THE EXACTA® Series

Durometer & IRHD Hardness Testing Systems

Precision Instruments For Testing Rubbers & Plastics

NEWAGE Testing Instruments, Inc.
The handheld durometer provides the highest level of craftsmanship, equal to the mechanical systems of precision bench models.

EXACTA
HP Series Handheld Durometers

Precision Durometers
With a Range of Capabilities
And Dependable Operation

The EXACTA handheld durometers are manufactured with the highest levels of craftsmanship (according to ASTM D2240, BS 903 Part A 26, and DIN 53 505) so they maintain the highest levels of accuracy. These durometers are manufactured using a rigid aluminum body which holds a precise spring-loaded measuring system. This measuring system is very linear, unlike competitive durometers which simply rely on a spring for the entire range of operation. Another feature of the EXACTA is the ability to adjust the calibration if the linearity or accuracy drift off the mark. Some durometers have no mechanism for adjustment of the linearity and in other cases no adjustment for the accuracy.

An important feature of the EXACTA durometers is the swivel arm that swings around to cover the indenter and protect it from damage when the tester is not in use. Deformation of the indenter can be equally significant for maintaining accuracy as calibrating the load.

The EXACTA durometers may be attached to test stands. (See facing page.) Two models are available. The HP-100T applies the load to the durometer by means of a lever so the loading is more consistent. The HP-100TX uses the same load application together with a timer.

Features of NewAge Durometers
• Highest durability and accuracy available.
• Models for all scales - A, B, C, D, DO, O, OO, and foam.
• Range of options, and stands to match any handheld application.

The Digital Durometer
The Digital durometer is a one-of-a-kind tester that enables operators to obtain with a resolution of 0.1 points, automatically store up to 2400 test results, and perform functions like automatic averaging of sample groups. Other features tolerance settings, automatic time-at-load prompts, date and clock settings so the data can be printed out with a time stamp, lot and sequence numbers, and a variety of reports. Other reports provide a hard copy of the test values, a graph showing the rheological properties, X-bar & R charts, histograms, and statistical values. Finally, test values can be transmitted to the serial port of a computer after testing is complete. A setting for the baud rate can be adjusted to most common parameters.

The Digital Durometer is a unique tester that has useful built-in functions like averaging, tolerances, reports, and a built-in timer to prompt for proper time-at-load.
EXACTA Plastic & Rubber Bench Testers

Precision Hardness Testing Instruments That Combine Exceptional Accuracy With a High Level of Utility

The Exacta Series hardness testers provide significant quality advantages for testing in the durometer and IRHD scales. Operators are able to test repeatably to tenths of a point. Even more significantly, operators can obtain the same results between laboratories. Testing smaller parts, like O-rings, magnifies these quality advantages.

The utility of the Exacta Series testers is due to the fact that this is a complete family of plastic and rubber hardness testers ranging from basic handheld durometers up through the most sophisticated test system available. Test heads are readily interchanged, enabling all scales to be tested on a single stand. Also, each of these testers has a range of features and capabilities that is more extensive than any other manufacturer. Components are available to test products from small O-rings to large rubber rollers to packed powders. There are software capabilities for storing data, averaging any number of tests, or printing X-Bar & R chart printouts and more.
A Wide Range of Capability

“Micro” load range test heads provide the capability to test materials down to .05” in the Micro A scale or from .04” to .08” thick in the IRHD micro range, depending on the hardness.

The Universal O-Ring Fixture adjusts quickly for a range of O-ring sizes using the micrometer head. The fixture slides out from under the penetrater for loading the O-ring and then slides back to a preset position under the indenter.

The specimen load weight and a light preload seat the specimen and indenter firmly prior to applying the full load so there is less inconsistency due to deflection under load.

The Calibration fixture is used for accurate checking of loads at 10 point increments as specified in ASTM D-2240. A quick field check device can also indicate accuracy at the 0 and 100 points.

Four Product Lines

Refer to back cover for individual components listing:

The HP Series Handheld Durometers
The NewAge HP Series Durometers come in a variety of scales and operate with any HP Series stand. The stands use a lever to apply the load consistently. One model is available to control time-at-load.

The 100 Series Analog Testers
The analog 100 Series operates with Durometer A or D, IRHD-Regular, and IRHD-Soft test heads. There is a timer to indicate time-at-load.

The 200 Series Digital Testers
The 200 Series provides the maximum capability and flexibility. It operates with A, Micro A, D, Micro D, IRHD, IRHD-Soft, and IRHD-Micro scales heads. Many optional components like the O-ring fixture can be attached, and the built-in software can store and manipulate data and generate many reports.

The 300 Series Digital Production Testers
The 300 Series is designed for production testing. It includes the same stand as the 200 Series with digital A and D scale durometers, and optionally, a motor drive to reduce operator influence.

Modular Design

All of the test stands have interchangeable components within each series so, for example, Series 200 components fit the Series 200 stand. Each stand can hold a range of test heads, so if a tester is purchased with a single head, others can be added at a later time. Also, these components can be added or removed easily. A quick release lever holds the bracket on the stand, and most test heads are easily unscrewed from the brackets.

One of the great advantages of the Exacta Series is all the options and unique components of the system.

1. One of the most basic refinements is the magnifying glass. When working with small or round parts, precise positioning can be important.

2. The O-ring fixture provides precise positioning for a large range of O-ring sizes. It has micrometer controlled, self-centering adjustment for the wall thickness of the O-ring in the horizontal plane and another adjustment in the vertical plane. The entire mechanism slides from under the indenter for easy placement and removal of the O-rings.

