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**July, 2022**





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DMS has consistently been a market leader in new product development and prides itself on being first with innovations that have benefited moldmaking worldwide, with a commitment to producing and delivering quality products on time at competitive prices. With more than 2000 customers and numerous distributors in Canada and USA, DMS has a product range of over 12,000 items, including mold bases, ejector pins, core pins, leader pins, sleeve ejectors, blade ejectors, bushings, tapered interlocks, sprue bushings, locating rings, unique mechanisms, date stamps, gating inserts, modular water manifolds, full colour mold plaques, REDE vault, unscrewing devices, heating and cooling, and mold polishing items.



**DMS (Windsor, ON) • DMS (Elk Grove Village, IL)**

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# About Us

Diemould Service Ltd.© is a global provider of high quality custom and standard mold components and tooling supplies that meet your exact requirements. History tells us, many customers are unable to get the experienced service that our team can offer to assist with their sourcing needs. With the network of manufacturers we have aligned with, our team can supply, or assist in finding, virtually any product you require in your shop. Give us a call today at **519-737-6743** and let our decades of experience work for you.

## Our Products

### Pins, Sleeves, Leader Pins and Bushings

- Special and standard ejector pins and core pins
- Special and standard ejector sleeves and extenders
- Special and standard bushings
- Special and standard leader pins
- Solid aluminum bronze bushings



### Mold Components

- Special mold components of any kind (per your drawings)
- Special Unilifter® core blades
- Mold Counters
- Accelerated ejectors/plate accelerators
- Air poppets/ejectors
- Lifters (Sanyko style), slide core units & gibs
- Plate control items (side locks-ALL types)
- Runner shutoffs
- Slide retainers (3 types)
- Special mold bases & die sets



### Heating and Cooling

- Cooling items (brass, aluminum & stainless)
- Mold power connectors
- Water manifolds
- Mold sockets & water fittings



### Polishing Supplies

- Polishing shop supplies (Diamond compound, felt, brushes, abrasives)
- Hand tools (Pencil grinders, hand grinders, Turbolaps, Diprofil)
- Motors, flexible shafts, foot pedals
- Carbide burs
- Precision files
- Polishing & Ceramic stones



### Distributors and Agents for:

- **Adamas** Diamond Compounds
- **Boride** Engineered Abrasives, **Falcon Tool**
- **Cumsa**
- **Exaflow** & **I-Mold** Tunnel gates
- **ITC** Temperature Controls
- **Foredom**, **NSK**, **ULAP**
- **Custom Mold**
- **Jergens®**
- **Rud Chain** & **Hoist Rings**
- **Strack®/Hotset®**

**Specials  
templates  
available on  
our website**

**DMS**  
Your Innovative Edge  
Complete sourcing for your  
tool shop needs

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**ALMO**  
**BOLEXP**

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Engineered Abrasives

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# Specials

## Pins, Sleeves & Bushings (Per Your Drawing)



Your Innovative Edge  
Complete sourcing for your  
tool shop needs

### Lifters and Slide Action



### Alignment



### Miscellaneous Components



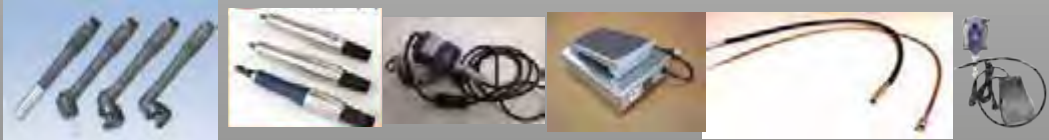
### Heating and Cooling



### Polishing Supplies



### Air and Electric Tools



### Clamping and Hoisting



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# Conversion Tables

## Inches to Millimeters

INCHES	MM	INCHES	MM
1	25.4	34	863.6
2	50.8	35	889.0
3	76.2	36	914.4
4	101.6	37	939.8
5	127.0	38	965.2
6	152.4	39	990.6
7	177.8	40	1016.0
8	203.2	41	1041.4
9	228.6	42	1066.8
10	254.0	43	1092.2
11	279.4	44	1117.6
12	304.8	45	1143.0
13	330.2	46	1168.4
14	355.6	47	1193.8
15	381.0	48	1219.2
16	406.4	49	1244.6
17	431.8	50	1270.0
18	457.2	51	1295.4
19	482.6	52	1320.8
20	508.0	53	1346.2
21	533.4	54	1371.6
22	558.8	55	1397.0
23	584.2	56	1422.4
24	609.6	57	1447.8
25	635.0	58	1473.2
26	660.4	59	1498.6
27	685.8	60	1524.0
28	711.2	61	1549.4
29	736.6	62	1574.8
30	762.0	63	1600.2
31	787.4	64	1625.6
32	812.8	65	1651.0
33	838.2	66	1676.4

INCHES	MM
1/64	0.015625
1/32	0.031250
3/64	0.046875
1/16	0.062500
5/64	0.078125
3/32	0.093750
7/64	0.109375
1/8	0.125000
9/64	0.140625
5/32	0.156250
11/64	0.171875
3/16	0.187500
13/64	0.203125
7/32	0.218750
15/64	0.234375
1/4	0.250000
17/64	0.265625
9/32	0.281250
19/64	0.296875
5/16	0.312500
21/64	0.328125
11/32	0.343750
23/64	0.359375
3/8	0.375000
25/64	0.390625
13/32	0.406250
27/64	0.421875
7/16	0.437500
29/64	0.453125
15/32	0.468750
31/64	0.484375
1/2	0.500000

INCHES	MM
33/64	0.515625
17/32	0.531250
35/64	0.546875
9/16	0.562500
37/64	0.578125
19/32	0.593750
39/64	0.609375
5/8	0.625000
41/64	0.640625
21/32	0.656250
43/64	0.671875
11/16	0.687500
45/64	0.703125
23/32	0.718750
47/64	0.734375
3/4	0.750000
49/64	0.765625
25/32	0.781250
51/64	0.796875
13/16	0.812500
53/64	0.828125
27/32	0.843750
55/64	0.859375
7/8	0.875000
57/64	0.890625
29/32	0.906250
59/64	0.921875
15/16	0.937500
61/64	0.953125
31/32	0.968750
63/64	0.984375
1	1.000000

INCHES	MM	INCHES	MM	INCHES	MM
0.001	0.0254	0.01	0.254	0.1	2.54
0.002	0.0508	0.02	0.508	0.2	5.08
0.003	0.0762	0.03	0.762	0.3	7.62
0.004	0.1016	0.04	1.016	0.4	10.16
0.005	0.1270	0.05	1.270	0.5	12.70
0.006	0.1524	0.06	1.524	0.6	15.24
0.007	0.1778	0.07	1.778	0.7	17.78
0.008	0.2032	0.08	2.032	0.8	20.32
0.009	0.2286	0.09	2.286	0.9	22.86

MULTIPLY BY	FROM	TO	MULTIPLY BY
	← TO	← FROM	
0.0394	inch	millimeter	25.4
0.0016	inch <sup>2</sup>	millimeter <sup>2</sup>	645.16
0.061	inch <sup>3</sup>	centimeter <sup>3</sup>	16.3871
0.2642	gallon (U.S.)	liter	3.7854
0.03527	oz. (avdp.)	gram	28.3495
2.2044	pound	kilogram	0.4536
62.43	lbs/ft <sup>3</sup>	g / cm <sup>3</sup>	0.0160
0.145	psi	kPa	6.8948
14.2247	psi	kg / cm <sup>2</sup>	0.0703
1.8°C + 32	°F	°C	(°F-32)/1.8



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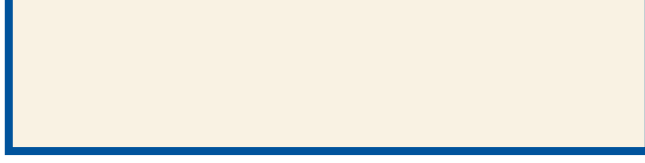
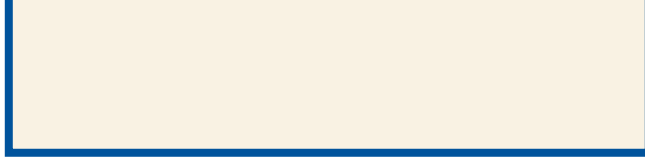
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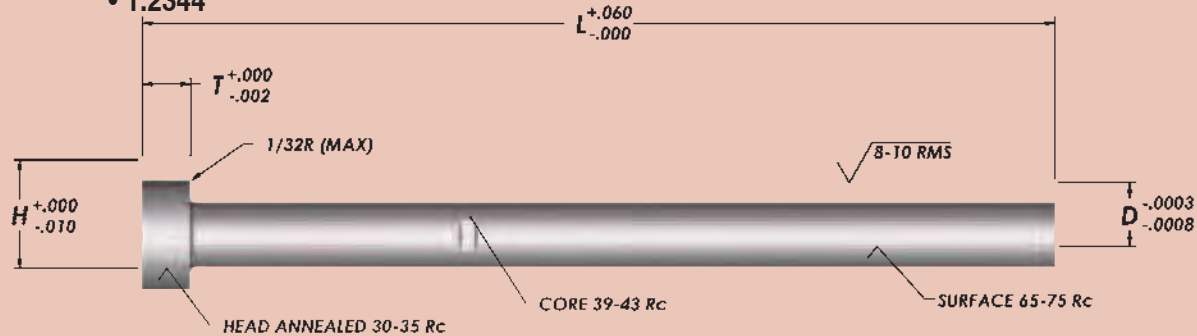




# Ejector Pins

## Nitrided - Parallel Inch

Material • AISI: H13  
• 1.2344



D	Cat. No.	L														H	T	
		6"		10"		14"		18"		25"		36"	39"	42"	45"			50"
		STD.	+005	STD.	+005	STD.	+005	STD.	+005	STD.	+005	STD.	STD.					
1/32	EP03	<b>L06P</b>	<b>L065</b>														1/4	1/8
3/64	EP04	L06P	<b>L065</b>														1/4	1/8
1/16	EP06	L06P		L10P	<b>L10P5</b>												1/4	1/8
5/64	EP07	L06P		L10P	<b>L10P5</b>												1/4	1/8
3/32	EP09	L06P		L10P	<b>L10P5</b>												1/4	1/8
7/64	EP10	L06P		L10P	<b>L10P5</b>												1/4	1/8
1/8	EP12	L06		L10	L105	L14	L145	L18		L25							1/4	1/8
9/64	EP14			L10		L14	<b>L145</b>										1/4	1/8
5/32	EP15	L06		L10	L105	L14	L145	L18		L25		<b>L36</b>					9/32	5/32
11/64	EP17			L10		L14	<b>L145</b>	L18									11/32	3/16
3/16	EP18	L06		L10	L105	L14	L145	L18		L25			L39		<b>L45</b>	<b>L50</b>	3/8	3/16
13/64	EP20			L10		L14	<b>L145</b>	L18		L25							3/8	3/16
7/32	EP21	L06		L10	L105	L14	<b>L145</b>	L18		L25							13/32	3/16
15/64	EP23			L10		L14	<b>L145</b>	L18		L25							13/32	3/16
1/4	EP25	L06		L10	L105	L14	L145	L18	L185	L25	<b>L255</b>	L36	L39				7/16	3/16
17/64	EP26			L10		L14	<b>L145</b>	L18		L25						<b>L50</b>	7/16	1/4
9/32	EP28	L06		L10	L105	L14	<b>L145</b>	L18		L25							7/16	1/4
19/64	EP29			L10		L14	<b>L145</b>	L18		L25							1/2	1/4
5/16	EP31	L06		L10	L105	L14	L145	L18	L185	L25	L255	L36	L39		<b>L50</b>		1/2	1/4
21/64	EP32			L10		L14	<b>L145</b>	L18		L25							9/16	1/4
11/32	EP34	L06		L10	L105	L14	<b>L145</b>	L18		L25							9/16	1/4
23/64	EP35			L10		L14	<b>L145</b>	L18		L25							5/8	1/4
3/8	EP37	L06		L10	L105	L14	L145	L18	L185	L25	L255	L36	L39		<b>L50</b>		5/8	1/4
25/64	EP39			<b>L10</b>		<b>L14</b>	<b>L145</b>										5/8	1/4
13/32	EP40	L06		L10	L105	L14	<b>L145</b>	L18		L25							11/16	1/4
27/64	EP42			<b>L10</b>		<b>L14</b>	<b>L145</b>										11/16	1/4
7/16	EP43	L06		L10	L105	L14	L145	L18		L25		L36	L39				11/16	1/4
29/64	EP45			<b>L10</b>		<b>L14</b>	<b>L145</b>										11/16	1/4
15/32	EP46	<b>L06</b>		L10	L105	L14	<b>L145</b>	L18		L25							3/4	1/4
31/64	EP48			<b>L10</b>		<b>L14</b>	<b>L145</b>										3/4	1/4
1/2	EP50	L06		L10	L105	L14	L145	L18	L185	L25	L255	L36	L39	<b>L42</b>	<b>L50</b>		3/4	1/4
17/32	EP53	<b>L06</b>		L10		L14	<b>L145</b>										3/4	1/4
9/16	EP56	L06		L10		L14		L18		L25			L39		<b>L50</b>		13/16	1/4
5/8	EP62	L06		L10		L14		L18		L25		L36	L39		<b>L50</b>		7/8	1/4
11/16	EP68	<b>L06</b>		L10		L14		L18		L25							15/16	1/4
3/4	EP75	L06		L10		L14		L18		L25		L36	L39		<b>L45</b>	<b>L50</b>		
7/8	EP87	<b>L06</b>		L10		L14		L18		L25			L39		<b>L50</b>		1-1/8	1/4
1	EP100	L06		L10		L14		L18		L25		L36	L39	<b>L42</b>	<b>L45</b>	<b>L50</b>		

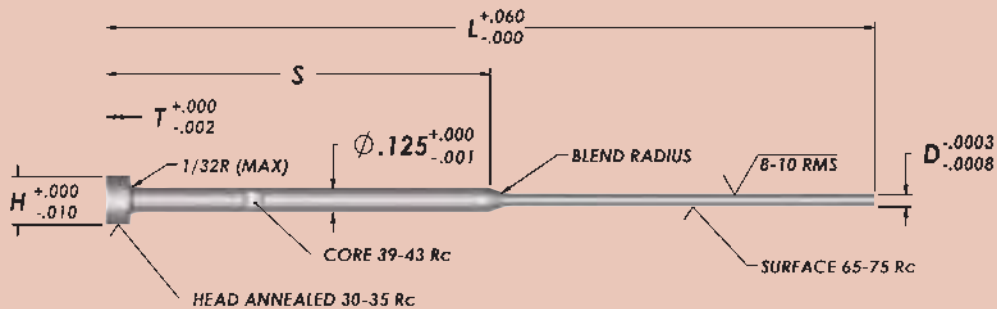
- To order, add overall length "L" to Catalog Number. Example: EP04L06P
- Sizes marked in blue print are available but generally not stocked. Call for price and delivery. Example: EP06L10P
- New Items shown in bold print. Example: EP14L145



# Ejector Pins

## Nitrided - Shoulder Inch

Material • AISI: H13  
• 1.2344



D	S	Cat. No.	L						H	T
			6"		10"		14"			
			STD.	+0.005	STD.	+0.005	STD.	+0.005		
1/32	1/2	EP03	L06-1/2	<b>L065-1/2</b>					1/4	1/8
	2	EP03	L06-2		<b>L10-2</b>	<b>L105-2</b>				
3/64	1/2	EP04	L06-1/2		L10-1/2	L105-1/2	L14-1/2		1/4	1/8
	2	EP04	L06-2		L10-2	L105-2	L14-2			
	3	EP04			L10-3					
	4	EP04			L10-4	<b>L105-4</b>	<b>L14-4</b>	<b>L145-4</b>		
1/16	1/2	EP06	L06-1/2		L10-1/2	L105-1/2	L14-1/2		1/4	1/8
	2	EP06	L06-2		L10-2	L105-2	L14-2			
	3	EP06			L10-3					
	4	EP06			L10-4	<b>L105-4</b>	<b>L14-4</b>	<b>L145-4</b>		
5/64	1/2	EP07	L06-1/2		L10-1/2	L105-1/2	L14-1/2		1/4	1/8
	2	EP07	L06-2		L10-2	L105-2	L14-2			
	3	EP07			L10-3					
	4	EP07			L10-4	<b>L105-4</b>	<b>L14-4</b>	<b>L145-4</b>		
3/32	1/2	EP09	L06-1/2		L10-1/2	L105-1/2	L14-1/2		1/4	1/8
	2	EP09	L06-2		L10-2	L105-2	L14-2			
	3	EP09			L10-3					
	4	EP09			L10-4	<b>L105-4</b>	<b>L14-4</b>	<b>L145-4</b>		
7/64	1/2	EP10	L06-1/2		L10-1/2	L105-1/2	L14-1/2		1/4	1/8
	2	EP10	L06-2		L10-2	L105-2	L14-2			
	3	EP10			L10-3					
	4	EP10			L10-4	<b>L105-4</b>	<b>L14-4</b>	<b>L145-4</b>		

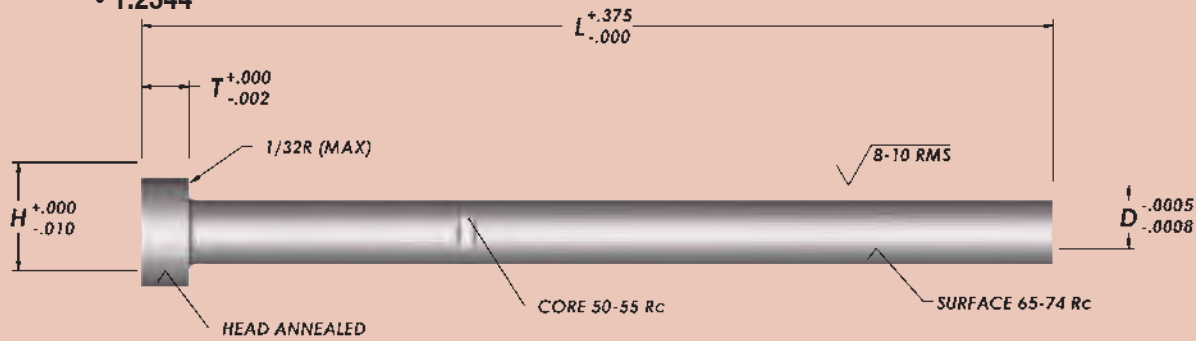
- To order, add overall length "L" to Catalog Number. Example: EP03L06-1/2
- Sizes marked in blue print are available but generally not stocked. Call for price and delivery. Example: EP04L10-3
- New Items shown in bold print. Example: EP03**L065-1/2**





# Ejector Pins Through Hard - Parallel Inch

Material • AISI: H13  
• 1.2344



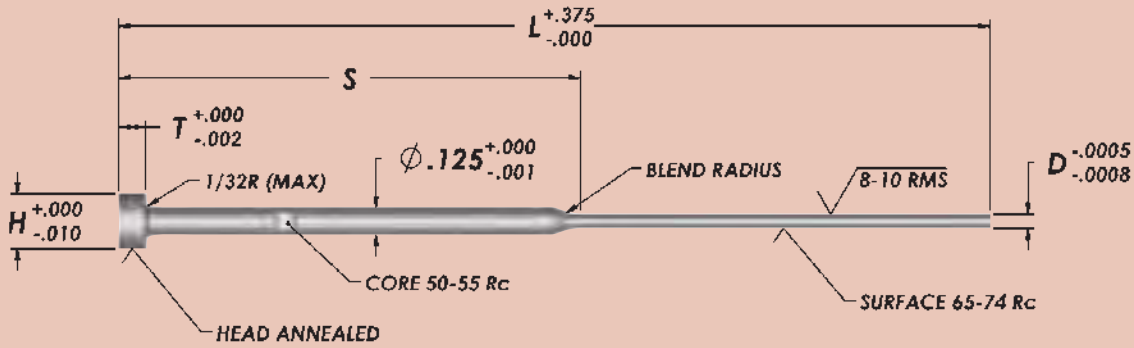
D	Cat. No.	L						H	T	
		6"		10"		14"				18"
		STD.	+0.005	STD.	+0.005	STD.	+0.005			
1/32	RHX-02	<b>L06</b>	<b>L065</b>					1/4	1/8	
3/64	RHX-03	L06	<b>L065</b>					1/4	1/8	
1/16	RHX-05	L06		L10	L105			1/4	1/8	
5/64	RHX-06	L06		L10	L105			1/4	1/8	
3/32	RHX-07	L06		L10	L105			1/4	1/8	
7/64	RHX-08	L06		L10	L105			1/4	1/8	
1/8	RHX-09	L06		L10	L105	L14	L145	1/4	1/8	
9/64	RHX-10	L06		L10	L105	L14	<b>L145</b>	1/4	1/8	
5/32	RHX-11	L06		L10	L105	L14	L145	9/32	5/32	
11/64	RHX-12	L06		L10	L105	L14	<b>L145</b>	11/32	3/16	
3/16	RHX-13	L06		L10	L105	L14	L145	3/8	3/16	
13/64	RHX-14	L06		L10		L14	<b>L145</b>	3/8	3/16	
7/32	RHX-15	L06		L10	L105	L14	<b>L145</b>	13/32	3/16	
15/64	RHX-16	L06		L10		L14	<b>L145</b>	13/32	3/16	
1/4	RHX-17	L06		L10	L105	L14	L145	<b>L18</b>	7/16	3/16
17/64	RHX-18	L06		L10		L14	<b>L145</b>	7/16	1/4	
9/32	RHX-19	L06		L10	L105	L14	<b>L145</b>	7/16	1/4	
19/64	RHX-20	L06		L10		L14	<b>L145</b>	1/2	1/4	
5/16	RHX-21	L06		L10	L105	L14	L145	<b>L18</b>	1/2	1/4
21/64	RHX-22	L06		L10		L14	<b>L145</b>	9/16	1/4	
11/32	RHX-23	L06		L10	L105	L14	<b>L145</b>	9/16	1/4	
23/64	RHX-24	L06		L10		L14	<b>L145</b>	5/8	1/4	
3/8	RHX-25	L06		L10	L105	L14	L145	<b>L18</b>	5/8	1/4
25/64	RHX-26	L06		L10		<b>L14</b>	<b>L145</b>	37/64	1/4	
13/32	RHX-27	L06		L10	L105	L14	<b>L145</b>	11/16	1/4	
27/64	RHX-28	L06		L10		<b>L14</b>	<b>L145</b>	11/16	1/4	
7/16	RHX-29	L06		L10	L105	L14	L145	11/16	1/4	
29/64	RHX-30	L06		L10		<b>L14</b>	<b>L145</b>	45/64	1/4	
15/32	RHX-31	L06		L10	L105	L14	<b>L145</b>	3/4	1/4	
31/64	RHX-32	L06		L10		<b>L14</b>	<b>L145</b>	3/4	1/4	
1/2	RHX-33	L06		L10	L105	L14	L145	<b>L18</b>	3/4	1/4
17/32	RHX-34	<b>L06</b>		<b>L10</b>		<b>L14</b>		3/4	1/4	
9/16	RHX-35	<b>L06</b>		<b>L10</b>		<b>L14</b>		13/16	1/4	
5/8	RHX-37	<b>L06</b>		<b>L10</b>		<b>L14</b>		<b>L18</b>	7/8	1/4
11/16	RHX-39	<b>L06</b>		<b>L10</b>		<b>L14</b>		15/16	1/4	
3/4	RHX-41	<b>L06</b>		<b>L10</b>		<b>L14</b>		<b>L18</b>	1	1/4
7/8	RHX-45	<b>L06</b>		<b>L10</b>		<b>L14</b>		1-1/8	1/4	
1	RHX-47	<b>L06</b>		<b>L10</b>		<b>L14</b>		1-1/4	1/4	

• To order, add overall length "L" to Catalog Number. Example: RHX-03L06



# Ejector Pins Through Hard - Shoulder Inch

Material • AISI: H13  
• 1.2344



D	S	Cat. No.	L					H	T
			STD.	STD.	+0.005	STD.	+0.005		
1/32	1/2	RHX-02-1/2	L06					1/4	1/8
	2	RHX-02-2	L06						
	3	RHX-02-3		L10	L105				
	4	RHX-02-4		L10	L105				
3/64	1/2	RHX-03-1/2	L06					1/4	1/8
	2	RHX-03-2	L06	L10	L105				
	3	RHX-03-3		L10	L105				
	4	RHX-03-4		L10	L105				
1/16	1/2	RHX-05-1/2	L06	L10	L105			1/4	1/8
	2	RHX-05-2	L06	L10	L105	L14	L145		
	3	RHX-05-3		L10	L105				
	4	RHX-05-4		L10	L105				
5/64	1/2	RHX-06-1/2	L06	L10	L105			1/4	1/8
	2	RHX-06-2	L06	L10	L105	L14	L145		
	3	RHX-06-3		L10	L105				
	4	RHX-06-4		L10	L105				
3/32	1/2	RHX-07-1/2	L06	L10	L105			1/4	1/8
	2	RHX-07-2	L06	L10	L105	L14	L145		
	3	RHX-07-3		L10	L105				
	4	RHX-07-4		L10	L105				
7/64	1/2	RHX-08-1/2	L06	L10	L105			1/4	1/8
	2	RHX-08-2	L06	L10	L105	L14	L145		
	3	RHX-08-3		L10	L105				
	4	RHX-08-4		L10	L105				

• To order, add overall length "L" to Catalog Number. Example: RHX-02-1/2L06



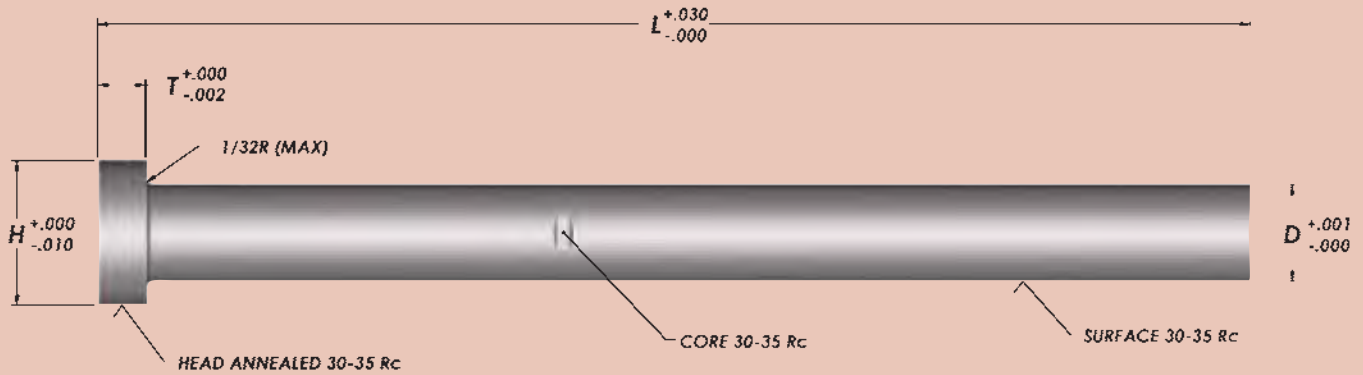


# Core Pins

## Standard Hardness (Soft)

### Inch

Material • AISI: H13  
• 1.2344



D	Cat. No.	L				H	T
		3"	6"	10"	14"		
3/32	CPS09	L03	L06	L10		1/4	1/8
7/64	CPS10	L03	L06	L10		1/4	1/8
1/8	CPS12	L03	L06	L10	L14	1/4	1/8
9/64	CPS14	L03	L06	L10	L14	1/4	1/8
5/32	CPS15	L03	L06	L10	L14	9/32	5/32
11/64	CPS17	L03	L06	L10	L14	11/32	3/16
3/16	CPS18	L03	L06	L10	L14	3/8	3/16
13/64	CPS20	L03	L06	L10	L14	3/8	3/16
7/32	CPS21	L03	L06	L10	L14	13/32	3/16
1/4	CPS25	L03	L06	L10	L14	7/16	3/16
9/32	CPS28	L03	L06	L10	L14	7/16	1/4
5/16	CPS31	L03	L06	L10	L14	1/2	1/4
11/32	CPS34	L03	L06	L10	L14	9/16	1/4
3/8	CPS37	L03	L06	L10	L14	5/8	1/4
13/32	CPS40	L03	L06	L10	L14	11/16	1/4
7/16	CPS43	L03	L06	L10	L14	11/16	1/4
15/32	CPS46	L03	L06	L10	L14	3/4	1/4
1/2	CPS50	L03	L06	L10	L14	3/4	1/4
9/16	CPS56		L06	L10	L14	13/16	1/4
5/8	CPS62		L06	L10	L14	7/8	1/4
3/4	CPS75		L06	L10	L14	1	1/4
7/8	CPS87		L06	L10	L14	1-1/8	1/4
1"	CPS100		L06	L10	L14	1-1/4	1/4

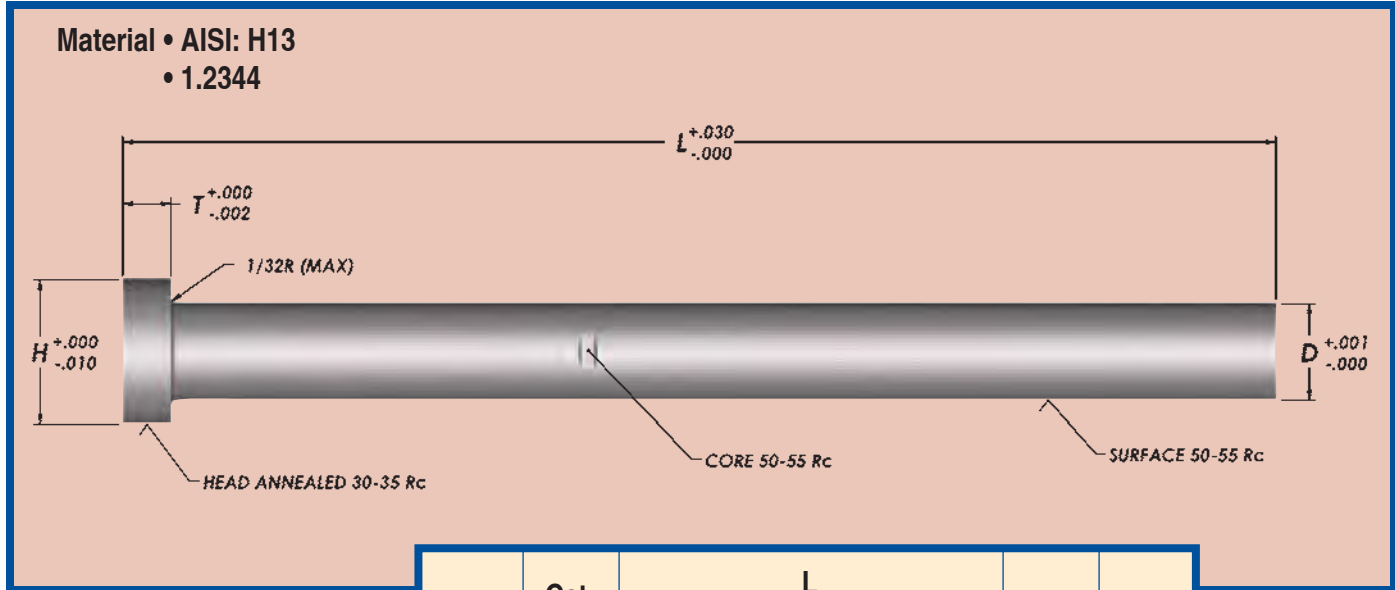
To order, add overall length L to Catalog Number. Example: CPH09L03



# Core Pins

## High Hardness (Hard)

### Inch

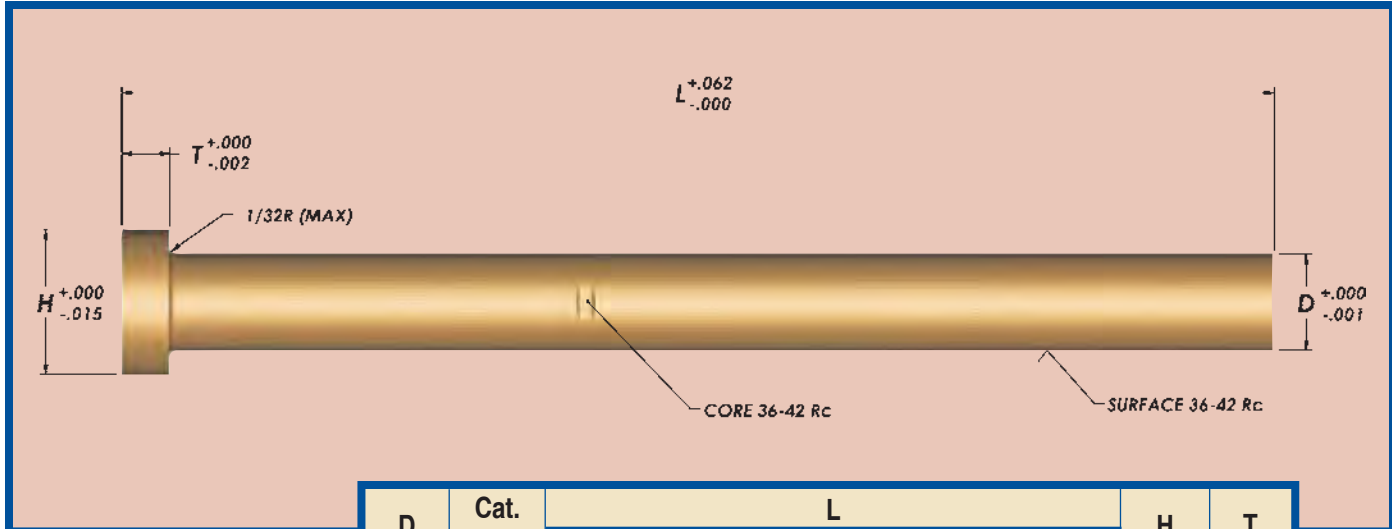


D	Cat. No.	L				H	T
		3"	6"	10"	14"		
3/32	CPH09	L03	L06	L10		1/4	1/8
7/64	CPH10	L03	L06	L10		1/4	1/8
1/8	CPH12	L03	L06	L10	L14	1/4	1/8
9/64	CPH14	L03	L06	L10	L14	1/4	1/8
5/32	CPH15	L03	L06	L10	L14	9/32	5/32
11/64	CPH17	L03	L06	L10	L14	11/32	3/16
3/16	CPH18	L03	L06	L10	L14	3/8	3/16
13/64	CPH20	L03	L06	L10	L14	3/8	3/16
7/32	CPH21	L03	L06	L10	L14	13/32	3/16
1/4	CPH25	L03	L06	L10	L14	7/16	3/16
9/32	CPH28	L03	L06	L10	L14	7/16	1/4
5/16	CPH31	L03	L06	L10	L14	1/2	1/4
11/32	CPH34	L03	L06	L10	L14	9/16	1/4
3/8	CPH37	L03	L06	L10	L14	5/8	1/4
13/32	CPH40	L03	L06	L10	L14	11/16	1/4
7/16	CPH43	L03	L06	L10	L14	11/16	1/4
15/32	CPH46	L03	L06	L10	L14	3/4	1/4
1/2	CPH50	L03	L06	L10	L14	3/4	1/4
9/16	CPH56		L06	L10	L14	13/16	1/4
5/8	CPH62		L06	L10	L14	7/8	1/4
3/4	CPH75		L06	L10	L14	1	1/4
7/8	CPH87		L06	L10	L14	1-1/8	1/4
1"	CPH100		L06	L10	L14	1-1/4	1/4

To order, add overall length L to Catalog Number. Example: CPH09L03



# Core Pins Copper Alloy Inch



D	Cat. No.	L				H	T
		4"	8"	12"	18"		
1/8	MM12	L04	L08	L12		1/4	1/8
5/32	MM15	L04	L08	L12	L18	9/32	5/32
3/16	MM18	L04	L08	L12	L18	3/8	3/16
7/32	MM21	L04	L08	L12	L18	13/32	3/16
1/4	MM25	L04	L08	L12	L18	7/16	3/16
9/32	MM28	L04	L08	L12	L18	7/16	1/4
5/16	MM31	L04	L08	L12	L18	1/2	1/4
3/8	MM37	L04	L08	L12	L18	5/8	1/4
7/16	MM43	L04	L08	L12	L18	11/16	1/4
1/2	MM50	L04	L08	L12	L18	3/4	1/4
9/16	MM56	L04	L08	L12	L18	13/16	1/4
5/8	MM62	L04	L08	L12	L18	7/8	1/4
3/4	MM75	L04	L08	L12	L18	1	1/4

Copper Alloy Pins from DMS offer the highest combination of thermal conductivity and strength available. Made from prehardened copper alloy, our pins are 3 times stronger than competing copper alloy pins, and have thermal conductivity 3-5 times greater than steel pins.

The high strength provides longer life, resistance to abrasion and ease of machining.

The high thermal conductivity provides faster heat removal from critical areas, reducing molded part cost and post-mold shrinkage. The high-copper alloy provides excellent corrosion resistance and inherent lubricity and galling resistance.

Custom sizes are available.

- To order, add overall length "L" to Catalog Number. Example: MM12L04
- Material: Copper Alloy AB-4
- Specials available upon request.

### SAFE HANDLING

Copper Alloy in solid form poses no special health risk. Like many industrial materials, beryllium-containing materials may pose a health risk if recommended safe handling practices are not followed. Inhalation of airborne beryllium may cause a serious lung disorder in susceptible individuals. The Occupational Safety and Health Administration (OSHA) has set mandatory limits on occupational respiratory exposures.

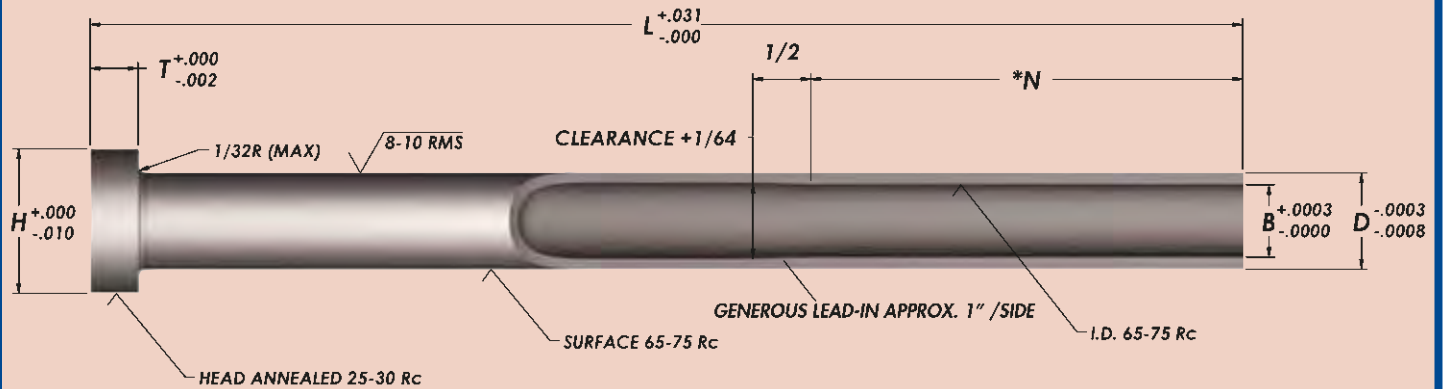




# Ejector Sleeves

## Nitrided - Parallel Inch

Material • AISI: H13  
 • 1.2344  
 Nitrided • I.D. & O.D.



B I.D.	D O.D.	Cat. No.	L												H	T
			3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"		
3/32	3/16	SE02	L03	L04	L05	L06	L07	L08							3/8	3/16
1/8	7/32	SE03	L03	L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	13/32	3/16
5/32	1/4	SE04		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	7/16	3/16
3/16	5/16	SE05		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	1/2	1/4
7/32	11/32	SE55		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	9/16	1/4
1/4	3/8	SE06		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	5/8	1/4
5/16	7/16	SE07		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	11/16	1/4
3/8	1/2	SE08		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	3/4	1/4
7/16	5/8	SE09		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	7/8	1/4
1/2	11/16	SE10		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	15/16	1/4
9/16	3/4	SE11		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	1	1/4
5/8	7/8	SE12		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	1-1/8	1/4
3/4	1	SE13		L04	L05	L06	L07	L08	L09	L10	L11	L12	L13	L14	1-1/4	1/4

- To order, add overall length "L" to Catalog Number. Example: SE02L03
- Sizes marked in BLUE print are available, but generally not stocked. Call for price and delivery.  
 Example: SE02L08 \*(N) = 1-3/4 for SE02 and SE03 \*(N) = 2-1/4 for SE04 and larger.

### \* Extra Long Ejector Sleeves Inch Standard



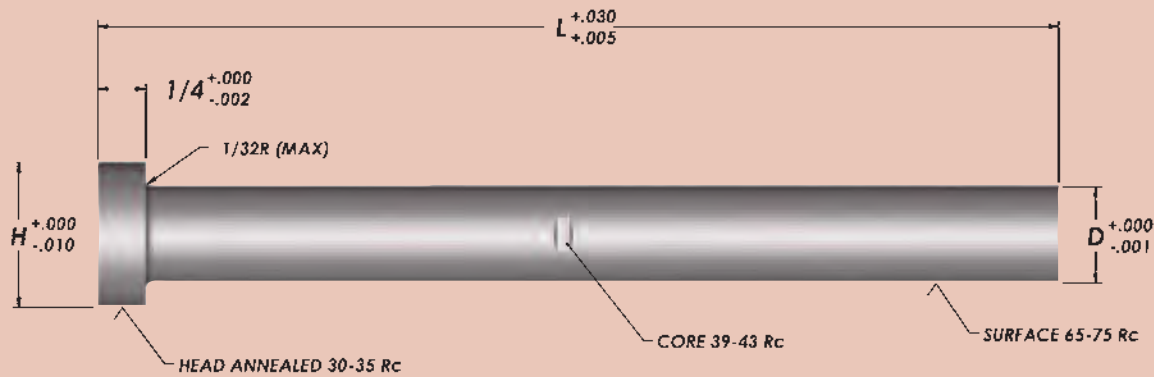
N=2-3/8" for SE04  
 N=2-3/4" for SE05, SE055  
 N=3-1/4" for SE06 thru SE13

B I.D.	D O.D.	Cat. No.	L				H	T
			15"	16"	17"	18"		
5/32	1/4	SE04	L15	L16	L17	L18	7/16	3/16
3/16	5/16	SE05	L15	L16	L17	L18	1/2	1/4
7/32	11/32	SE55	L15	L16	L17	L18	9/16	1/4
1/4	3/8	SE06	L15	L16	L17	L18	5/8	1/4
5/16	7/16	SE07	L15	L16	L17	L18	11/16	1/4
3/8	1/2	SE08	L15	L16	L17	L18	3/4	1/4
7/16	5/8	SE09	L15	L16	L17	L18	7/8	1/4
1/2	11/16	SE10	L15	L16	L17	L18	15/16	1/4
9/16	3/4	SE11	L15	L16	L17	L18	1	1/4
5/8	7/8	SE12	L15	L16	L17	L18	1-1/8	1/4
3/4	1	SE13	L15	L16	L17	L18	1-1/4	1/4



# Return Pins Nitrided Inch

Material • AISI: H13  
• 1.2344



### D = 1/2"

L	3-9/16	4-1/16	4-9/16	5-1/16	5-9/16	6-1/16	6-9/16
H	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Catalog Number	RP5356	RP5406	RP5456	RP5506	RP5556	RP5606	RP5656

### D = 5/8"

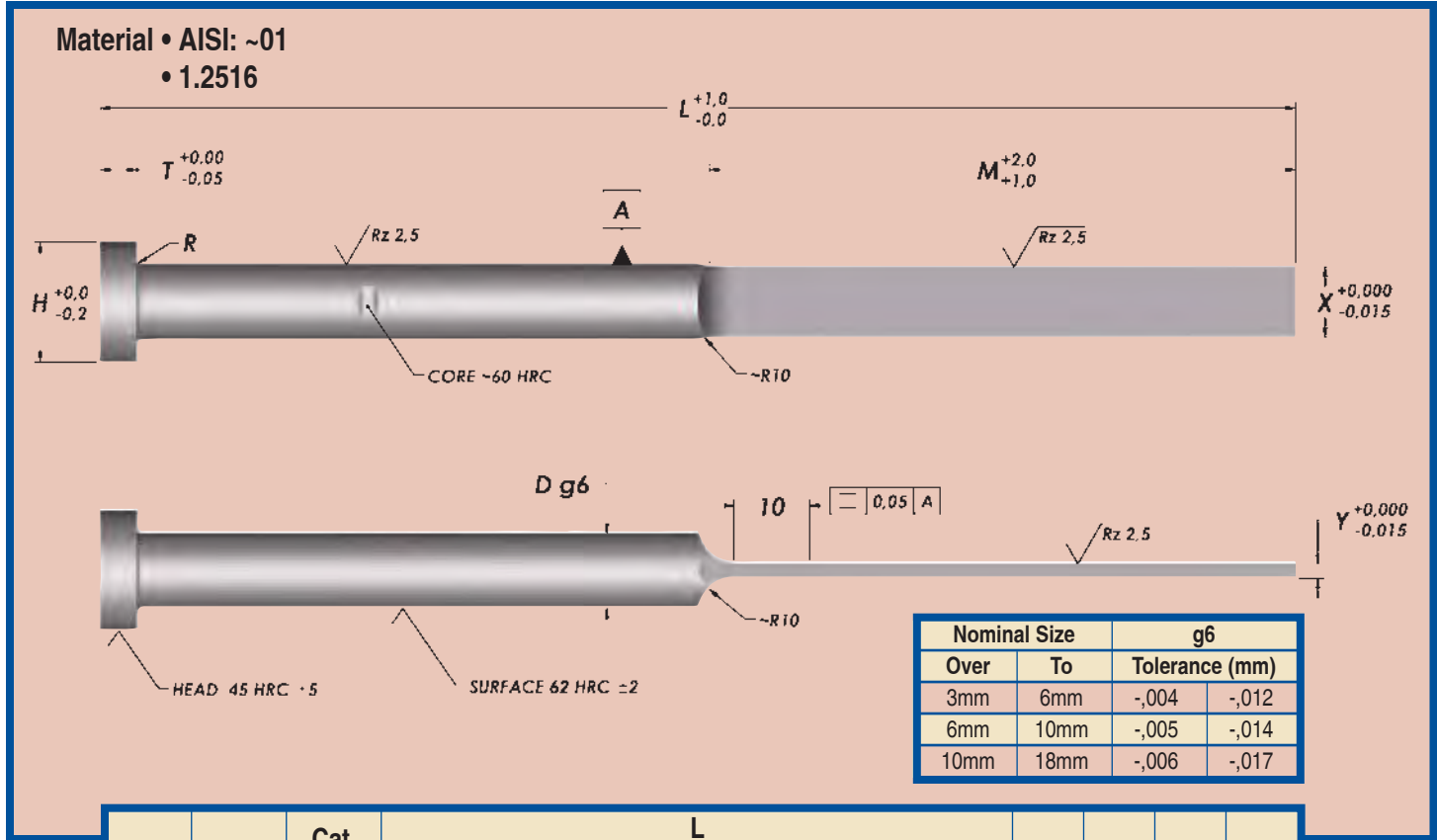
L	4-1/16	4-9/16	5-1/16	5-9/16	6-1/16	6-9/16	7-1/16	7-9/16	8-1/16
H	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8
Catalog Number	RP6406	RP6456	RP6506	RP6556	RP6606	RP6656	RP6706	RP6756	RP6806

### D = 3/4"

L	4-15/16	5-7/16	5-15/16	6-7/16	6-15/16	7-7/16	7-15/16	8-7/16	8-15/16	9-7/16
H	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
Catalog Number	RP7493	RP7543	RP7593	RP7643	RP7693	RP7743	RP7793	RP7843	RP7893	RP7943



# Ejector Blades Through Hard Metric



X	Y	Cat. No.	L											D	H	T	R
			63 M=32	80 M=40	100 M=50	125 M=63	160 M=80	200 M=100	250 M=125	315 M=160	400 M=200						
3,5	0,8	B03508	063	080	100	125	160							4,0	8,0	3,0	0,3
	1,0	B03510	063	080	100	125	160	200	250								
	1,2	B03512		080	100	125	160	200									
3,8	0,8	B03808	063	080	100	125	160						4,2	8,0	3,0	0,3	
	1,0	B03810	063	080	100	125	160										
	1,2	B03812		080	100	125	160	200									
4,5	1,0	B04510	063	080	100	125	160	200					5,0	10,0	3,0	0,3	
	1,2	B04512		080	100	125	160	200									
	1,5	B04515		080	100	125	160	200									
5,5	1,0	B05510		080	100	125	160	200					6,0	12,0	5,0	0,5	
	1,2	B05512		080	100	125	160	200	250								
	1,5	B05515		080	100	125	160	200	250								
	2,0	B05520		080	100	125	160	200	250								
7,5	1,0	B07510				125	160						8,0	14,0	5,0	0,5	
	1,2	B07512			100	125	160	200	250								
	1,5	B07515			100	125	160	200	250	315							
	2,0	B07520			100	125	160	200	250	315							
9,5	1,2	B05512					160	200					10,0	16,0	5,0	0,5	
	1,5	B09515					160	200	250	315	400						
	2,0	B09520					160	200	250	315	400						
11,5	2,0	B11520						200	250	315	400		12,0	18,0	7,0	0,8	
	2,5	B11525							200	250	315	400					
15,5	2,0	B15520							200	250	315	400	16,0	22,0	7,0	0,8	
	2,5	B15525								200	250	315					400





# Ejector Pins

## Nitrided - Parallel

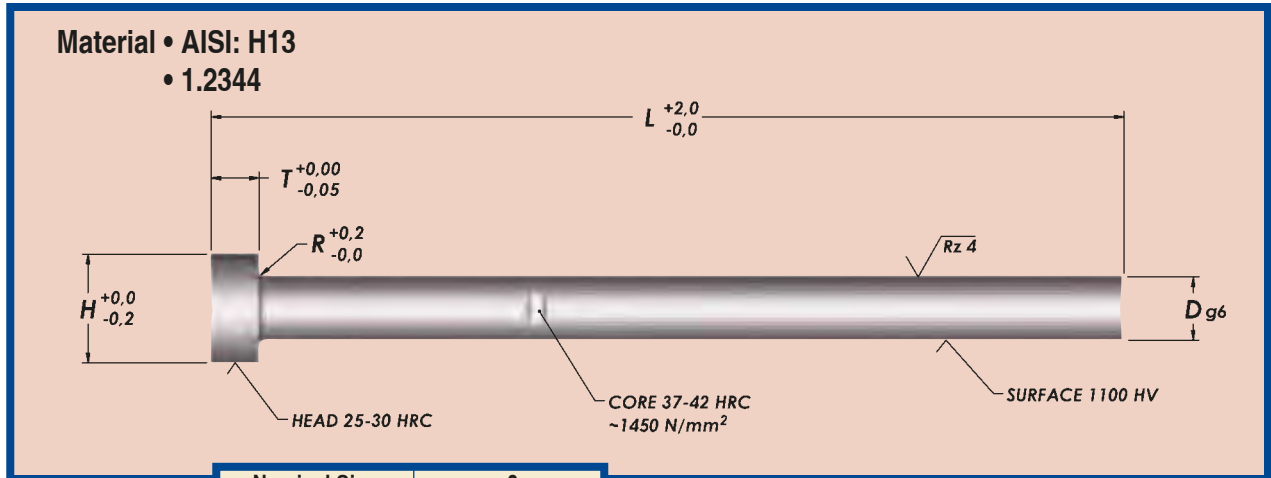
### Metric

D	Cat. No.	L											H	T	R
		100	125	160	200	250	315	400	500	630	800	1000			
1.5	AN-01.5			160		250	315						3	1.5	0.2
1.6	AN-01.6			160	200								3	1.5	0.2
2.0	AN-02.0	100	125	160	200	250		400					4	2.0	0.2
2.2	AN-02.2			160		250		400					4	2.0	0.2
2.4	AN-02.4			160		250							5	2.0	0.3
2.5	AN-02.5	100	125	160	200	250	315						5	2.0	0.3
2.7	AN-02.7		125		200		315	400					5	2.0	0.3
2.9	AN-02.9			160		250							5	2.0	0.3
3.0	AN-03.0	100	125	160	200	250	315	400	500	630	800		6	3.0	0.3
3.1	AN-03.1			160		250							6	3.0	0.3
3.2	AN-03.2		125	160		250		400	500	630	800		6	3.0	0.3
3.4	AN-03.4			160		250							6	3.0	0.3
3.5	AN-03.5			160		250		400			800		7	3.0	0.3
3.7	AN-03.7			160		250		400	500	630			7	3.0	0.3
3.9	AN-03.9			160		250							7	3.0	0.3
4.0	AN-04.0	100	125	160	200	250	315	400	500	630	800		8	3.0	0.3
4.1	AN-04.1					250							8	3.0	0.3
4.2	AN-04.2			160	200	250	315	400	500	630	800		8	3.0	0.3
4.4	AN-04.4			160		250							8	3.0	0.3
4.5	AN-04.5			160		250		400	500	630	800	1000	8	3.0	0.3
4.9	AN-04.9			160		250							8	3.0	0.3
5.0	AN-05.0	100	125	160	200	250	315	400	500	630	800		10	3.0	0.3
5.1	AN-05.1					250							10	3.0	0.3
5.2	AN-05.2			160	200	250		400	500	630	800		10	3.0	0.3
5.4	AN-05.4			160		250							10	3.0	0.3
5.5	AN-05.5			160		250		400	500		800		10	3.0	0.3
5.7	AN-05.7			160		250							10	3.0	0.3
5.9	AN-05.9			160		250							10	3.0	0.3
6.0	AN-06.0	100	125	160	200	250	315	400	500	630	800	1000	12	5.0	0.5
6.1	AN-06.1					250							12	5.0	0.5
6.2	AN-06.2			160		250		400	500	630	800		12	5.0	0.5
6.5	AN-06.5			160		250		400	500				12	5.0	0.5
6.9	AN-06.9					250							12	5.0	0.5
7.0	AN-07.0			160		250	315	400	500	630	800	1000	12	5.0	0.5
7.2	AN-07.2			160		250							12	5.0	0.5
7.5	AN-07.5								500	630			12	5.0	0.5
7.8	AN-07.8					250							12	5.0	0.5
8.0	AN-08.0	100	125	160	200	250	315	400	500	630	800	1000	14	5.0	0.5
8.1	AN-08.1			160		250							14	5.0	0.5
8.2	AN-08.2			160		250		400	500	630	800	1000	14	5.0	0.5
8.4	AN-08.4			160		250							14	5.0	0.5
8.5	AN-08.5			160		250		400	500	630			14	5.0	0.5
9.0	AN-09.0			160		250		400	500	630			14	5.0	0.5
9.5	AN-09.5								500	630			14	5.0	0.5
9.7	AN-09.7			160		250							14	5.0	0.5
10.0	AN-10.0	100	125	160	200	250	315	400	500	630	800	1000	16	5.0	0.5
10.1	AN-10.1					250							16	5.0	0.5
10.2	AN-10.2			160		250		400	500	630	800		16	5.0	0.5
10.5	AN-10.5			160		250		400	500	630			16	5.0	0.5
11.0	AN-11.0			160		250		400	500	630			18	5.0	0.5
12.0	AN-12.0	100	125	160	200	250	315	400	500	630	800	1000	18	7.0	0.8
12.2	AN-12.2					250		400	500	630	800	1000	18	7.0	0.8
12.5	AN-12.5	100		160		250		400	500	630	800		18	7.0	0.8
14.0	AN-14.0			160	200	250	315	400	500		800	1000	22	7.0	0.8
14.2	AN-14.2					250							22	7.0	0.8
16.0	AN-16.0	100		160	200	250	315	400	500	630	800	1000	22	7.0	0.8
16.2	AN-16.2					250							22	7.0	0.8
18.0	AN-18.0			160	200	250	315	400	500	630	800	1000	24	8.0	1.0
20.0	AN-20.0		125	160	200	250	315	400	500	630	800	1000	26	7.0	0.8
25.0	AN-25.0			160	200	250	315	400	500	630	800	1000	32	10.0	1.0
32.0	AN-32.0				200	250	315	400	500	630	800	1000	40	10.0	1.0

• To order, add overall length "L" to Catalog Number. Example: AN-01,5L160

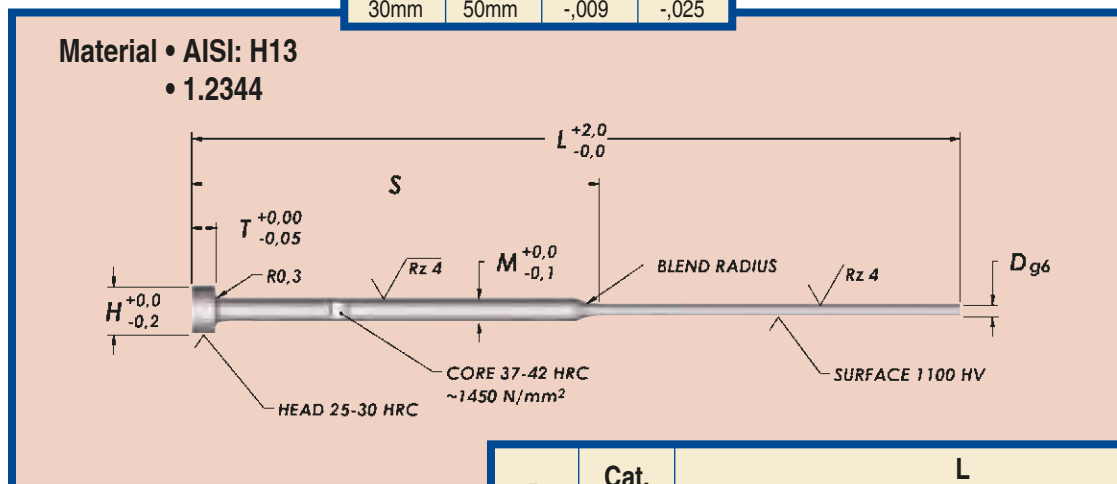


# Ejector Pins Nitrided - Parallel Metric



Nominal Size		g6	
Over	To	Tolerance (mm)	
0mm	3mm	-0,002	-0,008
3mm	6mm	-0,004	-0,012
6mm	10mm	-0,005	-0,014
10mm	18mm	-0,006	-0,017
18mm	30mm	-0,007	-0,020
30mm	50mm	-0,009	-0,025

# Ejector Pins Nitrided - Shoulder Metric

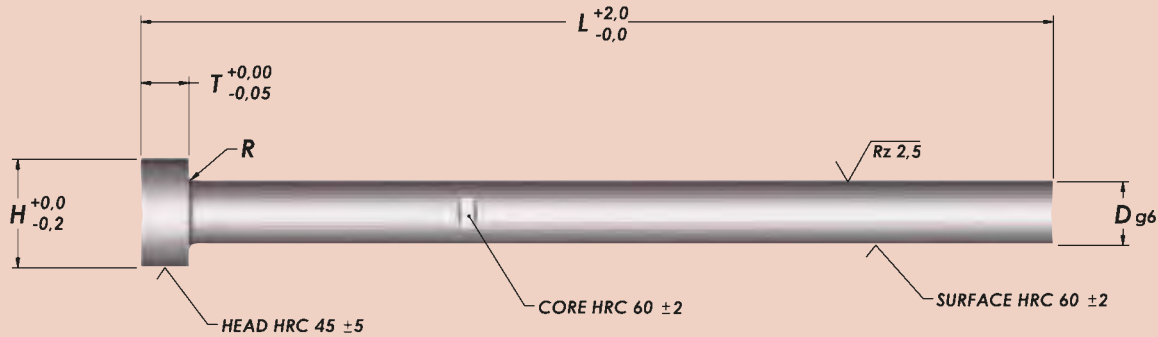


D	Cat. No.	L						M	H	T
		80 S=35	100 S=50	125 S=50	160 S=63	200 S=80	250 S=100			
0,8	CN-0,8			125				2	4	2
1,0	CN-1,0	080	100	125	160	200		2	4	2
1,1	CN-1,1			125				2	4	2
1,2	CN-1,2			125				2	4	2
1,3	CN-1,3			125				2	4	2
1,4	CN-1,4			125				2	4	2
1,5	CN-1,5	080	100	125	160	200	250	3	6	3
1,6	CN-1,6			125				3	6	3
1,7	CN-1,7	080			160			3	6	3
1,8	CN-1,8			125				3	6	3
2,0	CN-2,0	080	100	125	160	200	250	3	6	3
2,2	CN-2,2	080			160			3	6	3
2,5	CN-2,5		100	125	160	200	250	3	6	3
2,7	CN-2,7				160			3	6	3



# Ejector Pins Through Hard - Parallel Metric

Material • <math>3\varnothing</math> : AISI L2 (1.2344)  
 • >3<math>\varnothing</math> : AISI ~01 (1.2516)



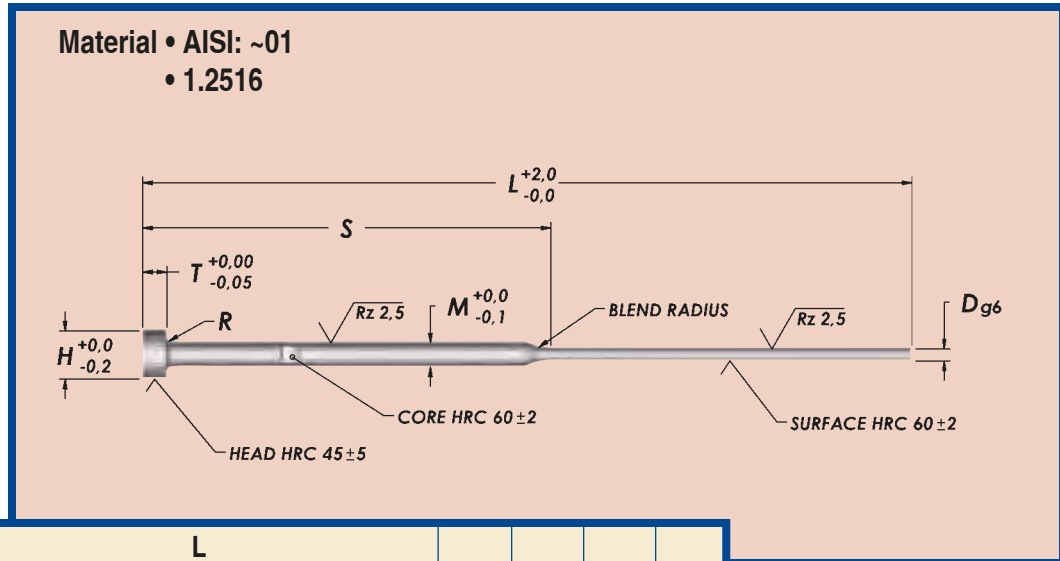
D	Cat. No.	L										H	T	R
		40	63	80	100	125	160	200	250	315	400			
1,5	AH-01,5				100	125	160	200	250			3	1,5	0,2
1,6	AH-01,6				100	125	160	200				3	1,5	0,2
2,0	AH-02,0	040	063	080	100	125	160	200	250			4	2,0	0,2
2,2	AH-02,2				100	125	160	200				4	2,0	0,2
2,5	AH-02,5				100	125	160	200	250			5	2,0	0,3
2,7	AH-02,7				100	125	160	200	250			5	2,0	0,3
3,0	AH-03,0	040	063	080	100	125	160	200	250	315	400	6	3,0	0,3
3,2	AH-03,2				100	125	160	200	250			6	3,0	0,3
3,5	AH-03,5				100	125	160	200	250	315	400	7	3,0	0,3
3,7	AH-03,7				100	125	160	200	250			7	3,0	0,3
4,0	AH-04,0	040	063	080	100	125	160	200	250	315	400	8	3,0	0,3
4,2	AH-04,2				100	125	160	200	250	315	400	8	3,0	0,3
4,5	AH-04,5				100	125	160	200	250			8	3,0	0,3
4,7	AH-04,7				100			200	250			8	3,0	0,3
5,0	AH-05,0	040	063	080	100	125	160	200	250	315	400	10	3,0	0,3
5,2	AH-05,2				100	125	160	200	250	315	400	10	3,0	0,3
5,5	AH-05,5				100	125	160	200	250	315		10	3,0	0,3
6,0	AH-06,0	040	063	080	100	125	160	200	250	315	400	12	5,0	0,5
6,2	AH-06,2				100	125	160	200	250	315	400	12	5,0	0,5
6,5	AH-06,5				100	125	160	200	250	315		12	5,0	0,5
7,0	AH-07,0				100	125	160	200	250	315	400	12	5,0	0,5
8,0	AH-06,0		063	080	100	125	160	200	250	315	400	14	5,0	0,5
8,2	AH-08,2			080	100	125	160	200	250	315	400	14	5,0	0,5
8,5	AH-08,5				100	125	160	200	250	315		14	5,0	0,5
9,0	AH-09,0				100	125	160	200	250	315		14	5,0	0,5
10,0	AH-10,0			080	100	125	160	200	250	315	400	16	5,0	0,5
10,2	AH-10,2					125	160	200	250	315	400	16	5,0	0,5
10,5	AH-10,5				100	125		200		315	400	16	5,0	0,5
11,0	AH-11,0						160	200	250	315		16	5,0	0,5
12,0	AH-12,0			080	100	125	160	200	250	315	400	18	7,0	0,8
12,2	AH-12,2						160	200	250	315		18	7,0	0,8
12,5	AH-12,5						160	200	250			18	7,0	0,8
14,0	AH-14,0				100	125	160	200	250	315	400	22	7,0	0,8
16,0	AH-16,0				100	125	160	200	250	315	400	22	7,0	0,8
18,0	AH-18,0						160	200	250	315	400	24	7,0	0,8
20,0	AH-20,0						160	200	250	315	400	26	8,0	1,0

• To order, add overall length "L" to Catalog Number. Example: AH-01,5L100





# Ejector Pins Through Hard - Shoulder Metric



D	Cat. No.	L					M	H	T	R
		80 S=35	100 S=50	125 S=50	160 S=63	200 S=80				
0,8	CH-0,8	080	100	125	160	200	2	4	2	0,2
0,9	CH-0,9		100	125	160	200	2	4	2	0,2
1,0	CH-1,0	080	100	125	160	200	2	4	2	0,2
1,1	CH-1,1		100	125	160	200	2	4	2	0,2
1,2	CH-1,2	080	100	125	160	200	2	4	2	0,2
1,3	CH-1,3	080	100	125	160	200	2	4	2	0,2
1,4	CH-1,4		100	125	160	200	2	4	2	0,2
1,5	CH-1,5	080	100	125	160	200	3	6	3	0,3
1,6	CH-1,6		100	125	160	200	3	6	3	0,3
1,7	CH-1,7		100	125	160	200	3	6	3	0,3
1,8	CH-1,8		100	125	160	200	3	6	3	0,3
1,9	CH-1,9		100	125	160	200	3	6	3	0,3
2,0	CH-2,0		100	125	160	200	3	6	3	0,3
2,1	CH-2,1		100	125	160	200	3	6	3	0,3
2,2	CH-2,2		100	125	160	200	3	6	3	0,3
2,3	CH-2,3		100	125	160	200	3	6	3	0,3
2,4	CH-2,4		100	125	160	200	3	6	3	0,3
2,5	CH-2,5		100	125	160	200	3	6	3	0,3

• To order, add overall length "L" to Catalog Number. Example: CH-0,8L080

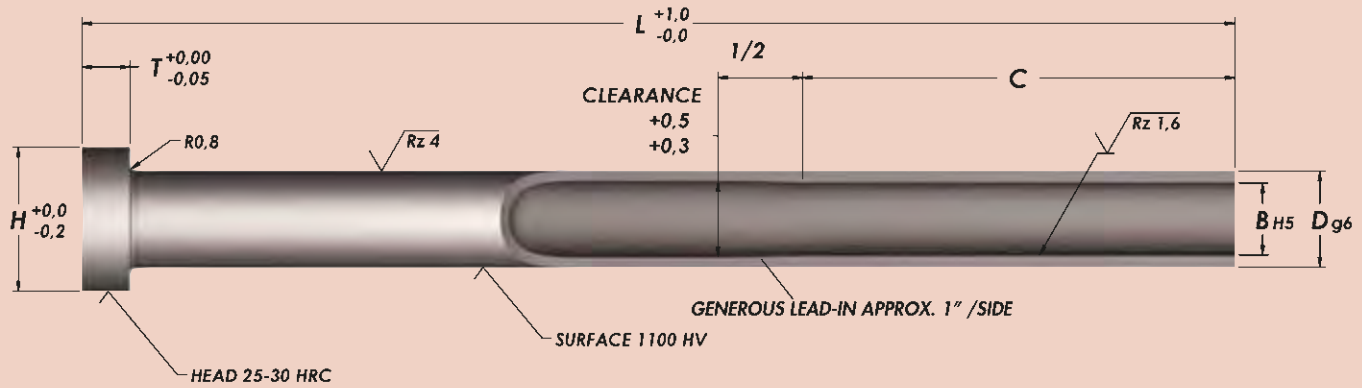
Nominal Size		g6	
Over	To	Tolerance (mm)	
0mm	3mm	-,002	-,008
3mm	6mm	-,004	-,012
6mm	10mm	-,005	-,014
10mm	18mm	-,006	-,017
18mm	30mm	-,007	-,020



# Ejector Sleeves

## Nitrided - Parallel Metric

Material • AISI: H13  
 • 1.2344  
 Nitrided • I.D. & O.D.



D O.D.	B I.D.	Catalog Number	L													C	H	T
			75	100	125	150	175	200	225	250	275	300	325	350	400			
4,0	2,0	SN-04,0x02,0	075	100	125	150	175	200								35	8,0	3,0
	2,2	SN-04,0x02,2	075	100	125	150												
5,0	2,5	SN-05,0x02,5	075	100	125	150										35	10,0	3,0
	2,7	SN-05,0x02,7	075	100	125	150												
	3,0	SN-05,0x03,0	075	100	125	150	175		250							45	10,0	3,0
6,0	3,2	SN-05,0x03,2	075	100	125	150	175	200										
	3,0	SN-06,0x03,0	075	100	125											45	12,0	5,0
	3,5	SN-06,0x03,5	075	100	125	150	175											
	3,7	SN-06,0x03,7	075	100	125	150												
8,0	4,0	SN-06,0x04,0	075	100	125	150	175	200	225	250	275	300		400		50	12,0	5,0
	4,2	SN-06,0x04,2	075	100	125	150	175			250								
	4,0	SN-08,0x04,0	075	100	125	150										50	14,0	5,0
10,0	4,2	SN-08,0x04,2	075	100	125	150	175	200	225	250								
	5,0	SN-08,0x05,0	075	100	125	150	175	200	225	250		325						
	5,2	SN-08,0x05,2	075	100	125	150	175	200	225	250								
12,0	6,0	SN-10,0x06,0	075	100	125	150	175	200	225	250	275					50	16,0	5,0
	6,2	SN-10,0x06,2	075	100	125	150	175	200	225									
14,0	8,0	SN-12,0x08,0	075	100	125	150	175	200	225	250			350			50	20,0	7,0
	8,2	SN-12,0x08,2	075	100	125	150	175	200	225	250								
16,0	10,0	SN-14,0x10,0		100	125	150	175	200	225	250						50	22,0	7,0
	10,2	SN-14,0x10,2		100	125	150	175	200		250								
16,0	12,0	SN-16,0x12,0		100	125	150	175	200	225	250						50	22,0	7,0

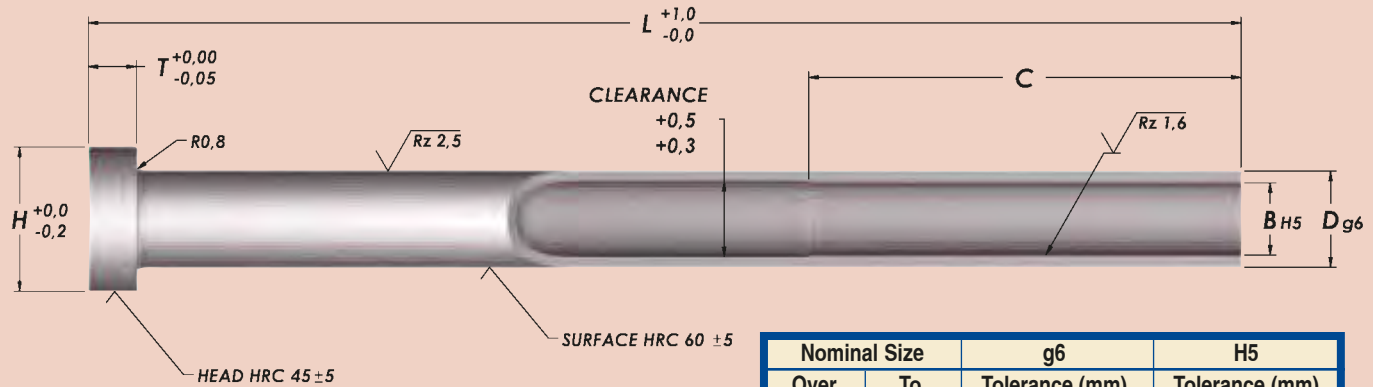
• To order, add overall length "L" to Catalog Number. Example: SN-04,0x02,0L075

Nominal Size		g6		H5	
Over	To	Tolerance (mm)		Tolerance (mm)	
0mm	3mm	-0,02	-0,08	+0,04	0
3mm	6mm	-0,04	-0,12	+0,05	0
6mm	10mm	-0,05	-0,14	+0,06	0
10mm	18mm	-0,06	-0,17	+0,08	0



# Ejector Sleeves Through Hard - Parallel Metric

Material • AISI 01  
• 1.2516



Nominal Size		g6		H5	
Over	To	Tolerance (mm)		Tolerance (mm)	
0mm	3mm	-.002	-.008	+.004	0
3mm	6mm	-.004	-.012	+.005	0
6mm	10mm	-.005	-.014	+.006	0
10mm	18mm	-.006	-.017	+.008	0
18mm	30mm	-.007	-.020	+.009	0

D O.D.	B I.D.	Catalog Number	L								H	T	C		
			75	100	125	150	175	200	225	250				275	
3,0	1,5	SH-03,0x01,5	075	100	125	150	175					35	6,0	3,0	
	1,6	SH-03,0x01,6	075	100	125	150	175								
4,0	2,0	SH-04,0x02,0	075	100	125	150	175	200	225			35	8,0	3,0	
	2,2	SH-04,0x02,2	075	100	125	150	175	200	225						
	2,5	SH-04,0x02,5	075	100	125	150	175	200	225						
5,0	2,5	SH-05,0x02,5	075	100	125	150	175	200	225	250		35	10,0	3,0	
	2,7	SH-05,0x02,7	075	100	125	150	175	200	225	250					
	3,0	SH-05,0x03,0	075	100	125	150	175	200	225	250	275				45
	3,2	SH-05,0x03,2	075	100	125	150	175	200	225	250	275				
6,0	3,0	SH-06,0x03,0	075	100	125	150	175	200	225	250	275	45	12,0	5,0	
	3,5	SH-06,0x03,5	075	100	125	150	175	200	225	250	275				
	4,0	SH-06,0x04,0	075	100	125	150	175	200	225	250	275				
	4,5	SH-06,0x04,5	075	100	125	150	175	200	225	250	275				
8,0	4,2	SH-08,0x04,2	075	100	125	150	175	200	225	250	275	45	14,0	5,0	
	5,0	SH-08,0x05,0	075	100	125	150	175	200	225	250	275				
	5,2	SH-08,0x05,2	075	100	125	150	175	200	225	250	275				
10,0	6,0	SH-10,0x06,0	075	100	125	150	175	200	225	250	275	45	16,0	5,0	
	6,2	SH-10,0x06,2	075	100	125	150	175	200	225	250	275				
12,0	8,0	SH-12,0x08,0	075	100	125	150	175	200	225	250	275	45	20,0	7,0	
	8,2	SH-12,0x08,2	075	100	125	150	175	200	225	250	275				
14,0	10,0	SH-14,0x10,0	075	100	125	150	175	200	225	250	275	45	22,0	7,0	
16,0	12,0	SH-16,0x12,0	075	100	125	150	175	200	225	250	275	45	22,0	7,0	
20,0	14,0	SH-20,0x14,0		100		150		200		250		45	26,0	8,0	

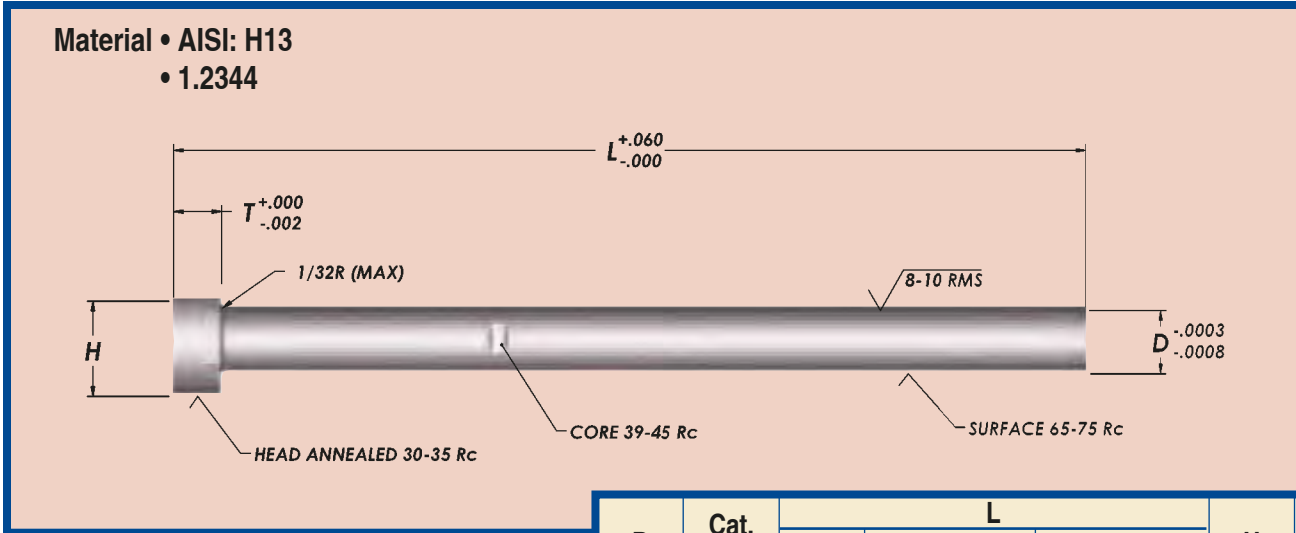
- To order, add overall length "L" to Catalog Number. Example: SH-03,0x02,0L075
- Sizes marked in blue print are available but generally not stocked.
- Call for price and delivery. Example: SH-03,0x01,5L075





# D-Head Ejector Pins

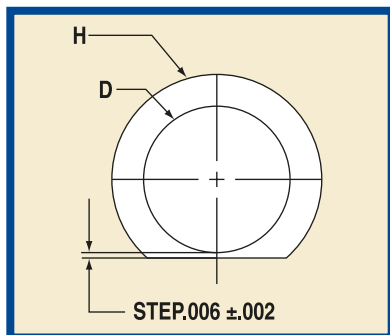
## Nitrided - Parallel



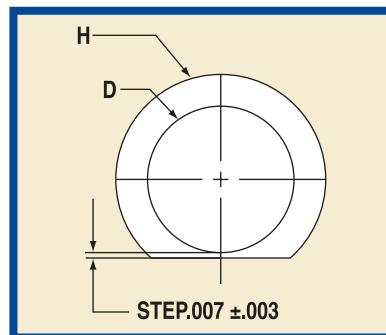
- No machining required.
- Save time – let us key your pins.

D	Cat. No.	L					H	T
		6"	10"	14"	18"	25"		
		STD.	STD.	STD.	STD.	STD.		
1/8	DPIN12	L06	L10	L14			1/4	1/8
9/64	DPIN14		L10	L14			1/4	1/8
5/32	DPIN15	L06	L10	L14	L18	L25	9/32	5/32
3/16	DPIN18	L06	L10	L14	L18	L25	3/8	3/16
7/32	DPIN21			L14			13/32	3/16
1/4	DPIN25	L06	L10	L14	L18	L25	7/16	3/16
5/16	DPIN31	L06	L10	L14	L18	L25	1/2	1/4
3/8	DPIN37	L06	L10	L14	L18	L25	5/8	1/4
1/2	DPIN50	L06	L10	L14	L18	L25	3/4	1/4
5/8	DPIN62	L06	L10	L14	L18	L25	7/8	1/4
3/4	DPIN75	L06	L10	L14	L18	L25	1	1/4
1	DPIN100	L06	L10	L14	L18	L25	1-1/4	1/4

- To order, add overall length "L" to Catalog Number. Example: DPIN12L06
- Other key headed pins not shown are available upon request. Check with our order desk.



1/8 - 5/16 dia.

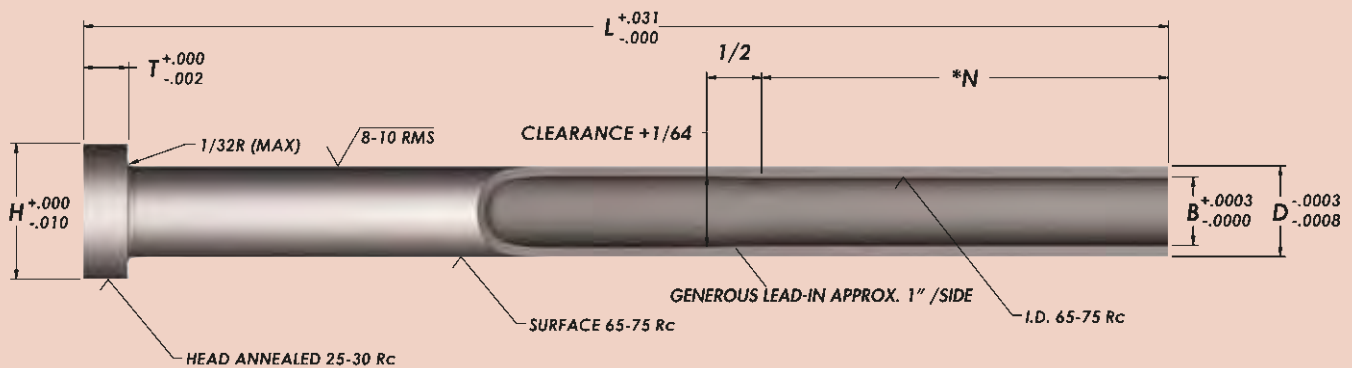


3/8 - 1" dia.



# Ejector Sleeves +.005 Oversize Nitrided - Parallel Inch

Material • AISI: H13  
• 1.2344  
Nitrided • I.D. & O.D.



B I.D.	D O.D.	Cat. No.	L									H	T
			4"	5"	6"	7"	8"	9"	10"	11"	12"		
3/32	.1925	OSE02	L04	L05	L06	L07	L08	L09	L10	L11	L12	3/8	3/16
1/8	.2238	OSE03	L04	L05	L06	L07	L08	L09	L10	L11	L12	13/32	3/16
5/32	.2550	OSE04	L04	L05	L06	L07	L08	L09	L10	L11	L12	7/16	3/16
3/16	.3175	OSE05	L04	L05	L06	L07	L08	L09	L10	L11	L12	1/2	1/4
1/4	.3800	OSE06	L04	L05	L06	L07	L08	L09	L10	L11	L12	5/8	1/4
5/16	.4425	OSE07	L04	L05	L06	L07	L08	L09	L10	L11	L12	11/16	1/4
3/8	.5050	OSE08	L04	L05	L06	L07	L08	L09	L10	L11	L12	3/4	1/4

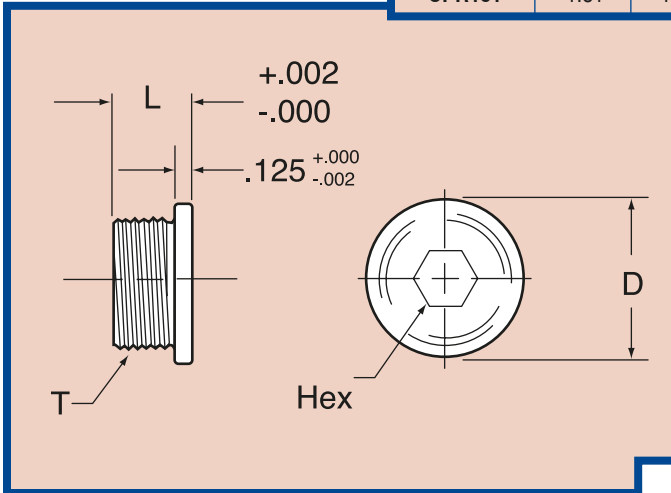
- To order, add overall length "L" to Catalog Number. Example: OSE02L04
  - Sizes marked in light print are available but generally not stocked. Call for price and delivery. Example: OSE02L11
  - \* (N) = 1-3/4 for OSE02 and OSE03
  - \* (N) = 2-1/4 for OSE04 and larger
- Any of DMS standard sleeves (from page B9) can be ordered oversize. Call our order desk for details.



# Core Pin Retainers

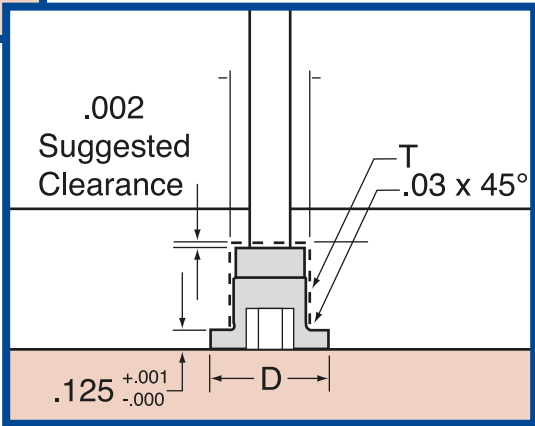


Catalog Number	D O.D. -.000 -.010	T Thread	Head Thickness -.002	L Length +.002 -.000	Hex Size	Recommended Pin Sizes
CPR56	.56	3/8 - 24	.125	.437	3/16	3/32 thru 5/32 diameters
CPR68	.68	1/2 - 20	.125	.437	1/4	11/64 thru 9/32 diameters
CPR93	.93	3/4 - 16	.125	.437	3/8	5/16 thru 7/16 diameters
CPR106	1.06	7/8 - 14	.125	.437	3/8	15/32 thru 9/16 diameters
CPR131	1.31	1-1/8 - 12	.125	.437	3/8	5/8 thru 3/4 diameters



Material : 12L14: Black oxidized

- Allows for improved and more consistent installation and removal of core pins by toolmaker
- Does not force the head of the core pin head against the bottom of the counterbore



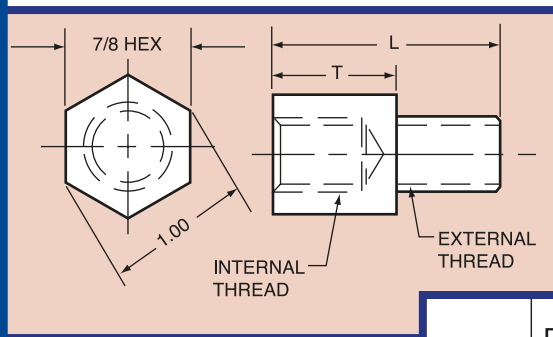


# Knockout Rod Extensions

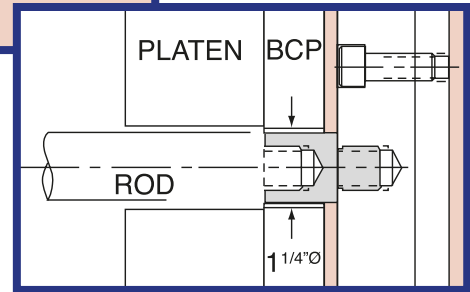


## Hex Style

Catalog Number	T	L Length	Thread internal & external
KRE37-10	1.052	1.672	3/8 - 16
KRE37-15	1.552	2.172	3/8 - 16
KRE50-10	1.052	1.672	1/2 - 13
KRE50-15	1.552	2.175	1/2 - 13
KRE62-10	1.052	1.922	5/8 - 11
KRE62-15	1.552	2.422	5/8 - 11
KRE75-10	1.052	1.672	3/4 - 10
KRE75-15	1.552	2.422	3/4 - 10
KRE75-10NT*	1.052	1.922	3/4 - 10
KRE75-15NT*	1.552	2.422	3/4 - 10



\*Note: External thread only. Tool maker to machine internal thread on "NT" style.



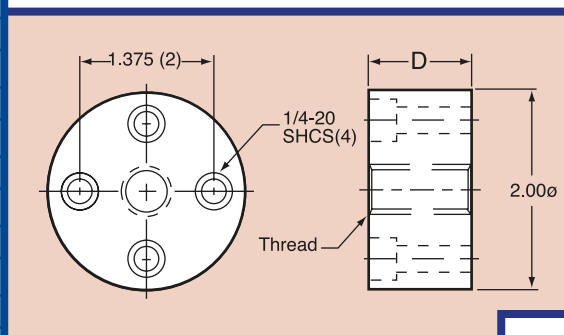
### "L" DIMENSIONS:

1.052 = .875 (BCP) + .187 (Stop Pins) - .010  
 1.552 = 1.375 (BCP) + .187 (Stop Pins) - .010

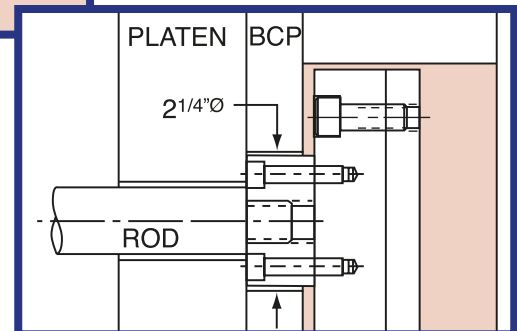
## Round Style



Catalog Number	D	Thread
KR37-10	1.052	3/8 - 16
KR37-15	1.552	3/8 - 16
KR50-10	1.052	1/2 - 13
KR50-15	1.552	1/2 - 13
KR62-10	1.052	5/8 - 11
KR62-15	1.552	5/8 - 11
KR75-10	1.052	3/4 - 10
KR75-15	1.552	3/4 - 10
KR75-10NT*	1.052	no thread
KR75-15NT*	1.552	no thread



\*Note: No female thread. Tool maker to machine internal thread on "NT" style.






