

Expandable Cavities

Standard, simplified solutions
for molding plastic parts
with external undercuts



DME

Expandable Cavities

COST SAVINGS & FAQ

The Expandable Cavity (EX-CAV) simplifies design and cuts costs to reliably mold and release external profiles on circular plastic parts. The product is ideal for parts such as bottle caps, threads, snap rings, barbs, convex grooves, protrusions, logo details, etc. Expandable Cavities eliminate the need for traditional slide action assemblies, thereby allowing higher cavitation within the same mold footprint to increase productivity. Depending on the part configuration, the Expandable Cavity's striker insert can be used in the "A" or "B" side of the mold.

- 1) Expandable Cavities with an "A" side striker insert mold the complete part, enabling details such as an outer thread or a snap ring to be released from the mold.
- 2) Expandable Cavities with a "B" side striker insert are for part configurations where undercuts such as barbs and protrusions are located under the part surface.

COST SAVINGS THAT MAXIMIZE VALUE:

- Simplified mold design
 - Eliminates traditional slides; allows molding of details once considered "un-moldable"
 - Uses existing ejector system for actuation; either mold open or ejection stages the Expandable Cavity forward to release the molded undercut
- Reduces maintenance costs
- Maximizes cavities per mold
 - Compact; often enabling more cavities in the mold and/or the use of a smaller mold base
- Improved mold balance and flexibility in design
- Easily accommodates family molds
- Reduces cycle time from staging plates forward during mold open
- Can be ordered with the required molding detail, eliminating the risk of machining errors or scrapping the unit, saving time and money
- Detail is machined in a one-piece unit eliminating the risk of error or mismatch that can occur with mating slides
- Manufactured with certified alloy steel (A-2) and proprietary processing techniques to ensure long life and dependable performance

Frequently Asked Questions

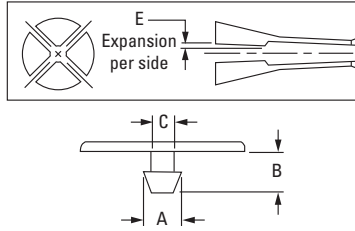
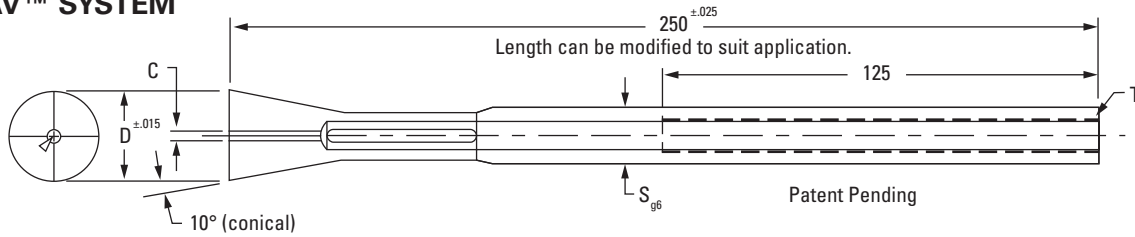
- Q. What are the material types from which an Expandable Cavity can be made, and how much hardness and wear resistance is expected?
- A. A-2 tool steel is the default material. It has a hardness of 54-57 HRC. Wear resistance is very good.
- Q. Are surface treatments recommended?
- A. It depends on the application. The DME engineering staff will review potential options, if needed.
- Q. Are there any temperature limitations?
- A. Maximum temperature is 260°C/500°F.
- Q. What is the expected life cycle of an Expandable Cavity and what maintenance is required?
- A. Customers have run millions of cycles. The biggest factor for performance is not the flexing aspect or fatigue as much as cleanliness of the tool over the life of the mold.

