



ASTM D3767 Thickness Gauge

**ELAS TEK** ElaTek Products  
by CCSi

The ATG Series Gauges are specifically engineered for measuring the thickness of all types of test specimens, where conformance to [ASTM D3767](#) Procedures A, A1, or A2 is necessitated. Although configured for D3767 dimensional measurements, the gauges may also be used for “standard measurements” ... virtually eliminating the need for multiple or dedicated gauges.

Each of the ASTM D3767 thickness gauges is individually assembled and calibrated to assure that the inherent frictional resistance of the mechanism, as well as the force introduced by the mass of the movement assembly, are ultimately considered. Additionally, each mass is matched to the selected stem and contact combinations to attain an optimal “pressure” profile.

Supplemental stem, mass, and contact sets are available to allow this analog gauge to be easily modified to measure virtually any size and hardness combinations of test specimens. Simply replace the exchangeable mass, contact, or stem to suite the application!

The granite base provides an accurate reference plane as well as a stable support, the mass being sufficient to prevent unintended movement. It is a hard, smooth contact surface, which is easily cleaned and impervious to most environmental effects.

 Index Terms: dimension; measurement; 83.060; specimen support fixture; thickness gage; thickness gauge; dimensional measurement; ASTM D3767; dial indicators; digital indicators.

#### ElaTek™ ASTM D3767 Analog Thickness Gauge: Features

##### Analog Indicator:

- Large Dial Readout;
- Revolution Counter Eases Determinations;
- Indicator Resolution: .01 mm / .0005 in;
- 25.4 mm (1 inch) Stem Travel (lifting lever included);
- 5.6 and 9.525 mm (0.250 and 0.375 in) diameter contacts included;
- NIST Traceable Certified Mass (matched to 9.525 mm contact foot).

##### Gauge Support:


- Granite Base:
- Laboratory Grade AA;
- NIST traceable Certificate of Accuracy;
- 152.4 x 152.4 x 50.8 mm (6 x 6 x 2 inch).

##### Support Column:

- Diameter: 31.75 mm (1.25 inch) Ø;
- Height: 203.2 mm (8 inch);
- Throat Depth: 1.75 inches (44.45 mm);
- Maximum Height: 152.4 mm (6 inch), less indicator;
- Fine height adjustment knob.

#### ElaTek™ ASTM D3767 Analog Thickness Gauges: Contact Foot / Mass Selection

It is widely recognized that the hardness of many materials is not routinely determined employing [ASTM D1415 Standard Test Method for Rubber Property – International Hardness](#) or International Rubber Hardness Degrees (IRHD). As a matter of practicality, the value of 35 IRHD may be supplanted with a value of [ASTM D2240](#) Type A 40/1. However, it is imperative that materials be tested to determine their actual IRHD value, and that any correlation between the two values shall be ascertained on a material specific basis in an empirical fashion.

 Please note that the contact / optimal mass selection given below, and in ASTM D3767, is *intended as a guide*. Any appropriate combination, in that the proper pressure is applied to the test specimen, may be used to suite a particular application. Commercially available contacts may also vary from the stated diameters, hence the mass used with them will change accordingly.

The “Optimal Mass” may be considered that which would cause the pressure (kPa / psi) to be applied by a “contact” of the stated diameter with no gauge or mechanism involved, as if by gravity, as given below ([ASTM D3767](#) Table 1):

| Materials Above 35 IRHD: Application of 22 kPa (3.2 psi) |              |              |              |
|--|--------------|--------------|--------------|
| Contact Diameter Ø                                       | Optimal Mass | Maximum Mass | Minimum Mass |
| 10.0 mm  | 176 g        | 215 g        | 138 g        |
| 8.0 mm   | 113 g        | 138 g        | 88 g         |
| 6.3 mm   | 70 g         | 85 g         | 55 g         |
| 6.0 mm   | 63 g         | 77 g         | 50 g         |
| 5.0 mm   | 44 g         | 54 g         | 34 g         |
| 4.0 mm   | 28 g         | 34 g         | 22 g         |
| 3.2 mm   | 18 g         | 22 g         | 14 g         |

| Materials Below 35 IRHD: Application of 10 kPa (1.5 psi) |              |              |              |
|--|--------------|--------------|--------------|
| Contact Diameter Ø                                       | Optimal Mass | Maximum Mass | Minimum Mass |
| 10.0 mm  | 80 g         | 97 g         | 64 g         |
| 8.0 mm   | 52 g         | 62 g         | 41 g         |
| 6.3 mm   | 32 g         | 38 g         | 25 g         |
| 6.0 mm   | 29 g         | 35 g         | 23 g         |
| 5.0 mm   | 20 g         | 24 g         | 16 g         |
| 4.0 mm   | 13 g         | 15 g         | 10 g         |
| 3.2 mm   | 8 g          | 10 g         | 7 g          |

**ElasTek™ ASTM D3767 Analog Thickness Gauge: Bradnick–Warner Specimen Support Fixture**



Bradnick–Warner Specimen Support Fixture

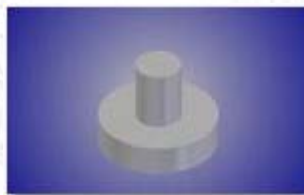
The *optional* Bradnick–Warner Specimen Support Fixture, as described in [ASTM D3767](#) (refer to Figure 3 of the method), is designed for use with the dimensional measuring instruments described Procedures A, A1, and A2.

This device is designed to accommodate specimens which are small, thin, or irregularly shaped. It is placed over the instrument platform and is secured with a standard ¼–20 hexagonal bolt.

The fixture's base has a centrally located orifice to accept various inserts, either the 3 standard inserts (included), those which are designed for special use (available on request), or those designed for use with other instruments, such as the Shore® Type M MicroHardness Durometer, also available from CCSi.



Standard Base Insert



Standard Cylindrical Insert



Standard Domed Insert