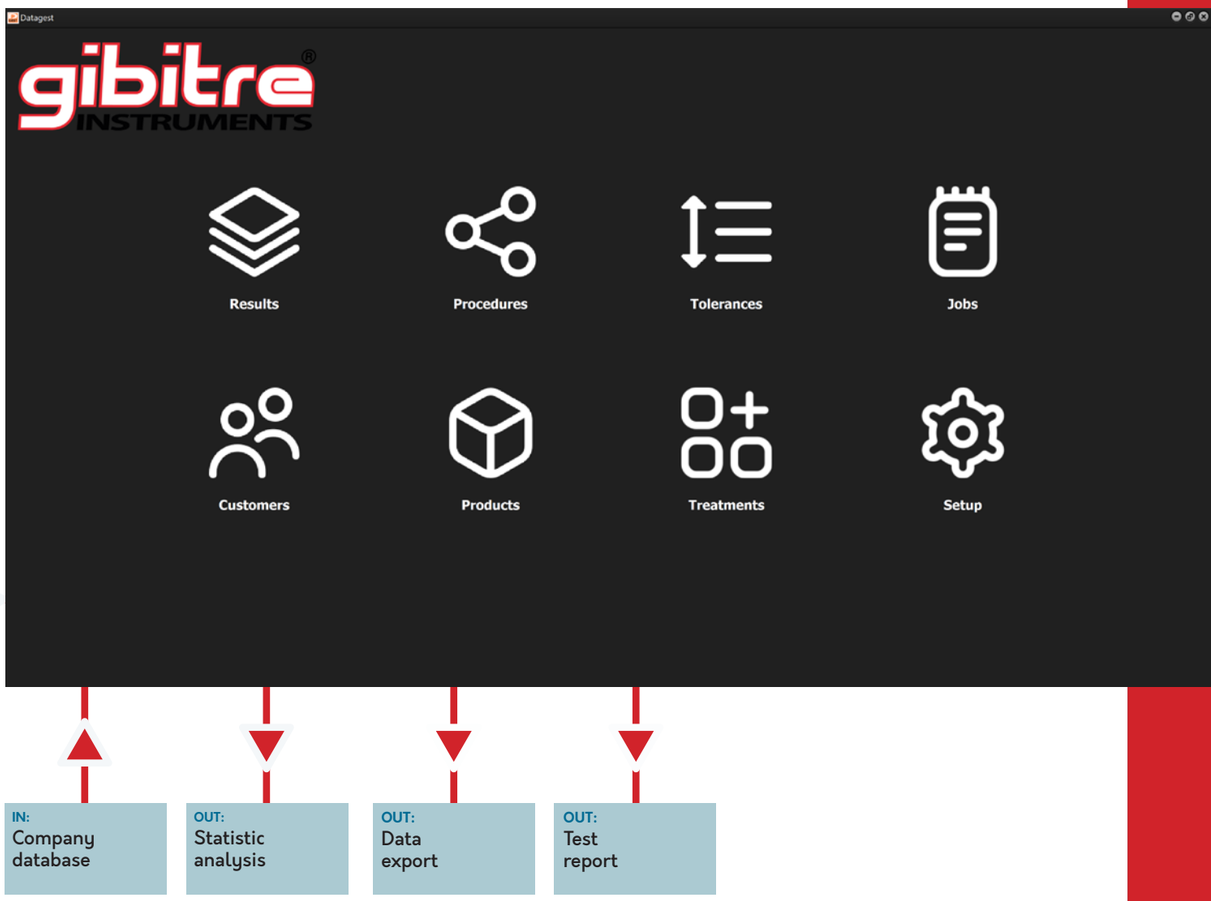


Datagest Program

The Datagest program is the database management tool always installed in combination with all Gibitre instrument-control programs.

The program permits to:

- Select, filter, print, export and analyse the test results stored with all the instruments connected.
- Prepare test procedures by defining the test conditions and the results to be produced.
- Set tolerance limits for each product by manual insertion or using the statistical analysis (mean and standard deviation) of saved results.
- Prepare multi-instrument test reports.



Industry 4.0 integration

The instrument and the software have been specifically developed to optimize integration with other environments.

The database in SQL format and the Gibitre_Company_Connect program allows you synchronize your company management software with Gibitre database and to speed up the identification of the tests and to use bar-code readers or similar devices.

The automatic logging service permits to send alarm information to the cloud-service platform of Gibitre Instruments in order to optimize the reaction times of the Service Support.

AUTOMATIC HARDNESS CHECK - DRIVE - TECHNICAL DETAILS

INSTRUMENT CHARACTERISTICS

Available hardness types	Shore: (A, D, 00, M) IRHD: (Micro, Normal, Hard, Low)
Test modality	Fully automatic test in different points of the same sample
Resolution	0.01 Hardness point
Maximum Sample Thickness	100 mm
Integrated Digital Display	Allows complete control of the instrument and display of results
Optional Software	Software for the complete control of the instrument compatible with Windows 10 and 11.

