

# EXPANDABLE CAVITIES

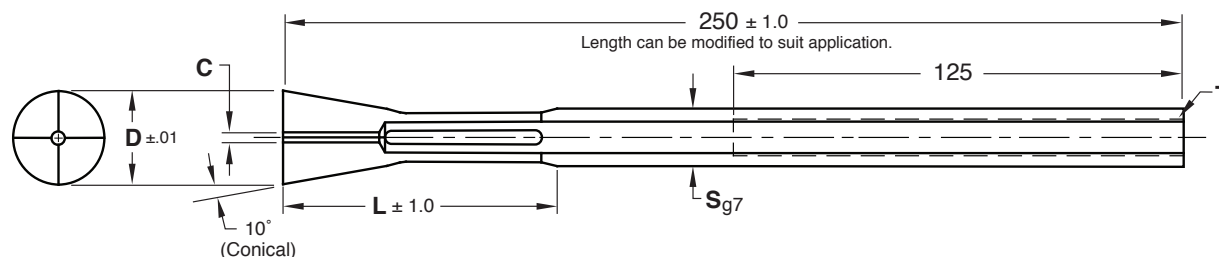
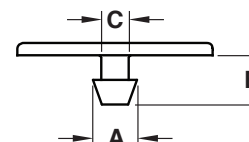
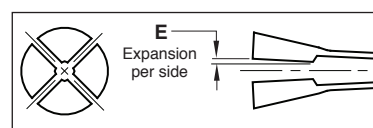
## EX-CAV® SYSTEM

Expandable Cavities (Ex-Cavs) mold undercuts such as threads, dimples, and protrusions.

The patented Ex-Cav design eliminates the engineering, maintenance, and machining required for side action mechanisms which results in smaller molds or higher mold cavitation.

### Technical Information:

- Four sizes offered to satisfy a wide range of parts.
- The Ex-Cav expands along a conical shape, 10° per side.
- Manufactured from A-2, 54-57 HRC material for repeatable expansion. For optimal performance, the Ex-Cavs should ride against a hardened striker insert which can be manufactured by Roehr or customer supplied.
- Maximum temperature: 260°C / 500° F
- Expandable Cavities generally operate without lubrication.
- Ex-Cavs can be ordered with molding detail for a 'mold ready' component.
- Ex-Cav Fixtures for machining details in house are also available.
- Custom Ex-Cavs are available. Also, when an entire part is formed within the cavity, an A-Series Ex-Cav can be provided.



M A-2 H 54-57 HRC

CATALOG NUMBER	D Ex-Cav Diameter	A Maximum Part Diameter -10° per side	B Maximum Molding Length	C Minimum Part Inner Diameter	E Expansion Per Side	F Min. Wall Thickness	L Expansion Length	S Body Diameter	T Thread	X Minimum Ejection Stroke (Prev. page)
EXCAV20	20mm .787in	14mm .551in	13mm .512in	2.5mm .098in	1.6mm .063in	3mm .118in	59mm 2.323in	14mm .551in	M8	15mm .591in
EXCAV26	26mm 1.024in	18mm .709in	20mm .787in	3.5mm .138in	2.5mm .098in	4mm .157in	76mm 2.992in	16mm .630in	M10	15mm .591in
EXCAV38	38mm 1.496in	30mm 1.181in	27mm 1.063in	4mm .157in	3mm .118in	4mm .157in	89mm 3.504in	27mm 1.063in	M18	20mm .787in
EXCAV50	50mm 1.969in	40mm 1.575in	39mm 1.535in	5.5mm .217in	3.5mm .138in	5mm .197in	101mm 3.976in	34mm 1.339in	M24	20mm .787in

Custom Ex-Cavs are available for molded parts up to and beyond 500mm.  
Ex-Cav sizes outside of this chart are available as customs.