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**Leader Pins**  
(Straight)

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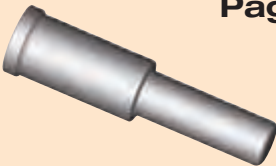
**Shoulder Bushings**  
(Bronze Plated)

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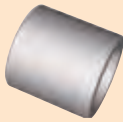
**Guided Ejector Support Pillars**  
(Metric)

Page 3




**Leader Pins**  
(Shoulder)

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**Straight Bushings**  
(Steel)



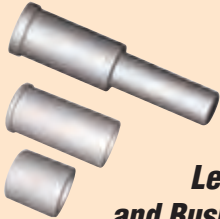
**Straight Bushings**  
(Solid Bronze)

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**Guided Ejector Leader Pins**

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**Shoulder Leader Pins and Bushings 1/2"**

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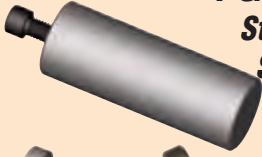


**Straight Bushings**  
(Bronze Plated)




**Straight Bushings**  
(Self Lubricating)

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**Standard Support Pillars**  
(Tapped)




**Stop Pins**

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**Shoulder Bushings**  
(Steel)

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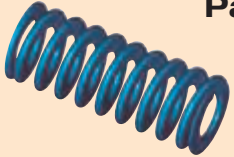


**Guided Ejector Bushings**  
(Steel)



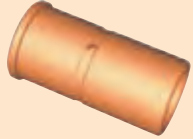
**Guided Ejector Bushings**  
(Solid Bronze)

Page 17




**Springs Medium Duty**  
(Blue)

Page 6




**Shoulder Bushings**  
(Solid Bronze)

Page 12

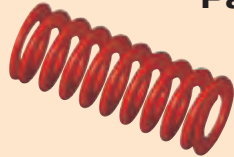


**Guided Ejector Bushings**  
(Bronze Plated)




**Guided Ejector Bushings**  
(Self Lubricating)

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**Springs Medium Heavy Duty**  
(Red)

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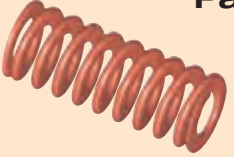
**Shoulder Bushings**  
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**Guided Ejector Support Pillars**  
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**Springs Heavy Duty**  
(Gold)






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**Slide Latches**

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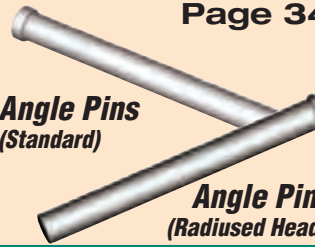
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**Sprue Bushings**  
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**Angle Pins**  
(Standard)


**Angle Pins**  
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**Guide Locks**

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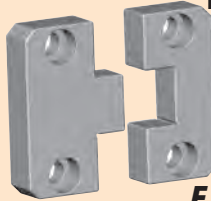
**Sprue Reamers**

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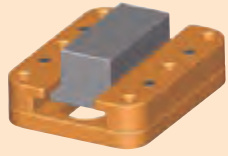
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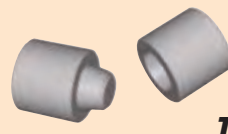
**E Side Locks**

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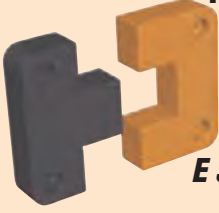
**Gib Assemblies**

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**Round Tapered Interlocks**

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**E Side Locks**  
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**Locating Rings**

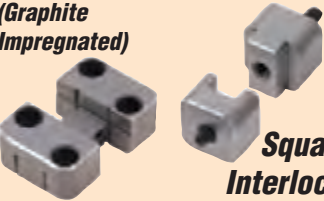
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**Spacer Plates**

**E Side Locks**  
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**Square Interlocks**

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**Slide Retainers**

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**Cashew Gate Inserts**  
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**Cashew Gate Inserts**  
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**Double Date Stamp**

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**Cashew Gate Inserts**  
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**Unit Date Stamp**

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**Cashew Gate Inserts**  
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**EXAflow**  
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**EXAflow**  
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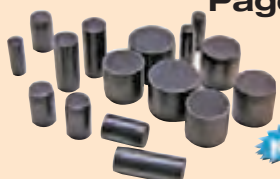
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**Bolexp® Ball-Guided Ejector Bushings**

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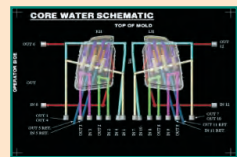
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**ICS Laser Technologies Full Colour Mold Plaques**

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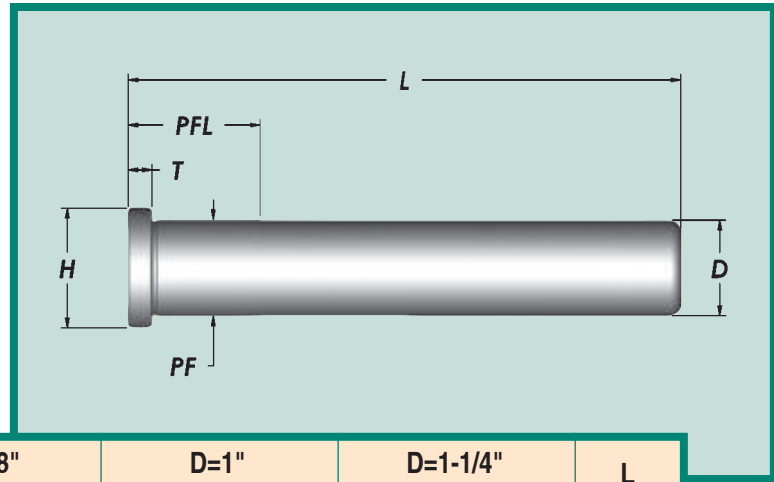
**CPLP-PLP**



# Leader Pins Straight 3/4 – 1-1/4



General Dimensions and Tolerances				
Nominal Diameter	D +.0000 -.0005	PF +.0005 -.0000	H +.000 -.010	T +.000 -.005
3/4	.749	.751	.990	3/16
7/8	.874	.876	1.115	1/4
1"	.999	1.001	1.240	1/4
1-1/4	1.249	1.251	1.490	5/16



L	D=3/4"		D=7/8"		D=1"		D=1-1/4"		L
	PFL	Cat. No.	PFL	Cat. No.	PFL	Cat. No.	PFL	Cat. No.	
1-3/4	7/8	1000	7/8	1099	7/8	1198			1-3/4
2-1/4	7/8	1001	7/8	1100	7/8	1199			2-1/4
2-3/4	7/8	1002	7/8	1101	7/8	1200	7/8	1300	2-3/4
3-1/4	7/8	1003	7/8	1102	7/8	1201	7/8	1301	3-1/4
3-3/4	7/8	1004	7/8	1103	7/8	1202	7/8	1302	3-3/4
4-1/4	1-3/8	1005	1-3/8	1104	1-3/8	1203	7/8	1303	4-1/4
4-3/4	1-3/8	1006	1-3/8	1105	1-3/8	1204	1-3/8	1304	4-3/4
5-1/4	1-3/8	1007	1-3/8	1106	1-3/8	1205	1-3/8	1305	5-1/4
5-3/4	1-7/8	1008	1-3/8	1107	1-3/8	1206	1-3/8	1306	5-3/4
6-1/4	1-7/8	1009	1-7/8	1108	1-3/8	1207	1-3/8	1307	6-1/4
6-3/4	1-7/8	1010	1-7/8	1109	1-7/8	1208	1-7/8	1308	6-3/4
7-1/4	1-7/8	1011	1-7/8	1110	1-7/8	1209	1-7/8	1309	7-1/4
7-3/4	1-7/8	1012	1-7/8	1111	1-7/8	1210	1-7/8	1310	7-3/4
8-1/4			1-7/8	1112	1-7/8	1211	1-7/8	1311	8-1/4
8-3/4			1-7/8	1113	1-7/8	1212	1-7/8	1312	8-3/4
9-1/4	1-7/8	1015			1-7/8	1213	1-7/8	1313	9-1/4
9-3/4					1-7/8	1214	1-7/8	1314	9-3/4
10-1/4					1-7/8	1215	1-7/8	1315	10-1/4
10-3/4			1-7/8	1117	1-7/8	1216	1-7/8	1316	10-3/4
11-1/4					1-7/8	1217	1-7/8	1317	11-1/4
11-3/4					1-7/8	1218	1-7/8	1318	11-3/4
12-1/4			1-7/8	1120	1-7/8	1219	1-7/8	1319	12-1/4
12-3/4							1-7/8	1320	12-3/4
13-3/4							1-7/8	1322	13-3/4
14-3/4							1-7/8	1324	14-3/4
15-3/4							1-7/8	1326	15-3/4
24					1-7/8	LP1x24	1-7/8	LP1-1/4x24	24

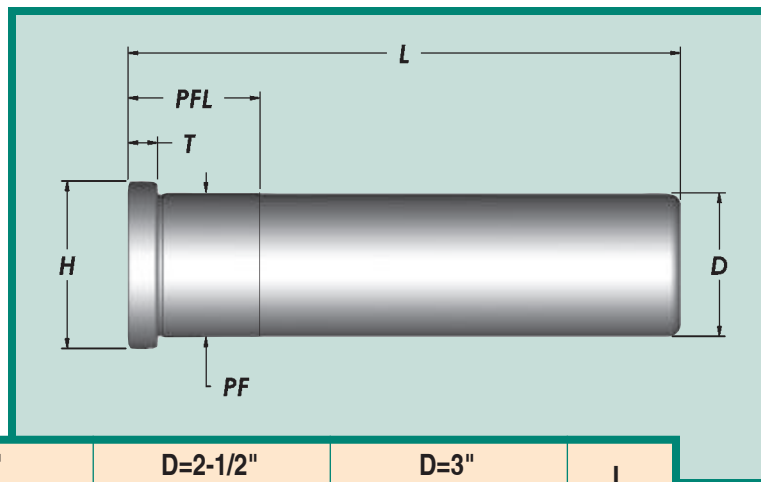




# Leader Pins Straight 1-1/2 – 3"



General Dimensions and Tolerances				
Nominal Diameter	D +.0000 -.0005	PF +.0005 -.0000	H +.000 -.010	T +.000 -.005
1-1/2	1.499	1.501	1.740	5/16
2"	1.999	2.001	2.240	5/16
2-1/2	2.499	2.501	2.740	5/16
3"	2.999	3.001	3.365	1/2



L	D=1-1/2"		D=2"		D=2-1/2"		D=3"		L
	PFL	Cat. No.	PFL	Cat. No.	PFL	Cat. No.	PFL	Cat. No.	
3-3/4	1-3/8	1402							3-3/4
4-1/4	1-3/8	1403							4-1/4
4-3/4	1-3/8	1404							4-3/4
5-1/4	1-3/8	1405							5-1/4
5-3/4	1-3/8	1406	1-7/8	1606	2-3/8	1806			5-3/4
6-1/4	1-3/8	1407							6-1/4
6-3/4	1-3/8	1408	1-7/8	1608					
7-1/4									7-1/4
7-3/4	1-7/8	1410	1-7/8	1610	2-3/8	1810			7-3/4
8-1/4									8-1/4
8-3/4	1-7/8	1412	1-7/8	1612	2-3/8	1812			8-3/4
9-1/4									9-1/4
9-3/4	1-7/8	1414	1-7/8	1614	2-3/8	1814			9-3/4
10-1/4									10-1/4
10-3/4	1-7/8	1416	1-7/8	1616	2-3/8	1816			10-3/4
11-1/4									11-1/4
11-3/4	1-7/8	1418	1-7/8	1618	2-3/8	1818			11-3/4
12-1/4									12-1/4
12-3/4	1-7/8	1420	1-7/8	1620	2-3/8	1820	2-7/8	3020	12-3/4
13-3/4	1-7/8	1422	1-7/8	1622	2-3/8	1822			13-3/4
14-3/4	1-7/8	1424	1-7/8	1624	2-3/8	1824	2-7/8	3024	14-3/4
15-3/4	1-7/8	1426	1-7/8	1626	2-3/8	1826			15-3/4
16-3/4			2-3/8	1628	2-3/8	1828	2-7/8	3028	15-3/4
18-3/4			2-3/8	1632	2-3/8	1832	2-7/8	3032	18-3/4
<b>NEW</b> 36	2-3/8	LP1-1/2x36	2-3/8	LP2x36	2-3/8	LP2-1/2x36	2-7/8	LP3x36	36

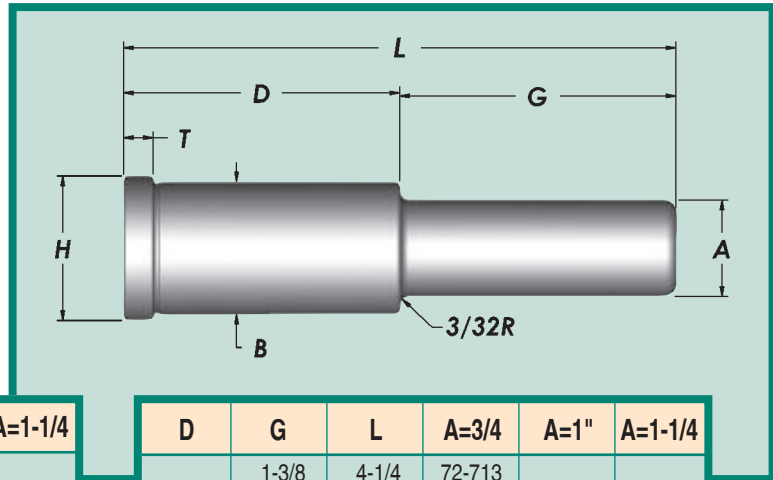




# Leader Pins Shoulder 3/4 – 1-1/4"



General Dimensions and Tolerances				
Nominal Diameter	A +.0000 -.0005	B +.0005 -.0000	H +.000 -.010	T +.000 -.005
3/4	.749	1.126	1.250	5/16
1"	.999	1.376	1.500	5/16
1-1/4	1.249	1.626	1.750	5/16



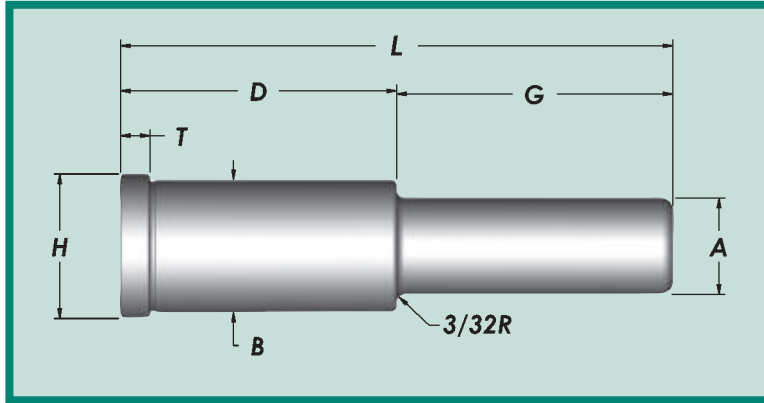
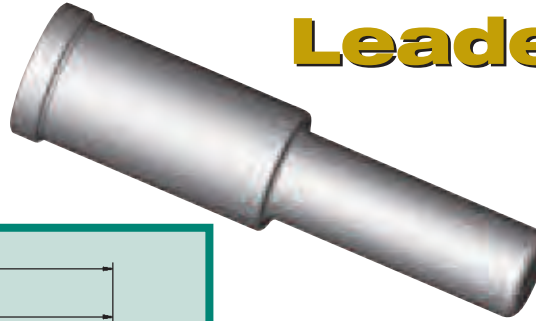
D	G	L	A=3/4	A=1"	A=1-1/4
7/8	7/8	1-3/4	70-707		
	1-3/8	2-1/4	70-713		
	2-3/8	3-1/4	70-723		
1-3/8	2-7/8	3-3/4	70-727	10-727	
	7/8	2-1/4	71-307		
	1-3/8	2-3/4	71-313	11-313	
	1-7/8	3-1/4	71-317	11-317	
	2-3/8	3-3/4	71-323		
1-7/8	2-7/8	4-1/4	71-327	11-327	
	3-3/8	4-3/4	71-333	11-333	121-333
	7/8	2-3/4	71-707		
	1-3/8	3-1/4	71-713	11-713	
	1-7/8	3-3/4	71-717	11-717	
	2-3/8	4-1/4	71-723	11-723	121-723
2-3/8	2-7/8	4-3/4	71-727	11-727	121-727
	3-3/8	5-1/4	71-733	11-733	
	3-7/8	5-3/4	71-737		121-737
	1-3/8	3-3/4	72-313	12-313	
	1-7/8	4-1/4	72-317	12-317	
	2-3/8	4-3/4	72-323	12-323	
4-3/8	2-7/8	5-1/4	72-327	12-327	122-327
	3-3/8	5-3/4		12-333	
	3-7/8	6-1/4	72-337	12-337	122-337

D	G	L	A=3/4	A=1"	A=1-1/4
2-7/8	1-3/8	4-1/4	72-713		
	1-7/8	4-3/4	72-717	12-717	122-717
	2-3/8	5-1/4	72-723	12-723	122-723
	2-7/8	5-3/4	72-727	12-727	122-727
	3-3/8	6-1/4		12-733	
3-3/8	3-7/8	6-3/4	72-737	12-737	
	4-3/8	7-1/4		12-743	122-743
	1-7/8	5-1/4	73-317	13-317	
	2-3/8	5-3/4	73-323		123-323
3-7/8	2-7/8	6-1/4		13-327	
	3-3/8	6-3/4	73-333	13-333	
	4-3/8	7-3/4		13-343	123-343
4-3/8	2-3/8	6-1/4	73-723	13-723	123-723
	2-7/8	6-3/4	73-727	13-727	123-727
	3-3/8	7-1/4		13-733	123-733
	3-7/8	7-3/4		13-737	123-737
	4-7/8	8-3/4		13-747	
4-7/8	2-7/8	7-1/4		14-327	
	3-3/8	7-3/4			124-333
	3-7/8	8-1/4		14-337	
	4-3/8	8-3/4			
	4-7/8	9-1/4			124-347
5-7/8	3-7/8	8-3/4		14-737	124-737
	4-3/8	9-1/4		14-743	
	4-7/8	9-3/4		14-747	124-747
5-7/8	5-7/8	10-3/4			124-757
	3-7/8	9-3/4		15-737	125-737
	4-3/8	10-1/4			125-743
	5-7/8	11-3/4			125-757

\* Items in blue being discontinued. Available while supplies last. May be available as a per order item after depleted.



# Shoulder Leader Pins 1/2"



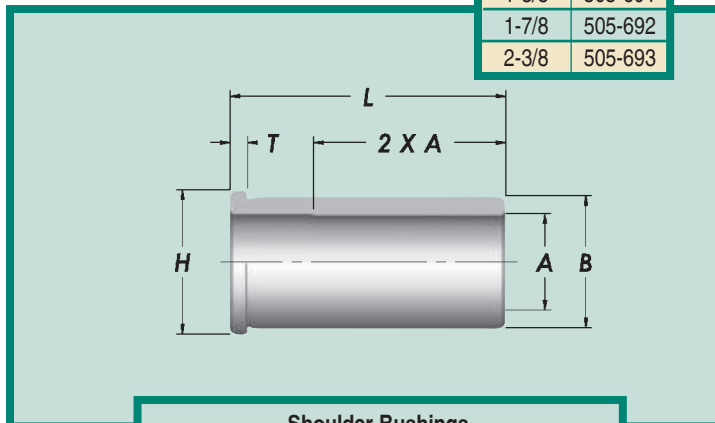
D	G	L	Cat. No.
7/8	7/8	1-3/4	500-707
	1-3/8	2-1/4	500-713
	1-7/8	2-3/4	500-717
	2-3/8	3-1/4	500-723
1-3/8	7/8	2-1/4	501-307
	1-3/8	2-3/4	501-313
	1-7/8	3-1/4	501-317
1-7/8	7/8	2-3/4	501-707
	1-3/8	3-1/4	501-713
	1-7/8	3-3/4	501-717
2-3/8	7/8	3-1/4	502-307
2-7/8	1-3/8	4-1/4	502-713

Leader Pins General Dimensions and Tolerances				
Nominal Diameter	A +.0000 -.0005	B +.0005 -.0000	H +.000 -.010	T +.000 -.005
1/2	.499	.751	.853	3/16

# Shoulder Bushings 1/2"

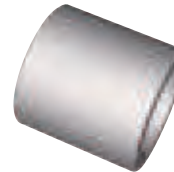


L	Cat. No.
7/8	505-690
1-3/8	505-691
1-7/8	505-692
2-3/8	505-693

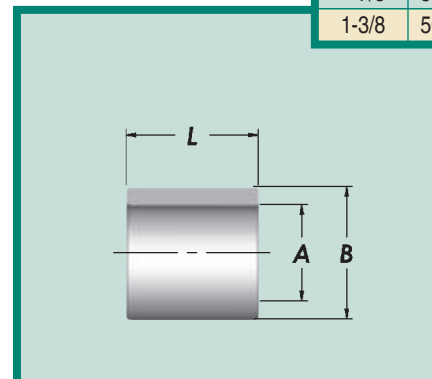


Shoulder Bushings General Dimensions and Tolerances				
Nominal Diameter	A +.0005 -.0000	B +.0005 -.0000	H +.000 -.010	T +.000 -.005
1/2	.500	.7505	.853	3/16

# Straight Bushings 1/2"



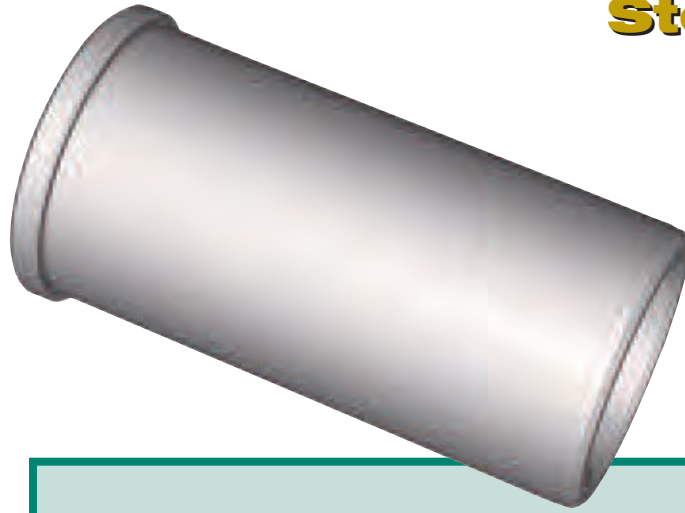
L	Cat. No.
7/8	505-498
1-3/8	505-499



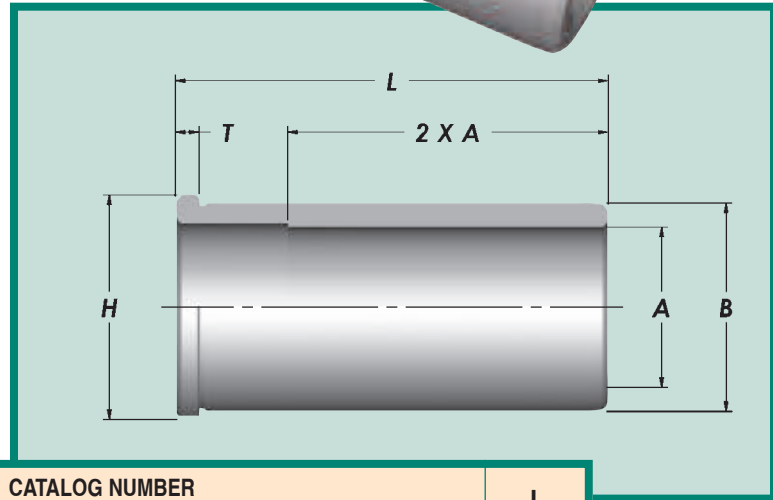
Straight Bushings General Dimensions and Tolerances		
Nominal Diameter	A +.0005 -.0000	B +.0005 -.0000
1/2	.500	.7505



# Shoulder Bushings Steel



General Dimensions and Tolerances				
Nominal I.D.	A +0.005 -0.000	B +0.005 -0.000	H +0.000 -0.010	T +0.000 -0.005
3/4	.7505	1.1255	1.250	3/16
7/8	.8755	1.2505	1.375	3/16
1"	1.0005	1.3755	1.500	3/16
1-1/4	1.2505	1.6255	1.750	3/16
1-1/2	1.5005	2.0005	2.125	3/16
2"	2.0005	2.5005	2.625	3/16
2-1/2	2.5005	3.2505	3.375	3/16
3"	3.0005	3.7505	3.937	1/2

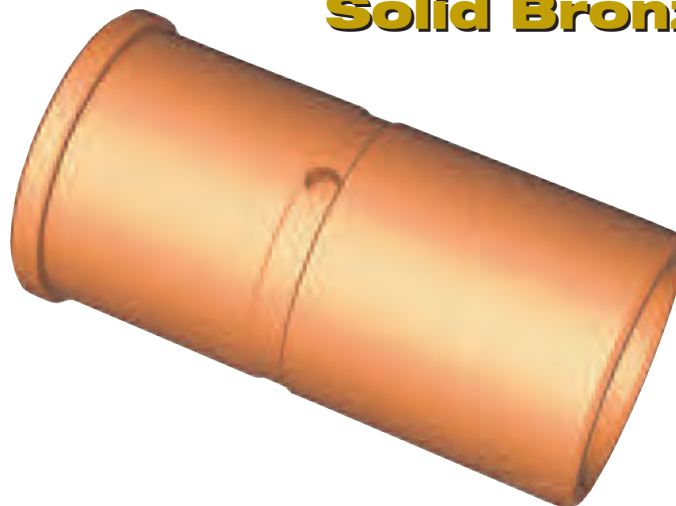


L	CATALOG NUMBER				L
	A=3/4"	A=7/8"	A=1"	A=1-1/4"	
7/8	2700	2710	2730	2750	7/8
1-3/8	2701	2711	2731	2751	1-3/8
1-7/8	2702	2712	2732	2752	1-7/8
2-3/8	2703	2713	2733	2753	2-3/8
2-7/8	2704	2714	2734	2754	2-7/8
3-3/8	2705	2715	2735	2755	3-3/8
3-7/8	2706	2716	2736	2756	3-7/8
4-3/8	2707	2717	2737	2757	4-3/8
4-7/8	2708	2718	2738	2758	4-7/8
5-7/8	2709	2720	2740	2760	5-7/8
7-7/8					7-7/8

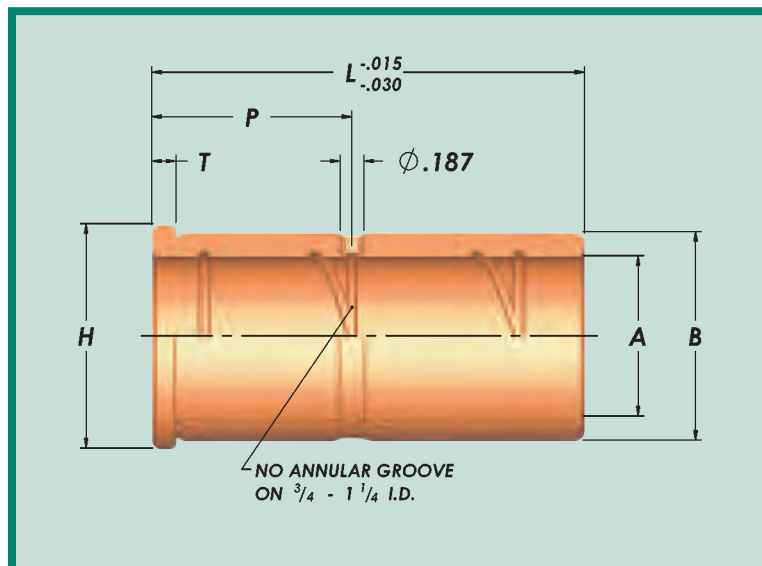
L	CATALOG NUMBER				L
	A=1-1/2"	A=2"	A=2-1/2"	A=3"	
7/8	2770				7/8
1-3/8	2771	2901	2951		1-3/8
1-7/8	2772	2902	2952		1-7/8
2-3/8	2773	2903	2953		2-3/8
2-7/8	2774	2904	2954		2-7/8
3-3/8	2775	2905	2955		3-3/8
3-7/8	2776	2906	2956	3976	3-7/8
4-3/8	2777	2907	2957		4-3/8
4-7/8	2778	2908	2958	3978	4-7/8
5-7/8	2780	2910	2960	3980	5-7/8
7-7/8				3984	7-7/8



# Shoulder Bushings Solid Bronze



General Dimensions and Tolerances				
Nominal I.D.	A +.0005 -.0000	B +.0005 -.0000	H +.000 -.010	T +.000 -.005
3/4	.7505	1.1255	1.302	3/16
7/8	.8755	1.2505	1.427	3/16
1"	1.0005	1.3755	1.552	3/16
1-1/4	1.2505	1.6255	1.802	3/16
1-1/2	1.5005	2.0005	2.177	3/16
2"	2.0005	2.5005	2.677	3/16
2-1/2	2.5005	3.2505	3.427	3/16
3"	3.0005	3.7505	3.990	1/2



L	P	CATALOG NUMBER								L
		A=3/4"	A=7/8"	A=1"	A=1-1/4"	A=1-1/2"	A=2"	A=2-1/2"	A=3"	
7/8	*	2700SB	2710SB	2730SB	2750SB	2770SB	-	-	-	7/8
1-3/8	.56	2701SB	2711SB	2731SB	2751SB	2771SB	2901SB	2951SB	-	1-3/8
1-7/8	.56	2702SB	2712SB	2732SB	2752SB	2772SB	2902SB	2952SB	-	1-7/8
2-3/8	1.56	2703SB	2713SB	2733SB	2753SB	2773SB	2903SB	2953SB	-	2-3/8
2-7/8	1.56	2704SB	2714SB	2734SB	2754SB	2774SB	2904SB	2954SB	-	2-7/8
3-3/8	1.56	2705SB	2715SB	2735SB	2755SB	2775SB	2905SB	2955SB	-	3-3/8
3-7/8	1.56	2706SB	2716SB	2736SB	2756SB	2776SB	2906SB	2956SB	3976SB	3-7/8
4-3/8	1.56	2707SB	-	2737SB	2757SB	2777SB	2907SB	2957SB	-	4-3/8
4-7/8	1.56	2708SB	-	2738SB	2758SB	2778SB	2908SB	2958SB	3978SB	4-7/8
5-7/8	1.56	2709SB	-	2740SB	2760SB	2780SB	2910SB	2960SB	3980SB	5-7/8
7-7/8	-	-	-	-	-	-	-	-	3984SB	7-7/8

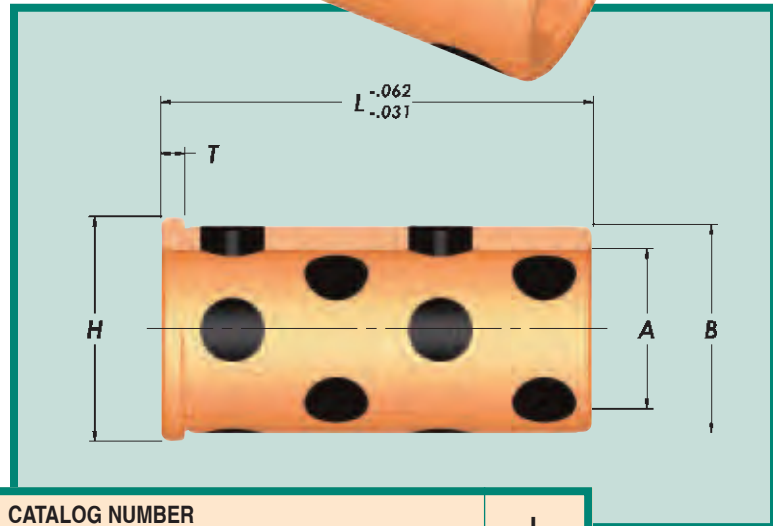
\* No grease groove or hole on 7/8 long bushings.



# Shoulder Bushings Self Lubricating



General Dimensions and Tolerances				
Nominal I.D.	A +0.0005 -0.0000	B +0.0005 -0.0000	H +0.000 -0.005	T +0.000 -0.005
3/4	.7505	1.1255	1.302	3/16
7/8	.8755	1.2505	1.427	3/16
1"	1.0005	1.3755	1.552	3/16
1-1/4	1.2505	1.6255	1.802	3/16
1-1/2	1.5005	2.0005	2.177	3/16
2"	2.0005	2.5005	2.677	3/16
2-1/2	2.5005	3.2505	3.427	3/16
3"	3.0005	3.7505	3.990	1/2



L	CATALOG NUMBER				L
	A=3/4"	A=7/8"	A=1"	A=1-1/4"	
7/8	2700SL	2710SL	2730SL	2750SL	7/8
1-3/8	2701SL	2711SL	2731SL	2751SL	1-3/8
1-7/8	2702SL	2712SL	2732SL	2752SL	1-7/8
2-3/8	2703SL	2713SL	2733SL	2753SL	2-3/8
2-7/8	2704SL	2714SL	2734SL	2754SL	2-7/8
3-3/8	2705SL	2715SL	2735SL	2755SL	3-3/8
3-7/8	2706SL	2716SL	2736SL	2756SL	3-7/8
4-3/8	2707SL	2717SL	2737SL	2757SL	4-3/8
4-7/8	2708SL	2718SL	2738SL	2758SL	4-7/8
5-7/8	2709SL	2720SL	2740SL	2760SL	5-7/8
7-7/8					7-7/8

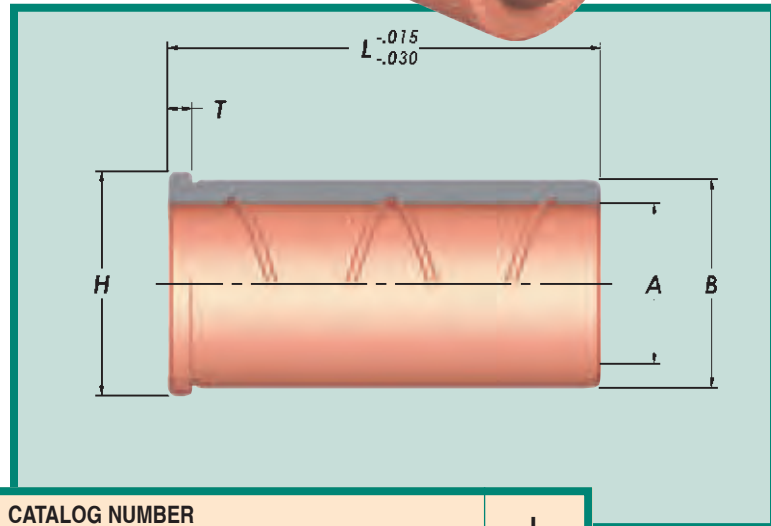
L	CATALOG NUMBER				L
	A=1-1/2"	A=2"	A=2-1/2"	A=3"	
7/8	2770SL				7/8
1-3/8	2771SL	2901SL	2951SL		1-3/8
1-7/8	2772SL	2902SL	2952SL		1-7/8
2-3/8	2773SL	2903SL	2953SL		2-3/8
2-7/8	2774SL	2904SL	2954SL		2-7/8
3-3/8	2775SL	2905SL	2955SL		3-3/8
3-7/8	2776SL	2906SL	2956SL	3976SL	3-7/8
4-3/8	2777SL	2907SL	2957SL		4-3/8
4-7/8	2778SL	2908SL	2958SL	3978SL	4-7/8
5-7/8	2780SL	2910SL	2960SL	3980SL	5-7/8
7-7/8				3984SL	7-7/8



# Shoulder Bushings Bronze Plated



General Dimensions and Tolerances				
Nominal I.D.	A +0.0005 -0.0000	B +0.0005 -0.0000	H +0.000 -0.015	T +0.000 -0.005
3/4	.7505	1.1255	1.302	3/16
7/8	.8755	1.2505	1.427	3/16
1"	1.0005	1.3755	1.552	3/16
1-1/4	1.2505	1.6255	1.802	3/16
1-1/2	1.5005	2.0005	2.177	3/16
2"	2.0005	2.5005	2.677	3/16
2-1/2	2.5005	3.2505	3.427	3/16
3"	3.0005	3.7505	3.990	1/2



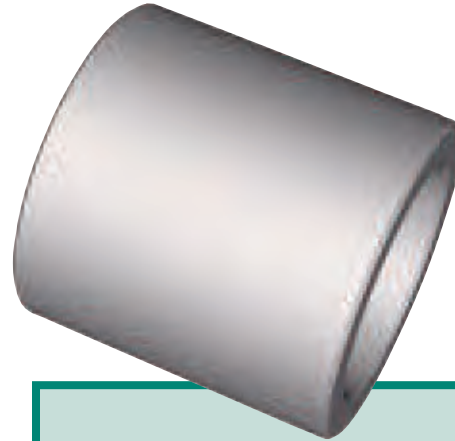
L	CATALOG NUMBER				L
	A=3/4"	A=7/8"	A=1"	A=1-1/4"	
7/8	LBB-06-07	LBB-07-07	LBB-08-07	LBB-10-07	7/8
1-3/8	LBB-06-13	LBB-07-13	LBB-08-13	LBB-10-13	1-3/8
1-7/8	LBB-06-17	LBB-07-17	LBB-08-17	LBB-10-17	1-7/8
2-3/8	LBB-06-23	LBB-07-23	LBB-08-23	LBB-10-23	2-3/8
2-7/8	LBB-06-27	LBB-07-27	LBB-08-27	LBB-10-27	2-7/8
3-3/8	LBB-06-33	LBB-07-33	LBB-08-33	LBB-10-33	3-3/8
3-7/8	LBB-06-37	LBB-07-37	LBB-08-37	LBB-10-37	3-7/8
4-3/8	LBB-06-43	LBB-07-43	LBB-08-43	LBB-10-43	4-3/8
4-7/8	LBB-06-47	LBB-07-47	LBB-08-47	LBB-10-47	4-7/8
5-7/8	LBB-06-57	LBB-07-57	LBB-08-57	LBB-10-57	5-7/8
7-7/8					7-7/8

L	CATALOG NUMBER				L
	A=1-1/2"	A=2"	A=2-1/2"	A=3"	
7/8	LBB-12-07				7/8
1-3/8	LBB-12-13	LBB-16-13	LBB-20-13		1-3/8
1-7/8	LBB-12-17	LBB-16-17	LBB-20-17		1-7/8
2-3/8	LBB-12-23	LBB-16-23	LBB-20-23		2-3/8
2-7/8	LBB-12-27	LBB-16-27	LBB-20-27		2-7/8
3-3/8	LBB-12-33	LBB-16-33	LBB-20-33		3-3/8
3-7/8	LBB-12-37	LBB-16-37	LBB-20-37	LBB-24-37	3-7/8
4-3/8	LBB-12-43	LBB-16-43	LBB-20-43		4-3/8
4-7/8	LBB-12-47	LBB-16-47	LBB-20-47	LBB-24-47	4-7/8
5-7/8	LBB-12-57	LBB-16-57	LBB-20-57	LBB-24-57	5-7/8
7-7/8				LBB-24-77	7-7/8

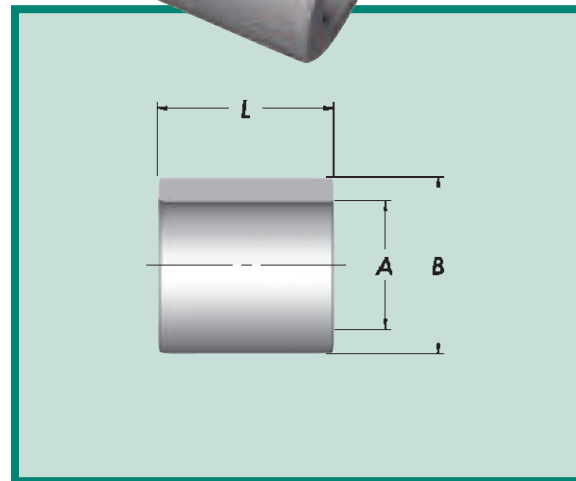




## Straight Bushings Steel



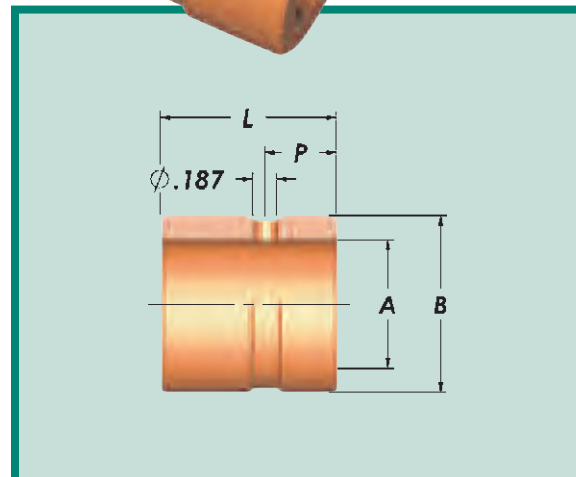
Catalog Number	Nominal I.D.	A I.D. +.0005 -.0000	B O.D. +.0005 -.0000	L -.015 -.030
2500	3/4	.7505	1.1255	7/8
2501	3/4	.7505	1.1255	1-3/8
2502	7/8	.8755	1.2505	1-3/8
2503	1"	1.0005	1.3755	1-3/8
2504	1-1/4	1.2505	1.6255	1-3/8
2505	1-1/4	1.2505	1.6255	1-7/8
2506	1-1/2	1.5005	2.0005	1-3/8
2507	1-1/2	1.5005	2.0005	1-7/8
2508	2"	2.0005	2.5005	3-7/8
2509	2-1/2	2.5005	3.2505	4-7/8
2510	3	3.005	3.7505	4-7/8



## Straight Bushings Solid Bronze



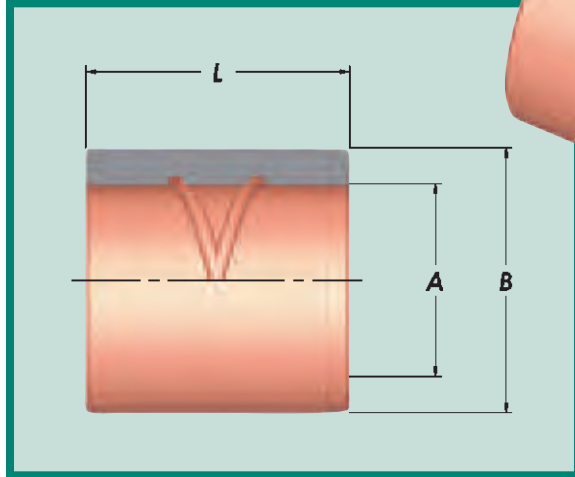
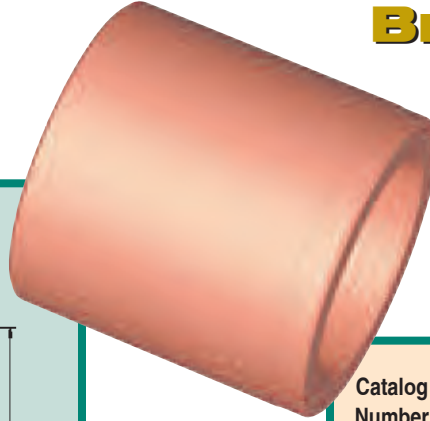
Catalog Number	Nominal I.D.	A I.D. +.0005 -.0000	B O.D. +.0005 -.0000	P	L -.015 -.030
2500SB	3/4	.7505	1.1255	*	7/8
2501SB	3/4	.7505	1.1255	.56	1-3/8
2502SB	7/8	.8755	1.2505	.56	1-3/8
2503SB	1"	1.0005	1.3755	.56	1-3/8
2504SB	1-1/4	1.2505	1.6255	.56	1-3/8
2505SB	1-1/4	1.2505	1.6255	.56	1-7/8
2506SB	1-1/2	1.5005	2.0005	.56	1-3/8
2507SB	1-1/2	1.5005	2.0005	.56	1-7/8
2508SB	2"	2.0005	2.5005	1.56	3-7/8
2509SB	2.5	2.5005	3.2505	1.56	4-7/8
2510SB	3	3.0005	3.7505	1.56	4-7/8



\* No grease groove or hole on 7/8 long bushings.

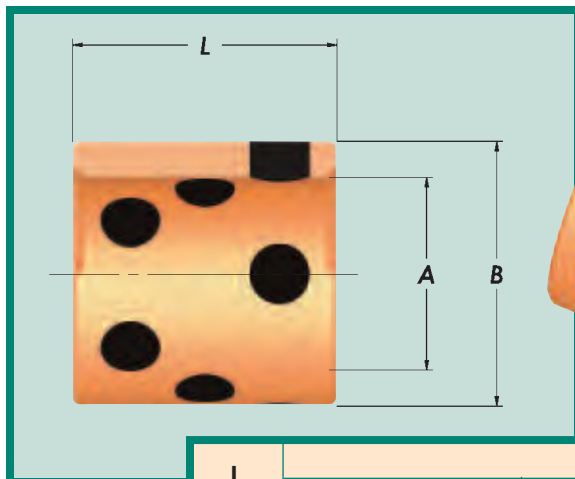


# Straight Bushings Bronze Plated



Catalog Number	Nominal I.D.	A I.D. +.0005 -.0000	B O.D. +.0005 -.0000	L -.031 -.062
STB-06-07	3/4	.7505	1.1255	7/8
STB-06-13	3/4	.7505	1.1255	1-3/8
STB-07-13	7/8	.8755	1.2505	1-3/8
STB-08-13	1"	1.0005	1.3755	1-3/8
STB-10-13	1-1/4	1.2505	1.6255	1-3/8
STB-10-17	1-1/4	1.2505	1.6255	1-7/8
STB-12-13	1-1/2	1.5005	2.0005	1-3/8
STB-12-17	1-1/2	1.5005	2.0005	1-7/8
STB-16-37	2"	2.0005	2.5005	3-7/8
STB-20-47	2-1/2	2.5005	3.2505	4-7/8
STB-24-47	3"	3.0005	3.7505	4-7/8

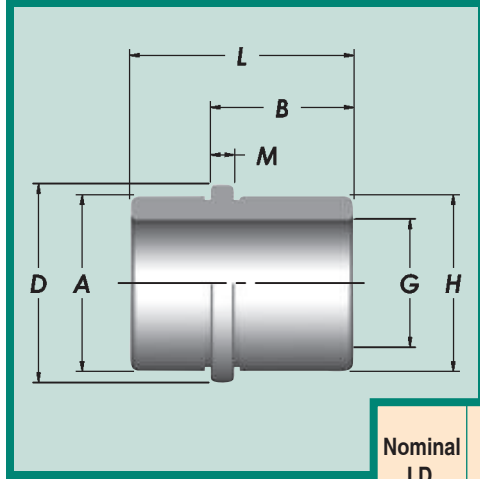
# Straight Bushings Self-Lubricating



L	CATALOG NUMBER								L
	A=3/4"	A=7/8"	A=1"	A=1-1/4"	A=1-1/2"	A=2"	A=2-1/2"	A=3"	
7/8	SB0607SL								7/8
1-1/4		SB710SL	SB0810SL	SB1010SL	SB1210SL	SB1610SL			1-1/4
1-3/8	SB0611SL	SB711SL	SB0811SL	SB1011SL	SB1211SL				1-3/8
1-1/2	SB0612SL	SB0712SL	SB0812SL	SB1012SL	SB1212SL	SB1612SL	SB2012SL		1-1/2
1-3/4			SB0814SL	SB1014SL	SB1214SL	SB1614SL			1-3/4
1-7/8				SB1015SL	SB1215SL				1-7/8
2"			SB0816SL	SB1016SL	SB1216SL	SB1616SL	SB2016SL	SB2416SL	2"
2-1/2						SB1620SL		SB2420SL	2-1/2
3"			SB0824SL	SB1024SL	SB1224SL	SB1624SL	SB2024SL	SB2424SL	3"
3-1/2								SB2428SL	3-1/2
3-7/8						SB1631SL			3-7/8
4-7/8						SB1639SL	SB2039SL	SB2439SL	4-7/8

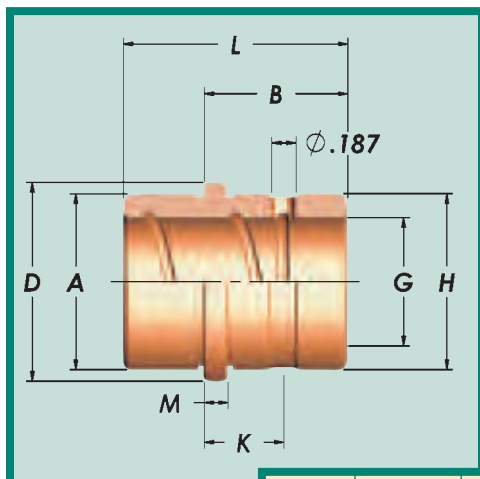


## Guided Ejector Bushings Steel



Nominal I.D.	G +.0005 -.0000	H +.0005 -.0000	A +.000 -.001	D +.000 -.010	L +.000 -.030	B +.000 -.015	M +.000 -.005	Catalog Number
3/4	.751	1.1255	1.1240	1.302	1.50	1.00	.187	GEB-06
7/8	.876	1.2505	1.2490	1.427	1.50	1.00	.187	GEB-07
1"	1.001	1.3755	1.3740	1.552	1.75	1.12	.187	GEB-08
1-1/4	1.251	1.6255	1.6240	1.802	1.75	1.12	.187	GEB-10
1-1/2	1.501	2.0005	1.9990	2.177	1.75	1.12	.187	GEB-12

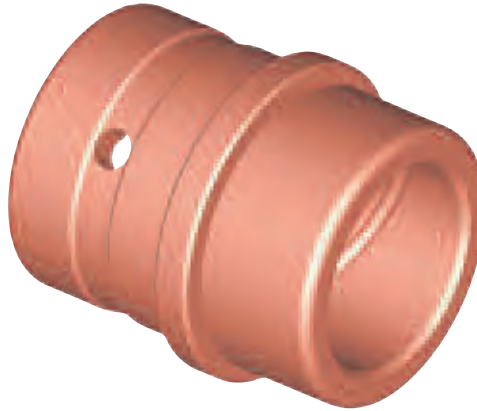
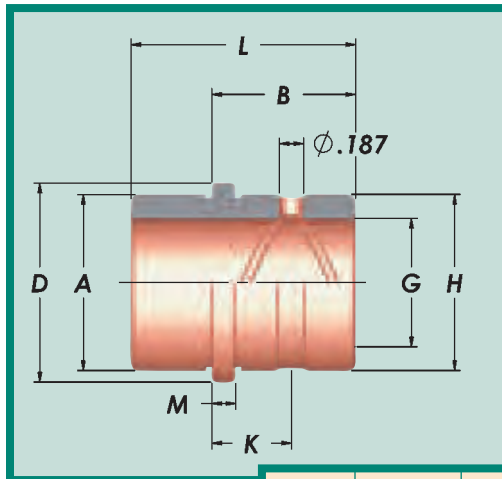
## Guided Ejector Bushings Solid Bronze



Nominal I.D.	G +.0005 -.0000	H +.0005 -.0000	A +.000 -.001	D +.000 -.010	L +.000 -.030	B +.000 -.015	M +.000 -.005	K	Catalog Number
3/4	.751	1.1255	1.1240	1.302	1.50	1.00	.187	.560	GEB-06SB
7/8	.876	1.2505	1.2490	1.427	1.50	1.00	.187	.560	GEB-07SB
1"	1.001	1.3755	1.3740	1.552	1.75	1.12	.187	.620	GEB-08SB
1-1/4	1.251	1.6255	1.6240	1.802	1.75	1.12	.187	.620	GEB-10SB
1-1/2	1.501	2.0005	1.9990	2.177	1.75	1.12	.187	.620	GEB-12SB
1-1/2	1.501	2.0005	1.999	2.177	2.5	1.875	.187	.620	GEB12SBX
2"	2.001	2.5005	2.4990	2.687	2.25	1.62	.187	.800	GEB-20SB

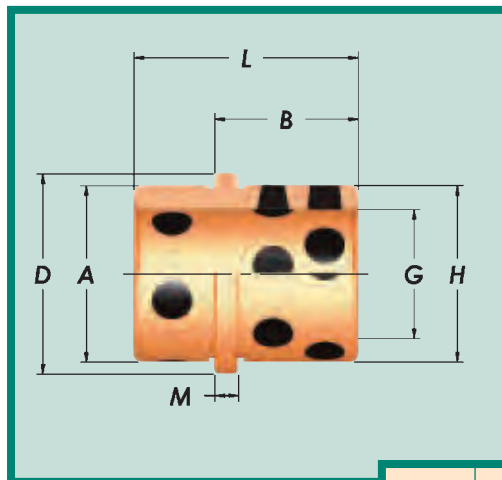


## Guided Ejector Bushings Bronze Plated



Nominal I.D.	G +.0005 -.0000	H +.0005 -.0000	A +.000 -.001	D +.000 -.010	L +.000 -.030	B +.000 -.015	M +.000 -.005	K	Catalog Number
3/4	.751	1.1255	1.1240	1.302	1.50	1.00	.187	.560	ELB-750
7/8	.876	1.2505	1.2490	1.427	1.50	1.00	.187	.560	ELB-875
1"	1.001	1.3755	1.3740	1.552	1.75	1.12	.187	.620	ELB-100
1-1/4	1.251	1.6255	1.6240	1.802	1.75	1.12	.187	.620	ELB-125
1-1/2	1.501	2.0005	1.9990	2.177	1.75	1.12	.187	.620	ELB-150
2"	2.001	2.5005	2.4990	2.687	2.25	1.62	.187	.800	ELB-200

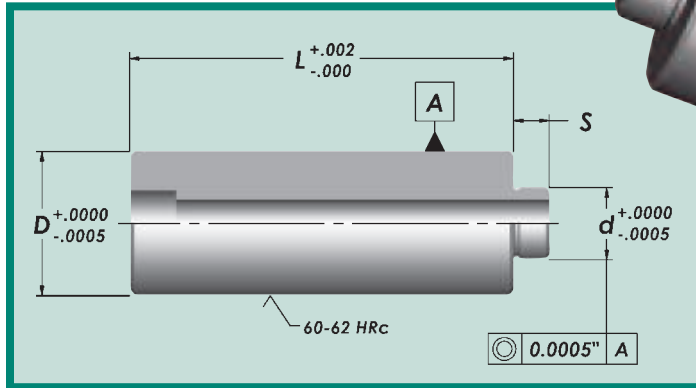
## Guided Ejector Bushings Self-Lubricating



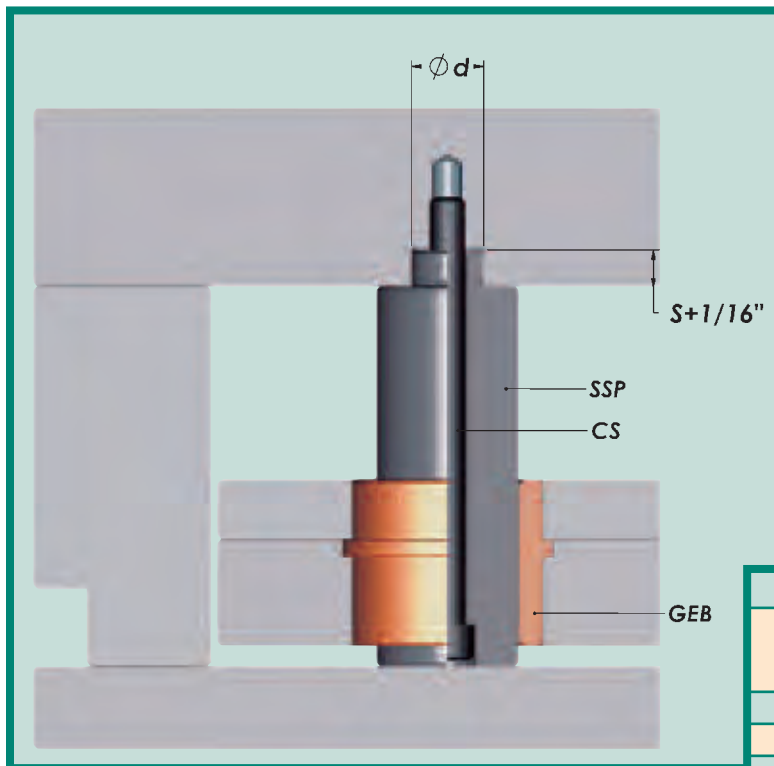
Nominal I.D.	G +.0005 -.0000	H +.0005 -.0000	A +.000 -.001	D +.000 -.010	L +.000 -.030	B +.000 -.015	M +.000 -.005	Catalog Number
3/4	.751	1.1255	1.1240	1.302	1.500	1.000	.187	GEB-06SL
7/8	.876	1.2505	1.2490	1.427	1.500	1.000	.187	GEB-07SL
1"	1.001	1.3755	1.3740	1.552	1.750	1.125	.187	GEB-08SL
1"	1.001	1.3755	1.3740	1.552	2.000	1.625	.187	GEB-08SLX
1-1/4	1.251	1.6255	1.6240	1.802	1.750	1.125	.187	GEB-10SL
1-1/4	1.251	1.6255	1.6240	1.802	2.500	1.875	.187	GEB-10SLX
1-1/2	1.501	2.0005	1.9990	2.177	1.750	1.125	.187	GEB-12SL
1-1/2	1.501	2.0005	1.9990	2.177	2.500	1.875	.187	GEB-12SLX
2"	2.001	2.5005	2.4990	2.687	2.250	1.625	.187	GEB-20SL



# Guided Ejection Support Pillars Inch



D	d	S	CATALOG NUMBER						
			L=2-1/2	L=3"	L=3-1/2	L=4"	L=4-1/2	L=5"	L=6"
3/4	.468	.281	SSP07525	SSP07530	SSP07535	SSP07540			
1"	.500	.312	SSP10025	SSP10030	SSP10035	SSP10040	SSP10045		
1-1/4	.687	.312	SSP12525	SSP12530	SSP12535	SSP12540	SSP12545	SSP12550	SSP12560
1-1/2	.750	.375	SSP15025	SSP15030	SSP15035	SSP15040	SSP15045	SSP15050	SSP15060
2"	.750	.375	SSP20025	SSP20030	SSP20035	SSP20040	SSP20045	SSP20050	SSP20060

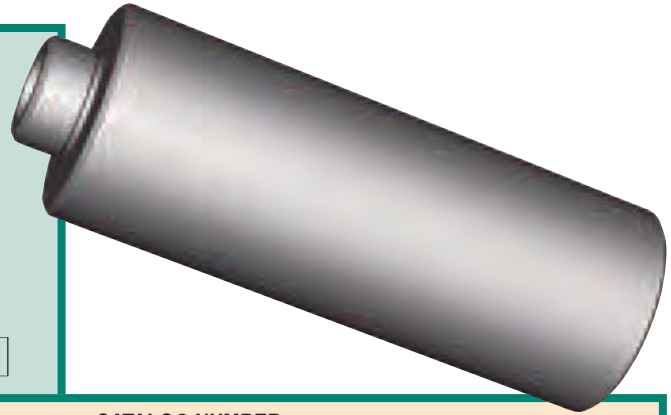
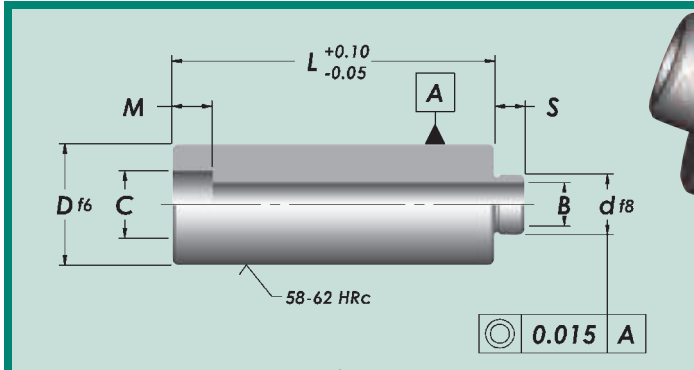


- Available in standard lengths.
- Case hardened.
- For use with any standard guided ejector bushing.
- Bottom clamp plate machining is not required.
- No press fit concerns.
- Ejector set machining is significantly reduced.

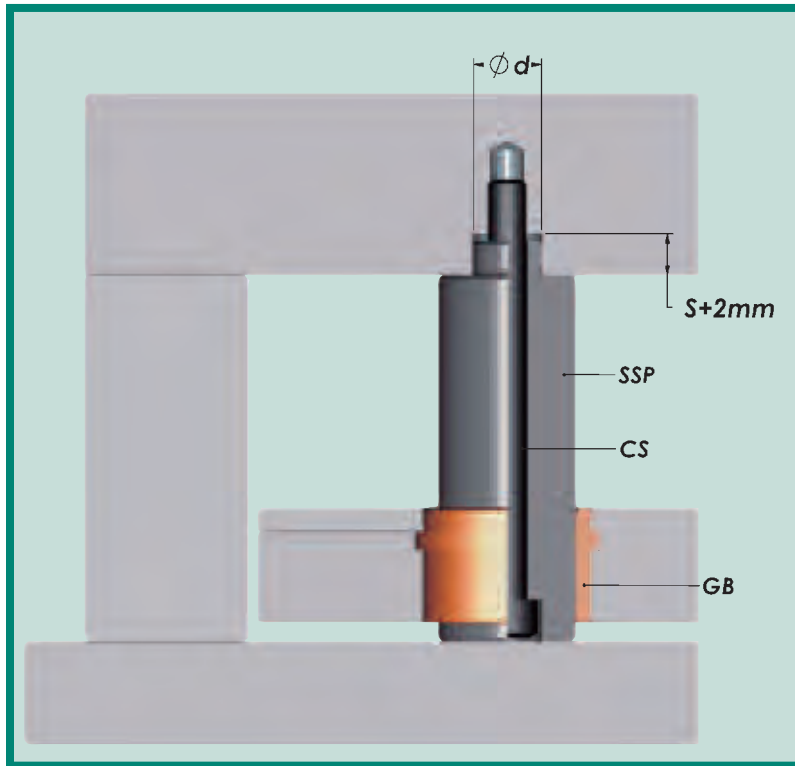
DESIGN INFORMATION			
D	Depth of reamed hole for 'd'	Tapped hole depth for cap screw	Capscrew (supplied)
3/4	.343	.468	1/4-20 x L+.250
1"	.375	.562	5/16-18 x L+.500
1-1/4	.375	.562	5/16-18 x L+.500
1-1/2	.437	.656	3/8-16 x L+.500
2"	.437	.656	3/8-16 x L+.500



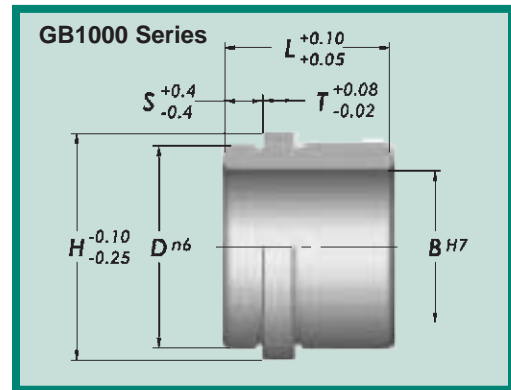
# Guided Ejection Support Pillars Metric



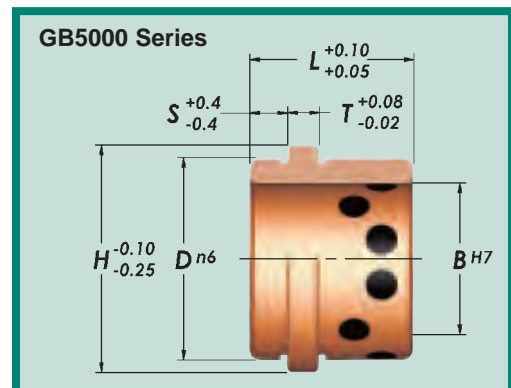
D	C	M	B	d	S	CATALOG NUMBER								
						L=36	L=46	L=56	L=76	L=96	L=116	L=136	L=156	
24	15	9	9	14	7	SSP-24x36	SSP-24x46	SSP-24x56	SSP-24x76	SSP-24x96				
36	18	11	11	18	9		SSP-36x46	SSP-36x56	SSP-36x76	SSP-36x96	SSP-36x116	SSP-36x136		
									SSP-48x76	SSP-48x96	SSP-48x116	SSP-48x136	SSP-48x156	



- All 'SSP' guided ejection support pillars are case hardened to the same standards as DMS leader pins.
- Assembly is suggested with metric capscrews (not supplied).
- SSP24 series use M8 capscrew.
- SSP36 series use M10 capscrew.
- SSP48 series use M12 capscrew.



MATERIAL N22 CASE HARD



ALUMINUM, BRONZE & GRAPHITE PLUGS

B	D	H	S	T	L	Part Number	
24	32	36	6	5	26	GB1000	GB5000
36	44	48	6	5	30	GB1001	GB5001
48	58	62	10	6	40	GB1002	GB5002

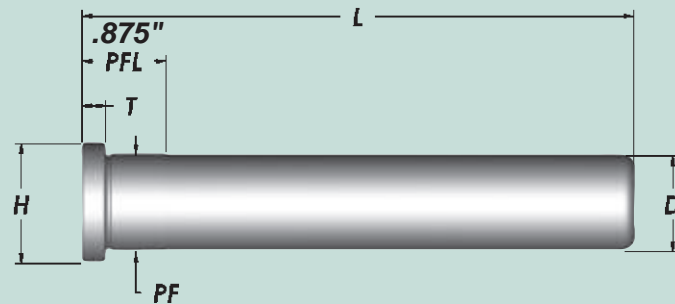




# Guided Ejector Leader Pins 7/8 Press Fit



General Dimensions and Tolerances				
Nominal Diameter	D +.0000 -.0005	PF +.0005 -.0000	H +.000 -.010	T +.000 -.005
3/4	.749	.751	.990	3/16
7/8	.874	.876	1.115	1/4
1"	.999	1.001	1.240	1/4
1-1/4	1.249	1.251	1.490	5/16

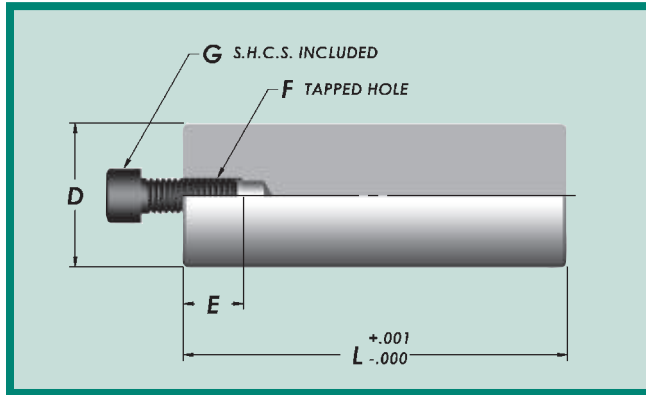


L	D=3/4"	D=7/8"	D=1"	D=1-1/4"	L
	Cat. No	Cat. No	Cat. No	Cat. No	
4-1/4	1005-GLP	1104-GLP	1203-GLP	1303-GLP	4-1/4
4-3/4	1006-GLP	1105-GLP	1204-GLP	1304-GLP	4-3/4
5-1/4	1007-GLP	1106-GLP	1205-GLP	1305-GLP	5-1/4
5-3/4	1008-GLP	1107-GLP	1206-GLP	1306-GLP	5-3/4
6-1/4	1009-GLP	1108-GLP	1207-GLP	1307-GLP	6-1/4



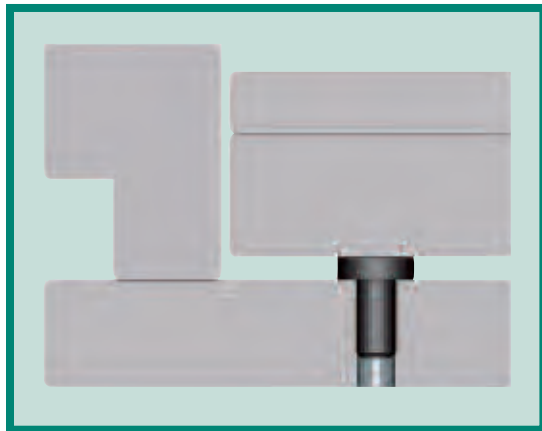


# Standard Support Pillars Tapped



D	E	F	G	CATALOG NUMBER								
				L=2-1/2"	L=3"	L=3-1/2"	L=4"	L=4-1/2"	L=5"	L=6"	L=8"	
1"	5/8	3/8-16	3/8-16x1"	SP1090	SP1091	SP1092	SP1093	SP1094				
1-1/4	5/8	3/8-16	3/8-16x1"	SP1130	SP1131	SP1132	SP1133	SP1134	SP1135	SP1136		
1-1/2	5/8	3/8-16	3/8-16x1"	SP1140	SP1141	SP1142	SP1143	SP1144	SP1145	SP1146		
2"	5/8	3/8-16	3/8-16x1"	SP1150	SP1151	SP1152	SP1153	SP1154	SP1155	SP1156		

# Stop Pins

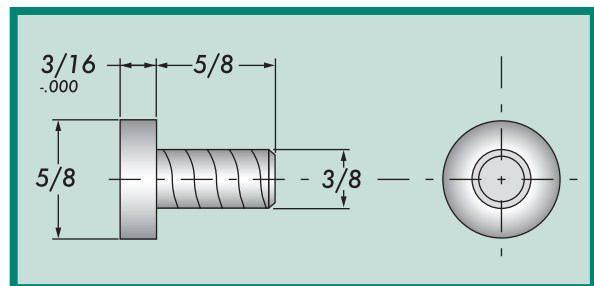
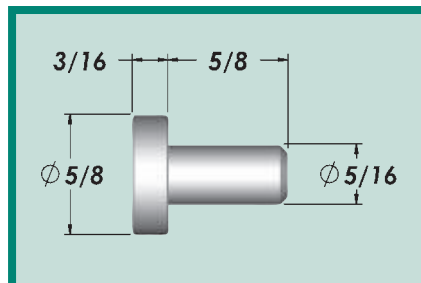


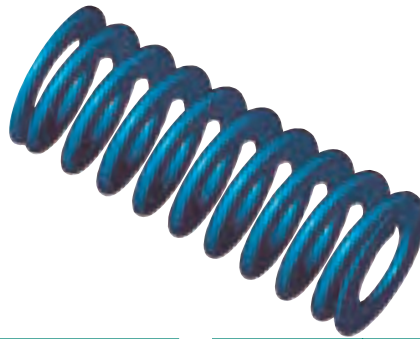
## Standard

- Head thickness is .020 oversize to provide grinding stock.
- Catalog Number SB-001

## Hardened & Self-Tapping

- Head thickness has grind stock.
- Use with 11/32 drilled hole.
- Catalog Number SB-001ST



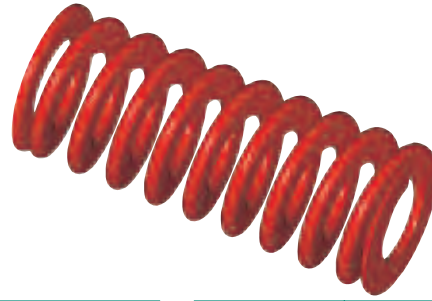


# Springs Medium Duty (Blue)

**Raymond**  
Die Springs

Hole Dia. OD	Rod Dia. ID	Free Length	Catalog Number	Load at 1/10" Deflec. (lbs.)	Max. Operating Deflection 40% of free length	
					Load (lbs.)	Deflec. (in.)
3/8	3/16	1"	037M0100	6.0	24.0	0.40
		1-1/4"	037M0125	5.0	27.0	0.50
		1-1/2"	037M0150	4.2	24.0	0.60
		1-3/4"	037M0175	3.7	23.8	0.70
		2"	037M0200	3.1	22.4	0.80
		2-1/2"	037M0250	2.6	24.0	1.00
		3"	037M0300	2.1	25.2	1.20
		12"	037M1200	0.6	28.8	4.80
1/2	9/32	1"	050M0100	11.0	44.0	0.40
		1-1/4"	050M0125	8.2	41.0	0.50
		1-1/2"	050M0150	6.8	40.8	0.60
		1-3/4"	050M0175	6.0	42.0	0.70
		2"	050M0200	5.5	44.0	0.80
		2-1/2"	050M0250	4.5	45.0	1.00
		3"	050M0300	3.5	42.0	1.20
		3-1/2"	050M0350	3.0	42.0	1.40
		4-1/2"	050M0450	2.3	45.0	1.80
		5-1/2"	050M0550	2.0	46.2	2.20
		6-1/2"	050M0650	1.4	36.4	2.60
		7-1/2"	050M0750	1.2	36.0	3.00
12"	050M1200	0.7	33.6	4.80		
5/8	11/32	1"	062M0100	16.4	65.6	0.40
		1-1/4"	062M0125	12.4	64.0	0.50
		1-1/2"	062M0150	10.8	64.8	0.60
		1-3/4"	062M0175	9.6	67.2	0.70
		2"	062M0200	8.6	70.4	0.80
		2-1/2"	062M0250	6.5	60.0	1.00
		3"	062M0300	5.8	67.2	1.20
		3-1/2"	062M0350	5.0	67.2	1.40
		4"	062M0400	4.4	70.4	1.60
		12"	062M1200	1.5	76.8	4.80
3/4	3/8	1"	075M0100	32.0	124.8	0.40
		1-1/4"	075M0125	25.6	128.0	0.50
		1-1/2"	075M0150	20.0	120.0	0.60
		1-3/4"	075M0175	17.6	123.2	0.70
		2"	075M0200	15.0	115.2	0.80
		2-1/2"	075M0250	12.0	120.0	1.00
		3"	075M0300	10.1	115.2	1.20
		3-1/2"	075M0350	8.3	112.0	1.40
		4"	075M0400	7.5	115.2	1.60
		4-1/2"	075M0450	6.4	115.2	1.80
		5"	075M0500	6.0	120.0	2.00
		5-1/2"	075M0550	5.5	121.0	2.20
		6"	075M0600	5.0	120.0	2.40
		6-1/2"	075M0650	4.7	117.0	2.60
7-1/2"	075M0750	3.8	114.0	3.00		
12"	075M1200	2.4	115.2	4.80		
1"	1/2	1"	100M0100	55.0	220.0	0.40
		1-1/4"	100M0125	45.0	225.0	0.50
		1-1/2"	100M0150	37.3	210.0	0.60
		1-3/4"	100M0175	32.0	210.0	0.70
		2"	100M0200	26.8	208.0	0.80

Hole Dia. OD	Rod Dia. ID	Free Length	Catalog Number	Load at 1/10" Deflec. (lbs.)	Max. Operating Deflection 40% of free length	
					Load (lbs.)	Deflec. (in.)
1"	1/2	2-1/2"	100M0250	20.9	200.0	1.00
		3"	100M0300	17.1	198.0	1.20
		3-1/2"	100M0350	14.5	210.0	1.40
		4"	100M0400	12.5	192.0	1.60
		4-1/2"	100M0450	11.0	187.2	1.80
		5"	100M0500	9.6	192.0	2.00
		5-1/2"	100M0550	8.8	193.6	2.20
		6"	100M0600	8.0	192.0	2.40
		7"	100M0700	7.2	201.6	2.80
		8"	100M0800	6.0	192.0	3.20
		12"	100M1200	4.0	192.0	4.80
		1-1/4	5/8	1-1/2"	125M0150	49.6
1-3/4"	125M0175			40.6	296.8	0.70
2"	125M0200			37.6	281.6	0.80
2-1/2"	125M0250			28.8	288.0	1.00
3"	125M0300			24.0	288.0	1.20
3-1/2"	125M0350			20.0	280.0	1.40
4"	125M0400			17.6	281.6	1.60
4-1/2"	125M0450			16.0	288.0	1.80
5"	125M0500			14.3	272.0	2.00
5-1/2"	125M0550			12.8	281.6	2.20
6"	125M0600			12.0	288.0	2.40
7"	125M0700			12.0	291.2	2.80
8"	125M0800	8.8	281.6	3.20		
10"	125M1000	7.2	288.0	4.00		
12"	125M1200	6.0	288.0	4.80		
1-1/2	3/4	2"	150M0200	53.0	424.0	0.80
		2-1/2"	150M0250	42.7	450.0	1.00
		3"	150M0300	36.0	432.0	1.20
		3-1/2"	150M0350	30.0	420.0	1.40
		4"	150M0400	24.9	432.0	1.60
		4-1/2"	150M0450	23.0	414.0	1.80
		5"	150M0500	21.0	420.0	2.00
		5-1/2"	150M0550	18.5	407.0	2.20
		6"	150M0600	17.0	408.0	2.40
		7"	150M0700	15.3	406.0	2.80
		8"	150M0800	13.2	409.6	3.20
		10"	150M1000	10.6	400.0	4.00
12"	150M1200	8.5	384.0	4.80		
2"	1"	2-1/2"	200M0250	100.0	1000.0	1.00
		3"	200M0300	83.0	996.0	1.20
		3-1/2"	200M0350	67.7	907.2	1.40
		4"	200M0400	60.0	960.0	1.60
		4-1/2"	200M0450	53.0	954.0	1.80
		5"	200M0500	47.0	940.0	2.00
		5-1/2"	200M0550	40.5	862.4	2.20
		6"	200M0600	39.0	936.0	2.40
		7"	200M0700	31.2	873.6	2.80
		8"	200M0800	28.5	912.0	3.20
		10"	200M1000	21.6	832.0	4.00
		12"	200M1200	18.5	840.0	4.80

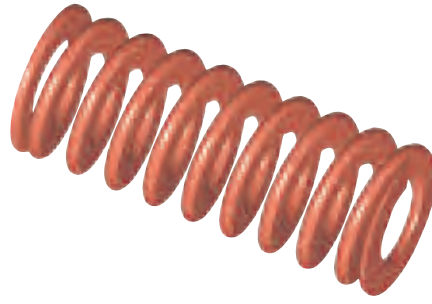


# Springs Medium Heavy Duty (Red)

Hole Dia. OD	Rod Dia. ID	Free Length	Catalog Number	Load at 1/10" Deflec. (lbs.)	Max. Operating Deflection 30% of free length	
					Load (lbs.)	Deflec. (in.)
3/8	3/16	1"	037MH0100	8.4	27.0	0.30
		1-1/4"	037MH0125	7.3	27.4	0.38
		1-1/2"	037MH0150	6.7	30.2	0.45
		1-3/4"	037MH0175	5.8	30.5	0.53
		2"	037MH0200	5.0	30.0	0.60
		2-1/2"	037MH0250	3.7	31.5	0.75
		3"	037MH0300	3.0	27.0	0.90
		12"	037MH1200	0.8	32.4	3.60
1/2	9/32	1"	050MH0100	15.5	50.4	0.30
		1-1/4"	050MH0125	12.2	48.8	0.38
		1-1/2"	050MH0150	9.8	42.8	0.45
		1-3/4"	050MH0175	8.5	44.6	0.53
		2"	050MH0200	7.5	45.0	0.60
		2-1/2"	050MH0250	6.0	45.0	0.75
		3"	050MH0300	5.1	51.3	0.90
		3-1/2"	050MH0350	4.0	42.0	1.05
12"	050MH1200	1.1	43.2	3.60		
5/8	11/32	1"	062MH0100	30.0	90.0	0.30
		1-1/4"	062MH0125	21.5	80.6	0.38
		1-1/2"	062MH0150	19.0	85.5	0.45
		1-3/4"	062MH0175	16.8	88.2	0.53
		2"	062MH0200	15.5	88.8	0.60
		2-1/2"	062MH0250	11.5	86.3	0.75
		3"	062MH0300	10.0	90.0	0.90
		3-1/2"	062MH0350	8.5	89.3	1.05
4"	062MH0400	7.6	91.2	1.20		
12"	062MH1200	2.6	97.2	3.60		
3/4	3/8	1"	075MH0100	50.0	150.0	0.30
		1-1/4"	075MH0125	38.0	142.5	0.38
		1-1/2"	075MH0150	31.0	144.0	0.45
		1-3/4"	075MH0175	27.0	151.2	0.53
		2"	075MH0200	24.0	148.8	0.60
		2-1/2"	075MH0250	18.8	144.0	0.75
		3"	075MH0300	14.9	129.6	0.90
		3-1/2"	075MH0350	12.8	134.4	1.05
		4"	075MH0400	11.0	144.0	1.20
		4-1/2"	075MH0450	10.0	151.2	1.35
		5"	075MH0500	9.0	135.0	1.50
		5-1/2"	075MH0550	8.0	132.0	1.65
6"	075MH0600	7.5	135.0	1.80		
12"	075MH1200	3.5	129.6	3.60		
1"	1/2	1"	100MH0100	82.7	228.0	0.30
		1-1/4"	100MH0125	65.3	234.0	0.38
		1-1/2"	100MH0150	53.8	223.2	0.45
		1-3/4"	100MH0175	46.1	231.0	0.53
		2"	100MH0200	40.0	240.0	0.60
		2-1/2"	100MH0250	32.2	232.5	0.75
		3"	100MH0300	26.7	225.0	0.90
		3-1/2"	100MH0350	22.9	226.8	1.05
		4"	100MH0400	20.2	220.8	1.20
		4-1/2"	100MH0450	17.8	229.5	1.35
		5"	100MH0500	15.7	216.0	1.50

Hole Dia. OD	Rod Dia. ID	Free Length	Catalog Number	Load at 1/10" Deflec. (lbs.)	Max. Operating Deflection 30% of free length	
					Load (lbs.)	Deflec. (in.)
1"	1/2	5-1/2"	100MH0550	13.7	211.2	1.65
		6"	100MH0600	12.5	216.0	1.80
		7"	100MH0700	10.9	210.0	2.10
		8"	100MH0800	9.6	211.2	2.40
		12"	100MH1200	6.5	223.2	3.60
1-1/4	5/8	1-1/2"	125MH0150	114.4	514.8	0.45
		1-3/4"	125MH0175	100.8	529.2	0.53
		2"	125MH0200	83.8	518.4	0.60
		2-1/2"	125MH0250	62.4	468.0	0.75
		3"	125MH0300	51.2	460.8	0.90
		3-1/2"	125MH0350	44.0	462.0	1.05
		4"	125MH0400	38.1	441.6	1.20
		4-1/2"	125MH0450	32.9	432.0	1.35
		5"	125MH0500	30.0	435.0	1.50
		5-1/2"	125MH0550	26.4	435.6	1.65
		6"	125MH0600	25.0	450.0	1.80
		7"	125MH0700	21.0	420.0	2.10
8"	125MH0800	18.4	441.6	2.40		
10"	125MH1000	14.5	435.0	3.00		
12"	125MH1200	12.4	446.4	3.60		
1-1/2	3/4	2"	150MH0200	103.0	648.0	0.60
		2-1/2"	150MH0250	81.2	642.0	0.75
		3"	150MH0300	62.4	561.6	0.90
		3-1/2"	150MH0350	54.0	554.4	1.05
		4"	150MH0400	46.5	576.0	1.20
		4-1/2"	150MH0450	41.0	583.2	1.35
		5"	150MH0500	36.8	552.0	1.50
		5-1/2"	150MH0550	33.0	567.6	1.65
		6"	150MH0600	29.5	547.2	1.80
		7"	150MH0700	25.5	554.4	2.10
		8"	150MH0800	22.0	528.0	2.40
		10"	150MH1000	17.6	528.0	3.00
12"	150MH1200	14.4	518.4	3.60		
2"	1"	2-1/2"	200MH0250	118.4	888.0	0.75
		3"	200MH0300	93.0	864.0	0.90
		3-1/2"	200MH0350	78.2	840.0	1.05
		4"	200MH0400	66.4	796.8	1.20
		4-1/2"	200MH0450	60.0	810.0	1.35
		5"	200MH0500	53.4	840.0	1.50
		5-1/2"	200MH0550	49.0	831.6	1.65
		6"	200MH0600	45.0	849.6	1.80
		7"	200MH0700	37.4	840.0	2.10
		8"	200MH0800	33.0	844.8	2.40
		10"	200MH1000	26.0	780.0	3.00
		12"	200MH1200	21.5	806.4	3.60

**Raymond**  
Die Springs



# Springs Heavy Duty (Gold)

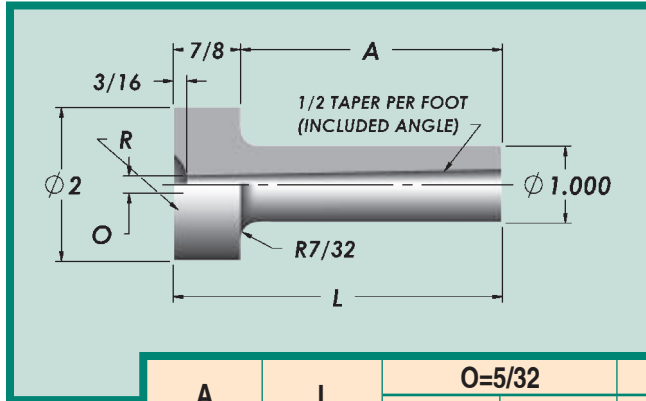
Hole Dia. OD	Rod Dia. ID	Free Length	Catalog Number	Load at 1/10" Deflec. (lbs.)	Max. Operating Deflection 25% of free length	
					Load (lbs.)	Deflec. (in.)
3/8	3/16	1"	037H0100	11.6	27.5	0.25
		1-1/4	037H0125	9.8	30.6	0.31
		1-1/2	037H0150	8.0	30.0	0.38
		1-3/4	037H0175	7.5	36.8	0.44
		2"	037H0200	6.2	36.0	0.50
		2-1/2	037H0250	5.0	34.4	0.63
		3"	037H0300	4.1	31.5	0.75
		12"	037H1200	1.1	36.0	3.00
1/2	9/32	1"	050H0100	22.5	59.0	0.25
		1-1/4	050H0125	18.2	58.1	0.31
		1-1/2	050H0150	14.8	58.1	0.38
		1-3/4	050H0175	12.6	60.4	0.44
		2"	050H0200	11.0	55.0	0.50
		2-1/2	050H0250	8.6	52.5	0.63
		3"	050H0300	7.4	55.5	0.75
		3-1/2	050H0350	6.0	52.5	0.88
12"	050H1200	1.7	48.0	3.00		
5/8	11/32	1"	062H0100	42.4	106.0	0.25
		1-1/4	062H0125	32.5	92.5	0.31
		1-1/2	062H0150	28.0	102.0	0.38
		1-3/4	062H0175	24.0	105.0	0.44
		2"	062H0200	20.8	104.0	0.50
		2-1/2	062H0250	17.0	106.3	0.63
		3"	062H0300	14.0	108.0	0.75
		3-1/2	062H0350	12.2	106.8	0.88
12"	062H1200	3.0	90.0	3.00		
3/4	3/8	1"	075H0100	108.0	270.0	0.25
		1-1/4	075H0125	88.0	275.0	0.31
		1-1/2	075H0150	69.0	246.0	0.38
		1-3/4	075H0175	60.0	262.5	0.44
		2"	075H0200	51.5	248.0	0.50
		2-1/2	075H0250	40.0	250.0	0.63
		3"	075H0300	33.0	255.0	0.75
		3-1/2	075H0350	29.0	245.0	0.88
		4"	075H0400	25.0	250.0	1.00
		4-1/2	075H0450	22.0	247.5	1.13
		5"	075H0500	19.5	243.8	1.25
		5-1/2	075H0550	17.8	233.8	1.38
6"	075H0600	16.0	240.0	1.50		
12"	075H1200	8.0	240.0	3.00		
1"	1/2	1"	100H0100	193.2	520.0	0.25
		1-1/4	100H0125	146.5	535.0	0.31
		1-1/2	100H0150	120.0	444.0	0.38
		1-3/4	100H0175	104.0	455.0	0.44
		2"	100H0200	87.2	450.0	0.50
		2-1/2	100H0250	66.5	425.0	0.63
		3"	100H0300	54.4	408.0	0.75
		3-1/2	100H0350	45.6	399.0	0.88
		4"	100H0400	40.0	400.0	1.00
		4-1/2	100H0450	35.2	396.0	1.13
		5"	100H0500	31.2	390.0	1.25

