

CCSi *Ultra-Life* Specimen Mold: ASTM D813



D813 *Ultra-Life* Specimen Mold

CCSi *Ultra-Life* molds are designed, engineered, and manufactured to produce high quality specimens, over an extended service life!

CCSi manufactures this specimen mold for the evaluation of the crack growth of vulcanized rubber when exposed to repetitive flexing, as described in [ASTM D813](#) “*Standard Test Method for Rubber Deterioration-Crack Growth.*” This test is also referred to as the DeMattia (De Mattia) Flex Test.

ASTM D813 requires that “... the test specimens shall consist of molded or cut strips, conforming to the shape and dimensions [given therein]...” The term “cut strips” refers to cutting specimens from a molded sheet of the specified configuration. However, preparing the specimens in a multi-cavity mold has become the preferred method of preparation.

The preference for employing a multi-cavity mold is due, largely, to the savings in preparation time, manpower, and producing more dimensionally precise test specimens

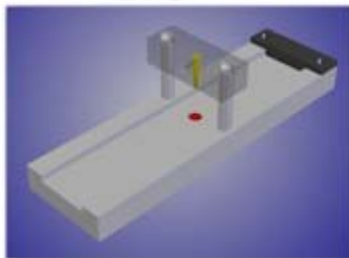
CCSi *Ultra-Life* Piercing Tool & Piercing Tool Holder: ASTM D813

ASTM D813 procedures also require that the test specimen be punctured by a special *piercing tool*. CCSi provides the specimen *piercing tool* and offers a *specimen holder* specifically designed for the purpose of securing the specimen and providing accurate, precise, and repeatable punctures... sample-to-sample, batch-to-batch! These are available individually, or as part of a complete *specimen piercing apparatus*.

The CCSi *specimen piercing apparatus* is of a unique and innovative design. The platen of the *specimen holder* has a circular orifice containing a compression molded polypropylene disc, which acts as a receiver for the *piercing tool*. Upon penetration of the specimen, there is no metal-to-metal contact of the constituent parts, as is the case with typical designs.



Piercing Tool



ASTM D813 Piercing Apparatus

This prolongs the life of both the *specimen holder* and *piercing tool*, while improving test determinations by maintaining a sharply formed piercing edge and not deforming the receiving platen.

The receiver for the compression molded polypropylene discs contains a ‘bored-through’ orifice facilitating the disc’s replacement. The contact surfaces of the poly discs are flat and parallel and may be used on either side, further improving cost effectiveness.

The components of the *specimen piercing apparatus* or of the same high quality materials, manufacturing, and design processes as the *Ultra-Life* Specimen Molds and Cutting Dies.

CCSi *Ultra-Life* Specimen Molds: Quality Manufacturing

CCSi *Ultra-Life* molds are manufactured from homogenous, solid, high carbon content A2 mold steel. Each undergoes precision grinding and CNC (Computer Numerical Control) machining to exacting requirements. The mold cavities are expertly honed and hand polished, after which the mold is industrial chrome plated.

Precision grinding ensures a parallel surface profile of the platens and CNC machining provides ultra-close dimensional tolerances, while the honing and polishing processes guarantee smooth, true specimen cavities.

The durable, hard chrome finish resists the corrosive and adhesive effects of most compounds, greatly improving overall durability and ease of maintenance. Optional finishes and cavity coatings are available.

The CCSi *Ultra-Life* mold platens are thicker than standard molds, providing superior heat and pressure distribution, as well as extending the mold’s useful life by resisting distortion. This also allows the overflow recesses to be deeper, reducing problems associated overfill. The platens are positively positioned with precision guide pins and receivers ... assuring precise closure!

CCSi *Ultra-Life* Specimen Molds: Innovative Design

CCSi *Ultra-Life* molds feature a unique cam-action hinge design which improves the critical distribution of pressure. Typical ‘fixed-hinge’ designs cause material to flow, outwardly, from this constraining point. This uneven application of pressure may cause excessive overfill, or cavity voids. The cam-action hinge design has all of the advantages of ‘stacked plate’ molds, combined with the convenience of ‘fixed-hinge’ designs!

The handles are manufactured from 304 stainless steel (a chromium - nickel austenitic alloy) and contain integral support pins. This allows the handles to rotate, which facilitates opening the mold. The handles are ergonomically positioned to ease placement and removal from the heated laboratory press.

Large triangular pry slots are located at the corners, opposite the cam-action hinges. These further facilitate mold opening and reduce the occurrence of cavity damage from improperly positioned tools.

CCSi *Ultra-Life* Specimen Molds: Features

The CCSi ASTM D429 Specimen Molds Feature:

- Exclusive *Ultra-Life* engineering;
- Designed with advanced 3D solid modeling;
- Manufactured using computerized systems and techniques;
- CNC (Computer Numerical Control) 4 axis machining;
- Precision ground;
- Expertly honed;
- Finely polished;
- High carbon content A2 mold steel;
- Thicker plates resist warping, distribute heat and pressure evenly;
- Cam action hinges prevent uneven closure;
- Industrial chrome plate finish;
- 304 stainless steel rotating handles ease opening, closing and handling;
- Deep overflow recesses (flash pockets) reduce overflow problems;
- Precision locator pins & receivers assure positive alignment;
- High strength fasteners resist the effects of strain and stress;
- Temperature probe orifices may be added for profiling;
- Optional finishes are available for highly corrosive compounds.

Available in:

- ASTM D813, 6 cavity configuration;

Also Available:

- Specimen Piercing Apparatus;
- Poly Inserts for Specimen Piercing Apparatus.

CCSi *Ultra-Life* ASTM D813 Mold & Piercing Apparatus: Specifications & Pricing

Part Number	Mold Configuration	Specimen Size
CCS-MD813-6	06 Cavity - 2 Plate	150 x 75 x 6.35 w/ 2.39 mm radius groove (5.9 x 2.95 x 0.25 w/ 0.094 in. radius groove)
CCS-D813-Pa	D813 Specimen Piercing Apparatus	Available by Special Request
CCS-D813-Ps	D813 Specimen Holder	
CCS-D813-Pt	D813 Specimen Piercing Tool	
CCS-D813-Pi	D813 Polypropylene Inserts (50 pk.)	
Please Request a Quotation for current pricing and delivery.		

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