

Multiform Collapsible Cores – Features and Benefits



- From diameter 10 to 200mm
- Can be used for round, square or oval parts
- Various coating options
- Can be used with all thermoplastics used in injection molding
- Also suitable for diecasting and thermosets
- Separate segments are exactly adjusted to match perfectly together
- For undercuts up to 12%
- High degree of temperature control as of diameter 14mm



Ordering Information

Multiform Collapsible Cores are supplied to customer specification. If you would like to place an order, please contact D-M-E. To calculate the core's geometry, a drawing showing the item is required.

The Multiform Collapsible Core and its Possibilities

- With this Multiform Collapsible Core, internal undercuts on plastic or die-cast items are no longer a problem.
- Internal undercuts – all the way round or just partially – on round, square or oval parts can now be carried out without any problems.
- Parts no longer have to be separated into two pieces. The procedures for gluing, ultrasonic welding, screwing or mechanical reworking are no longer required.
- Parts with single or multistart threads (also a combination of right- and left-handed threads).
- By means of the D-M-E Multiform Collapsible Core, non-loosening water-tight snap-on connections can be created. Threaded components, such as screw caps, can be produced at reduced cost, as the core allows the wall thickness to be reduced to a minimum. The dimensional stability of parts manufactured using D-M-E Multiform Collapsible Cores meets the highest requirements. For example, an accuracy of $\pm 0.015\text{mm}$ is achieved for flatness and roundness. Since no ejection draft line is required, precisely shaped, cylindrical parts with a uniform wall thickness can be produced.

Possible Undercut Ratios

The size of the maximum undercut ratio depends on the internal length (L). For each item's contour, the best possible design conditions are calculated, so that the best diameter and internal length ratios are achieved for each application.

For pre-selection, the small diameter (d) for a given large diameter (D) and a given internal length (L) can be calculated using the following formulas:

For small internal lengths:

$$\frac{\text{internal length } L}{\text{large diameter } D} < 2$$

$$d = D \times (0.866 + \frac{L}{D} \times 0.0328)$$

For large internal lengths:

$$\frac{\text{internal length } L}{\text{large diameter } D} \geq 2$$

$$d = D \times (0.9316 + (\frac{L}{D} - 2) \times 0.017)$$

Example: internal length L = 76.8mm
large diameter D = 128.0mm

$$\text{Ratio } \frac{L}{D} = \frac{76.8\text{mm}}{128\text{mm}} = 0.6 \rightarrow \text{small internal length (formula 1)}$$

$$d = D \times (0.866 + \frac{L}{D} \times 0.0328) = 128\text{mm} \times (0.866 + 0.6 \times 0.0328)$$

$$d = 113.64\text{mm}$$

The small diameter d can be a minimum of 113.64mm.

d = small diameter	D = large diameter	L = internal length
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