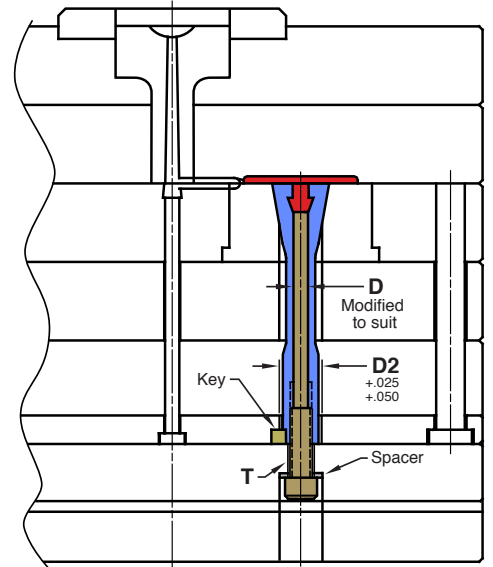
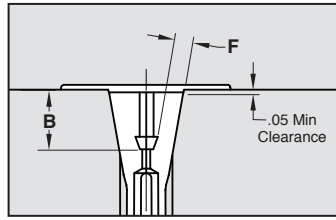
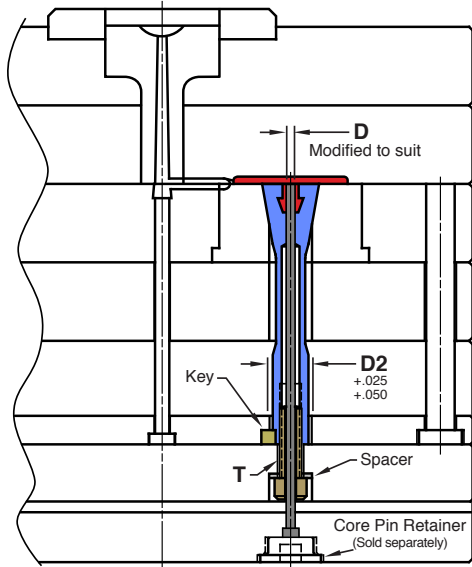
MOUNTING KITS & MACHINING SPECS

Hollow Bolt Mounting Kit Includes:

- Key (7 Thk. x 8 x 40)
- Hollowed Bolt
- Standard DIN H-13 Ejector Pin (400mm Long)
- Spacer

Pin Bolt Mounting Kit Includes:

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



EX-CAV NUMBER	D Nominal Pin Diameter	T Bolt Size	Spacer Size (ODxThk)	D2	HOLLOW BOLT KIT NUMBER
EXCAV20	3.5mm .138in	M8-1.25 x 40	22x4mm .866x.157in	14mm .551in	<b>EXC20BH</b>
EXCAV26	4mm .157in	M10-1.5 x 40	23x4mm .906x.157in	16mm .630in	<b>EXC26BH</b>
EXCAV38	10mm .394in	M18-2.5 x 50	33x6mm 1.299x.236in	27mm 1.063in	<b>EXC38BH</b>
EXCAV50	14mm .551in	M24-3 x 55	42x6mm 1.654x.236in	34mm 1.339in	<b>EXC50BH</b>

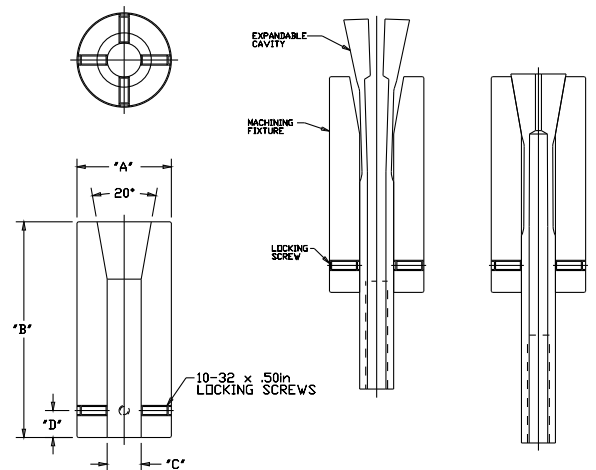
EX-CAV NUMBER	D Pin Diam. ± .05	T Bolt Thread	Spacer Size (ODxThk)	D2	PIN BOLT KIT NUMBER
EXCAV20	6.0mm .236in	M8-1.25	22x4mm .866x.157in	14mm .551in	<b>EXC20BP</b>
EXCAV26	7.7mm .303in	M10-1.5	23x4mm .906x.157in	16mm .630in	<b>EXC26BP</b>
EXCAV38	14.5mm .571in	M18-2.5	33x6mm 1.299x.236in	27mm 1.063in	<b>EXC38BP</b>
EXCAV50	19.8mm .780in	M24-3	42x6mm 1.654x.236in	34mm 1.339in	<b>EXC50BP</b>

US PATENT NUMBER: 8,038,433

EX-CAV MACHINING FIXTURES

Machining Fixtures for ExCavs securely hold the expanding segments in place when grinding, high speed machining or EDM'ing details.

CATALOG NUMBER	EXCAV SIZE	"A"	"B"	"C"	"D"	Locking Screws
EXCMF20	EXCAV20	41.28mm 1.625in	76.20mm 3.000in	14.03mm .552in	12.70mm .500in	10-32 x .50"
EXCMF26	EXCAV26	44.25mm 1.750in	101.60mm 4.000in	16.03mm .631in	12.70mm .500in	10-32 x .50"
EXCMF38	EXCAV38	53.98mm 2.125in	127.00mm 5.000in	27.03mm 1.064in	12.70mm .500in	10-32 x .50"
EXCMF50	EXCAV50	66.68mm 2.625in	152.40mm 6.000in	34.03mm 1.340in	12.70mm .500in	10-32 x .50"