Hole Dia. OD	Rod Dia. ID	Free Length	Catalog Number	Load at 1/10" Deflec. (lbs.)	Max. Operating Deflection 25% of free length	
					Load (lbs.)	Deflec. (in.)
1"	1/2	5-1/2	100H0550	28.8	396.0	1.38
		6"	100H0600	25.6	384.0	1.50
		7"	100H0700	22.4	392.0	1.75
		8"	100H0800	19.2	384.0	2.00
		12"	100H1200	12.8	360.0	3.00
1-1/4	5/8	1-1/2	125H0150	220.0	795.0	0.38
		1-3/4	125H0175	181.6	794.5	0.44
		2"	125H0200	149.6	748.0	0.50
		2-1/2	125H0250	117.6	735.0	0.63
		3"	125H0300	95.2	714.0	0.75
		3-1/2	125H0350	78.0	658.0	0.88
		4"	125H0400	66.4	664.0	1.00
		4-1/2	125H0450	58.4	657.0	1.13
		5"	125H0500	53.0	662.5	1.25
		5-1/2	125H0550	47.2	649.0	1.38
		6"	125H0600	45.0	636.0	1.50
		7"	125H0700	36.8	644.0	1.75
8"	125H0800	32.8	656.0	2.00		
10"	125H1000	25.6	640.0	2.50		
12"	125H1200	22.0	624.0	3.00		
1-1/2	3/4	2"	150H0200	198.0	952.0	0.50
		2-1/2	150H0250	155.0	968.8	0.63
		3"	150H0300	130.0	975.0	0.75
		3-1/2	150H0350	106.4	931.0	0.88
		4"	150H0400	91.2	912.0	1.00
		4-1/2	150H0450	81.6	882.0	1.13
		5"	150H0500	73.0	890.0	1.25
		5-1/2	150H0550	67.0	880.0	1.38
		6"	150H0600	58.4	876.0	1.50
		7"	150H0700	49.6	868.0	1.75
		8"	150H0800	43.2	864.0	2.00
		10"	150H1000	36.2	860.0	2.50
12"	150H1200	30.0	864.0	3.00		
2"	1"	2-1/2	200H0250	251.2	1625.0	0.63
		3"	200H0300	206.0	1500.0	0.75
		3-1/2	200H0350	170.0	1487.5	0.88
		4"	200H0400	150.0	1500.0	1.00
		4-1/2	200H0450	127.2	1350.0	1.13
		5"	200H0500	118.6	1375.0	1.25
		5-1/2	200H0550	107.7	1375.0	1.38
		6"	200H0600	97.7	1410.0	1.50
		7"	200H0700	82.0	1435.0	1.75
		8"	200H0800	73.0	1460.0	2.00
10"	200H1000	57.2	1375.0	2.50		
12"	200H1200	47.7	1260.0	3.00		

**Raymond**  
Die Springs

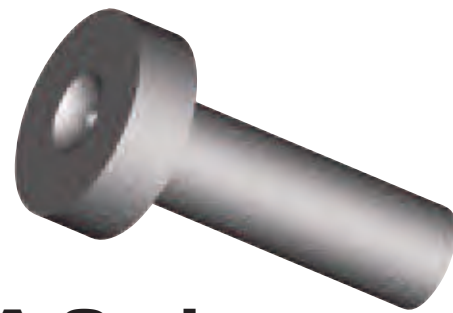
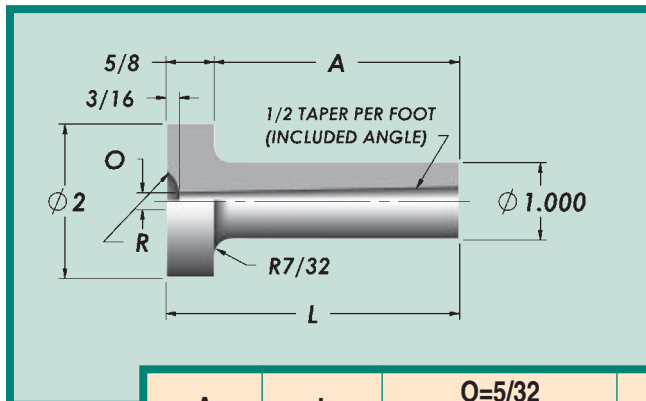


# Sprue Bushings



## B-Series

A	L	O=5/32		O=7/32		O=9/32		O=11/32	
		R=1/2	R=3/4	R=1/2	R=3/4	R=1/2	R=3/4	R=1/2	R=3/4
29/32	1-25/32	B129512	B129534	B129712	B129734	B129912	B129934	B129112	B129134
1-13/32	2-9/32	B221512	B221534	B221712	B221734	B221912	B221934	B221112	B221134
1-29/32	2-25/32	B229512	B229534	B229712	B229734	B229912	B229934	B229112	B229134
2-13/32	3-9/32	B321512	B321534	B321712	B321734	B321912	B321934	B321112	B321134
2-29/32	3-25/32	B329512	B329534	B329712	B329734	B329912	B329934	B329112	B329134
3-13/32	4-9/32	B421512	B421534	B421712	B421734	B421912	B421934	B421112	B421134
3-29/32	4-25/32	B429512	B429534	B429712	B429734	B429912	B429934	B429112	B429134
4-13/32	5-9/32	B521512	B521534	B521712	B521734	B521912	B521934	B521112	B521134
4-29/32	5-25/32	B529512	B529534	B529712	B529734	B529912	B529934	B529112	B529134
5-29/32	6-25-32			B629712	B629734	B629912	B629934	B629112	B629134
6-29/32	7-25-32			B729712	B729734	B729912	B729934	B729112	B729134



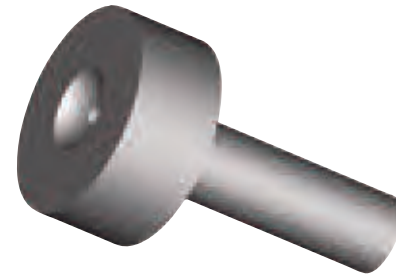
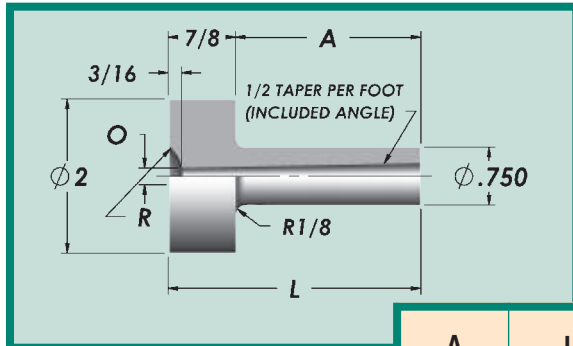
## A-Series

A	L	O=5/32		O=7/32		O=9/32		O=11/32	
		R=1/2	R=3/4	R=1/2	R=3/4	R=1/2	R=3/4	R=1/2	R=3/4
1-3/16	1-13/16	A129512	A129534	A129712	A129734	A129912	A129934	A129112	A129134
1-11/16	2-5/16	A221512	A221534	A221712	A221734	A221912	A221934	A221112	A221134
2-3/16	2-13/16	A229512	A229534	A229712	A229734	A229912	A229934	A229112	A229134
2-11/16	3-5/16	A321512	A321534	A321712	A321734	A321912	A321934	A321112	A321134
3-3/16	3-13/16	A329512	A329534	A329712	A329734	A329912	A329934	A329112	A329134
3-11/16	4-5/16	A421512	A421534	A421712	A421734	A421912	A421934	A421112	A421134
4-3/16	4-13/16	A429512	A429534	A429712	A429734	A429912	A429934	A429112	A429134





# Sprue Bushings



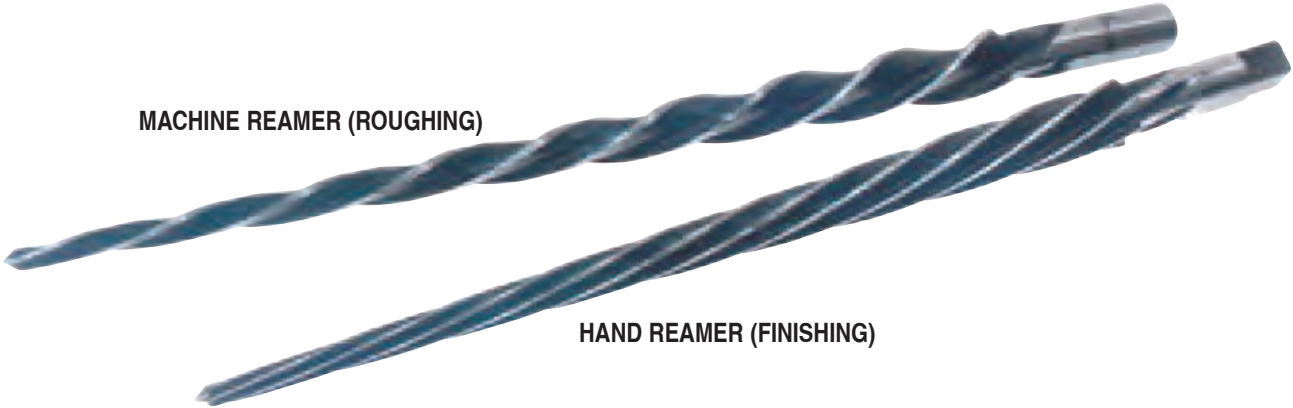
## U-Series

A	L	O=5/32		O=7/32		O=9/32	
		R=1/2	R=3/4	R=1/2	R=3/4	R=1/2	R=3/4
29/32	1-25/32	U157512	U157534	U157712	U157734	U157912	U157934
1-13/32	2-9/32	U241512	U241534	U241712	U241734	U241912	U241934
1-29/32	2-25/32	U257512	U257534	U257712	U257734	U257912	U257934
2-13/32	3-9/32	U341512	U341534	U341712	U341734	U341912	U341934
2-29/32	3-25/32	U357512	U357534	U357712	U357734	U357912	U357934



# Sprue Reamers

MACHINE REAMER (ROUGHING)



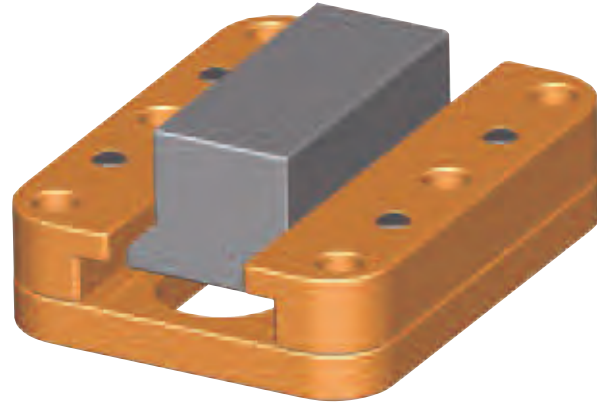
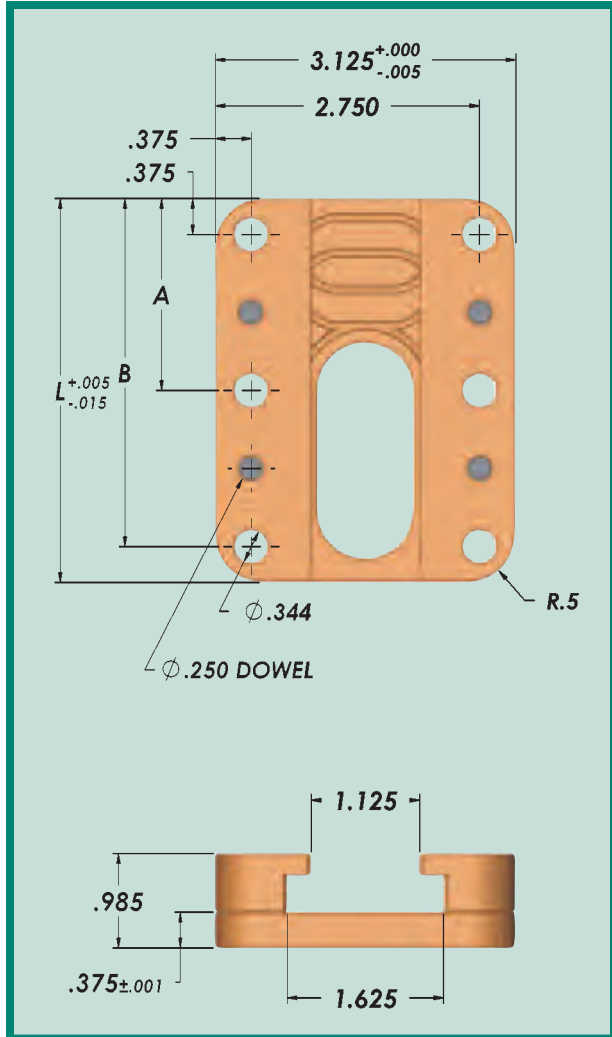
HAND REAMER (FINISHING)

HAND REAMERS						
Catalog Number	Flutes	Taper per foot	Diameter Small End	Diameter Large End	Shank Diameter	Flute Length
HR-50-06S	4	1/2	7/64	3/8	5/16	6"
HR-50-10L	6	1/2	13/64	5/8	1/2	10-1/2"

MACHINE REAMERS						
Catalog Number	Flutes	Taper per foot	Diameter Small End	Diameter Large End	Shank Diameter	Flute Length
MR-50-06S	3	1/2	7/64	3/8	5/16	6"
MR-50-10L	3	1/2	13/64	5/8	1/2	10-1/2"

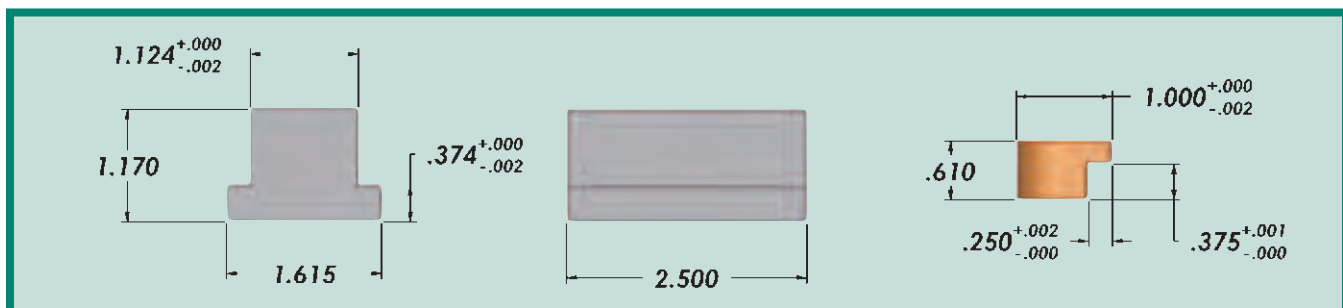


# Gib Assemblies



- Gib Assemblies are supplied assembled with (2) L-Gibs, (1) Base Plate, (4) 1/4" Dowels and (1) Slide.
- Each item can also be ordered separately.
- Assemblies come pre-doweled and pre-drilled with clearance holes for 5/16" screw.
- Slide unit is P20 steel, HRC 20-28.
- Base and L-Gibs are Aluminum Bronze material.

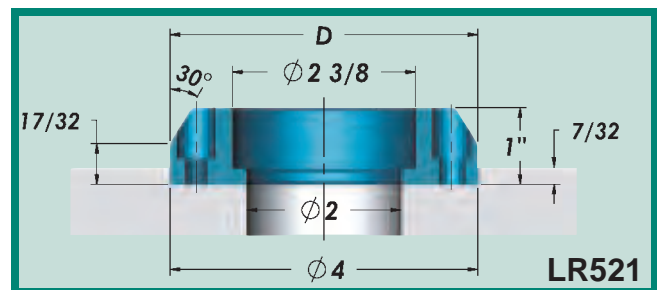
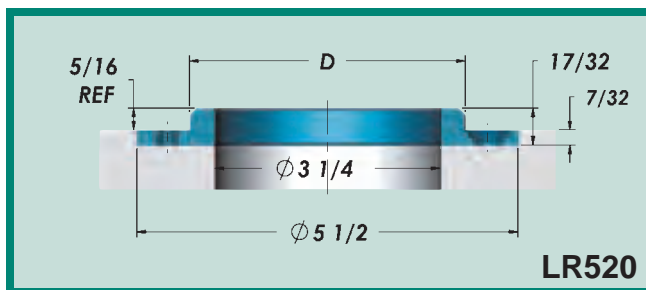
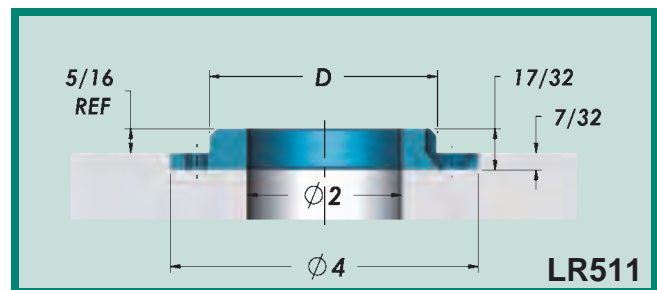
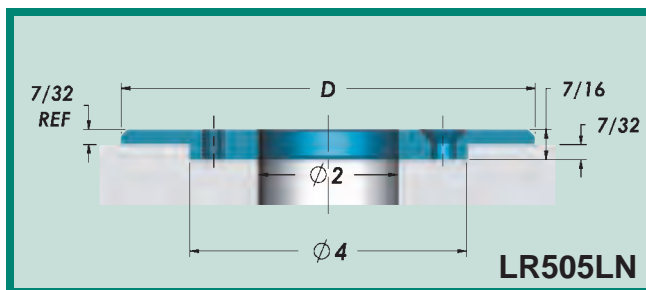
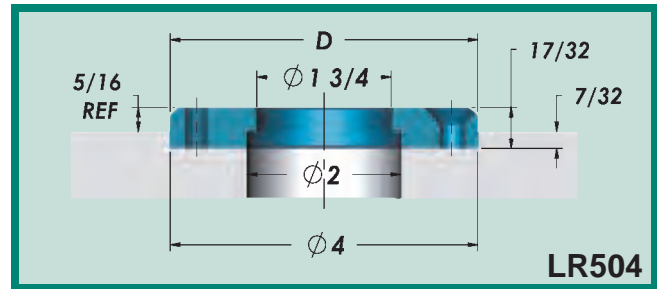
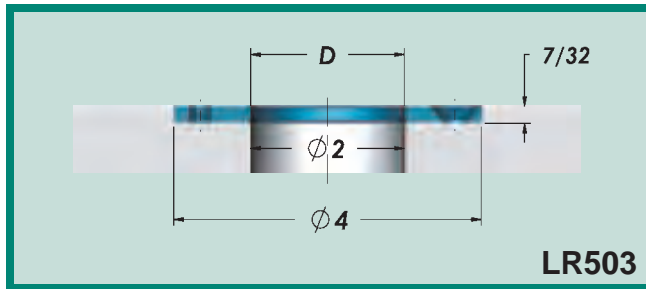
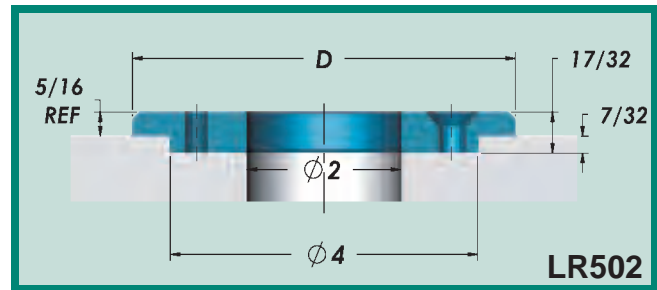
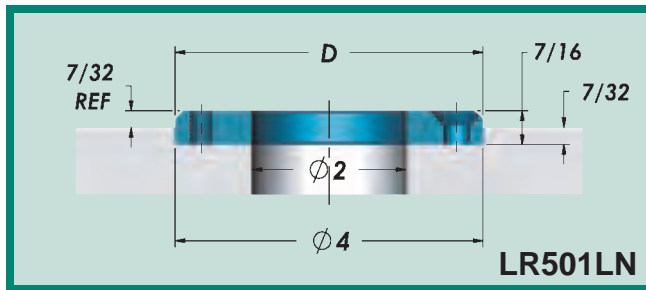
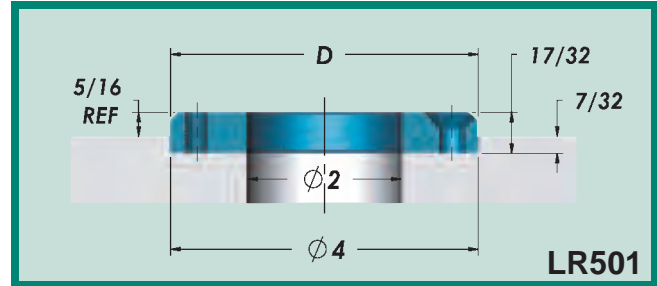
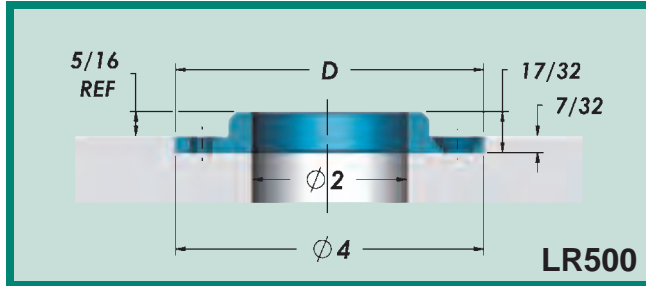
Catalog Number				A	B	L
Assembly	Slide	Base	L-Gib			
GA35	GAS25	GAB35	GAL35	-	3.125	3.50
GA40	GAS25	GAB40	GAL40	2.00	3.625	4.00
GA45	GAS25	GAB45	GAL45	2.25	4.125	4.50





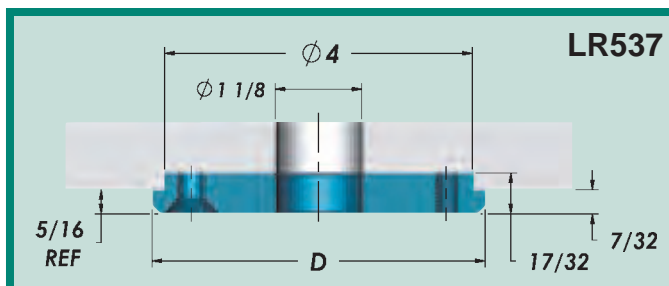
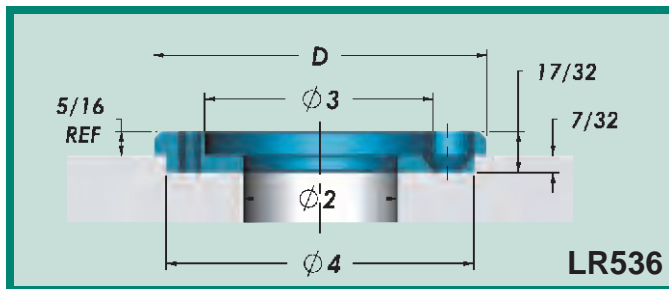
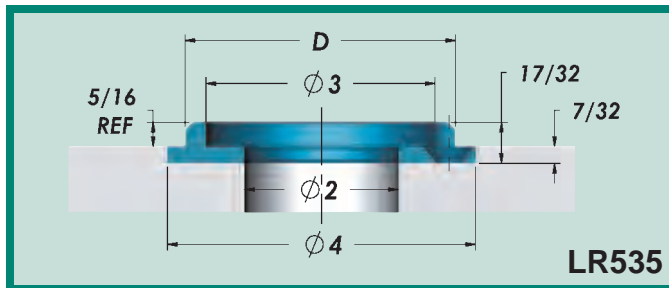
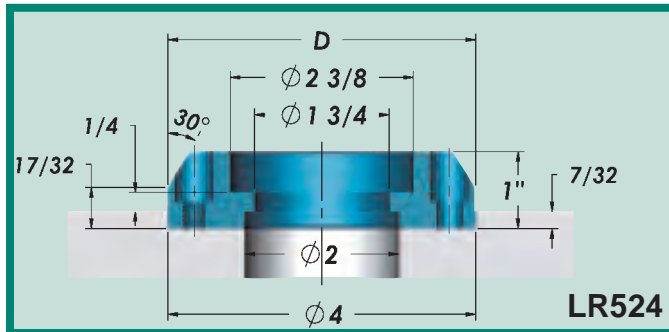
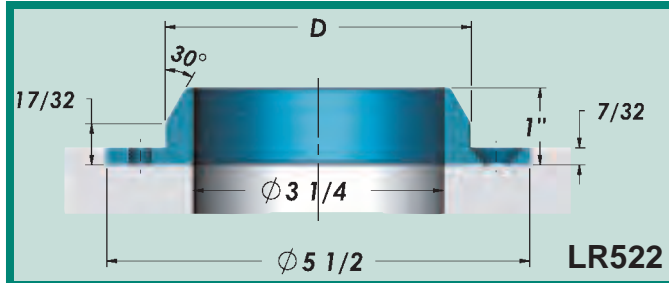
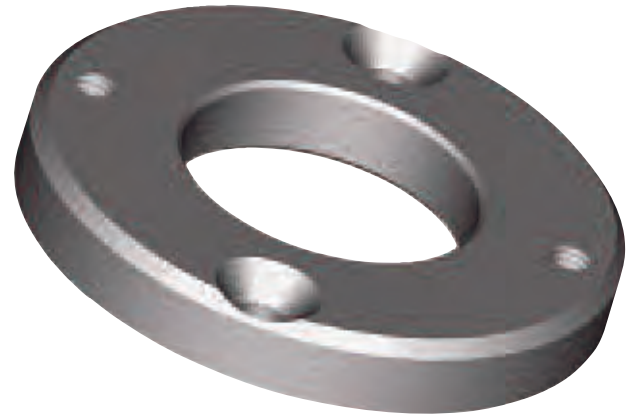
# Locating Rings

- LR521 and LR524 are supplied with two 5/16-18 Socket Head Cap Screws.
- All other Locating Rings are supplied with two 5/16-18 Flat Head Screws.





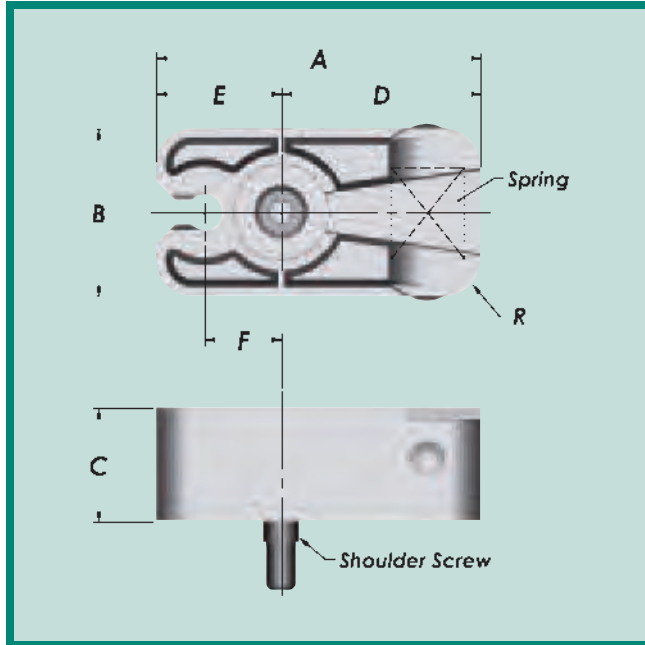
# Locating Rings



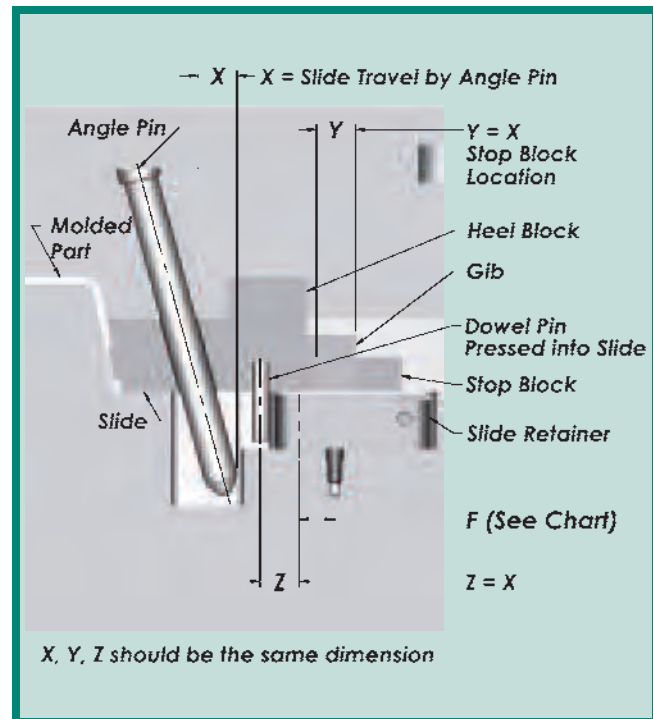
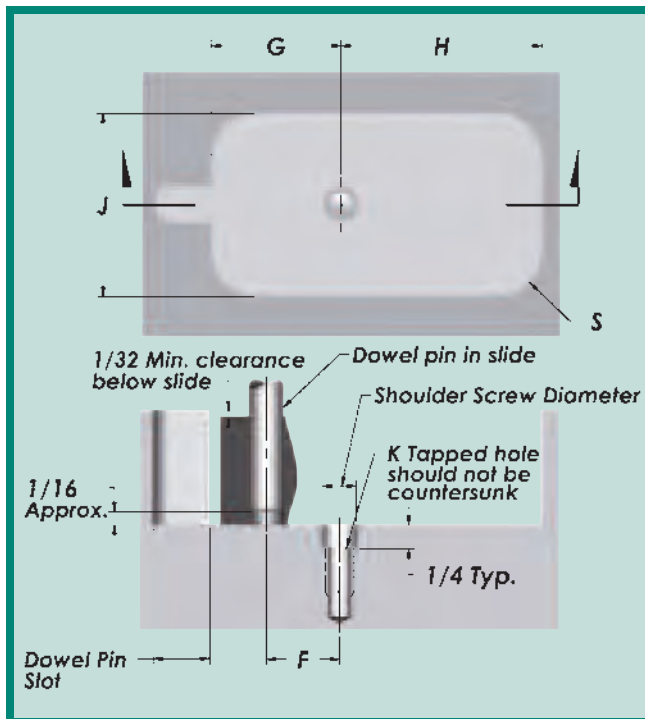
Catalog Number	D	Description
LR500	2.615	
LR501	3.990	Standard Series
LR501LN	3.990	LN Series
LR502	4.990	
LR503	2.000	
LR504	3.990	Clamp Type
LR505LN	5.990	LN Series
LR511	2.990	
LR520	3.990	Extension Nozzle Type
LR521	3.990	Standard Series - Extra Lead In
LR522	3.990	Extension Nozzle Type - Extra Lead In
LR524	3.990	Clamp Type - Extra Lead In
LR535	3.541	
LR536	4.331	Top Ring
LR537	4.331	Bottom Ring



# Inch Slide Retainers



- A compact method of slide retention that eliminates the use of springs or costly hydraulic systems.
- Interference with machine tie bars or safety gates is eliminated because the slide retainer can be installed behind or below the slide.
- They can be used in multiples for larger or heavier slides.

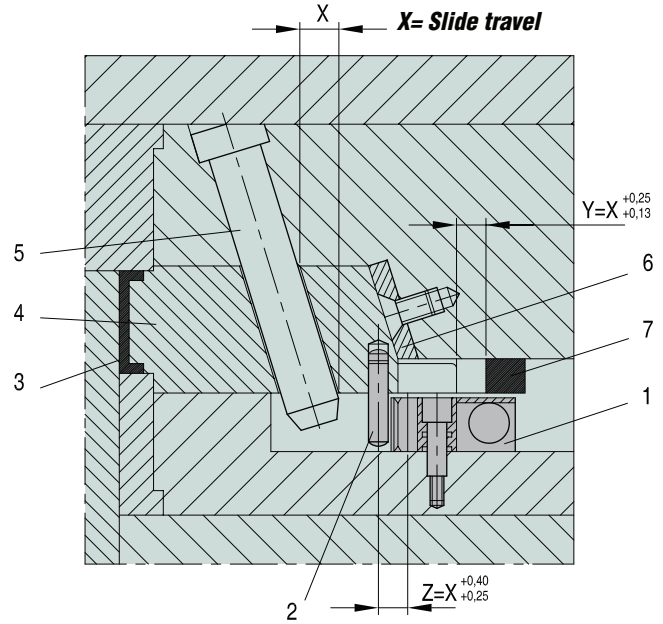


Catalog Number	A	B	C	D	E	F	R	Dowel Pin	Maximum Slide Weight	G	H	J	Tapped Hole K	Shoulder Screw	S
SRP-22	1-1/2	3/4	.63	.89	.61	.360	.19	1/4 X 1-1/4	22 Pounds	.73	1.01	1.00	10-24 X 1/2	1/4 X 5/8	.31
SRP-44	2-1/8	1-1/4	.79	1.31	.81	.500	.25	5/16 X 1-1/2	44 Pounds	.93	1.43	1.50	1/4-20 X 1/2	5/16 X 3/4	.37
SRP-88	3-3/8	1-3/4	1.18	2.08	1.30	.800	.38	3/8 X 2-1/4	88 Pounds	1.42	2.20	2.20	5/16-18 X 5/8	3/8 X 1"	.50



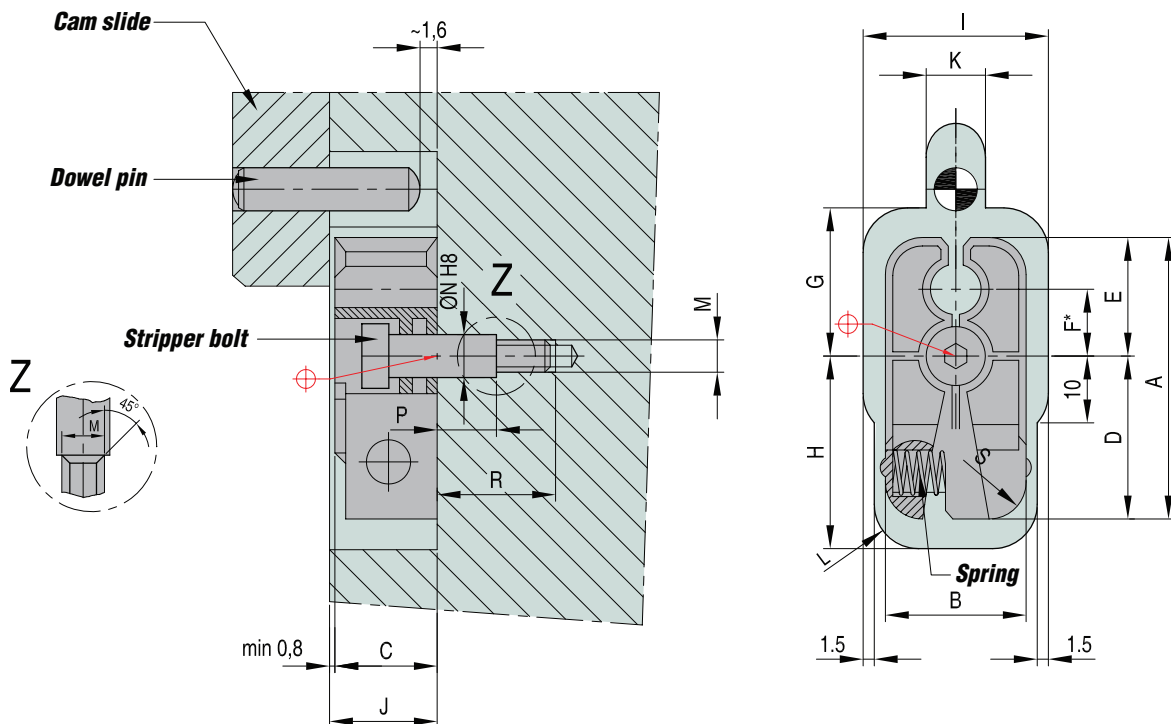


# Metric Slide Retainers



REF	SLIDE RETAINER							RETAINER POCKETS IN MOLD									MAX. SLIDE WEIGHT (KG)	
	A	B	C	D	E	F*	S	G	H	I	J	K	L	M	N	P		R
MRT-10M	38	19	16	22	16	9,1	5	19	26	25	17	8	6	M5	6	6	15,5	10
MRT-20M	54	32	20	33	21	12,7	6	24	36	38	21	10	8	M6	8	8,5	20,5	20
MRT-40M	86	45	30	53	33	20,3	10	36	56	51	31	12	11	M8	10	10	25,0	40

\*The distance from the center of the dowel pin to the center of the stripper bolt is critical





# Miniature Slide Retainers



(U.S. Patent No. 5,397,226)

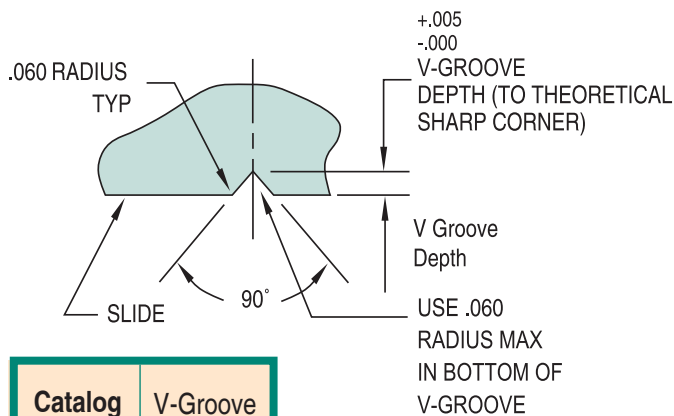
- Three sizes with slide ratings for 22, 44, and 88 lbs.
- Small in size, yet strong holding capacity.
- Self-contained product design facilitates easy installation
- Slide can be removed without removing the slide retainer from the mould.

## Dimensional Information for Miniature Slide Retainers

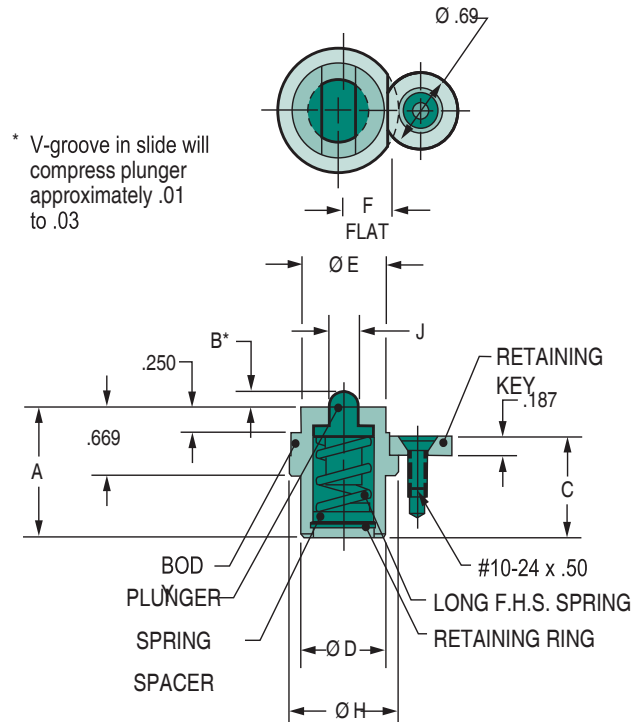
Material: Hardened H-13 Steel (Body and Plunger)

Catalog Number	A	B	C	Ø D	Ø E	F Flat	Ø H	J PLUNGER
SPSR 1000	1.08	.072	.795	.620	.630	.375	.866	.188
SPSR 2000	1.32	.121	1.035	.740	.748	.420	.984	.250
SPSR 4000	1.26	.149	.975	.870	.866	.468	1.102	.312

### Installation Dimensions for Machining V-Groove in Slide



Catalog Number	V-Groove Depth
SPSR 1000	.091
SPSR 2000	.153
SPSR 4000	.194



\* V-groove in slide will compress plunger approximately .01 to .03

NOTE: See "Pocket Dimensions" for additional information.

Catalog Number	MAXIMUM RECOMMENDED HOLDING WEIGHT
SPSR 1000	10 POUNDS
SPSR 2000	20 POUNDS
SPSR 4000	40 POUNDS

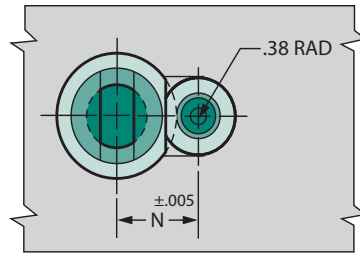
†Each includes: slide retainer assembly, retaining key and #10-24 x .50 long flat head screw. Replacement parts are special order.



# Miniature Slide Retainers

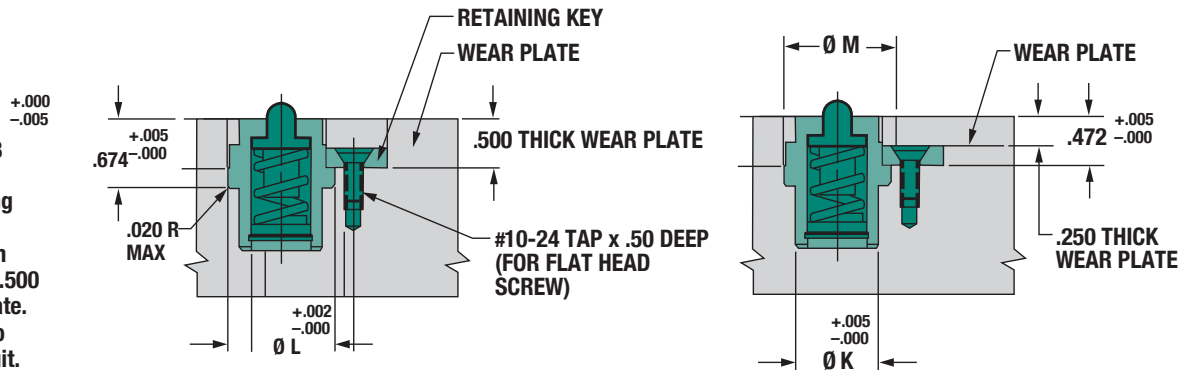
## Pocket Dimensions for Miniature Slide Retainers

NOTE: .500 thick wear plate can also be used to key and retain Mini-Might slide retainer instead of retaining key. Mold maker to machine to suit.

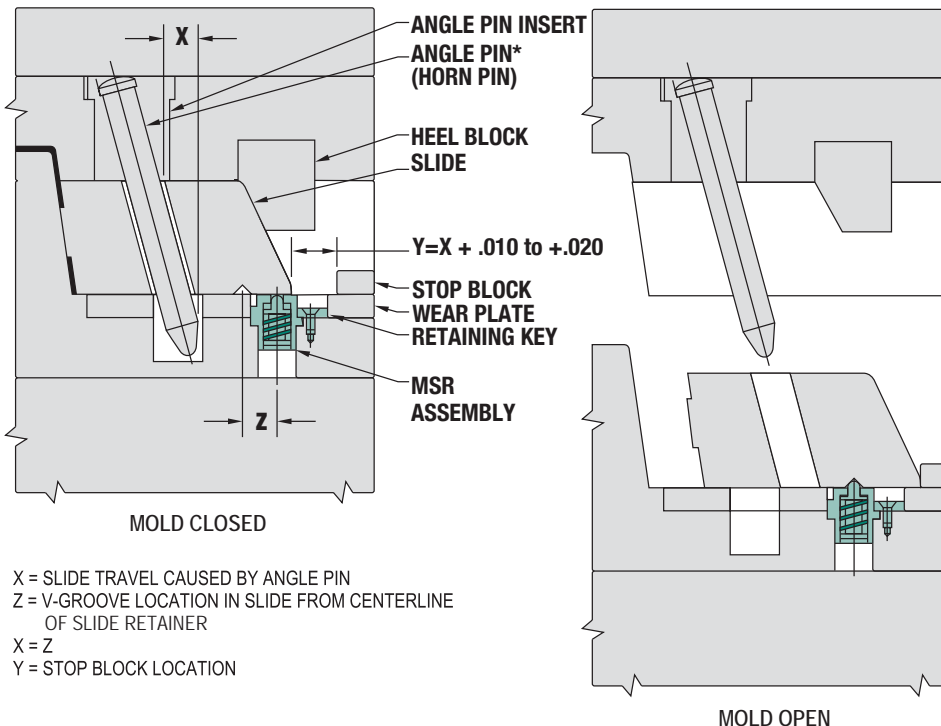


Catalog Number	Ø K	Ø L	Ø M	N DIM
SPSR 1000	.625	.869	.94	.670
SPSR 2000	.750	.987	1.06	.715
SPSR 4000	.875	1.105	1.19	.763

NOTE: Use .028 thick spacer under retaining key when mold has been machined for .500 thick wear plate. Mold maker to machine to suit.



## Typical Application of Miniature Slide Retainers



X = SLIDE TRAVEL CAUSED BY ANGLE PIN  
 Z = V-GROOVE LOCATION IN SLIDE FROM CENTERLINE OF SLIDE RETAINER  
 X = Z  
 Y = STOP BLOCK LOCATION

### NOTES:

1. Lubricate all metal-to-metal contact areas before first use and every 100,000 cycles (or more frequently as required.) Use a good grade of moldmakers' non-melting type grease rated for the operating temperature to be encountered.
2. Replace compression spring every 1,000,000 cycles or as required.
3. Do not operate at temperatures exceeding 250°F.



# Rectangular Inch Slide Retainers



U.S. Patent No. 4,961,702

- Three sizes with slide ratings for 22, 44 and 88 lbs.
- Small in size yet strong holding capacity
- provides a compact and economical means of slide retention
- suitable for new tooling design or retrofitting existing molds
- can be used in single or multiple configuration for heavier slides

## RECTANGULAR Slide Retainer – PPSL

Material: Investment Cast steel  
Hardness: Case-Hardened 58-62 HRC

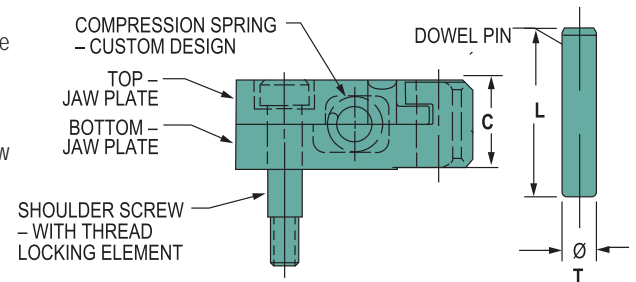
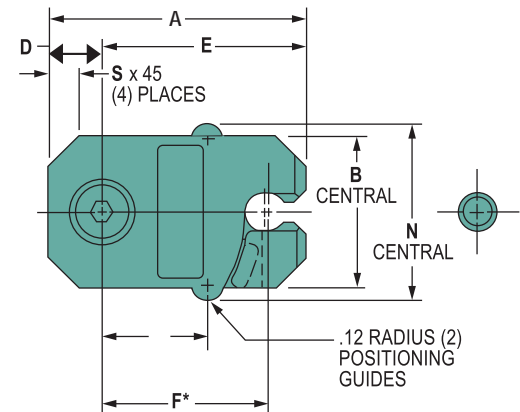
Catalog Number	A	B	C	D	E	F*	N	P	S	T	L
PPSL 0001	1.50	.76	.63	.27	1.23	.980	.94	.61	.14	.250	1.25
PPSL 0002	2.13	1.26	.79	.44	1.69	1.375	1.44	.88	.25	.312	1.50
PPSL 0003	3.38	1.76	1.18	.75	2.63	2.125	1.94	1.57	.38	.375	2.25

Catalog Number†	MAXIMUM RECOMMENDED SLIDE HOLD WEIGHT
PPSL 0001	22 POUNDS
PPSL 0002	44 POUNDS
PPSL 0003	88 POUNDS

\* Dimension F, the distance from dowel pin centerline at end of slide travel and centerline of shoulder screw, is important.

Overtravel of dowel pin beyond pin clearance provided at back of jaw area could result in damage to retainer.

† Includes compression spring, shoulder screw and dowel pin



## RECTANGULAR Slide Retainer – PPSL Application

The PPSL is designed to be mounted behind and below the slide (see drawing left), and is a compact unit that can be entirely contained within the mold. Interference with tie bars or safety gates is no longer a problem. (It can even be installed completely underneath the slide if space is limited.)

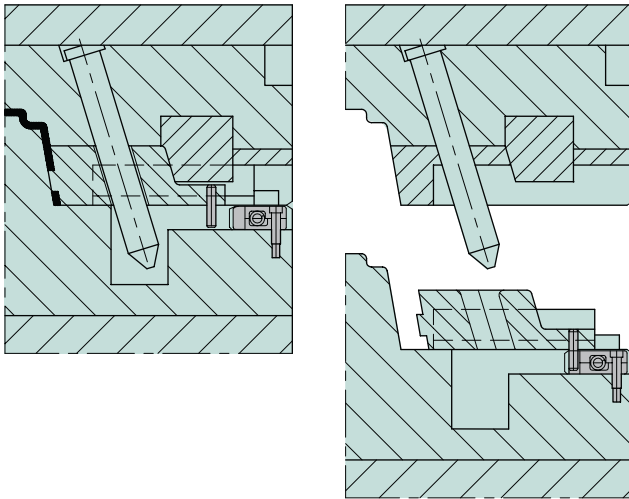
As the mold opens, the dowel pin installed in the slide positively locks into the PPSL until disengaged by the mold's closing action. The spring placed crossway in the retainer maintains the force required to keep the dowel pin in the jaws when the mold is open.

The PPSL is designed with a lead-in at the jaw opening so the dowel pin will enter the jaws even if there is a slight misalignment between the retainer and the pin.

**Note:** To prevent the dowel pin from contacting and applying pressure against the back of the retainer jaw (which could cause shearing of the dowel pin or shoulder screw) the installation dimensions shown on these pages are recommended.

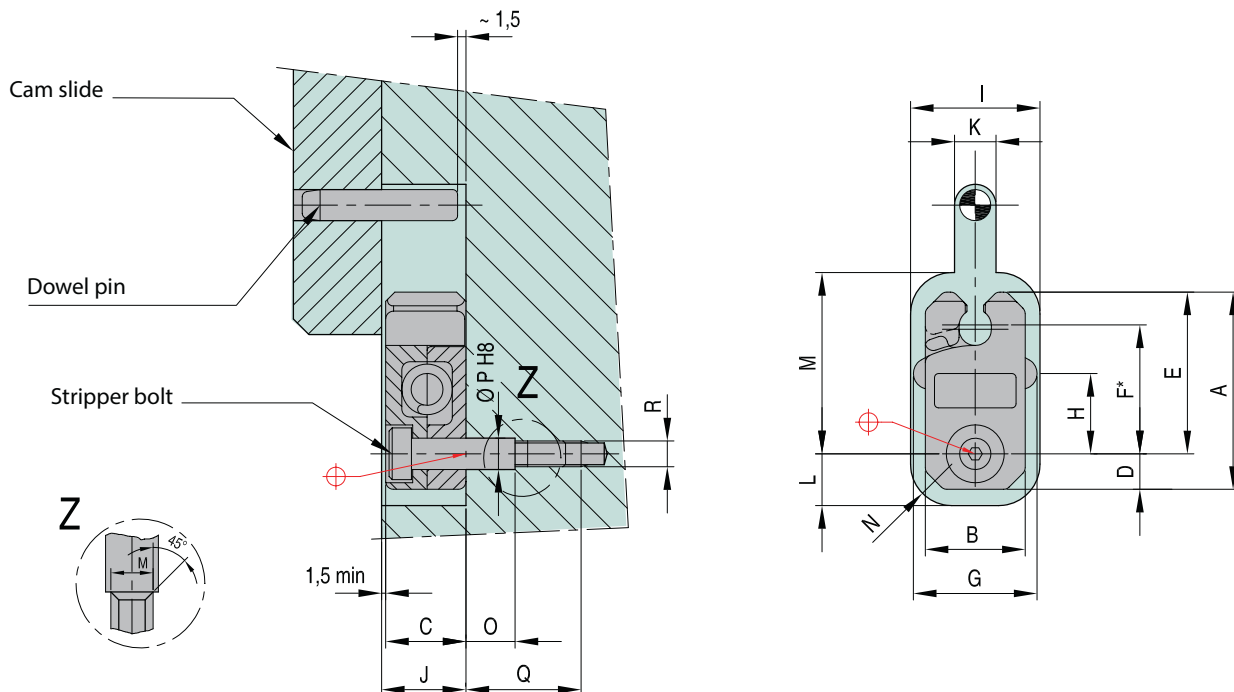


# Slide Retainers PPSM



REF	CAM SLIDE									RETAINER POCKETS IN MOULD									Max. slide weight (kg)
	A	B	C	D	E	F*	G	H	I	J	K	L	M	N	O	P	Q	R	
PPSM 0001	38	19	16	7	31,5	24,89	24,0	15,5	25,5	17,5	8	10,0	34,5	8	8,5	6	20	M5	10
PPSM 0002	54	32	20	11	43,0	34,93	36,5	22,5	38,0	21,5	10	14,5	46,0	10	10,5	8	25	M6	20
PPSM 0003	86	45	30	19	67,0	53,98	49,5	40,0	51,0	31,5	12	22,5	70,0	12	17,0	10	35	M8	40

\*The distance from the center of the dowel pin to the center of the stripper bolts is critical.





# Slide Latch High Hardness

## SLK-8-HH

Rated to carry a weight up to 8 pounds. 100% interchangeable with SLK-8A



**BODY**

**LOCK**

SKD 11 HRC 56-58

### INSTALLATION - LOCK

**OPTION A  
MACHINED INTO SLIDE**

MIN .375

R .020

.054

90°

R .030

**OPTION B  
LOCK INSERT**

Ø .502

.500

.400

TAP 2-56 x .250 DEEP

.110

.152

.100

.150

BOTTOM MOUNTING  
C'BORE FOR 4-40

Ø .502

.500

.302

.300

.150

TAP 2-56 .250 DEEP

### DESIGN GUIDELINES

FULL STROKE  
MINUS -.020

SEE VIEW A

VIEW A

**NOTE:** Set angle pin to release .020 from full stroke. Striker will snap to full stroke to assure re-entry clearance of angle pin

.075  
OFF CENTER

Ø .498

.150

.050

.295

TAPPED 4-40 THRU  
C'BORE FOR 2-56

.150

.145

.075  
OFF CENTER

### INSTALLATION - BODY

Ø .502

.500

.302

.300

.150

TAP 2-56 .250 DEEP

VIEW A

.020

VIEW A

**NOTE:** Set angle pin to release .020 from full stroke. Striker will snap to full stroke to assure re-entry clearance of angle pin

## SLK-25-HH

Rated to carry a weight up to 25 pounds. 100% interchangeable with SLK-25A

**BODY**

**LOCK**

SKD 11 HRC 56-58

TAPPED 10-32 FOR BOTTOM MOUNTING  
C'BORE 6-32 SHCS FOR TOP MOUNTING

1.490

1.100

1.490

.620

.620

.310

Ø .498

.100

.249

LARGE LEAD IN  
TAPER & RADIUS

### INSTALLATION - LOCK

**OPTION A  
MACHINED INTO SLIDE**

MIN .750

R .047

45°

.105

90°

R .083

**OPTION B  
LOCK INSERT**

.025-.027

.313

1.500

.875

1.100

.313R

TAP 8-32  
.300 DEEP

.135

.125

.252

.250

### INSTALLATION - BODY

1.500

.313

.502

.500

BOTTOM MOUNTING  
C'BORE for 10-32

1.100

.027

.025

TAP 6-32  
.300 DEEP

### DESIGN GUIDELINES

FULL STROKE  
MINUS -.030

SEE VIEW A

VIEW A

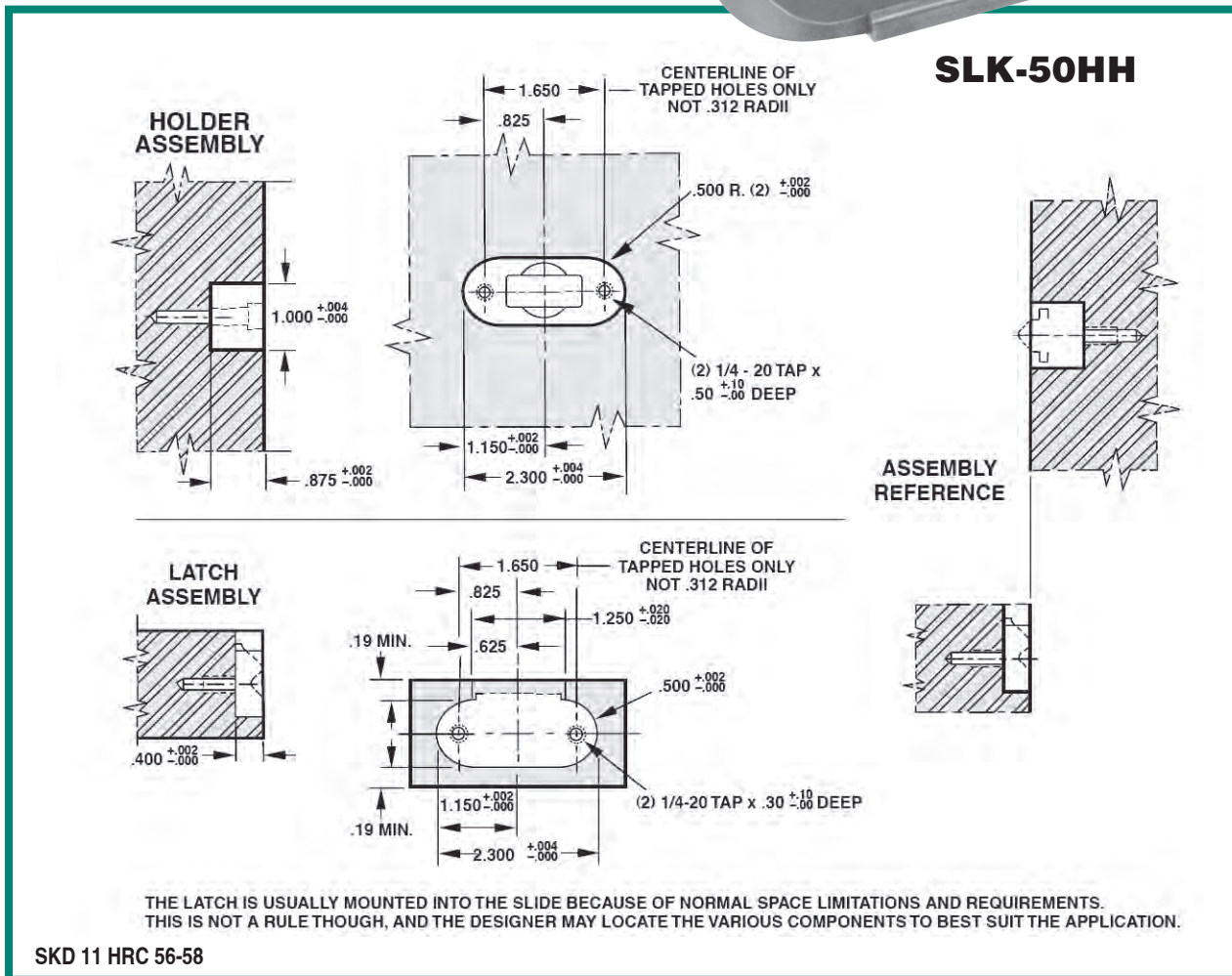
**NOTE:** Set angle pin to release .030 from full stroke. Striker will snap to full stroke to assure re-entry clearance of angle pin





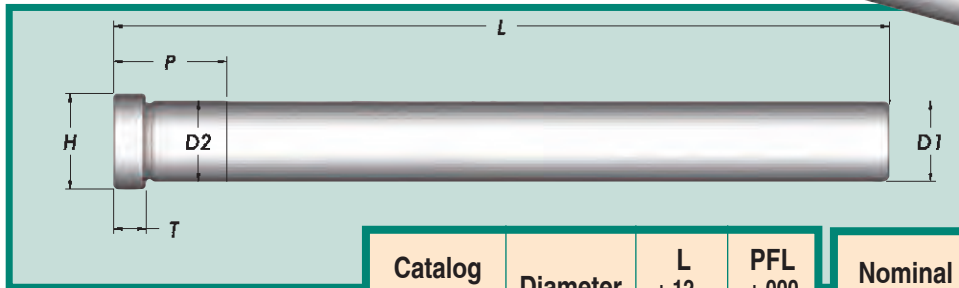
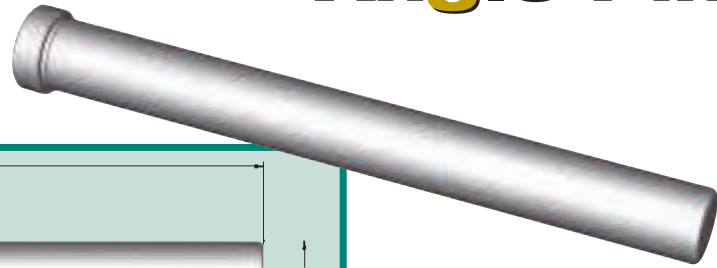
# Slide Latch Machining Data

Slide-Latch model SLK-50HH is rated to carry a weight of up to 50 pounds. Ideal for die cast mold slide applications. Multiple Slide-Latches can be easily machined and mounted in mold slides for higher load retentions.





# Angle Pins

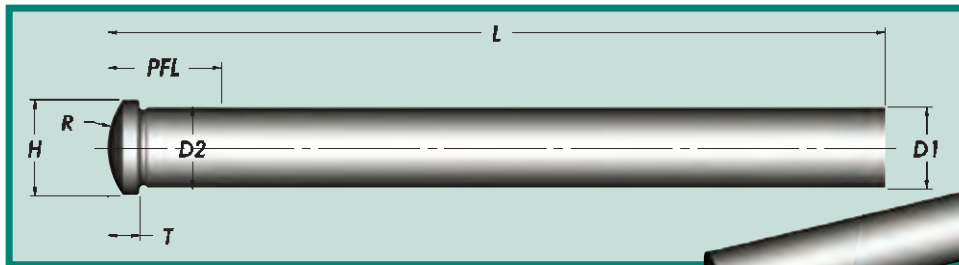


- Manufactured from H-13 steel.
- Surface hardness 65-80 Rc.
- Core hardness 35-40 Rc.
- Ground, nitrided and polished.

Catalog Number	Diameter	L +.12 -.00	PFL +.000 -.062
AP37L06	3/8	6"	7/8
AP37L10	3/8	10"	1-3/8
AP50L06	1/2	6"	7/8
AP50L10	1/2	10"	1-3/8
AP62L06	5/8	6"	7/8
AP62L10	5/8	10"	1-3/8
AP75L10	3/4	10"	1-3/8

Nominal Diameter	D1 +.0000 -.0005	D2 +.0005 -.0000	H +.000 -.010	T +.000 -.005
3/8	.374	.376	.49	.25
1/2	.499	.501	.61	.25
5/8	.624	.626	.74	.25
3/4	.749	.751	.86	.25

# Angle Pins With Radiused Heads



- Manufactured from H-13 steel.
- Surface hardness 65-75 Rc.
- Core hardness 35-40 Rc.
- Ground, nitrided and polished.

Catalog Number	Diameter +.0000 -.0005	L +.50 -.00	H +.000 -.010	T +.000 -.005	D2 +.0000 -.0005	PFL +.00 -.06	R SPH RAD
RAP37L06	.3740	6"	.500	.250	.3765	7/8	.375
RAP37L10	.3740	10"	.500	.250	.3765	1-3/8	.375
RAP50L06	.4990	6"	.625	.250	.5015	7/8	.500
RAP50L10	.4990	10"	.625	.250	.5015	1-3/8	.500
RAP62L06	.6240	6"	.750	.250	.6265	7/8	.625
RAP62L10	.6240	10"	.750	.250	.6265	1-3/8	.625
RAP75L10	.7490	10"	.875	.312	.7515	1-3/8	.750
RAP75L14	.7490	14"	.875	.312	.7515	1-3/8	.750
RAP100L10	.9990	10"	1.125	.312	1.0015	1-3/8	1.00
RAP100L14	.9990	14"	1.125	.312	1.0015	1-3/8	1.00

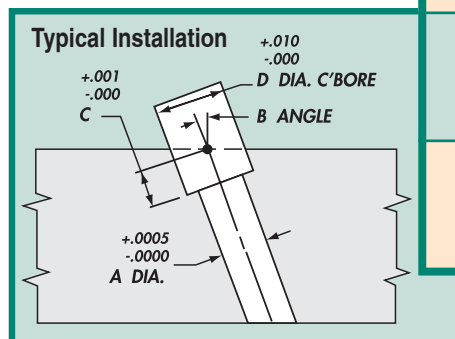
## Machining Dimensions For Installation

Pin "A" Diameter	Angle	C'bore Depth "C"	C'bore Dia. "D"
.3765	10°	.256	.562
	15°	.264	.562
	20°	.275	.562
	25°	.291	.562
.5015	10°	.258	.688
	15°	.268	.688
	20°	.283	.688
	25°	.304	.688
.6265	10°	.260	.812
	15°	.273	.812
	20°	.291	.812
	25°	.316	.812
.7515	10°	.324	.938
	15°	.339	.938
	20°	.361	.938
	25°	.389	.938
1.015	10°	.328	1.188
	15°	.348	1.188
	20°	.377	1.188
	25°	.415	1.188

These pins are supplied with a spherical radius premachined on the head, which eliminates angle grinding usually required on the head. To install on a specific angle, use the chart to determine counterbore depth.

### Installation Notes:

Cut angle pin to length as required to obtain required travel on the slide. The angle pin works on angle in clearance hole in slide to push the slide and create travel.

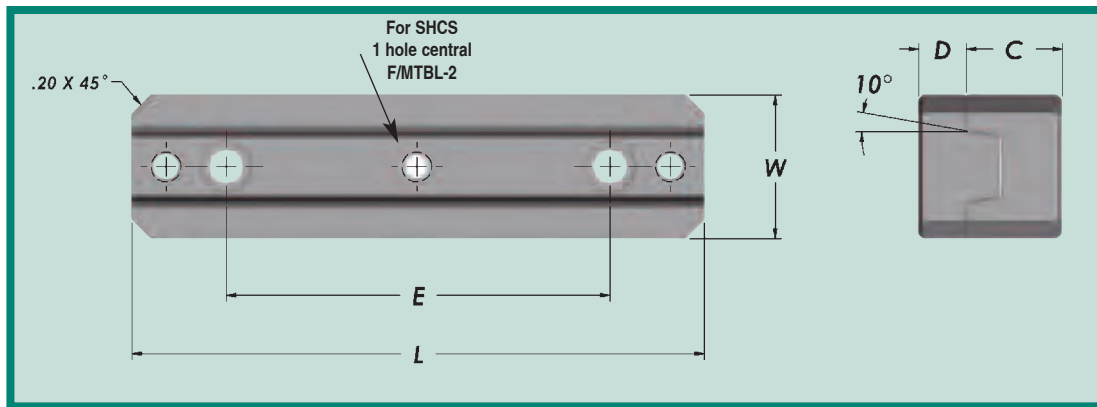


Note: "A" Dimension specified will provide approximately .001" clearance with D2 press fit.



# Taper Bar Locks

- DMS Tapered Bar Locks provide positive alignment between mold halves.
- They maintain alignment while allowing for thermal expansion.
- Made of 1045 steel hardened to 58-60 HRc.
- Male and Female mounting pockets should be accurately aligned, flat and parallel to the parting line.
- The pocket lengths should be long enough to provide clearance.



**SOLD ONLY IN SETS\*\***

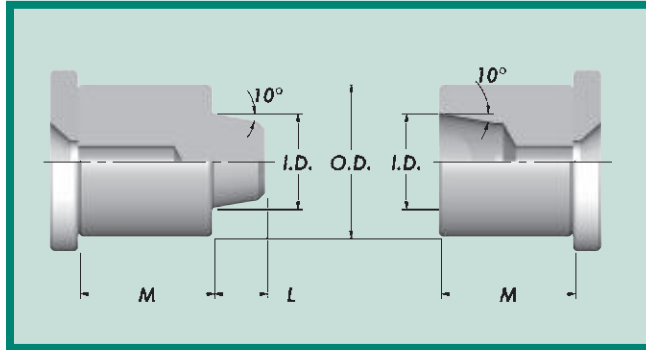
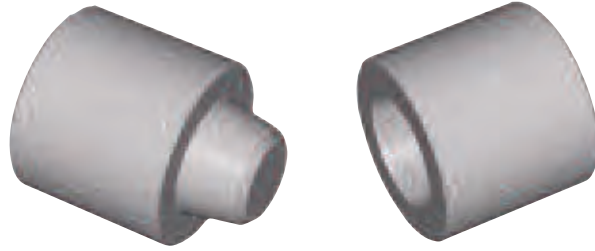
SET CODE	Number	L +.010 -.010	W +.000 -.001	D +.005 -.005	E +.005 -.005	S.H.C.S.	Jackscrew Thread
MFTBL-2	MTBL-2	1.980	.999	.312	-	#10-24	#10-24
MFTBL-4	MTBL-4	3.980	1.249	.375	2.500	1/4-20	1/4-20
MFTBL-6	MTBL-6	5.980	1.499	.500	4.000	5/16-18	5/16-18

SET CODE	Number	L +.010 -.010	W +.000 -.001	C +.005 -.005	E +.005 -.005	S.H.C.S.	Jackscrew Thread
MFTBL-2	FTBL-2	1.980	.999	.690	-	#10-24	#10-24
MFTBL-4	FTBL-4	3.980	1.249	.870	2.500	1/4-20	1/4-20
MFTBL-6	FTBL-6	5.980	1.499	1.000	4.000	5/16-18	5/16-18

\*\* When ordering, use **SET CODE**  
 Example: MFTBL-2 (Supplied with MTBL-2 & FTBL-2)



# Round Tapered Interlocks



- DMS round tapered interlocks provide positive alignment of cavities and cores.
- Extra grind stock is provided at the back of both male and female for positive fitting.

FEMALE					
O.D. +.0000 -.0005	I.D.	TAP SIZE	M +.010 +.015	Catalog Number	
1/2	5/16	10-24	7/8	FTL050-14	
			1-3/16	FTL050-19	
			1-3/8	FTL050-22	
			11/16	FTL075-11	
3/4	1/2	1/4-20	7/8	FTL075-14	
			1-3/16	FTL075-19	
			1-3/8	FTL075-22	
			11/16	FTL100-11	
1"	5/8	1/4-20	7/8	FTL100-14	
			1-3/16	FTL100-19	
			1-3/8	FTL100-22	
			1-1/8	FTL150-18	
1-1/2	1"	5/16-18	1-3/8	FTL150-22	
			1-5/8	FTL150-26	
			1-1/8	FTL200-18	
2"	1-1/2	5/16-18	1-3/8	FTL200-22	
			1-5/8	FTL200-26	

MALE					
O.D. +.0000 -.0005	I.D.	L	TAP SIZE	M +.010 +.015	Catalog Number
1/2	5/16	1/4	10-24	11/16	MTL050-11
				7/8	MTL050-14
				1-3/16	MTL050-19
				1-3/8	MTL050-22
3/4	1/2	9/32	1/4-20	11/16	MTL075-11
				7/8	MTL075-14
				1-3/16	MTL075-19
				1-3/8	MTL075-22
1"	5/8	11/32	1/4-20	11/16	MTL100-11
				7/8	MTL100-14
				1-3/16	MTL100-19
				1-3/8	MTL100-22
1-1/2	1"	1/2	5/16-18	1-1/8	MTL150-18
				1-3/8	MTL150-22
				1-5/8	MTL150-26
2"	1-1/2	1/2	5/16-18	1-1/8	MTL200-18
				1-3/8	MTL200-22
				1-5/8	MTL200-26



# Stop & Spacer Components

- *Spacer/ Stop Plates*
- *Return Pin Stop Spacer*
- *Switch Dogs/ Rods*
- *Stop Buttons*



**MATERIAL: 12L14, BLACK OXIDED**

## Spacer & Stop Plates



• Used as rest buttons or spacers

Part #	O.D.	Thickness	Screw Size
SP050	11/16"	3/16"	10-24
SP075	1"	3/16"	1/4-20
SP100	1-3/16"	3/16"	1/4-20
SP150	1-11/16"	1/4"	5/16-18
SD07	1"	3/16"	10-24
SD0750	3/4"	3/16"	10-24
SD-10	1-3/16"	3/16"	10-24

**NOTE:**  
Other sizes available upon request.

## Stop Spacers



Part #	O.D.	Thickness	Screw Size
SS-15	1-3/16"	1/2"	1/4-20
SS-20	1-11/16"	1/2"	1/4-20
SDB15375	1-1/2"	3/4"	3/8-16

**NOTE:**  
Other sizes available upon request.

## Switch Dog Stops



Part #	O.D.	Thickness	Thread
SSD8070	2"	.62"	1/2-20

**NOTE:**  
Other sizes available upon request.



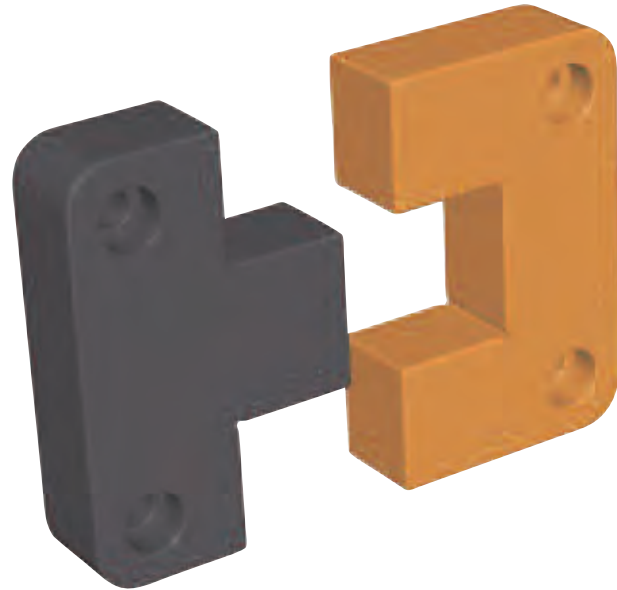
**NOTE:** 1/2-20 Threaded rod cut to length available upon request.



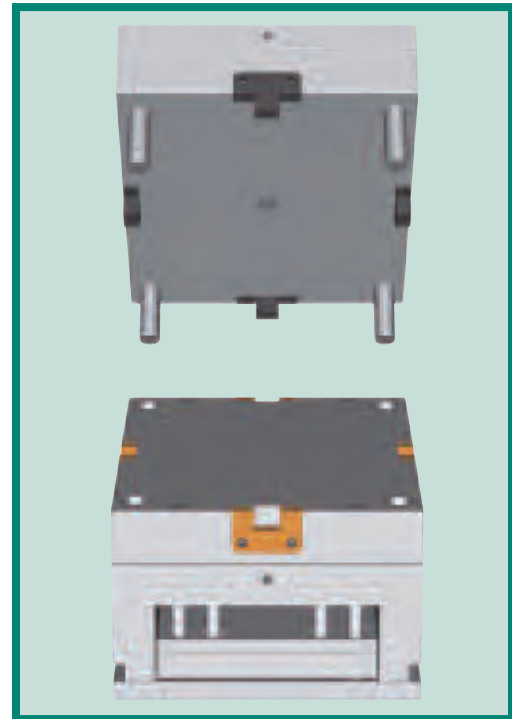
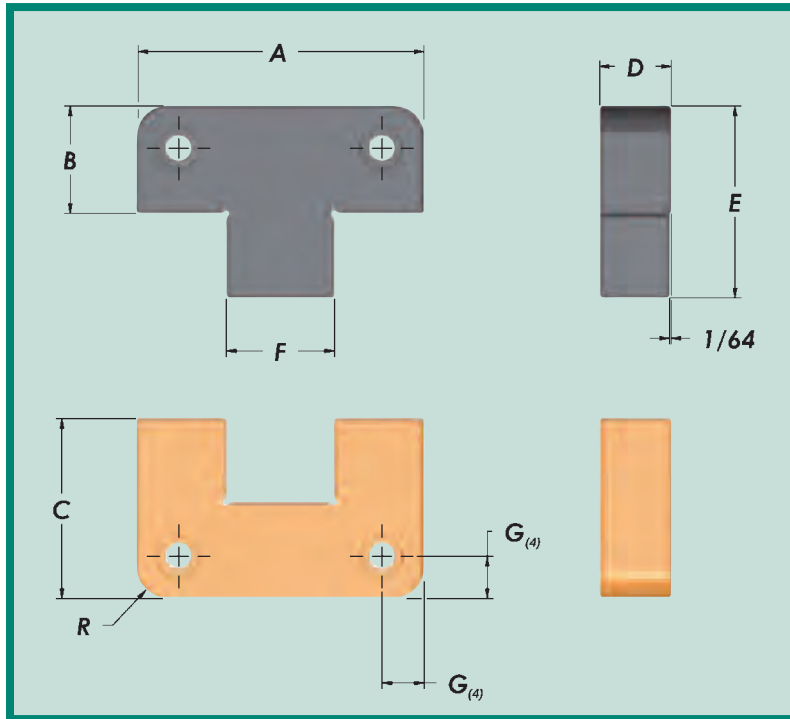
# Side Locks

Male half: O-6 steel (58-60 Rc)  
Black Oxide Finish

Female half: S-7 steel (54-56 Rc)  
Titanium Nitrided (80 Rc)



- Supplied with socket head cap screws.
- Sold in sets only.

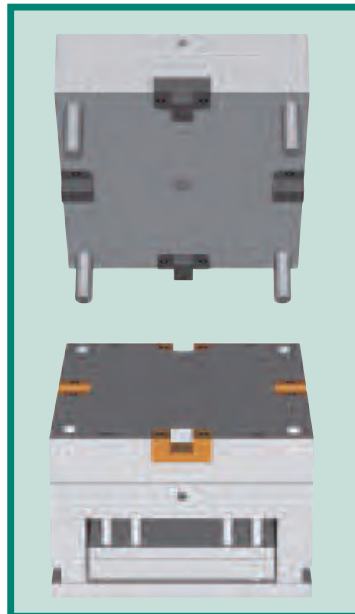
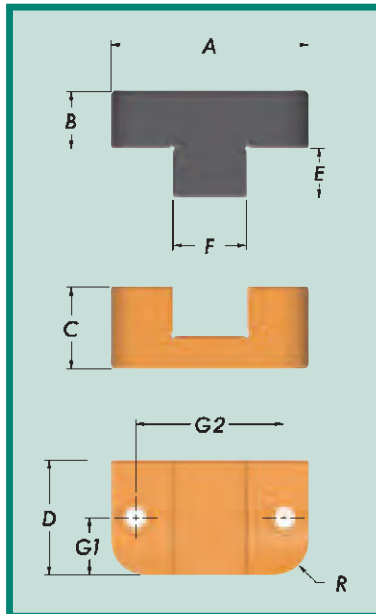
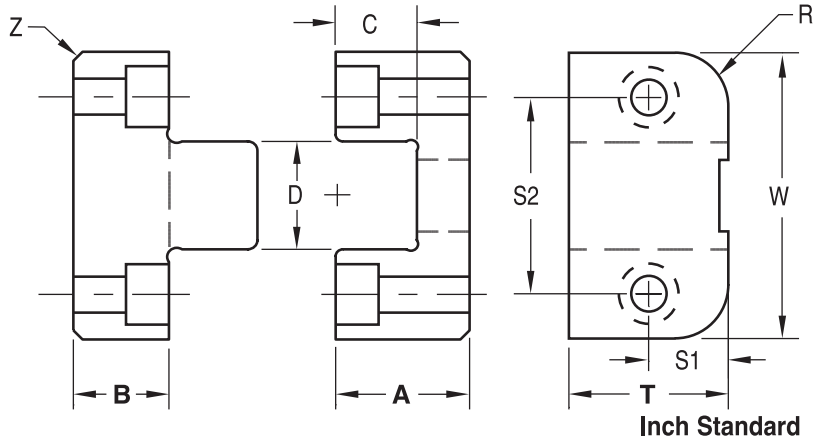


Catalog Number	A +.0000 -.0004	B +.000 -.002	C +.000 -.002	D +.000 -.002	E	F .0001/.0002 Clearance per side	G +.010 -.010	R	SHCS
PLS-100	1.000	.870	1.125	.375	1.310	.440	.250	3/16	10-32 X 1/2
PLS-125	1.250	.870	.875	.437	1.230	.500	.250	1/4	10-32 X 1/2
PLS-150	1.500	.870	1.000	.500	1.250	.625	.281	1/4	10-32 X 5/8
PLS-200	2.000	.870	1.375	.620	1.375	.680	.375	1/4	1/4-20 X 3/4
PLS-300	3.000	1.120	1.875	.745	2.000	1.125	.440	5/16	1/4-20 X 7/8
PLS-400	4.000	1.370	1.875	.875	2.312	1.375	.625	3/8	3/8-16 X 1
PLS-500	5.000	1.370	2.375	1.120	2.625	1.750	.625	3/8	3/8-16 X 1-1/4





# Top Locks



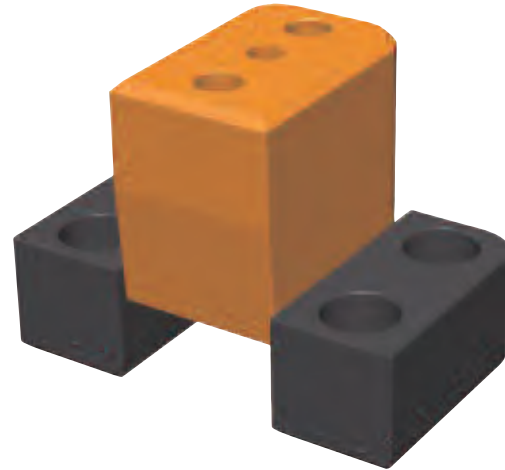
Male half: O-6 steel (58-60 Rc)  
Black Oxide Finish  
Female half: S-7 steel (54-56 Rc)  
Titanium Nitrided (80 Rc)

- Supplied with socket head cap screws.
- Sold in sets only.

Catalog Number	D +.000 -.002	A +.0000 -.0004	C +.000 -.002	B +.000 -.002	E	F .0001/.0003 Clearance per side	G1 ±0.1	G2 ±0.1	R Pocket Radius	SHCS	
										MALE	FEMALE
TL50X100	.500	1.000	.500	.375	.30	.375	.25	.688	.188	#6-32 x 1/2"	#6-32 x 5/8"
TL62X125	.625	1.250	.625	.500	.41	.438	.312	.875	.250	#6-32 x 5/8"	#6-32 x 3/4"
TL75X125	.750	1.250	.625	.500	.38	.438	.375	.875	.250	#8-32 x 5/8"	#8-32 x 3/4"
TOPL125	.750	1.250	.625	.500	.38	.438	.375	.875	.250	#8-32 x 5/8"	#8-32 x 3/4"
TL87X150	.875	1.500	.875	.750	.57	.500	.437	1.000	.250	#8-32 x 7/8"	#8-32 x 1"
TL100X150	1.000	1.500	.875	.375	.57	.500	.500	1.000	.250	#10-32 x 1/2"	#10-32 x 1"
TL100X200	1.000	2.000	1.125	.750	.75	.750	.500	1.375	.375	#10-32 x 7/8"	#10-32 x 1-1/8"
TL112X200	1.125	2.000	.875	.625	.50	.750	.563	1.375	.375	1/4-20 x 3/4"	1/4-20 x 1"
TOPL200	1.125	2.000	.875	.625	.50	.750	.563	1.375	.375	1/4-20 x 3/4"	1/4-20 x 1"
TL112X300	1.125	3.000	1.500	.750	.87	1.125	.563	2.250	.500	1/4-20 x 7/8"	1/4-20 x 1-5/8"
TL150X250	1.500	2.500	1.375	.625	.85	1.000	.750	1.750	.375	1/4-20 x 3/4"	1/4-20 x 1-1/2"
TL175X300	1.750	3.000	1.250	.875	.75	1.125	.875	2.250	.500	5/16-18 x 1"	5/16-18 x 1-1/4"
TOPL300	1.750	3.000	1.250	.875	.75	1.125	.875	2.250	.500	5/16-18 x 1"	5/16-18 x 1-1/4"
TL200X350	2.000	3.500	1.750	.750	1.07	1.500	1.000	2.500	.500	3/8-16 x 7/8"	3/8-16 x 2"



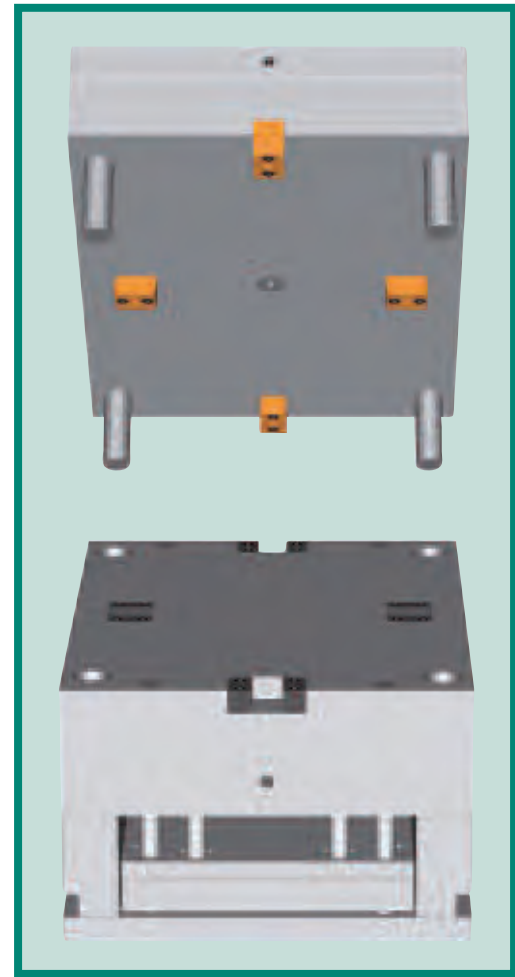
# Guide Locks



Because Guide Locks can be used inside the mold as well as at the parting line, DMS has added a jack screw hole to the male interlock. This allows removal without damage to the mold. Also added is a 5 angle on each end of the male.

**Male:**  
 AISI D2 (58-60 Rc)  
 Titanium Nitride Coated  
 78-80 Rc

**Female:**  
 AISI 1045 (60-62 Rc)  
 Black Oxide Finish



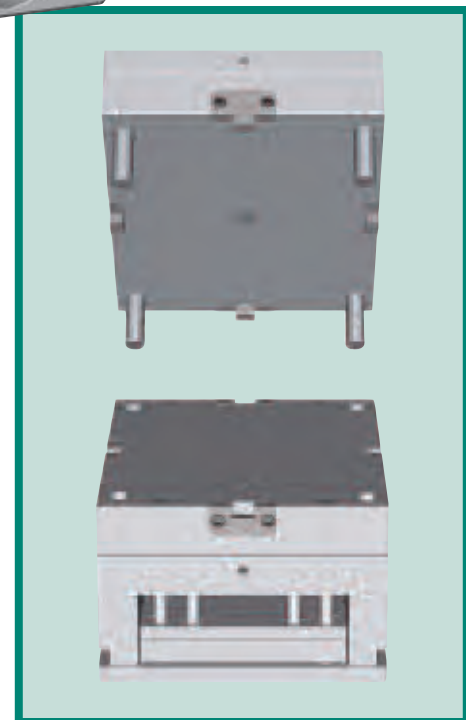
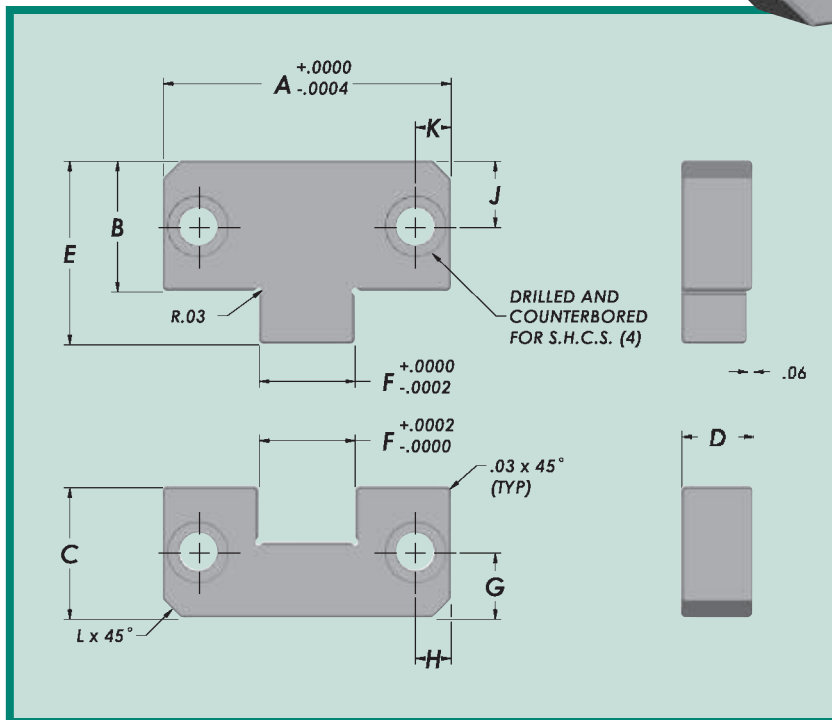
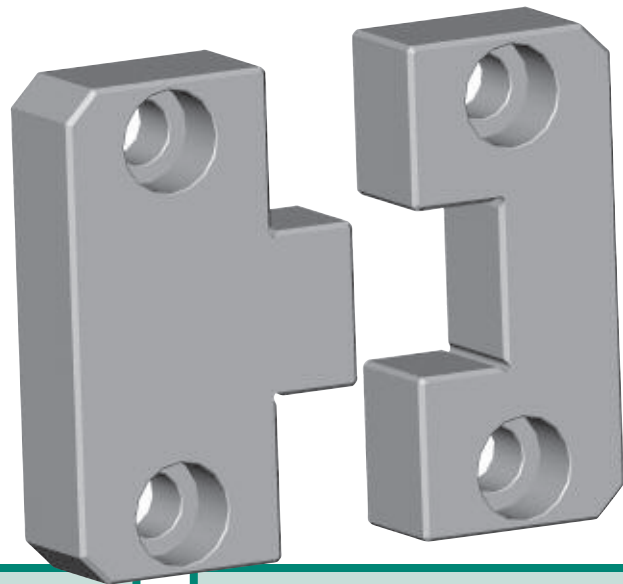
Catalog Number	W +.000 -.010	L +.000 -.010	T +.0000 -.0003	H +.000 -.010	M	C +.0000 -.0003	F +.000 -.005	S +.010 -.010	R	X Jack Screw	SHCS	
											MALE (2)	FEMALE (4)
GL-1.5	1.500	1.000	.500	.850	.375	.500	.500	.250	.187	#6-32	#10-32 X 1"	#10-32 X 5/8
GL-2.5	2.500	1.500	1.000	1.350	.625	.750	.750	.310	.250	1/4-20	1/4-20 X 1-1/2	1/4-20 X 7/8
GL-3.5	3.500	2.000	1.500	1.730	.750	1.000	1.000	.440	.375	3/8-16	3/8-16 X 2"	3/8-16 X 1-1/4
GL-4.5	4.500	2.500	2.000	2.100	.875	1.250	1.250	.560	.500	3/8-16	1/2-13 X 2-1/4	1/2-13 X 1-1/2



# E Side Locks

Male half:       AISI O2  
                      52-56 Rc  
Female half:     AISI O2  
                      56-58 Rc

- Supplied with socket head cap screws.
- Sold in sets only.



