



CCSi features the Gibitre™ IRHD Systems for evaluating the durometer hardness of elastomers and most polymers. The IRHD hardness systems are available in both the Standard (Types N, L, & H) and Micro IRHD Types as specified in [ASTM D1415](#), [DIN 53519](#), & [ISO 48](#).

The Gibitre™ IRHD Systems are available in two configurations:

- Model EC (electronic console), Micro and Standard;
- Model PC (computerized), Micro and Standard. The Micro is shown above at the far left.

These models both employ the same IRHD components, the difference being the degree of test process control, reporting options, and data output as discussed further.



The Standard IRHD configuration (Types N, L, H) of the Gibitre™ IRHD automatic hardness instruments is equipped with a motorized specimen handling and rotation device. The specimen is first manually positioned and properly aligned on the specimen support platform.

The Y-axis, or height, is adjusted (either automatically or manually), and the test is automatically performed. After each sequence, the specimen is rotated and tested at a pre-selected number of points.


Each test determination is performed precisely, without the intervention of the operator, and the results are recorded and tabulated by the software. This vastly improves both the accuracy and speed at which tests can be performed!

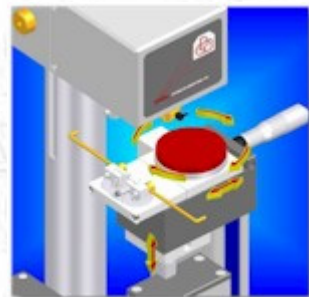
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The rotation of the specimen platform for the Gibitre™ Micro IRHD is also automatically controlled, and like the standard platform (shown above left) the height is also fully adjustable.

The X-axis positioning of the Gibitre™ Micro IRHD specimen support platform is adjusted with an integral dial type 'micrometric' micrometer, assuring precise positioning of the specimen. The Y-axis, or height, is adjusted (either automatically or manually), dependent on the model.

Additionally, two adjustable 'tweezer' arms may be employed to secure the position of the specimen during the test cycle.

 The 'micrometric' platform and 'tweezer' support features are *standard* on the Model PC and *optional* on the Model EC.



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Gibitre™ IRHD Systems: Model EC – Electronic Console



The Standard and Micro IRHD instruments can be controlled by the electronic console. The digital LCD displays five test determinations, producing a single test result. The test information displayed includes:

- Test Type (Micro IRHD, L, N, or H)
- Test Determination Number;
- Individual Hardness Values (1 - 5);
- Arithmetic Mean;
- Standard Deviation.



The keyboard allows the operator to control instrument's functions and the test sequence. This also accommodates repetition of a failed test during a test series. The standard console has a serial data output port for printing of the test results in an ASCII tabular format. The information that may be printed includes that which is displayed (listed above) as well as:

- Company (Operator) Name;
- Date and Time;
- Test Code (discrete test identification number).

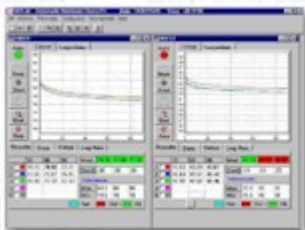
Gibitre™ Model EC *Optional Equipment*:

- Micrometric support platform with adjustable 'tweezer' arms;
- Electronic console with an integral 24 column printer;
- Diaphragm positioning devices (see below) for positioning and automatic measurement;
- Positioning devices for specific requirements.

#### Gibitre™ Model EC: Specifications

Applicable Standards:	ASTM D1415; ISO 48; DIN 53 519-1 & DIN 53 519-2
Test Types:	IRHD (N, L, H, & Micro)
Test Modality:	fully automatic, up to 5 test determinations
Test Time:	standard test time (dwell)
Test Data:	<ul style="list-style-type: none"> <li>● test &amp; sample identification information;</li> <li>● average of up to 5 determinations;</li> <li>● standard deviation;</li> <li>● arithmetic mean;</li> <li>● nonconforming tests may be repeated or excluded.</li> </ul>
Test Resolution:	0.1 IRHD units throughout the scale
Calibration:	calibration report with traceability to primary reference standard
Language Options:	English, German, Italian, French, Spanish
Power:	220 VAC ± 10%, 50 Hz ± 3 Hz, 4 A, 1 PH, 40 Watt
Test Unit Weight:	30 kg (67 lb.)
Test Unit Dimensions: (width x depth x height)	200 x 200 x 500 mm (8 x 8 x 20 inch)

#### Gibitre™ IRHD Systems: Model PC – Computer Controlled



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The Model PC IRHD Software features:

- Windows® 98, 2000, ME, NT4, & XP compatible software;
- 'Dwell' time for hardness determinations are software selectable;
- Individual Average and Standard Deviation calculations on specimens may be independently excluded, or repeated, if they are beyond the range of predetermined compliance objectives;
- Logarithmic and Linear 'Hardness Relaxation Curves' may be both viewed and printed;
- Calculation of regression in logarithmic scale includes both direction and correlation coefficient;
- Tabular Data may be both viewed and printed;
- Results filed in a standardized database (Paradox: CSVs, SSVs, etc., exportable);
- User's personalized test certification, printable in many languages;
- Available languages for screen and/or print formats include English, Italian, French, Spanish and German;
- Software operating manual;
- Software CD-ROM (installation and safe storage);
- A network version of the IRHD Software is available featuring Microsoft SQL (MSDE) database software.