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EX-CAV™ SYSTEM & MOUNTING KITS

EX-CAV™ SYSTEM



ITEM NUMBER	D EX-CAV DIAMETER	A MAXIMUM PART DIAMETER -10° PER SIZE	B MAXIMUM MOLDING LENGTH	C MINIMUM PART INNER DIAMETER	E EXPANSION PER SIDE	F MIN. WALL THICKNESS	S BODY DIAMETER	T THREAD	X MINIMUM EJECTION STROKE (NEXT PAGE)
EXCAV20	20	14	13	2.5	1.6	3	14	M8	15
EXCAV26	26	18	20	3.5	2.5	4	16	M10	15
EXCAV38	38	30	27	4.0	3.0	4	27	M18	20
EXCAV50	50	40	39	5.5	3.5	5	34	M24	20

All dimensions and tolerances in millimeters. Mounting kits sold separately (see below). Expandable Cavity sizes not shown on this table are available by special order.

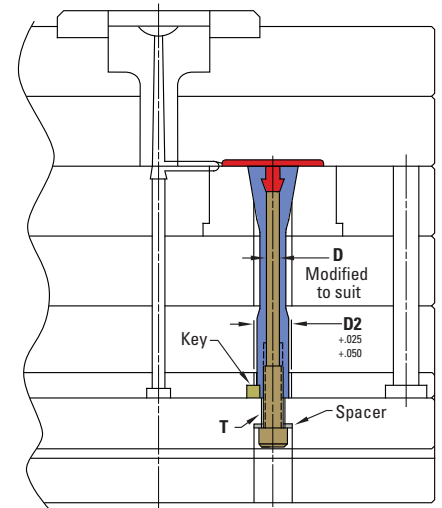
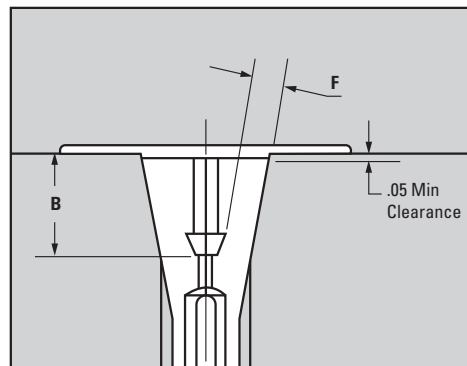
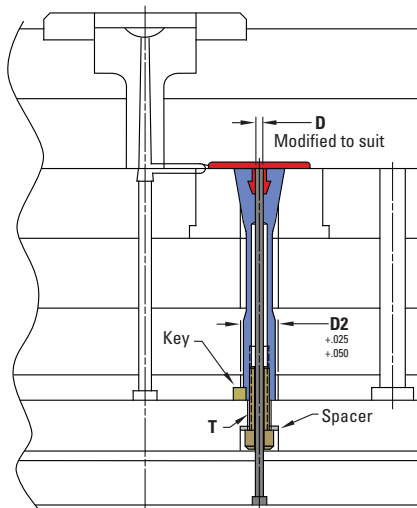
MOUNTING KITS

Hollow Bolt Mounting Kit Includes:

- Key (7 Thk. × 8 × 40)
- Hollow Bolt
- Standard DIN H-13 Ejector Pin (400mm long)
- Spacer

Pin Bolt Mounting Kit Includes:

- Key (7 Thk. × 8 × 40)
- Threaded Bolt/Pin (H-13, 40-44 HRC, 280mm long)
- Spacer



ITEM NUMBER	D NOMINAL PIN DIAMETER	T BOLT SIZE	S SPACER SIZE (ID × OD × THK)	D2	HOLLOW BOLT KIT NUMBER
EXCAV20	3.5	M8-1.25 × 40	8 × 22 × 4	14	EXC20BH
EXCAV26	4	M10-1.5 × 40	10 × 23 × 4	16	EXC26BH
EXCAV38	10	M18-2.5 × 50	19 × 33 × 6	27	EXC38BH
EXCAV50	14	M24-3 × 55	25 × 42 × 6	34	EXC50BH