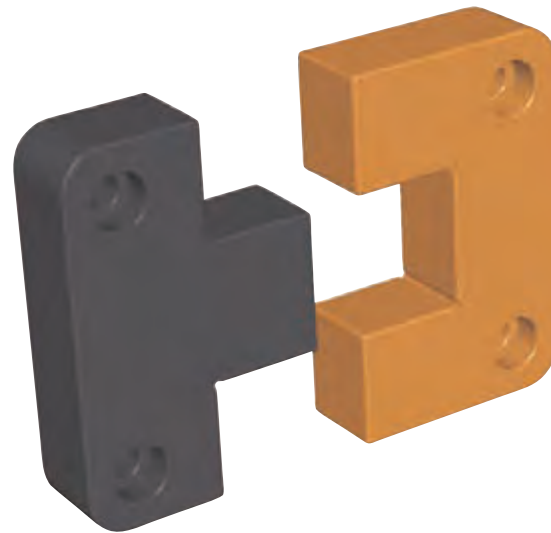
Catalog Number	A +.0000 -.0004	B +.0000 -.0008	C +.0000 -.0008	D +.000 -.002	E	F	G +.010 -.010	H	J	K	L	SHCS
ESL-1.5	1.500	.870	.870	.620	1.180	.500	.281	.281	.437	.281	.190	1/4-20 X 3/4
ESL-2.0	2.000	.870	.870	.620	1.180	.680	.375	.375	.437	.375	.190	1/4-20 X 3/4
ESL-3.0	3.000	1.360	1.370	.745	1.910	1.000	.688	.375	.688	.375	.190	3/8-16 X 1"
ESL-4.0	4.000	1.870	1.870	.745	2.640	1.375	.875	.625	.875	.625	.500	3/8-16 X 1"
ESL-5.0	5.000	1.870	1.870	1.120	2.640	1.750	.875	.750	.875	.750	.500	1/2-13 X 1-1/4



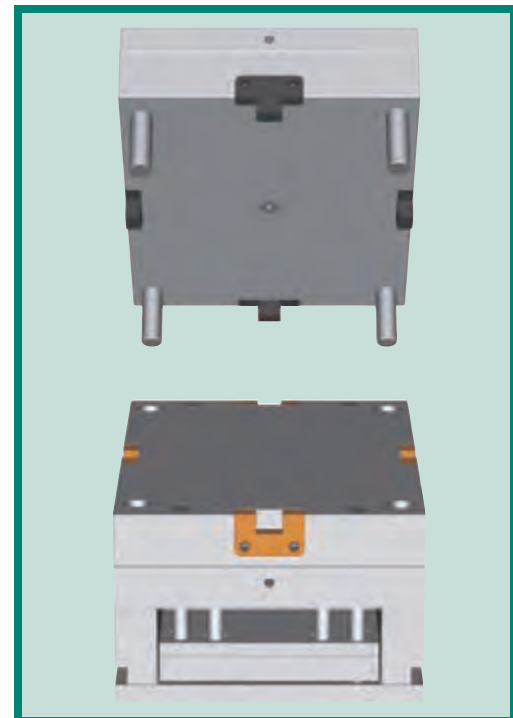
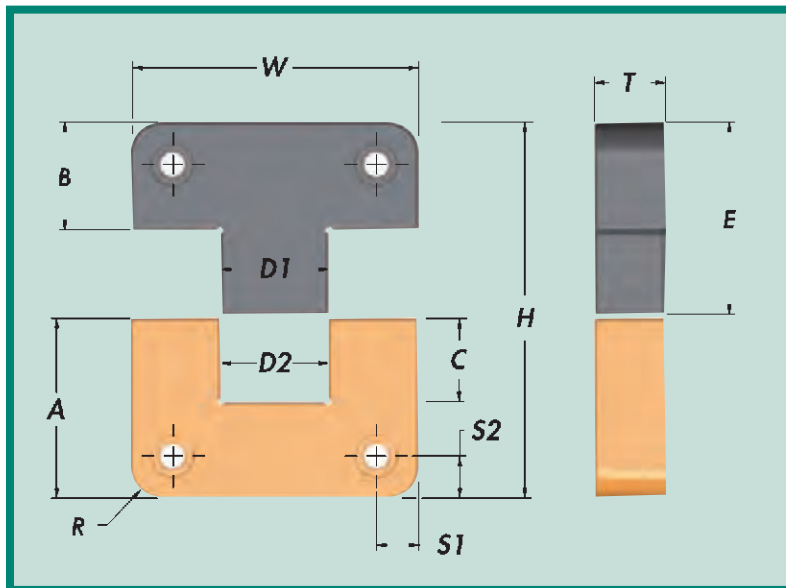
# E Side Locks (Treated)

Male half: YK 30 (58 ±2 Hrc)  
Black Oxide Finish

Female half: A2 Core 58-60 Surface (80 ±2 Hrc)  
Titanium Nitride Coated



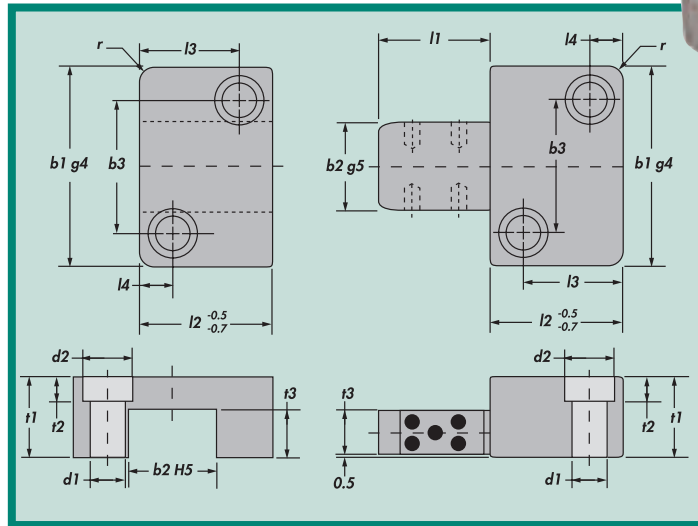
- Supplied with socket head cap screws.
- Sold in sets.



Catalog Number	W +.0000 -.0004	T +.000 -.002	A +.000 -.002	B +.000 +.002	C	D1 +.0000 -.0002	D2 +.0002 -.0000	H +.002 -.004	R	S1/S2 +.01 -.01	SHCS
ESLT-100	1.000	0.375	1.125	0.875	0.530	0.500	0.500	2.000	0.187	0.250	10-32x 1/2
ESLT-125	1.250	0.490	1.125	0.875	0.660	0.500	0.500	2.000	0.187	0.250	8/32 x 5/8
ESLT-150	1.500	0.500	0.875	0.875	0.560	0.563	0.563	1.750	0.187	0.250	8/32 x 5/8
ESLT-200	2.000	0.500	1.375	0.875	0.660	0.750	0.750	2.250	0.187	0.312	10-32 x 1/2
ESLT-300	3.000	0.750	1.875	0.875	1.130	1.250	1.250	2.750	0.250	0.375	1/4-20 x 3/4
ESLT-400	4.000	1.000	2.375	1.375	1.250	1.500	1.500	3.750	0.500	0.500	3/8-16 x 1
ESLT-500	5.000	1.250	2.875	1.375	1.630	2.000	2.000	4.250	0.500	0.625	1/2-13 x 1-1/4
ESLT-600	6.000	1.500	2.875	1.375	1.750	2.500	2.500	4.250	0.500	0.625	1/2-13 x 1-1/2



# E Side Locks (Graphite Impregnated)

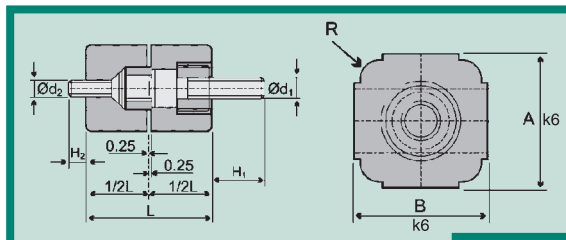


Material: YK30 56-60 Hrc

- Supplied with socket head cap screws.
- Sold in sets only.

Catalog Number	b1	b2	l1	l2	t1	t3	d1	d2	t2	b3	l3	l4	r
OSL16x20	40	16	20	22	20	11	6.6	11	6.8	26	15	7	6
OSL16x40	40	16	40	22	20	11	6.6	11	6.8	26	15	7	6
OSL20x25	45	20	25	27	22	13	6.6	11	6.8	31	19	7	6
OSL20x50	45	20	50	27	22	13	6.6	11	6.8	31	19	7	6
OSL25x32	50	25	32	36	25	14	6.6	11	6.8	35	27	9	8
OSL25x63	50	25	63	36	25	14	6.6	11	6.8	35	27	9	8
OSL32x40	63	32	40	46	32	19	9	15	9	45	35	11	8
OSL32x80	63	32	80	46	32	19	9	15	9	45	35	11	8
OSL40x50	85	40	50	56	36	22	11	18	11	60	40	15	10
OSL40x100	85	40	100	56	36	22	11	18	11	60	40	15	10
OSL50x56	100	50	56	66	40	24	14	20	13	74	48	18	10
OSL50x112	100	50	112	66	40	24	14	20	13	74	48	18	10

Note: All dimensions & tolerances are in millimeters



# Square Interlocks



Material: YK30 56-60 Hrc

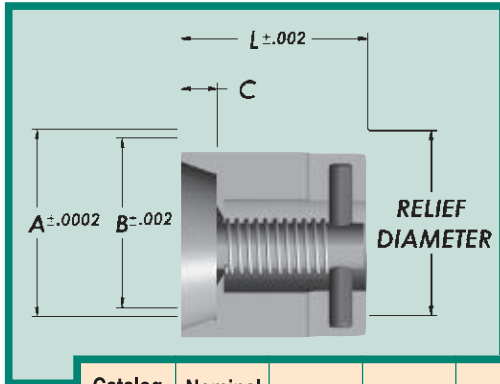
- Easily installed and removed from the parting line.
- Supplied with socket head cap screws.
- Sold in sets only.

Catalog Number	A	B	L	d1	d2	H1	H2	R
SIL-20	20	20	28	M5	M4	12	4	4
SIL-25	25	25	32	M6	M5	13	8	5
SIL-32	32	32	36	M8	M6	15	12	6
SIL-40	40	40	45	M10	M8	17	10	6

Note: All dimensions & tolerances are in millimeters



# Air Ejectors Standard

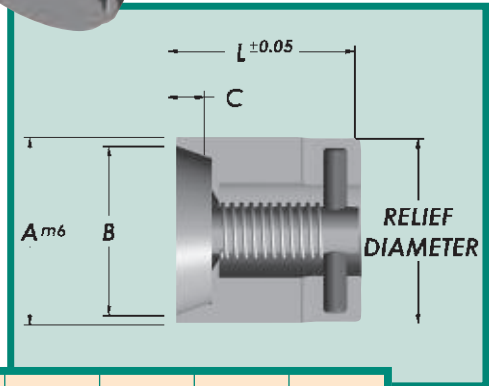


- Designed to assist in breaking the vacuum created when molding deep molded parts or thin walled parts such as flower pots, garbage cans and containers.
- The valve and body are made from hardened Stainless Steel 45-50 HRC.

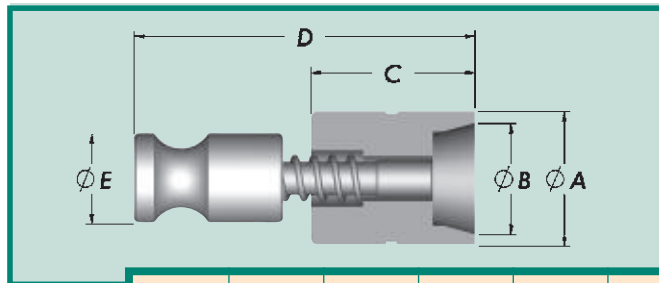
**INCH**

Catalog Number	Nominal I.D.	A	B	L	C
AE025	1/4	.2505	.225	.252	.05
AE037	3/8	.3755	.325	.377	.07
AE050	1/2	.5005	.437	.502	.10
AE062	5/8	.6255	.562	.627	.13
AE075	3/4	.7505	.656	.752	.15
AE100	1"	1.0005	.875	1.002	.20
AE150	1-1/2	1.5005	1.312	1.502	.30

**METRIC**

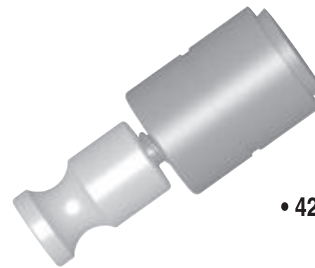


Catalog Number	Nominal I.D.	A	B	L	C
AE08MM	8	.3149	6.5	12	1.5
AE10MM	10	.3937	8	12	2.0
AE12MM	12	.4724	10	12	2.5
AE16MM	16	.6299	13	20	3
AE20MM	20	.7874	17	20	3.5

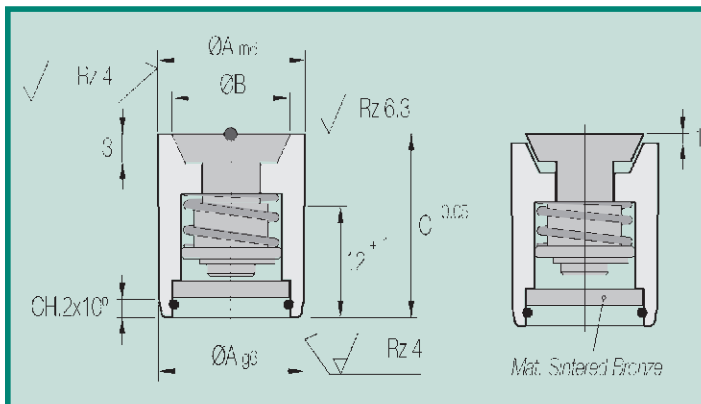


Catalog Number	A	B	C	D	E
AEP-01	8 <sup>+0.018</sup> / <sub>+0.007</sub>	6,6	11	24	6
AEP-02	12 <sup>+0.018</sup> / <sub>+0.007</sub>	9,7	18	34	8
AEP-03	18 <sup>+0.018</sup> / <sub>+0.007</sub>	14,8	22	45,5	12

## Plunger Style Metric



- 420 Stainless steel 50-55 Rc



## Filtered Metric

- Incorporating a sintered bronze filter ensuring that debris cannot affect the valve's proper function.
- The material is INOX. 1.4304 HRC 48-54.

Catalog Number	A	B	C	E
FV.161320	16	13	20	14
FV.201720	20	17	20	18

**CUMSA**  
www.cumsa.com





# Cashew Gate Inserts S2 Series

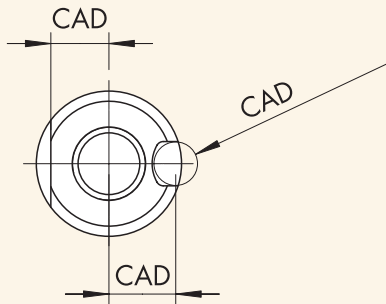
- For flat parting surfaces, including vestige with integrated cutting edge
- Ready to use! No adjustments necessary
- Hardness (60 HRC)
- Available in round (TGR) and square (TGS) versions



TGR

TGS

Anti-rotation locking possibility



	TGR 6	TGR/TGS 8	TGR/TGS 10	TGR/TGS 12	TGR/TGS 14
GATE POINT	0,6	0,6 / 0,8	0,8 / 1,2 / 1,6	1,2 / 1,6 / 2,0	1,6 / 2,0 / 2,4 / 2,8
RUNNER	2.5	3	4	5	6
MAXIMUM SHOT WEIGHT					
NV	3	5	30	50	200
MV	2	4	20	35	120
HV	1	3	12	25	75

NV = low viscosity / MV = medium viscosity / HV = high viscosity



TGR12

• Actual Size

• TGS12



TGR	Cat. No.	d	d1	d2	d3	h	h1	h2	l1	l2	M	Series	HRC
	TGR6	6	0,6	1.9	2.5	17.0	0.6	0.8	10	2.5	4	S2	Version H = 60 HRC
	TGR8	8	0,6	1.9	3	22.0	0.6	1.1	13	3.25	4	S2	
		8	0,8	2.1	3	22.0	0.6	1.1	13	3.25	4	S2	
	TGR10	10	0,8	2.2	4	22.0	0.8	1.2	12	4	5	S2	
		10	1,2	2.6	4	22.0	0.8	1.2	12	4	5	S2	
		10	1,6	3.0	4	22.0	0.8	1.2	12	4	5	S2	
	TGR12	12	1,2	2.6	5	22.0	0.8	1.4	11	5	5	S2	
		12	1,6	3.0	5	22.0	0.8	1.4	11	5	5	S2	
		12	2,0	3.4	5	22.0	0.8	1.4	11	5	5	S2	
	TGR14	14	1,6	3.0	6	22.0	0.8	1.6	10	6	6	S2	
		14	2,0	3.4	6	22.0	0.8	1.6	10	6	6	S2	
		14	2,4	3.8	6	22.0	0.8	1.6	10	6	6	S2	
	14	2,8	4.2	6	22.0	0.8	1.6	10	6	6	S2		

TGS	Cat. No.	b	b1	d1	d2	d3	h	h1	h2	l1	l2	M	Series	HRC
	TGS8	8	6	0,6	1.9	3	22.0	0.6	1.1	13	3.25	4	S2	Version H = 60 HRC
		8	6	0,8	2.1	3	22.0	0.6	1.1	13	3.25	4	S2	
	TGS10	10	8	0,8	2.2	4	22.0	0.8	1.2	12	4	5	S2	
		10	8	1,2	2.6	4	22.0	0.8	1.2	12	4	5	S2	
		10	8	1,6	3.0	4	22.0	0.8	1.2	12	4	5	S2	
	TGS12	12	10	1,2	2.6	5	22.0	0.8	1.4	11	5	5	S2	
		12	10	1,6	3.0	5	22.0	0.8	1.4	11	5	5	S2	
		12	10	2,0	3.4	5	22.0	0.8	1.4	11	5	5	S2	
	TGS14	14	12	1,6	3.0	6	22.0	0.8	1.6	10	6	6	S2	
		14	12	2,0	3.4	6	22.0	0.8	1.6	10	6	6	S2	
		14	12	2,4	3.8	6	22.0	0.8	1.6	10	6	6	S2	
		14	12	2,8	4.2	6	22.0	0.8	1.6	10	6	6	S2	

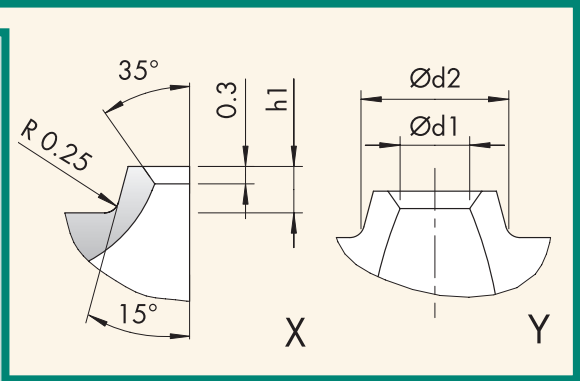
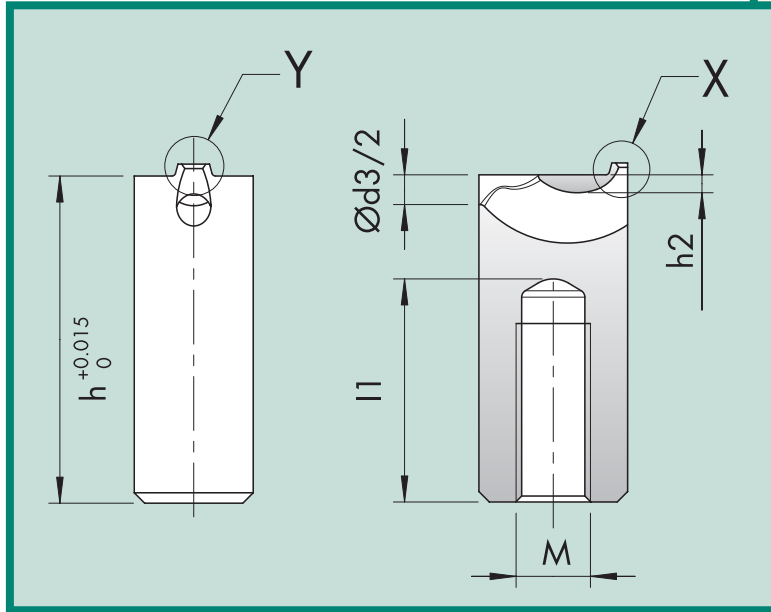
CAD files available at:

To order — Cat. No.-d1-Series-HRC. Example: TGR6-06-S2-H





# Cashew Gate Inserts S2 Series



**Table for distance L**

Part No.	Material Type			
	TPE, TPU, etc.	PE, PP, PET etc.	PC/ABS, PA, POM, HI-PC, etc.	PA+GF, PC, SAN, PMMA, etc.
TGR 6	9-12	12-18	15-22	18-25
TGR/TGS 8	11-14	15-22	19-27	23-30
TGR/TGS 10	15-18	19-27	24-33	28-36
TGR/TGS 12	18-22	22-30	27-36	32-40
TGR/TGS 14	20-25	25-33	30-37	35-43

## Recommendations

**Companion Vestige**

For optimum degating (especially of flat parts), we recommend the use of a companion vestige supplementing the vestige with cutting edge. This configuration will ensure that the part is separated from the runner flush with the parting line. Users will find this particularly advantageous in cases where materials are susceptible to stringing.

**Flat Parts**

If the molded part is very thin, the calotte must be ground down. ( $t1 > t/2$ )

**Thermoplastic elastomers (TPE)**

- Low Shore hardness = shorter distance L
- Use centring pin
- Max. hardness 100 Shore A



# Cashew Gate Inserts S1 Series

- With machining allowance on upper surface
- Slight contourings possible
- Same properties as S2 Series
- Available in round (TGR) and square (TGS) versions
- Minimum width of vestige same as S2 Series

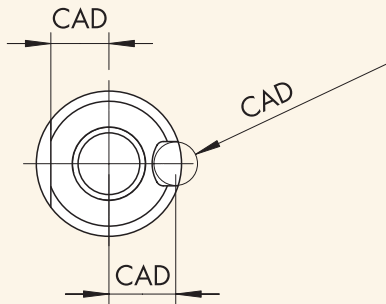


TGR



TGS

Anti-rotation locking possibility



	TGR 6	TGR/TGS 8	TGR/TGS 10	TGR/TGS 12	TGR/TGS 14
GATE POINT	0,6	0,6 / 0,8	0,8 / 1,2 / 1,6	1,2 / 1,6 / 2,0	1,6 / 2,0 / 2,4 / 2,8
RUNNER	2.5	3	4	5	6
MAXIMUM SHOT WEIGHT					
NV	3	5	30	50	200
MV	2	4	20	35	120
HV	1	3	12	25	75

NV = low viscosity / MV = medium viscosity / HV = high viscosity



TGR12

• Actual Size

• TGS12



TGR	Cat. No.	d	d1	d3	h	h1	h2	l1	l2	M	Series	HRC
	TGR6	6	0,6	2,5	17,6	0,6	1,4	10	2,5	4	S1	Version U = 40 HRC* *(available while quantity lasts) Version H = 60 HRC
	TGR8	8	0,6	3	22,6	0,6	1,7	13	3,25	4	S1	
		8	0,8	3	22,6	0,6	1,7	13	3,25	4	S1	
	TGR10	10	0,8	4	22,8	0,8	2,0	12	4	5	S1	
		10	1,2	4	22,8	0,8	2,0	12	4	5	S1	
		10	1,6	4	22,8	0,8	2,0	12	4	5	S1	
	TGR12	12	1,2	5	22,8	0,8	2,2	11	5	5	S1	
		12	1,6	5	22,8	0,8	2,2	11	5	5	S1	
		12	2,0	5	22,8	0,8	2,2	11	5	5	S1	
	TGR14	14	1,6	6	22,8	0,8	2,4	10	6	6	S1	
		14	2,0	6	22,8	0,8	2,4	10	6	6	S1	
		14	2,4	6	22,8	0,8	2,4	10	6	6	S1	
	14	2,8	6	22,8	0,8	2,4	10	6	6	S1		

TGS	Cat. No.	b	b1	d1	d3	h	h1	h2	l1	l2	M	Series	HRC
	TGS8	8	6	0,6	3	22,6	0,6	1,7	13	3,25	4	S1	Version U = 40 HRC* *(available while quantity lasts) Version H = 60 HRC
		8	6	0,8	3	22,6	0,6	1,7	13	3,25	4	S1	
	TGS10	10	8	0,8	4	22,8	0,8	2,0	12	4	5	S1	
		10	8	1,2	4	22,8	0,8	2,0	12	4	5	S1	
		10	8	1,6	4	22,8	0,8	2,0	12	4	5	S1	
	TGS12	12	10	1,2	5	22,8	0,8	2,2	11	5	5	S1	
		12	10	1,6	5	22,8	0,8	2,2	11	5	5	S1	
		12	10	2,0	5	22,8	0,8	2,2	11	5	5	S1	
	TGS14	14	12	1,6	6	22,8	0,8	2,4	10	6	6	S1	
		14	12	2,0	6	22,8	0,8	2,4	10	6	6	S1	
		14	12	2,4	6	22,8	0,8	2,4	10	6	6	S1	
		14	12	2,8	6	22,8	0,8	2,4	10	6	6	S1	

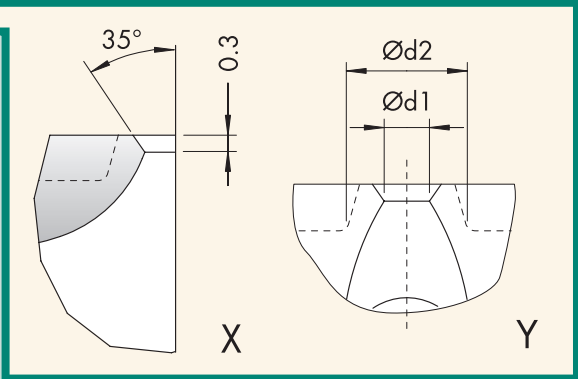
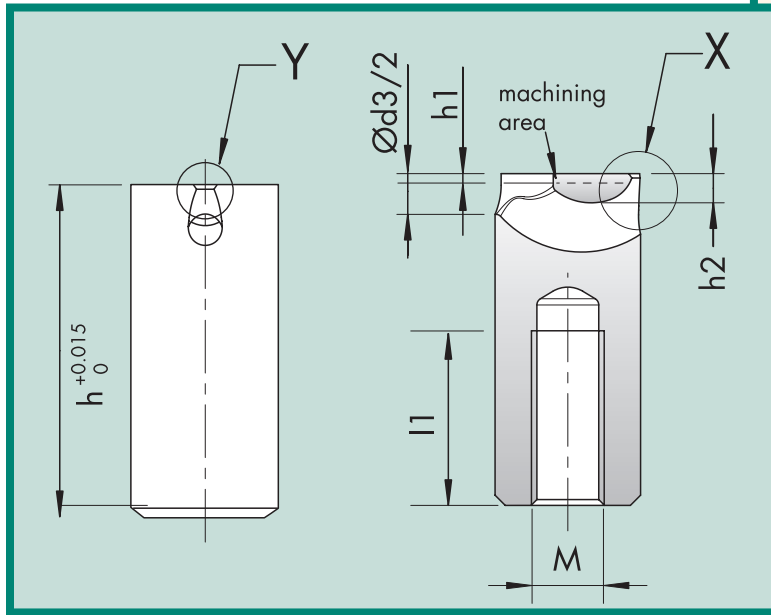
CAD files available at:



To order — Cat. No.-d1-Series-HRC. Example: TGR6-06-S1-U



# Cashew Gate Inserts S1 Series



**Table for distance L**

Part No.	Material Type			
	TPE, TPU, etc.	PE, PP, PET etc.	PC/ABS, PA, POM, HI-PC, etc.	PA+GF, PC, SAN, PMMA, etc.
TGR 6	9-12	12-18	15-22	18-25
TGR/TGS 8	11-14	15-22	19-27	23-30
TGR/TGS 10	15-18	19-27	24-33	28-36
TGR/TGS 12	18-22	22-30	27-36	32-40
TGR/TGS 14	20-25	25-33	30-37	35-43

## Recommendations

**Companion Vestige**

For optimum degating (especially of flat parts), we recommend the use of a companion vestige supplementing the vestige with cutting edge. This configuration will ensure that the part is separated from the runner flush with the parting line. Users will find this particularly advantageous in cases where materials are susceptible to stringing.

**Flat Parts**

If the molded part is very thin, the calotte must be ground down. ( $t_1 > t/2$ )

**Thermoplastic elastomers (TPE)**

- Low Shore hardness = shorter distance L
- Use centring pin
- Max. hardness 100 Shore A

TGR6, TGR8, TGS8 min Ø3,5

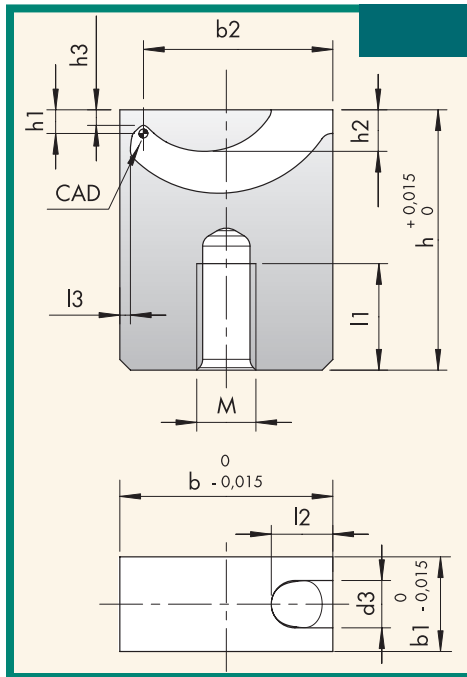
TPE < 10 Shore A

TGR6, TGR8, TGS8 min Ø3,5



# Cashew Gate Inserts Contourable

- For contouring up to 10mm
- Individually adjustable
- Available in 2 degrees of hardness (60 HRC / 40 HRC)

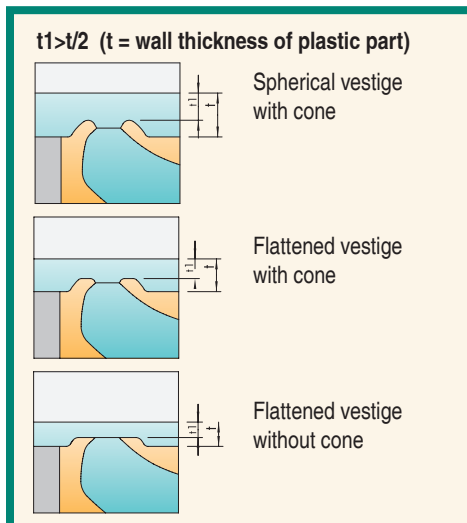


## TGC

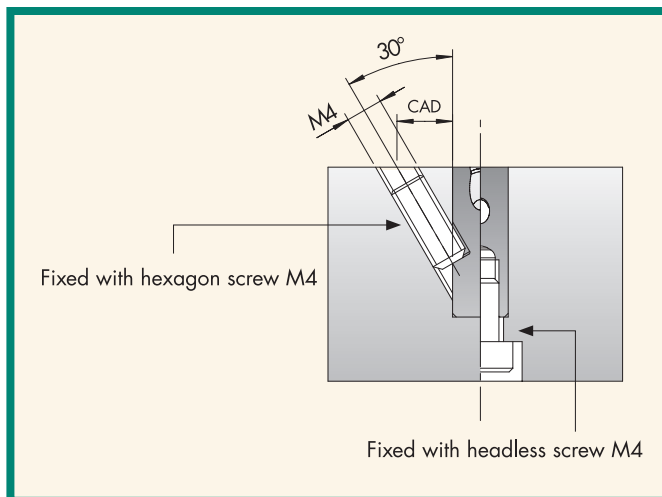
	TGC-XS	TGC-S	TGC-1	TGC-2	TGC-3	TGC-4
<b>MAX. CONTOUR DEPTH</b>	1	2	2	3	5	10
<b>GATE POINT</b>	0,4-0,6	0,4 - 0,8	0,6 - 1,2	0,8 - 1,8	0,5x4,5 - 1,5x5,5	0,5x4,5 - 1,5x5,5
<b>RUNNER</b>	2.5	2.5	4	6	8	8
<b>MAXIMUM SHOT WEIGHT</b>						
<b>NV</b>	5	12	35	120	1000	1000
<b>MV</b>	4	7	25	75	500	500
<b>HV</b>	3	5	15	50	300	300

NV = low viscosity / MV = medium viscosity / HV = high viscosity

## Vestige Versions



## TGC-XS / TGC-S Mounting Possibilities



Actual Size

•

TGC1

•

Cutaway View



Cat. No.	b	b1	b2	d3	h	h1	h2	h3	l1	l2	l3	M	HRC
TGC-XS	10	5	8.5	2.5	12	1	1.9	0.6	5	3.2	0.7	4	Version U = 40 HRC Version H = 60 HRC
TGC-S	15	6	13.3	2.5	18	2	3.5	1.5	8	4	0.9	4	
TGC-1	18	8	16	4	22	2	3.5	1.3	9	5.2	0.9	5	
TGC-2	25	10	22.1	6	22	3	4.8	2.1	8	6.5	1.2	5	
TGC-3	30	12	26.9	8	27	5	7.5	4.1	9	7	1.2	6	
TGC-4	45	12	41.2	8	36	10	16.7	9.1	8	9.6	1.8	6	

CAD files available at:



To order — Cat. No.-HRC. Example: TGC-S-U

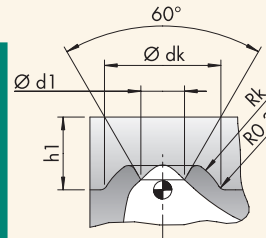


# Cashew Gate Inserts Contourable

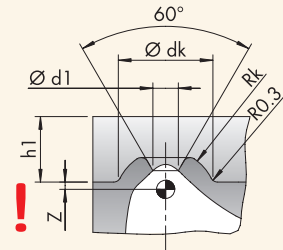
## Vestiges – TGC-XS / -S / -1 / -2

Cat. No.	Vestige	h1	d1 max.	dk	Rk	Z
TGC-XS	Standard	1.0	0.6	2.5	1.6	-
TGC-S	Standard	2.0	0.8	2.7	1.7	-
TGC-1	Small	1.8	0.7	2.6	1.4	0.2
	Standard	2.0	1.2	3.5	1.	-
TGC-2	Small	2.75	1.2	3.5	2.0	0.25
	Standard	3.0	1.8	4.5	2.6	-

### Standard Lip Design



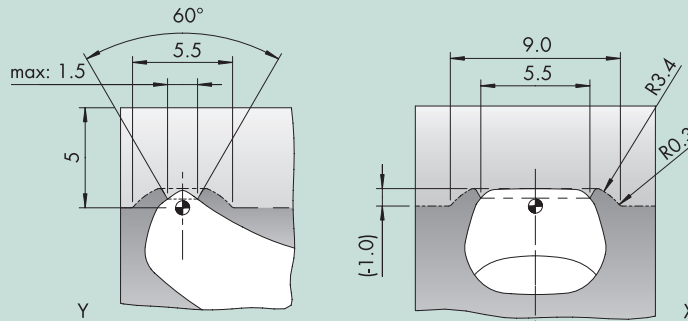
### Small Lip Design



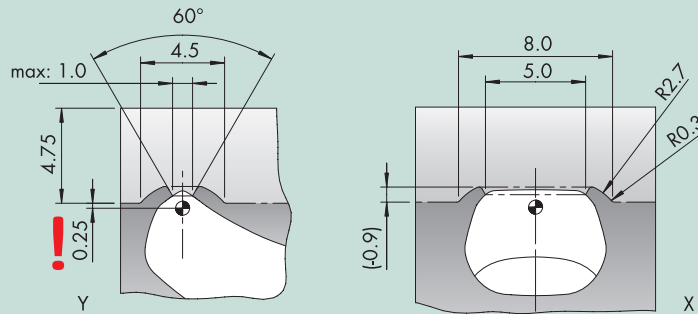
! - Maintain offset Z from CAD reference point

## Vestiges – TGC-3 / -4

### Standard Lip Design

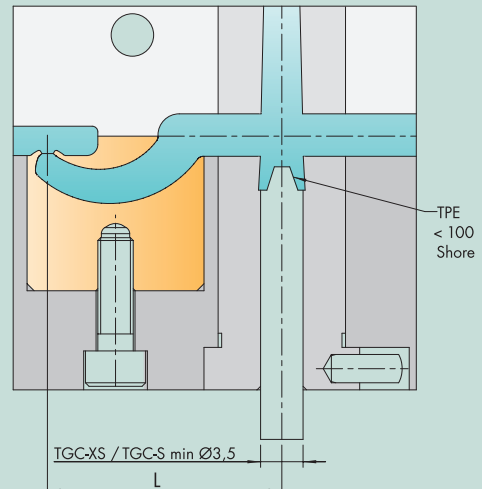
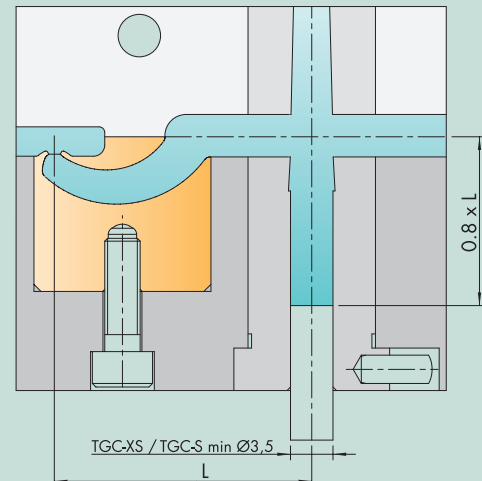


### Small Lip Design



### Thermoplastic elastomers (TPE)

- Low Shore hardness = shorter distance L
- Use centring pin
- Max. hardness 100 Shore A



## Table for distance L

Catalog Number	Material Type			
	TPE, TPU, etc.	PE, PP, PET etc.	PC/ABS, PA, POM, HI-PC, etc.	PA+GF, PC, SAN, PMMA, etc.
TGC-XS	12-16	13-20	16-23	22-29
TGC-S	16-21	18-25	21-28	27-34
TGC-1	21-26	26-34	31-39	36-45
TGC-2	28-33	31-39	36-44	41-50
TGC3	33-38	38-48	43-53	48-58
TGC-4	48-53	53-63	58-68	?



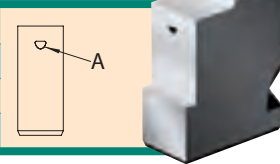


# SGC Cashew Gate Inserts

## Side Gate Contourable

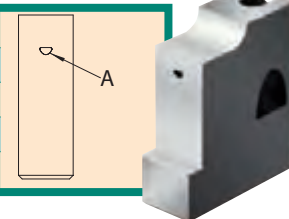
### SGC-SX

A (mm)	~O (mm)	b2 (mm)
0.13	0.4	0.9
0.3	0.6	1.0
0.53	0.8	1.1



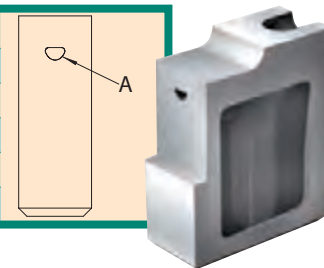
### SGC-S

A (mm)	~O (mm)	b2 (mm)
0.15	0.4	1.7
0.33	0.6	1.8
0.55	0.8	1.9
0.79	1.0	2.0



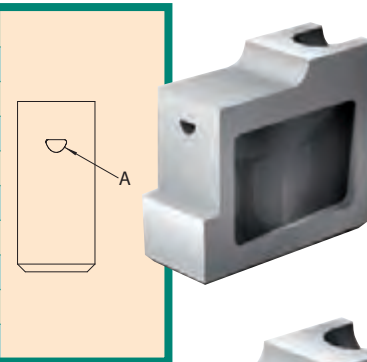
### SGC-1

A (mm)	~O (mm)	b2 (mm)
0.28	0.6	1.4
0.53	0.8	1.5
0.82	1	1.6
1.15	1.2	1.7
1.52	1.4	1.8



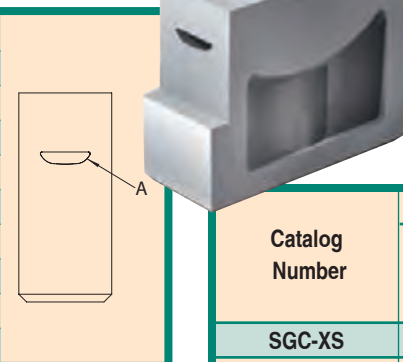
### SGC-2

A (mm)	~O (mm)	b2 (mm)
0.28	0.6	1.7
0.54	0.8	1.8
0.84	1	1.9
1.2	1.2	2
1.57	1.4	2.1
2	1.6	2.2
2.43	1.75	2.3
2.9	1.9	2.4
3.4	2.1	2.5



### SGC-3

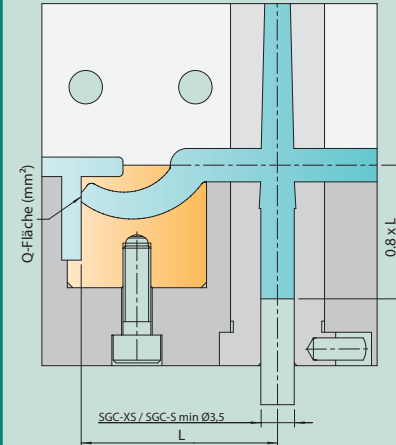
A (mm)	~O (mm)	b2 (mm)
1	1.1	2
1.75	1.5	2.1
2.56	1.8	2.2
3.43	2.1	2.3
4.35	2.35	2.4
5.32	2.6	2.5
6.33	2.85	2.6
7.38	3	2.7
8.48	3.3	2.8



#### Thermoplastic elastomers (TPE)

- Low Shore hardness = shorter distance L
- Use centring pin
- Max. hardness 100 Shore A

Standard installation for shallow and medium contour depths



Special installation for deep contours

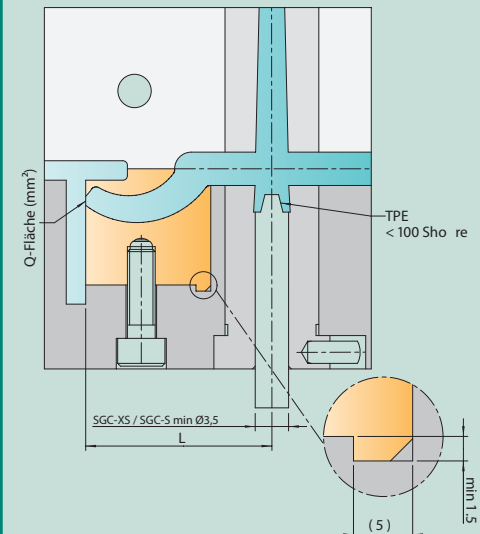


Table for distance L

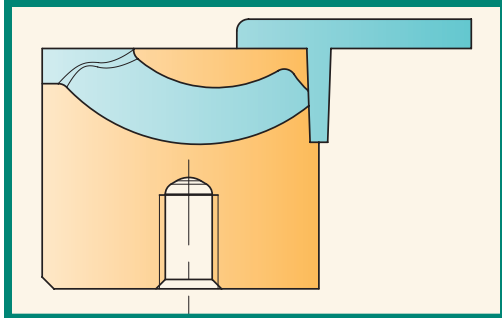
Catalog Number	Material Type			
	TPE, TPU, etc.	PE, PP, PET etc.	PC/ABS, PA, POM, HI-PC, etc.	PA+GF, PC, SAN, PMMA, etc.
SGC-XS	12-16	13-20	16-23	22-29
SGC-S	16-21	18-25	21-28	27-34
SGC-1	21-26	26-34	31-39	36-45
SGC-2	28-33	31-39	36-44	41-50
SGC3	33-38	38-48	43-53	48-58



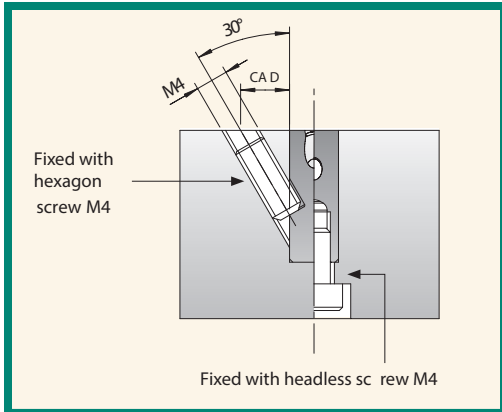
# SGC Cashew Gate Inserts

## Side Gate Contourable

- Curved tunnel permits getting deep inside the part
- Integrated dead-end recess reduces loss of pressure and shear stress
- Highly wear-resistant hot working steel M2 (1.3343) – 54+2 HRC



**SGC-XS / SGC-S Mounting Possibilities**



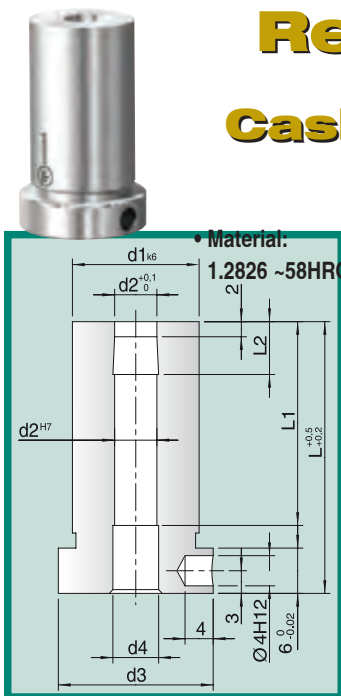
### SGC

	SGC-XS	SGC-S	SGC-1	SGC-2	SGC-3
<b>GATE POINT</b>	0,4 - 0,8	0,4 - 1,0	0,6 - 1,4	0,8 - 2,1	~ 0,1 - 3,3
<b>RUNNER</b>	2.5	2.5	4	6	8
<b>MAXIMUM SHOT WEIGHT</b>					
<b>NV</b>	12	20	35	250	1000
<b>MV</b>	7	12	25	120	500
<b>HV</b>	5	8	15	90	300

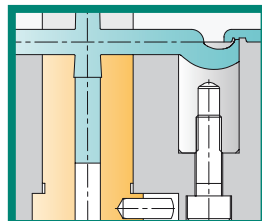
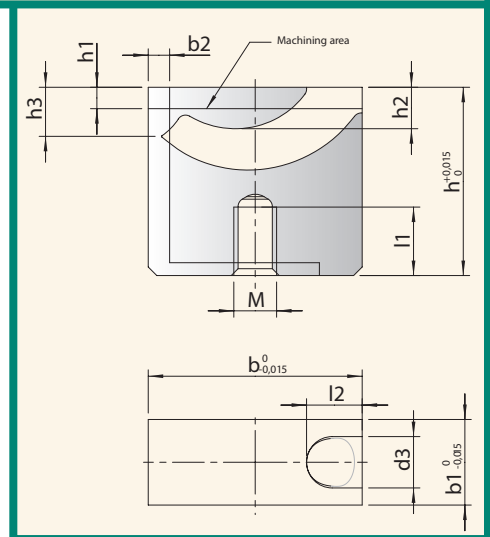
NV = low viscosity / MV = medium viscosity / HV = high viscosity

Cat. No.	b	b1	b2 max.	d3	h	h1 max.	h2	h3	l1	l2	M
<b>SGC-XS</b>	10	5	1.1	2.5	12	0.6	1.9	2.0	5	3.2	4
<b>SGC-S</b>	15	6	2.0	2.5	18	2	3.5	4.0	8	4	4
<b>SGC-1</b>	18	8	1.8	4	22	2	3.5	4.1	9	5.2	5
<b>SGC-2</b>	25	10	2.5	6	22	2.5	4.8	5.7	8	6.5	5
<b>SGC-3</b>	30	12	2.8	8	27	4.5	7.5	8.4	9	7	6

## Retaining Bush For Use with Cashew Gate Inserts



CAT. NO.	L	L1	L2	d1	d2	d3	d4
<b>RB4-36</b>	36	36					
<b>RB4-46</b>	46		7	12	4	16	4.5
<b>RB4-56</b>	56	46					
<b>RB6-36</b>	36	36					
<b>RB6-46</b>	46	46					
<b>RB6-56</b>	56		7	18	6	22	6.5
<b>RB6-66</b>	66	56					
<b>RB8-46</b>	46	46					
<b>RB8-56</b>	56	56	9.5	24	8	28	8.5
<b>RB8-66</b>	66	66					

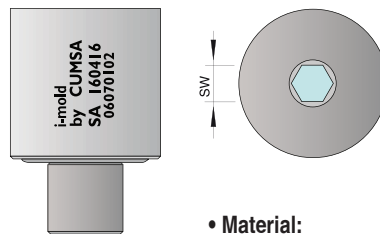
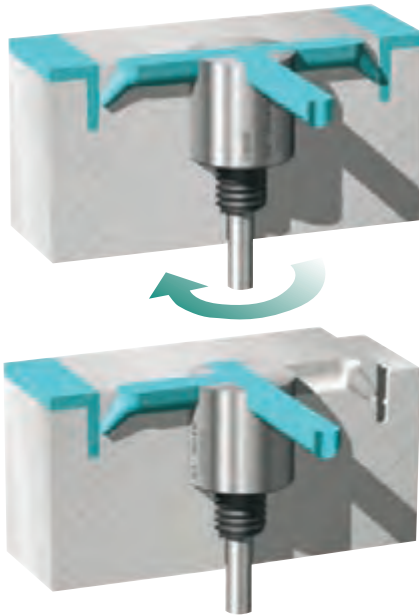


CAD files available at:

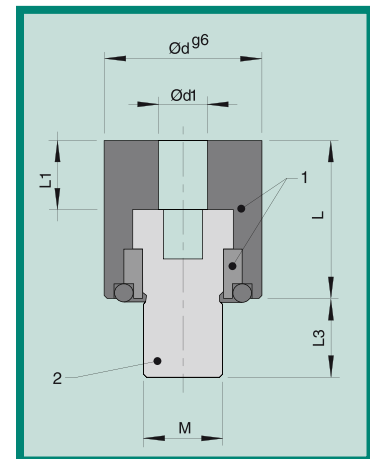




# Sprue Adjuster

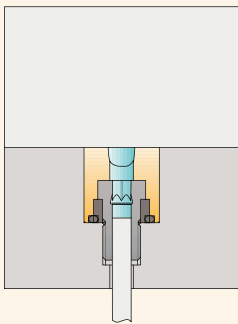


• Material:  
1: 1.4034 48 ± 3 HRC  
2: 1.3505 58 ± 2 HRC

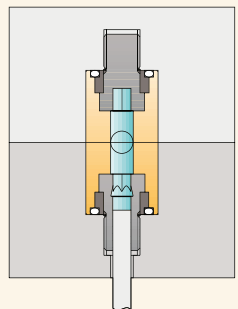


## INSTALLATION EXAMPLES

One half  
• trapezoidal runner

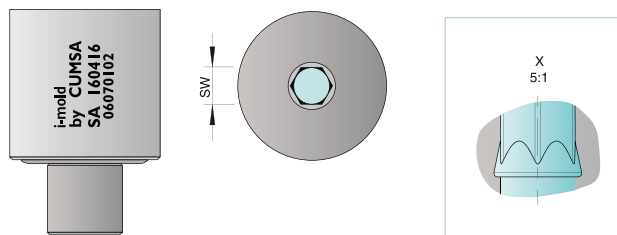


Both Halves  
• full round runner



WITHOUT BORE  
FOR FIXED HALF  
INSTALLATION

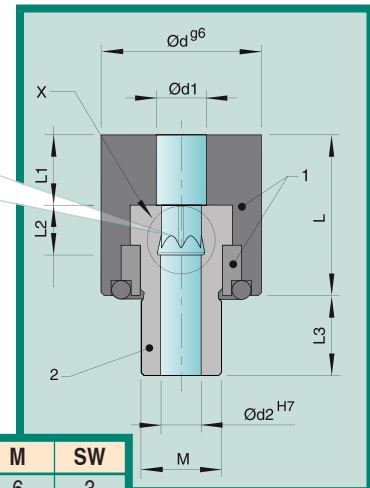
CAT. NO.	d	d1	L	L1	L3	M	SW
SA120014	12	4	14	5	6	6	3
SA160016	16	5	16	7	8	8	4
SA200018	20	6	18	9	10	10	5



• Material:  
1: 1.4034 48 ± 3 HRC  
2: 1.3505 58 ± 2 HRC

WITH EJECTOR  
BORE AND  
RETAINER

CAT. NO.	d	d1	d2	L	L1	L2	L3	M	SW
SA120314	12	4	3	14	5	6	6	6	3
SA160416	16	5	4	16	7	5	8	8	4
SA200518	20	6	5	18	9	5	10	10	5



## SPRUE ADJUSTER RANGE OF APPLICATION

Sample: both, left, right, close



Sample: left or right



Sample: open or close



CAD files available at:





# Runner Shut-Offs



U.S. Patent No. 5,208,053

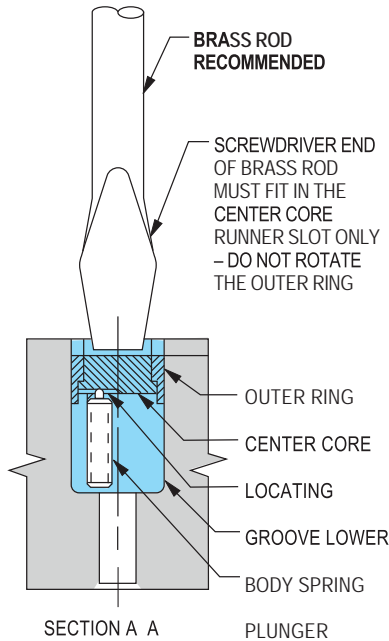
Runner Shut-offs are supplied unground as shown in background of photo. Foreground shows sample machining of runner, typically done with shut-off installed in mold.

Runner Shut-Offs provide a precise method of blocking or directing material flow to one or more cavities in multi-cavity or family molds.

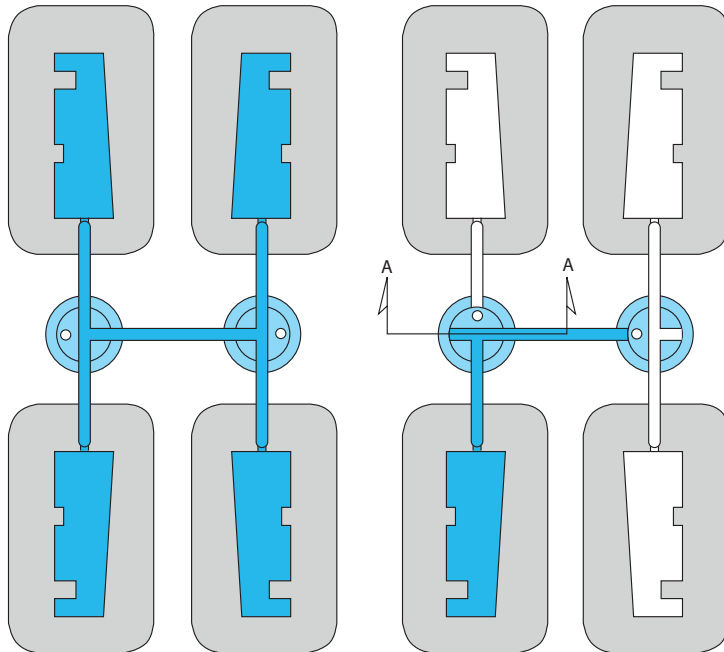
- Safer and more positive than the use of brass or ejector pins
- Reduces scrap and sorting
- Improves cycle time

## Typical Applications

### Shutting Off the Runner to One or More Cavities



**NOTE:** Spring plunger in Runner Shut-Off Insert engages a locating groove in the center core. This holds the center core in position at each 90° rotation of the center core, thus providing several combinations of runner shut-off positions.



Runner Shut-Offs are shown above in the open position, which allows material to flow to all cavities.

By rotating the center core of the Runner Shut-Off 90° or 180° with the screwdriver end of a brass rod, material flow to one or several cavities can be shut off, as shown above.

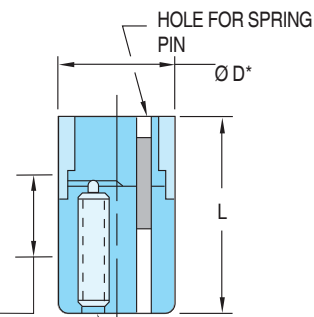
### Runner Shut-Offs - RSO

ITEM NUMBER	Ø D	L LENGTH
RSO-13	.5118 (13mm)	.885 (22.5mm)
RSO-16	.6299 (16mm)	.885 (22.5mm)
RSO-26	1.0236 (26mm)	1.260 (32mm)

All dimensions are in inches except for several parenthetical reference dimensions in millimeters.

#### INFORMATION KEY:

C = Depth of Runner  
 D = Diameter  
 L = Length  
 R = Radius  
 W = Width of Runner  
 Material: Stainless Steel Hardness: 50 ± 3HRC  
 Max. Temp: 120°C (250°F)  
 Dimensions: All dimensions are in inches, except as noted.



\*MEASURE Ø D IN THIS AREA ONLY. TOP AND BOTTOM OF INSERT HAVE A VERY SLIGHT RELIEF FOR PROPER INSTALLATION AND OPERATION.

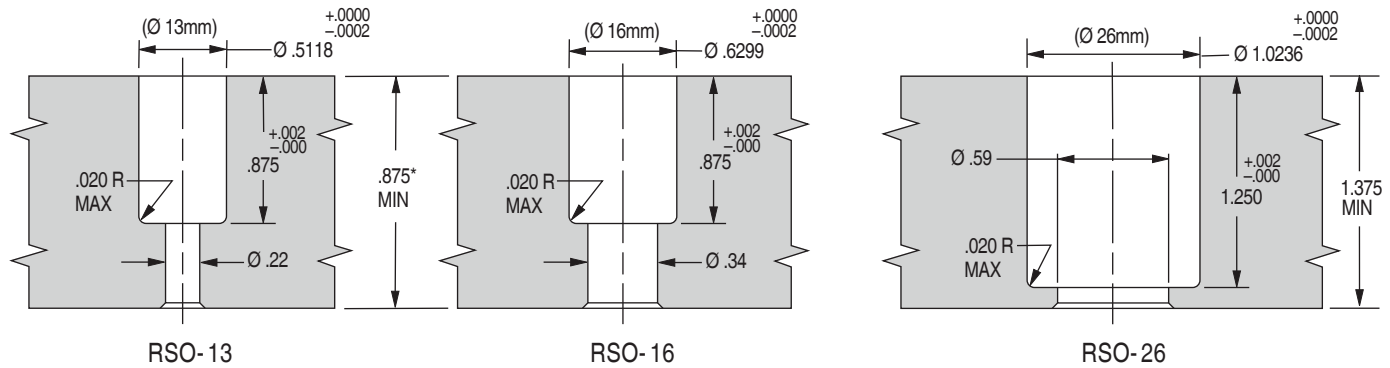
DO NOT ADJUST SPRING PLUNGER. IT HAS BEEN SUPPLIED INSTALLED TO THE CORRECT POSITION.



# Runner Shut-Offs Machining Information

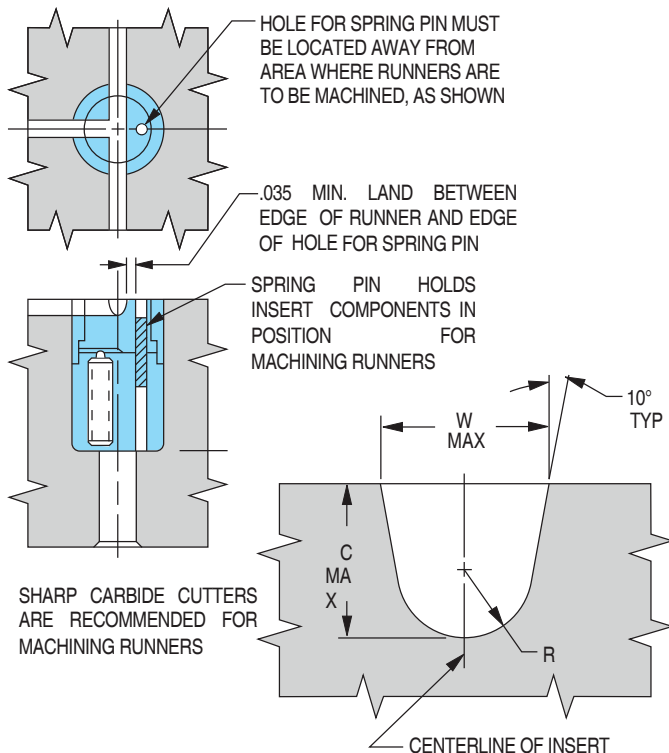
## Dimensions for Machining Pocket for Runner Shut-offs

- Pockets are typically bored in soft steel and jig ground in hardened steel
- Maintain a close tolerance press fit, as specified. Too loose a fit could allow the insert to move out of position, while too tight a press fit might prevent the center core from rotating when required



\* When using a 7/8 thick plate with the RSO 0013 or RSO 0016 inserts, machine the .5118 or .6299 diameters through the plate. Inserts must seat against a supporting plate before any grinding or machining is done and during the molding process.

## Dimensions for Machining Runners



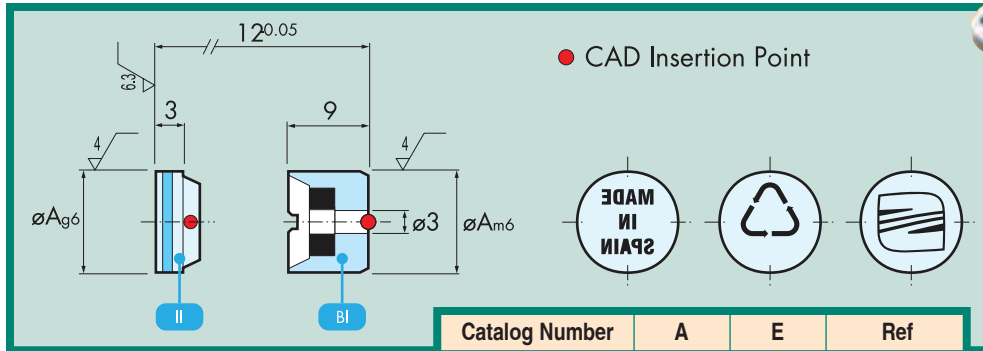
RECOMMENDED RUNNER SIZES					
Use Insert Item Number	W MAX	C MAX	R RADIUS	EQUIV Ø	AREA SQ IN
RSO-13 (RSO-16 & 26)	.099	.091	.040	.095	.007
	.126	.120	.050	.123	.012
RSO-16 (RSO-26)	.150	.131	.062	.141	.016
	.168	.144	.070	.156	.019
	.186	.157	.078	.172	.023
RSO-26	.206	.175	.086	.191	.029
	.260	.218	.109	.239	.045
	.298	.250	.125	.274	.059
	.334	.281	.140	.308	.074
	.372	.312	.156	.342	.092
	.410	.343	.172	.377	.112
	.446	.375	.187	.411	.133

NOTE: All runners should be machined along the center line of the insert and at 90° to the center line. If this is not done the runners will not align closely when rotated 90° or 180° to shut-off material flow to a cavity. All runners should be machined with inserts installed in the mold.

All dimensions are in inches except for some metric dimensions which are shown in parentheses.



# Interchangeable Inserts

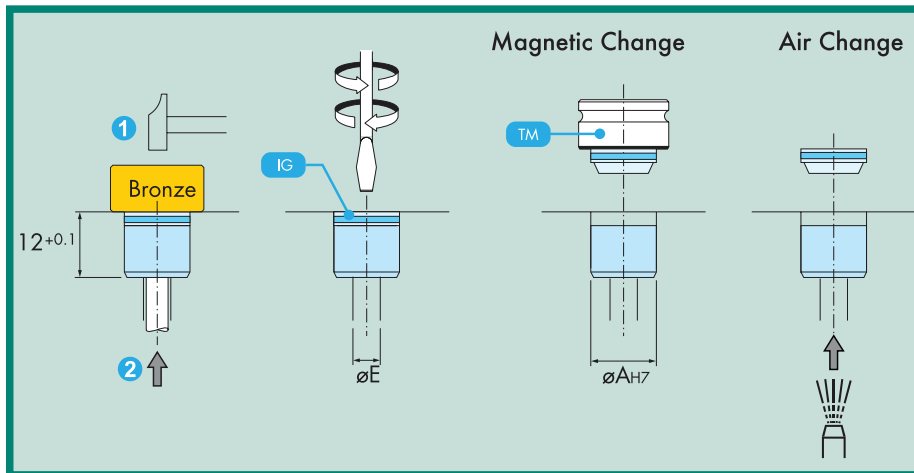


**IMPORTANT:** For best quality, send DXF file with your design.

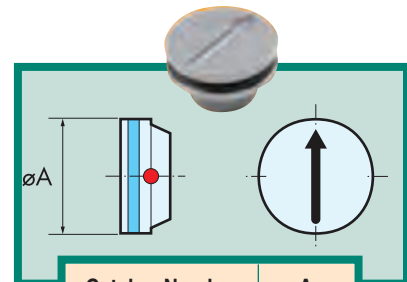
Catalog Number	A	E	Ref
BI-101209	10	6	II-101203
BI-121209	12	8	II-121203
BI-161209	16	10	II-161203



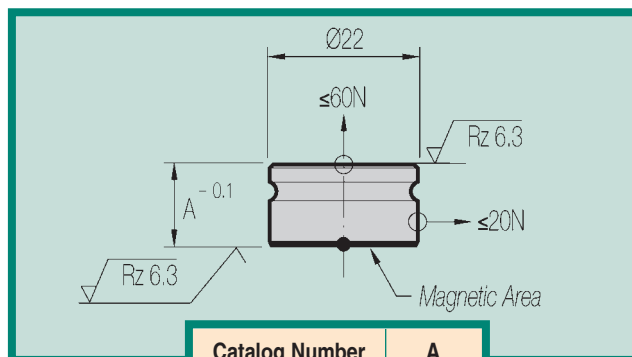
- Interchangeable engravings
- Possible to remove insert by magnetic or air circuit
- Available with a rotating arrow
- Offers a standard solution to the molder
- Material: INOX. 1.4034  
Hardened  $51 \pm 3$  HRC



# Turning Inserts



Catalog Number	A
IG-101203	10
IG-121203	12
IG-161203	16



Catalog Number	A
TM-102214	10.0
TM-102214	10.0
TM-102214	10.0
TM-102214	10.0

# Safety Stopper

- Magnetic safety stop that can be easily installed and removed
- Material 1.7242 – 55-60 HRC
- Maximum working temperature 130 C

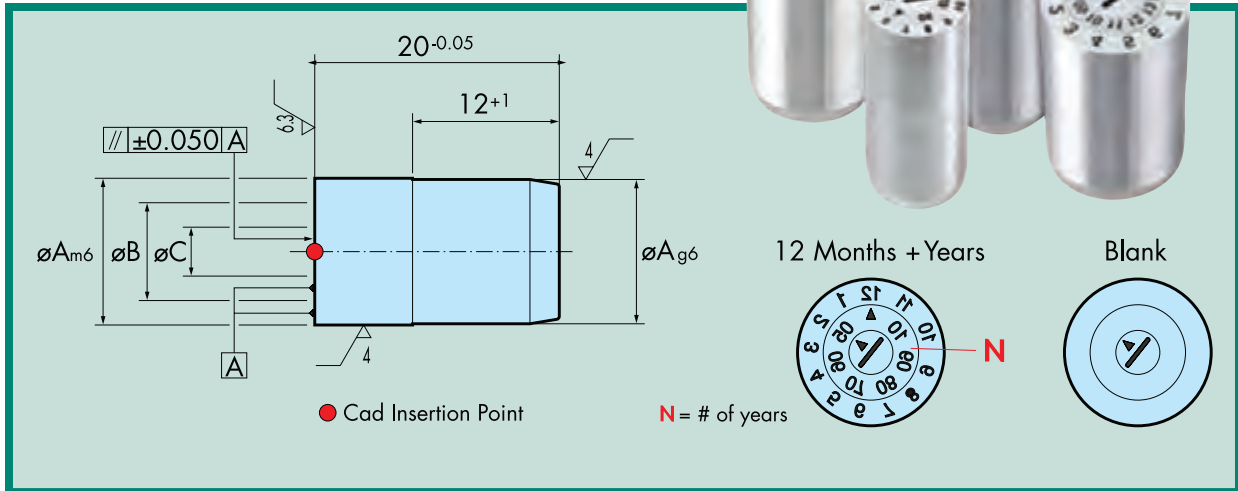


CAD files and flash demo at:  
**CUMSA**  
[www.cumsa.com](http://www.cumsa.com)



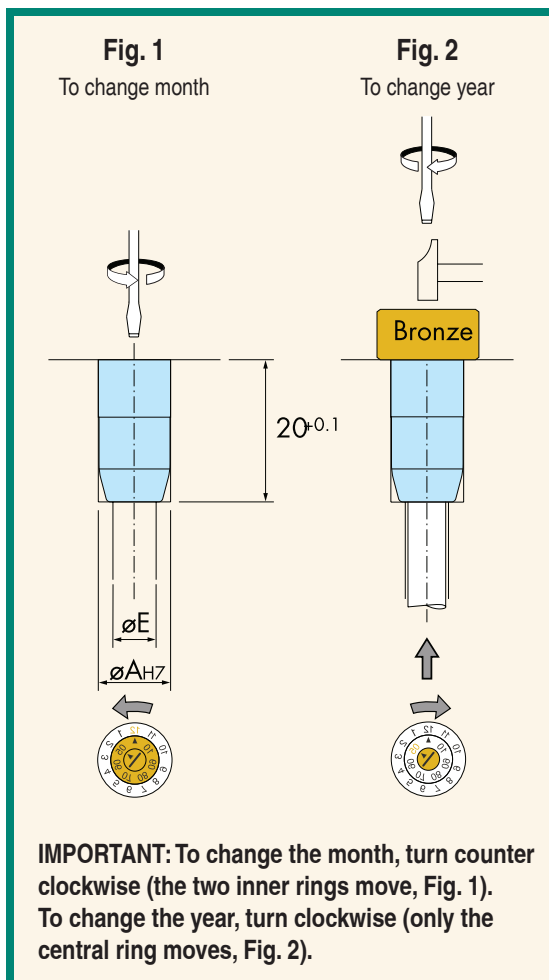


# Double Date Stamp



12 Months + Year	Blank	A	B	C	E	N
FD.080512 __	FD.080500	8	5.5	3	6	5
FD.120812 __	FD.120800	12	8	4	10	6
FD.161012 __	FD.161000	16	10.5	5.3	12	10

To order — Add the last two digits of the start or base year to catalog number.  
 Example for start or base year of 2011: FD-08051211

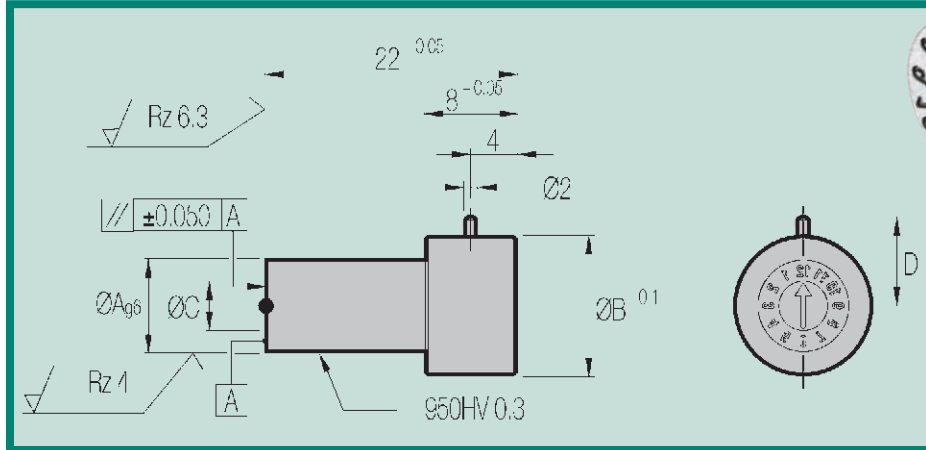


- Replaces the need for 2 separate date stamps
- No need to machine 2 separate holes
- Minimum space required for installation
- Special engraving available upon request.
- Material: INOX. 1.4034  
Hardened  $51 \pm 3$  HRC
- Maximum working temperature 100 C
- This is a CUMSA patented system

CAD files and flash demo at:  
**CUMSA**  
[www.cumsa.com](http://www.cumsa.com)



# High Temperature Date Stamp



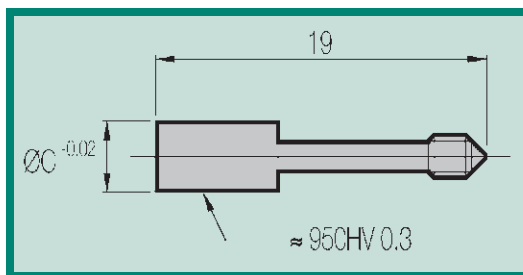
- Material is 1.2344 Nitrided (insert) and Inconel 2.4669 (body)
- Maximum working temperature is 450 C
- Designed for tools which operate at high temperatures
- Ideal for Zinc, Polyester, Bakelite and similar materials

12 Months	12 Months + Year <sup>1</sup>	Years <sup>2</sup>	A	B	C	D	No. of Years
FT.0847SF	FT.084712-__	FT.084705-__	8	12	4.7	11	5
FT.1267SF	FT.126712-__	FT.126708-__	12	16	6.7	12	8

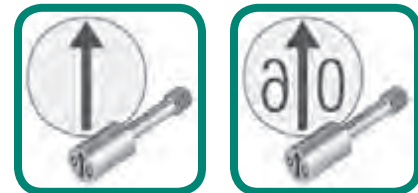
- (1) When ordering, add the year required to the part number (FT.084712-11)
- (2) When ordering, add the start year to the part number (FT.084705-11)



# High Temperature Inserts

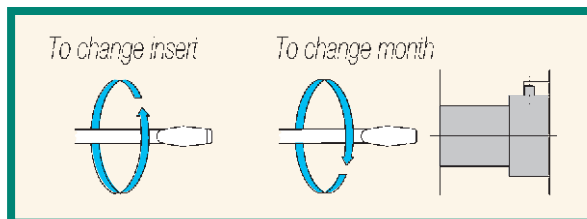


- Material is 1.2344 Nitrided
- Insert changes can be done while the tool is still in the press



Arrow only	Arrow & Year <sup>1</sup>	C
IT.4719SF	IT.4719 __	4.7
IT.6719SF	IT.6719 __	6.7

- (1) When ordering, add the year required to the part number (IT.479111)

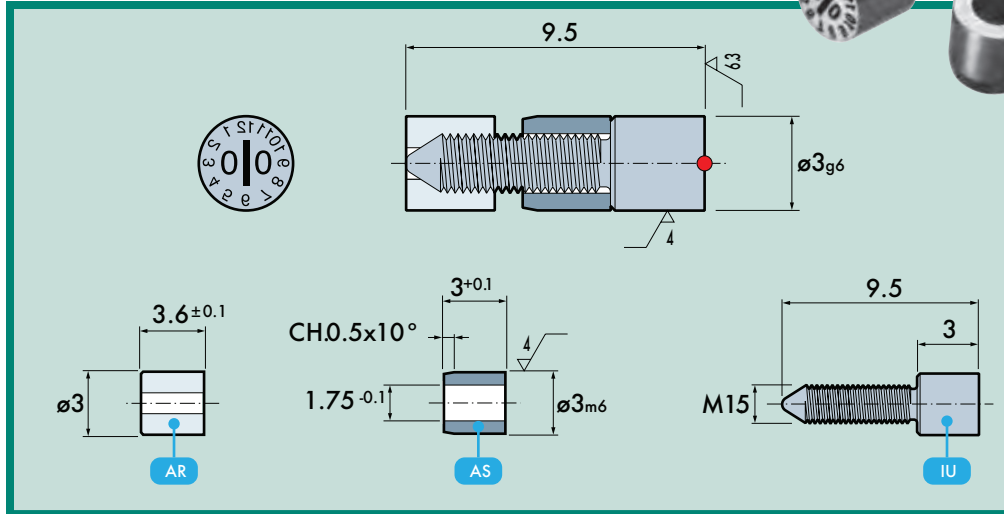


CAD files and flash demo at:  
**CUMSA**  
[www.cumsa.com](http://www.cumsa.com)



# Unit Date Stamp

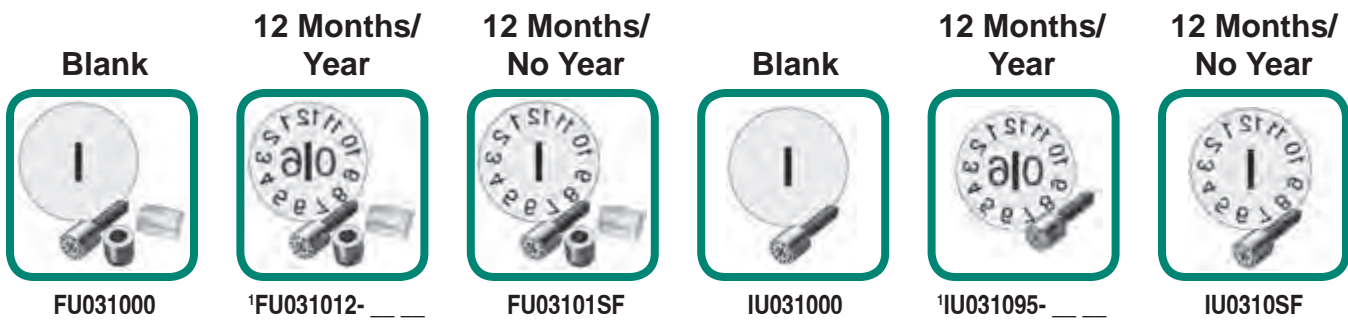
## Ø 3mm



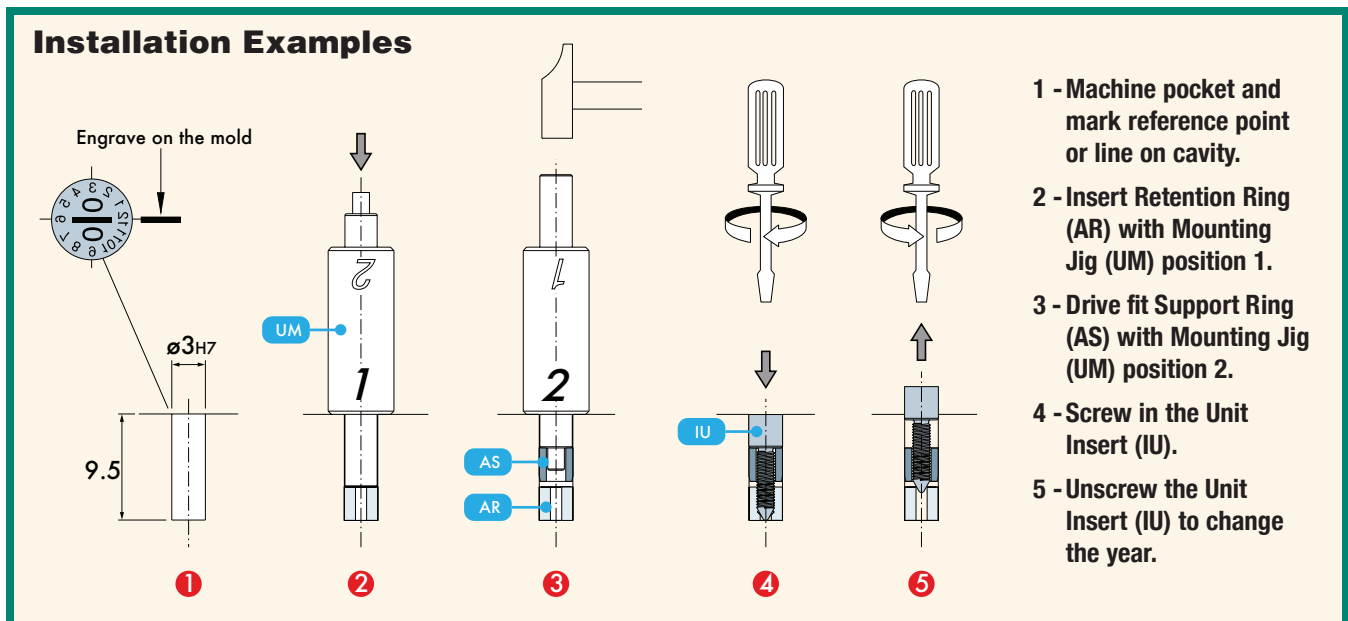
Ideal for limited spaces due to their small size.

- Material is INOX. 1.4034 — 48-54 HRC
- Maximum working temperature is 150°C

Unit Date Stamp Assemblies (FU) are supplied complete with (IU) Unit Insert, (AS) Support Unit, (AR) Retention Ring and (UM) Mounting Jig



(1) When ordering, add the year required to the part number (FU031012-11)



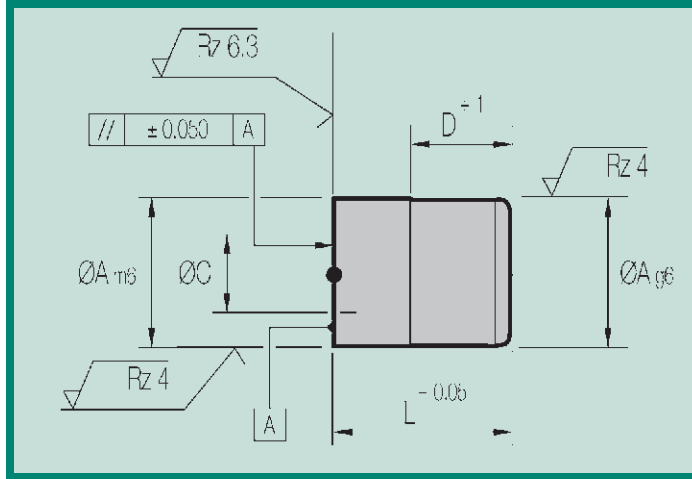
CAD files and flash demo at:  
**CUMSA**  
[www.cumsa.com](http://www.cumsa.com)



# Date Stamps



- Material is INOX. 1.4034 48-54HRC.
- Maximum working temperature is 150 C

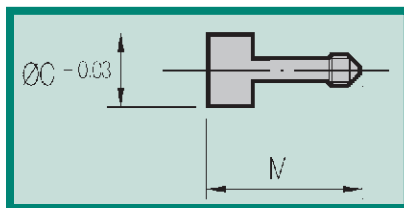


12 Months	12 Mon. + Yr. <sup>1</sup>	Years <sup>1</sup>	Blank	31 Days	Shifts	A	C	D	E	L	N <sup>2</sup>
FA.0422SF	FA.042212- __	FA.042204- __	FA.042200		FA.0422SP	4	2.2	6	3.5	12	4
FA.0530SF	FA.053012- __	FA.053004- __	FA.053000		FA.0530SP	5	3	6	3.5	12	4
FA.0632SF	FA.063212- __	FA.063205- __	FA.063200	FA.0632-31	FA.0632SP	6	3.2	12	4	20	5
FA.0847SF	FA.084712- __	FA.084705- __	FA.084700	FA.0847-31	FA.0847SP	8	4.7	12	6	20	5
FA.1057SF	FA.105712- __	FA.105706- __	FA.105700	FA.1057-31	FA.1057SP	10	5.7	12	8	20	6
FA.1267SF	FA.126712- __	FA.126708- __	FA.126700	FA.1267-31	FA.1267SP	12	6.7	12	10	20	8
FA.1687SF	FA.168712- __	FA.168710- __	FA.168700	FA.1687-31	FA.1687SP	16	8.7	12	12	20	10
FA.2007SF	FA.200712- __	FA.200710- __	FA.200700	FA.2007-31	FA.2007SP	20	10.7	12	14	20	10

\*Assemblies supplied complete with outer ring and arrow insert.

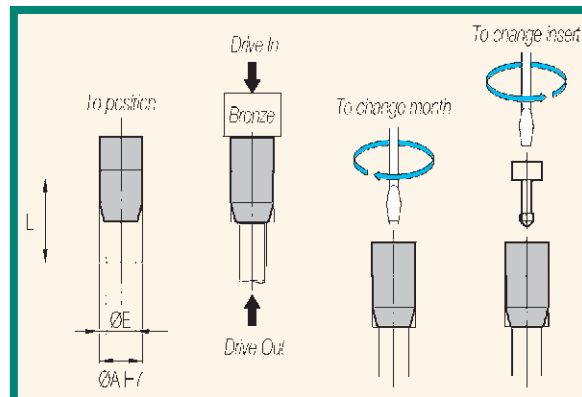
- (1) When ordering, add the year required to the part number (FA.04221211)
- (2) The number of years that fit on the 'Year' outer ring.

# Inserts



- Material is INOX. 1.4034 48-54HRC
- Insert changes can be done while the tool is still in the press.
- To replace inserts, simply turn clockwise until the unit clicks (about 8 revolutions) mating the insert flush with the outer ring.