The minimum required computer hardware (customer supplied or available as an option) is a Pentium® III class processor, 400 MHz front-side bus, 32 MB video RAM, and 128 MB of system RAM. A Microsoft Windows® operating system of WIN98 or higher is also required.

## Gibitre™ IRHD Systems Model PC: Specifications

Applicable Standards:	ASTM D1415; ISO 48; DIN 53 519-1 & DIN 53 519-2
Test Types:	IRHD (N, L, H, & Micro)
Test Modality:	fully automatic, up to 5 determinations
Test Time:	<ul style="list-style-type: none"> <li>● standard test time (dwell)</li> <li>● user selectable test times</li> </ul>
Test Data:	<ul style="list-style-type: none"> <li>● test &amp; sample identification information</li> <li>● average of up to 5 determinations</li> <li>● standard deviation</li> <li>● mean</li> <li>● relaxation curves (during dwell time)</li> <li>● nonconforming tests may be repeated or excluded</li> </ul>
Graphed Data:	<ul style="list-style-type: none"> <li>● relaxation curves (hardness variation during dwell)</li> <li>● linear and logarithmic</li> </ul>
Tabular Data:	<ul style="list-style-type: none"> <li>● test &amp; sample identification information</li> <li>● measurement determinations</li> <li>● standard deviation</li> <li>● mean</li> <li>● min/max tolerances</li> </ul>
Test Resolution:	0.1 IRHD units throughout the scale on all types
Tolerance Verification:	automatic comparison of user defined tolerances to actual test results
Calibration:	electronic calibration report with traceability to primary reference standard
Hardware:	Minimum Configuration (customer supplied): <ul style="list-style-type: none"> <li>● Pentium® III class processor</li> <li>● 32 MB video RAM</li> <li>● 128 MB system RAM</li> <li>● 400 MHz FSB</li> </ul>
Software:	Windows® 98, ME, 2000, XP, NT4 compatible program fully automates testing cycles & data acquisition
Language Options:	English, German, Italian, French, Spanish
Power:	220 VAC ± 10%, 50 Hz ± 3 Hz, 4 A, 1 PH, 40 Watt
Test Unit Weight:	30 kg (67 lb.)
Test Unit Dimensions: (width x depth x height)	200 x 200 x 500 mm (8 x 8 x 20 inch)

## Gibitre™ IRHD Systems: Optional Equipment



Optional O-ring Fixture

There are two diaphragm type positioning devices available as options for the Micro IRHD configuration which designed specifically for the hardness testing of o-rings. One accommodates o-rings up to 42 mm in diameter (shown at left), and the other for o-rings up to 75 mm in diameter.

Controlled by the rotation mechanism, the test determinations are obtained virtually 'hands-free' ... eliminating the arduous task of specimen repositioning.

The optional 'tubing' specimen positioning fixture accommodates samples of diameters up to 50 mm. This device can also be used for hose, gloves and condoms. Custom designed fixtures are available for virtually any specimen configuration.

Also available as an option, is a fixture for the positioning of wire, cable, and other symmetrically shaped test specimens. This is especially useful for testing wire insulation.



Optional Tubing Fixture



Optional Wire Fixture

Part Number	Description
8-H02-00-000-0	Standard IRHD Instrument (Type L, N, H)
8-HM2-00-000-0	Micro IRHD Instrument
HAR 05s	Standard Version 5.0 IRHD System Software
HAR 05n	Network Version 5.0 IRHD System Software
8-HC0-00-000-0	Electronic Console with Serial Output
8-HC1-00-000-0	Electronic Console with Integral Printer
8-H00-00-999-0	Certified Test Block Kit for Standard IRHD
8-HM1-00-999-0	Certified Test Block Kit for Micro IRHD
8-HM1-55-000-0	Micro IRHD 'Micrometric' Specimen Platform
8-HM1-70-000-00	42 mm 'Diaphragm' Type O-ring Fixture
8-HM1-71-000-00	75 mm 'Diaphragm' Type O-ring Fixture
8-HM1-65-000-0	'Tubing' Sample Positioning Fixture
8-HM1-65-000-0	'Wire' Sample Positioning Fixture
7-500-00-006-0	Spare Parts Kit for Standard IRHD
7-500-00-005-0	Spare Parts Kit for Micro IRHD

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