ITEM NUMBER	D PIN DIAMETER	T BOLT THREAD	S SPACER SIZE (ID × OD × THK)	D2	PIN BOLT KIT NUMBER
EXCAV20	6.0	M8-1.25	8 × 22 × 4	14	EXC20BP
EXCAV26	7.7	M10-1.5	10 × 23 × 4	16	EXC26BP
EXCAV38	14.5	M18-2.5	19 × 33 × 6	27	EXC38BP
EXCAV50	19.8	M24-3	25 × 42 × 6	34	EXC50BP

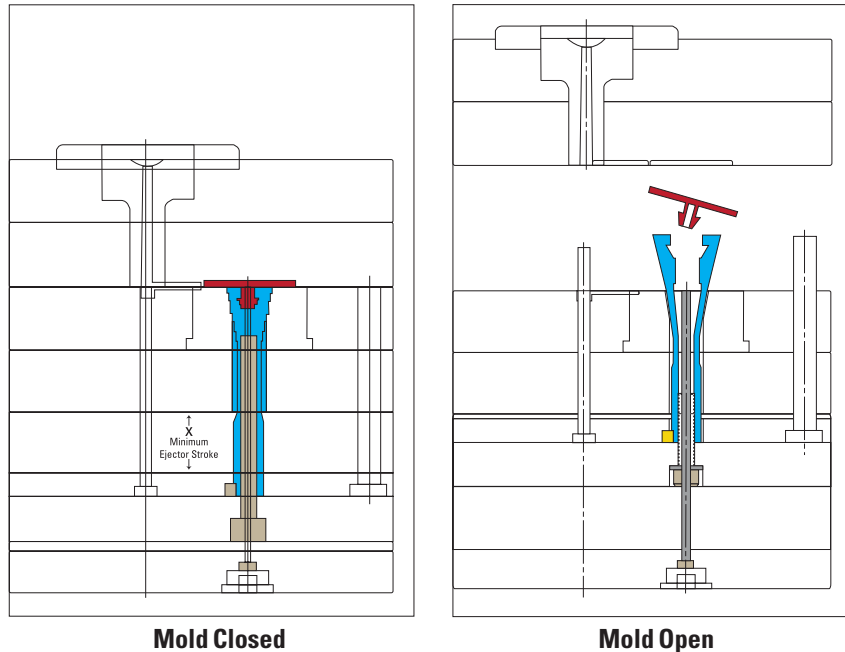
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TECHNICAL INFORMATION

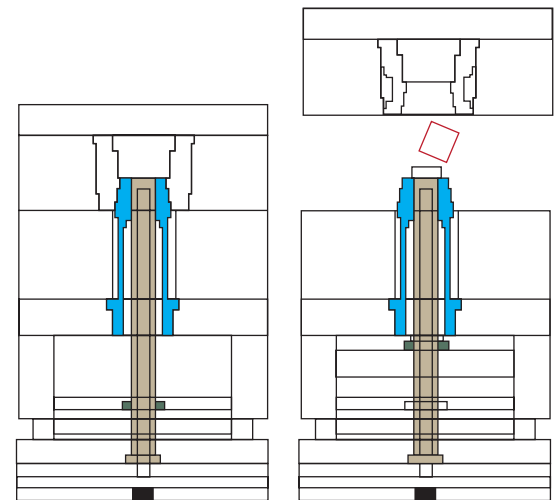
Expandable Cavities simplify tooling design to effectively mold undercuts such as threads, dimples, and protrusions on parts such as snap O-ring caps, plumbing supplies, industrial flanges and valves, electrical fixtures, and much more.

The patented Expandable Cavity design eliminates the engineering, maintenance, and machining required for slide action mechanisms which results in smaller molds or higher mold cavitation.



Technical Information:

- Available in four standard sizes to satisfy a wide range of applications.
- The Expandable Cavity expands along a conical shape; 10° per side.
- Manufactured from A-2 tool steel (54-57 HRC) for repeatable expansion. For optimal performance, the Expandable Cavity should ride against a hardened insert.
- Expandable Cavities are capable of operating without lubrication. However, treating the Expandable Cavity with an additional coating for wear reduction or corrosion resistance is beneficial.
- Expandable Cavities can be ordered with molding detail for a 'mold ready' component.



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