Arrow only	Arrow & Year	C	M
IA.2275SF	IA.2275 __	2.2	7.7
IA.3075SF	IA.3075 __	3	7.7
IA.3217SF	IA.3217 __	3.2	17
IA.4717SF	IA.4717 __	4.7	17
IA.5717SF	IA.5717 __	5.7	17
IA.6717SF	IA.6717 __	6.7	17
IA.8717SF	IA.8717 __	8.7	17
IA.1007SF	IA.1007 __	10.7	17

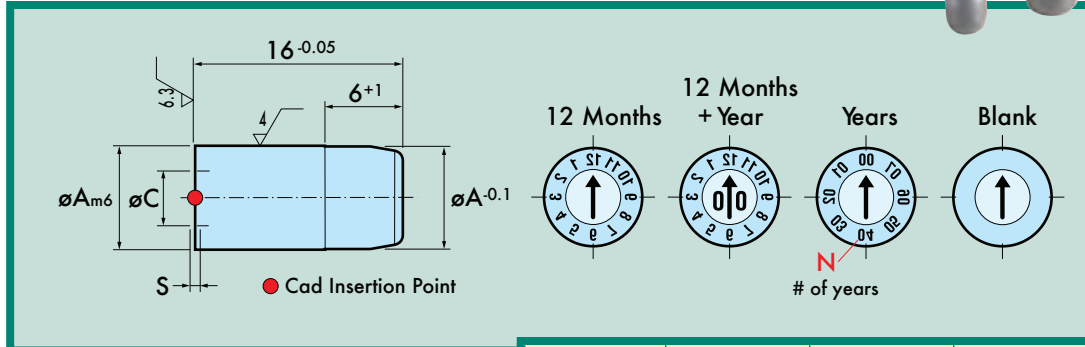


- (1) When ordering, add the year required to the part number (IA.227511)

CAD files and flash demo at:  
**CUMSA**  
[www.cumsa.com](http://www.cumsa.com)



# Xtra Date Stamp

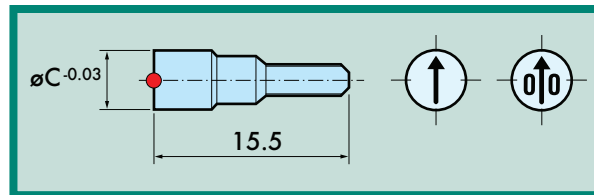


- Material is INOX. 1.4034 48-54HRC.
- Maximum working temperature is 100 C

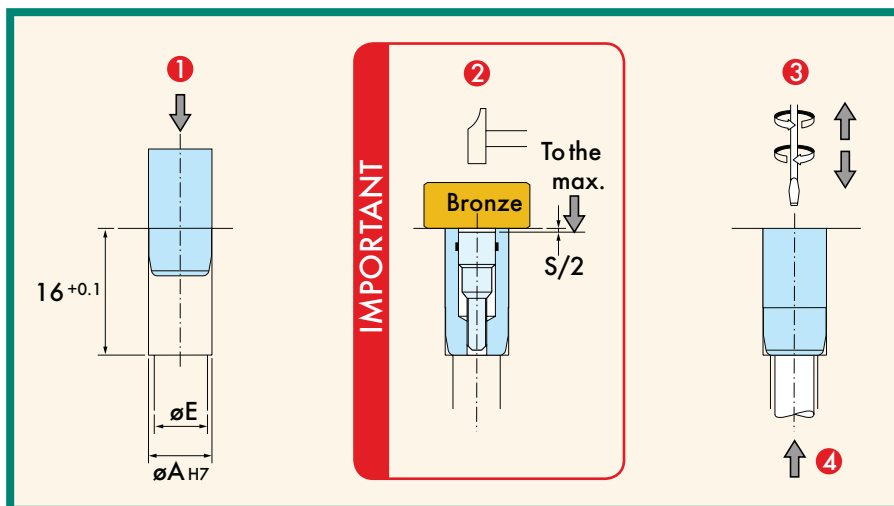
12 Months	12 Mon. + Yr.	Years <sup>1</sup>	Blank <sup>1</sup>	A	C	E	N	S
FX.0623SF	FX.062312 __	FX.062305- __	FX.062300	6	3.2	4	5	0.25
FX.0847SF	FX.084712 __	FX.084705- __	FX.084700	8	4.7	6	5	0.25
FX.1057SF	FX.105712 __	FX.105706- __	FX.105700	10	5.7	8	6	0.35
FX.1267SF	FX.126712 __	FX.126708- __	FX.126700	12	6.7	10	8	0.35

(1) When ordering, add the desired year to the part number (FX.06231211)

# Xtra Insert



- Material is INOX. 1.4034 48-54HRC
- Only an H7 pocket required for assembly
- No downtime when changing inserts



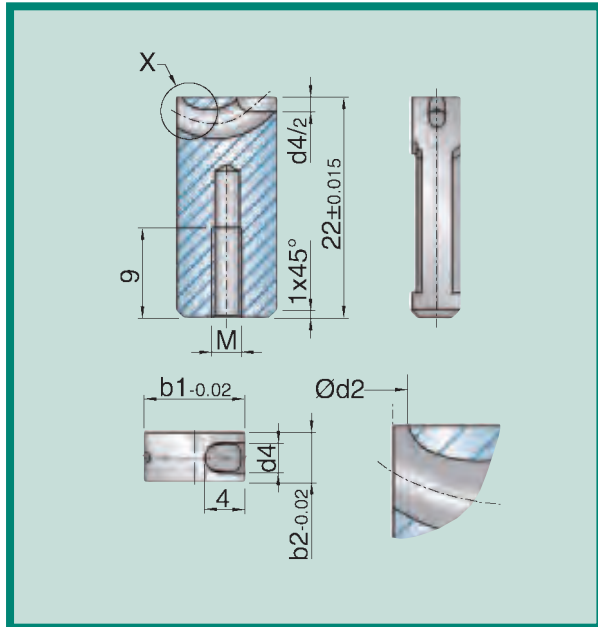
Arrow only	Arrow & Year <sup>1</sup>	C
IX.3215SF	IX.3215 __	3.2
IX.4715SF	IX.4715 __	4.7
IX.5715SF	IX.5715 __	5.7
IX.6715SF	IX.6715 __	6.7

(1) When ordering, add the desired year to the part number (IX.321511)

CAD files and flash demo at:  
**CUMSA**  
[www.cumsa.com](http://www.cumsa.com)



# Cashew Gate Inserts Miniflow - GTM

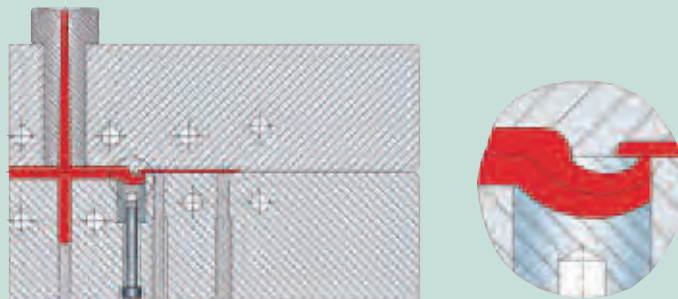


- For gating of small, thin walled parts.
- This insert does not have a raised lip (calotte).
- Suitable for very thin-walled parts.
- Usable for all thermoplastics including fillers up to 50% glass.
- All inserts have the gate diameter 'd2' molded into them.

Catalog Number	b1	b2	d2	d4	M	Viscosity		
						high flowability	regular flowability	low flowability
GTM-10-05	10	5	0,5	3	3	4	4	3
GTM-10-07	10	5	0,7	3	3	6	5	4
GTM-10-09	10	5	0,9	3	3	12	9	7
GTM-10-11	10	5	1,1	3	3	17	14	9

Weight in grams

## Installation Example



### Thin Walled Miniflow

Designed for particularly thin-walled parts (0,5 to 1,2 mm wall thickness). The insert has no raised lip (calotte). Gating will occur flush with the molding.

- the gating point will be flush with, or slightly projecting from, the bottom surface depending on the plastic used.

CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)

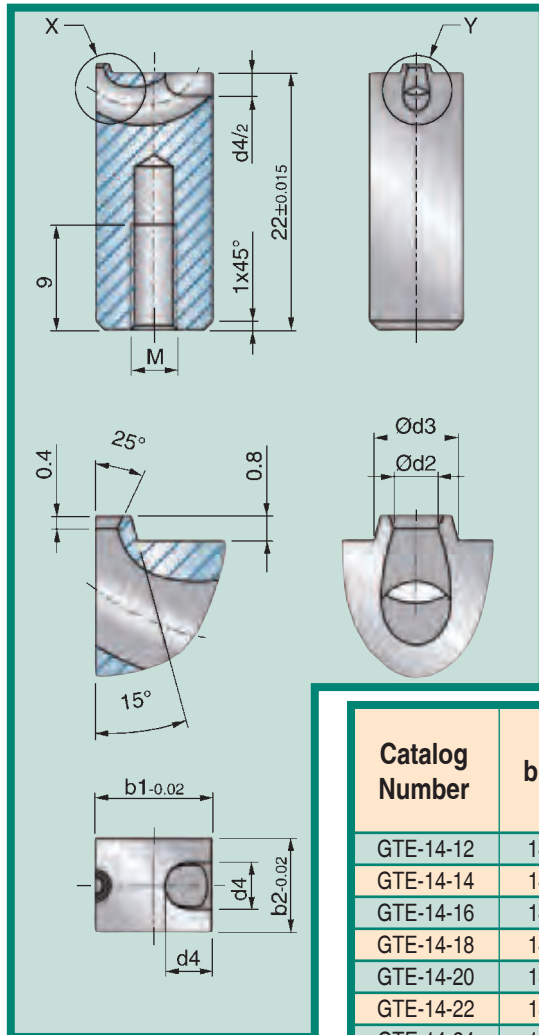






# Cashew Gate Inserts 14mm

For shot weights up to 100g



Actual Size

External View

Cutaway View

- Manufactured in a solid one-piece unit using the Metal Injection Molding (MIM) process.
- Optimal balancing of cavity filling due to the exactness of MIM.
- Hardened to 60HRC and polished.
- Ideal for thin wall parts.

Catalog Number	b1	b2	d2	d3	d4	M	Viscosity		
							high flowability	regular flowability	low flowability
GTE-14-12	14	12	1,2	2,5	6	6	20	16	10
GTE-14-14	14	12	1,4	2,7	6	6	30	23	15
GTE-14-16	14	12	1,6	2,9	6	6	40	30	20
GTE-14-18	14	12	1,8	3,1	6	6	54	40	27
GTE-14-20	14	12	2,0	3,3	6	6	68	52	34
GTE-14-22	14	12	2,2	3,5	6	6	85	65	43
GTE-14-24	14	12	2,4	3,7	6	6	100	80	50

Weight in grams

## Installation Example

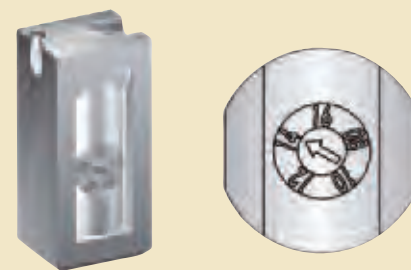


### Thermoplastic Elastomers

When processing thermoplastic elastomers, please observe the following recommendations to ensure reliable de-molding.

- the distance 'L' should decrease with the Shore hardness value
- a centering cone should be used
- this installation example applies to elastomers in the medium Shore hardness range (up to 100 Shore A)

All inserts have the gate diameter 'd2' molded into them.



CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)

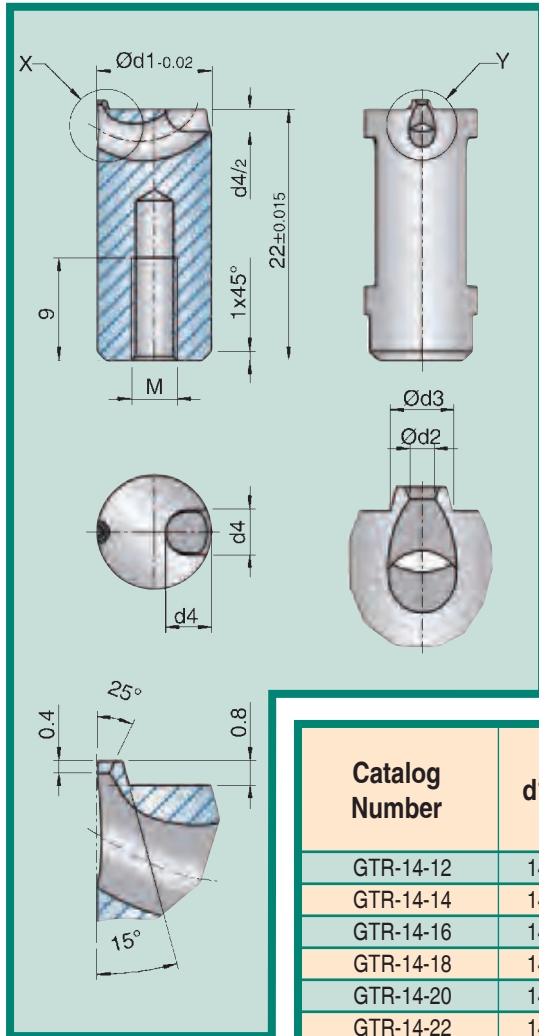




# Cashew Gate Inserts

Ø 14mm

For shot weights up to 100g



Actual Size

External View

Cutaway View

- Manufactured in a solid one-piece unit using the Metal Injection Molding (MIM) process.
- Optimal balancing of cavity filling due to the exactness of MIM.
- Hardened to 60HRC and polished.
- Anti-rotation locking molded into all round inserts. However in most cases the insert is adequately held by the capscrew.

Catalog Number	d1	d2	d3	d4	M	Viscosity		
						high flowability	regular flowability	low flowability
GTR-14-12	14	1,2	2,5	6	6	20	16	10
GTR-14-14	14	1,4	2,7	6	6	30	23	15
GTR-14-16	14	1,6	2,9	6	6	40	30	20
GTR-14-18	14	1,8	3,1	6	6	54	40	27
GTR-14-20	14	2,0	3,3	6	6	68	52	34
GTR-14-22	14	2,2	3,5	6	6	85	65	43
GTR-14-24	14	2,4	3,7	6	6	100	80	50

Weight in grams

## Installation Example

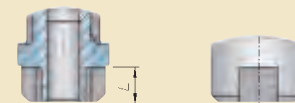
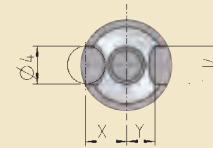


### Nozzle Side Installation

The cashew gate insert is screwed into the nozzle side of the mold. The front of the gate insert is sealed off by the cavity.

- to reduce pressure loss
- to minimize shear

## Anti-Rotation Locking Dimensions



Catalog Series	Parallel Pin distance 'X'	Key distance 'Y'
GTR-14	6,0 mm	4,5 mm

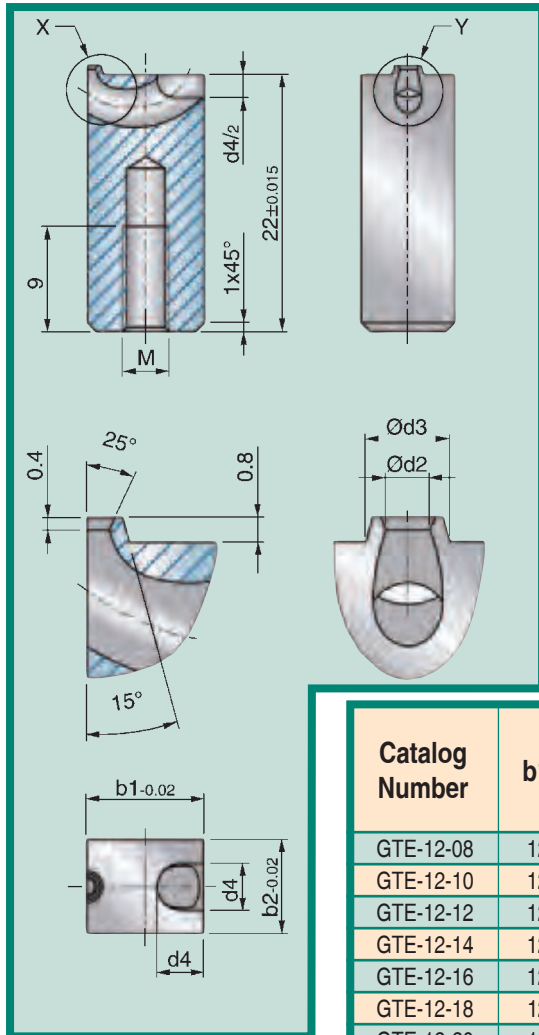
CAD files available at:  
www.exaflow.com





# Cashew Gate Inserts 12mm

For shot weights up to 68g



Actual Size

External View

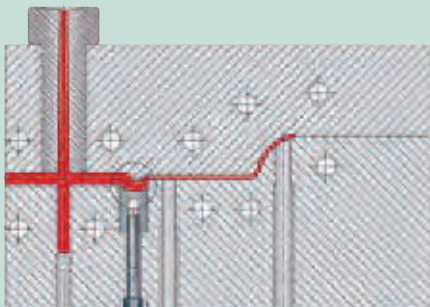
Cutaway View

- Manufactured in a solid one-piece unit using the Metal Injection Molding (MIM) process.
- Optimal balancing of cavity filling due to the exactness of MIM.
- Hardened to 60HRC and polished.
- Ideal for thin wall parts.

Catalog Number	b1	b2	d2	d3	d4	M	Viscosity		
							high flowability	regular flowability	low flowability
GTE-12-08	12	10	0,8	2,1	5	5	8	7	5
GTE-12-10	12	10	1,0	2,3	5	5	14	12	9
GTE-12-12	12	10	1,2	2,5	5	5	20	16	10
GTE-12-14	12	10	1,4	2,7	5	5	30	23	15
GTE-12-16	12	10	1,6	2,9	5	5	40	30	20
GTE-12-18	12	10	1,8	3,1	5	5	54	40	27
GTE-12-20	12	10	2,0	3,3	5	5	68	52	34

Weight in grams

## Installation Example

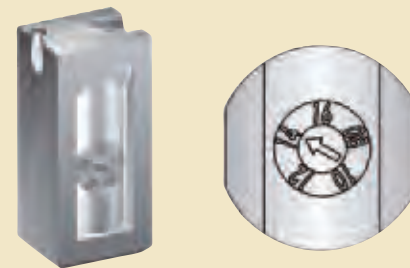


### Thin Walled Parts

The raised lip (calotte) height can be reduced to a maximum of 0.4mm. This is the level of the defined stall edge. The front of the gate insert is sealed off by the cavity to the level of the parting line.

- to reduce pressure loss
- to minimize shear

All inserts have the gate diameter 'd2' molded into them.



CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)

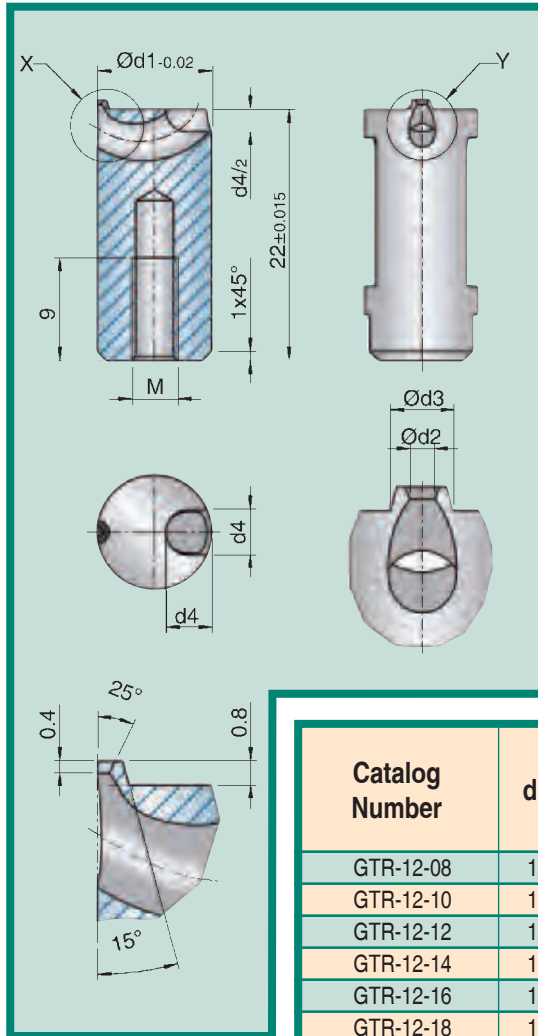




# Cashew Gate Inserts

## Ø 12mm

For shot weights up to 68g



Actual Size

External View

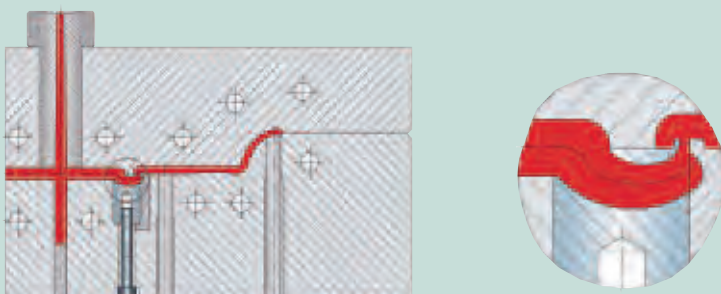
Cutaway View

- Manufactured in a solid one-piece unit using the Metal Injection Molding (MIM) process.
- Optimal balancing of cavity filling due to the exactness of MIM.
- Hardened to 60HRC and polished.
- Anti-rotation locking molded into all round inserts. However in most cases the insert is adequately held by the capscrew.

Catalog Number	d1	d2	d3	d4	M	Viscosity		
						high flowability	regular flowability	low flowability
GTR-12-08	12	0,8	2,1	5	5	8	7	5
GTR-12-10	12	1,0	2,3	5	5	14	12	9
GTR-12-12	12	1,2	2,5	5	5	20	16	10
GTR-12-14	12	1,4	2,7	5	5	30	23	15
GTR-12-16	12	1,6	2,9	5	5	40	30	20
GTR-12-18	12	1,8	3,1	5	5	54	40	27
GTR-12-20	12	2,0	3,3	5	5	68	52	34

Weight in grams

### Installation Example

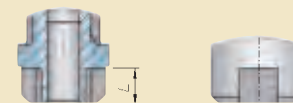
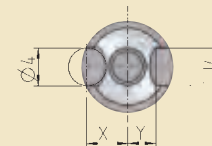


#### Flat Parts

The front of the cashew gate insert is fully sealed off by a companion raised lip (calotte) machined into the dead-end insert.

- to reduce pressure loss
- to minimize shear

### Anti-Rotation Locking Dimensions



Catalog Series	Parallel Pin distance 'X'	Key distance 'Y'
GTR-12	5,2 mm	3,8 mm

CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)



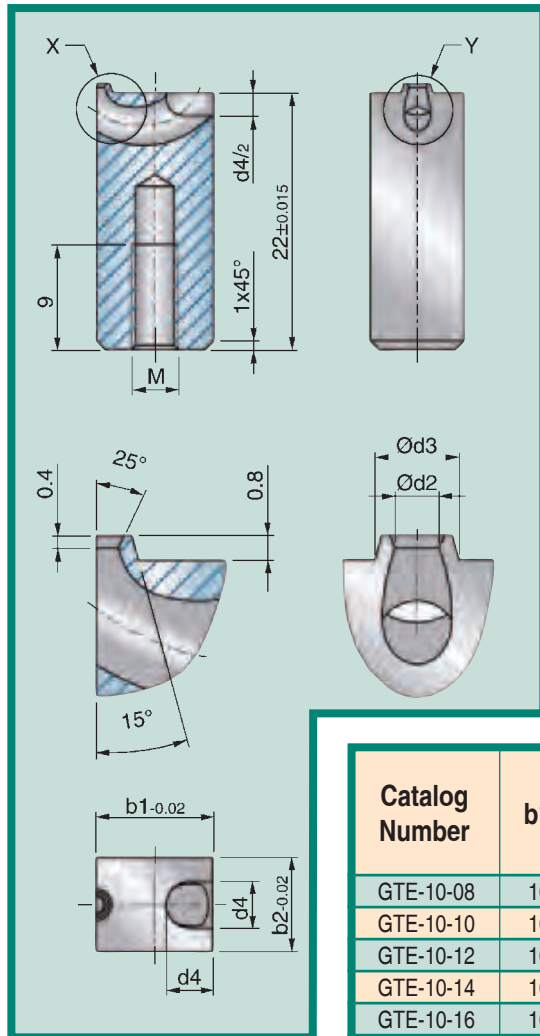




# Cashew Gate Inserts

10mm

For shot weights up to 40g



Actual Size

External View

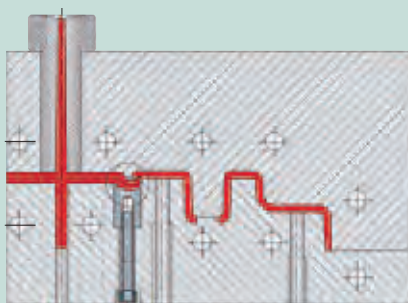
Cutaway View

- Manufactured in a solid one-piece unit using the Metal Injection Molding (MIM) process.
- Optimal balancing of cavity filling due to the exactness of MIM.
- Hardened to 60HRC and polished.
- Ideal for thin wall parts.

Catalog Number	b1	b2	d2	d3	d4	M	Viscosity		
							high flowability	regular flowability	low flowability
GTE-10-08	10	8	0,8	2,1	4	4	8	7	5
GTE-10-10	10	8	1,0	2,3	4	4	14	12	9
GTE-10-12	10	8	1,2	2,5	4	4	20	16	10
GTE-10-14	10	8	1,4	2,7	4	4	30	23	15
GTE-10-16	10	8	1,6	2,9	4	4	40	30	20

Weight in grams

## Installation Example

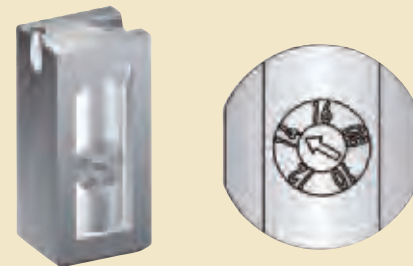


### Standard Installation

The front of the cashew gate insert is sealed off by the mold cavity.

- to reduce pressure loss
- to avoid jetting

All inserts have the gate diameter 'd2' molded into them.



CAD files available at:  
www.exaflow.com

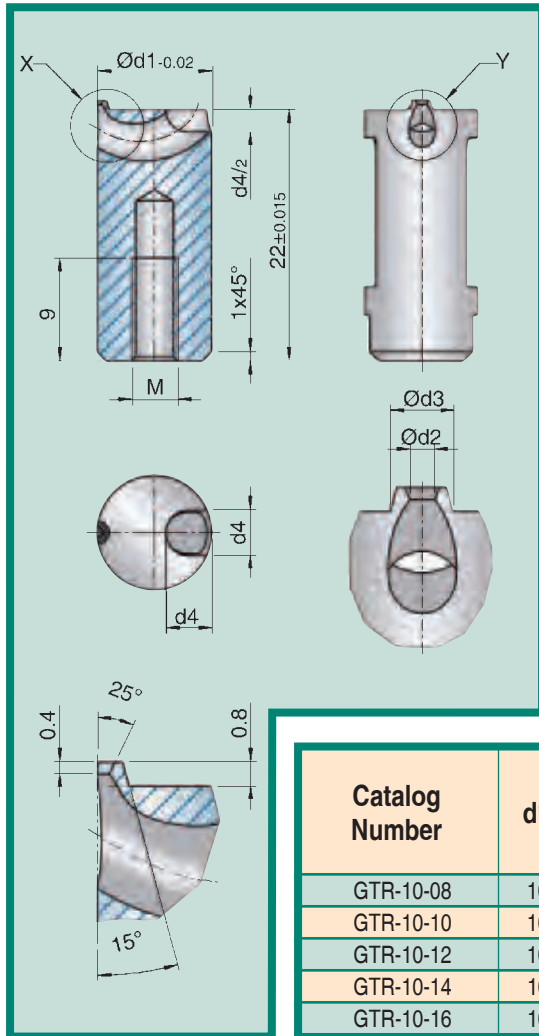




# Cashew Gate Inserts

Ø 10mm

For shot weights up to 40g

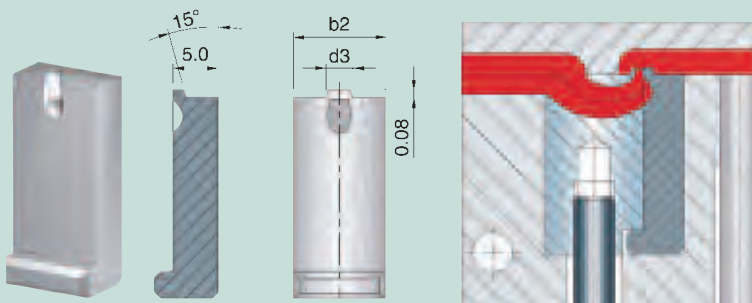


- Manufactured in a solid one-piece unit using the Metal Injection Molding (MIM) process.
- Optimal balancing of cavity filling due to the exactness of MIM.
- Hardened to 60HRC and polished.
- Anti-rotation locking molded into all round inserts. However in most cases the insert is adequately held by the capscrew.

Catalog Number	d1	d2	d3	d4	M	Viscosity		
						high flowability	regular flowability	low flowability
GTR-10-08	10	0,8	2,1	4	4	8	7	5
GTR-10-10	10	1,0	2,3	4	4	14	12	9
GTR-10-12	10	1,2	2,5	4	4	20	16	10
GTR-10-14	10	1,4	2,7	4	4	30	23	15
GTR-10-16	10	1,6	2,9	4	4	40	30	20

Weight in grams

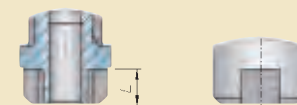
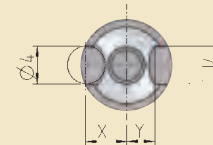
## Technical Information:



### Dead-End Recess Auxiliary Insert for GTE Series

A dead-end recess breaking the force of the melt flow can be machined either into an auxiliary insert or directly into the cavity. The auxiliary insert should be made from a highly wear-resistant steel with a hardness of 60HRC. The dimensions b2 and d3 depend on the size of the cashew gate insert selected. For recess geometries in various CAD formats please refer to the Exaflow website.

### Anti-Rotation Locking Dimensions



Catalog Series	Parallel Pin distance 'X'	Key distance 'Y'
GTR-10	4,5 mm	3,0 mm

CAD files available at:  
www.exaflow.com







# Dual Ring Date Stamps

## Dual-Ring Mold Dating Insert Offers the Ultimate in Date Insert Flexibility

### Patented Indexable Mold Date Insert Technology

The Dual-Ring Mold Dating Insert features a date insert valid for six years, and is based on Indexable Mold Date Insert technology.

The Dual-Ring Insert eliminates the need to install two date inserts or change the inner insert each year. This easy-to-use indexable insert provides the flexibility you need to keep your mold dating current, especially as the lifetime of molds becomes shorter.

- Outer ring: 12 months, months 1 through 12
- Inner ring: 6 years + arrow (arrow points to month)
- Center insert: arrow (points to year & adjusts position of both arrows)

### Features and Benefits

- Double indexable: both arrows independently “click into position”
- Change positions easily with only a screwdriver using arrow in inner insert
  - Turn clockwise to change “year” arrow (6 years)
  - Turn counter-clockwise to change “month” arrow (12 months)
- All inserts remain flush when rotated
- Dual-Ring Inserts may be interchanged for the 20mm, 16mm, 10mm, 8mm to 6mm diameter Indexable and Front Removable inserts

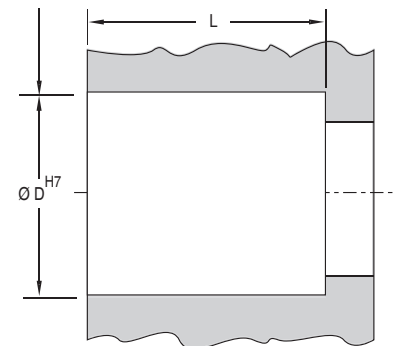
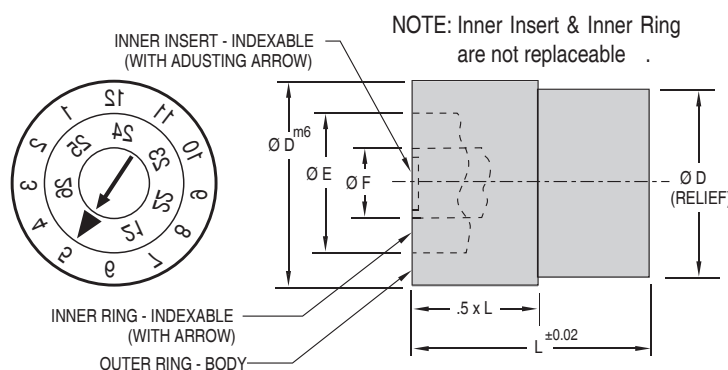


Patent Pending

### Installation and Machining

- Press-fit installation required
- Maintain a close tolerance press fit. Too loose a fit could allow the insert to move out of position, while too tight a press fit might prevent the inner insert and inner ring from rotating when required
- Accurately measure the  $\varnothing D$  for each part and machine hole to provide about

Pocket for installation  
(hold pocket depth as required by the application)



Ø D	TOLERANCE	
	m6	h7
6	+0.004 TO +0.012	0.000 TO -0.012
8	+0.006 TO +0.015	0.000 TO -0.015
10	+0.006 TO +0.015	0.000 TO -0.015
16	+0.007 TO +0.018	0.000 TO -0.018
20	+0.008 TO +0.021	0.000 TO -0.021

#### INFORMATION KEY:

D = Outside Diameter  
 E = Outside Diameter of Inner Ring  
 F = Outside Diameter of Inner Insert  
 G = Hole Diameter  
 L = Length  
 Material: Corrosion-resistant Stainless Steel  
 Hardness: 53 ± 3 HRC  
 Max. Temp: 150°C (300°F)  
 Dimensions: All dimensions are in mm, except as noted

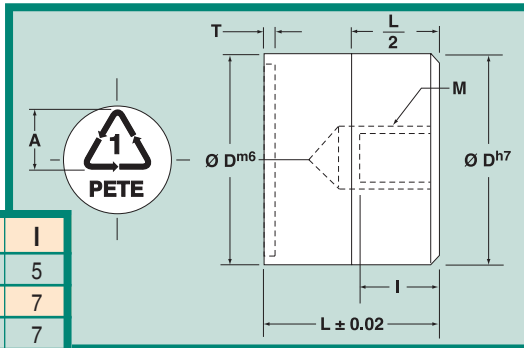
### Dual Ring Mold Dating Insert – MD and Assembly

ITEM NUMBER	Ø D	Ø E	Ø F	L LENGTH
MD 2020_*	20	12.8	6.2	16
MD 1620_*	16	10.6	5	14
MD 1020_*	10	6.4	3.2	12
MD 0820_*	8	5.3	2.5	10
MD 0620_*	6	3.8	1.8	10

\* When ordering, add digits of engraved year required where asterisks ( \_\* ) are shown in item number (e.g., MD 0620\_\*: MD 062022; MD 1020\_\*: MD 102022).



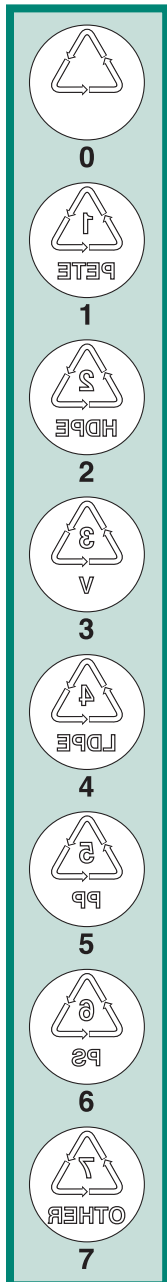
# Recycle Inserts SPI Standards



D	L	A	M	T	I
8	10	5	M4	0,2	5
10	12	6	M5	0,3	7
12	14	7	M5	0,3	7
16	14	10	M6	0,3	7
20	16	12	M6	0,3	8



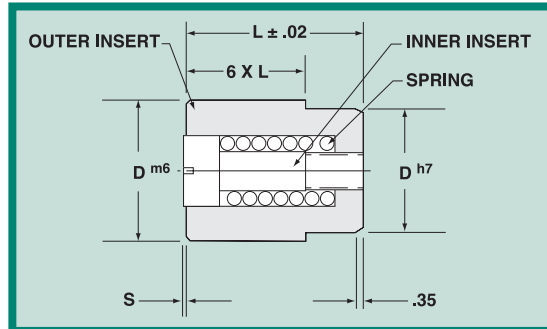
- Standards with threaded holes
- Based upon US SPI standards
- Material: 420 Stainless; 1.4021; 46Hrc+/- 2
- Maximum working temperature: 300F



Catalog Number	D	Recycling Number	Abbreviation	Polymer Name
MA-08-01	8	1	PETE	Polyethelene, Terephthalate
MA-08-02	8	2	HDPE	High Density Polyethelene
MA-08-03	8	3	PVC(or V)	Polyvinyl Chloride
MA-08-04	8	4	LDPE	Low-Density Polyethelene
MA-08-05	8	5	PP	Polypropelene
MA-08-06	8	6	PS	Polystyrene
MA-08-07	8	7	"OTHER"	All other resins
MA-08-00	8	N/A	N/A	Blank
MA-10-01	10	1	PETE	Polyethelene, Terephthalate
MA-10-02	10	2	HDPE	High Density Polyethelene
MA-10-03	10	3	PVC(or V)	Polyvinyl Chloride
MA-10-04	10	4	LDPE	Low-Density Polyethelene
MA-10-05	10	5	PP	Polypropelene
MA-10-06	10	6	PS	Polystyrene
MA-10-07	10	7	"OTHER"	All other resins
MA-10-00	10	N/A	N/A	Blank
MA-12-01	12	1	PETE	"Polyethelene, Terephthalate"
MA-12-02	12	2	HDPE	High Density Polyethelene
MA-12-03	12	3	PVC(or V)	Polyvinyl Chloride
MA-12-04	12	4	LDPE	Low-Density Polyethelene
MA-12-05	12	5	PP	Polypropelene
MA-12-06	12	6	PS	Polystyrene
MA-12-07	12	7	"OTHER"	All other resins
MA-12-00	12	N/A	N/A	Blank
MA-16-01	16	1	PETE	Polyethelene, Terephthalate
MA-16-02	16	2	HDPE	High Density Polyethelene
MA-16-03	16	3	PVC(or V)	Polyvinyl Chloride
MA-16-04	16	4	LDPE	Low-Density Polyethelene
MA-16-05	16	5	PP	Polypropelene
MA-16-06	16	6	PS	Polystyrene
MA-16-07	16	7	"OTHER"	All other resins
MA-16-00	16	N/A	N/A	Blank
MA-20-01	20	1	PETE	Polyethelene, Terephthalate
MA-20-02	20	2	HDPE	High Density Polyethelene
MA-20-03	20	3	PVC(or V)	Polyvinyl Chloride
MA-20-04	20	4	LDPE	Low-Density Polyethelene
MA-20-05	20	5	PP	Polypropelene
MA-20-06	20	6	PS	Polystyrene
MA-20-07	20	7	"OTHER"	All other resins
MA-20-00	20	N/A	N/A	Blank



# Front Removable Date Stamps Economy Series "E"



NOTE: Press fit installation required in mold.

## INSERT ASSEMBLIES

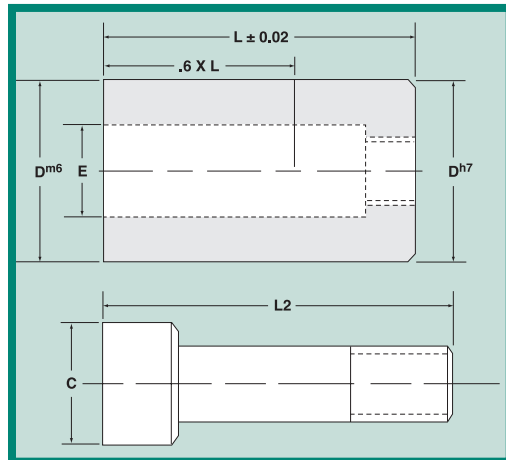
D	L	12 Months w/arrow	12 Months w/arrow/year*	Years/arrow**	Days/arrow	Shifts/arrow	Numeral 0-9	Blank/arrow
4	8	M0408	M04 x __	A04 x __	DA04	SH04		BL0408
5	8	M0508	M05 x __	A05 x __	DA05	SH05		BL0508
6	8	M0608	M06 x __	A06 x __	DA06	SH06	FOR0006	BL0608
8	10	M0810	M08 x __	A08 x __	DA08	SH08	FOR0008	BL0810
10	12	M1012	M10 x __	A10 x __	DA10	SH10	FOR0010	BL1012
12	14	M1214	M12 x __	A12 x __	DA12	SH12	FOR0012	BL1214
16	14	M1614	M16 x __	A16 x __	DA16	SH16	FOR0016	BL1614
20	16	M2016	M20 x __	A20 x __	DA20	SH20	FOR0020	BL2016

Material: 420 Stainless; 1.4021; 46Hrc +/- 2

- Provides part traceability
- Maximum working Temperature: 300F
- Markings are Laser etched.
- Insert changes can be done from parting line
- Press fit installation required
- Interchangeable with DME Front Removable or Progressive C-series

\* When ordering add the year required to the part number (M05 x 07)

\*\*When ordering specify beginning year



NOTE: Press fit installation required in mold.

## REPLACEMENT BODIES

D	L	12 Months	Days	Shifts	Blank
4	8	MB04	DB04	SB04	BLB04
5	8	MB05	DB05	SB05	BLB05
6	8	MB06	DB06	SB06	BLB06
8	10	MB08	DB08	SB08	BLB08
10	12	MB10	DB10	SB10	BLB10
12	14	MB12	DB12	SB12	BLB12
16	14	MB16	DB16	SB16	BLB16
20	16	MB20	DB20	SB20	BLB20

# Replacement Inserts & Bodies

## DIMENSIONAL DATA

D(mm) Dia.	E (mm)	L(mm) Length	S(mm) Etch Depth	Tolerance(mm)	
				m6	h7
4	2,1	8	.203	+ ,012 to + ,004	0 to - ,012
5	3,1	8	.203	+ ,012 to + ,004	0 to - ,012
6	3,1	8	.203	+ ,012 to + ,004	0 to - ,012
8	4,4	10	.254	+ ,015 to + ,006	0 to - ,015
10	5,2	12	.3556	+ ,015 to + ,006	0 to - ,015
12	6,2	14	.3556	+ ,018 to + ,007	0 to - ,018
16	8,2	14	.3556	+ ,018 to + ,007	0 to - ,018
20	11	16	.3556	+ ,021 to + ,008	0 to ,021

## REPLACEMENT INSERTS (with springs)

Arrow Only	Arrow & Year*	C	L2
AR04	AY04 __	2,1	8
AR05	AY05 __	3,1	8
AR06	AY06 __	3,1	8
AR08	AY08 __	4,4	10
AR10	AY10 __	5,2	12
AR12	AY12 __	6,2	14
AR16	AY16 __	8,2	14
AR20	AY20 __	11	16

## REPLACEMENT SPRINGS (pkg of 5)

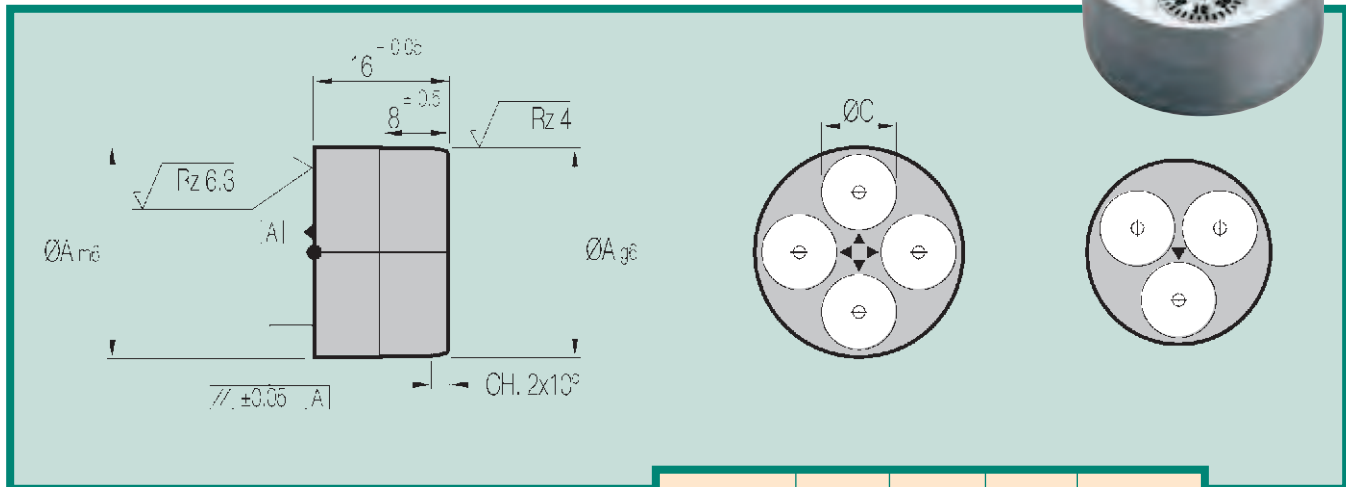
D(mm) Diameter	Cat. Number
4	RS04
5	RS05
6	RS06
8	RS08
10	RS10
12	RS12
16	RS16
20	RS20

\* When ordering add the year required to the part number

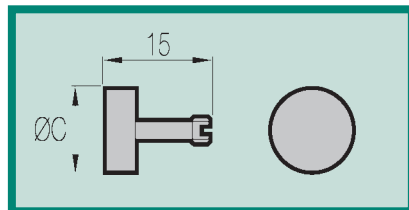


# Block Base 3 & 4 Zone

The Block Base is the most versatile engraving unit on the market. With 3 and 4 zone configurations you can view any sort of standardized information about your part.



- Material is INOX. 1.4034 48-54HRC.
- This is a CUMSA patented system.



Catalog Number	A	C	E	Number of Zones
BM.160603	16	6.5	8	3
BM.180604	18	6.5	8	4
BM.220903	22	8.7	10	3
BM.250904	25	8.7	10	4
BM.281103	28	11.5	12	3
BM.321104	32	11.5	12	4

## Block Inserts

### Blank

C	Catalog Number
6,5	PM0615-00
8,7	PM0915-00
11,5	PM1115-00

### Recycle

C	Catalog Number
6,5	PM0615-07
8,7	PM0915-07
11,5	PM1115-07



### Food

C	Catalog Number
6,5	PM0615-09
8,7	PM0915-09
11,5	PM1115-09

### Shift

C	Catalog Number
6,5	PM0615-101
8,7	PM0915-101
11,5	PM1115-101

### 31 Days

C	Catalog Number
6,5	PM0615-102
8,7	PM0915-102
11,5	PM1115-102

### Months

C	Catalog Number
6,5	PM0615-103
8,7	PM0915-103
11,5	PM1115-103

### Months & Year

C	Catalog Number
6,5	PM0615-104-__
8,7	PM0915-104-__
11,5	PM1115-104-__

### Years

C	Catalog Number
6,5	PM0615-105-__
8,7	PM0915-105-__
11,5	PM1115-105-__

### 0-30

C	Catalog Number
6,5	PM0615-106
8,7	PM0915-106
11,5	PM1115-106

### 0-50

C	Catalog Number
6,5	PM0615-107
8,7	PM0915-107
11,5	PM1115-107

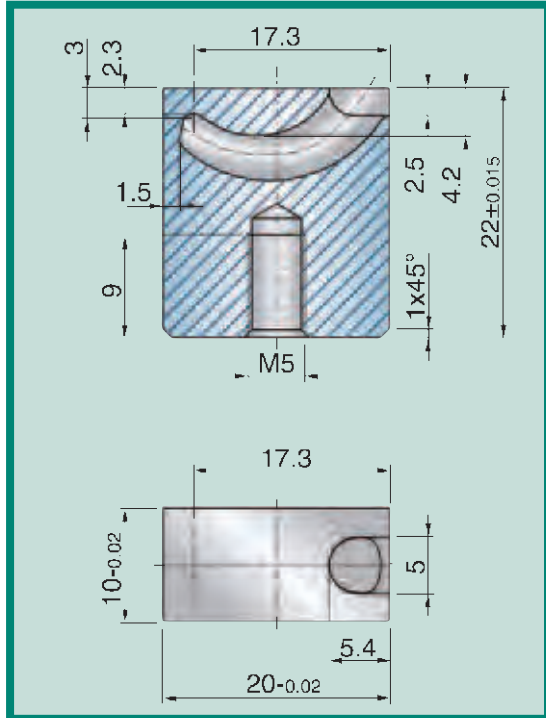
1 Add starting year after the dash (PM0615-104-06)

CAD files and flash demo at:

**CUMSA**  
www.cumsa.com



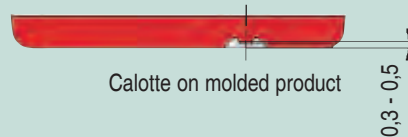
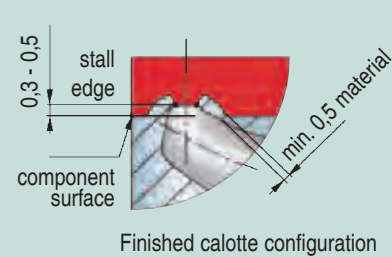
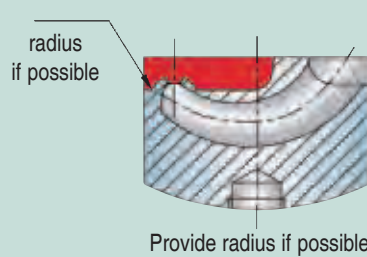
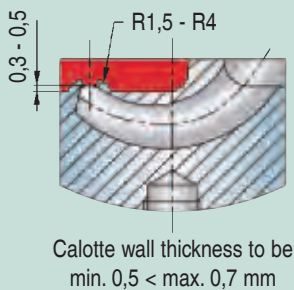
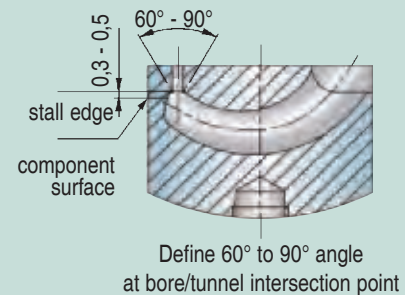
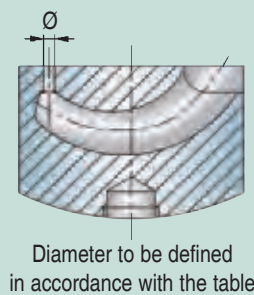
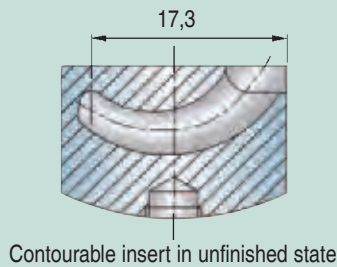
# Cashew Gate Inserts Kontourflow® GTK



For tunnel gating of small to medium sized moldings contoured in the gate area

- maximum gate diameter (pointed tunnel) up to 1,7 mm.
- contourable up to 3 mm depth.
- usable for all thermoplastics including fillers up to 50% glass fibre.

## Standard Design



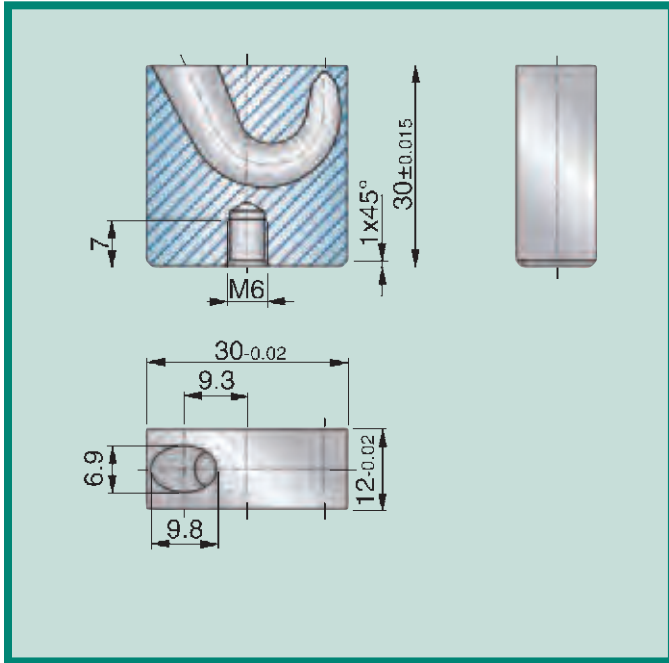
CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)



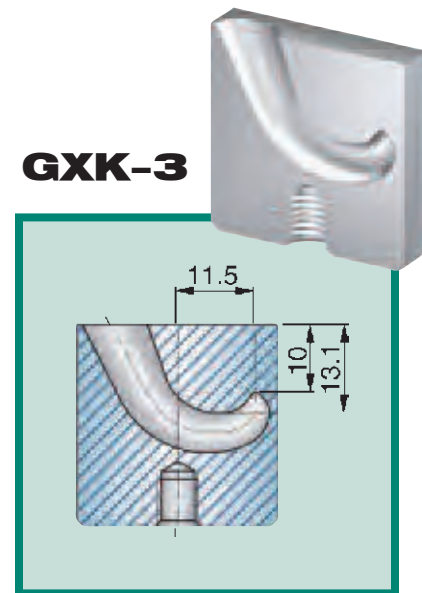
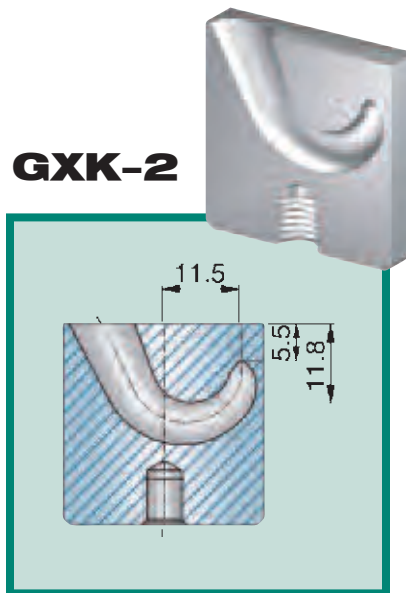
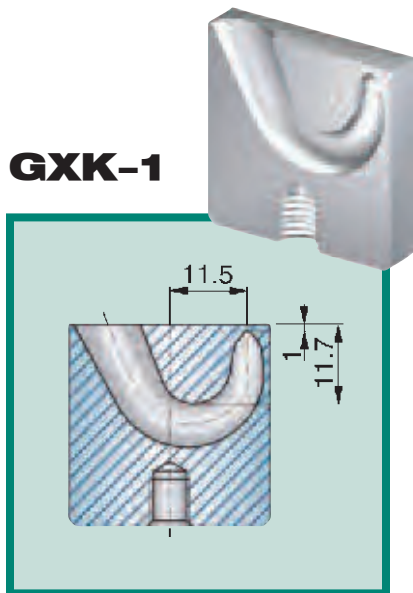




# Cashew Gate Inserts Maxiflow - GXK



For tunnel gating of medium-to-large components. Supports contouring to a depth of 11,5 mm. Suitable for gate diameters up to 3,5 mm and shot weights up to 1,200 g per insert. The Maxiflow range can be used to process all common plastics, including reinforced types.



CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)

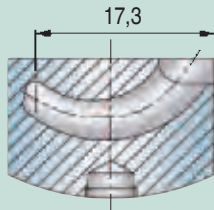
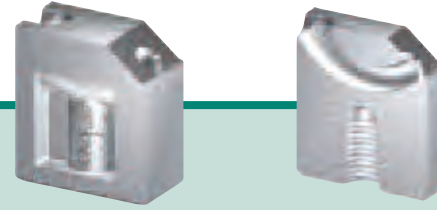




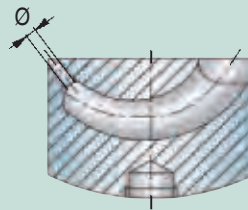


# Cashew Gate Inserts Kontourflow® - GTK

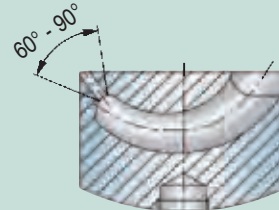
## Inclined Surface



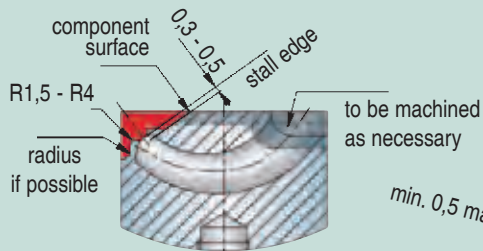
Contourable insert in unfinished state



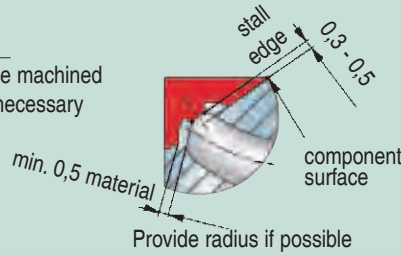
Diameter to be defined in accordance with the table



Define 60° to 90° angle at bore/tunnel intersection point



Calotte wall thickness to be min. 0,5 < max. 0,7 mm

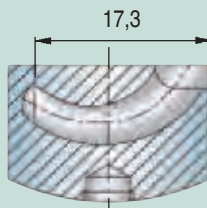
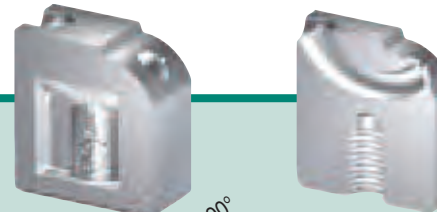


Provide radius if possible

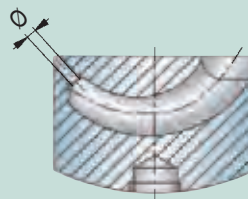


Calotte on molded product

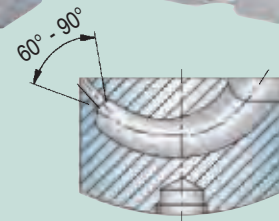
## Curved Surface



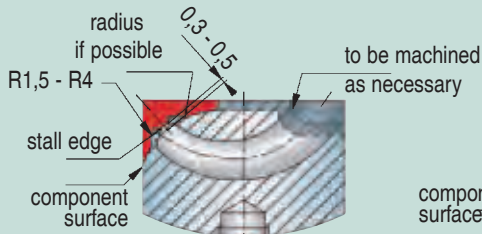
Contourable insert in unfinished state



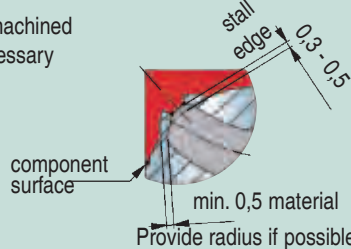
Diameter to be defined in accordance with the table



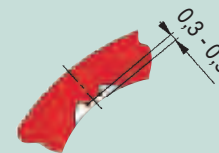
Define 60° to 90° angle at bore/tunnel intersection point



Calotte wall thickness to be min. 0,5 < max. 0,7 mm



Provide radius if possible



Calotte on molded product

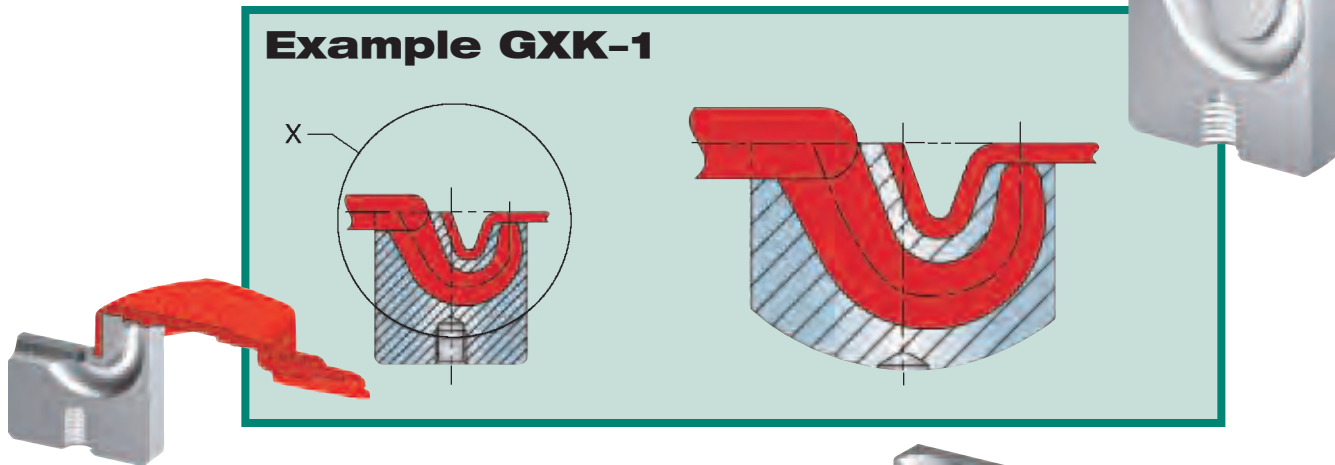
CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)



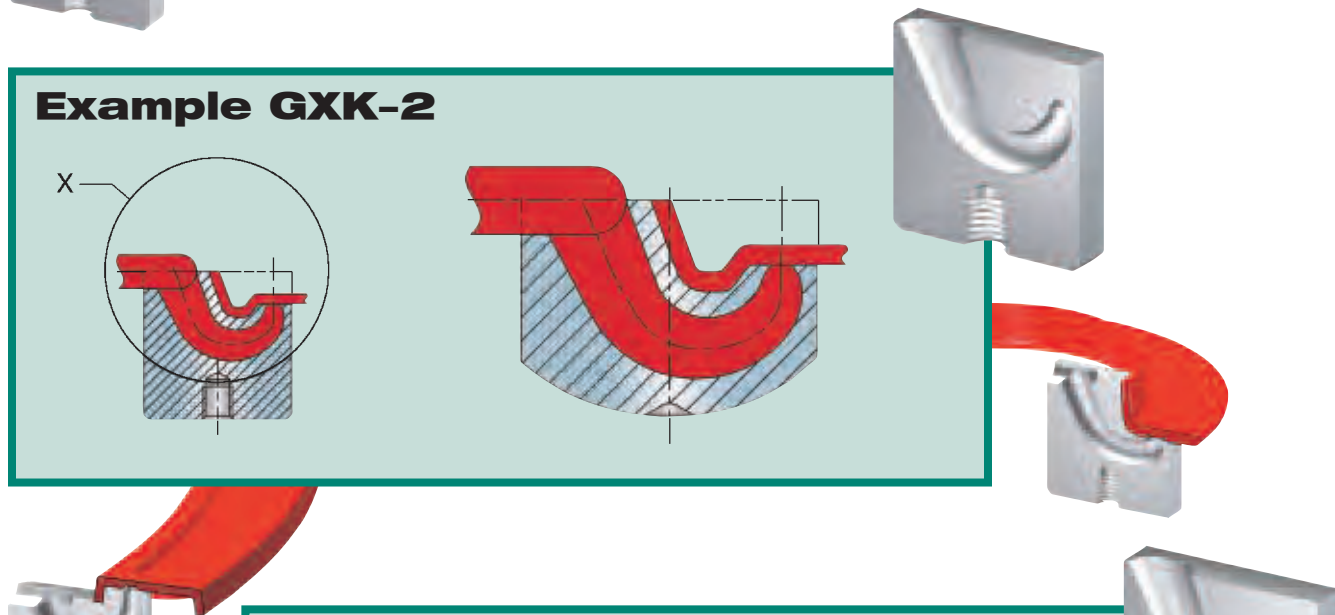


# Cashew Gate Inserts Maxiflow - GXK

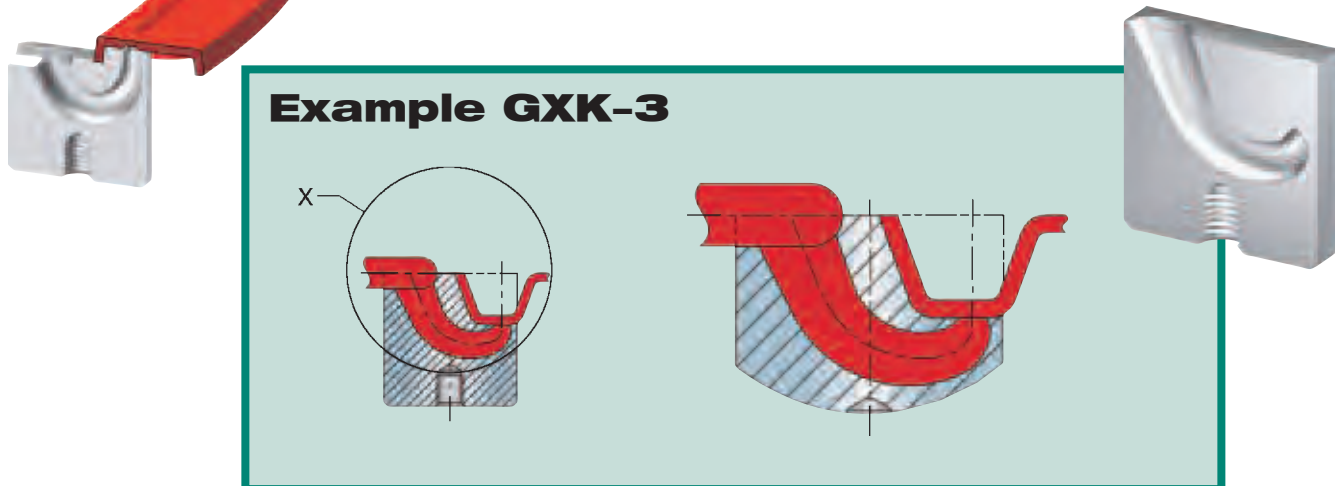
### Example GXK-1



### Example GXK-2



### Example GXK-3



#### Maxiflow benefits:

- gating point may be located up to 10mm above or below the parting line
- permits gating immediately behind projecting ribs
- gate may be remote from molding wall

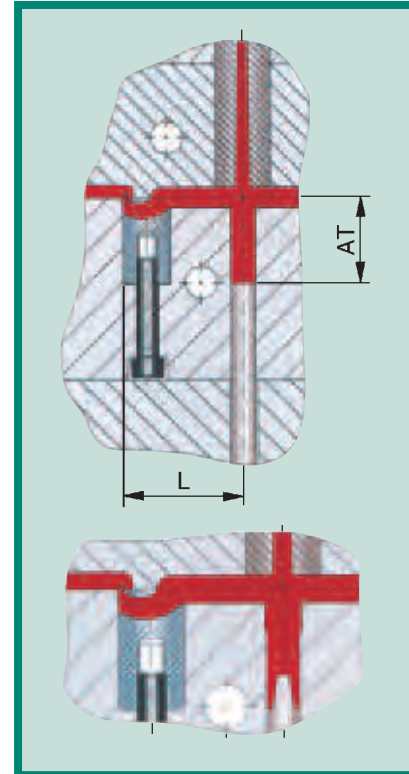
CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)



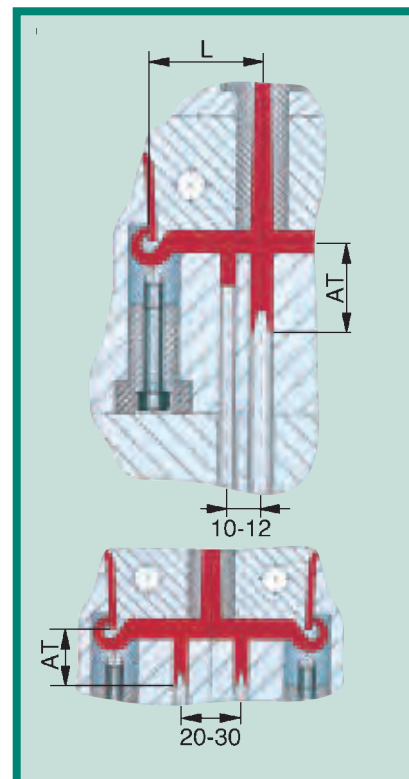


# Cashew Gate Installation Data

Plastic Group	GTM	GTR/ GTE	GTK
HD-PE, LD-PE, PET, PP, PA, PC, PVC. (L)	>15	>20	>25
Runner Design	round	round	round
Ejector Depth (AT)	>11	>16	>20
ABS, M ABS, ASA, PS, PC/ABS, POM, PBT. (L)	>20	>25	>30
Runner Design	round	round	round
Ejector Depth (AT)	>14	>20	>24
Elastomers TPE, TPU, TPP, TPA. (L)	>15	>15	>20
Runner Design	arbitrary	arbitrary	arbitrary
Ejector Depth (AT)	>11	>11	>16
Brittle Plastics (L)	>25	>30	>40
Runner Design	half round	half round	half round
Ejector Depth (AT)	>18	>24	>32



Plastic Group	GRF	GXK
HD-PE, LD-PE, PET, PP, PA, PC, PVC. (L)	>30	>35
Runner Design	round	round
Ejector Depth (AT)	>30	>35
ABS, M ABS, ASA, PS, PC/ABS, POM, PBT. (L)	>30	>40
Runner Design	round	round
Ejector Depth (AT)	>30	>40
Elastomers TPE, TPU, TPP, TPA. (L)	>20	>30
Runner Design	arbitrary	arbitrary
Ejector Depth (AT)	>20	>30
Brittle Plastics (L)	on request	on request
Runner Design	half round	half round
Ejector Depth (AT)	on request	on request



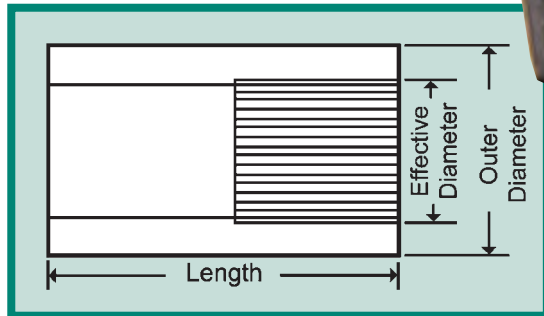
Recommended distances 'L' from the injection point to the sprue ejector for various material groups. The distance 'AT' is the correlated ejector depth.

CAD files available at:  
[www.exaflow.com](http://www.exaflow.com)





# Sintered Vents



KIC

## PLASTIC INJECTION MOLDING

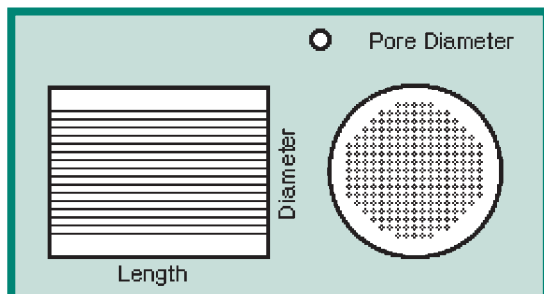
(Pore Diameter: 0.03–0.10mm)

CAT. NO.	O.D.	EFF. D.	PORES	L
003-0610	6	2.5	880	10
003-0810	8	2.5	880	10
003-1010	10	2.5	880	10
005-0610	6	3.5	880	10
005-0810	8	3.5	880	10
005-1010	10	3.5	880	10
01-0810	8	5.5	880	10
01-1010	10	5.5	880	10

KIC Sintered Vents are composed of several straight and uniform pores made through a unique process to allow air or gas that gets trapped inside the mold cavity during the injection or die casting process to escape freely. To optimize mold design and reduce the possibility of manufacturing defective parts, specify strategically placed insertion points to hold the vents.

KIC Sintered Vents with ultra fine pores (diameters of 0.03mm) have been used successfully in venting systems for plastic injection mold applications. The passage of trapped air and gases can be properly released while blocking the escape of molten plastic. With KIC Sintered Vents, you get shorter shot-cycles while dramatically increasing productivity.

KIC Sintered Vents with a pore diameter of 0.4mm are suitable for larger, gravity die-cast parts, while 0.5mm diameter vents are more suited for smaller parts. Low pressure die-cast, or vacuum casting parts require pore diameters between 0.2 and 0.3mm.



## LOW PRESSURE DIE-CASTING AND VACUUM CASTING

(Pore Diameter: 0.3± mm)

CAT. NO.	DIA.	PORES	L
03-0510	5	90	10
03-0610	6	90	10
03-0615	6	90	15
03-0810	8	200	10
03-0815	8	200	15
03-1010	10	340	10
03-1015	10	340	15
03-1210	12	340	10
03-1215	12	340	15
03-1415	14	550	15

CODING SYSTEM EXAMPLE: 005-0610

0.05 Pore Dia. (mm) 06 Vent Dia. (mm) 10 Vent L. (mm)

## GRAVITY DIE-CASTING

(Pore Diameter: 0.5± mm)

CAT.NO.	DIA.	PORES	L
05-0310	3	40	10
05-0410	4	40	10
05-0510	5	60	10
05-0610	6	60	10
05-0615	6	60	15
05-0810	8	100	10
05-0815	8	100	15
05-1010	10	200	10
05-1015	10	200	15
05-1210	12	200	10
05-1215	12	200	15
05-1415	14	340	15
05-1615	16	240	15
05-1815	18	550	15
05-2015	20	550	15
05-2815	28	970	15

**PRODUCTIVITY:** Fast and easy exchange of venting plugs; easy cleaning of molding dies.

**EFFICIENCY:** Perforation volumes are 5–30 times higher than ordinary venting plugs.

**DURABILITY:** Decrease replacement frequency of venting plugs.

**QUALITY:** Drastically decreases defects such as pin holes, mis-run, and short-shots.

**SELECTION:** Pore sizes range from 0.03 to 0.5mm; length and diameter of vents to meet your needs.

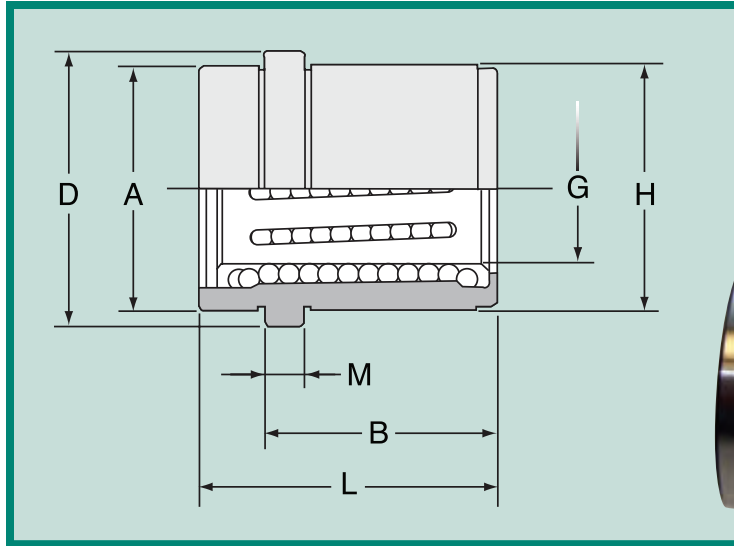
### PLEASE NOTE

- We can supply custom vents made to your specification.
- During installation, do not strike the vent pores.
- Keep insertion tolerances between 0.025 and 0.05mm.
- Actual pore diameters and specifications may vary slightly and are subject to change without notice.





# Ball Guided Ejector Bushings Bolexp<sup>®</sup> Inch Series



Nom. I.D.	G	H +.0005 -.0000	A +.000 -.001	D +.000 -.030	L +.000 -.030	B +.000 -.030	M +.000 -.005	Catalog Number
3/4	.751	1.2505	1.2490	1.427	1.50	1.00	.187	BGEB0750
7/8	.876	1.3755	1.3740	1.552	1.75	1.12	.187	BGEB0875
1"	1.001	1.6255	1.6240	1.802	1.75	1.12	.187	BGEB1000
1-1/4	1.251	2.0005	1.9990	2.177	1.75	1.12	.187	BGEB1250
1-1/2	1.501	2.5005	2.4990	2.687	2.25	1.62	.187	BGEB1500

- Materials: Special steel bush. Bronze cage with high resistance to wear.
- High-precision balls.
- Hardness: 60-62 HRc.
- Max Operating temp: 110-125C .

**Material:** Special roll steel bush casing, hardened & ground which holds fixed inside a high-resistant bronze cage for guiding the balls running along the cage. The unique feature of these bushings is that the balls do not run aligned, but at a slight angle thus enlarging the contact area and enabling greater load capacity. This system allows the precision balls to circulate endlessly.

Typically for use in the ejector system when a “friction free” application is required. Use DMS “Press Fit” Leader pins with these in the guided ejector system.

**Fitting:** Ensure that the leader pin holes in the clamp plate and the bores in the ejector set are square and in line. It is recommended to mount at least two units.

**Lubrication:** The bushings are supplied oiled and must be lubricated when necessary. Proper lubrication and maintenance are a must. The channels that the balls run along must be free and clear of ANY particles, thus the removal of all impurities is essential.

It is recommended to use oils within the range of ISO viscosities from ISO VG 64 to 100.

A complete range of metric ejector, shoulder and straight bushings are also available. Please visit [www.bolexp.com](http://www.bolexp.com) or call DMS for further information.



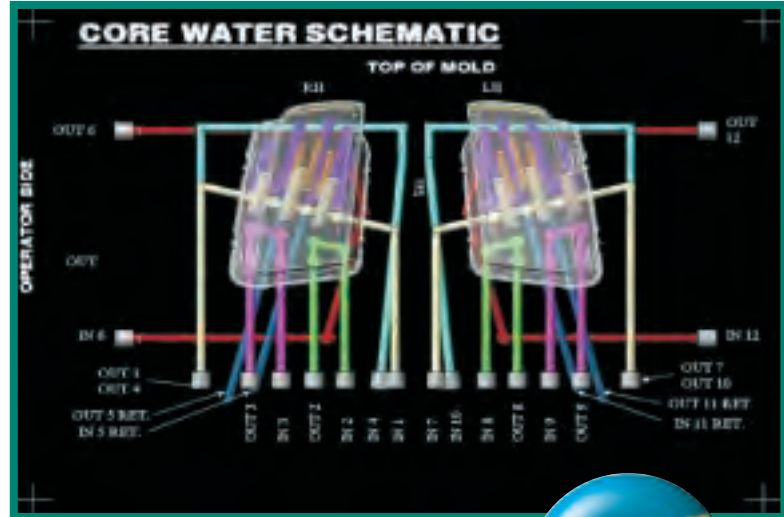
Exploded View



# Full Colour Mold Plaques Tooling Identification

**SAVE ENGINEERING  
TIME AND MONEY!**

**INDUSTRY PROVEN  
THERMAL SET  
GRAPHICS**



Simplified Data Transfers JPEG.

- 300 DPI files (options available)
- Dimension the part and email
- Design any colour combinations
- NOTE: Technical support available

ICS Laser  
Technologies



<b>NOVA</b> tool & mold inc.			
CUSTOMER	SAMPLE I.D. PLAQUE ONLY!		
PART NAME	CREATE YOUR OWN CUSTOM DESIGN!		
PART NO.	NO. CAV.	1	
NOVA JOB NO.	MOLD NO.	2225	
MOLD WEIGHT	1,000 LBS	L 6.00	W 4.00 H 1.13
MANUFACTURED IN CANADA		JUN 2009	
<small>5190 HALFORD DR., RR #1, WINCORA, ONTARIO M5A 5A9 TEL: (918) 727-1127 FAX: (918) 727-1111 EMAIL: eng@novamold.com</small>			

*used by permission*

**STANDARD I.D.  
MOLD PLAQUES**



**SERVICE  
IDENTIFICATION**



**ASSET TAGS**

<b>ICS</b> Laser Technologies <small>Main Street, U.S.A. 48225 Phone: (800) 012-1234 Fax: (800) 012-5635</small>	CUSTOMER PT. #	106022009	Made in U.S.A.					
	OPERATION DESCRIPTION	FULL COLOUR SAMPLE DIE TAG						
JOB # 777	CUSTOMER NAME	ICS LASER TECHNOLOGIES	SHUT HEIGHT	1/2"				
	PT. NAME	ID TAG	WEIGHT OF UPPER DIE HALF	100 lbs.	TOTAL WEIGHT	225 lbs.	STOCK THICKNESS	0.3mm (.035")
	DIE SIZE	12" X 36"	COIL WIDTH AND PROGRESSION	13" wide X 39" prog.				

**DIE TAGS**

- ✓ Cost competitive
- ✓ Protective coated
- ✓ Quick turnaround

- HIGH CUSTOMER APPROVAL RATING •
- Mold Magnets for Part Identification Also Available •





# RedE Vault The 21st Century Owner's Manual

## INNOVATIVE SOFTWARE:

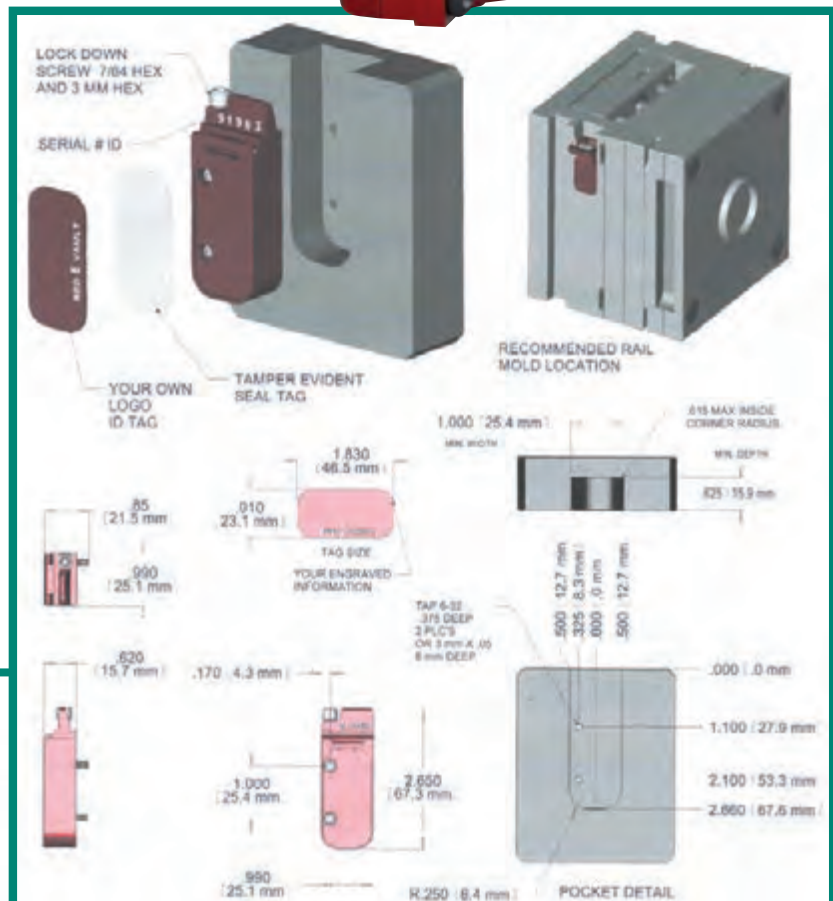
The RedE Vault mold management solution utilizes the RedE Vault easy to use mold management software and cloud backup services, providing you with offsite backup and 24/7 access to your mold data. The innovative RedE Vault system allows you to secure and store important process parameters, mold repair logs, and drawings while enforcing business practices, increasing mold technician accountability and assisting in ISO compliance with one easy to use storage solution. The RedE Innovations data services allow you to manage your mold data and provides a thorough overview of multiple molds through our secure website.

Our user friendly software was designed to help mold owners secure and manage their mold data while allowing quick and easy access to templates, drawings and files, with the administrative option to control each user's data access permissions. With 16GB of memory and the ability to optionally encrypt your files using the ASE-256 encryption algorithm the RedE Vault makes sure your data is easily accessible and never compromised.