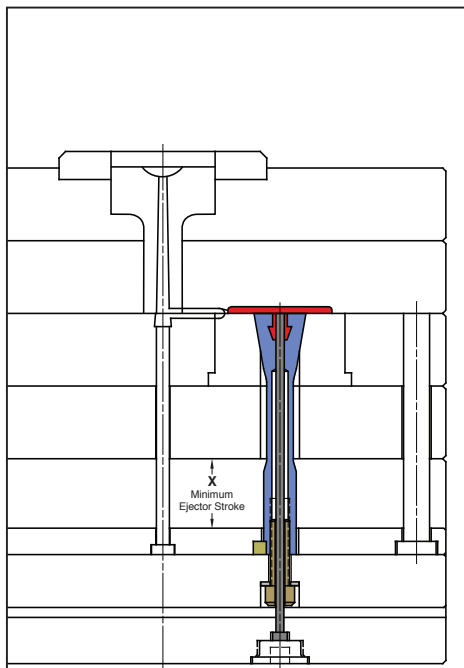


PULL EXPANDABLE CAVITY DOWN INTO FIXTURE AND TIGHTEN LOCKING SCREWS.

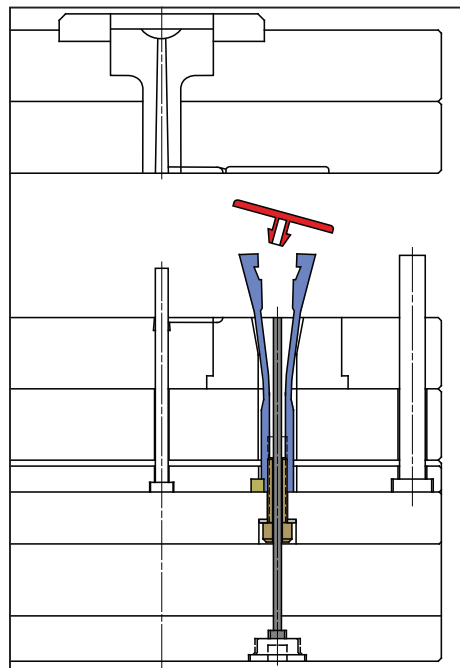
Roehr can also supply Ex-Cavs with fully machined molding details upon request.

# EXPANDABLE CAVITIES

## EX-CAV<sup>®</sup> SEQUENCE

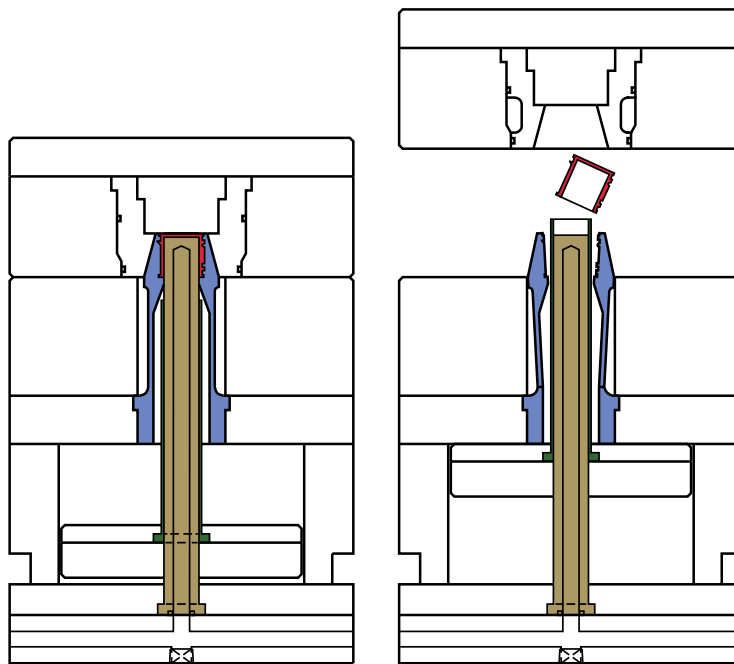


**Mold Closed-B Series**



**Mold Open-B Series**

B-Side Expandable Cavities are anchored into the ejector plates and actuated during the machine knock-out sequence. Often times a 2nd ejector plate set is used for final part ejection with an ejector pin or sleeve. Runners may go across the top of the EXCAV and the molded parts edge gated as long as this does not interfere with the EXCAV expansion.



**Mold Closed-A Series**

**Mold Open-A Series**

A-Side Expandable Cavities are anchored between the mold "B" plate and support plate and actuated immediately during mold open/close at the main parting line by the cavity insert. The molded parts are then generally ejected with an ejector pin or sleeve. Because there is airspace around the A-Side EXCAV at the parting line, the molded parts must be top gated with a 3-plate cold runner or hot tip.

# EXPANDABLE CAVITIES

EX-CAV<sup>®</sup> CUSTOMS

