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# Automatic Hardness Check



- Gibitre produces Hardness testers according to Shore (A, D, 00) and IRHD (Normal, Hard, Low, Micro)
- Gibitre is accredited according to ISO 17025 standard for Hardness testers calibration





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# Automatic Hardness Check



- Single Units and Multi-unit instruments are produced.
- The instruments can be controlled both with software or electronic console.





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## Automatic Hardness Check



- Single units can be connected to the same pc using serial or usb ports.
- More units can be used at the same time and all the data are stored in the same database.



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## Automatic Hardness Check



- The multi-unit configuration permits to install up to 4 selected types of shore or irhd hardness units.
- The unit to be used is placed in the front position and is automatically recognized by the software.



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## Automatic Hardness Check

The hardness units produced by Gibitre have some unique features:

The sample holder moves automatically up and down and rotates to permit the automatic performance of tests in different points of the sample.

- The sample holder is connected to a ball-recirculation screw to ensure long duration of the lifting system.
- The IRHD units (Normal, Hard, Low and Micro) apply the pre-load and load force to the sample using a load cell.





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# Hardness Check Software

- Automatic execution of tests in different points of the sample
- Analysis of hardness relaxation and Hardness Hysteresis (IRHD)
- Automatic comparison with tolerance limits

GIBITRE INSTRUMENTS - Connect to: Hardness-MicroIRHD on COM:2

File Test Graph Database Configurations Help

**Connect**  
ISO 48 - Micro IRHD Std

Order : Test 001    Customer : Customer 01    Connect To : mIRHD  
Lot : Lot 001    Product : Gibitre Rubber R0705001  
Batch : 1    Operator :     Display Limits

Hardness : **68.42**  
Run : **.1063**  
Time **30.00**  
Auto   
Y Axe  
Max  
Min  
X Axe  
Max

Single Irhd  
Logarithmic Group

Results

N° Test	IRHD	a Num	r Num	k Num	As Num	
Max :	74.00					
Min :	64.00					
1	68.37	-4.09	0.95	73.81	23.88	
2	68.63	-5.15	1.00	75.41	18.16	
3	68.42	-4.64	0.89	74.52	20.45	

Max :	68.63	-4.09	1.00	75.41	23.88	
Min :	68.37	-5.15	0.89	73.81	18.16	
Average :	68.47	-4.63	0.95	74.58	20.83	
Dev. Std.:	0.1380	0.5301	0.0551	0.8017	2.8789	
Cp :	12.08					
Cpk :	13.35					



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## Diaphragm centering device for O-rings

- The device is used in combination with the Micrometric Slide (code 8-HS0-44-000-0) and enables automatic multiple tests to be carried out on O-ring or round parts with external diameter up to 75 mm.
- The use is very simple:
  - 1) set on the manual gauge-meter of the sliding system the dimension of the o-ring to be tested  $(\text{internal diameter} + \text{cord})/2$  to centre it correctly.
  - 2) put the o-ring on the Diaphragm centring and fix the o-ring slightly using the open-close leverage
  - 3) Start a multiple test session to make automatically tests in different points of the sample.
- When you test different o-rings of the same kind, no regulation is required between one o-ring and the next one
- The distance between the plate and the diaphragm can be regulated according to the cross-section of the o-ring.
- The Y axe position is automatically centred due to the mechanical construction of the instrument





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## Microcylinder centering device for O-rings

- The device is designed for the quick centring of O-rings or cylindrical parts independently from the diameter. This device permits to make one test on the sample and requires manual re-positioning of the sample between one tests and the next.
- This device is mounted directly on the standard plate of the instrument.
- The use is very simple:
  - 1) the sample is placed between the vertical micro-cylinders.
  - 2) The position of the micro-cylinders is regulated using the handle to fix the sample in the middle.
  - 3) The middle position of the micro-cylinders is the correct centring point for the test.
- The height of the micro-cylinder can be regulated using the regulation ring according to the cross-section of the sample.
- The Y axe position is automatically centred due to the mechanical construction of the instrument





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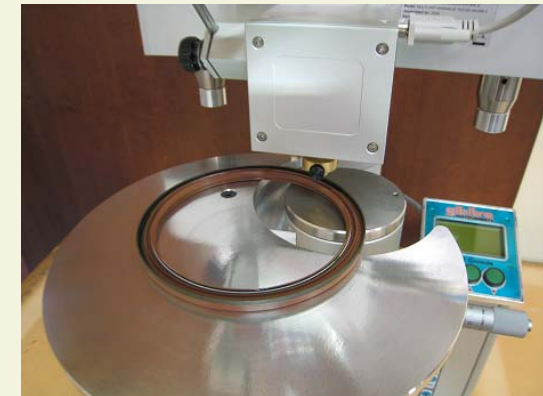
## Centering device for tubes

- The device positions a piece of tubing for testing.
- Note: this device permits to make one test on the sample and requires manual re-positioning of the sample between one tests and the next.



## Extension of sample holder

- Aluminium extension to be applied to the sample holder for the testing of hardness of big samples.





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## Laser Centring Device

The device includes:

- - Class 1 laser Sensor that detects the maximum thickness point of the part being tested
- - Motor-controlled slide that moves the sample to perform the test in the optimum test position.
- For the performance of the test the user must simply place the sample on the sample holder in the test area and press start.

The instrument:

- - finds automatically the optimum test point of the sample
- - measures the thickness of the sample in the test point.
- - moves the sample in the test position
- - performs the hardness test in the optimum test point
- - moves back to the start point to prepare for the next test.