## FEATURES:

- Online overview and management of RedE Vaults
- Password protected access and file security
- File and data encryption
- Permanent on mold data storage
- View and update data via RedEVault.com
- Secure offsite backup
- Assists in ISO compliance
- Multilingual interface
- Stores all digital file types
- Custom data entry template designer
- Enforces business process
- Corporate branding
- Each RedE Vault has its own ID#
- Revision tracking



## YOUR MOLD DATA STORAGE SOLUTION

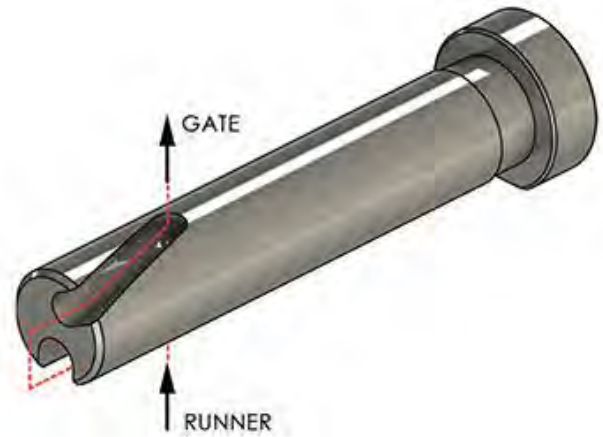
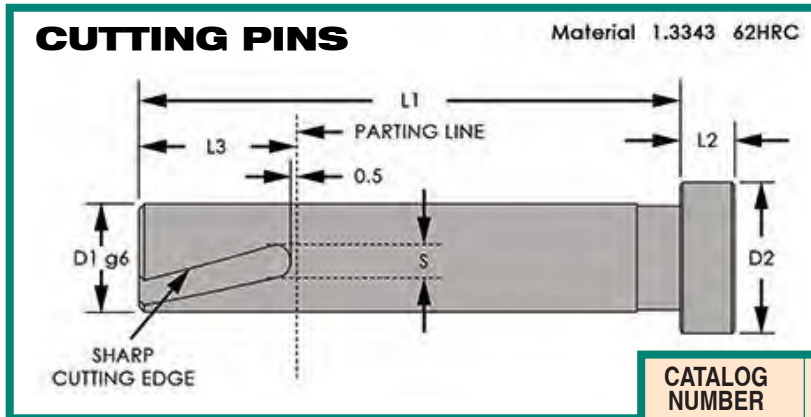
- Design Schematics & Prints
- Setup and Maintenance Data
- Part Specs and Materials
- Bill of Materials
- Part Picture and Video Storage
- Contracts
- Repair History
- Quality Control Logs

[www.redevault.com](http://www.redevault.com)

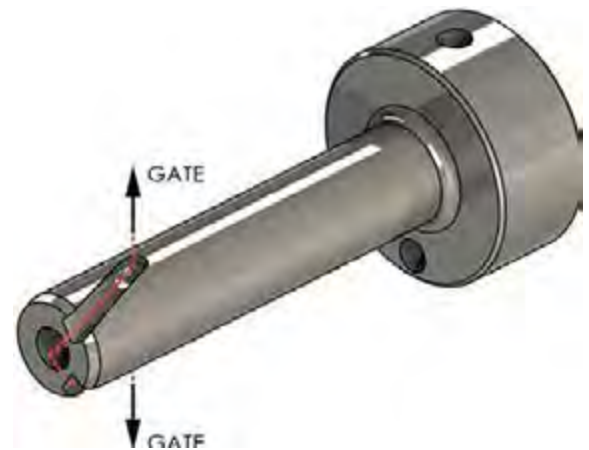
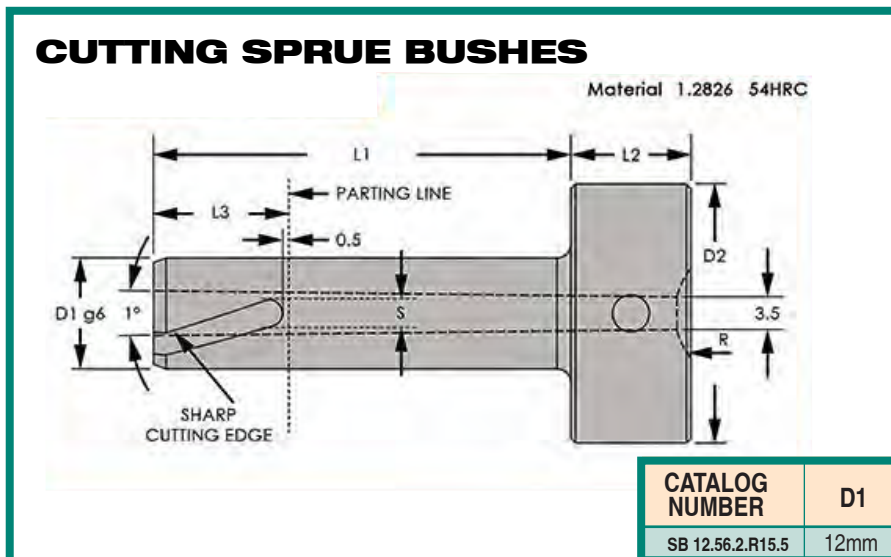


# In-Mould Edge Gate Cutting

- The pin and bush provide automation in cutting large edge gates
- The large gate enables a reduction in injection pressure
- The large gate improves packing and part quality
- The pin and bush are made from M2 Steel 62 HRC
- Full drawings and 3D models can be downloaded from our website



CATALOG NUMBER	D1	D2	L1	L2	L3	S	GATES
PI0.50.1	10mm	13.7mm	50mm	5mm	14.5mm	3mm	1
PI0.50.2-120	10mm	13.7mm	50mm	5mm	14.5mm	3mm	2
P12.60.1	12mm	16.5mm	60mm	7mm	14.5mm	3mm	1
P12.60.2-90	12mm	16.5mm	60mm	7mm	14.5mm	3mm	2
P12.60.2-120	12mm	16.5mm	60mm	7mm	14.5mm	3mm	2
P3-8.50.1	3/8"	13.7mm	50mm	5mm	14.5mm	3mm	1
PI-2.60.1	1/2"	16.5mm	60mm	7mm	14.5mm	3mm	1
PI-2.60.2-90	1/2"	16.5mm	60mm	7mm	14.5mm	3mm	2
PI-2.60.2-120	1/2"	16.5mm	60mm	7mm	14.5mm	3mm	2
SPECIAL			L1 LENGTH		PLEASE ENQUIRE		



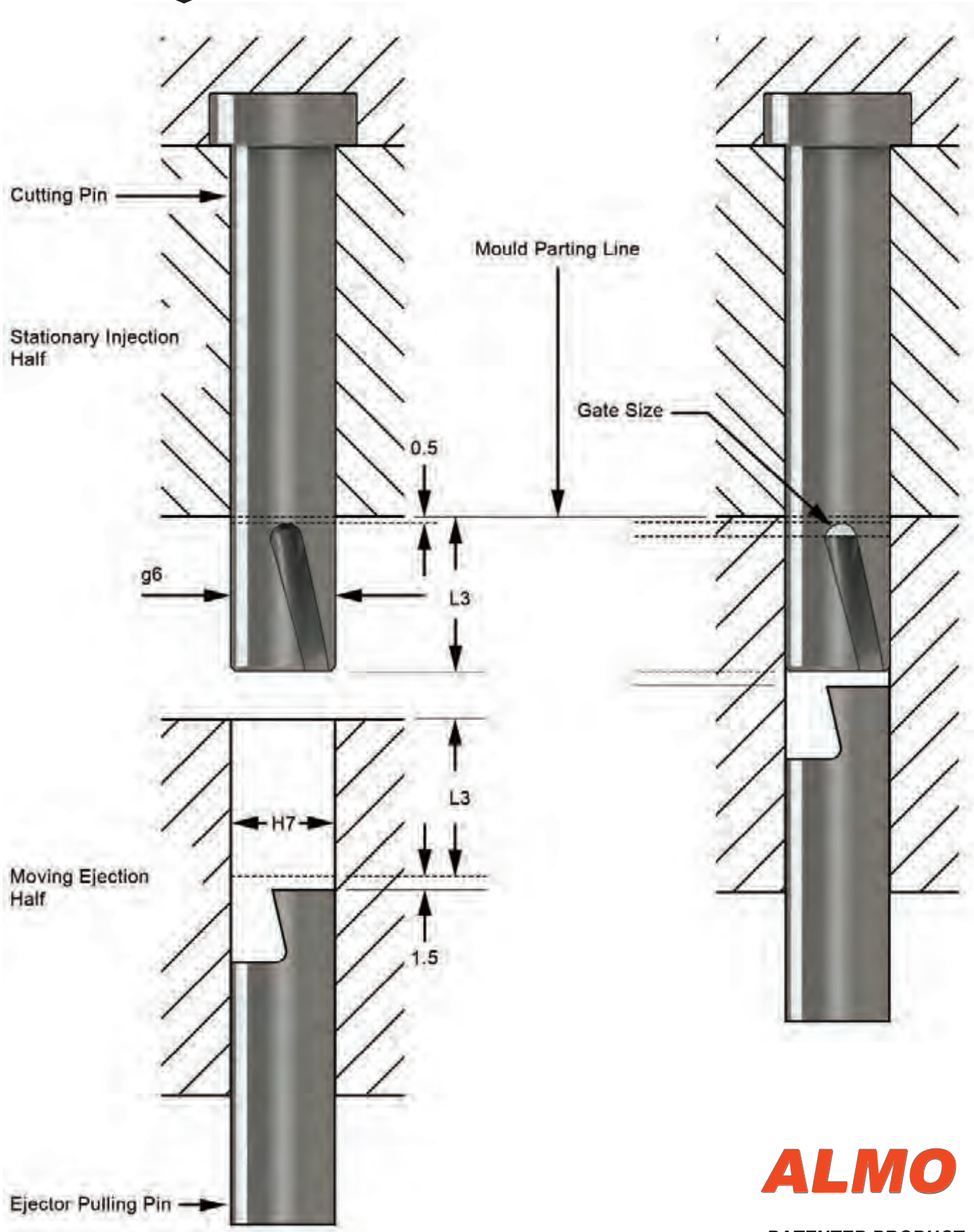
CATALOG NUMBER	D1	D2	L1	L2	L3	S	R
SB 12.56.2.R15.5	12mm	28mm	56mm	13mm	14.5mm	3mm	15.5
SB 12.56.2.R15.5	12mm	28mm	76mm	13mm	14.5mm	3mm	15.5
SB 12. 7 6.2.R 15.5	18mm	38mm	60mm	18mm	20.5mm	5mm	15.5
SB 18.60.2.R 1 5.5	18mm	38mm	90mm	18mm	20.5mm	5mm	15.5
SB 18.90.2.R15.5	12mm	28mm	56mm	13mm	14.5mm	3mm	1/2"
SB12.56.2.R1 2	12mm	28mm	56mm	13mm	14.5mm	3mm	1/2"
SB 18.60.2.RI 2	18mm	38mm	60mm	18mm	20.5mm	5mm	1/2"
SB 18.90.2.RI 2	18mm	38mm	60mm	18mm	20.5mm	5mm	1/2"
SPECIAL			L1 LENGTH		PLEASE ENQUIRE		

PATENTED PRODUCT

**ALMO**



# Installation Info Pin



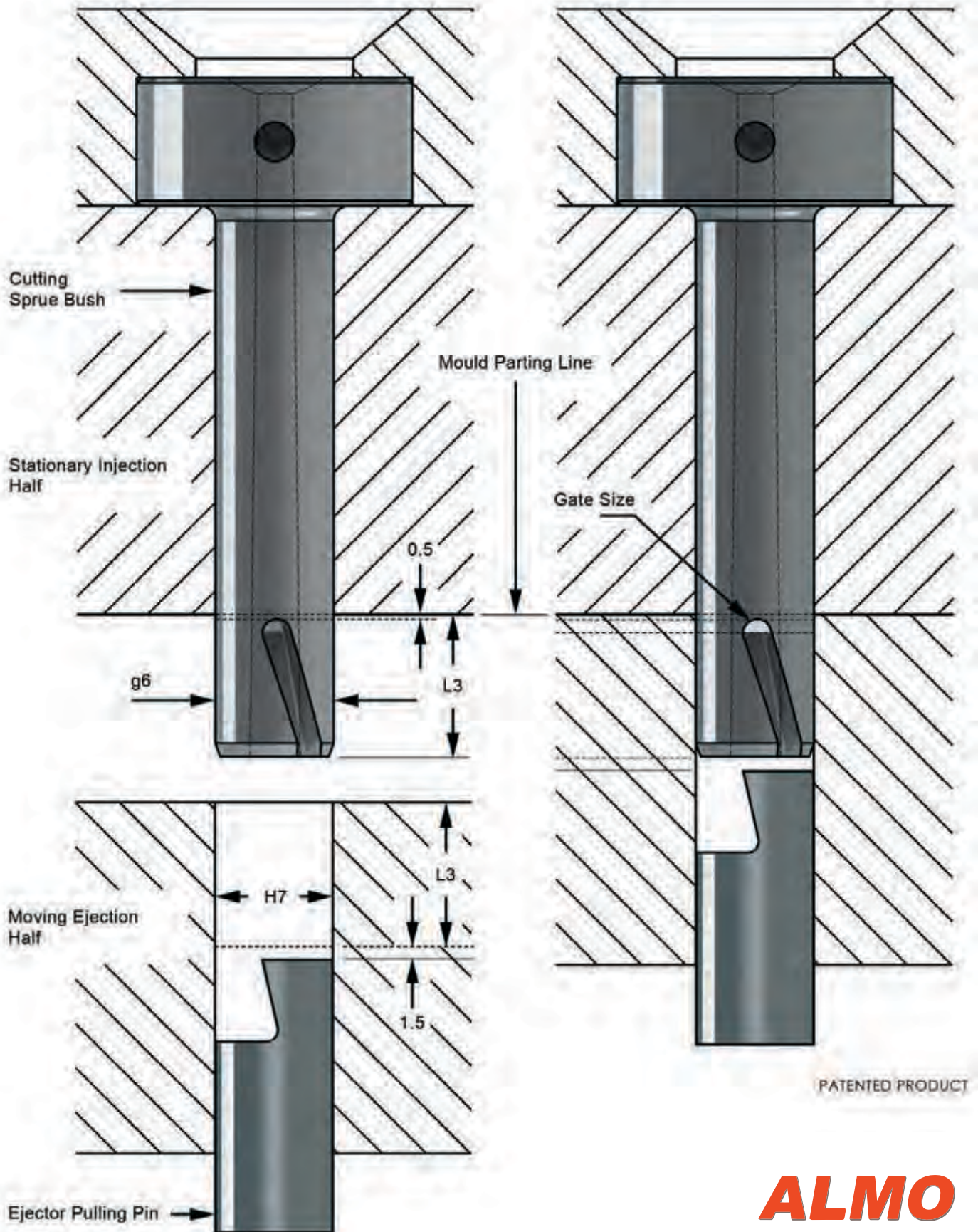
**ALMO**

PATENTED PRODUCT



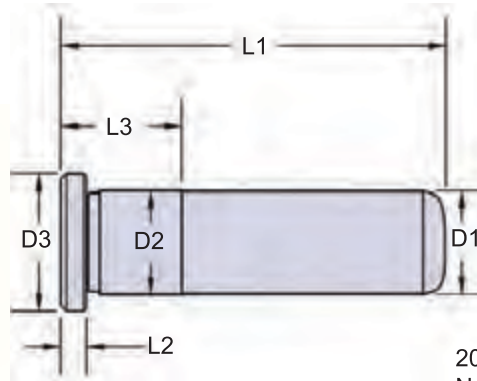
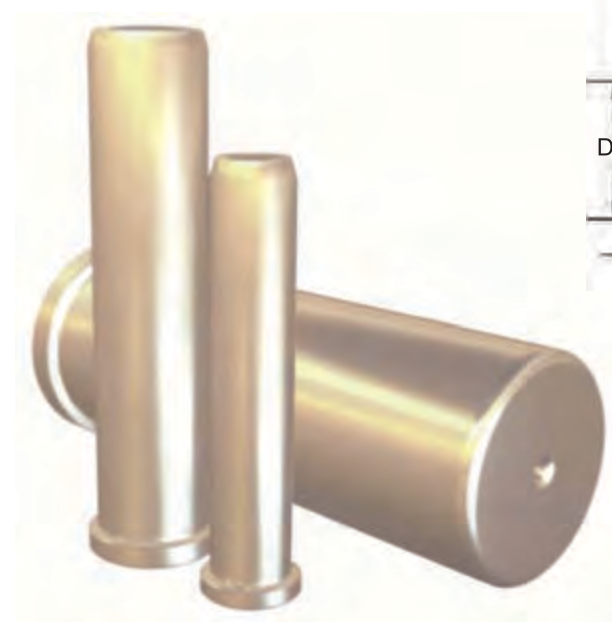


# Installation Info Sprue Bush





# Metric Leader Pins



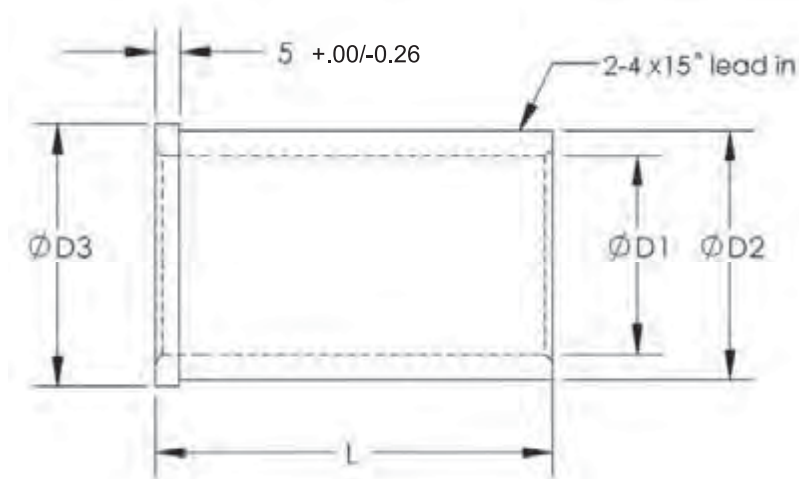
20mm through 60mm  
Not all pins are ground on centers.

GENERAL DIMENSIONS				
NOM. PIN DIA.	D1	D2	D3	L2
20	+0.000 -0.013	+0.013 -0.000	+0.00 -0.26	+0.00 -0.05
25	19.975	20.025	25.00	5.00
30	24.975	25.025	31.00	6.00
40	29.975	30.025	36.00	8.00
50	39.975	40.025	46.00	8.00
60	49.975	50.025	56.00	8.00

LEADER PINS – METRIC												
L1 Overall Length	NOMINAL DIA. 20mm		NOMINAL DIA. 25mm		NOMINAL DIA. 30mm		NOMINAL DIA. 40mm		NOMINAL DIA. 50mm		NOMINAL DIA. 60mm	
	PART NUMBER	L3	PART NUMBER	L3	PART NUMBER	L3	PART NUMBER	L3	PART NUMBER	L3	PART NUMBER	L3
50mm	MLP20x50	25mm	MLP25x50	25mm								
60mm	MLP20x60	25mm	MLP25x60	25mm								
70mm	MLP20x70	25mm	MLP25x70	25mm	MLP30x70	25mm						
80mm	MLP20x80	25mm	MLP25x80	25mm	MLP30x80	25mm						
90mm	MLP20x90	25mm	MLP25x90	25mm	MLP30x90	25mm	MLP40x90	35mm				
100mm	MLP20x100	25mm	MLP25x100	25mm	MLP30x100	25mm	MLP40x100	35mm				
120mm	MLP20x120	35mm	MLP25x120	35mm	MLP30x120	35mm	MLP40x120	35mm				
140mm	MLP20x140	35mm	MLP25x140	35mm	MLP30x140	35mm	MLP40x140	35mm				
150mm									MLP50x150	45mm	MLP60x150	60mm
160mm	MLP20x160	45mm	MLP25x160	35mm	MLP30x160	35mm	MLP40x160	35mm				
175mm									MLP50x175	45mm	MLP60x175	60mm
180mm	MLP20x180	45mm	MLP25x180	45mm	MLP30x180	45mm	MLP40x180	45mm				
200mm	MLP20x200	45mm	MLP25x200	45mm	MLP30x200	45mm	MLP40x200	45mm	MLP50x200	45mm	MLP60x200	60mm
220mm	MLP20x220	45mm	MLP25x220	45mm	MLP30x220	45mm	MLP40x220	45mm				
225mm									MLP50x225	45mm	MLP60x225	60mm
240mm	MLP20x240	45mm	MLP25x240	45mm	MLP30x240	45mm	MLP40x240	45mm				
250mm									MLP50x250	45mm	MLP60x250	60mm
260mm			MLP25x260	45mm	MLP30x260	45mm	MLP40x260	45mm				
275mm									MLP50x275	45mm	MLP60x275	60mm
280mm			MLP25x280	45mm	MLP30x280	45mm						
300mm			MLP25x300	45mm	MLP30x300	45mm	MLP40x300	45mm	MLP50x300	45mm	MLP60x300	60mm
325mm									MLP50x325	45mm	MLP60x325	60mm
350mm									MLP50x350	45mm	MLP60x350	60mm
375mm									MLP50x375	45mm	MLP60x375	60mm
400mm									MLP50x400	45mm	MLP60x400	60mm



# Solid Bronze Metric Shoulder Bushings



\*\*WITH GREASE GROOVES\*\*

L	Nominal I.D.					
	20	25	30	40	50	60
25.00	LBBM20x25	LBBM25x25	LBBM30x25	LBBM40x25	—	—
30.00	LBBM20x30	LBBM25x30	LBBM30x30	LBBM40x30	LBBM50x30	LBBM60x30
40.00	LBBM20x40	LBBM25x40	LBBM30x40	LBBM40x40	LBBM50x40	LBBM60x40
50.00	LBBM20x50	LBBM25x50	LBBM30x50	LBBM40x50	LBBM50x50	LBBM60x50
65.00	LBBM20x65	LBBM25x65	LBBM30x65	LBBM40x65	LBBM50x65	LBBM60x65
80.00	LBBM20x80	LBBM25x80	LBBM30x80	LBBM40x80	LBBM50x80	LBBM60x80
100.00	LBBM20x100	LBBM25x100	LBBM30x100	LBBM40x100	LBBM50x100	LBBM60x100
120.00	LBBM20x120	LBBM25x120	LBBM30x120	LBBM40x120	LBBM50x120	LBBM60x120
140.00	—	LBBM25x140	LBBM30x140	LBBM40x140	LBBM50x140	LBBM60x140
150.00	—	LBBM25x150	LBBM30x150	LBBM40x150	LBBM50x150	LBBM60x150

GENERAL DIMENSIONS			
Nom. I.D.	D1 +0.013 -0.000	D2 +0.013 -0.000	D3 +0.00 -0.13
20	20.013	26.013	28.00
25	25.013	32.013	35.00
30	30.013	38.013	41.00
40	40.013	50.013	53.00
50	50.013	60.013	63.00
60	60.013	70.013	73.00

Materials: Aluminum Bronze

Tolerances: L: +0.00/-0.76





# Slide Lifter Units Adjustable



- Three sizes : 3/4" , 1" , 1-1/4" , 1-1/2" , 2" and metric sizes
- Other sizes available upon request
- Standard zero degree
- Available in increments of 1 Deg up to 10 deg as special order
- Solid bronze slide plate also available

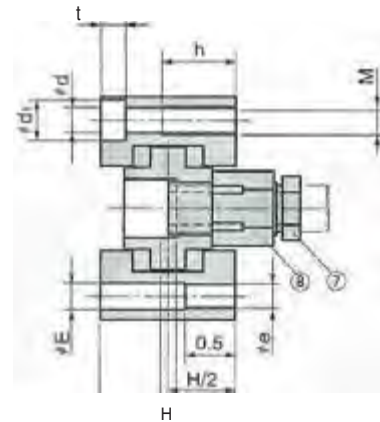
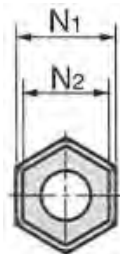
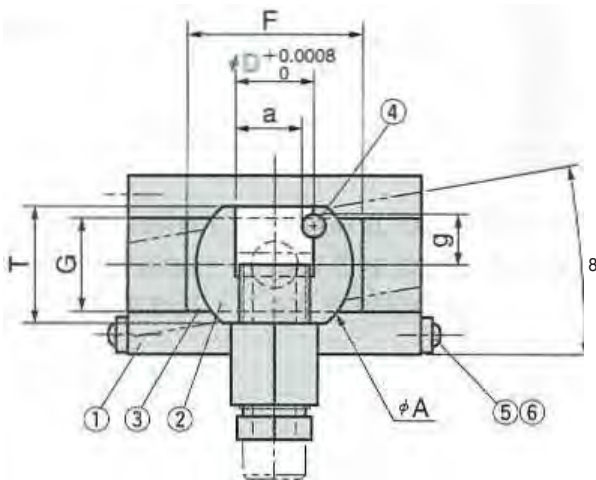
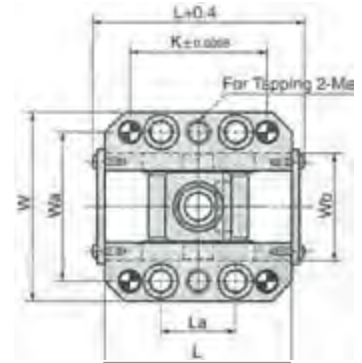
\*To order solid bronze use part number with suffix "NG". Example :UKOCUM075-0-NG

## Slide Lifter Unit - UKOCUM

ITEM NUMBER	D	W	Wa	L	La	***K	Ma	Wb	d	d1	t
UKOCUM075	3/4	3.0	2.4	3.0	1.2	2.2	3/8	1.8	11/32	17/32	0.4
UKOCUM100	1"	3.2	2.5	3.4	1.5	2.5	3/8	1.9	11/32	17/32	0.4
UKOCUM125	1.25	3.5	2.8	4.0	2.0	3.0	3/8	2.2	11/32	17/32	0.4

ITEM NUMBER	h	M	***e	E	H	T	G	F	A	a	g	N1	N2
UKOCUM075	0.75	1/2	5/16	.35	1.8	1.2	1.0	1.8	1.55	0.63	0.5	25.4	20.6
UKOCUM100	0.75	1/2	5/16	.35	1.8	1.4	1.0	2.0	1.80	0.88	0.5	28.5	23.8
UKOCUM125	0.75	1/2	5/16	.35	2.2	1.5	1.0	2.4	2.00	1.125	0.6	31.7	26.9

\*\*\* Including precision dowel holes



±0.1(adjusting allowance)

## Table of Components

No.	Description	Qty.	Material and Remark
q	Guide Rail	2	S45C (I C45 A 1045)
w	Inclined Pin Holder	1	S45C (I C45 A 1045)
e	Slide Plate	2	Bronze with Graphite
r	Loosening Lock	1	SK5M
t	Lock Plate	2	SS400 (A A36-89b, A283-88)
y	Round Head Screw	4	SCM435 (I 34CrMo4 A 4137)
u	Adjusting Rod	1	S45C (I C45 A 1045)
i	Lock Nut	1	S45C (I C45 A 1045)



# U Couplings & T-Gibs



## U Couplings

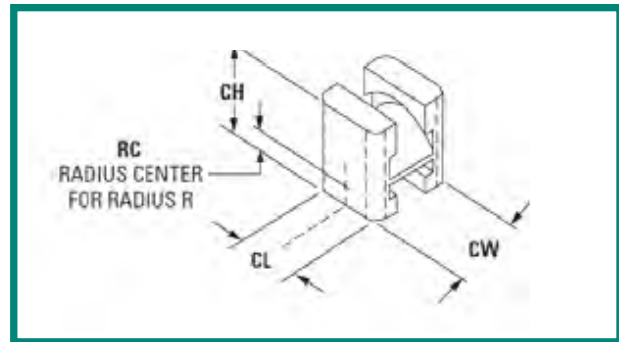
**Material: H-13 Steel**

**Hardness 38-42 RC**

**⚠ Enquire about Custom Unilifter Blades ⚠**

### U-COUPPLINGS - INCH

SERIES	ITEM NO.	CW	CL	CH	RC	R
0.250	ULCM50	0.500	0.437	0.625	0.125	0.250
0.500	ULCU87	0.875	0.750	0.875	0.187	0.406
1.000	ULCX175	1.750	1.500	1.656	0.125	0.875



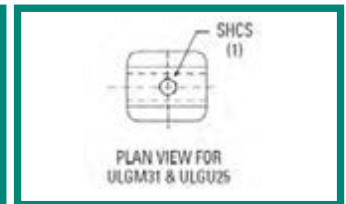
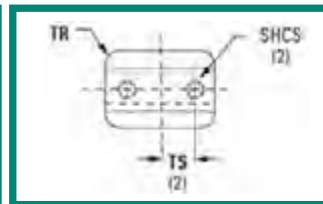
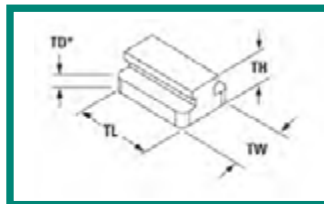
### U-COUPPLINGS - METRIC *Dimensions in mm*

SERIES	ITEM NO.	CW	CL	CH	RC	R
10	ULCMM22	22.00	18.00	25.00	6.00	10

## T-Gibs

**Material: H-13 Steel**

**Hardness 38-42 RC**



### T-GIBS - INCH *Dimensions in mm*

SERIES	TW +.000 -.001	TH +.010 -.000	TD* +.010 -.000	TR	SHCS	ITEM NUMBER	TS	TL +.000 -.010	TRAVEL ALLOWED
0.250	0.500	0.500	0.344	0.093	#10-32x1"	ULGM31	CL	0.750	5/16
						ULGM100	0.5	1.500	1"
0.500	0.875	0.468	0.219	0.187	1/4-20x3/4	ULGU25	CL	1.000	1/4
						ULGU50	0.375	1.250	1/2
						ULGU100	0.625	1.750	1"
1.000	1.750	0.615	0.250	0.312	3/8-16x1 1/4	ULGx50	0.625	2.000	1/2
						ULGx100	0.875	2.500	1"
						ULGx250	1.375	4.000	2 1/2

### T-GIBS - METRIC *Dimensions in mm*

SERIES	TW +.000 -.025	TH +.25 -.00	TD* +.25 -.00	TR	SHCS	ITEM NUMBER	TS	TL +.00 -.25	TRAVEL ALLOWED
10	22	13	6.00	5	M5 X 20	ULGMM10	10	33	10
						ULGMM30	15	52	30

**\*NOTE: Thickness TD is provided with an additional .010" (or .25mm) for final adjustment**



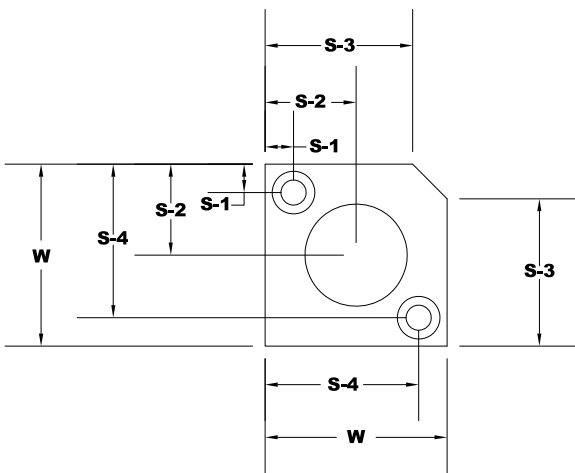
# CPLP-PLP Parting Line Pads

- **Customs Available Upon Request**

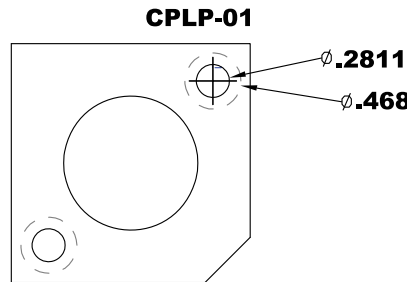
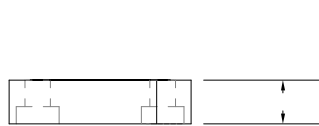


Material: 4140 - 50RC

## Corner Parting Line Pad



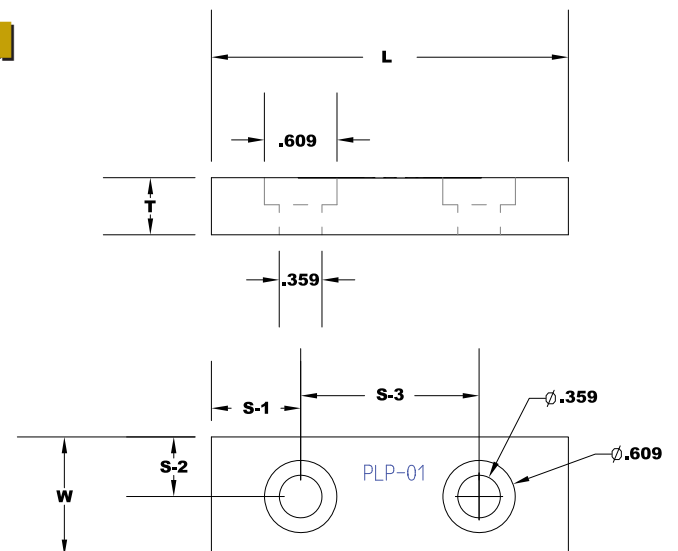
Part#	"T" +.001	"W" -.004 +.008	"S-1"	"S-2"	"S-3"	"S-4"
CPLP-1.0	.480"	2"	0.312	0.5	1.5	1.687
CPLP-1.5	.480"	3"	0.5	0.75	1.5	2.5
CPLP-2.0	.480"	4"	0.075	1	2.5	3.25
CPLP-2.5	.480"	5"	1"	1.25	3.5	4"
CPLP-3.0	.480"	6"	1"	1.5	4.5	5"



- **CPLP-01**  
Screw Hole 02811 x 0.468
- **CPLP-1.5 to CPLP-3.0**  
Screw Hole 02811 x 0.468

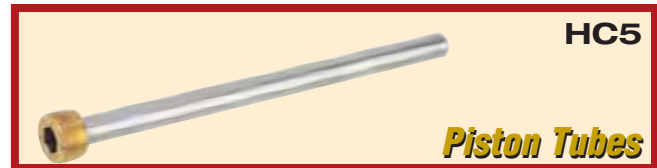
## Parting Line Pad

Part#	"T" +.001	"W" -.004 +.008	"L" -.004 +.008	"S-1"	"S-2"	"S-3"
PLP-01	.480"	1"	3"	0.75	0.5	1.5
PLP-02	.480"	1-1/2"	3"	0.75	0.75	1.5
PLP-03	.480"	2"	4"	0.75	1	2.5
PLP-04	.480"	2-1/2"	5"	0.75	1.25	3.5
PLP-05	.480"	3"	6"	0.75	1.5	4.5



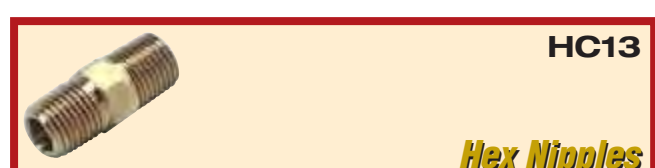
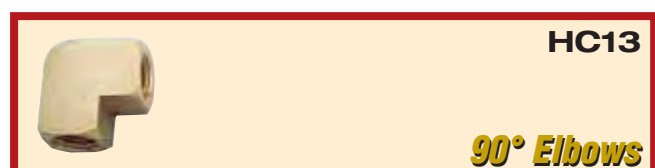
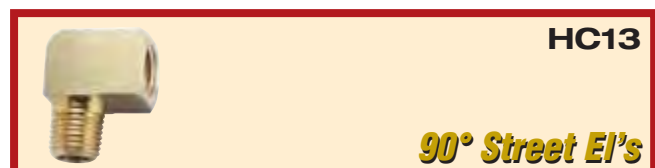
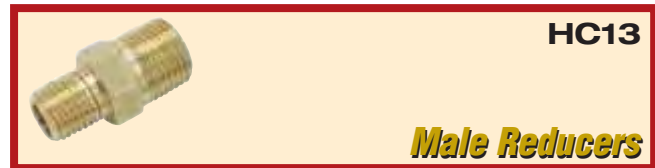


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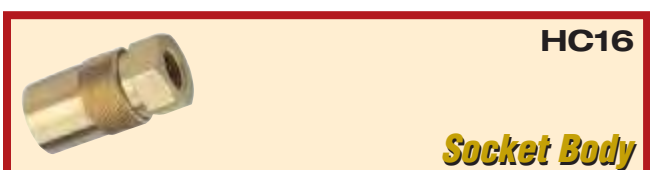
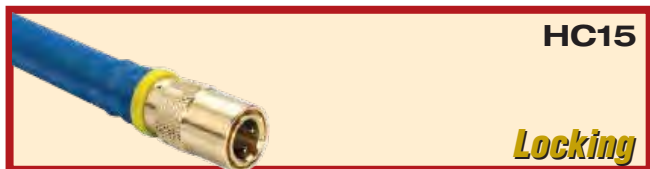
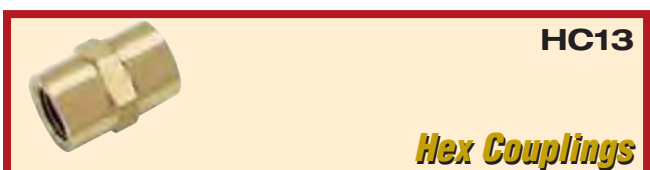


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# Index







# Index



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**Threadless Plugs**



**HC26,HC27,HC28**  
**Temperature Control Systems**



**HC21**  
**O-Ring Plugs**



**HC29**  
**360° Manifolds**



**HC21**  
**Heavy Duty Plugs/BSP Plugs/Stop Plugs**



**HC30,HC31,HC32**  
**Compound Flexible Water Manifold System**



**HC22**  
**Pipe Plug Diverters**



**HC33**  
**Specials**



**HC22**  
**Combination Hose Inserts**



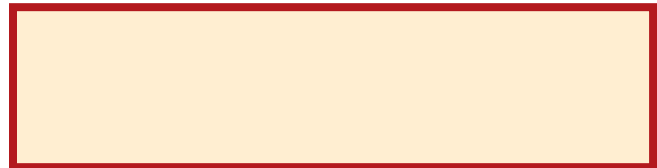

**HC23,HC24**  
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**Isobar® Heat Pipes**




**HC25**  
**GLASTHERM®**  
**High Temperature Insulator Sheets**




**HC25**  
**Locating Rings for Insulator Sheets**



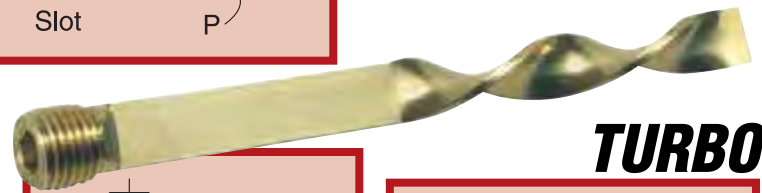
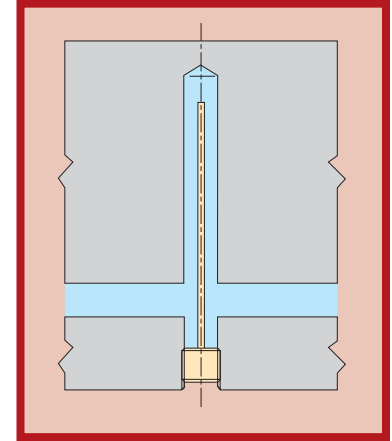
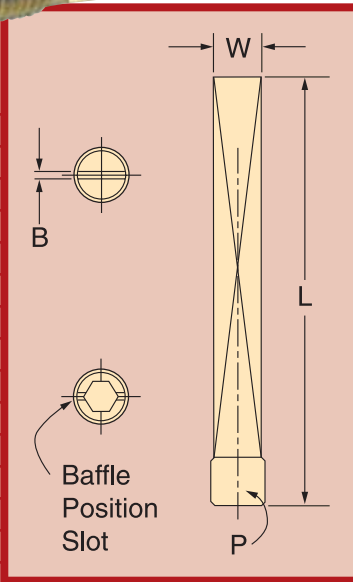


# Brass Baffles



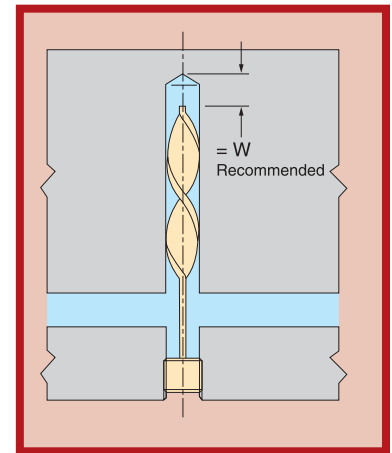
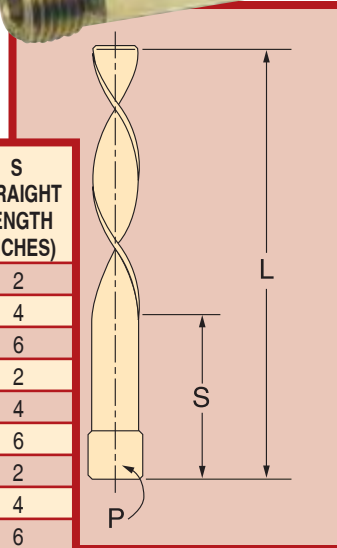
## STRAIGHT

CATALOG NUMBER	P PLUG SIZE (NPT)	L OVERALL LENGTH (INCHES)	W BLADE WIDTH (-.005) (-.015)	DRILL SIZE	B BLADE THICKNESS
BA0604	1/16	4	1/4	1/4	.057
BA0608	1/16	8	1/4	1/4	.057
BA0612	1/16	12	1/4	1/4	.057
BA1204	1/8	4	5/16	5/16	.057
BA1208	1/8	8	5/16	5/16	.057
BA1212	1/8	12	5/16	5/16	.057
BA2505	1/4	5	7/16	7/16	.085
BA2510	1/4	10	7/16	7/16	.085
BA2515	1/4	15	7/16	7/16	.085
BA3706	3/8	6	9/16	9/16	.093
BA3712	3/8	12	9/16	9/16	.093
BA3718	3/8	18	9/16	9/16	.093
BA5008	1/2	8	11/16	11/16	.093
BA5016	1/2	16	11/16	11/16	.093
BA7512	3/4	12	15/16	15/16	.093
BA7520	3/4	20	15/16	15/16	.093
BA7536	3/4	36	15/16	15/16	.093
BA9016	1"	16	1-1/8	1-1/8	.102
BA9024	1"	24	1-1/8	1-1/8	.102
BA9036	1"	36	1-1/8	1-1/8	.102




## TURBO

CATALOG NUMBER	P PLUG SIZE (NPT)	L OVERALL LENGTH (INCHES)	W BLADE WIDTH (-.005) (-.015)	DRILL SIZE	B BLADE THICKNESS	S STRAIGHT LENGTH (INCHES)
TB0604	1/16	4	1/4	1/4	.050	2
TB0608	1/16	8	1/4	1/4	.050	4
TB0612	1/16	12	1/4	1/4	.050	6
TB1204	1/8	4	5/16	5/16	.050	2
TB1208	1/8	8	5/16	5/16	.050	4
TB1212	1/8	12	5/16	5/16	.050	6
TB2505	1/4	5	7/16	7/16	.080	2
TB2510	1/4	10	7/16	7/16	.080	4
TB2515	1/4	15	7/16	7/16	.080	6
TB3706	3/8	6	9/16	9/16	.090	2
TB3712	3/8	12	9/16	9/16	.090	4
TB3718	3/8	18	9/16	9/16	.090	6
TB5008	1/2	8	11/16	11/16	.090	3
TB5016	1/2	16	11/16	11/16	.090	5
TB7512	3/4	12	15/16	15/16	.090	4
TB7520	3/4	20	15/16	15/16	.090	6
TB9016	1"	16	1-1/8	1-1/8	.105	5
TB9024	1"	24	1-1/8	1-1/8	.105	8



## MATERIAL

CATALOG NUMBER	(REF.) PLUG SIZE (NPT)	OVERALL LENGTH (INCHES)	BLADE WIDTH (-.005) (-.015)	BLADE THICKNESS
BM06-025-36	1/16	36	1/4	.050
BM12-031-36	1/8	36	5/16	.050
BM25-043-36	1/4	36	7/16	.080
BM37-056-36	3/8	36	9/16	.090
BM50-068-36	1/2	36	11/16	.090
BM75-090-36	3/4	36	29/32	.090
BM75-093-36	3/4	36	15/16	.090
BM90-112-36	1"	36	1-1/8	.105

- Flush-seal (7/8 taper) brass pipe plugs are standard.
- Steel, stainless, and 3/4 taper are available.
- Turbo baffles create turbulent cooling action and keeps blade centered in the cooling channel.
- Patented  technology allows 300% more wrenching torque. (Not on 1" baffles.)

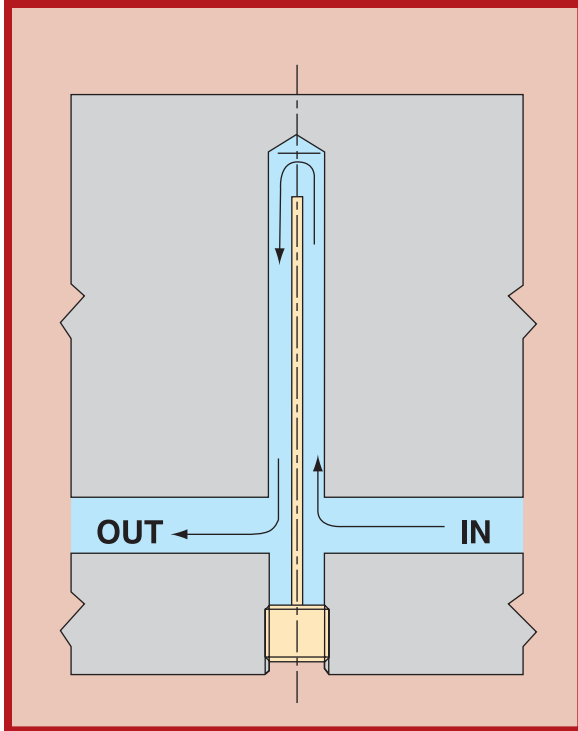
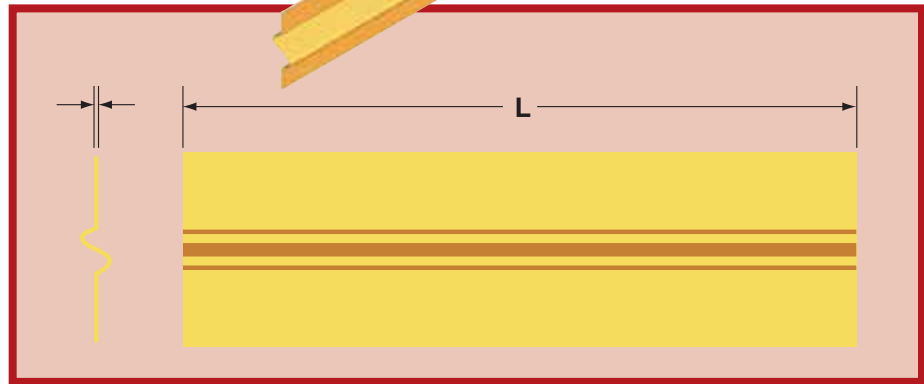
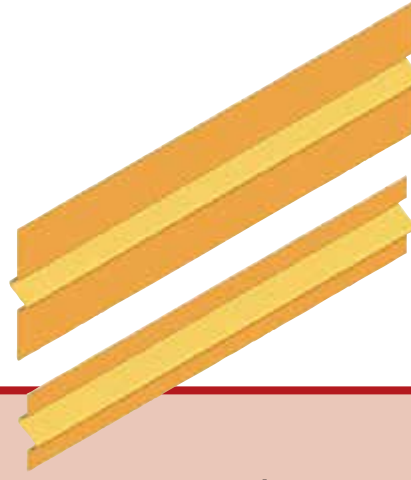


# E Series Brass Baffles

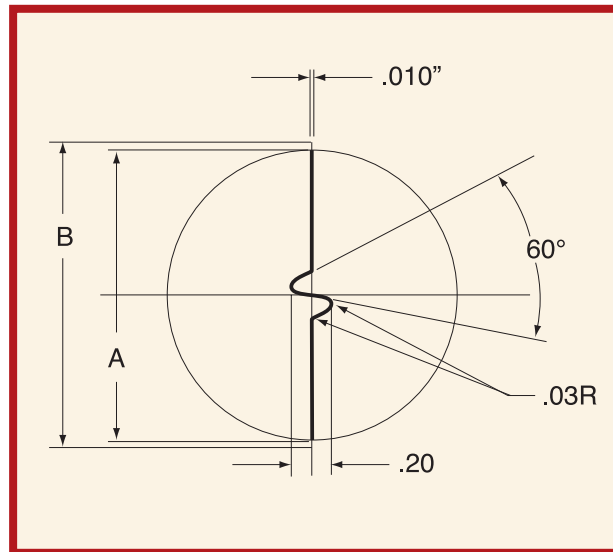
DMS "E-Series" brass baffles are an economical way to baffle longer water lines.

- Will not twist in hole due to its configuration.
- Will not rotate out of its located position.
- Recommended for use in Die Cast Dies where high temperatures are used.

Simply cut to the required length and insert slightly short of final depth. These baffles will then be forced home by a pipe plug or block.



CATALOG NUMBER	A	B	PIPE THREAD	DRILL SIZE	LENGTH ± .004
EB25-48	0.437	0.446	1/4NPT	7/16	48"
EB37-48	0.562	0.576	3/8NPT	9/16	48"
EB50-48	0.688	0.703	1/2NPT	11/16	48"
EB75-48	0.906	0.926	3/4NPT	15/16	48"
EB100-48	1.125	1.150	1"NPT	1-1/8	48"

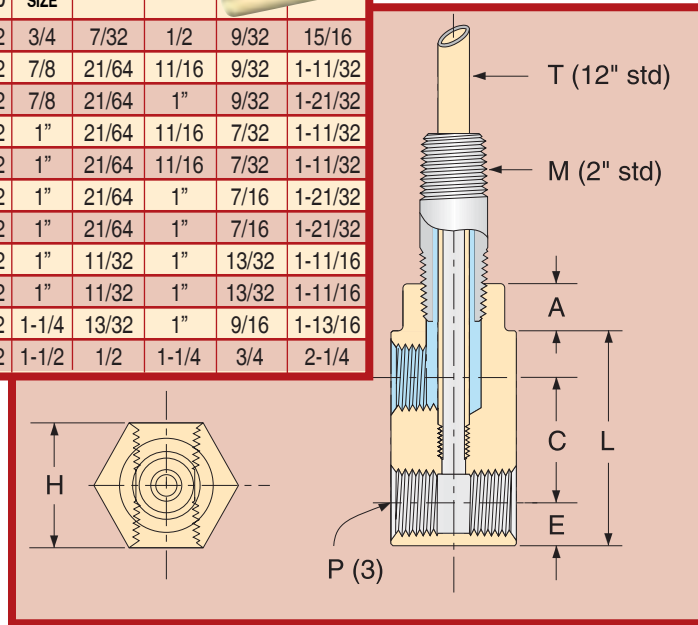




# Standard Cascades

## ASSEMBLIES

CATALOG NUMBER	M PIPE NIPPLE (NPT)	P PIPE TAP SIZE (NPT)	T BRASS TUBE O.D.	BRASS TUBE INCLUDED	HEX SIZE	E	C	A	L
16N	1/8	1/16	3/16	187T-12	3/4	7/32	1/2	9/32	15/16
186N	1/8	1/8	3/16	187T-12	7/8	21/64	11/16	9/32	1-11/32
181N	1/8	1/8	3/16	187T-12	7/8	21/64	1"	9/32	1-21/32
146N	1/4	1/8	1/4	250T-12	1"	21/64	11/16	7/32	1-11/32
146N-4	1/4	1/4	1/4	250T-12	1"	21/64	11/16	7/32	1-11/32
141N	1/4	1/8	1/4	250T-12	1"	21/64	1"	7/16	1-21/32
141N-4	1/4	1/4	1/4	250T-12	1"	21/64	1"	7/16	1-21/32
381N	3/8	1/8	5/16	312T-12	1"	11/32	1"	13/32	1-11/16
381N-4	3/8	1/4	5/16	312T-12	1"	11/32	1"	13/32	1-11/16
121N-4	1/2	1/4	7/16	437T-12	1-1/4	13/32	1"	9/16	1-13/16
341N-4	3/4	3/8	5/8	625T-12	1-1/2	1/2	1-1/4	3/4	2-1/4



- Assemblies include brass head, 12" brass tube, 2" long galvanized pipe nipple, and brass pipe plug.
- Order extra length brass tubes below.
- Cascade assemblies are available in special pipe tap and tube combinations.

## HEADS

CATALOG NUMBER	TUBE THREAD SIZE	BRASS TUBE NUMBER
16H	10-32	187T-
186H	10-32	187T-
181H	10-32	187T-
146H	1/4-28	250T-
146H-4	1/4-28	250T-
141H	1/4-28	250T-
141H-4	1/4-28	250T-
381H	5/16-24	312T-
381H-4	5/16-24	312T-
121H-4	7/16-20	437T-
341H-4	5/8-18	625T-



- For use with standard brass tubes.
- All dimensions are same as above assembly chart for corresponding catalog number.
- Supplied with brass pipe plug.
- Special pipe tap sizes, tube thread sizes and hole locations are available.
- Use brass tubes on page HC5.

## HIGH FLOW HEADS

CATALOG NUMBER	TUBE THREAD SIZE	HIGH FLOW TUBE NUMBER
16H-HFT	1/4-28	HF187T-
186H-HFT	1/4-28	HF187T-
181H-HFT	1/4-28	HF187T-
146H-HFT	5/16-24	HF250T-
146H-4-HFT	5/16-24	HF250T-
141H-HFT	5/16-24	HF250T-
141H-4-HFT	5/16-24	HF250T-
381H-HFT	3/8-24	HF312T-
381H-4-HFT	3/8-24	HF312T-
121H-4-HFT	1/2-20	HF437T-



- For use with high flow stainless tubes.
- All dimensions are same as above assembly chart except for tube thread size.
- Supplied with brass pipe plug.
- Special pipe tap sizes, tube thread sizes and hole locations are available.
- Use high flow stainless tubes on page HC5.



# High Flow Cascades

Increased inlet areas produce higher flow rates.

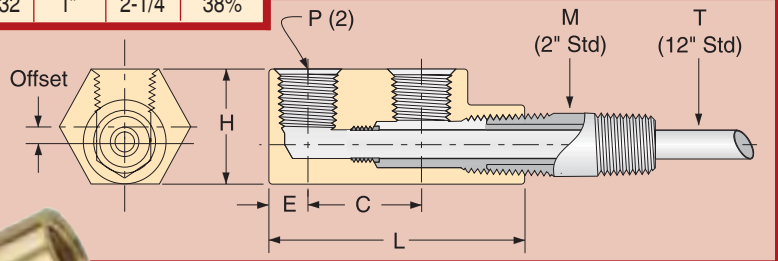


## ASSEMBLIES

CATALOG NUMBER	M PIPE NIPPLE (NPT)	P PIPE TAP SIZE (NPT)	T HIGH FLOW TUBE O.D.	T HIGH FLOW TUBE INCLUDED	H HEX SIZE	OFFSET	E	C	L	% ACTUAL FLOW INCREASE
HF16N	1/16	1/16	1/8	HF125T-12	5/8	3/32	1/4	1/2	1-1/4	-
HF186N	1/8	1/8	3/16	HF187T-12	3/4	3/32	5/16	11/16	1-5/8	64%
HF181N	1/8	1/8	3/16	HF187T-12	3/4	3/32	5/16	1"	1-15/16	64%
HF146N-4	1/4	1/4	1/4	HF250T-12	1"	5/32	11/32	11/16	1-7/8	48%
HF141N-4	1/4	1/4	1/4	HF250T-12	1"	5/32	11/32	1"	2-3/16	48%
HF381N-4	3/8	1/4	3/8	HF375T-12	1-1/8	1/8	11/32	1"	2-1/4	38%

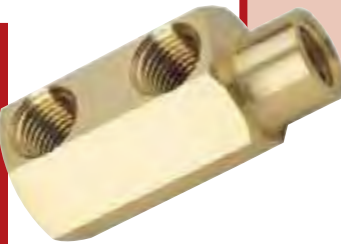
- Up to 64% higher flow rates than standard cascades.
- Offset design provides more sealing threads without pipe interference.
- Assemblies include brass head, 12" high flow stainless tube, and 2" long galvanized pipe nipple.

If cooling rates are limiting cycle times, or connection leakage is a problem, the High Flow Cascade should solve the problem.



## HEADS

CATALOG NUMBER	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
HF16H	10-32	HF125T-
HF186H	1/4-28	HF187T-
HF181H	1/4-28	HF187T-
HF146H-4	5/16-24	HF250T-
HF141H-4	5/16-24	HF250T-
HF381H-4	7/16-20	HF375T-



- All dimensions are same as above assembly chart.
- Special pipe tap sizes and tube combinations are available.
- Use high flow stainless tubes on page HC5.

# Compact Cascades

## ASSEMBLIES

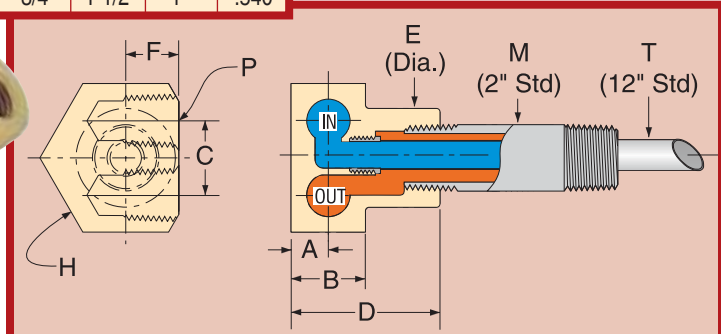


CATALOG NUMBER	M PIPE NIPPLE (NPT)	P IN/OUT PIPE (NPT)	T HIGH FLOW TUBE O.D.	HIGH FLOW TUBE INCLUDED	H HEX SIZE	A	B	C	D	E	F
ET1816	1/8	1/16	3/16	HF187T-12	15/16	7/32	7/16	1/2	1"	5/8	.330
ET1418	1/4	1/8	1/4	HF250T-12	1-1/4	5/16	5/8	11/16	1-1/4	3/4	.410
ET1414	1/4	1/4	1/4	HF250T-12	1-1/2	3/8	3/4	3/4	1-1/2	7/8	.540
ET3814	3/8	1/4	5/16	HF312T-12	1-1/2	3/8	3/4	3/4	1-1/2	1"	.540

- Assemblies include brass head, 12" high flow stainless tube, and 2" long galvanized pipe nipple.
- In/Out connections are positioned sideways for mounting in tight spaces or thin mold plates.

## HEADS

CATALOG NUMBER	M PIPE NIPPLE (NPT)	P IN/OUT PIPE (NPT)	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
ET1816H	1/8	1/16	1/4-28	HF187T-
ET1418H	1/4	1/8	5/16-24	HF250T-
ET1414H	1/4	1/4	5/16-24	HF250T-
ET3814H	3/8	1/4	3/8-24	HF312T-



- All dimensions are same as above assembly chart.
- Use high flow stainless tubes on page HC5.

Compact Cascades provide maximum cooling rates with improved design and High Flow Tubes.





# High Flow Tubes

INCREASE FLOW UP TO 300%



TUBE O.D.	TUBE I.D.	THREAD SIZE	THREAD LENGTH	CATALOG NUMBER			
				12"	18"	24"	36"
.090	.076	5-44	1/8	HF093T-12	HF093T-18	HF093T-24	HF093T-36
.090	.076	10-32	3/16	JHF093T-12	JHF093T-18	JHF093T-24	JHF093T-36
.125	.109	10-32	3/16	HF125T-12	HF125T-18	HF125T-24	HF125T-36
.125	.109	1/4-28	1/4	JHF125T-12	JHF125T-18	JHF125T-24	JHF125T-36
.187	.167	1/4-28	1/4	HF187T-12	HF187T-18	HF187T-24	HF187T-36
.187	.167	5/16-24	5/16	JHF187T-12	JHF187T-18	JHF187T-24	JHF187T-36
.250	.230	5/16-24	5/16	HF250T-12	HF250T-18	HF250T-24	HF250T-36
.250	.230	3/8-24	3/8	JHF250T-12	JHF250T-18	JHF250T-24	JHF250T-36
.312	.288	3/8-24	3/8	HF312T-12	HF312T-18	HF312T-24	HF312T-36
.312	.288	7/16-20	7/16	JHF312T-12	JHF312T-18	JHF312T-24	JHF312T-36
.365	.340	7/16-20	7/16	HF375T-12	HF375T-18	HF375T-24	HF375T-36
.365	.340	1/2-20	1/2	JHF375T-12	JHF375T-18	JHF375T-24	JHF375T-36
.427	.397	1/2-20	1/2	HF437T-12	HF437T-18	HF437T-24	HF437T-36

- All stainless construction for high strength and durability.
- Cut to exact lengths at no charge.
- We stock over 150 sizes of thin wall stainless tube.
- We build stepped tube assemblies and custom threaded tubes to your print.

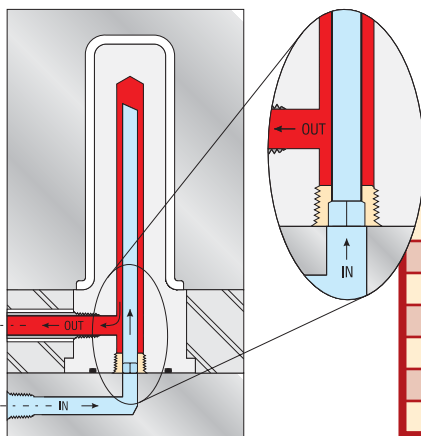
## Standard Tubes



TUBE O.D.	TUBE I.D.	THREAD SIZE	THREAD LENGTH	CATALOG NUMBER			
				12"	18"	24"	36"
.125	.062	5-44	3/16	125T-12	125T-18	125T-24	125T-36
.187	.123	10-32	3/16	187T-12	187T-18	187T-24	187T-36
.250	.170	1/4-28	1/4	250T-12	250T-18	250T-24	250T-36
.312	.210	5/16-24	5/16	312T-12	312T-18	312T-24	312T-36
.375	.273	3/8-24	3/8	375T-12	375T-18	375T-24	375T-36
.437	.307	7/16-20	7/16	437T-12	437T-18	437T-24	437T-36
.625	.495	5/8-18	5/8	625T-12	625T-18	625T-24	625T-36

- Tubes 18" and longer have both ends threaded.
- Half-hard temper for reliable performance.
- Also available in stainless steel.
- Bulk tube available.

## Piston Tubes



Coolant flows through hex socket and high flow stainless tube.

High-Flow Stainless Tube gives maximum cooling rates.

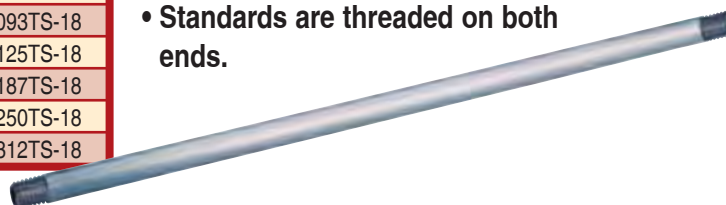
PIPE SIZE (NPT)	TUBE O.D.	TUBE I.D.	CATALOG NUMBER			
			12"	24"	36"	48"
1/16	.125	.109	PT16-12	PT16-24	PT16-36	PT16-48
1/8	.187	.167	PT18-12	PT18-24	PT18-36	PT18-48
1/4	.250	.230	PT14-12	PT14-24	PT14-36	PT14-48
3/8	.365	.345	PT38-12	PT38-24	PT38-36	PT38-48
1/2	.365	.340	PT12-12	PT12-24	PT12-36	PT12-48
3/4	.427	.397	PT34-12	PT34-24	PT34-36	PT34-48

- Precision brazed assembly provides high strength and reliable performance.
- Flow thru pipe plug is available in custom sizes and materials.

TUBE O.D.	TUBE I.D.	THREAD SIZE	CATALOG NUMBER
.093	.077	NO THREADS	093TS-18
.125	.062	5-44	125TS-18
.187	.123	10-32	187TS-18
.250	.170	1/4-28	250TS-18
.312	.210	5/16-24	312TS-18

- Stainless tubes are 18" overall.
- Standards are threaded on both ends.

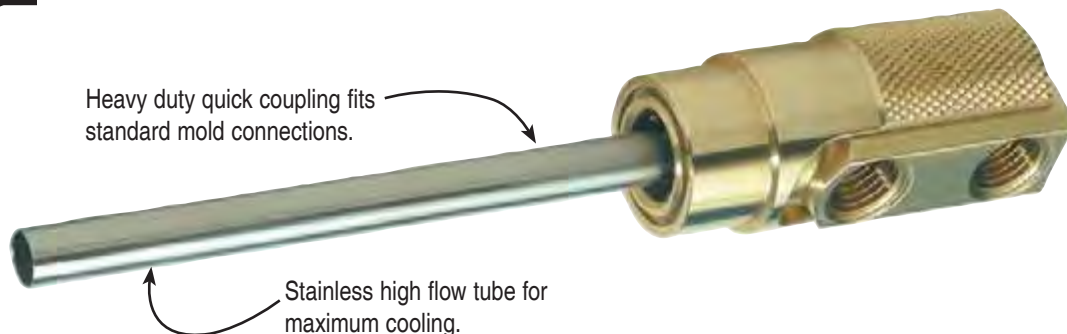
## Stainless Tubes







# Quick-Coupler Cascades



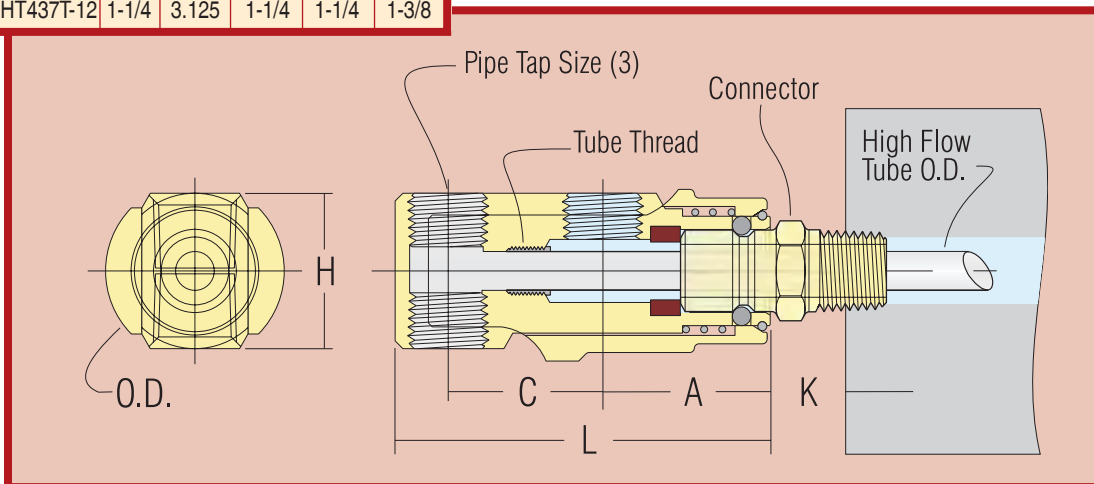
Heavy duty quick coupling fits standard mold connections.

Stainless high flow tube for maximum cooling.

## ASSEMBLIES

CATALOG NUMBER	P PIPE TAP SIZE (NPT)	T HIGH FLOW TUBE THREAD	HIGH FLOW TUBE INCLUDED	H HEX KEY SIZE	L	C	A	D ACTUAL O.D.
SC186N	1/8	1/4-28	HF187T-12	13/16	1.937	11/16	31/32	7/8
SC181N	1/8	1/4-28	HT187T-12	13/16	2.250	1"	31/32	7/8
SC146N-4	1/4	5/16-24	HT250T-12	1"	2.187	11/16	1-5/32	1-1/8
SC141N-4	1/4	5/16-24	HT250T-12	1"	2.500	1"	1-5/32	1-1/8
SC121N-4	1/4	1/2-20	HT437T-12	1-1/4	3.125	1-1/4	1-1/4	1-3/8
SC121N-6	3/8	1/2-20	HT437T-12	1-1/4	3.125	1-1/4	1-1/4	1-3/8

- Can be installed and removed without disconnecting coolant lines.
- Viton Seals standard.
- High flow design provides maximum cooling rates.
- 12" high flow stainless tube included.



## HEADS

CATALOG NUMBER	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
SC186H	1/4-28	HF187T-
SC181H	1/4-28	HF187T-
SC146H-4	5/16-24	HF250T-
SC141H-4	5/16-24	HF250T-
SC121H-4	1/2-20	HF437T-
SC121H-6	1/2-20	HF437T-



- Aids in quick and efficient assembly and disassembly of cooling circuit.
- Heavy duty all brass and stainless steel construction.
- Dimensions are same as above assembly chart for corresponding catalog number.
- Use high flow tubes on page HC5.



# HexKey Cascades

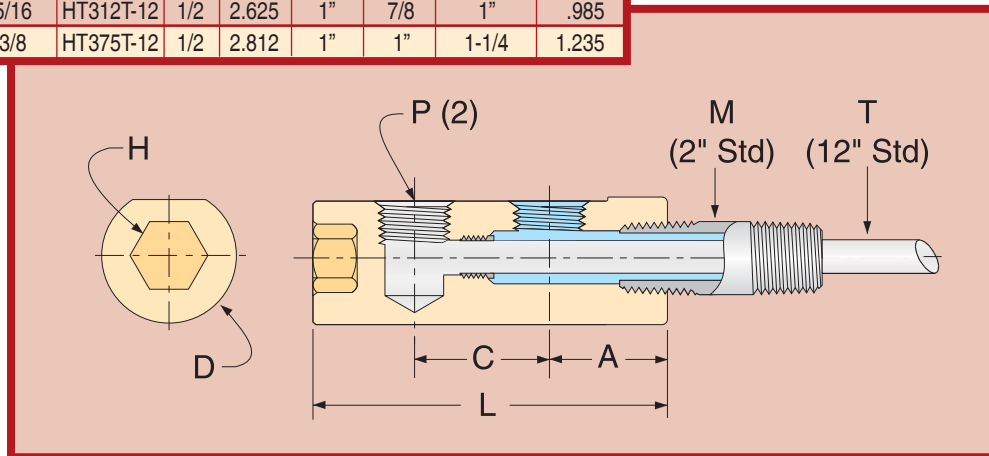
HexKey Cascades are round, and install with an Allen wrench. They may be installed with minimal clearance or very close together where space is limited.



## ASSEMBLIES

CATALOG NUMBER	M PIPE NIPPLE (NPT)	P PIPE TAP SIZE (NPT)	T HIGH FLOW TUBE O.D.	HIGH FLOW TUBE INCLUDED	H HEX KEY SIZE	L	C	A	NOMINAL CLEARANCE DRILL	D ACTUAL O.D.
E16N	1/16	1/16	1/8	HF125T-12	5/16	1.625	9/16	1/2	5/8	.610
E16N-2	1/8	1/16	3/16	HT187T-12	3/8	1.687	9/16	9/16	3/4	.735
E186N	1/8	1/8	3/16	HT187T-12	3/8	1.875	11/16	9/16	7/8	.860
E181N	1/8	1/8	3/16	HT187T-12	3/8	2.187	1"	9/16	7/8	.860
E146N	1/4	1/8	1/4	HT250T-12	1/2	2.187	11/16	13/16	1"	.985
E146N-4	1/4	1/4	1/4	HT250T-12	1/2	2.312	11/16	7/8	1"	.985
E141N	1/4	1/8	1/4	HT250T-12	1/2	2.500	1"	13/16	1"	.985
E141N-4	1/4	1/4	1/4	HT250T-12	1/2	2.625	1"	7/8	1"	.985
E381N-4	3/8	1/4	5/16	HT312T-12	1/2	2.625	1"	7/8	1"	.985
E121N-4	1/2	1/4	3/8	HT375T-12	1/2	2.812	1"	1"	1-1/4	1.235

- Assemblies include brass head, 12" high flow stainless tube, and 2" long galvanized pipe nipple.
- Easy to install and remove.



## HEADS

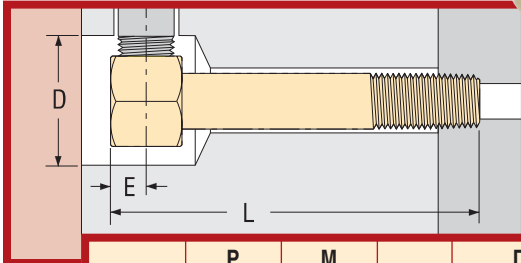
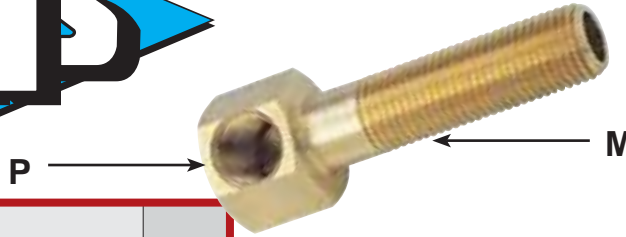
CATALOG NUMBER	HIGH FLOW TUBE THREAD SIZE	USE HIGH FLOW TUBE NUMBER
E16H	10-32	HF125T-
E16H-2	1/4-28	HF187T
E186H	1/4-28	HF187T-
E181H	1/4-28	HF187T-
E146H	5/16-24	HF250T-
E146H-4	5/16-24	HF250T-
E141H	5/16-24	HF250T-
E141H-4	5/16-24	HF250T-
E381H-4	3/8-24	HF312T-
E121H-4	7/16-20	HF375T-



- All dimensions are same as above assembly chart.
- HexKey Cascade heads use High Flow stainless tubes on page HC5.



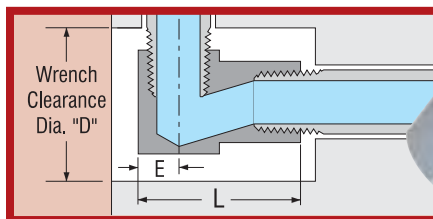
# Brass Extension Elbows



- Positive socket wrench installation.
- One piece construction ensures positive alignment, and complete removal.
- Easy length adjustment (see Brass Extension Plugs).
- Custom elbows are available in exact lengths and a wide variety of thread combinations. (Including BSP)

ELBOW NUMBER	P TAP SIZE FEMALE (NPT)	M PIPE SIZE MALE (NPT)	HEX SIZE	D WRENCH CLEARANCE DIAMETER	E	OVERALL LENGTH "L"							
						2-1/2"	4"	5-1/2"	7"	8-1/2"	10"	11-1/2"	13"
18B	1/8	1/8	3/4	1-1/4	9/32	X025	X040	X055	X070	X085	X100	X115	X130
1814B	1/8	1/4	3/4	1-1/4	9/32	X025	X040	X055	X070	X085	X100	X115	X130
14B	1/4	1/4	7/8	1-3/8	11/32	X025	X040	X055	X070	X085	X100	X115	X130
1438B	1/4	3/8	7/8	1-3/8	11/32	X025	X040	X055	X070	X085	X100	X115	X130
38B	3/8	3/8	1"	1-1/2	1/2	X025	X040	X055	X070	X085	X100	X115	X130
50B	1/2	1/2	1-1/4	1-3/4	5/8	X025	X040	X055	X070	X085	X100	X115	X130

To order, add overall length to catalog number. Example: 18BX025



# Hex Elbows

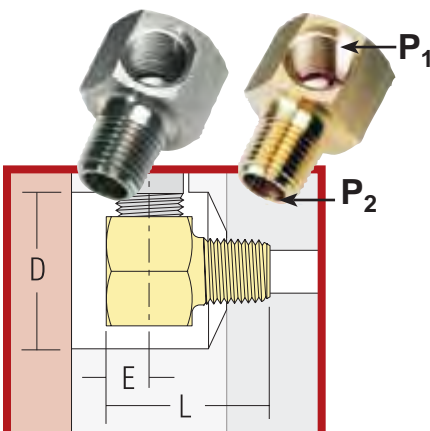
- Available in brass or zinc plated steel.
- Easy socket wrench installation and removal.
- Angular flow path allows connecting fittings to be torqued tight without choking off flow.

• Requires much smaller clearance diameter than standard pipe elbows.

ELBOW NUMBER	P <sub>1</sub> TAP SIZE FEMALE (NPT)	P <sub>2</sub> TAP SIZE FEMALE (NPT)	L	E	D WRENCH CLEARANCE DIAMETER	HEX SIZE	CATALOG NUMBER	
							STEEL	BRASS
16S	1/16	1/16	13/16	7/32	1"	9/16	16S-S	16S-B
18S	1/8	1/8	1"	9/32	1-1/4	3/4	18S-S	18S-B
1814S	1/8	1/4	1-1/4	9/32	1-1/4	3/4	1814S-S	1814S-B
14S	1/4	1/4	1-3/8	11/32	1-3/8	7/8	14S-S	14S-B
1438S	1/4	3/8	1-3/8	11/32	1-3/8	7/8	1438S-S	1438S-B
38S	3/8	3/8	1-5/8	1/2	1-1/2	1"	38S-S	38S-B
50S	1/2	1/2	1-7/8	9/16	1-7/8	1-1/4	50S-S	50S-B
75S	3/4	3/4	2-1/4	5/8	2-1/4	1-1/2	75S-S	75S-B

# Male Hex Elbows

- Available in brass or plated steel.
- Easy socket wrench installation and removal.
- Full flow path allows connecting fittings to be torqued tight without choking off flow.
- Requires minimum clearance diameter.



ELBOW NUMBER	P <sub>1</sub> TAP SIZE FEMALE (NPT)	P <sub>2</sub> TAP SIZE MALE (NPT)	L	E	D WRENCH CLEARANCE DIAMETER	HEX SIZE	CATALOG NUMBER	
							STEEL	BRASS
16MS	1/16	1/16	13/16	7/32	1"	9/16	16MS-S	16MS-B
18MS	1/8	1/8	1"	9/32	1-1/4	3/4	18MS-S	18MS-B
1814MS	1/8	1/4	1-1/4	9/32	1-1/4	3/4	1814MS-S	1814MS-B
14MS	1/4	1/4	1-3/8	11/32	1-3/8	7/8	14MS-S	14MS-B
1438MS	1/4	3/8	1-3/8	11/32	1-3/8	7/8	1438MS-S	1438MS-B
38MS	3/8	3/8	1-5/8	1/2	1-1/2	1"	38MS-S	38MS-B
50MS	1/2	1/2	1-7/8	9/16	1-7/8	1-1/4	50MS-S	50MS-B
75MS	3/4	3/4	2-1/4	5/8	2-1/4	1-1/2	75MS-S	75MS-B



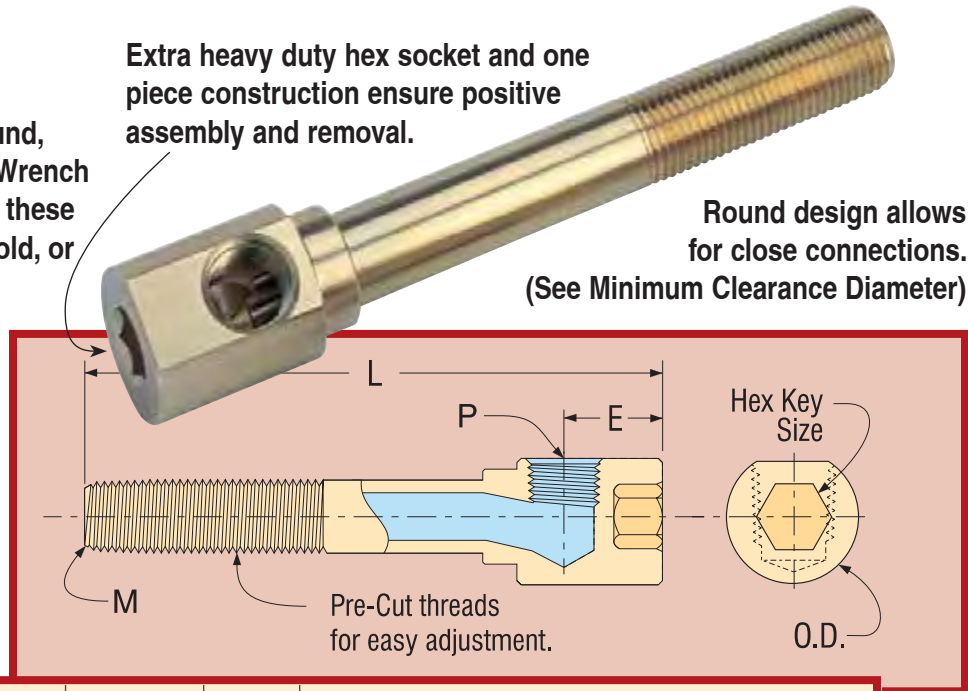
# HexKey Extension Elbows

HexKey Extension Elbows are round, and install with an Allen wrench. Wrench clearance is not required, making these elbows ideal for use inside the mold, or anywhere space is limited.

- Angular flow path allows connecting pipe fittings to be torqued tight without choking off flow.
- Accurate length adjustments are easy with the Brass Extension Plug thread system.

Extra heavy duty hex socket and one piece construction ensure positive assembly and removal.

Round design allows for close connections. (See Minimum Clearance Diameter)

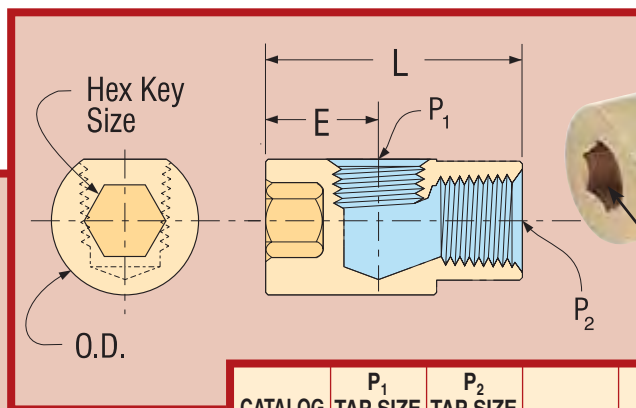
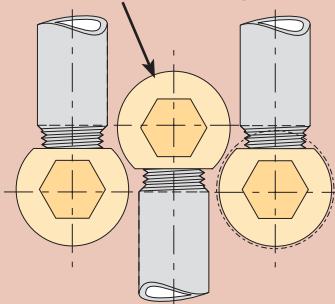


CATALOG NUMBER	P TAP SIZE FEMALE (NPT)	M PIPE SIZE MALE (NPT)	E	O.D.	MINIMUM CLEARANCE DIAMETER	HEX KEY SIZE	OVERALL LENGTH "L"							
							2-1/2	4"	5-1/2	7"	8-1/2	10"	11-1/2	13"
EKL16	1/16	1/16	.531	.552	9/16	1/4	X025	X040	X055	X070	X085	X100	X115	X130
EKL18	1/8	1/8	.580	.615	5/8	5/16	X025	X040	X055	X070	X085	X100	X115	X130
EKL14	1/4	1/4	.660	.860	7/8	3/8	X025	X040	X055	X070	X085	X100	X115	X130
EKL38	3/8	3/8	.780	.985	1"	1/2	X025	X040	X055	X070	X085	X100	X115	X130
EKL50	1/2	1/2	.940	1.235	1-1/4	1/2	X025	X040	X055	X070	X085	X100	X115	X130

To order, add overall length to catalog number. Example: EKL16X025

- Angular coolant path prevents fitting interference at assembly and guarantees full flow. (See Drawing)

Compact, round design allows for close connections. (See Minimum Clearance Diameter)



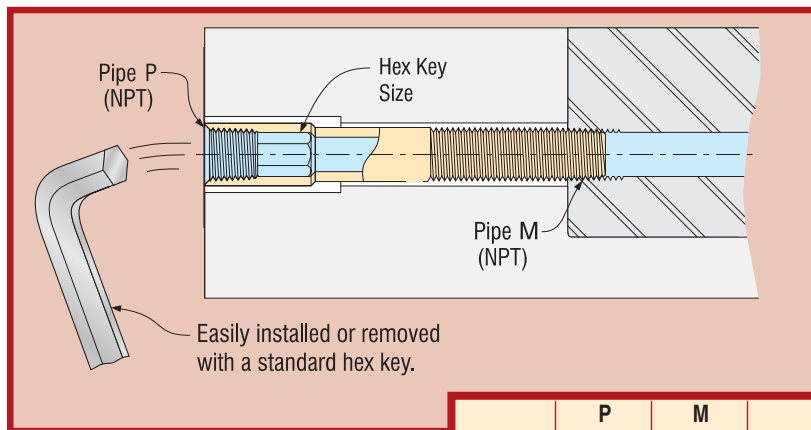
# HexKey Elbows

HexKey Elbows install with an Allen wrench for positive assembly and removal.

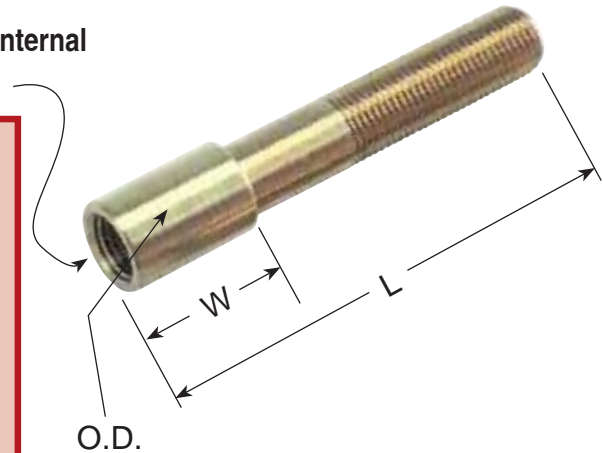
CATALOG NUMBER	P <sub>1</sub> TAP SIZE FEMALE (NPT)	P <sub>2</sub> TAP SIZE FEMALE (NPT)	L	E	O.D.	MINIMUM CLEARANCE DIAMETER	HEX KEY SIZE
HKL16	1/16	1/16	1.125	.531	.552	9/16	1/4
HKL18	1/8	1/8	1.250	.580	.615	5/8	5/16
HKL1814	1/8	1/4	1.375	.593	.860	7/8	3/8
HKL14	1/4	1/4	1.500	.660	.860	7/8	3/8
HKL1438	1/4	3/8	1.625	.712	.985	1"	1/2
HKL38	3/8	3/8	1.750	.780	.985	1"	1/2
HKL50	1/2	1/2	2.125	.940	1.235	1-1/4	1/2



# HexKey Extension Pipes



Heavy duty internal hex socket

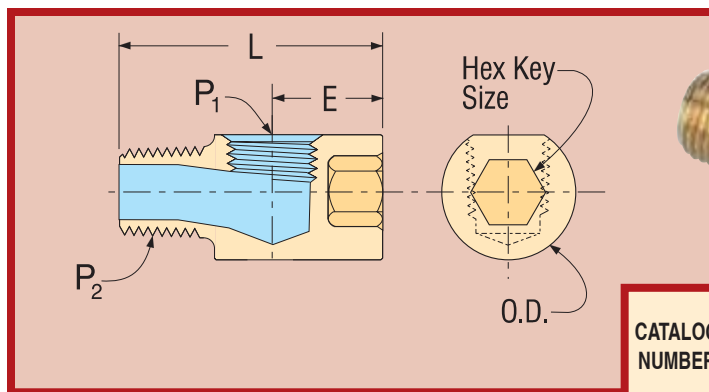


- HexKey Extension Pipes are available in a wide variety of special lengths and threads.
- Accurate length adjustments are easy with the Brass Extension Plug thread system.

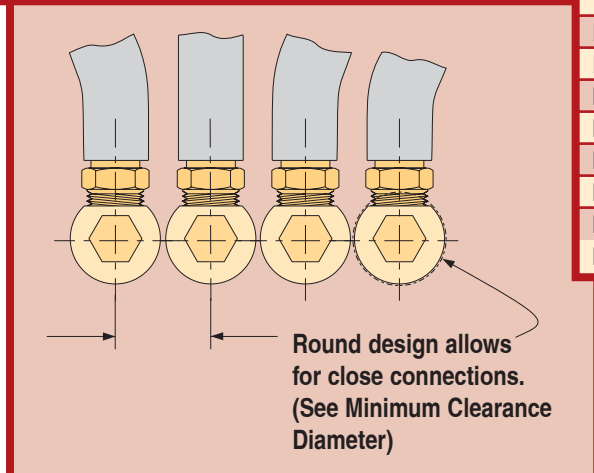
CATALOG NUMBER	P TAP SIZE FEMALE (NPT)	M PIPE SIZE MALE (NPT)	W	O.D.	HEX KEY SIZE	OVERALL LENGTH "L"				
						2-1/2	4"	5-1/2	7"	8-1/2
EP18	1/8	1/8	3/4	1/2	1/4	X025	X040	X055	X070	X085
EP14	1/4	1/4	1"	11/16	3/8	X025	X040	X055	X070	X085
EP38	3/8	3/8	1-1/4	13/16	1/2	X025	X040	X055	X070	X085
EP50	1/2	1/2	1-1/2	1"	9/16	X025	X040	X055	X070	X085

To order, add overall length to catalog number. Example EP18X025

# HexKey Street Elbows



Extra heavy duty hex socket allows maximum assembly torque and positive removal.



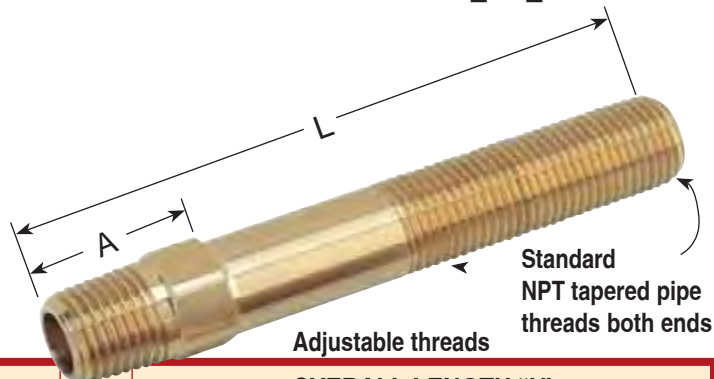
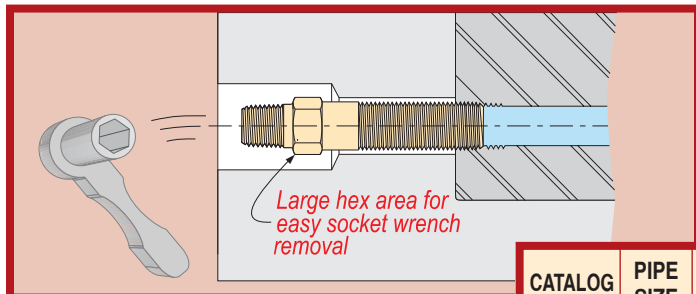
CATALOG NUMBER	P <sub>1</sub> TAP SIZE FEMALE (NPT)	P <sub>2</sub> PIPE SIZE MALE (NPT)	L	E	O.D.	MINIMUM CLEARANCE DIAMETER	HEX KEY SIZE
KL16	1/16	1/16	1.156	.531	.552	9/16	1/4
KL1618	1/16	1/8	1.218	.531	.615	5/8	5/16
KL18	1/8	1/8	1.312	.580	.615	5/8	5/16
KL1814	1/8	1/4	1.500	.593	.860	7/8	3/8
KL14	1/4	1/4	1.625	.660	.860	7/8	3/8
KL1438	1/4	3/8	1.625	.712	.985	1"	1/2
KL38	3/8	3/8	1.750	.780	.985	1"	1/2
KL50	1/2	1/2	2.250	.940	1.235	1-1/4	1/2

- HexKey Street Elbows install with an Allen wrench for positive assembly and removal.
- Angular coolant path allows connecting fittings to be torqued tight without choking off flow.





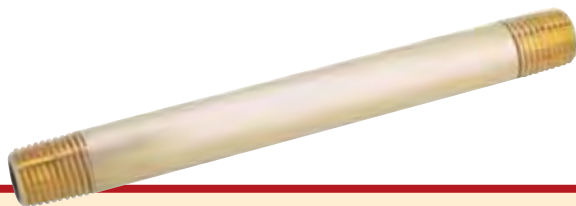
# Adjustable Hex Nipples



- Especially useful when installing Cascade Heads, Hex Elbows, etc.
- Longer or special lengths are available.
- Available in special thread combinations.

CATALOG NUMBER	PIPE SIZE (NPT)	A	HEX SIZE	OVERALL LENGTH "L"							
				2-1/2"	4"	5-1/2"	7"	8-1/2"	10"	11-1/2"	13"
APN16	1/16	11/16	3/8	X025	X040	X055	X070	X085	X100	X115	X130
APN18	1/8	3/4	7/16	X025	X040	X055	X070	X085	X100	X115	X130
APN14	1/4	7/8	9/16	X025	X040	X055	X070	X085	X100	X115	X130
APN38	3/8	1"	11/16	X025	X040	X055	X070	X085	X100	X115	X130
APN12	1/2	1-3/8	7/8	X025	X040	X055	X070	X085	X100	X115	X130

To order, add overall length to catalog number. Example: APN16X025



# Brass Pipe Nipples

CATALOG NUMBER	PIPE SIZE (NPT)	OVERALL LENGTH																
		CLOSE	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	7"	8"	9"	10"	11"	12"
BPN16	1/16	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
BPN18	1/8	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
BPN14	1/4	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
BPN38	3/8	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
BPN12	1/2	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120

To order, add overall length to catalog number. Example: BPN16X025



# Galvanized Pipe Nipples

CATALOG NUMBER	PIPE SIZE (NPT)	OVERALL LENGTH																
		CLOSE	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	7"	8"	9"	10"	11"	12"
GPN16*	1/16	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
GPN18	1/8	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
GPN14	1/4	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
GPN38	3/8	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120
GPN12	1/2	X000	X015	X020	X025	X030	X035	X040	X045	X050	X055	X060	X070	X080	X090	X100	X110	X120

To order, add overall length to catalog number. Example: GPN16X025

\* 1/16 pipe nipples are stainless steel.





# Push-Lok Hose Barbs

CATALOG NUMBER	HOSE I.D.	PIPE SIZE (NPT)
PLM-04-02	1/4	1/8
PLM-04-04	1/4	1/4
PLM-06-02	3/8	1/8
PLM-06-04	3/8	1/4
PLM-08-04	1/2	1/4
PLM-08-06	1/2	3/8
PLM-08-08	1/2	1/2
PLM-08-12	1/2	3/4
PLM-12-08	3/4	1/2
PLM-12-12	3/4	3/4



- All Push-Lok Hose fittings are constructed of brass and do not require hose clamps when used with Push-Lok hose.
- Flow diameters are maximized for improved flow rates.

# Safety Clips

- Safety Clips reduce the possibility of the accidental release of waterline sockets.
- These clips are colour coded red or blue to designate hot and cold waterlines.
- Fits Parker, DME, Foster, and comparable waterline sockets



CATALOG NUMBER	FITS SOCKET SERIES
C200	JS204 thru JS226
C300	JS306 thru JS328
C500	JS504 thru JS526

To order, specify Catalog number and colour: Example C200-B



# Fittings & Accessories

## Reducing Bushings



CATALOG NUMBER	PIPE SIZE
RB18-1	1/8 X 1/16
RB14-2	1/4 X 1/8
RB38-4	3/8 X 1/4
RB50-6	1/2 X 3/8
RB75-8	3/4 X 1/2

## Male Reducers



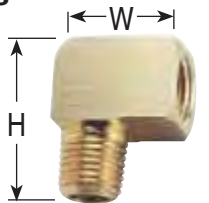
CATALOG NUMBER	PIPE SIZE	L
MR18-1	1/8 X 1/16	1"
MR14-2	1/4 X 1/8	1-3/16
MR38-4	3/8 X 1/4	1-7/16
MR50-6	1/2 X 3/8	1-5/8

## 45° Street EL's



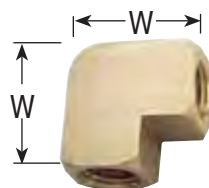
CATALOG NUMBER	PIPE SIZE
AL-18	1/8
AL-14	1/4
AL-38	3/8
AL-50	1/2

## 90° Street EL's



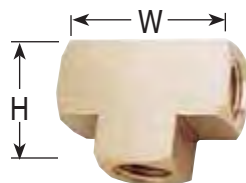
CATALOG NUMBER	PIPE SIZE	W	H
SL-18	1/8	11/16	15/16
SL-14	1/4	1"	1-1/4
SL-38	3/8	1-1/8	1-3/8
SL-50	1/2	1-1/2	1-3/4

## 90° Elbows



CATALOG NUMBER	PIPE SIZE	W
EL-18	1/8	13/16
EL-14	1/4	1-1/8
EL-38	3/8	1-1/4
EL-50	1/2	1-9/16

## Tees



CATALOG NUMBER	PIPE SIZE	W	H
T-18	1/8	1-1/16	13/16
T-14	1/4	1-1/2	1-1/8
T-38	3/8	1-11/16	1-1/4
T-50	1/2	2-1/8	1-9/16

## Hex Nipples



CATALOG NUMBER	PIPE SIZE	HEX SIZE	L
HN-18	1/8	7/16	31/32
HN-14	1/4	9/16	1-3/8
HN-38	3/8	11/16	1-7/16
HN-50	1/2	7/8	1-13/16

## Male Hose Barbs



CATALOG NUMBER	HOSE I.D.	PIPE SIZE
MB14-2	1/4	1/8
MB14-4	1/4	1/4
MB15-2	5/16	1/8
MB15-4	5/16	1/4
MB38-2	3/8	1/8
MB38-4	3/8	1/4
MB50-4	1/2	1/4
MB50-6	1/2	3/8
MB50-8	1/2	1/2
MB75-8	3/4	1/2
MB75-12	3/4	3/4

## Female Hose Barbs



CATALOG NUMBER	HOSE I.D.	PIPE SIZE
FB14-2	1/4	1/8
FB14-4	1/4	1/4
FB15-4	5/16	1/4
FB38-2	3/8	1/8
FB38-4	3/8	1/4
FB50-6	1/2	3/8
FB50-8	1/2	1/2

## Hose Splicers



CATALOG NUMBER	HOSE I.D.
HS-14	1/4 X 1/4
HS-38	3/8 X 3/8
HS-50	1/2 X 1/2

## Hex Couplings



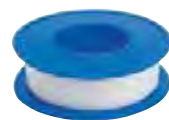
CATALOG NUMBER	PIPE SIZE
C-18	1/8
C-14	1/4
C-38	3/8
C-50	1/2

## Hose Clamps



CATALOG NUMBER	MAX. HOSE O.D.
HC-58	5/8
HC-78	7/8
HC-118	1-1/8

## Teflon Tape



CATALOG NUMBER	ROLL SIZE
TL-250	1/4 X 520"
TL-500	1/2 X 520"



# Flow Thru Sockets

## 200 Series

## 300 Series

## 500 Series



■ **STRAIGHT**



■ **45°**



■ **90°**

CATALOG NUMBER	HOSE I.D.
S204	1/4
S205	5/16
S206	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
S306	3/8
S308	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
N/A	3/8
S504	1/2
S506	3/4

CATALOG NUMBER	HOSE I.D.
S224	1/4
S225	5/16
S226	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
S326	3/8
S328	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
N/A	3/8
S524	1/2
S526	3/4

CATALOG NUMBER	HOSE I.D.
S214	1/4
S215	5/16
S216	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
S316	3/8
S318	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
N/A	3/8
S514	1/2
S516	3/4

Note: For "Push-Lok" hose bars add PL to catalog number. Example S204PL

# Valved Sockets

## 200 Series

## 300 Series

## 500 Series



■ **STRAIGHT**



■ **45°**



■ **90°**

CATALOG NUMBER	HOSE I.D.
S204V	1/4
S205V	5/16
S206V	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
S306V	3/8
S308V	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
N/A	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
S224V	1/4
S225V	5/16
S226V	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
S326V	3/8
S328V	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
N/A	3/8
N/A	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
S214V	1/4
S215V	5/16
S216V	3/8
N/A	1/2
N/A	3/4

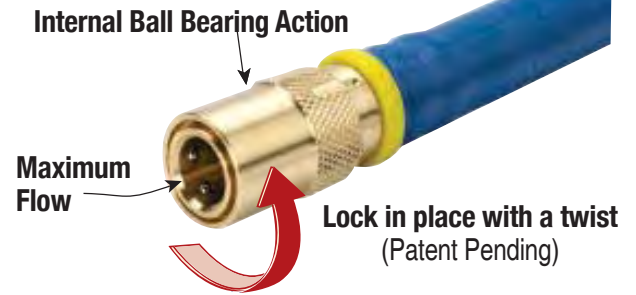
CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
S316V	3/8
S318V	1/2
N/A	3/4

CATALOG NUMBER	HOSE I.D.
N/A	1/4
N/A	5/16
N/A	3/8
N/A	1/2
N/A	3/4

Note: For "Push-Lok" hose bars add PL to catalog number. Example S204VPL



# Locking Couplers



## FOR PUSH-LOK HOSE

- No hose clamp required when used with Push-Lok hose.
- Straight thru design for maximum flow rates.
- Sleeve lock provides safety.
- All brass and stainless steel construction.
- Compatible with all mold connection systems.



**STRAIGHT**



**45°**



**90°**

### 200 Series (1/4" Hole)

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-204-PL	1/4	•
CM-205-PL	5/16	•
CM-206-PL	3/8	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-224-PL	1/4	•
CM-225-PL	5/16	•
CM-226-PL	3/8	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-214-PL	1/4	•
CM-215-PL	5/16	•
CM-216-PL	3/8	•

### 300 Series (3/8" Hole)

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-306-PL	3/8	•
CM-308-PL	1/2	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-326-PL	3/8	•
CM-328-PL	1/2	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-316-PL	3/8	•
CM-318-PL	1/2	•

### 500 Series (1/2" Hole)

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-504-PL	1/2	•
CM-506-PL	3/4	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-524-PL	1/2	•
CM-526-PL	3/4	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-514-PL	1/2	•
CM-516-PL	3/4	•

## WITH STANDARD BARBS

- Use hose clamps with these couplers.
- Straight thru design for maximum flow rates.
- Sleeve lock provides safety.
- All brass and stainless steel construction.
- Compatible with all mold connection systems.



**STRAIGHT**



**45°**



**90°**

### 200 Series (1/4" Hole)

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-204	1/4	•
CM-205	5/16	•
CM-206	3/8	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-224	1/4	•
CM-225	5/16	•
CM-226	3/8	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-214	1/4	•
CM-215	5/16	•
CM-216	3/8	•

### 300 Series (3/8" Hole)

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-306	3/8	•
CM-308	1/2	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-326	3/8	•
CM-328	1/2	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-316	3/8	•
CM-318	1/2	•

### 500 Series (1/2" Hole)

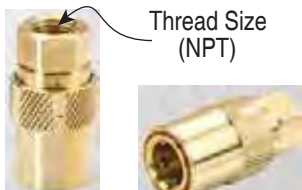
CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-504	1/2	•
CM-506	3/4	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-524	1/2	•
CM-526	3/4	•

CATALOG NUMBER	HOSE ID	STOCK ITEM
CM-514	1/2	•
CM-516	3/4	•

## BODIES ONLY

- Flow-thru type.
- Select pipe thread to suit your application.



Thread Size (NPT)

### 200 Series (1/4" Hole)

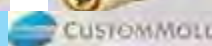
CATALOG NUMBER	THREAD SIZE	STOCK ITEM
CMB-200	1/8	•
CMB-200-1/4	1/4	•

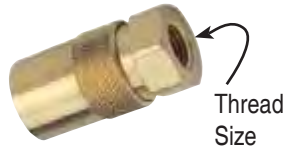
### 300 Series (3/8" Hole)

CATALOG NUMBER	THREAD SIZE	STOCK ITEM
CMB-300	1/4	•
CMB-300-3/8	3/8	•

### 500 Series (1/2" Hole)

CATALOG NUMBER	THREAD SIZE	STOCK ITEM
CMB-500	1/2	•





# Socket Body

## 200 Series

CATALOG NUMBER	THREAD SIZE (NPT)
CMB-200-18	1/8
CMB-200-14	1/4

## 300 Series

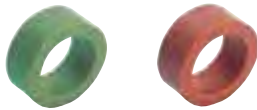
CATALOG NUMBER	THREAD SIZE (NPT)
CMB-300-14	1/4
CMB-300-38	3/8

## 500 Series

CATALOG NUMBER	THREAD SIZE (NPT)
CMB-500-12	1/2

Socket bodies are flow-thru only.

# Seals



## 200 Series

CATALOG NUMBER	SEAL MATERIAL
S-200-6	SILICONE
V-200-6	VITON

## 300 Series

CATALOG NUMBER	SEAL MATERIAL
S-300-6	SILICONE
V-300-6	VITON

## 500 Series

CATALOG NUMBER	SEAL MATERIAL
S-500-6	SILICONE
V-500-6	VITON

# Connector Plugs

### MALE (brass)



BSP AVAILABLE

## 200 Series

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P250	1/16	3/16
P251	1/8	1/4
P252	1/4	1/4
P253	3/8	1/4

## 300 Series

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P351	1/8	1/4
P352	1/4	3/8
P353	3/8	3/8
P354	1/2	3/8

## 500 Series

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P552	1/4	3/8
P553	3/8	1/2
P554	1/2	5/8
P556	3/4	5/8

P251-BSP	1/8	1/4
P252-BSP	1/4	1/4

P351-BSP	1/8	1/4
P352-BSP	1/4	3/8
P353-BSP	3/8	3/8

P553-BSP	3/8	1/2
P554-BSP	1/2	5/8

### FEMALE (plated steel)



CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P251F	1/8	1/4
P252F	1/4	1/4
P253F	3/8	1/4

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P352F	1/4	3/8
P353F	3/8	3/8
P354F	1/2	3/8

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P554F	1/2	5/8
P556F	3/4	5/8

### FEMALE (brass)



CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P250FB	1/16	1/4
P251FB	1/8	1/4
P252FB	1/4	1/4
P253FB	3/8	1/4

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P351FB	1/8	11/32
P352FB	1/4	3/8
P353FB	3/8	3/8
P354FB	1/2	3/8

CATALOG NUMBER	PIPE THREAD	FLOW DIA.
P551FB	1/8	11/32
P552FB	1/4	7/16
P553FB	3/8	9/16
P554FB	1/2	5/8

BSP AVAILABLE

P251FB-BSP	1/8	1/4
P252FB-BSP	1/4	1/4

P351FB-BSP	1/8	11/32
P352FB-BSP	1/4	3/8
P353FB-BSP	3/8	3/8

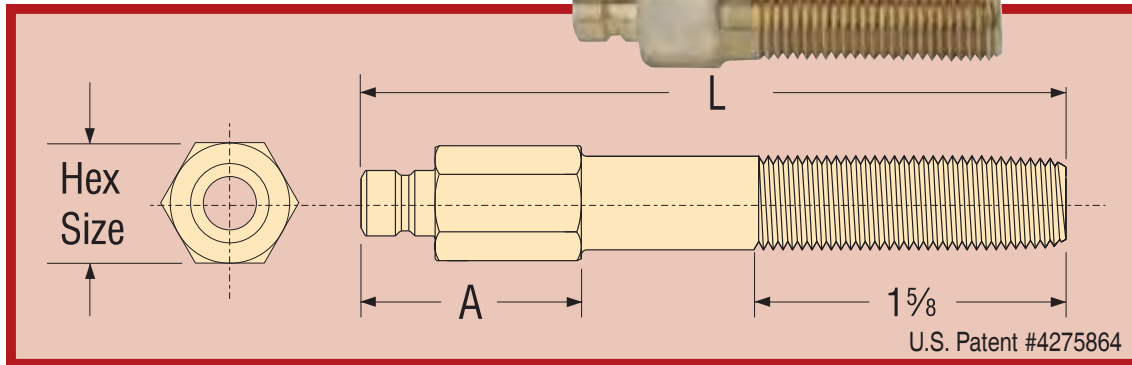
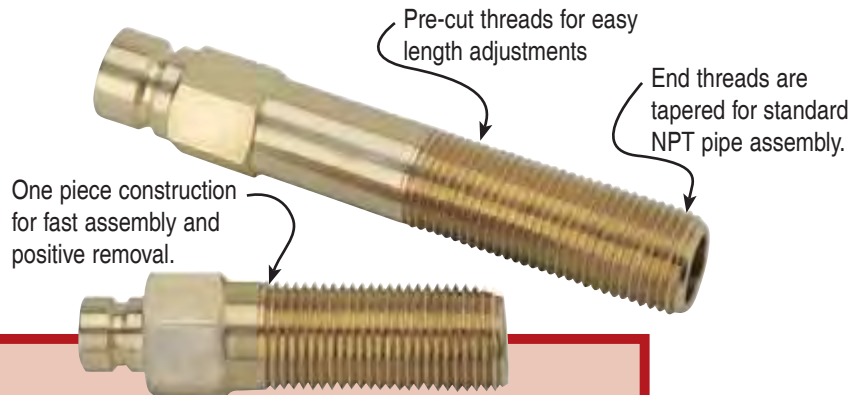
P553FB-BSP	3/8	9/16
P554FB-BSP	1/2	5/8





# Brass Extension Plugs

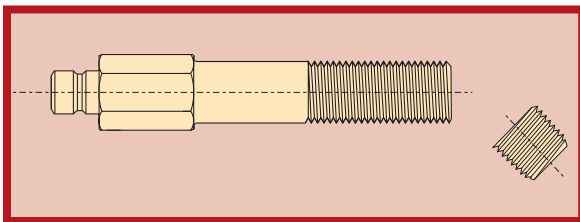
- Extension Plugs are compatible with all major mold connection systems.
- In addition to brass they can be ordered in stainless or plated steel.
- Extension plugs are also available in all metric pipe sizes.



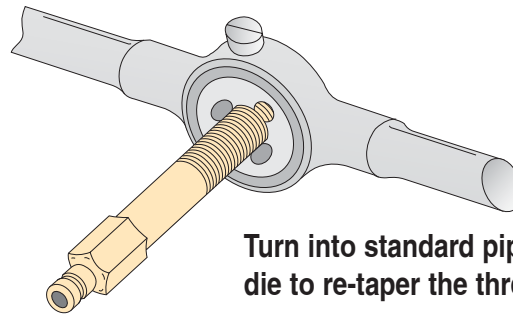
- BSP Brass Extension Plugs now available
- Available with pre-applied sealant.
- Order any quantity.



## Length Adjustments



If special length adjustments are required, simply cut to length and chamfer the end.

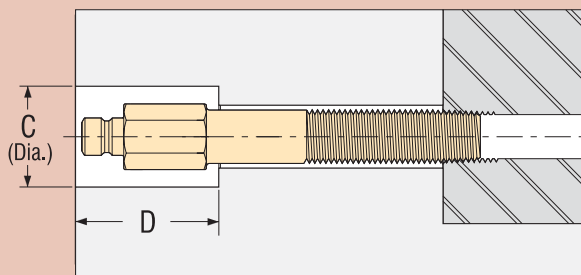


Turn into standard pipe threading die to re-taper the threads.

## Installation

CATALOG SERIES	C (DIA.)	D
250	3/4	1"
251	7/8	1-1/4
252	1"	1-1/2
253	1-1/8	1-1/2
350	1"	1-1/4
351	1"	1-1/4
352	1"	1-1/2
353	1-1/8	1-1/2
354	1-1/2	1-3/4
553	1-3/8	1-5/8
554	1-1/2	1-3/4

At assembly, the tapered brass threads provide a dependable, leak proof seal. With one-piece construction, removing the plug is guaranteed.





# Brass Extension Plugs

## 200 Series

CATALOG NUMBER	L OVERALL LENGTH (INCHES)	PIPE SIZE (NPT)	HEX SIZE	A
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### 1/16" Pipe Extensions

P250X025	2-1/2	1/16	3/8	11/16
P250X040	4	1/16	3/8	13/16
P250X055	5-1/2	1/16	3/8	13/16
P250X070	7	1/16	3/8	13/16

### 1/8" Pipe Extensions

P251X025	2-1/2	1/8	7/16	11/16
P251X040	4	1/8	7/16	1"
P251X055	5-1/2	1/8	7/16	1"
P251X070	7	1/8	7/16	1"
P251X085	8-1/2	1/8	7/16	1"
P251X100	10	1/8	7/16	1"
P251X115	11-1/2	1/8	7/16	1"
P251X130	13	1/8	7/16	1"

### 1/4" Pipe Extensions

P252X025	2-1/2	1/4	9/16	7/8
P252X040	4	1/4	9/16	1-1/4
P252X055	5-1/2	1/4	9/16	1-1/4
P252X070	7	1/4	9/16	1-1/4
P252X085	8-1/2	1/4	9/16	1-1/4
P252X100	10	1/4	9/16	1-1/4
P252X115	11-1/2	1/4	9/16	1-1/4
P252X130	13	1/4	9/16	1-1/4

### 3/8" Pipe Extensions

P253X025	2-1/2	3/8	11/16	1"
P253X040	4	3/8	11/16	1-1/4
P253X055	5-1/2	3/8	11/16	1-1/4
P253X070	7	3/8	11/16	1-1/4
P253X085	8-1/2	3/8	11/16	1-1/4
P253X100	10	3/8	11/16	1-1/4
P253X115	11-1/2	3/8	11/16	1-1/4
P253X130	13	3/8	11/16	1-1/4

### 1/2" Pipe Extensions

CUSTOM				
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## 300 Series

CATALOG NUMBER	L OVERALL LENGTH (INCHES)	PIPE SIZE (NPT)	HEX SIZE	A
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### 1/16" Pipe Extensions

P350X025	2-1/2	1/16	9/16	7/8
P350X040	4	1/16	9/16	1"
P350X055	5-1/2	1/16	9/16	1"
P350X070	7	1/16	9/16	1"

### 1/8" Pipe Extensions

P351X025	2-1/2	1/8	9/16	7/8
P351X040	4	1/8	9/16	1"
P351X055	5-1/2	1/8	9/16	1"
P351X070	7	1/8	9/16	1"
P351X085	8-1/2	1/8	9/16	1"
P351X100	10	1/8	9/16	1"
P351X115	11-1/2	1/8	9/16	1"
P351X130	13	1/8	9/16	1"

### 1/4" Pipe Extensions

P352X025	2-1/2	1/4	9/16	7/8
P352X040	4	1/4	9/16	1-1/4
P352X055	5-1/2	1/4	9/16	1-1/4
P352X070	7	1/4	9/16	1-1/4
P352X085	8-1/2	1/4	9/16	1-1/4
P352X100	10	1/4	9/16	1-1/4
P352X115	11-1/2	1/4	9/16	1-1/4
P352X130	13	1/4	9/16	1-1/4

### 3/8" Pipe Extensions

P353X025	2-1/2	3/8	11/16	1"
P353X040	4	3/8	11/16	1-1/4
P353X055	5-1/2	3/8	11/16	1-1/4
P353X070	7	3/8	11/16	1-1/4
P353X085	8-1/2	3/8	11/16	1-1/4
P353X100	10	3/8	11/16	1-1/4
P353X115	11-1/2	3/8	11/16	1-1/4
P353X130	13	3/8	11/16	1-1/4

### 1/2" Pipe Extensions

P354X025	2-1/2	1/2	7/8	1-1/8
P354X040	4	1/2	7/8	1-1/2
P354X055	5-1/2	1/2	7/8	1-1/2
P354X070	7	1/2	7/8	1-1/2
P354X085	8-1/2	1/2	7/8	1-1/2
P354X100	10	1/2	7/8	1-1/2
P354X115	11-1/2	1/2	7/8	1-1/2
P354X130	13	1/2	7/8	1-1/2

## 500 Series

CATALOG NUMBER	L OVERALL LENGTH (INCHES)	PIPE SIZE (NPT)	HEX SIZE	A
----------------	---------------------------	-----------------	----------	---

### 1/16" Pipe Extensions

CUSTOM				
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### 1/8" Pipe Extensions

CUSTOM				
--------	--	--	--	--

### 1/4" Pipe Extensions

CUSTOM				
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### 3/8" Pipe Extensions

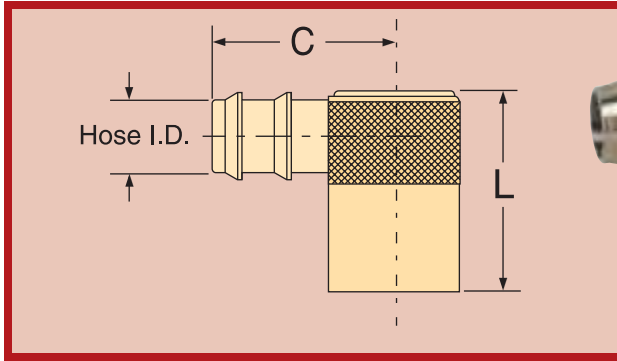
P553X025	2-1/2	3/8	13/16	1-1/8
P553X040	4	3/8	13/16	1-3/8
P553X055	5-1/2	3/8	13/16	1-3/8
P553X070	7	3/8	13/16	1-3/8
P553X085	8-1/2	3/8	13/16	1-3/8
P553X100	10	3/8	13/16	1-3/8
P553X115	11-1/2	3/8	13/16	1-3/8
P553X130	13	3/8	13/16	1-3/8

### 1/2" Pipe Extensions

P554X025	2-1/2	1/2	7/8	1-1/8
P554X040	4	1/2	7/8	1-1/2
P554X055	5-1/2	1/2	7/8	1-1/2
P554X070	7	1/2	7/8	1-1/2
P554X085	8-1/2	1/2	7/8	1-1/2
P554X100	10	1/2	7/8	1-1/2
P554X115	11-1/2	1/2	7/8	1-1/2
P554X130	13	1/2	7/8	1-1/2



# Quick-Coupler Water Jumpers



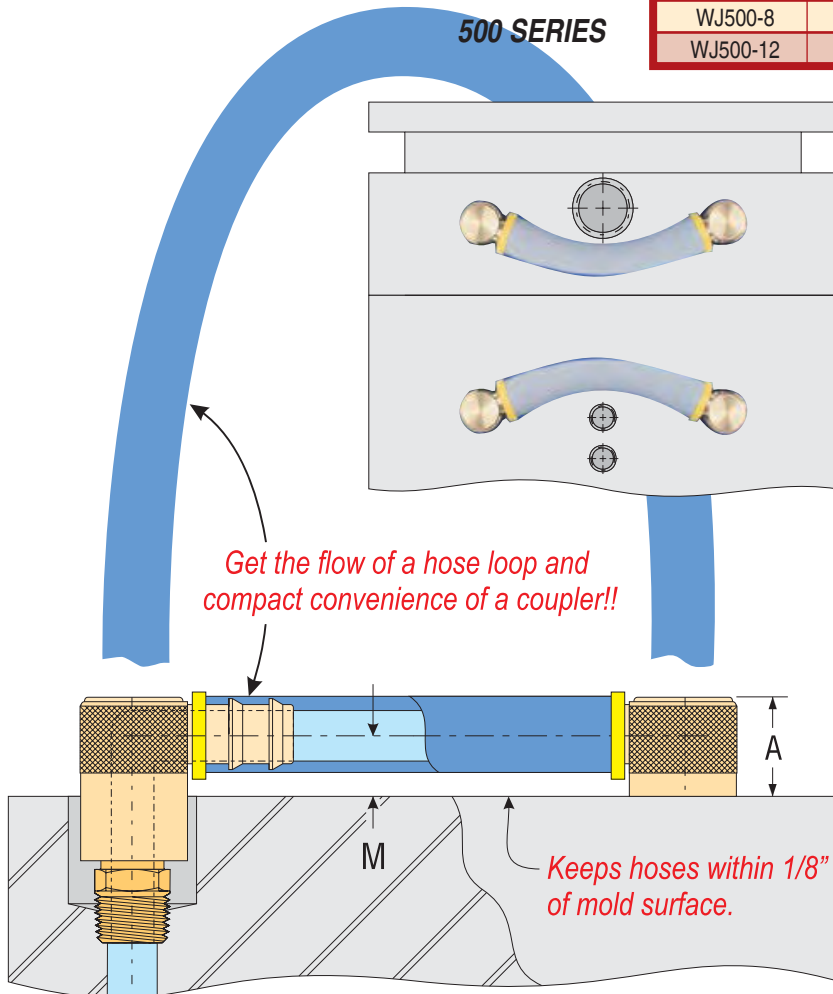
Coupler sleeve twists to lock, preventing accidental disconnect.



For use with Push-Lok hose, no hose clamps are required

Oversized and unrestricted flow path maintains full flow rate of hose used.

CATALOG NUMBER	FITS PLUG SERIES	HOSE I.D.	L	C	M	A
WJ200-4	200	1/4"	1"	1-1/4"	3/8"	5/8"
WJ200-5	200	5/16"	1"	1-1/4"	3/8"	5/8"
WJ200-6	200	3/8"	1"	1-1/4"	3/8"	5/8"
WJ300-6	300	3/8"	1-7/16"	1-9/16"	1/2"	7/8"
WJ300-8	300	1/2"	1-7/16"	1-9/16"	1/2"	7/8"
WJ500-8	500	1/2"	2-1/8"	2"	7/8"	1-1/8"
WJ500-12	500	3/4"	2-1/8"	2"	7/8"	1-1/8"

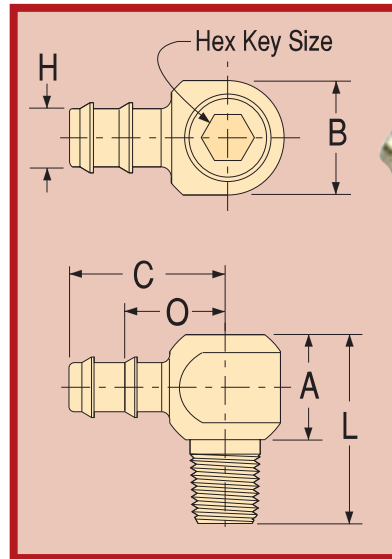


- Eliminates bulky hose loops.
- Compact design neatly and safely holds cooling lines close to the mold surface.
- Stock only one part number for any hose size. No special tubes or length restrictions.
- Compatible with all major mold connection systems.
- Unlimited installation options. Fits around obstacles, and installs in compact spaces.
- Viton seals for temperatures up to 400 F.
- All brass and stainless steel construction.



# Swivel Water Jumpers

- Can be fully recessed to prevent accidental disconnect or damage.
- Swivel body allows installation in tight spaces.
- Eliminate crimped hoses and setup errors.
- Supplied with Viton O-Ring seals.
- All brass construction.
- Hex key installation.
- Custom length Jumpers can be quoted.

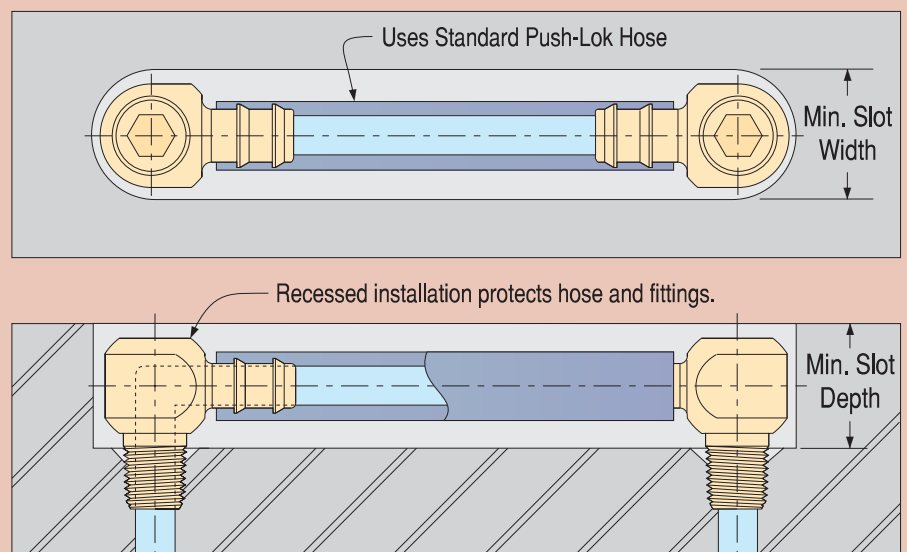
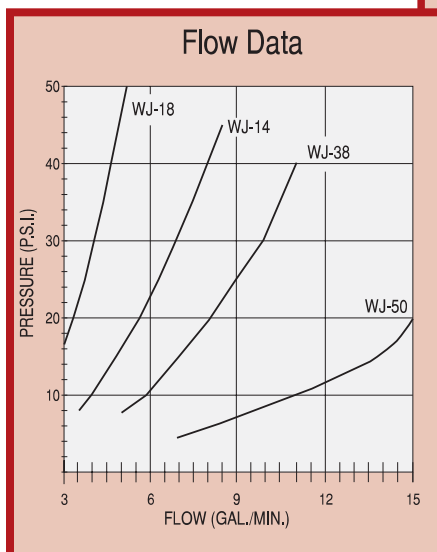


Heavy duty hex key socket allows maximum torque and positive removal.



Threads can be adjusted to specific lengths.

CATALOG NUMBER	PIPE SIZE (NPT)	H HOSE I.D.	HEX KEY SIZE	L	A	C	O	B	MIN. SLOT WIDTH	MIN. SLOT DEPTH
WJ18-S	1/8	5/16	3/16	1-3/16	11/16	1"	5/8	.660	11/16	1"
WJ18-M	1/8	5/16	3/16	2"	11/16	1"	5/8	.660	11/16	1"
WJ18-L	1/8	5/16	3/16	3-1/2	11/16	1"	5/8	.660	11/16	1"
WJ14-S	1/4	3/8	1/4	1-7/16	13/16	1-3/16	25/32	.840	7/8	1-3/16
WJ14-M	1/4	3/8	1/4	2-3/8	13/16	1-3/16	25/32	.840	7/8	1-3/16
WJ14-L	1/4	3/8	1/4	3-7/8	13/16	1-3/16	25/32	.840	7/8	1-3/16
WJ38-S	3/8	1/2	5/16	1-5/8	1"	1-3/8	15/16	.980	1"	1-3/8
WJ38-M	3/8	1/2	5/16	2-5/8	1"	1-3/8	15/16	.980	1"	1-3/8
WJ38-L	3/8	1/2	5/16	4-1/8	1"	1-3/8	15/16	.980	1"	1-3/8
WJ50-S	1/2	3/4	3/8	2"	1-1/8	1-1/2	1-1/8	1.235	1-1/4	1-9/16
WJ50-M	1/2	3/4	3/8	3"	1-1/8	1-1/2	1-1/8	1.235	1-1/4	1-9/16
WJ50-L	1/2	3/4	3/8	4-1/2	1-1/8	1-1/2	1-1/8	1.235	1-1/4	1-9/16





## Threadless Plugs



- Threadless plugs utilize an expandable O-ring to create a positive seal.
- Seals rough or corroded holes.
- Withstands pressures up to 72 psi.
- No tapping is required.

CATALOG NUMBER	NOMINAL SIZE	HEIGHT	HEX SIZE	DRILL SIZE	O-RING CATALOG NUMBER
TBPP012	1/8	.50	5/64	11/32	OR-012
TBPP025	1/4	.56	1/8	7/16	OR-025
TBPP037	3/8	.62	1/8	9/16	OR-037
TBPP050	1/2	.62	1/8	11/16	OR-050
TBPP012-OS	1/8	.50	5/64	23/64	OR-012
TBPP025-OS	1/4	.56	1/8	29/64	OR-025
TBPP037-OS	3/8	.62	1/8	37/64	OR-037
TBPP050-OS	1/2	.62	1/8	45/64	OR-050

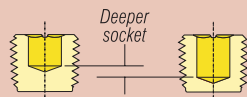
## Heavy Duty Plugs

CATALOG NUMBER	THREAD SIZE (NPT)
XTBF-006	1/16
XTBF-012	1/8
XTBF-025	1/4
XTBF-037	3/8
XTBF-050	1/2
XTBF-075	3/4

- Standard brass flush seal plugs with **X<sub>T</sub>** forming technology for maximum wrenching torque.
- Extra deep socket can't "round out" when plugs are installed or removed.
- Order in any quantity.



With Patented **X<sub>T</sub>** Technology....



Extra deep socket is stronger, and will not strip out.

CATALOG NUMBER	THREAD SIZE (NPT)
MP-012BSP	1/8-28
MP-025BSP	1/4-19
MP-037BSP	3/8-19
MP-050BSP	1/2-14
MP-075BSP	3/4-14
MP-100BSP	1-11



## BSP Plugs

- Fits BSPT and BSPP threaded holes.
- Features extra deep socket for strength.
- Order in any quantity.

## Pressure Plugs



- Standard plugs are flush type (7/8" taper per foot).
- Oversize plugs are (3/4" taper per foot). To order add -O/S to catalog number.

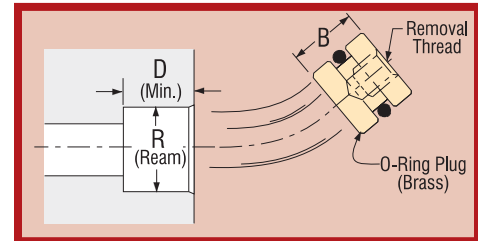
THREAD SIZE (NPT)	TPI	FLUSH HEIGHT	CATALOG NUMBER		
			BRASS	ALLOY STEEL	STAINLESS STEEL
1/16	27	.250	BPP006	APP006	SPP006
1/8	27	.250	BPP012	APP012	SPP012
1/4	18	.406	BPP025	APP025	SPP025
3/8	18	.406	BPP037	APP037	SPP037
1/2	14	.531	BPP050	APP050	SPP050
3/4	14	.531	BPP075	APP075	
1"	11-1/2	.656	BPP100	APP100	
1-1/4	11-1/2	.656	BPP125		
1-1/2	11-1/2	.656	BPP150		



## O-Ring Plugs

CATALOG NUMBER	R REAM SIZE	B (+.000) (-.005)	D (+.005) (-.000)	REMOVAL THREAD SIZE
OR-06	.281	1/4	.250	6-32
OR-12	.375	5/16	.312	10-32
OR-25	.500	5/16	.312	10-32
OR-38	.625	7/16	.437	1/4-20
OR-50	.750	1/2	.500	1/4-20
OR-75	1.000	5/8	.625	3/8-16

- O-Ring plugs are used when backed up by other mold inserts, holder block, etc.
- They require less space than NPT pressure plugs. Less interference in tight spaces.
- Standard Buna O-Ring provides seal to 210 .
- Viton O-rings and quad rings are available.



## Stop Plugs



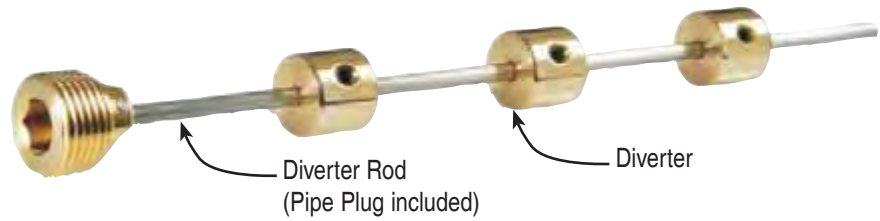
CATALOG NUMBER	FITS SOCKET SERIES NUMBER
CP-200	<b>200</b>
CP-300	<b>300</b>
CP-500	<b>500</b>

- Stops coolant flow on hoses with flow-thru sockets.
- Prevents accidents by plugging unused hoses and manifold ports.
- Keeps couplers and seals clean when not in use.

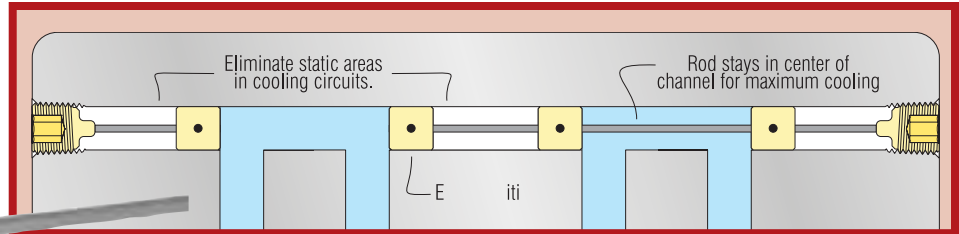




# Pipe Plug Diverters



Pipe plug is pre-assembled to locating rod and swivels for positive installation and removal.



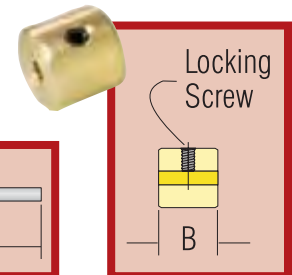
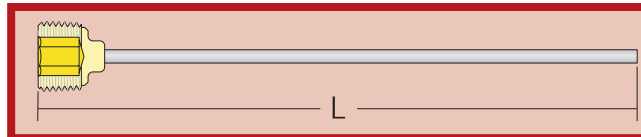
## Diverters

- No special tools needed.
- Simply lock diverters in position on the stainless rod, and install into the cooling chamber.
- Rod stays in the center of the cooling channel, allowing maximum heat transfer to coolant.
- Choose the pipe size and length from the chart. Then choose diverter. Longer length diverter rods are available.

CATALOG NUMBER	PIPE SIZE	O.D. (-.005)	B	FITS ROD DIA.
D-125	1/8	.340	3/8	3/32
D-250	1/4	.432	7/16	1/8
D-375	3/8	.557	1/2	1/8
D-500	1/2	.682	3/4	3/16
D-750	3/4	.932	3/4	3/16

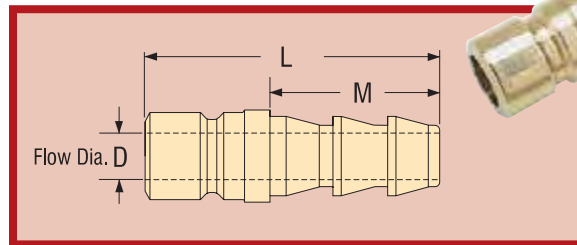
CATALOG NUMBER	PIPE SIZE	L	ROD DIA.	DIVERTER NUMBER
DR-125	1/8	12	3/32	D-125
DR-250	1/4	18	1/8	D-250
DR-375	3/8	18	1/8	D-375
DR-500	1/2	24	3/16	D-500
DR-750	3/4	24	3/16	D-750

- Locking screw included.
- Custom sizes available.
- Order in any quantity.



# Combination Hose Inserts

Eliminates multiple fittings and assembly. Put a Combination Hose Insert on one end of a hose, and a coupler on the other. Hoses may then be snapped together in series.



- All flow diameters are maximized to reduce restrictions.
- For use with Push-Lok or standard hose.

## 200 Series

CATALOG NUMBER	HOSE I.D.	D	M	L
CH200-4	1/4	3/16	7/8	1-3/8
CH200-5	5/16	1/4	7/8	1-3/8
CH200-6	3/8	1/4	1-1/16	1-9/16
CH200-8	1/2	1/4	1-1/16	1-9/16

## 300 Series

CATALOG NUMBER	HOSE I.D.	D	M	L
CH300-4	1/4	3/16	7/8	1-13/16
CH300-5	5/16	1/4	7/8	1-13/16
CH300-6	3/8	9/32	1-1/16	1-13/16
CH300-8	1/2	11/32	1-1/16	1-13/16

## 500 Series

CATALOG NUMBER	HOSE I.D.	D	M	L
CH500-8	1/2	13/32	1-1/16	2"
CH500-12	3/4	9/16	1-1/2	2-1/2



# Isobar<sup>®</sup> Heat Pipes

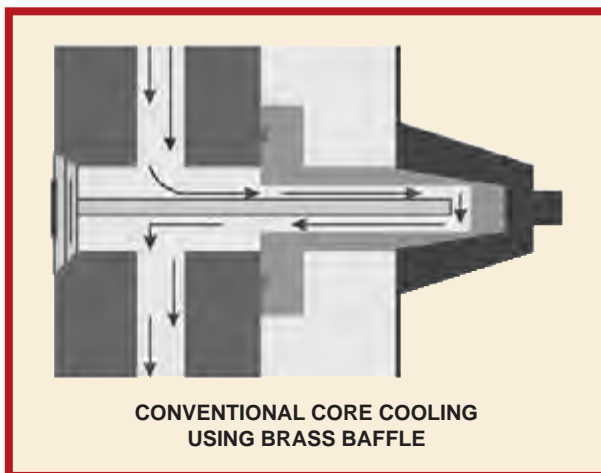
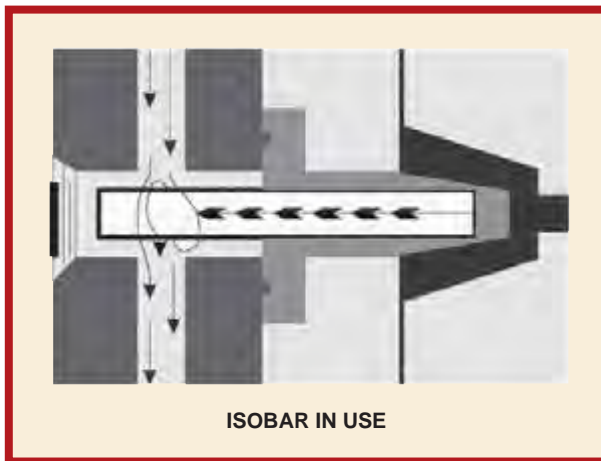
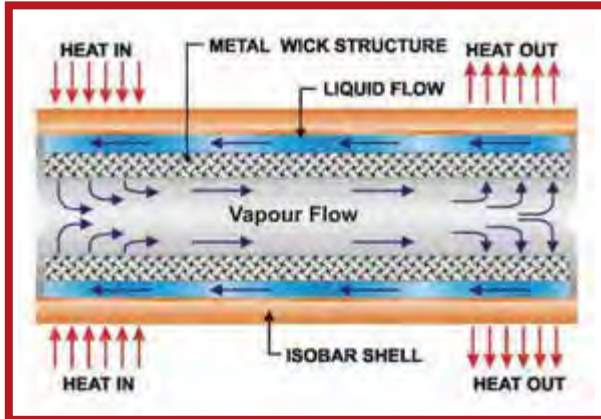
An Isobar<sup>®</sup> Heat Pipe is a super-thermal conductor that has the capacity to transfer large amounts of heat at high speeds in both heating and cooling applications. In fact, Isobar<sup>®</sup> Heat Pipes have, in some applications and orientations, a thermal conductivity in excess of 10,000 times the rate of a solid copper bar of the same geometry. The working fluid constantly changes phase due to the low vapor pressure inside the unit.

The resulting pressure difference moves the vapor from the heated end to colder area where it condenses and releases the heat energy uniformly. Isobars<sup>®</sup> are most successfully used horizontally. Special designs for vertical use are available to order.

Isobars<sup>®</sup> are used instead of conventional water-cooling methods. They can simplify tool design and are easy to fit. They are designed to operate over the range of mold operating temperatures between 35 F and 500 F. For relevant hole dimensions, please see chart below.

Isobar<sup>®</sup> Heat Pipes can be designed or retrofitted into many molding applications to improve efficiency related to cycle times, cure rates, mold temperature uniformity, set-up times and recovery rate. The cooled length should be a minimum of 50% of heated length for maximum efficiency.

DMS can manufacture your core pin and have Isobars<sup>®</sup> charged directly to the core pin.



DIAMETER	DRILL (IN.)	TOLERANCE (HIGH)	TOLERANCE (LOW)
3/32	0.096	+0.001	-0.001
1/8	0.127	+0.001	-0.001
5/32	0.157	+0.001	-0.001
3/16	0.189	+0.001	-0.001
7/32	0.219	+0.001	-0.001
1/4	0.252	+0.001	-0.001
5/16	0.314	+0.001	-0.001
3/8	0.377	+0.001	-0.001
1/2	0.502	+0.001	-0.001

DIAMETER	DRILL (mm)	TOLERANCE (HIGH)	TOLERANCE (LOW)
3mm	3.07	+0.03	-0.03
4mm	4.04	+0.03	-0.03
5mm	5.08	+0.03	-0.03
6mm	6.05	+0.03	-0.03
8mm	8.05	+0.03	-0.03
10mm	10.01	+0.03	-0.03
12mm	11.96	+0.03	-0.03
15mm	14.96	+0.03	-0.03
16mm	16.08	+0.03	-0.03
18mm	17.98	+0.03	-0.03
20mm	19.94	+0.03	-0.03
25mm	24.94	+0.03	-0.03
30mm	29.95	+0.03	-0.03



ISOBAR<sup>®</sup> is a registered trademark of Acrolab Ltd.



# Isobar<sup>®</sup> Heat Pipes



DIAMETER	ISOBAR LENGTH (Isobars can also be manufactured to any length and other diameters)																	
	INCHES	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
3/32																		
1/8																		
5/32																		
3/16																		
7/32																		
1/4																		
5/16																		
3/8																		
1/2																		
MILLIMETERS	50	60	80	100	120	140	160	180	200	220	240	260	280	300	320			
3																		
4																		
5																		
6																		
8																		
10																		
12																		
15																		
16																		
18																		
20																		
25																		
30																		

Length Tolerances: +0.000/-0.060 inches  
+0.00/-1.50 millimeters

Standard sizes come with extractable end caps  
Ordering Information: HP-D X L

Custom sizes also available  
**ISOBAR<sup>®</sup> MUST NEVER BE CUT.**

### ISOBAR<sup>®</sup> INSTALLATION PROCEDURE

1. Inspect holes into which Isobars will be inserted to make sure that holes are free of oil or solvent contamination, as well as steel chips or other foreign debris.
2. Ensure that hole ends are deburred so as to cause no interference or galling of the Isobar<sup>®</sup> surface.
3. Apply a liberal amount of thermal paste over the Isobar's<sup>®</sup> entire length.
4. Apply a small amount of paste into the hole opening and begin to insert the Isobar<sup>®</sup> by alternately rotating and pushing the Isobar into the hole and withdrawing it slightly to ensure the entire surface of the Isobar<sup>®</sup> and the hole opening are coated with paste.
5. Insert the Isobars<sup>®</sup> (threaded end last) with hand pressure only. Never install an Isobar<sup>®</sup> by tapping, hammering, or using an excessive amount of force, as this will most often result in damage to the Isobars<sup>®</sup>.
6. Wipe off excess thermal paste from the tool with a soft cloth; do not use solvents.
7. In the event that the holes drilled for the Isobars<sup>®</sup> are exposed to the outer surface of the mold, these areas must be covered with a 1/8 inch or 3mm steel plate of suitable rigid insulation in order to completely encapsulate the Isobar<sup>®</sup> within the tooling confines. This should be done as a safety concern to prevent damage resulting from the possible overheating of the tool in excess of 550 F or 280 C.

**CAUTION: EXPOSURE OF ISOBAR<sup>®</sup> TO EXCESSIVE TEMPERATURES OR IMPROPER USE MAY CAUSE DAMAGE OR PERSONAL INJURY.**

ISOBAR<sup>®</sup> is a registered trademark of Acrolab Ltd.

## Thermally Conductive Paste

CATALOG NUMBER	VOLUME
TCP-1	5 GR.
TCP-4	4 OZ.
TCP-8	8 OZ.
TCP-16	16 OZ.

NOTE: Although thermal paste is inert, rubber gloves are recommended to keep hands clean.



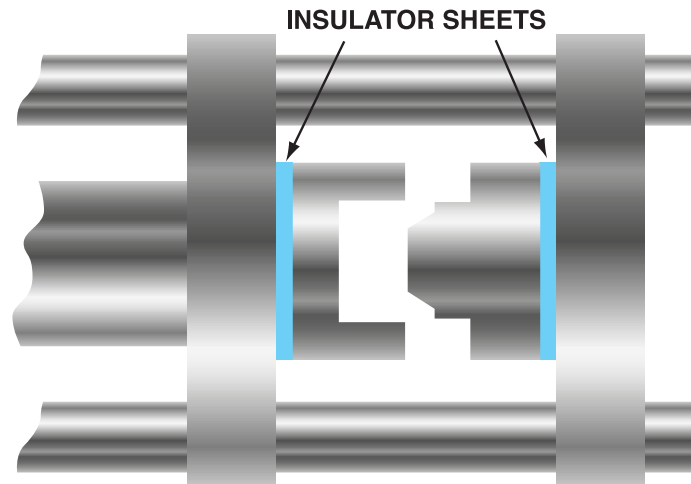
www.acrolab.com



# High Temperature Insulator Sheets

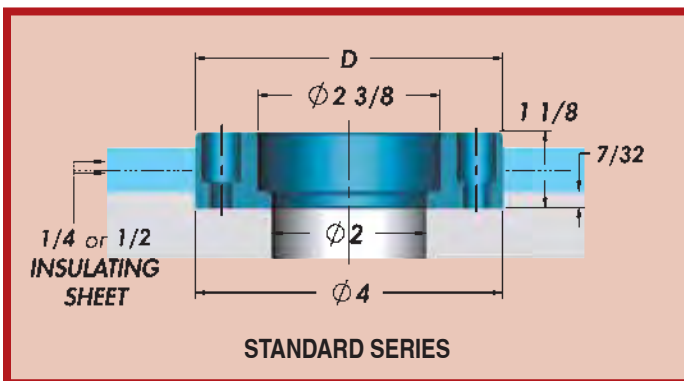
## GLATHERM<sup>®</sup> Grade HT

Glastherm Grade HT is a high compressive strength, heat-resistant composite material. Finished to a close thickness tolerance, it is ideal for installation between the mold and the press or within the mold itself. It is completely asbestos-free and rugged to withstand rough handling during installation. It is easily cut and machined with standard metal working equipment. Diamond cutting tools are recommended for long life. Compression molded for high impact strength, supplied micro-finished top and bottom, parallel within  $\pm .002$ .

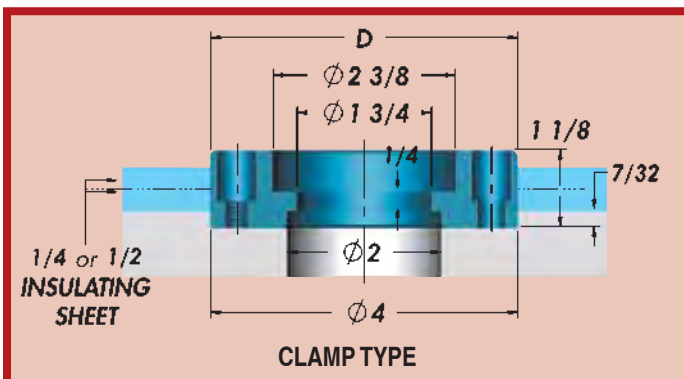


GENERAL INFORMATION		
Compressive Strength	(ASTM D-229)	49,400 psi at 75°F
		27,200 psi at 300°F
		18,000 psi at 400°F
		17,100 psi at 500°F
		15,000 psi at 550°F
Modules of Elasticity in Compression	(ASTM D-229)	1.8 x 10 <sup>6</sup> psi at 75°F
		2.9 x 10 <sup>6</sup> psi at 75°F
Water Absorption	(ASTM D-229)	0.2%
Thermal Conductivity (K Factor) (Btu/hr/ft <sup>2</sup> /in/°F)	(ASTM C-177)	1.9 at 75°F
		2.1 at 425°F
Flame Resistance	(UL Subject 94)	94V-0
Expansion Across Thickness		6.43 x 10 <sup>-5</sup> in/in/°F
Expansion Across Surface		6.43 x 10 <sup>-5</sup> in/in/°F
Maximum Recommended Service Temperature		550°F

THICKNESS	LENGTH	WIDTH	CATALOG NUMBER
1/4	36"	18"	GTIS1836-25
1/4	36"	24"	GTIS2436-25
1/4	36"	36"	GTIS3636-25
1/2	36"	18"	GTIS1836-50
1/2	36"	24"	GTIS2436-50
1/2	36"	36"	GTIS3636-50
1/4	48"	48"	GTIS4848-25
1/4	48"	96"	GTIS4896-25
1/2	48"	48"	GTIS4848-50
1/2	48"	96"	GTIS4896-50



- High hot compressive strength.
- Low thermal conductivity.
- Oil and moisture resistant.
- Reduces heat loss.
- Helps control temperature.
- Faster mold startup.
- Special machining to print available.
- Special sizes also available



## Locating Rings For Use with Insulator Sheets

CATALOG NUMBER	D	DESCRIPTION
LR541	3.990	Standard Series
LR544	3.990	Clamp Type

GLATHERM<sup>®</sup> is a registered trademark of Glastic Corp.

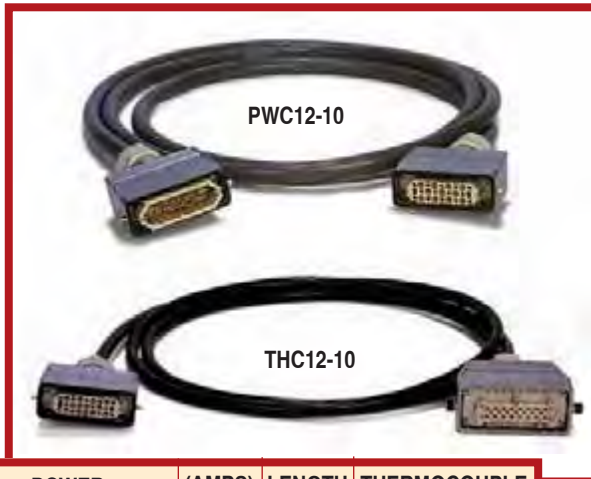


# Temperature Control Systems



All ITC's temperature control systems, associated components and accessories are ruggedly reliable, easy to use and maintain. Their simple, down-to-earth design makes them highly adaptable in ever changing manufacturing environments. Affordability, adaptability, superior features and a 2-year limited warranty equates to a quick payback, improved molding cycles, less down time, reduced operating costs and an improved bottom line.

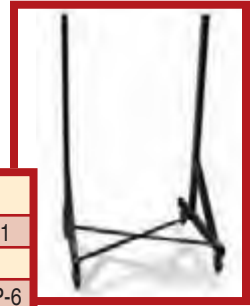
## MOLD CABLES



POWER	(AMPS)	LENGTH	THERMOCOUPLE
PWC5-10	(15)	10 ft.	THC5-10
PWC5-20	(15)	20 ft.	THC5-20
PWC8-10	(15)	10 ft.	THC8-10
PWC8-20	(15)	20 ft.	THC8-20
PWC12-10	(15)	10 ft.	THC12-10
PWC12-20	(15)	20 ft.	THC12-20
PWCHP3-10	(30)	10 ft.	
PWCHP3-20	(30)	20 ft.	
PWCHP6-10	(30)	10 ft.	
PWCHP6-20	(30)	20 ft.	

- Custom lengths and connector configurations are available upon request.

## PORTABLE FLOOR STANDS



CATALOG NUMBER	USE WITH
PFS-1	MF1, MF2 & MFHP-1
PFS-5	MF5 & MFHP-3
PFS-812	MF8, MF12 & MFHP-6

- Manufactured of heavy gage steel tubing.
- Provided with swivel and lockable casters.
- Shipped unassembled.



## TRANSFORMER PACKAGES

- Pre-wired and assembled.
- Includes Transformer, Welded stand with casters, Fused disconnect and 10 ft. AC input power cable (no connector on end).

CATALOG NUMBER	STEP DOWN 480v TO 240v 3-PHASE
TP-6-5	6 kva with 5 zone stand
TP-9-8	9 kva with 8 zone stand
TP15-8	15 kva with 8 zone stand
TP15-12	15 kva with 12 zone stand
TP-30-8	30 kva with 8 zone stand
TP-30-12	30 kva with 12 zone stand
TP-45-12	45 kva with 12 zone stand

## MOLD CONNECTORS

POWER	(AMPS)	THERMOCOUPLE
MPC-5	(15)	MTC-5
MPC-8	(15)	MTC-8
MPC-12	(15)	MTC-12
MPCHP-3	(30)	
MPCHP-6	(30)	

- Mold Power Connectors have 6' leads with ground wire.







# Temperature Control Systems

CAT. NUMBER	(AMPS)	DESCRIPTION
MEK-5TC	(15)	Cable, Mold End Kit, 5 Zone, Thermocouple (Female)
MEK-8TC	(15)	Cable, Mold End Kit, 8 Zone, Thermocouple (Female)
MEK-12TC	(15)	Cable, Mold End Kit, 12 Zone, Thermocouple (Female)
MEK-PR	(15)	Cable, Mold End Kit, 5, 8 & 12 Zone, Power (Female)
FEK-PR	(15)	Cable, Frame End Kit, 5, 8 & 12 Zone, Power (Male)
FEK-TC	(15)	Cable, Frame End Kit, 5, 8 & 12 Zone, Thermocouple (Female)
FCK-PR	(15)	Main Frame, Connector, 5, 8 & 12 Zone, Power (Female)
FCK-TC	(15)	Main Frame, Connector, 5, 8 & 12 Zone, Thermocouple (Male)
MF-EC	All	Card Edge Connector Kit w/Contacts - All Main Frames
MF-ECC	All	Card Edge Connector, Contacts - All Main Frames
MF-CG	All	Card Guide, 6" - All Main Frames
ABC-15	All	Module Fuse - Special Fast Blow
MEKHP-3PR	(30)	Cable, Mold End Kit, 3 Zone, Power (Female) (High Power)
MEKHP-6PR	(30)	Cable, Mold End Kit, 6 Zone, Power (Female) (High Power)
FEKHP-3PR	(30)	Cable, Frame End Kit, 3 Zone, Power (Male) (High Power)
FEKHP-6PR	(30)	Cable, Frame End Kit, 6 Zone, Power (Male) (High Power)
FCKHP-3PR	(30)	Main Frame, Connector, 3 Zone, Power (Female) (High Power)
FCKHP-6PR	(30)	Main Frame, Connector, 6 Zone, Power (Female) (High Power)

## CONNECTOR KITS



## 1 & 2 ZONE CONNECTOR KITS

(Combination Power & T/C)

CAT. NUMBER	(AMPS)	DESCRIPTION
1Z-ME	(15)	Cable End, Male Connector, 1 & 2 Zone
1Z-FE	(15)	Cable End, Female Connector, 1 & 2 Zone
1Z-MC	(15)	Mold Connector, Male, 1 & 2 Zone
1Z-FC	(15)	Frame Connector, Female, 1 & 2 Zone
1Z-MEL	(15)	Cable Coupler Hood, w/Latch, Male, 1 & 2 Zone
1Z-ME90	(15)	Cable End, Male Connector, 90°
1Z-IPP	(15)	Input Power Cord Plug (Female)
MPTCHP-1	(30)	Mold Connector, 1 & 2 Zone (Male) (High Power)



## 1 & 2 ZONE CABLES

(Combination Power & T/C)

CAT. NUMBER	(AMPS)	LENGTH
PTC1-10	(15)	10 ft long
PTC1-20	(15)	20 ft. long
PTCHP1-10	(30)	10 ft. long (High Power)
PTCHP1-20	(30)	20 ft. long (High Power)



• Custom lengths and connector configurations are available upon request.



• Main Frames, Temperature Control Modules, Cables and other components are all sold separately.  
• Please specify Voltage and Current requirements when ordering.

## MAIN FRAME HARNESSES

POWER	ZONES	THERMOCOUPLE
MF-PH5	5	MF-TH5
MF-PH8	8	MF-TH8
MF-PH12	12	MF-TH12

## MOLD WIRING JUNCTION BOXES



**Empty**

• Connectors must be ordered separately

CAT. NO.	ZONES
MJB-5	5
MJB-8	8
MJB-12	12



**Pre-Wired**

• Pre-wired with terminal strip and connectors

CAT. NO.	ZONES
MJBW-8	8
MJBW-12	12



**Main Frame Blank Panel**

CAT. NO.	FITS
MFBP	ALL 15 & 30 AMP MAIN FRAMES

• Standard Main Frames, Cables, etc. can be modified to accommodate your application.  
• All modular components are "G" Series compatible.



# Temperature Control Systems

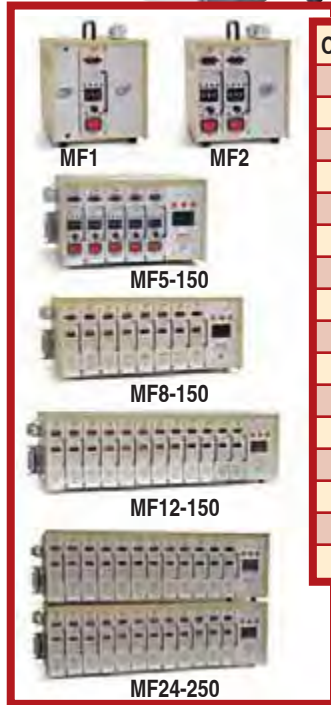
## VISIONS 3000 INTELLIGENT TEMPERATURE CONTROL SYSTEM

- Unless otherwise specified, all VISIONS 3000 systems are 240v, 3-phase.
- Systems are available for both 15 and 30 amp zones.
- VISIONS 3000 offered with standard key-pad interface or optional touch screen interface.
- Valve gate sequencing option.
- Special or larger control systems, as well as dual or low voltage systems are available upon request.



## STANDARD 15 AMP MAIN FRAME

CATALOG NUMBER	DESCRIPTION
VCS-16-16-70	16 - Zone w / 70 amp breaker
VCS-32-18-100	18 - Zone w / 100 amp breaker
VCS-32-20-100	20 - Zone w / 100 amp breaker
VCS-32-22-100	22 - Zone w / 100 amp breaker
VCS-32-24-100	24 - Zone w / 100 amp breaker
VCS-32-26-100	26 - Zone w / 100 amp breaker
VCS-32-28-100	28 - Zone w / 100 amp breaker
VCS-32-30-100	30 - Zone w / 100 amp breaker
VCS-32-32-100	32 - Zone w / 100 amp breaker
VCS-48-34-125	34 - Zone w / 125 amp breaker
VCS-48-36-125	36 - Zone w / 125 amp breaker
VCS-48-38-125	38 - Zone w / 125 amp breaker
VCS-48-40-125	40 - Zone w / 125 amp breaker
VCS-48-42-125	42 - Zone w / 125 amp breaker
VCS-48-44-125	44 - Zone w / 125 amp breaker
VCS-48-46-125	46 - Zone w / 125 amp breaker
VCS-48-48-125	48 - Zone w / 125 amp breaker
VCS-64-50-125	50 - Zone w / 125 amp breaker
VCS-64-52-125	52 - Zone w / 125 amp breaker
VCS-64-54-125	54 - Zone w / 125 amp breaker
VCS-64-56-125	56 - Zone w / 125 amp breaker
VCS-64-58-125	58 - Zone w / 125 amp breaker
VCS-64-60-125	60 - Zone w / 125 amp breaker
VCS-64-62-125	62 - Zone w / 125 amp breaker
VCS-64-64-125	64 - Zone w / 125 amp breaker
VCS-80-66-150	66 - Zone w / 150 amp breaker
VCS-80-68-150	68 - Zone w / 150 amp breaker
VCS-80-70-150	70 - Zone w / 150 amp breaker
VCS-80-72-150	72 - Zone w / 150 amp breaker
VCS-80-74-150	74 - Zone w / 150 amp breaker
VCS-80-76-150	76 - Zone w / 150 amp breaker
VCS-80-78-150	78 - Zone w / 150 amp breaker
VCS-80-80-150	80 - Zone w / 150 amp breaker
VCS-96-82-150	82 - Zone w / 150 amp breaker
VCS-96-84-150	84 - Zone w / 150 amp breaker
VCS-96-86-150	86 - Zone w / 150 amp breaker
VCS-96-88-150	88 - Zone w / 150 amp breaker
VCS-96-90-150	90 - Zone w / 150 amp breaker
VCS-96-92-150	92 - Zone w / 150 amp breaker
VCS-96-94-150	94 - Zone w / 150 amp breaker
VCS-96-96-150	96 - Zone w / 150 amp breaker
VCS-112-98-175	98 - Zone w / 175 amp breaker
VCS-112-100-175	100 - Zone w / 175 amp breaker
VCS-112-102-175	102 - Zone w / 175 amp breaker
VCS-112-104-175	104 - Zone w / 175 amp breaker
VCS-112-106-175	106 - Zone w / 175 amp breaker
VCS-112-108-175	108 - Zone w / 175 amp breaker
VCS-112-110-175	110 - Zone w / 175 amp breaker
VCS-112-112-175	112 - Zone w / 175 amp breaker
VCS-128-114-200	114 - Zone w / 200 amp breaker
VCS-128-116-200	116 - Zone w / 200 amp breaker
VCS-128-118-200	118 - Zone w / 200 amp breaker
VCS-128-120-200	120 - Zone w / 200 amp breaker
VCS-128-122-200	122 - Zone w / 200 amp breaker
VCS-128-124-200	124 - Zone w / 200 amp breaker
VCS-128-126-200	126 - Zone w / 200 amp breaker
VCS-128-128-200	128 - Zone w / 200 amp breaker



CATALOG NUMBER	DESCRIPTION
MF1	1 - Zone
MF2	2 - Zone
MF5-150	5 - Zone w / 50 amp breaker
MF8-150	8 - Zone w / 50 amp breaker
MF12-150	12 - Zone w / 50 amp breaker
MF16-250	16 - Zone w / (2) 50 amp breakers
MF16-170	16 - Zone w / 70 amp breaker
MF20-250	20 - Zone w / (2) 50 amp breakers
MF20-170	20 - Zone w / 70 amp breaker
MF24-250	24 - Zone w / (2) 50 amp breakers
MF24-170	24 - Zone w / 70 amp breaker
MF28-350	28 - Zone w / (3) 50 amp breakers
MF32-350	32 - Zone w / (3) 50 amp breakers
MF40-450	40 - Zone w / (4) 50 amp breakers
MF44-450	44 - Zone w / (4) 50 amp breakers
MF48-450	48 - Zone w / (4) 50 amp breakers

- 15 & 30 amp main frames use S20-D3C & UATC-20 control modules.
- 240v, 3-phase, except MF1 & MF2 which are 240v single phase.
- Components contained within the main frame.
- Special or larger control systems available.
- Stacks of 2 or more main frames are rigidly fastened together into a single prewired unit.

## STANDARD 30 AMP MAIN FRAME



(High Power)

CATALOG NUMBER	DESCRIPTION
MFHP-1-130	1 - Zone w / 30 amp breaker
MFHP-3-150	3 - Zone w / 50 amp breaker
MFHP-6-1100	6 - Zone w / 100 amp breaker



# Introducing 360° Manifolds

**The Kool Flow 360° Inlet design offers more flexibility to have supply and return lines in any direction.**

**This design also offers the convenience of less plumbing and hardware.**

## 360° Port-to-Port (PP)

*Limited for space?*

With a port -to-port configuration you can separate Hot & Cold and mount in different locations.



COLOUR	# OF INLETS	# OF OUTLETS	# OF BLOCKS
Red/Silver	One each End	48 Max	10 Max
Blue/Silver	One each End	48 Max	10 Max

## 360° Port-to-Blank (PB)

*No costly end-plug.*

With a port-to-blank configuration you can eliminate the costly end plug and still mount the Hot & Cold in different locations.



COLOUR	# OF INLETS	# OF OUTLETS	# OF BLOCKS
Red/Silver	One	49 Max	11 Max
Blue/Silver	One	49 Max	11 Max

## 360° Port-to-Divide (PD)

*Combine your cooling needs into one manifold.*

Separate Hot & Cold with a Mid-Block and mount in one easy location.



COLOUR	# OF INLETS	# OF OUTLETS	# OF BLOCKS
Red/Silver/Blue	One each End	98 Max	21 Max







# FB2 Series Manifold

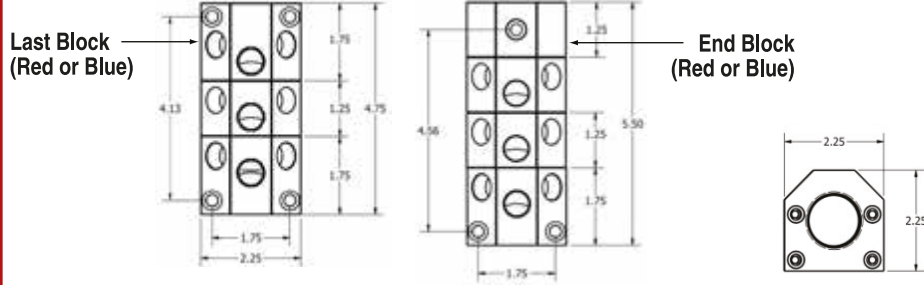
## Specifications

Block Size: 2.25" W x 2.25" H  
 Material: 6061-T6, Anodized  
 Mounting Hole Size: 1/4" SHCS  
 Inlet Hole: 1" NPT  
 Outlet Hole: 1/4" or 3/8"  
 (5) Outlet Holes per Standard Block  
 (3) Outlet Holes per 90 Degree Block

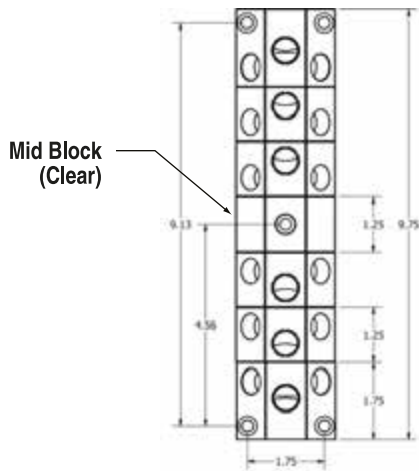


Port-to-Port (PP)

Port-to-Blank (PB)



## Port-to-Divide (PD)



## Port-to-Divide



### 1/4" Outlet

#### Assembly No.

FB2-1-4-PD  
 FB2-2-4-PD  
 FB2-3-4-PD  
 FB2-4-4-PD  
 FB2-5-4-PD

### 3/8" Outlet

#### Assembly No.

FB2-1-6-PD  
 FB2-2-6-PD  
 FB2-3-6-PD  
 FB2-4-6-PD  
 FB2-5-6-PD

## Port-to-Port



### 1/4" Outlet, Red

#### Assembly No.

FB2-2-4-R-PP  
 FB2-3-4-R-PP  
 FB2-4-4-R-PP  
 FB2-5-4-R-PP

### 3/8" Outlet, Red

#### Assembly No.

FB2-2-6-R-PP  
 FB2-3-6-R-PP  
 FB2-4-6-R-PP  
 FB2-5-6-R-PP

### 1/4" Outlet, Blue

#### Assembly No.

FB2-2-4-B-PP  
 FB2-3-4-B-PP  
 FB2-4-4-B-PP  
 FB2-5-4-B-PP

### 3/8" Outlet, Blue

#### Assembly No.

FB2-2-6-B-PP  
 FB2-3-6-B-PP  
 FB2-4-6-B-PP  
 FB2-5-6-B-PP

## Port-to-Blank



### 1/4" Outlet, Red

#### Assembly No.

FB2-1-4-R-PB  
 FB2-2-4-R-PB  
 FB2-3-4-R-PB  
 FB2-4-4-R-PB  
 FB2-5-4-R-PB

### 3/8" Outlet, Red

#### Assembly No.

FB2-1-6-R-PB  
 FB2-2-6-R-PB  
 FB2-3-6-R-PB  
 FB2-4-6-R-PB  
 FB2-5-6-R-PB

### 1/4" Outlet, Blue

#### Assembly No.

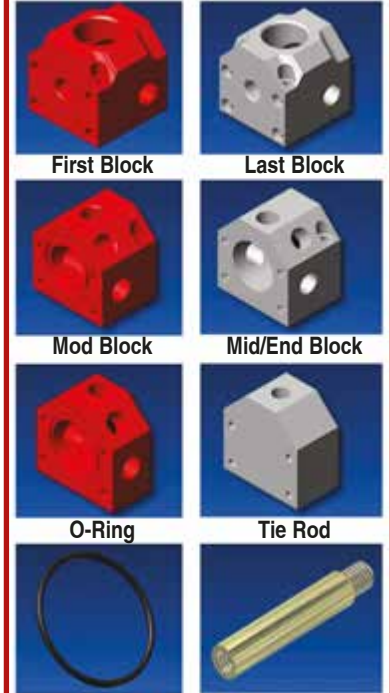
FB2-1-4-B-PB  
 FB2-2-4-B-PB  
 FB2-3-4-B-PB  
 FB2-4-4-B-PB  
 FB2-5-4-B-PB

### 3/8" Outlet, Blue

#### Assembly No.

FB2-1-6-B-PB  
 FB2-2-6-B-PB  
 FB2-3-6-B-PB  
 FB2-4-6-B-PB  
 FB2-5-6-B-PB

## 90 Deg First Block 90 Deg Last Block



Assembly includes o-rings and hardware required for each block.

## 90 Deg First Block

Part Number	Outlet Size	Color
FB2-FB90-1-4-R	1/4"	Red
FB2-FB90-1-4-B	1/4"	Blue
FB2-FB90-1-6-R	3/8"	Red
FB2-FB90-1-6-B	3/8"	Blue

## 90 Deg Last Block

Part Number	Outlet Size	Color
FB2-FB90-1-4-CL	1/4"	Clear
FB2-FB90-1-6-CL	3/8"	Clear

## First Block

Part Number	Outlet Size	Color
FB2-FB-1-4-R	1/4"	Red
FB2-FB-1-4-B	1/4"	Blue
FB2-FB-1-6-R	3/8"	Red
FB2-FB-1-6-B	3/8"	Blue

## Mod Block

Part Number	Outlet Size	Color
FB2-MOD-4-R	1/4"	Red
FB2-MOD-4-B	1/4"	Blue
FB2-MOD-6-R	3/8"	Red
FB2-MOD-6-B	3/8"	Blue

## Last Block (Port-to-Port only)

Part Number	Outlet Size	Color
FB2-LB-1-4-CL	1/4"	Clear
FB2-LB-1-6-CL	3/8"	Clear

## Mid/End Block

Part Number	Outlet Size	Color
FB2-EB-1-CL	n/a	Clear



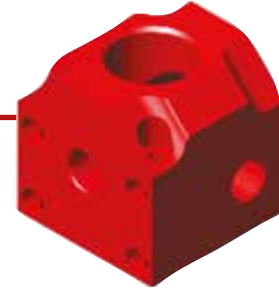
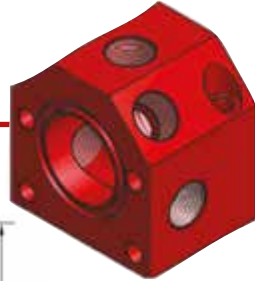
koolfowmanifold.com



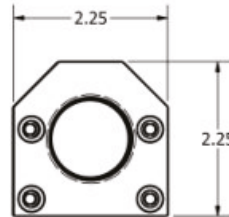
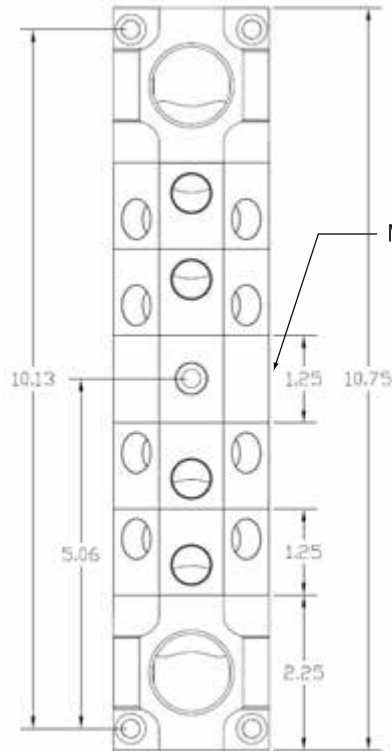
# FB2 90° Series

## Specifications

Block Size: 2.25" W x 2.25" H  
 Material: 6061-T6, Anodized  
 Mounting Hole Size: 1/4" SHCS  
 Inlet Hole: 1" NPT  
 Outlet Hole: 1/4" or 3/8"  
 (5) Outlet Holes per Standard Block  
 (3) Outlet Holes per 90 Degree Block



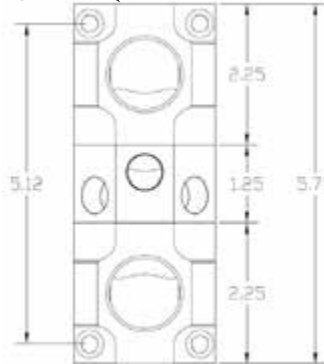
### Port-to-Divide (PD)



Mid Block  
(Clear)

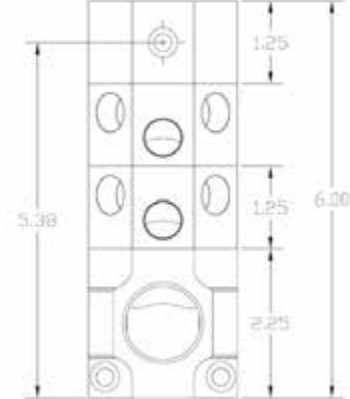
### Port-to-Port (PP)

End Block  
(Red or Blue)



### Port-to-Blank (PB)

Last Block  
(Red or Blue)



### Port-to-Divide



### Port-to-Port



### Port-to-Blank



**1/4" Outlet** Assembly No.  
 FB290-1-4-PD  
 FB290-2-4-PD  
 FB290-3-4-PD  
 FB290-4-4-PD  
 FB290-5-4-PD

**3/8" Outlet** Assembly No.  
 FB290-1-6-PD  
 FB290-2-6-PD  
 FB290-3-6-PD  
 FB290-4-6-PD  
 FB290-5-6-PD

**1/4" Outlet, Red** Assembly No.  
 FB290-2-4-R-PP  
 FB290-3-4-R-PP  
 FB290-4-4-R-PP  
 FB290-5-4-R-PP

**3/8" Outlet, Red** Assembly No.  
 FB290-2-6-R-PP  
 FB290-3-6-R-PP  
 FB290-4-6-R-PP  
 FB290-5-6-R-PP

**1/4" Outlet, Blue** Assembly No.  
 FB290-2-4-B-PP  
 FB290-3-4-B-PP  
 FB290-4-4-B-PP  
 FB290-5-4-B-PP

**3/8" Outlet, Blue** Assembly No.  
 FB290-2-6-B-PP  
 FB290-3-6-B-PP  
 FB290-4-6-B-PP  
 FB290-5-6-B-PP

**1/4" Outlet, Red** Assembly No.  
 FB290-1-4-R-PB  
 FB290-2-4-R-PB  
 FB290-3-4-R-PB  
 FB290-4-4-R-PB  
 FB290-5-4-R-PB

**3/8" Outlet, Red** Assembly No.  
 FB290-1-6-R-PB  
 FB290-2-6-R-PB  
 FB290-3-6-R-PB  
 FB290-4-6-R-PB  
 FB290-5-6-R-PB

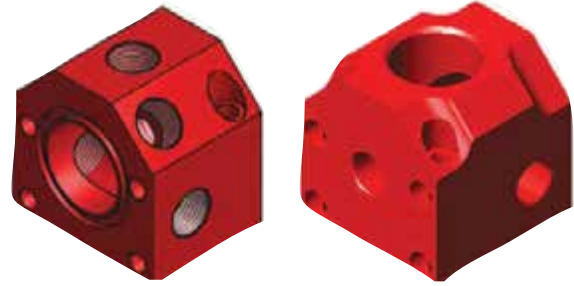
**1/4" Outlet, Blue** Assembly No.  
 FB290-1-4-B-PB  
 FB290-2-4-B-PB  
 FB290-3-4-B-PB  
 FB290-4-4-B-PB  
 FB290-5-4-B-PB

**3/8" Outlet, Blue** Assembly No.  
 FB290-1-6-B-PB  
 FB290-2-6-B-PB  
 FB290-3-6-B-PB  
 FB290-4-6-B-PB  
 FB290-5-6-B-PB





# FB3 90° Series



### Specifications

Block Size: 3.00" W x 3.00" H  
 Material: 6061-T6, Anodized  
 Mounting Hole Size: 5/16" SHCS  
 Inlet Hole: 1-1/2" NPT  
 Outlet Hole: 3/8" or 1/2"  
 (5) Outlet Holes per Standard Block  
 (3) Outlet Holes per 90 Degree Block

### Port-to-Divide



<b>3/8" Outlet</b>	<b>1/2" Outlet</b>
Assembly No.	Assembly No.
FB390-1-6-PD	FB390-1-8-PD
FB390-2-6-PD	FB390-2-8-PD
FB390-3-6-PD	FB390-3-8-PD
FB390-4-6-PD	FB390-4-8-PD
FB390-5-6-PD	FB390-5-8-PD

### Port-to-Port



<b>3/8" Outlet, Red</b>	<b>1/2" Outlet, Red</b>
Assembly No.	Assembly No.
FB390-2-6-R-PP	FB390-2-8-R-PP
FB390-3-6-R-PP	FB390-3-8-R-PP
FB390-4-6-R-PP	FB390-4-8-R-PP
FB390-5-6-R-PP	FB390-5-8-R-PP
<b>3/8" Outlet, Blue</b>	<b>1/2" Outlet, Blue</b>
Assembly No.	Assembly No.
FB390-2-6-B-PP	FB390-2-8-B-PP
FB390-3-6-B-PP	FB390-3-8-B-PP
FB390-4-6-B-PP	FB390-4-8-B-PP
FB390-5-6-B-PP	FB390-5-8-B-PP

### Port-to-Blank



<b>3/8" Outlet, Red</b>	<b>1/2" Outlet, Red</b>
Assembly No.	Assembly No.
FB390-1-6-R-PB	FB390-1-8-R-PB
FB390-2-6-R-PB	FB390-2-8-R-PB
FB390-3-6-R-PB	FB390-3-8-R-PB
FB390-4-6-R-PB	FB390-4-8-R-PB
FB390-5-6-R-PB	FB390-5-8-R-PB
<b>3/8" Outlet, Blue</b>	<b>1/2" Outlet, Blue</b>
Assembly No.	Assembly No.
FB390-1-6-B-PB	FB390-1-8-B-PB
FB390-2-6-B-PB	FB390-2-8-B-PB
FB390-3-6-B-PB	FB390-3-8-B-PB
FB390-4-6-B-PB	FB390-4-8-B-PB
FB390-5-6-B-PB	FB390-5-8-B-PB



# Specials

- DMS can offer a wide range of heating and cooling products that may not be shown in this catalog.
- As a full service manufacturer and supplier, we can provide design assistance and prototype or production quantities of special heating and cooling products.
- The items on this page represent just a few of the many specials that have been manufactured for unique applications.



## Special and Large Pipe Fittings



## Special Baffles



## Metric and Special Adapters



## Stainless Tube Assemblies

# Pipe Check

DMS Pipe Check is an easy way to check a pipe thread. This handy tool can check pipe sizes from 1/16" through 1/2" for a number of applications. Use the PC-100 to quickly find the size of a pipe.



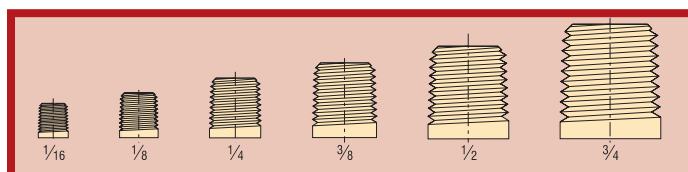
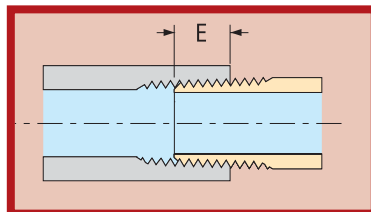
## PC-100

PC-100 simply determines the size of pipes from 1/16" to 1/2" NPT. Made entirely of heavy gauge aluminum. Just turn the thread into the hole that fits to determine pipe sizes.

## Pipe Thread Data

The nominal size of any pipe does not in fact refer to either the outside diameter (O.D.) or the inside diameter (I.D.) of the pipe. The table lists standard pipe sizes along with the actual O.D. and I.D. for each size.

Once the correct pipe size has been determined, the "E" dimension may be used to determine the length of the component required to assemble properly when fully tightened.



PIPE SIZE	THREADS PER INCH	OUTSIDE DIA. OF PIPE	INSIDE DIA. OF PIPE	TAP DRILL SIZE		E
				WITHOUT REAM	WITH REAM	
1/16	27	.312	.209	1/4	15/64	.261
1/8	27	.405	.269	11/32	21/64	.263
1/4	18	.540	.364	7/16	27/64	.395
3/8	18	.675	.493	9/16	9/16	.407
1/2	14	.840	.622	45/64	11/16	.534
3/4	14	1.050	.824	29/32	57/64	.545
1"	11-1/2	1.315	1.049	1-9/64	1-1/8	.661
1-1/4	11-1/2	1.660	1.380	1-31/64	1-15/32	.681
1-1/2	11-1/2	1.900	1.610	1-23/32	1-45/64	.681
2"	11-1/2	2.375	2.067	2-3/16	2-11/64	.697



# Polishing Supplies

## EDM Polishing Stones P1

AM-8 Excellent ultrasonic stone, strong; holds shape  
AS-9 Great with porfiler & hand stoning



## Specialty Stones P7

"AO" Aggressive stone for general mill removal of EDM  
"TH" Aluminum oxide; performs well on all types tool steel  
900-F Very soft stone for super-fine finishing



## Industrial Abrasives P13

**Sharpening Stones**  
For deburring, sharpening, honing  
**Dressing Sticks**  
Aluminum Oxide to clean & dress wheels  
**Boron Carbide Dressing Stick**  
Extremely wear resistant



## EDM Polishing Stones P2

Orange EDM - Fast cutting action consistent breakdown  
GOLD - Perfect all around aluminum oxide stone



## Roughing Stones P8

Roughout - Softer stone, aggressive cutting  
Ruby - Extremely fast cutting stone  
Boat Stone - for large dies and sharp edges  
Roughing - Medium stone for large cavity or parting lines



## Diamond Compounds P14

DMS Diamond Compound  
Oil soluble, high quality  
Mold Makers Diamond  
Oil soluble, consistent particles  
"Super US" - Very high concentration of diamond particles



## General Purpose Stones P3

### Aluminum Oxide

AM-2 General purpose stone; soft; fast breakdown  
Die Stone - similar to AM2, but slightly harder



## Detail Stones P9

**Ceramic Super stones**  
Very strong, used for EDM removal in ribs & slots  
**Air Operated Lapping Machine**  
Pneumatic short-stroke profiler



## Diamond Compounds P15,16

Oil-Based  
Water-Based



## General Purpose Stones P4

### Aluminum Oxide

AM-K White aluminum oxide good for machined surfaces  
AS-H White aluminum oxide softer than AM-K



## Detail Stones P10

**Ceramic Diamond**  
Diamond impregnated stone for harder steels 45-65Hrc  
CNB80 & CNB120 - Extremely aggressive composite fiber



## Lapping Items P17

**Diamond Compound**  
For finishing & touch up work  
**High Speed Motor**



## General Purpose Stones P5

### Silicon Carbide

CS Fast cutting black silicon carbide  
CS-M premium green silicon carbide, fast cutting med. hard  
CS-HD Harder than CS-M excellent for hard steels 47-63Hrc



## Accessories P11

**Stone holders**  
Specially designed for hand use and profilers



## Mounted Stones P18,19

**MX Wheels**  
For polishing and deburring of runners  
**Polishing Points**  
3/32 shanks for all mold & die work  
**Mounted Stones**  
"W" shapes for general purpose grinding

## Specialty Stones P6

"PC" Premium stone for final finish work  
"T2" Excellent stone for stainless steel  
"T4" Engineered for finishing aluminum & soft metals



## Accessories P12

**Bori-Lube** - To clean, lubricate, prevent stone loading  
**Mold Polish** - Removes haze, rust, oxidation, stains & haze-out  
**Turbo-Lap** - Pneumatic Short Stroke Profiler  
**Rib-Light** - High intensity pen lights



## Polishing Felts P20

**Felt Bobs & Wheels**  
To produce high finishes on all dies & molds



# Polishing Supplies

## Polishing Brushes P21

### Mounted Polishing Brushes

Bristle & wire fill for various applications



## Specialty Abrasives P27

### Flap Wheels

Cleaning, deburring & blending

### Non-Woven Hand Pads

Non woven synthetic fiber with abrasive grain for surface conditioning without damage.



## Carbide Burs P33

Carbide burs - 1/4 shanks

## Cut-Off Wheels & Mandrels P22

### High Speed Cutoff Wheel

For quick cutting & blending

### Reinforced Cutoff Wheels

Smoother cuts on ferrous metals

### Mandrels

Various mandrels for mounting felts & wheels



## Diamond Products P28

### Standard, long & needle diamond files

For use on carbide, stainless, hardened steel, glass, ceramics, and other hard materials.

### Diamond Foil

Diamond grain electroplated on to foil

## Carbide Burs P34

Carbide Burs - 1/4 shanks

Carbide Burs - 1/4 shanks for non-ferrous metals

Carbide Blanks - Round blanks & split ends for etching.

## Coated Abrasives P23

PSA Discs - Resin bond cloth discs with adhesive

PSA Disc Holder - Plastic backing pads with shanks

Shop Rolls - Cloth aluminum oxide bench rolls

PSA Strips - Resin & glue bond abrasive strips with adhesive



## Diamond Products P29

### Tapered Diamond Needle Files

Flat or round handles. Permit filing slots or ribs as narrow as .020". Round handles designed for profilers & lappers.



## Steel Files P35

Needle Files - 6-1/4" long reach for profilers & hand



## Coated Abrasives P24

Aluminum oxide laminated discs

Available in 2 styles of screw on technology and two grades of resin.



## Diamond Products P30

### Diamond Needle Files & Extra Thin Diamond Files

Economical range of files for use in profilers.

### Diamond Points & Diamond Discs

Miniature mounted points & discs for fine detail jobs.

## Steel Files P36

Diemakers' & Silversmiths' Files

Diesiners' Regular Riffle - 7" Overall

## Coated Abrasives P25

Zirconium Laminated Discs

Available in 2 styles of screw on technology & two grades

Laminated Disc Holders

For mounting of all laminated discs



## Carbide Burs P31

Carbide burs - 1/8 shanks



## Stone Selection Guide P37

Stone Selection Suggestions

Popular Stone Shapes - Inches, Millimeters

## Specialty Coated Abrasives P26

Cartridge Rolls - For high speed deburring

Spiral Bands - Great in curved or hard to reach areas



## Carbide Burs P32

Carbide burs - 1/8 shanks x 1/4 head

Carbide burs - SS White 3/32 Shank dental burs

Carbide Burs - 3/32" diameter



# EDM Polishing Stones

## AM-8



AM-8 is designed for removing EDM scale on all types of mold & die steel. Additionally, it is an excellent tool for polishing sharp corners and small details either by hand or with the use of polishing machines.