SOFTWARE

Test results calculated for each test	Shore units: Initial hardness, hardness values after set test times IRHD/micro IRHD: Hardness at 30 sec (and at set test times), Angle Coeff. of Hardness Vs Time curve, Hysteresis after load removal.
Results storage	The test result sand the curves are stored in the SQL Gibitre database which is installed in combination with the software
Regression curve analysis	Angle coefficient of Regression curve
Hysteresis analysis (irhd tests)	% recovery after set time after main force removal
Data analysis	Mean, std. Dev., min, max, Cp, Cpk of test results. X-Chart and Gaussian distribution
Graphs	Rubber Relaxation curve (hardness versus test time) in linear and logarithmics axes

CONTROL OF THE INSTRUMENT WITH DIGITAL DISPLAY

Display Characteristics	The Touch-screen display permit to start and stop the automatic execution of the test and to display the hardness reading

SAFETY DEVICES

Labelling	CE Labelling

CALIBRATION

Accredited Calibration (optional)	ACCREDIA calibration Certificate issued by Gibitre Instruments ISO 17025-Accredited Laboratory
Standard Calibration	Calibration Report conforming to ISO 48-2 (IRHD units) or ISO 48-4 (Shore Units) with traceability to primary references

TECHNICAL SPECIFICATIONS

Power supply	110-240 V, 50/60 Hz, 15 W, single phase
Dimensions	(W x D x H) 280 x 280 x 400 mm
Weight	20 Kg

PERSONAL COMPUTER (OPTIONAL)

Personal Computer (optional)	Minimum Configuration: Intel Core i5 4 GB RAM. Compatible Operating Systems: Windows 10 and 11; Connection to the instrument via USB Cable (included)

TYPE OF HARDNESS UNITS

SHORE UNITS

Shore A	Standards: ISO 48-4, ASTM D2240 Application: Soft Rubber, Plastics, Elastomers Sample standard thickness: 6 mm
	Indentor Force: 8.05 N (at 100 Shore) Contact force: 1000 g Indentation: 2.5 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore
Shore D	Standards: ISO 48-4, ASTM D2240, ISO 868 Application: Hard Rubber, Thermoplastics Sample standard thickness: 6 mm
	Indentor Force: 44.5 N (at 100 Shore) Contact force: 5000 g Indentation: 2.5 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore
Shore A0	Standards: ISO 48-4 Application: Light Foams, Sponge Rubber, Gels, Human Tissue Sample thickness: 6 mm
	Indentor Force: 8.05 N (at 100 Shore) Contact force: 1000 g Indentation: 2.5 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore
Shore 00	Standards: ASTM D2240 Application: Light Foams, Sponge Rubber, Gels, Human Tissue Sample thickness: 6 mm
	Indentor Force: 1.111 N (at 100 Shore) Contact force: 400 g Indentation: 2.5 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore
Shore AM	Standards: ISO 48-4, ASTM D2240 Application: Small Technical Articles, O-rings Sample thickness: 1.5-6 mm
	Indentor Force: 0.76 N (at 100 Shore) Contact force: 250 g Indentation: 1.25 mm Measurement Range: 0-100 Shore Resolution: 0.01 Shore

IRHD UNITS

IRHD-M (MICRO)	Standards: ISO 48-2, ASTM D1415 Application: Small Technical Articles, O-rings Sample thickness: 1-5 mm
	Pre-Load: 8.3 mN Total Load: 153.3 mN Anular Foot: 235 mN Indentation: 0.3 mm Measurement Range: 30-100 irhd Resolution: 0.01 irhd
IRHD-N (NORMAL)	Standards: ISO 48-2, ASTM D1415 Application: Rubber Parts with Hardness >30 irhd Sample thickness: 8-10 mm
	Indentor Diamater: 2.5 mm Pre-Load: 0.3 N Total Load: 5.7 N Anular Foot: 8.3 N Indentation: 1.8 mm Measurement Range: 30-85 irhd Resolution: 0.01 irhd
IRHD-H (HIGH HARDNESS)	Standards: ISO 48-2, ASTM D1415 Application: Hard Rubber Parts with Hardness >85 irhd Sample thickness: 8-10 mm
	Indentor Diamater: 1.0 mm Pre-Load: 0.3 N Total Load: 5.7 N Anular Foot: 8.3 N Indentation: 0.44 mm Measurement Range: 85-100 irhd Resolution: 0.01 irhd
IRHD-L (LOW HARDNESS)	Standards: ISO 48-2, ASTM D1415 Application: Soft Rubber Parts with Hardness <35 irhd Sample thickness: 8-10 mm
	Indentor Diamater: 1.0 mm Pre-Load: 0.3 N Total Load: 5.7 N Anular Foot: 8.3 N Indentation: 0.09-1.1 mm Measurement Range: 10-35 irhd Resolution: 0.01 irhd

VLRH UNITS

VLRH (VERY LOW RUBBER HARDNESS)	Standards: ISO 48-3 Application: Soft Rubber. Parts with Hardness < 35 IRHD Sample Thickness: 6 mm
	Indentor Diamater: 2.5 mm Pre-Load: 8.3 mN Total Load: 100 mN Anular Foot: 235 mN Indentation: 1000 µm Measurement Range: 0-100 VLRH Resolution: 0.01 VLRH

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