3. Indenter extensions are available in a number of lengths.

4. Gage blocks are used for a quick check of the operation of the unit. The gage blocks are greatly preferable to unreliable test blocks which may change hardness over a period of time.

5. Unique indenter configurations are available for testing gel caps, packed powders, and plastic foams. Custom software and fixtures have been produced and NewAge Industries can provide quotes for custom programming or production of fixtures.
NewAge has created a variety of special applications, like packed powder and gel capsule testers (below) requiring special indenters. Custom software has also been produced.

The Exacta is constructed like a precision watch. Every aspect of manufacture is kept to the highest industry standards. One example is the use of bearings to prevent frictional inaccuracies.

Dozens of functions can be controlled through the electronics: Automatic averaging test results of any group size, tolerances, control limits, time-at load, communication protocols, and numerous different printed reports. Custom software functions can also be created.

Exceptional Quality

Every aspect of the Exacta tester is designed to provide the highest levels of accuracy. Unique features include all-metal construction, bearings on main friction points, and advanced electronics. These features combine to make a true test instrument that stands out in a field where durometer testing is often perceived to be inexact.

Another unusual feature is the specimen load weight which holds the sample tightly to the anvil. (Refer to the picture above.) On the 100 and 200 Series this weight eliminates sample deflection under load, which introduces error. Likewise, the light preload that is applied prior to applying the test load provides a good starting point for the measurement. It also removes error.

A simple accuracy check can be performed at any time that will determine if the zero and 100 points are accurate. Advanced calibration is possible with the calibration stand, model EX-006. The design of the Exacta makes it possible to adjust the linearity of the tester, as opposed to many competing models which do not allow such adjustments.

All these features add up to provide the highest levels of repeatability and reproducibility available by any plastic/rubber hardness testers in the world.

Sophisticated Electronics

The 200 and 300 Series have an array of digital outputs and capabilities: Multiple files can be created with separate scales and tolerance settings so test results can be kept in separate databases to track the history of samples. Alternately, the communication protocol is easily adjustable using the software so the data can be downloaded to a computer. Other main electronic functions are:

- Time-at-load settings that reduce the effect of operator influence by eliminating the “spike” at the beginning of the test.
- Automatic averaging of test results in group sizes defined by the operator.
- Tolerances for peak and final values, control limits, and range.
- Printed reports for: data with tolerances, time and date; X-Bar & R Charts; graphs showing the hardness/time curve; statistical reports with results; and histograms of the data.

Many types of reports are available including X-Bar & R charts, histograms, statistics, data with tolerances, dates, and times.
# EXACTA

## Models and Accessories

### HP Hand Held Durometer Series

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<td>Digital Test Stand</td>
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<td>HP-AR A Scale Durometer - 1 point increment dial</td>
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<tr>
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<td>Options</td>
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<td>HP-O O Scale Durometer - 1 point increment dial</td>
<td>EX001SO Durometer O Indenter - 100 &amp; 200 Series</td>
</tr>
<tr>
<td>HP-OO OO Scale Durometer - 1 point increment dial</td>
<td>EX001SD Durometer D Indenter - 100 &amp; 200 Series</td>
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### Digital Durometers

| HP-AR/D A Scale Digital Durometer with SPC | EX001RS Soft IRHD Indenter for 200 Series |
| HP-DR/D D Scale Digital Durometer with SPC | EX001IRM Soft IRHD Micro Test Head (includes bracket) |

### Durometer Stands

| HP-100T Test Stand (includes bracket) | EX001DE15 15mm diameter presser foot |
| HP-100TX Test Stand w/built in timer (includes bracket) | EX001DE20 20mm diameter presser foot |

### Test Fixtures and Accessories

- **Indenters**
  - EX001SA Durometer A Indenter - 100 & 200 Series
  - EX001SB Durometer B Indenter - 100 & 200 Series
  - EX001SO Durometer O Indenter - 100 & 200 Series
  - EX001SD Durometer D Indenter - 100 & 200 Series
  - EX001IR Normal IRHD Indenter for 200 Series
  - EX001RS Soft IRHD Indenter for 200 Series
  - EX001IRM Soft IRHD Micro Test Head (includes bracket)

- **Options**
  - EX001DE10 10mmn Platform Indenter
  - EX001DE15 15mm Platform Indenter
  - EX001DE20 20mm Platform Indenter
  - EX001X Custom Indenters

- **Heads**
  - EX200/300T Digital Test Stand
  - EX300BR Head Bracket for Production Test Heads
  - EX300SA Regular Shore A Production Test Head
  - EX300SD Regular Shore D Production Test Head

- **Bracket**
  - EX300MT Test Head Bracket Motor Drive

- **Stand**
  - EX300 Digital Production Series
  - EX300/300G Digital Gel-Cap Test Stand
    - Includes: motorized elevating stage, Gel-Cap software
  - EX300/300T Digital Test Stand
    - Includes: motorized elevating stage, Gel-Cap software
  - EX300 Digital Production Series
    - Includes: motorized elevating stage, Gel-Cap software

### Gel-Cap Tester (for Pharmaceutical Testing)

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<td>EX200N01 0-1 Newton Head w/10mm dia. presser foot</td>
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<tr>
<td></td>
<td>EX200N10 0-10 Newton Head w/10mm dia. presser foot</td>
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<tr>
<td></td>
<td>EX200N20 0-20 Newton Head w/10mm dia. presser foot</td>
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### NewAge Industries manufactures a complete line of hardness testing equipment for:
- Rockwell, Brinell, Microhardness, and Durometer Scales
- In portable, bench, and custom in-line styles.
- Test Blocks, Indenters, and other accessories are also available.

### Represented by: