

# twilight

INSTRUMENTOS DE MEDICIÓN INDUSTRIAL

## Durómetro Análogo Tipo A Modelo E2A, Asker-Imada IM-E2A

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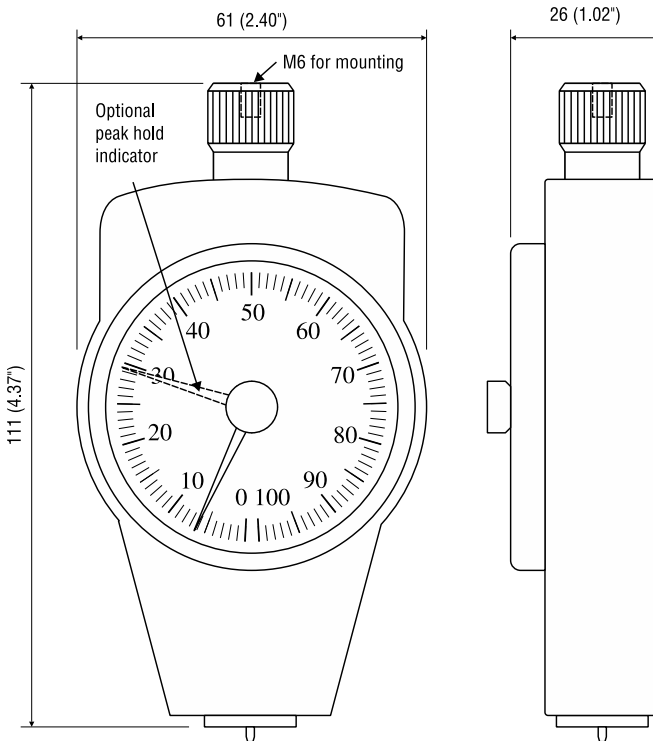
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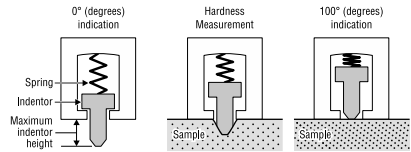
# Durometer E2 Series



## INSTRUCTION MANUAL

## How the E2 durometer works

By pressing the indenter into a surface, the material resistance force and the indenter spring force balance, whereby the depth of the indenter is measured providing the hardness of the material on a scale of 100 points.

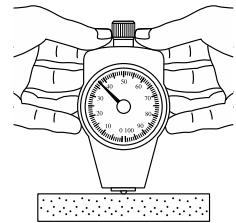


For example, if the indenter doesn't move into the body of the durometer, the measurement is zero. If the indenter moves all the way into the body of the durometer, the measurement is 100. Results vary depending on the depth the indenter moves into the body of the durometer. Therefore it is not consistent but increases linearly as it indents.

E2 durometers conform to both ASTM D2240 and ISO specifications.

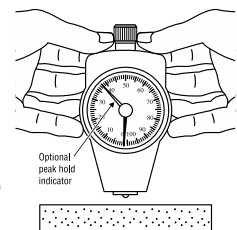
## How to use the E2 durometer

1. Place the sample material horizontally on a hard surface.
2. Hold the durometer between both hands over the material so that the indenter touches it.
3. Push down perpendicularly to the test material until the presser foot makes firm contact.
4. Take a reading.



## With Optional Peak Indicator

1. Make sure the peak indicator is set to zero.
2. Place the sample test material horizontally on a hard surface.
3. Hold the durometer between both hands over the material so that the indenter touches it.
4. Push down perpendicularly to the test material until the presser foot makes firm contact.
5. Lift the durometer and read the result from the peak indicator.
6. Before taking another reading, reset the peak indicator to zero and repeat the process.



Several tests should be made on a given sample and the results averaged. When recording hardness results, the following should be noted:

1. The temperature and humidity at the time of the test.
2. The time interval (in seconds) that elapses after the presser foot makes firm contact and the reading is made.

### **How to improve measurement accuracy**

The surface to be tested must be flat, clean and smooth. (The maximum allowable surface roughness is  $\pm 0.001''$ ). The test piece size must be at least  $.75'' \times 1.75''$  and thicker than  $.25''$  (6mm). If the sample is thinner than  $.25''$  (6mm), several layers of the same material can be stacked on top of each other (do not glue layers together) making sure there is no air between the layers.

You may take measurements from samples that do not conform to the above requirements, but test results should be used only as a reference.

It is recommended that you select different locations on the sample for each measurement, at least  $.25''$  away from any previous measurement. Keep your measurements at least  $.5''$  from all edges.

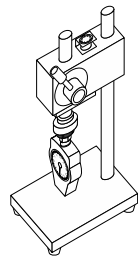
Higher readings result when pressing the durometer down fast (more force) and lower ones when pressing down slowly. To ensure consistent measurements apply consistent force.

Also, measurements may vary slightly if read at different times after taking the measurement. For example, you may get a slightly different reading if you read the result immediately versus 30 seconds later. Therefore, it is recommended that this aspect of measuring be consistent.

It is recommended that readings less than 10 and above 90 be avoided.

If you are using a durometer after it has been stored for a while, press the indenter on a surface about 20 times before using it.

Eliminate speed and weight variables with a constant load stand. Available with pneumatic speed control and flexible coupling or standard weight model.



### **IMPORTANT**

Avoid applying a shock load to the indenter.

When storing, avoid environments that are humid, dusty or oily.

Do not lubricate.

Keep the indenter clean and free of scratches.



## Troubleshooting

Checkpoint	Solution
1 Is the indenter shape correct?	Use an optical projector to accurately check the shape and dimensions of the indenter.
2 Is the indicator needle firmly mounted on the axle?	Press the indenter on a very hard surface so the needle points to 100.
3 Is the indenter height correct?	Make sure the needle points to zero without any pressure on the indenter.
4 Is the durometer mechanism working properly?	Height gauge is sold separately. Use it to make sure the durometer corresponds to the appropriate number (2, 50, 100 points).
5 Is the indenter pressure correct?	Apply accurate force and make sure the durometer indicates the specific hardness.

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3100 Dundee Road, Suite 707, Northbrook, IL 60062

1-866-527-4666 • Fax: 847-564-2095

[www.hoto-instruments.com](http://www.hoto-instruments.com) • E-mail: [info@hoto-instruments.com](mailto:info@hoto-instruments.com)

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INSTRUMENTOS DE MEDICIÓN INDUSTRIAL



LLÁMANOS

+52(81) 8115-1400 / +52 (81) 8173-4300

LADA Sin Costo:  
01 800 087 43 75

E-mail:  
[ventas@twilight.mx](mailto:ventas@twilight.mx)

[www.twilight.mx](http://www.twilight.mx)



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