AM-8	100	120	150	180	220	280	320	400	600
1/16 x 1/4 x 6		020120	020230	020340	020450	020560	020670	020780	021000
1/16 x 1/2 x 6	020020	020130	020240	020350	020460	020570	020680	020790	021010
1/8 x 1/8 x 6	020030			020360	020470		020690	020800	021020
1/8 x 1/4 x 6	020040	020150	020260	020370	020480	020590	020700	020810	021030
1/8 x 1/2 x 6	020050	020160	020270	020380	020490	020600	020710	020820	021040
1/8 x 1 x 6	020060	020170	020280	020390	020500	020610	020720	020830	021050
5/32 x 5/32 x 6	020070	020180		020400	020510		020730	020840	021060
1/4 x 1/4 x 6	020090	020200	020310	020420	020530	020640	020750	020860	021080
1/4 x 1/2 x 6	020100	020210	020320	020430	020540	020650	020760	020870	021090
1/4 x 1 x 6	020110	020220	020330	020440	020550	020660	020770	020880	021100
3/8 x 3/8 x 6	020112	020222	020332	020442	020552		020772		
1/4 TRI x 6		020224		020444	020554		020774		021104
3/8 TRI x 6		020225		020445	020555		020775		021105
1/4 RND x 5.5		020227		020447	020557		020777	020887	021107
3/8 RND x 5.5		020228		020448	020558		020778		021108

## AS-9



AS-9 is engineered for hand stoning EDM scales surfaces. It can be used with polishing machines, but the special formulation provides a fast, smooth cutting action during hand stoning. Use either with a lubricant or dry.



AS-9	100	120	150	180	220	280	320	400	600
1/16 x 1/4 x 6		021260	021370	021480	021590	021700	021810	021920	022140
1/16 x 1/2 x 6	021160	021270	021380	021490	021600	021710	021820	021930	022150
1/8 x 1/8 x 6				021500	021610	021720	021830	021940	022160
1/8 x 1/4 x 6	021180	021290	021400	021510	021620	021730	021840	021950	022170
1/8 x 1/2 x 6	021190	021300	021410	021520	021630	021740	021850	021960	022180
1/8 x 1 x 6	021200	021310	021420	021530	021640	021750	021860	021970	
5/32 x 5/32 x 6		021320		021540	021650		021870	021980	022200
1/4 x 1/4 x 6	021230	021340	021450	021560	021670	021780	021890	022000	022220
1/4 x 1/2 x 6	021240	021350	021460	021570	021680	021790	021900	022010	022230
1/4 x 1 x 6	021250	021360	021470	021580	021690	021800	021910	022020	022240





# EDM Polishing Stones

## Orange EDM

Orange EDM can be used by hand, with a profiler or ultrasonic units. Designed as an excellent tool for fast EDM scale removal. Orange EDM holds its shape and provides consistent cutting.



Orange EDM	120	180	220	320	400	600
1/16 x 1/4 x 6	082005		082203	082307	082405	082604
1/16 x 1/2 x 6	082011		082215	082311	082412	082606
1/8 x 1/8 x 6	082015	082101	082219	082319	082417	082615
1/8 x 1/4 x 6	082019	082115	082225	082322	082419	082619
1/8 x 1/2 x 6	082021	082120	082230	082325	082421	082623
1/8 x 1 x 6	082023	082126	082232	082330	082425	082627
5/32 x 5/32 x 6	082029	082129	082236	082335	082430	082633
1/4 x 1/4 x 6	082035	082137	082239	082340	082439	082637
1/4 x 1/2 x 6	082042	082142	082242	082342	082442	082642
1/4 x 1 x 6	082045	082149	082252	082346	082455	082659
3/8 x 3/8 x 6	082055		082254	082355	082457	082661
1/4 TRI x 6	082066		082270	082362	082465	
3/8 TRI x 6	082070		082275	082365	082467	
1/4 RND x 5.5	082083		082283	082367	082471	082695

## Gold



The new GOLD stone is the perfect all around aluminum oxide stone. It has excellent breakdown characteristics and retains its shape well. The GOLD is filled with a special lubricant, however, it is recommended to use polishing lubricants with all grits; pre-soaking is not required. This stone works well on EDM machined surfaces and on all tool steels. The GOLD stone can be used by hand or in a reciprocating profiler. Also available in metric sizes.



GOLD	150	220	320	400	600	800
1/8 x 1/4 x 6	057240	057440	057540	057640	057740	057840
1/8 x 1/2 x 6	057250	057450	057550	057650	057750	057850
5/32 x 5/32 x 6	057230	057430	057530	057630	057728	057830
1/4 x 1/4 x 6	057260	057460	057560	057660	057760	057860
1/4 x 1/2 x 6	057270	057470	057570	057670	057770	057870
1/4 x 1 x 6	057271	057472	057572	057671	057772	057872



# General Purpose Stones Aluminum Oxide

## AM-2



An excellent all around finishing stone. AM-2 is engineered for hand polishing of all types of mold & die steels, including SAE1030 pre heat treated P20, H13, S-7 and T-420. Soft action combined with the perfect breakdown permits pre-finishing on non-ferrous metals.



AM-2	100	150	180	220	280	320	400	600	900
1/16 x 1/4 x 6	023210	023340		023600	023730	023860	023990	024250	024510
1/16 x 1/2 x 6	023220	023350		023610		023870	024000	024260	024250
1/8 x 1/8 x 6	023220	023360	023490	023620		023880	024010	024270	024530
1/8 x 1/4 x 6	023240	023370	023500	023630	023760	023890	024020	024280	024540
1/8 x 1/2 x 6	023250	023380	023510	023640	023770	023900	024030	024290	024550
1/8 x 1 x 6	023260	023390	023520	023560	023780	023910	024040	024300	
5/32 x 5/32 x 6	023720	023400	023530	023660		023920	024050	024310	024570
1/4 x 1/4 x 6	023290	023420	023550	023680	023810	023940	024070	024330	024590
1/4 x 1/2 x 6	023300	023430	023560	023690	023820	023950	024080	024340	024600
1/4 x 1 x 6	023310	023440	023570	023700	023830	023960	024090	024350	024610
3/8 x 3/8 x 6	023315	023445		023705	023835	023965	024095	024355	
1/2 x 1/2 x 6	023320	023450	023580	023710	023840	023970	024100	024360	024620
1/2 x 1 x 6	023330	023460	023590	023720	023850	023980	024110	024370	024630
1 x 1 x 6	023331	023461	023591	023721		023981	024111	024371	
1/4 TRI x 6		023463		023723		023983	024113		
3/8 TRI x 6		023464		023724		023984	024114		
1/4 RND x 5.5		023466		023726		023986	024116	024376	
3/8 RND x 5.5		023467		023727		023987	024117	024377	
1/2 RND x 5.5		023468		023728		023988	024118		

## Die Stone



The Die Stone is engineered for use on all tool steels. It provides consistent breakdown and fast cutting action. Slightly harder than the AM-2.

Die Stone	150	180	220	320	400	600
1/16 x 1/4 x 6	081017		081203	081323	081405	081611
1/16 x 1/2 x 6	081012		081210	081324	081409	081620
1/8 x 1/8 x 6	081015	081112	081215	081329	081412	081625
1/8 x 1/4 x 6	081019	081117	081223	081333	081419	081629
1/8 x 1/2 x 6	081022	081123	081225	081335	081421	081631
1/8 x 1 x 6	081025	081128	081231	081336	081422	081633
5/32 x 5/32 x 6	081030	081135	081235	081339	081425	081639
1/4 x 1/4 x 6	081037	081139	081236	081340	081436	081640
1/4 x 1/2 x 6	081042	081142	081242	081342	081442	081642
1/4 x 1 x 6	081045	081149	081273	081349	081449	081646
3/8 x 3/8 x 6	081048		081278	081353	081452	081655
1/2 x 1/2 x 6	081053	081154	081283	081354	081455	081662
1/2 x 1 x 6	081057	081157	081286	081355	081460	081664
1 x 1 x 6	081062	081163	081289	081359	081465	081669
1/4 TRI x 6	081065		081290	081361	081469	
3/8 TRI x 6	081069		081291	081364	081470	
1/4 RND x 5.5	081073		081295	081367	081488	081670
3/8 RND x 5.5	081078		081297	081371	081489	081675
1/2 RND x 5.5	081099		081299	081374	081495	





# General Purpose Stones Aluminum Oxide

## AM-K



AM-K is a white aluminum oxide stone of medium hardness. It performs well on all types of mold steels. Generally, AM-K is used dry for rough forming and removal of machine marks. Lubricants should be used for finer grits.



AM-K	100	150	180	220	320	400	600
1/16 x 1/4 x 6	025980	026120	026260	026400	026680	026820	
1/16 x 1/2 x 6	025990	026130	026270	026410	026690	026830	027110
1/8 x 1/8 x 6		026140	026280	026420	026700	026840	027120
1/8 x 1/4 x 6	026010	026150	026290	026430	026710	026850	027130
1/8 x 1/2 x 6	026020	026160	026300	026440	026720	026860	027140
1/8 x 1 x 6	026030	026170	026310	026450	026730	026870	
5/32 x 5/32 x 6		026180	026320	026460	026740	026880	027160
1/4 x 1/4 x 6	026060	026200	026340	026480	026760	026900	027180
1/4 x 1/2 x 6	026070	026210	026350	026490	026770	026910	027190
1/4 x 1 x 6	026080	026220	026360	026500	026780	026920	027200
1/2 X 1/2 X 6	026090	026230	026370	026510	026790	026930	027210
1/2 X 1 X 6	026100	026240	026380	026520	026800	026940	027220
1 X 1 X 6	026110	026250		026530	026810		027230

## AS-H



AS-H is similar to AM-K but slightly softer. It conforms quickly to pre-shaped surfaces. AS-H are more suitable for hand stoning and should always be used with lubricant.



AS-H	100	150	180	220	320	400	600
1/8 x 1/4 x 6			027590	027730	028010	028150	
1/8 x 1/2 x 6	027320	027460	027600	027740	028020		028440
1/4 x 1/4 x 6	027360		027640	027780	028060	028200	028480
1/4 x 1/2 x 6	027370	027510	027650	027790	028070	028210	028490

### Polishing Tips

- Start your polishing with a finer grit stone rather than a coarse stone. You will save time in the long run.
- Hold the stone firmly for directional control, but press only hard enough to make the stone cut. Let the abrasive do the work.
- After each grit change, clean the work area thoroughly to remove all larger abrasive grain particles.
- When using a machine (such as a profiler or ultrasonic unit, or lapping tool) use moderate speed and pressure only. Excessive speed and pressure can cause minute stresses of metal resulting in "orange peel" or "dimpling."



# General Purpose Stones Aluminum Oxide

## CS



This fast cutting black silicon carbide is a soft stone designed to conform rapidly to a variety of details and is mostly used for hand polishing. It breaks down rapidly. CS stones are used on all tool steels as well as for roughing on some non-ferrous materials.



CS	150	180	220	320	400	600
1/8 x 1/4 x 6	024850			025410	025550	025830
1/8 x 1/2 x 6	024860	025000	025130	025420	025560	025840
1/4 x 1/4 x 6	024900		025140	025460	025600	025880
1/4 x 1/2 x 6	024910	025050	025180	025470	025610	025890
1/4 x 1 x 6	024920		025190	025480	025620	025900
1/2 X 1/2 X 6	024930		025200	025490	025630	025910
1/2 X 1 X 6	024940		025210	025500	025640	025920

## CS-M



This premium green silicon carbide stone has superb cutting ability. CS-M has a special bond which makes it non-loading with a medium soft hardness. The sharp silicon carbide allows use of the CS-M for finishing low tensile strength materials such as aluminum, bronze, cast iron. Lubricant should be used.



CS-M	120	150	220	320	400	600
1/16 x 1/2 x 6		035205	035305	035505	035605	035805
1/8 x 1/4 x 6	035113	035213	035313	035513	035613	035813
1/8 x 1/2 x 6	035117	035217	035317	035517	035617	035817
5/32 x 5/32 x 6				035525	035625	035825
1/4 x 1/4 x 6	035129	035229	035329	035529	035629	035829
1/4 x 1/2 x 6	035133	035233	035333	035533	035633	035833
1/4 x 1 x 6		035237	035337	035537	035637	035837
3/8 x 3/8 x 6		035241	035341	035541	035641	
1/2 x 1/2 x 6		035245	035345	035545	035645	035845
1/2 x 1 x 6		035249	035349	035549	035649	035849
1 x 1 x 6		035253	035353	035553	035653	035853
"1/4 rnd x 5-1/2"			035373	035573	035673	



## CS-HD

Hard premium green silicon carbide stone has superb cutting ability. Excellent for hardened steels 47-63Hrc. Harder acting and slower to break down than CS or CS-M. This polishing stone can be used to polish even the hardest die & mold steels.



CS-HD	120	150	220	320	400	600
1/16 x 1/2 x 6		036205	036305	036505	036605	036805
1/8 x 1/4 x 6	036113	036213	036313	036513	036613	036813
1/8 x 1/2 x 6	036117	036217	036317	036517	036617	036817
5/32 x 5/32 x 6			036325	036525	036625	036825
1/4 x 1/4 x 6	036129	036229	036329	036529	036629	036829
1/4 x 1/2 x 6	036133	036233	036333	036533	036633	036833
1/4 x 1 x 6		036237	036337	036537	036637	
3/8 x 3/8 x 6			036341	036541	036641	
1/2 x 1/2 x 6		036245	036345	036545	036645	036845
1/2 x 1 x 6		036249	036349	036549	036649	
1 x 1 x 6		036253	036353	036553	036653	036853





# Specialty Stones Aluminum Oxide

## PC



“Polisher’s Choice” is made from premium select grain & bond and a proprietary process. The “PC” is a quick contouring finishing stone designed for rapid stock removal and is an outstanding choice for metal finishes requiring a final diamond finish. This stone requires lubricant and is suited for use by hand or profiler.



PC	150	220	320	400	600
1/8 x 1/4 x 6	059230	059330	059530	059630	059730
1/8 x 1/2 x 6	059240	059340	059540	059640	059740
5/32 x 5/32 x 6	059215	059315	059515	059615	059715
1/4 x 1/4 x 6	059250	059350	059550	059650	059750
1/4 x 1/2 x 6	059260	059360	059560	059660	059760
1/4 x 1 x 6	059265	059365	059565	059665	059765

## T2



Specially treated medium-hard stone cuts very fast and yet provides a silky, smooth finish. Use T-2 for high quality mold steels such as P20, H13 and 420 stainless. EXCELLENT stone for stainless steels.



T-2	150	220	320	400	600
1/16 x 1/4 x 6	036900	037096	037292	037492	037688
1/8 x 1/4 x 6	036912	037108	037304	037504	037700
1/8 x 1/2 x 6	036916	037112	037316	037508	037704
1/8 x 1 x 6	036918	037114	037318	037510	037706
5/32 x 5/32 x 6	036924	037120	037320	037516	037712
1/4 x 1/4 x 6	036928	037124	037324	037520	037716
1/4 x 1/2 x 6	036932	037128	037328	037524	037736
1/4 x 1 x 6	036936	037132	037332	037528	
1/2 x 1 x 6	036952	037148	037348	037544	037740
1 x 1 x 6	036956	037152	037352	037548	037744

## T4



Specially treated medium aluminum oxide that cuts fast and leaves an excellent finish. Similar to the T-2 but breaks down faster. Engineered for use on aluminum and soft metals without scratching or tearing the surface. Use of a lubricant is recommended.



T-4	150	220	320	400	600
1/8 x 1/4 x 6	038192	038352	038432	038512	038592
1/8 x 1/2 x 6	038196	038356	038436	038516	038596
1/4 x 1/4 x 6	038208	038368	038448	038528	038608
1/4 x 1/2 x 6	038212	038372	038452	038532	038612
1/4 x 1 x 6	038216	038376	038456	038536	038616





# Specialty Stones Aluminum Oxide

## TH



Made from premium aluminum oxide, then specially treated to provide a load resistant, smooth cutting action. The special formulation of the "TH" allows it to hold its shape and makes it an excellent choice for EDM surfaces. Performs well on all types of tool steels.



TH	150	220	320	400	600
1/8 x 1/4 x 6	034912	034108	034304	034504	034700
1/8 x 1/2 x 6	034916	034112	034316	034508	034704
1/4 x 1/4 x 6	034928	034124	034324	034520	034716
1/4 x 1/2 x 6	034932	034128	034328	034524	034736
1/4 x 1 x 6	034936	034132	034332	034528	034738
1/2 x 1 x 6	034933	034125	034333	034536	034737
1 x 1 x 6	034937	034126	034334	034537	034740



## AO



AO is a perfect all around aluminum oxide stone with excellent breakdown characteristics yet, it retains its shape well, especially when polishing mold cavity details. The AO is filled with a lubricant during the manufacturing process so it does not require pre-lubrication although the use of a lubricant is recommended.

AO	120	150	220	320	400	600
1/16 x 1/4 x 6	033101	033201	033401	033601	033701	033901
1/16 x 1/2 x 6	033105	033205	033405	033605	033705	033905
1/8 x 1/8 x 6	033109	033209	033409	033609	033709	033909
1/8 x 1/4 x 6	033113	033213	033413	033613	033713	033913
1/8 x 1/2 x 6	033117	033217	033417	033617	033717	033917
1/8 x 1 x 6	033121	033221	033421	033621	033721	
5/32 x 5/32 x 6	033125	033225	033425	033625	033725	033925
1/4 x 1/4 x 6	033129	033229	033429	033629	033729	033929
1/4 x 1/2 x 6	033133	033233	033433	033633	033733	033933
1/4 x 1 x 6	033137	033237	033437	033637	033737	033937
3/8 x 3/8 x 6	033141	033241	033441	033641	033741	
1/2 x 1/2 x 6	033145	033245	033445	033645	033745	033945
1/2 x 1 x 6	033149	033249	033449	033649	033749	033949
1 x 1 x 6	033153	033253	033453	033653	033753	033953
1/4 Tri x 6				033669	033769	
3/8 Tri x 6	033173		033473		033773	
1/2 Tri x 6	033177					
1" Tri x 6	033181					
1/4 Rnd x 5.5	033189	033289	033489	033689	033789	033989
3/8 Rnd x 5.5		033293	033493	033693	033793	033993
1/2 Rnd x 5.5			033497	033697	033797	033997



900-F	900
1/8 x 1/4 x 6	028600
1/8 x 1/2 x 6	028610
1/4 x 1/4 x 6	028630
1/4 x 1/2 x 6	028640
1/4 x 1 x 6	028650
1/2 x 1/2 x 6	028660

## 900-F



This stone has a super-fine structure and excellent breakdown properties for final finishing prior to diamond polish finishing. 900-F works especially well on P-20 mold steel ranging in hardness from 29-32Hrc. Primarily used for hand finishing operations and lubricant should be used.



# Roughing Stones

## DMS-I

Made from sharp grains of aluminum oxide held in a medium bond. Designed for large cavity and parting line work. Can also be used as a general purpose stone in smaller sizes. Use dry for best results.



DMS-I	80	120	150	180
1/4 x 1 x 8	K18080	K18120	K18150	K18180
1/2 x 1 x 8	K19080	K19120	K19150	K19180

## RO-MED

RO-MED is an excellent roughout for mold contours because of its fast Breakdown.



## RO-HARD

For detailing sharp corners and steps.



RO-MED	80	100	150	220
1/4 x 1 x 8	029200	029230	029260	029290
1/2 x 1 x 8	029210	029240	029270	029300
1 x 2 x 8	029220	029250	029280	029310

RO-HARD	150	220
1/4 x 1 x 8	029460	029490
1/2 x 1 x 8	029470	029500
1 x 2 x 8	029480	029510

## ROUGHOUTS



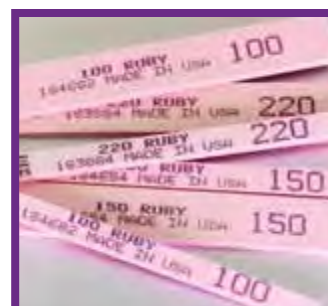
Ideal for removing cutter marks after the duplicating process. From soft to hard, the Roughout stones enable rapid, aggressive stock removal.



ROUGHOUT	80 Blue	100 White	120 Green	180 White
1/4 X 1 X 8	029516	029530	029545	029575
1/2 x 1 x 8	029519	029533	029548	029578
1 X 1 X 8	029521	029536	029551	029581
1 x 2 x 8	029524	029539	029554	029584

## RUBY

Ruby stones are extremely fast cutting and perform well on all tool steels. They provide sharp cutting action for fast stock removal. The consistent breakdown allows the stone to be used dry without loading. Try the "RB" for fast stock removal on mold contours.



## BOAT STONES

Available in aluminum oxide and black or green silicon carbide. Made to be easily held and primarily used on large dies and sharp edges on machined parts.



Type	Available Colors	Size
Aluminum Oxide	White, Brown, Pink, Ruby, Red, Orange	9" x 2-1/2" x 1-1/2"
Silicon Carbide	Black, Green	9" x 2-1/2" x 1"

RUBY	80	100	150	220
1/4 X 1/4 X 6	074329	074529	074629	074829
1/4 X 1/2 X 6	074333	074533	074633	074833
1/4 x 1 x 6	074343	074543	074643	074843
1/2 x 1/2 x 6	074341	074541	074641	074841
1/2 x 1 x 6	074345	074545	074645	074845



To order, specify type and color (i.e. Aluminum Oxide-White)



# Detail Stones

## CERAMIC SUPER STONES

The original Ceramic Stone/Super Stone is used for fine detail polishing. Made from strands of fiber disbursed in a thermoset resin. This unique stone is extremely strong and thin. Its flexibility makes this stone excellent for tight ribs, slots and EDM removal. Can be used by hand, yet works extremely well in filing, lapping & ultrasonic machines.



Size (mm)	Violet	Green (coarser)	Gold <	Light Brown	Orange	Brown (Black)	Blue	White >	Red finer)
1 x 4 x 50	669886	-	-	-	-	670587	670787	-	-
0.5 x 2 x 100	669800	669900	670100	670200	670300	670500	670700	670800	670900
0.5 x 4 x 100	669810	669910	670110	670210	670310	670510	670710	670810	670910
0.5 x 6 x 100	669830	669930	670130	670230	670330	670530	670730	670830	670930
0.8 x 4 x 100	669812	669912	670112	670212	-	670512	670712	670812	-
0.8 x 6 x 100	669832	669932	670132	670232	-	670532	670732	-	-
0.8 x 10 x 100	669852	-	670152	670252	-	670552	670252	670852	-
1 x 2 x 100	669804	669904	670104	670204	670304	670504	670704	670804	670904
1 x 4 x 100	669814	669914	670114	670214	670314	670514	670714	670814	670914
1 x 6 x 100	669834	669934	670134	670234	670334	670534	670734	670834	670934
1 x 10 x 100	669854	669954	670154	670254	670354	670554	670754	670854	670954
1.5 x 4 x 100	669816	669916	670116	670216	670316	670516	670716	-	-
1.5 x 6 x 100	669836	669936	670136	670236	670336	670536	670736	-	-
1 x 4 x 150	-	669924	670124	670224	-	-	-	-	-
2.35 x 50	-	-	-	-	670371	670571	670771	-	-
2.35 x 100	669870	-	-	-	-	670545	670745	-	-
3 x 50	669881	-	-	-	670381	670581	670781	670881	670981
3.16 x 50	669891	669991	670091	670191	670391	670591	670791	-	-
3 x 100	669851	669951	670151	670251	670351	670551	670751	670851	670951

## AIR OPERATED LAPPING MACHINE

Turbine-driven "in-line" reciprocating UltraLap for very small to medium sized detail/finishing work. All three systems generate minimal noise/vibration and require little maintenance.



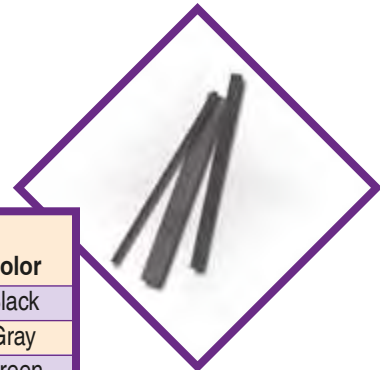
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Catalog No.	UTR-70	UTR-30	UTR-20
Stroke length	0.7mm	0.3mm	0.2mm
Max. Speed at no load	35,000 spm	40,000 spm	50,000 spm
Air Consumption	0.05 m <sub>3</sub> /min	0.05 m <sub>3</sub> /min	0.05 m <sub>3</sub> /min
Air Pressure Max.	90 psi	90 psi	90 psi
Dimension (mm)	24 x 180	24 x 180	24 x 180
Weight (grams)	175	175	165
Lubrication	1 to 2 drops/min each unit		



# Detail Stones

## CERAMIC DIAMOND STONES (Flat)



Diamond impregnated ceramic stones. Perfect for removing EDM scale when polishing steels of 45-65Hrc. The high performance is attained by the uniform impregnation of diamond particles across the length of the entire stone. May be used with profiler, ultrasonic systems or by hand.

Dimension (mm)	Part Number	Grit	Color
1 x 4 x 100	673110	#200	Black
1 x 4 x 100	673210	#400	Gray
1 x 4 x 100	673310	#600	Green
1 x 6 x 100	673120	#200	Black
1 x 6 x 100	673220	#400	Gray
1 x 6 x 100	673320	#600	Green
1 x 10 x 100	673130	#200	Black
1 x 10 x 100	673230	#400	Gray
1 x 10 x 100	673330	#600	Green

## FIBER STONES Strength and Speed

The "CNB" family of stones is made from an advanced coated composite fiber. The CNB's are extremely aggressive and are fabricated to provide incredible strength and cutting action. Great for EDM removal, welds and rapid stock removal. Cuts the hardest tool steels with its very coarse and fast cutting properties. The CNB-80 has cutting action similar to an 80grit and the CNB120 has cutting action similar to a 120grit.



### CNB-80

Dimension (mm)	Item No.
1.2 x 4 x 75	046903
1.2 x 6 x 75	046917
1.2 x 10 x 75	046921
1.2 x 10 x 150	046944

### CNB-120

Dimension (mm)	Item No.
0.8 x 4 x 75	046959
0.8 x 6 x 75	046962
0.8 x 10 x 75	046973
0.8 x 10 x 150	046978





## STONEHOLDERS



Specially designed holders for hand use and profilers. Conventional and detail polishing holder designs are available. All holders are made of material that will not damage mold & die surfaces.



### Polishing Stone Holders – Handheld

Item Number	Accommodates Stone Sizes
029910	1/8 x 1/4, 1/8 x 1/2, 1/4 x 1/4
029912	1/4 x 1/4, 1/4 x 1/2
029913	3/8" round, 1/4" round
029914	1/16 x 1/4, 1/16 x 1/2
029915	Set of above four



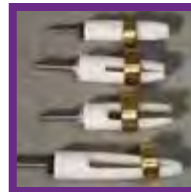
### Ceramic Stone Holders – Handheld

Item Number	Length	Accommodates Sizes
029930	5-3/4	2-4mm stick
029935	5-3/4	6mm stick
029940	5-3/4	8-10mm stick
029945	set of above three	
029925	5-1/2	3mm round



### Polishing Stone Holders – Profiler

Item Number	Shank	Accommodates Sizes
029960	3/16"	1/4 stone long
029963	3/16"	1/4 stone short
029967	3/16"	1/8 stone short
029958	Large brass ring replacement	
029923	3/16"	Vice clamp
029924	1/8"	Vice clamp
029916	3/16"	1/8 x 1/4
029917	3/16"	1/8 x 1/2, 1/4 x 1/4
029918	1/8"	1/8 x 1/4
029919	1/8"	1/8 x 1/2, 1/4 x 1/4



### Ceramic Stone Holders – Profiler

Item Number	Shank	
029950	1/8"	for profiler
029953	3mm	for profiler
029954	3/16"	for profiler
029955	Brass ring replacement	





# Accessories



Item Number	Size
BL10-G	1 gallon

## POLISHING LUBRICANT

Borilube 10 is formulated for mold polishing to clean, lubricate and prevent stone loading. Environmentally friendly and non-hazardous.



Item Number	Size
332000	20gram syringe

## MOLD POLISH

Mold polish is odor and residue free, and non-corrosive. It will remove rust, oxidation, diamond polish haze, plate out and stains on fine tooling surfaces. BORIDE mold polish restores surface finishes while providing excellent high luster sheen. Mold Polish comes in a 20 gram controlled syringe allowing precise application without fear of contamination.

## PNEUMATIC SHORT STROKE PROFILER

The Turbo Lap Linear offers 22,000 strokes per minute with a stroke size of .7mm or .027. The Turbo Lap Swing offers an orbital stroke of 12,000 strokes per minute with a stroke size of 3mm left to right and 1.2mm linear. Ideal for use with ceramic, ribstones or composite stones.

**Kits include:**  
 Turbo-Lap profiler (Linear or Swing)  
 Air line w/pipe thread connector  
 Exhaust overhose, hex wrench  
 Stoneholder, (1) blue ceramic stone



Item Number	Description
TLL-07	linear profiler
TLS-12	swing profiler

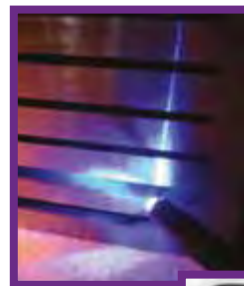


Each Turbo Lap should be used at 80 psi or at a maximum of 85 psi with clean, dry air. Lubrication is not needed.

## RIBLIGHT RIB LIGHT REACH High Intensity Pen Light

Rib Light is excellent for illuminating hard to see spots like ribs and slots. Available with a Blue or white LED light.

Reach Rib Light is the same great light with a long flexible neck for illuminating those hard to reach spots. Supplied with 3 AAAA batteries.



Item Number	Description
380100	Rib Light Blue LED Light
380110	Rib Light White LED Light
380120	Reach Rib Light Blue LED Light
380130	Reach Rib Light White LED Light



# Industrial Sharpening Stones



## Aluminum Oxide – Square Files

All 6 pcs per box except items marked \* are 2/box

Item	Part	Description
076251	SFA-C42	1/4 X 1/4 X 4
076253	SFA-C43	3/8 X 3/8 X 4
076255	SFA-C44	1/2 X 1/2 X 4
076265	SFA-C65	5/8 X 5/8 X 6
076275*	SFA-C67	1 X 1 X 6
076280	SFA-M42	1/4 X 1/4 X 4
076285	SFA-M43	3/8 X 3/8 X 4
076290	SFA-M44	1/2 X 1/2 X 4
076300	SFA-M65	5/8 X 5/8 X 6
076310*	SFA-M67	1 X 1 X 6
076315	SFA-F42	1/4 X 1/4 X 4
076320	SFA-F43	3/8 X 3/8 X 4
076325	SFA-F44	1/2 X 1/2 X 4
076335	SFA-F65	5/8 X 5/8 X 6
076345*	SFA-F67	1 X 1 X 6

## Aluminum Oxide – Single Grit Bench

All 6 pcs per box except items marked \* are 1/box

Item	Part	Description
076000	SBA-C42	1/4 x 1 x 4
076005	SBA-C44	1/2 x 1 x 4
076015*	SBA-C67	1 x 2 x 6
076025	SBA-M42	1/4 x 1 x 4
076030	SMA-M44	1/2 x 1 x 4
076040*	SBA-M67	1 x 2 x 6
076050	SBA-F42	1/4 x 1 x 4
076055	SBA-F44	1/2 x 1 x 4
076065*	SBA-F67	1 x 2 x 6

## Aluminum Oxide – Triangle File

All 6 pcs per box

Item	Part	Description
076455	TFA-C42	1/4 X 4
076460	TFA-C43	3/8 X 4
076465	TFA-C44	1/2 X 4
076490	TFA-M42	1/4 X 4
076495	TFA-M43	3/8 X 4
076500	TFA-M44	1/2 X 4
076525	TFA-F42	1/4 X 4
076530	TFA-F43	3/8 X 4
076535	TFA-F44	1/2 X 4

## Silicon Carbide – Combination Round Knife

All 1/box

Item	Description
076230	4 x 1-1/2 120/320

Used for deburring, sharpening and honing. Stones are oil pre-filled to save time and eliminate the necessity of pre-soaking prior to first use. Available in aluminum oxide or silicon carbide.

Coarse Grit (C):120 ; (M): 220; Fine(F) 320

## Aluminum Oxide – Combination Bench

“All 1 pc/box; Coarse 1 side , Fine 1 side

Item	Part	Description
076210	CBA-FC45	5/8 X 5/8 X 4-1/2
076220	CBA-FC67	1 X 2 X 6
076225	CBA-FC87	1 X 2 X 8

## Aluminum Oxide – Knife Blade

All 6 pc/box

Item	Part	Description
076770	KBA-C41	1/8 X 1 X 4
076775	KBA-M41	1/8 X 1 X 4
076250	KBA-F41	1/8 X 1 X 4

## Aluminum Oxide – Half Round

All 6 pc/box

Item	Part	Description
076747	HFA-C43	3/8 X 4
076754	HFA-M43	3/8 X 4
076761	HFA-F43	3/8 X 4

## Aluminum Oxide – Round File

All 6 pcs per box

Item	Part	Description
076665	RFA-C42	1/4 X 4
076667	RFA-C43	3/8 X 4
076669	RFA-C44	1/2 X 4
076679	RFA-M42	1/4 X 4
076681	RFA-M43	3/8 X 4
076683	RFA-M44	1/2 X 4
076693	RFA-F42	1/4 X 4
076695	RFA-F43	3/8 X 4
076697	RFA-F44	1/2 X 4

## Silicon Carbide – Combination Bench

All 1/box

Item	Part	Description
076235	CBS-FC45	5/8 x 1-5/8 x 4-1/2
076245	CBS-FC67	1 x 2 x 6
076250	CBS-FC87	1 x 2 x 8

## Assortment Kit

Item	Description
076999	Contains: SBAF42;CBAF45;SFAM42 TFAC42; RFAF42; KBAF41



# Diamond Compounds

## MOLD MAKERS DIAMOND

Used for precision finishing on all types of molds. Oil soluble with a wide thermal range. Packaged in 5 & 18 gram syringes.



Application	Grade	Micron size	Mesh	Colour	Concentration	Part No. 5 Gram	Part No. 18 Gram
Final Polish	1	0-2	14,000	White	Standard	331020	331030
Final Polish	3	2-4	8,000	Yellow	Standard	331050	331060
Final & Pre-polish	6	4-8	3,000	Orange	Standard	331080	331090
Final & Pre-polish	9	6-10	1,800	Green	Standard	331110	331120
Pre-Polish Lapping	15	9-19	1,200	Blue	Standard	331140	331150
Stock Removal	30	20-30	800	Red	Standard	331170	331180



## “SUPER US” DIAMOND COMPOUND

Very high diamond concentration contains grains precisely graded and evenly distributed in a specific viscosity medium. Provides a uniform finish & luster while allowing rapid stock removal. Oil or alcohol soluble.



M · D · T

Recommendations for use	Grade	Micron size	Approx. Mesh	Color	Concentration	Part No. 5 Gram	Part No. 10 Gram
Finest finishes, optical lenses, semiconductors.	1	1/2 to 1-1/2	15,000	Ivory	Very High	DC-1VH-5	DC-1VH-10
	3	2 to 4	8,500	Yellow	Very High	DC-3VH-5	DC-3VH-10
Final finish for most molds, dies, extrusion dies.	6	4 to 7	4,000	Orange	Very High	DC-6VH-5	DC-6VH-10
	9	8 to 11	2,000	Green	Very High	DC-9VH-5	DC-9VH-10
Preliminary finish after abrasive stone finishing.	15	12 to 18	1,200	Dark Blue	Very High	DC-15VH-5	DC-15VH-10
	30	25 to 33	675	Red	Very High	DC-30VH-5	DC-30VH-10
Fast stock removal and roughing on hard materials/carbide	45	36 to 51	325	Brown	Very High	DC-45VH-5	DC-45VH-10
	60	54 to 70	235	Purple	Very High	DC-60VH-5	DC-60VH-10



# Diamond Compounds Oil-Based

First Number = BORIDE Item Number    Second Number = ADAMAS Item Number

Grade	Micron	Color	5 GRAM SYRINGE				18 GRAM SYRINGE			
			Medium	Heavy	Extra Heavy	Super	Medium	Heavy	Extra Heavy	Super
100	100-150	Black	330001 100MM5	330002 100MH5	330003 100MX5	330004 100MS5	330021 100MM18	330022 100MH18	330023 100MX18	330024 100MS18
170	80-100	Dark Gray	330041 170MM5	330042 170MH5	330043 170MX5	330044 170MS5	330061 170MM18	330062 170MH18	330063 170MX18	330064 170MS18
230	54-80	Purple	330081 230MM5	330082 230MH5	330083 230MX5	330084 230MS5	330101 230MM18	330102 230MH18	330103 230MX18	330104 230MS18
45	36-54	Brown	330161 45MM5	330162 45MH5	330163 45MX5	330164 45MS5	330181 45MM18	330182 45MH18	330183 45MX18	330184 45MS18
30	22-36	Dark Red	330241 30MM5	330242 30MH5	330243 30MX5	330244 30MS5	330221 30MM18	330222 30MH18	330223 30MX18	330224 30MS18
25	20-30	Black Cherry	---	---	---	---	---	330262 25MH18	---	---
20	15-25	Light Blue	330281 20MM5	330282 20MH5	330283 20MX5	330284 20MS5	330301 20MM18	330302 20MH18	330303 20MX18	330304 20MS18
15	12-22	Dark Blue	330321 15MM5	330322 15MH5	330323 15MX5	330324 15MS5	330341 15MM18	330342 15MH18	330343 15MX18	330344 15MS18
9	8-12	Green	330401 9MM5	330402 9MH5	330403 9MX5	330404 9MS5	330421 9MM18	330422 9MH18	330423 9MX18	330424 9MS18
6	4-8	Orange	330481 6MM5	330482 6MH5	330483 6MX5	330484 6MS5	330501 6MM18	330502 6MH18	330503 6MX18	330504 6MS18
4	2-6	Pink	330521 4MM5	330522 4MH5	330523 4MX5	330524 4MS5	330541 4MM18	330542 4MH18	330543 4MX18	330544 4MS18
3	2-4	Yellow	330561 3MM5	330562 3MH5	330563 3MX5	330564 3MS5	330581 3MM18	330582 3MH18	330583 3MX18	330584 3MS18
2	1-3	Lavender	330601 2MM5	330602 2MH5	330603 2MX5	330604 2MS5	330621 2MM18	330622 2MH18	330623 2MX18	330624 2MS18
1	0-2	Ivory	330641 1MM5	330642 1MH5	330643 1MX5	330644 1MS5	330661 1MM18	330662 1MH18	330663 1MX18	330664 1MS18
1/2	0-1	Light Gray	330681 1/2MM5	330682 1/2MH5	330683 1/2MX5	330684 1/2MS5	330701 1/2MM18	330702 1/2MH18	330703 1/2MX18	330704 1/2MS18
1/4	0-1/2	Gray	330721 1/4MM5	330722 1/4MH5	330723 1/4MX5	330724 1/4MS5	330741 1/4MM18	330742 1/4MH18	330743 1/4MX18	330744 1/4MS18
1/10	0-1/4	White	330761 1/10MM5	330762 1/10MH5	330763 1/10MX5	330764 1/10MS5	330781 1/10MM18	330782 1/10MH18	330783 1/10MX18	330784 1/10MS18

Other syringe sizes or jars available upon request.

**DIAMAX Thinner** - Used to thin the slurry, extend the diamond compound and reduce gumming.



Description	4 oz Bottle of DIAMAX Thinner	16 oz Bottle of DIAMAX Thinner	2 oz Finger Spray Bottle (empty) - Fill with DIAMAX Thinner and use fine mist spray for perfect application
Item	336005	336010	336211







# Diamond Compounds Water-Based

First Number = BORIDE Item Number    Second Number = ADAMAS Item Number

Grade	Micron	Color	5 GRAM SYRINGE				18 GRAM SYRINGE			
			Medium	Heavy	Extra Heavy	Super	Medium	Heavy	Extra Heavy	Super
100	100-150	Black	330011 100WM5	330012 100WH5	330013 100WX5	330014 100WS5	330031 100WM18	330032 100WH18	330033 100WX18	330034 100WS18
170	80-100	Dark Gray	330051 170WM5	330052 170WH5	330053 170WX5	330054 170WS5	330071 170WM18	330072 170WH18	330073 170WX18	330074 170WS18
230	54-80	Purple	330091 230WM5	330092 230WH5	330093 230WX5	330094 230WS5	330111 230WM18	330112 230WH18	330113 230WX18	330114 230WS18
45	36-54	Brown	330171 45WM5	330172 45WH5	330173 45WX5	330174 45WS5	330191 45WM18	330192 45WH18	330193 45WX18	330194 45WS18
30	22-36	Dark Red	330251 30WM5	330252 30WH5	330253 30WX5	330254 30WS5	330231 30WM18	330232 30WH18	330233 30WX18	330234 30WS18
20	15-25	Light Blue	330291 20WM5	330292 20WH5	330293 20WX5	330294 20WS5	330311 20WM18	330312 20WH18	330313 20WX18	330314 20WS18
15	12-22	Dark Blue	330331 15WM5	330332 15WH5	330333 15WX5	330334 15WS5	330351 15WM18	330352 15WH18	330353 15WX18	330354 15WS18
9	8-12	Green	330411 9WM5	330412 9WH5	330413 9WX5	330414 9WS5	330431 9WM18	330432 9WH18	330433 9WX18	330434 9WS18
6	4-8	Orange	330491 6WM5	330492 6WH5	330493 6WX5	330494 6WS5	330511 6WM18	330512 6WH18	330513 6WX18	330514 6WS18
4	2-6	Pink	330531 4WM5	330532 4WH5	330533 4WX5	330534 4WS5	330551 4WM18	330552 4WH18	330553 4WX18	330554 4WS18
3	2-4	Yellow	330571 3WM5	330572 3WH5	330573 3WX5	330574 3WS5	330591 3WM18	330592 3WH18	330593 3WX18	330594 3WS18
2	1-3	Lavender	330611 2WM5	330612 2WH5	330613 2WX5	330614 2WS5	330631 2WM18	330632 2WH18	330633 2WX18	330634 2WS18
1	0-2	Ivory	330651 1WM5	330652 1WH5	330653 1WX5	330654 1WS5	330671 1WM18	330672 1WH18	330673 1WX18	330674 1WS18
1/2	0-1	Light Gray	330691 1/2WM5	330692 1/2WH5	330693 1/2WX5	330694 1/2WS5	330711 1/2WM18	330712 1/2WH18	330713 1/2WX18	330714 1/2WS18
1/4	0-1/2	Gray	330731 1/4WM5	330732 1/4WH5	330733 1/4WX5	330734 1/4WS5	330751 1/4WM18	330752 1/4WH18	330753 1/4WX18	330754 1/4WS18
1/10	0-1/4	White	330771 1/10WM5	330772 1/10WH5	330773 1/10WX5	330774 1/10WS5	330791 1/10WM18	330792 1/10WH18	330793 1/10WX18	330794 1/10WS18

Other syringe sizes or jars available upon request.

**DIAMAX Thinner** - Used to thin the slurry, extend the diamond compound and reduce gumming.



Description	4 oz Bottle of DIAMAX Thinner	16 oz Bottle of DIAMAX Thinner	2 oz Finger Spray Bottle (empty) - Fill with DIAMAX Thinner and use fine mist spray for perfect application
Item	336005	336010	336211








# Lapping & Finishing Accessories

## LUBRICATOR & THINNER FOR DIAMOND COMPOUNDS

<p>When polishing with diamond compound, microscopic sized metal cuttings may cause the compound to thicken. Thinner/lubricator is formulated to prevent thickening and assures proper lubrication during polishing. Supplied in a 4 oz plastic bottle with a cap that permits dispensing in small droplets.</p>	<p>Catalog No. DCLT-4</p> 
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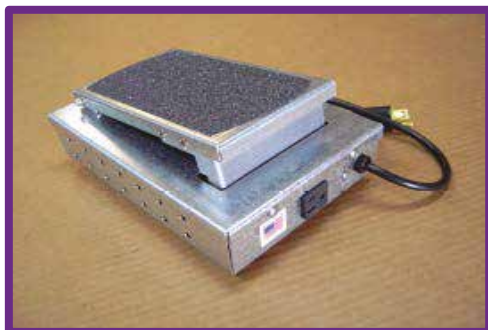
## HIGH SPEED MOTOR FOR FLEXIBLE SHAFT TOOLS



### **DUMORE** **Series 6 Super Flex**

- FEATURES:
- 0-60 Hz 1/4 HP
  - 115V 3.8 AMPS
  - No Load Speed 22,000 RPM
  - Heavy duty hanging plate with swivel base.

PART # 6-021



### **SPEED CONTROL**

PART # 12675



### **FLEXIBLE SHAFTS & SHEATHS**

PART # 12675 – INNER  
PART # 12626 – SHEATH



# Mounted Stones

## MX COTTON FIBER FINISHING WHEELS

Excellent for polishing and deburring mold runners, and can be used in aerospace, gear manufacturing, casting applications as well. Material is muslin with aluminum oxide grit and resin bonded. Lamination runs parallel to shank to prevent chipping of wheel. Available in 80, 120, 180 and 320 grits. Stocked in medium hard bond. Mounted on 1/8 shanks. To order specify Cat No. & grit ( ie MX145080 for Mx145 80grit)



Cat. No.	Size
MX145	1/8 x 3/8
MX146	1/8 x 1/2
MX154	3/16 x 1/2
MX163	1/4 x 1/2
MX176	3/8 x 1/2
MX185	1/2 x 1/2

## POLISHING POINTS

White Polishing Points					
WPP3P	WPP14P	WPP18P	WPP19P	WPP22P	WPP26P

Excellent for very fine finishing. 400grit aluminum oxide ceramically bonded points on 3/32 shanks.

Red Polishing Points						
WRP1A	WRP23A	WRP22A	WRP12A	WRP17A	WRP28A	WRP46A
Coarse		Medium		Fine		

General purpose -3/32 shanks. Aluminum oxide coarse grits on left to fine on right. For blending and shaping details.

Blue Polishing Points					
Size	1/8 x 1/4	.131x13/32	1/8 x 9/32	3/32x17/64	1/4 x 1/2
Cat no.	HP12	HP23	HP26	HP28	HP59

Vitrified aluminum oxide, medium hardness on 3/32 shanks

## GROUP "B" SHAPES - 1/8 SHANKS

### Color Blue

Designed to hold their shape. Medium hardness premium aluminum oxide. Excellent utility point.

### Color Red

Medium soft aluminum oxide recommended for non-hardened low alloy steels.

### Color White

General purpose medium soft aluminum oxide recommended for non-hardened low alloy steels. Will break down to avoid loading and allows sharp cutting edges to be exposed to the workpiece.

Shape No.	B44	B45	B52	B53	B55	B96
Diameter	7/32	3/16	3/8	1/4	1/8	1/8
Thickness	3/8	5/16	3/4	5/8	1/4	1/4
Max. RPM	68,000	100,000	45,000	60,000	100,000	100,000
Available in colors	Blue, Red, White	Blue, White	Blue, Red, White	Blue, Red, White	Blue, Red, White	Blue, Red, White

Shape No.	B97	B98	B105	B123	B124	B125	B135
Diameter	3/32	3/32	1/4	3/16	1/8	1/4	1/4
Thickness	3/8	1/4	1/4	3/16	1/8	1/4	1/2
Max. RPM	100,000	100,000	100,000	100,000	100,000	60,000	60,000
Available in colors	Blue, Red, White	Blue, White	Blue, Red, White	Blue, Red, White	Blue, Red, White	Blue, Red	Blue, Red



# Mounted Stones

## GROUP "W" SHAPES - 1/8 SHANKS

### Color Blue

Designed to hold their shape. Medium hardness premium aluminum oxide. Excellent utility point.

### Color Red

Medium soft aluminum oxide recommended for non-hardened low alloy steels.

### Color White

General purpose medium soft aluminum oxide recommended for non-hardened low alloy steels. Will break down to avoid loading and allows sharp cutting edges to be exposed to the workpiece.

### NOTE

The right stone the first time.

Abrasive type, grade (strength of bond), grain size, grain spacing, bond type are all factors to consider when ordering mounted stones. To get the best results one must arrive at the right combination. DMS mounted stones have been designed to our specifications after many years of field testing.

Shape No.	W142	W144	W145	W146	W152	W153	W154
Diameter	3/32	1/8	1/8	1/8	3/16	3/16	3/16
Thickness	1/4	1/4	3/8	1/2	1/4	3/8	1/2
Max. RPM	90,000					80,000	70,000
Available in colors	Blue, Red, White	Blue, White	Blue, Red, White	Blue, Red, White	Blue, Red, White	Blue, Red, White	Blue, Red, White

Shape No.	W160	W161	W162	W163	W170	W175	W176
Diameter	1/4	1/4	1/4	1/4	5/16	3/8	3/8
Thickness	1/4	5/16	3/8	1/2	1/2	3/8	1/2
Max. RPM	70,000	60,000			40,000		35,000
Available in colors	Blue, White	Blue, White	Blue, Red, White	Blue, Red, White	Blue, Red, White	Blue, White	Blue, Red, White

Shape No.	W181	W182	W185	W200	W215	W216	W220**
Diameter	1/2	1/2	1/2	3/4	1"	1"	1"
Thickness	1/16	1/8	1/2	1/8	1/8	1/4	1"
Max. RPM	70,000		60,000	50,000	38,000		25,000
Available in colors	Blue, White	Blue, White	Blue, White	Blue, Red, White	Blue, White	Blue, White	Blue, White

\*\*W220 IN 1/4" SHANK ONLY

Sold as 25 to a pack, except W200 – W220

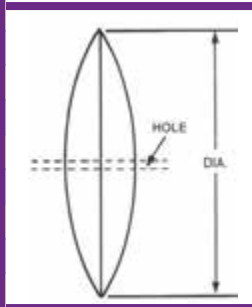
**WARNING - WEAR FACE PROTECTION**  
GRINDING WHEELS IMPROPERLY USED ARE DANGEROUS.  
Speed, safety guards, mounting procedures, operating rules, handling, storage and inspection are important.



# Felt Bobs & Wheels

## Knife Edge Felt Wheels

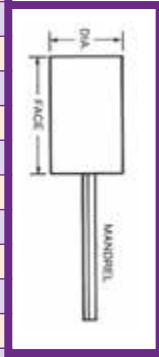
Cat. No.	Diameter	Thickness
KE1	1/2	3/16
KE2	5/8	3/16
KE3	3/4	3/16
KE4	1"	3/16
KE5	1-1/2	3/16
KE6	2"	3/16
KE7	2-1/2	3/16
KE8	3"	1/4
KE9	4"	1/4



Available in flint hard only

## Mounted Felt Bobs (Cylindrical)

Cat. No.	Diameter	Face	Mandrel
MFB01	1/4	1/4	1/8
MFB02	1/4	3/8	1/8
MFB03	3/8	3/8	1/8
MFB04	3/8	1/2	1/8
MFB05	1/2	1/2	1/8
MFB06	1/2	3/4	1/8
MFB07	1/2	1"	1/8
MFB08	3/4	3/4	1/8
MFB09	3/4	1"	1/8
MFB11	1"	1"	1/4
MFB13	1"	1-1/2	1/4
MFB16	1-1/4	1-1/4	1/4
MFB18	1-1/2	1-1/2	1/4
MFB21	2"	2"	1/4



Available in hard only.

## Shaped Felt Bobs

Cat. No.	Diameter	Face
SB137	3/8	1/2
SB150	1/2	1"
SB225	1/4	1/4
SB237	3/8	1/2
SB337	3/8	1/2
SB350	1/2	1"
SB450	1/2	3/4
SB550	1/2	3/4
SB650	1/2	1/2

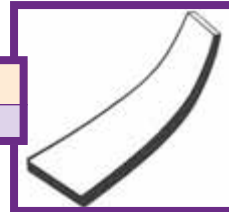


Available in hard, 1/8" shanks

## Felt Pads

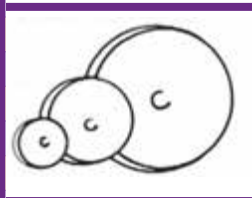
Cat. No.	Size
FP12	1/8 x 1" x 3" Long.

Ideal for touch-up work. Available in soft only



## Felt Wheels

Cat. No.	Diameter	Thickness
FW05012	1/2	1/8
FW07512	3/4	1/8
FW10012	1"	1/8
FW10025	1"	1/4
FW15012	1-1/2	1/8
FW15025	1-1/2	1/4
FW20025	2"	1/4
FW20037	2"	3/8
FW20050	2"	1/2
FW30025	3"	1/4
FW30050	3"	1/2

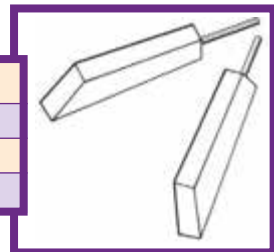


Available in hard only. With pin hole center.

## Mounted Felt Laps

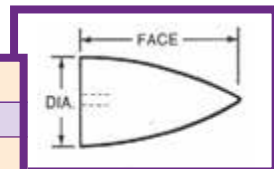
Cat. No.	Size
FL25	1/4 x 1/4 x 1-1/2
FL37	3/8 x 3/8 x 1-3/4
FL50	1/2 x 1/2 x 1-3/4

Designed for use with profilers. 45 angle cut on 1/8" shank.



## Felt Cones

Cat. No.	Diameter	Face
C1	1/4	1/2
C2	3/8	3/4
C3	1/2	1"



Available in flinthard only

## Felt Sheets

Handy when special shapes and sizes are required. Cut your own size & shape.

Also available in 1" thick

Catalog No.	Width x Length x Thickness	Density
FST-12-187S	12" x 12" x 3/16	Soft
FST-12-187M	12" x 12" x 3/16	Medium
FST-12-375S	12" x 12" x 3/8	Soft
FST-12-375M	12" x 12" x 3/8	Medium
FST-12-500S	12" x 12" x 1/2	Soft
FST-12-500M	12" x 12" x 1/2	Medium
FST-12-250S	12" x 12" x 1/4	Soft
FST-12-250M	12" x 12" x 1/4	Medium
FST-12-250H	12" x 12" x 1/4	Hard



# Mounted Polishing Brushes



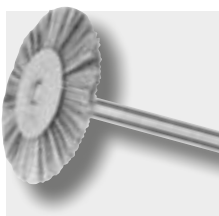
## Wheel Brushes – Bristle Fill

Catalog No.	Diameter	Fill Material	Shank
26041	3/4	Stiff Hair	3/32
26059	3/4	Stiff Hair	1/8



### Cup & Wheel Brushes

All cup & wheel brushes are made with a solid ring construction (except nylon) where each individual filament is wrapped around a steel ring and permanently anchored in the brush.

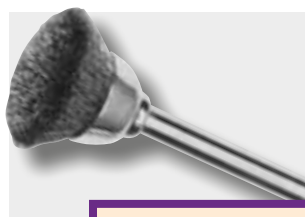


## Wheel Brushes – Wire Fill

Catalog No.		Diameter	Wire Size	Shank
Steel	Brass			
26000	—	3/4	.003	1/8
26003	—	3/4	.005	1/8
26012	—	1"	.003	1/8
26015	26016	1"	.005	1/8

### End Brushes

All end brushes (except nylon) are of one piece ferrule construction that ensures the shank and ferrule will not become separated in use. The plastic ferrule prevents scratching. Bristles are solidly looped around a metal retainer to prevent them from coming out of the ferrule during use.



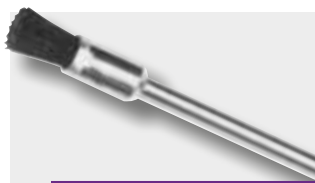
## Cup Brushes – Bristle Fill

Catalog No.	Diameter	Fill Material	Shank
26091	9/16	Stiff Hair	3/32
26093	9/16	Stiff Hair	1/8
26094	9/16	Soft Hair	1/8
26095	1"	Stiff Hair	1/8
26096	1"	Soft Hair	1/8



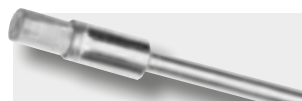
## Cup Brushes – Wire Fill

Catalog No.		Diameter	Wire Size	Shank
Steel	Brass			
26071	—	9/16	.003	1/8
26074	26075	9/16	.005	1/8



## End Brushes – Bristle Fill

Catalog No.	Diameter	Trim Length	Fill Material	Shank
26115	3/16	1/4	Stiff Hair	1/8
26116	3/16	1/4	Stiff Hair	3/32
26118	1/4	3/8	Soft Hair	3/32
26119	1/4	3/8	Stiff Hair	1/8
26121	5/16	9/16	Stiff Hair	1/8



## End Brushes – Wire Fill

Catalog No.		Diameter	Wire Size	Trim Length	Shank
Steel	Brass				
26098	26097	3/16	.003	1/4	1/8
26107	26106	1/4	.005	7/16	1/8



## End Brushes – Bristle Fill (Plastic Ferrule)

Catalog No.	Diameter	Trim Length	Fill Material	Shank
26128	3/16	1/4	Stiff Hair	1/8
26131	1/4	3/8	Stiff Hair	1/8
26133	5/16	9/16	Stiff Hair	1/8





# Cut-Off Wheels & Mandrels

## HIGH SPEED CUT-OFF WHEELS

Vitrified binded for quick, efficient cutting and blending. Excellent for cutting slots, ribs and all types of tool steel. Structured to be cool cutting to minimize damage to parts being cut.

Always use approved machine guards/eye protection when cutting or grinding with cut-off wheels.

Catalog No.	Diameter	Thickness	Hole
CW10606	1"	1/16	1/16
CW20306	1-1/4	1/32	1/16
CW20606	1-1/4	1/16	1/16
CW30106	1-1/2	1/64	1/16
CW31212	1-1/2	1/8	1/8
CW40106	2"	1/64	1/16
CW40312	2"	1/32	1/8
CW40612	2"	1/16	1/8
CW40912	2"	3/32	1/8
CW41212	2"	1/8	1/8



## REINFORCED T-1 CUT-OFF WHEELS

Double reinforced for maximum safety on die grinders and other high speed tools. Grade A60-TBF for smoother cut on ferrous metals.

Always use approved machine guards/eye protection when cutting or grinding with cut-off wheels.

Catalog No.	Diameter	Thickness	Hole	Max RPM
CWR2031	2"	1/32	1/4	30,550
CWR2062	2"	1/16	1/4	30,550
CWR3031	3"	1/32	1/4	25,000
CWR3062	3"	1/16	1/4	25,000

Other sizes also available upon request.



## MANDRELS WITH SCREWS

FOREDOM

	Cat. No.	Shank	Arbor Hole/ Capacity	Max RPM
	M1	3/32	1/16	40,000
	M10	3/32	1/16	40,000
	M12	1/8	1/8	40,000
	M13	3/32	1/16	30,000
	M14	1/8	1/8	30,000
	M8	1/8	1/4	20,000
	M15	1/8	1/16	40,000
	M19	1/8	1/16	30,000
	M2	3/32	1/8	20,000

	Cat. No.	Shank	Arbor Hole/ Capacity	Max RPM
	M6	1/8	1/16	40,000
	M20	1/8	1/8	20,000
	M3	3/32	3/32	40,000
	M9	1/8	3/32	40,000
	M7	1/8	1/8	40,000
	M83	1/8	1/8	20,000
	M84	1/4	1/8	20,000
	M85	1/4	1/4	20,000



# Coated Abrasives

## PSA DISCS & HOLDERS

Strong resin over resin bond construction is resistant to heat & moisture. Premium zirconium grain Egyptian cotton cloth backing. Closed coat structure. Hot melt adhesive back allows for quick change and less downtime.



### PSA DISCS



Grit	Catalog Number				
	1"	2"	3"	4"	5"
40	34989	35022	35042	35062	35082
50	34990	35023	35043	35063	35083
80	34992	35025	35045	35065	35085
100	34993	35026	35046	35066	35086
120	34994	35027	35047	35067	35087
150	34995	35028	35048	35068	35088
180	34996	35029	35049	35069	35089
240	34998	35031	35051	35071	35091
320	34999	35033	35053	35073	35093

Note: other sizes available upon request.

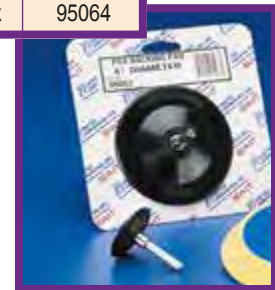
### PSA DISC HOLDERS

Size	Cat. No.
1" x 1/8 shank	11705
1" x 1/4 shank	95059
2" x 1/4 shank	95061
3" x 1/4 shank	95062
4" x 1/4 shank	95063
5" x 1/4 shank	95064



## CLOTH BENCH ROLLS - DA-F HANDY ROLLS

Aluminum oxide grain on high quality DA-F material for high flexibility. Medium tensile strength. Open coat structure prevents loading. Handy dispenser roll allows for lengths to be cut as required. Egyptian cotton backing for durability.



Grit	Catalog Number		
	1"	1-1/2"	2"
50	80505	80506	80520
80	80805	80806	80820
100	81005	81006	81020
120	81205	81206	81220
150	81505	81506	81520
180	81805	81806	81820
240	82405	82406	82420
320	83205	83206	83220
400	83405	83406	83420



### PSA STRIPS

Same material as PSA discs, but supplied in 1" x 11" strips. 50/pkg Aluminum oxide resin bonded cloth with PSA back. "Grits 240 thru 400 available in "Glue Bond" which allows strip to be extremely flexible.



Grit	Part No. A/O R/B	Part No. A/O G/B
50	16162	—
80	12227	—
100	12228	—
120	12229	—
150	12230	—
180	12231	—
240	12232	22208
320	12233	22209
400	16686	22210



# Coated Abrasives

## ALUMINUM OXIDE LAMINATED DISCS

### Type 2A



- Aluminum oxide grain
- General purpose, long life
- Easy disc changes by twisting off of backing pad
- For ferrous and/or non-ferrous metals

### Type 3A



- Premium aluminum oxide grain with grinding aid
- Cooling agents for cool cutting & longer life
- Fast stock removal
- Easy disc changes by twisting off of backing pad
- For ferrous & non-ferrous metals. Stainless steel, high tensile steel or titanium.



### Sait-lok™

All metal attachment on disc ensures a secure fit to the backing pad.



### Sait-lok-R™

Nylon screw threaded hub for easy mounting to the backing pad.

Size	Grit	Sait-Lok™ Part no.		Sait-Lok-R™ Part no.		QTY PER BOX
		2A	3A	2A	3A	
1"	36	52208	50208	—	—	100
	40	52209	50209	—	—	100
	50	52210	50210	—	—	100
	60	52211	50211	—	—	100
	80	52212	50212	—	—	100
	100	52213	50213	—	—	100
1-1/2"	120	52214	50214	—	—	100
	36	52215	50215	52264	50264	100
	40	52216	50216	52265	50265	100
	50	52217	50217	52266	50266	100
	60	52218	50218	52267	50267	100
	80	52219	50219	52268	50268	100
2"	100	52220	50220	52269	50269	100
	120	52221	50221	52270	50270	100
	36	52222	50222	52271	50271	100
	40	52223	50223	52272	50272	100
	50	52224	50224	52273	50273	100
	60	52225	50225	52274	50274	100
3"	80	52226	50226	52275	50275	100
	100	52227	50227	52276	50276	100
	120	52228	50228	52277	50277	100
	36	52229	50229	52278	50278	50
	40	52230	50230	52279	50279	50
	50	52231	50231	52280	50280	50
3"	60	52232	50232	52281	50281	50
	80	52233	50233	52282	50282	50
	100	52234	50234	52283	50283	50
	120	52235	50235	52284	50284	50



Note: See page 25 for Backing pads

### Tech Info

2-ply construction is rugged enough for contoured or flat surfaces.



# Coated Abrasives

## ZIRCONIUM LAMINATED DISCS

### Type "Z"



- Premium zirconium grain.
- Very fast stock removal.
- Easy disc changes by twisting to unlock backing pad.
- For use on stainless steel, high tensile alloys, ferrous or non-ferrous metals (such as iron, steel, welds, etc).

### Type 3Z



- Premium zirconium grain with grinding aid.
- Cooling agents for cool cutting & long life.
- Very fast stock removal, no discoloration.
- Easy disc changes by twisting to unlock backing pad.
- For use on stainless steel, high tensile alloys, ferrous or non-ferrous metals.



Size	Grit	Sait-Lok™ Part no.		Sait-Lok-R™ Part no.		QTY PER BOX
		Z	3Z	Z	3Z	
1-1/2"	36	55215	56215	55264	56264	100
	40	55216	56216	55265	56265	100
	50	55217	56217	55266	56266	100
	60	55218	56218	55267	56267	100
	80	55219	56219	55268	56268	100
2"	24	55221	-	55270	-	100
	36	55222	56222	55271	56271	100
	40	55223	56223	55272	56272	100
	50	55224	56224	55273	56276	100
	60	55225	56225	55274	56274	100
	80	55226	56226	55275	56275	100
3"		55228	-	55277	-	50
	36	55229	56229	55278	56278	50
	40	55230	56230	55279	56279	50
	50	55231	56231	55280	56280	50
	60	55232	56232	55281	56281	50
	80	55233	56233	55282	56282	50

### Tech Info

2-ply construction is rugged enough for contoured or flat surfaces. Quick change backings make for fast, easy disc changes and lessdown time. Universal backings fit most major backing pad brands.

## BACKING PADS FOR LAMINATED DISCS

### Sait-lok™

For use with Sait-Lok™ laminated discs for use with discs on page 24/25. Disc twists into metal hub in backing pad for fast/easy changes. 1/4 shanks



Size	Part #
1" medium	95165
1-1/2" hard	95266
1-1/2" medium	95166
2" hard	95267
2" medium	95167
3" hard	95268
3" medium	95168



### Sait-lok-R™

For use with Sait-Lok-R™ laminated discs for use with discs on page 24/25. Nylon threaded hub of disc twists into backing pad for secure fit. 1/4 shanks



Size	Part #
1-1/2" medium	95171
1-1/2" hard	95271
2" medium	95172
2" hard	95272
3" medium	95173
3" hard	95273





# Specialty Coated Abrasives

## CARTRIDGE ROLLS – TA-X FULL TAPER

Size			Grit	Max RPM	Part No.	Use Mandrel #
Base Dia.	Length	Arbor Hole				
3/8	1"	1/8	60	26,000	38300	95105
3/8	1"	1/8	80	26,000	38301	95105
3/8	1"	1/8	120	26,000	38302	95105
3/8	1-1/2	1/8	60	26,000	38306	95104
3/8	1-1/2	1/8	80	26,000	38307	95104
3/8	1-1/2	1/8	120	26,000	38308	95104
1/2	1"	1/8	60	26,000	38312	95105
1/2	1"	1/8	80	26,000	38313	95105
1/2	1"	1/8	120	26,000	38314	95105
1/2	1-1/2	1/8	50	26,000	38318	95104
1/2	1-1/2	1/8	60	26,000	38319	95104
1/2	1-1/2	1/8	80	26,000	38320	95104
1/2	1-1/2	1/8	120	26,000	38322	95104
1/2	2"	1/8	60	26,000	38326	95103
1/2	2"	1/8	80	26,000	38327	95103
1/2	2"	1/8	120	26,000	38328	95103
5/8	2"	1/8	60	18,000	38332	95103
5/8	2"	1/8	80	18,000	38333	95103
5/8	2"	1/8	120	18,000	38334	95103
3/4	1-1/2	1/8	60	18,000	38338	95104
3/4	1-1/2	1/8	80	18,000	38339	95104
3/4	1-1/2	1/8	120	18,000	38340	95104
3/4	1-1/2	1/4	60	18,000	38344	95106
3/4	2"	3/16	80	18,000	38345	95106
3/4	2"	3/16	120	18,000	38346	95106

- Premium Aluminum Oxide Grain
- Excellent for sanding and polishing channels, fillets, recesses, side walls and bottoms of dead end holes.
- Great for high speed deburring and flash removal.
- For ferrous and non-ferrous metals, stainless and high-tensile steels.
- Packaging 100/box

### Cartridge Roll Mandrels



Part #	Size
95103	1/8 x 1-1/2 x 1/4
95104	1/8 x 1 x 1/4
95105	1/8 x 3/4 x 1/4
95106	3/16 x 1-1/2 x 1/4

### Tech Info

Multi-layer, self dressing construction exposes sharp, new cutting abrasive as each layer wears away.



## SPIRAL BANDS – TA-X

### Spiral Band Drums

Size/Shank	Max RPM	Part No.
1/2 x 1/2 x 1/4	30,000	95121
1/2 x 1 x 1/4	15,000	95122
1/2 x 1-1/2 x 1/4	12,000	95123
3/4 x 1 x 1/4	19,000	95126
3/4 x 1-1/2 x 1/4	10,000	95127
3/4 x 1-1/2 x 1/4	10,000	95127
1 x 1 x 1/4	18,000	95130
1-1/2 x 1 x 1/4	14,000	95133
1-1/2 x 1-1/2 x 1/4	10,000	95134
2 x 2 x 1/4	6,000	95137
3 x 3 x 3/8	3,000	95140

### Tech Info

Single ply of coated abrasive, spirally wound and bonded to an inner liner. Quick removal & installation. Smooth running for easy control.

Size	Grit	Max RPM	Part No.	Qty/box
1/2 x 1/2	60	30,000	42001	100
	80	30,000	42002	100
	120	30,000	42003	100
1/2 x 1	60	15,000	42006	100
	80	15,000	42007	100
	120	15,000	42008	100
1/2 x 1-1/2	60	12,000	42011	100
	80	12,000	42012	100
	120	12,000	42013	100
3/4 x 1	36	19,000	42016	100
	60	19,000	42017	100
	80	19,000	42018	100
	120	19,000	42019	100
3/4 x 1-1/2	60	10,000	42022	100
	80	10,000	42023	100
	120	10,000	42024	100
1 x 1	36	18,000	42027	100
	60	18,000	42028	100
	80	18,000	42029	100
	120	18,000	42030	100

Size	Grit	Max RPM	Part No.	Qty/box
1-1/2 x 1	36	14,000	42033	100
	60	14,000	42034	100
	80	14,000	42035	100
	120	14,000	42036	100
1-1/2 x 1-1/2	36	10,000	42039	100
	60	10,000	42040	100
	80	10,000	42041	100
2 x 2	120	10,000	42042	100
	36	6,000	42045	50
	60	6,000	42046	50
3 x 3	80	6,000	42047	50
	120	6,000	42048	50
	36	3,000	42051	50
3 x 3	60	3,000	42052	50
	80	3,000	42053	50
	120	3,000	42054	50

- Premium Aluminum Oxide Grain
- Excellent for removing parting lines, imperfections, burrs
- Great in curved, corner, contoured and hard to reach areas
- For ferrous and non-ferrous metals, stainless and high tensile steel.






# Specialty Coated Abrasives

## FLAP WHEELS

- Premium Aluminum Oxide Grain 2A
- Excellent for cleaning, deburring, polishing, blending.
- For ferrous and non-ferrous metals wood, plastics or fiberglass. Packaged 5/box

Size			Part Number	
Dia.	Width	Grit	1/4" shank	1-4/-20 threaded
1"	3/4	60	70001	71000
1"	3/4	80	70002	71001
1"	3/4	120	70003	71002
1"	3/4	180	70004	71003
1"	3/4	240	70005	71004
1"	1"	60	70010	71010
1"	1"	80	70011	71011
1"	1"	120	70012	71012
1"	1"	180	70013	71013
1"	1"	240	70014	71014
1-1/2	1/2	40	70024	—
1-1/2	1/2	60	70025	71020
1-1/2	1/2	80	70026	71021
1-1/2	1/2	120	70027	71022
1-1/2	1/2	180	70028	71023
1-1/2	1/2	240	70029	71024
1-1/2	1"	60	70040	71030
1-1/2	1"	80	70041	71031
1-1/2	1"	120	70042	71032
1-1/2	1"	180	70043	71033
1-1/2	1"	240	70044	71034
2"	1"	40	70049	—
2"	1"	60	70050	71040
2"	1"	80	70051	71041
2"	1"	120	70052	71042
2"	1"	180	70053	71043
2"	1"	240	70054	71044



Size			Part Number	
Dia.	Width	Grit	1/4" shank	1-4/-20 threaded
2-1/2	1/2	60	70060	71050
2-1/2	1/2	80	70061	71051
2-1/2	1/2	120	70062	71052
2-1/2	1/2	180	70063	71053
2-1/2	1/2	240	70064	71054
2-1/2	1"	40	70069	—
2-1/2	1"	60	70070	71055
2-1/2	1"	80	70071	71056
2-1/2	1"	120	70072	71057
2-1/2	1"	180	70073	71058
2-1/2	1"	240	70074	71059
3"	1/2	60	70080	71060
3"	1/2	80	70081	71061
3"	1/2	120	70082	71062
3"	1/2	180	70083	71063
3"	1/2	240	70084	71064
3"	3/4	60	70090	71070
3"	3/4	80	70091	71071
3"	3/4	120	70092	71072
3"	3/4	180	70093	71073
3"	3/4	240	70094	71074
3"	1"	40	70099	—
3"	1"	60	70100	71080
3"	1"	80	70101	71081
3"	1"	120	70102	71082
3"	1"	180	70103	71083
3"	1"	240	70104	71084
3"	2"	40	70110	—
3"	2"	60	70111	—
3"	2"	80	70112	—
3"	2"	120	70113	—



**Tech Info**  
Resin over resin construction for a strong bond resistant to heat and moisture. Closed coat structure for better material removal.



Sand-Light Handle - Part# 95080

## NON-WOVEN ABRASIVES

### Hand Pads

- Non-Woven synthetic fiber impregnated with abrasive grain for surface conditioning without damage to or removal of base material.
- Wet/dry construction for use in a wide range of applications.
- Reusable and long lasting design for economical use.
- 6" x 9" sheets. 20 per box.

**Brown/Heavy Duty:** Excellent for removing heavy rust and cleaning welds. For use on both ferrous & non-ferrous metals.


**Maroon/General Purpose:** For removal of light rust. Excellent for cleaning & brightening. Use on stainless, ferrous & non-ferrous metals.

**Black/Stainless:** For blending & finishing. Excellent for paint removal. Use on stainless, ferrous & non-ferrous metals.

**Green/Stripper:** General cleaning. Excellent for stripping paint and varnish. Use on ferrous & non-ferrous metals.

**Gray/Ultra Fine:** For light finishing. Excellent for sanding before or between finish coats. Use with non-ferrous metals.

**White/Light Duty**  
For light cleaning & polishing of fiberglass, plastics & ceramics.

Color	Grade	Part No.
Brown	Heavy Duty	77440
Maroon	General Purpose	77447
Black	Stainless	77446
Green	Stripper	77496
Gray	Ultra Fine	77448
White	Light Duty	77486



# Diamond Products

## STANDARD DIAMOND FILES

- All standard and long type diamond files are in medium grit size 120-150 mesh. All shanks are 1/8".
- For use on carbide, stainless steel, hardened steel, glass, ceramics and other hard materials.

### Diamond Foil

Virgin diamond abrasive grains electroplated to a very thin flexible metal foil. PSA adhesive backing provides great flexibility. Simply cut foil to size and remove backing paper to affix to your holder. Using the variety of grits available, this is an inexpensive way to make fast cutting tools. No lubricant is required. Size 2" x 4" sheets

Part No.	Grit	Part No.	Grit
95000	120	95040	600
95010	150	95050	800
95020	200	95060	1200
95030	400		

Standard Diamond Files	Style	Size	Cat. No. Coated 1 Side	Cat. No. Coated Both Sides
		.078 wide x .039 thick	DLA2x1	DF-11
		.118 wide x .039 thick	DLA3x1	DF-12
		.157 wide x .039 thick	DLA4x1	DF-13
		.196 wide x .078 thick	DLA5x2	DF-14
		.157 wide x .019 thick	DLA0.5x4	—
		.157 wide x .029 thick	DLA0.75x4	—
		.157 wide x .039 thick	DLA 1 x 4	—
		0.039	DLA1	—
		0.078	DLA2	—
		0.118	DLA3	—
		0.157	DLA4	—
		.078x.078x.078	DLA-T2	—
		.118x.118x.118	DLA-T3	—
		.157x.157x.157	DLA-T4	—
		.039 Radius	DLA-R1	—
		.059 Radius	DLA-R1.5	—
		.078 Radius	DLA-R2	—
		.161 wide x .072 thick	DLAR2.5xR5	—

## LONG DIAMOND FILES

Long Diamond Files	Style	Size	Cat. No. Coated 1 Side	Cat. No. Coated Both Sides
		.196 wide x .059 thick	DLE-1	DLE-11
		0.118	DLE-2	—
		.196 x .078	—	DLE-3
		.201 x .085	—	DLE-4
		.118 x .118 x .118	DLE-5	—
		.098 x .098	DLE-6	—

## DIAMOND NEEDLE FILES

- Ideal for applications that require a longer reach. 5-1/2" long with 3" of diamond coating.
- Available in 3 grits. Shanks are color coded for easy identification.  
Blue Shank ..... coarse 80/120Grit  
Yellow Shank .... medium 120/170Grit  
Black Shank ..... fine 200/240Grit

Style	CATALOG NUMBER		
	80/120G	120/170G	200/240G
	121397	121398*	121399
	121400	121401	121402
	121403	121404	121405
	121406	121407	121408
	121412	121413	121414

\*Also available coated 1 side only. Part #DLH-1.

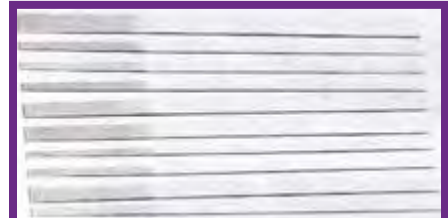


## TAPERED DIAMOND FILES with "Flat" or "Round" Handles

Handy, very useful and top quality Diamond needle files that taper from .080" and .050" to .020". Available with "flat" or "round" handles, these special files permit filing slots or ribs as narrow as .020". Available in sets of 10 files, or individually in various sizes. The long 3mm round handled files have a removable plastic sleeve for use by hand or with profilers. The shorter, tapered files are designed for use with "Turbolappers" or Profilers.

M · D · T

### Flat Handles



Catalog Number	Overall Length	Length of Diamond Coating	Thickness Max. x Min.	Grit Size
DFCC125-80	6-1/2"	2"	.080 x .020	80
DFC125-80	6-1/2"	2"	.080 x .020	120
DFC125-80H	6-1/2"	coated 1 side only	.080 x .020	120
DFM125-80	6-1/2"	2"	.080 x .020	240
DFF125-80	6-1/2"	2"	.080 x .020	320
DFCC165-125	6-1/2"	2"	.080 x .020	80
DFC165-125	6-1/2"	2"	.080 x .020	120
DFC165-125H	6-1/2"	coated 1 side only	.080 x .020	120
DFM165-125	6-1/2"	2"	.080 x .020	240
DFF165-125	6-1/2"	2"	.080 x .020	320
DFCC250-250	6-1/2"	2"	.080 x .020	80
DFCC250-250H	6-1/2"	coated 1 side only	.080 x .020	80
DFC250-250	6-1/2"	2"	.080 x .020	120
DFC250-250H	6-1/2"	coated 1 side only	.080 x .020	120
DFM250-250	6-1/2"	2"	.080 x .020	240
DFF250-250	6-1/2"	2"	.080 x .020	320
DFCC318-318	6-1/2"	2"	.080 x .020	80
DFCC318-318H	6-1/2"	coated 1 side only	.080 x .020	80
DFC318-318	6-1/2"	2"	.080 x .020	120
DFC318-318H	6-1/2"	coated 1 side only	.080 x .020	120
DFM318-318	6-1/2"	2"	.080 x .020	240
DFC400-400	6-1/2"	2"	.080 x .020	120
DFM400-400	6-1/2"	2"	.080 x .020	200
DFSET 10/10	Set consists of 10 files in handy plastic pouch. 2 each of DFC165-125, DFM165-125, DFM250-250. One each of DFM125-80, DFF165-125, DFM318-318, DFF318-318			

### Round Handles – 5-3/16" overall length



Catalog Number	Handle Color	Length of Diamond Coating	Thickness Max. x Min.	Grit Size
DFC095	Green	1-3/16	.050 x .020	150
DFM095	Red	1-3/16	.050 x .020	280
DFF095	Yellow	1-3/16	.050 x .020	400
DFCC160	Black	1-3/16	.050 x .020	80
DFC160	Green	1-3/16	.050 x .020	150
DFM160	Red	1-3/16	.050 x .020	280
DFF160	Yellow	1-3/16	.050 x .020	400
DFCC240	Black	1-3/16	.050 x .020	80
DFC240	Green	1-3/16	.050 x .020	150
DFM240	Red	1-3/16	.050 x .020	280
DFF240	Yellow	1-3/16	.050 x .020	400
DFF125R	Yellow	1-3/16	.050 x .020	400
DFSET 10/10R	Set consists of: One each of DFC095, DFM095, DFF095, DFC160, DFF160, DFC240, DFM240, DFF240, DFF124R, DFM160			

M · D · T

### Round Handles (Short) – for use with Turbolappers & Profilers (3mm shanks)

Catalog Number	Width	Overall Length	Length of Diamond Coating	Thickness Max. x Min.	Grit Size
TPDF005662	1/4" (6mm)	2-1/4	5/8	.040 x .018	200
TPDF230902	1/16" (2mm)	3-5/8	1-1/4	.040 x .018	200
TPDF430902	5/32" (4mm)	3-5/8	1-1/4	.040 x .018	200
TPDF630902	1/4" (6mm)	3-5/8	1-1/4	.040 x .018	200
TPDF0056612	1/4" (6mm)	2-1/4	5/8	.040 x .018	120
TPDF2309012	1/16" (2mm)	3-5/8	1-1/4	.040 x .018	120
TPDF4309012	5/32" (4mm)	3-5/8	1-1/4	.040 x .018	120
TPDF6309012	1/4" (6mm)	3-5/8	1-1/4	.040 x .018	120
TPDFSET 5	Set includes: 1 of TPDF2309012, 2 of TPDF4309012, 2 of TPDF6309012				

M · D · T





# Diamond Products

## REGULAR SHAPED DIAMOND NEEDLE FILES IN 3 GRADES

Handy, very useful and top quality Diamond needle files made of high quality "virgin" man made diamond grains. All tools are precision made and are suited for work on hardened and nitrided steel molds, dies and punches as well as carbide, glass, carbon fiber, graphite and semi precious stones.

Catalog Number			Shape & Style Number	M · D · T
120 Grit	150 Grit	Black 120 Grit		
DF1-5515	DFF1-5515	DFB1-5515	(1) Flat	
DF2-5020	DFF2-5020	DFB2-5020	(2) Halfround	
DF3-5020	-----	-----	(3) Knife	
DF4-3030	DFF4-3030	DFB4-3030	(4) Round	
DF5-4040	DFF5-4040	DFB5-4040	(5) Triangle	
DF6-3030	DFF6-3030	DFB6-3030	(6) Square	
DF7-5020	-----	-----	(7) Barrette	
DFSET12456	Set consists of 5 files in handy plastic pouch. All 120grit part nos. DF1-5515, DF2-5020, DF4-3030, DF5-4040, DF6-3030			
DFBSET12456	Set consists of 5 files in handy plastic pouch. All 120grit "black" part nos. DFB1-5515, DFB2-5020, DFB4-3030, DFB5-4040, DFB6-3030			
DFFSET12456	Set consists of 5 files in handy plastic pouch. All 150grit part nos. DFF1-5515, DFF2-5020, DFF4-3030, DFF5-4040, DFF6-3030			
DFSET1-6	Set consists of 6 files & handy stand. All 120grit part nos. DF1-5515, DF2-5020, DF3-5020, DF4-3030, DF5-4040, DF6-3030			

## "EXTRA THIN" DIAMOND FILES FOR PROFILERS

These "ExtraThin" (.032") flat diamond coated files provide easy access when filing narrow slots. Used with Profilers & Lapping Machines.

Catalog No.	Grit	Overall Length	Length of Coating	Dimensions
DF85150-1	150 Grit	2-1/4	3/4 - 1 side	1/32 x 13/64
DF83150-2S	150 Grit	2"	5/8 - 2 sides	1/32 x 1/8
DF85150-2	150 Grit	2-1/4	3/4 - 2 sides	1/32 x 13/64
DF83150-2	150 Grit	2-1/4	3/4 - 2 sides	1/32 x 1/8
DF86150-2	150 Grit	2-1/4	3/4 - 2 sides	1/32 x 1/4
DF86200-2	200 Grit	2-1/4	3/4 - 2 sides	1/32 x 1/4
DF85200-2	200 Grit	2-1/4	3/4 - 2 sides	1/32 x 13/64
DF83200-2	200 Grit	2-1/4	3/4 - 2 sides	1/32 x 1/8
DF85300-2	200 Grit	2-1/4	3/4 - 2 sides	1/32 x 13/64
DF83300-2	200 Grit	2-1/4	3/4 - 2 sides	1/32 x 1/8
DF-THIN-10	Complete set of all 10 files in a plastic pouch.			

## TAPERED DIAMOND FILES FOR LAPPING MACHINES



M · D · T

120 Grit	150 Grit	200 Grit	Width	Coated Length	Overall Length
DFTFL10120	DFTFL10150	DFTFL10200	3/8	2-3/8	3-1/2
DFTFL8120	DFTFL8150	DFTFL8200	5/16	2-3/8	3-1/2
DFTFL6120	DFTFL6150	DFTFL6200	1/4	1-5/8	2-3/4
DFTFL4120	DFTFL4150	DFTFL4200	5/32	1"	2-3/4

## DIAMOND POINTS M · D · T



M · D · T

Diamond Points 1/8 Shank - 150Grit				Diamond Points 3/32 Shank-120Grit			
DP20T-18		DP10B-18		DP-13060		DP-01014	
DP30T-18		DP15B-18		DP-40020		DP-01018	
DP30V-18		DP30J-18		DP-40030		DP-01023	
DP13R-18		DP40J-18		DP-66023		DP-01029	
DP14R-18		DP50J-18		DP-68030		DP-01042	
DP15R-18		DP34S-18		DP-61040		DP-10035	
DP20P-18		DP36S-18		DP-74030		DP-10012	
DP30P-18		DP20B-18		DP-66045		DP-11016	
DP40P-18		DP30B-18		DP-52030		DP-11021	
DP50P-18		DP40F-18		DP-04050		DP-10930	
DP20SET-18	Set of all 20 diamond points in plastic case			DPW20-332	Set of 20 all 20 diamond points in wallet		

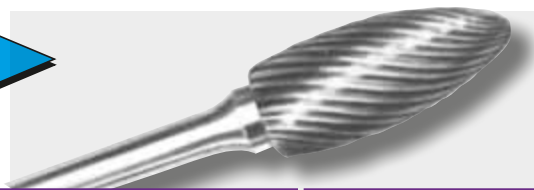




# Carbide Burs

## CUT SELECTION

The cut or flute pattern is an important decision when using carbide burs. This is determined by the hardness of the material being removed and the finish required. Below are illustrations of the basic patterns that are available and the advantages of each.






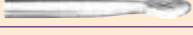
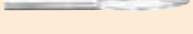






 <p><b>#1 Standard Cut</b> A general purpose pattern to be used on cast iron, steel and other ferrous metals.</p>	 <p><b>#4 Double Cut</b> For use on heat treated and tough alloy steel. Produces a smaller chip and minimizes slivers in stringy material. Enables excellent control.</p>	 <p><b>#8 Chipbreaker Cut</b> This pattern reduces chip size allowing an improvement in control.</p>
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### Miniature Burs






1/8" Shank 1-1/2" OAL Solid Carbide

"EC" denotes end cutting bur

Shape	Cat. No. Cut #1	Cat. No. Cut #4	Bur Diameter	Length of Cut	Included Angle
  <p>END CUT</p>	SA-41-1	SA-41-4	1/16	1/14	—
	SA-42-1	SA-42-4	3/32	7/16	—
	SA-43-1	SA-43-4	1/8	9/16	—
	SB-41-1	SB-41-4	1/16	1/4	—
	SB-42-1	SB-42-4	3/32	7/16	—
	SB-43-1	SB-43-4	1/8	9/16	—
	SB-ECO	—	1/8	—	—
	SC-41-1	SC-41-4	3/32	7/16	—
	SC-42-1	SC-42-4	1/8	9/16	—
	SD-41-1	SD-41-4	3/32	3/32	—
	SD-42-1	SD-42-4	1/8	1/8	—
	SE-41-1	SE-41-4	1/8	1/4	—
	SF-41-1	SF-41-4	1/8	1/4	—
	SF-42-1	SF-42-4	1/8	1/2	—
	SG-41-1	SG-41-4	1/8	1/4	—
	SG-42-1	SG-42-4	1/8	5/16	—
	SG-43-1	SG-43-4	1/8	3/8	—
	SG-44-1	SG-44-4	1/8	1/2	—
	SH-41-1	SH-41-4	1/8	1/4	—
	SL-41-1	SL-41-4	1/8	3/8	8°
	SL-42-1	SL-42-4	1/8	1/2	8°
	SM-41-1	SM-41-4	1/8	11/32	12°
	SM-42-1	SM-42-4	1/8	7/16	14°
	SM-43-1	SM-43-4	1/8	5/8	7°
	SN-41-1	SN-41-4	3/32	1/8	10°
	SN-42-1	SN-42-4	1/8	3/16	10°
	SN-41-1EC	SN-41-4EC	3/32	1/8	10°
	SN-42-1EC	SN-42-4EC	1/8	3/16	10°

### Miniature Burs

— 1/8" x 3" OAL solid carbide

Shape	Cat. No. Cut #1	Cat. No. Cut #4	Bur Diameter	Length of Cut
	SA-43-1L3	SA-43-4L3	1/8	9/16
	SB-ECO-L3	—	1/8	—
	SC-42-1L3	SC-42-4L3	1/8	9/16
	SD-42-1L3	SD-42-4L3	1/8	1/8
	SF-42-1L3	SF-42-4L3	1/8	1/2



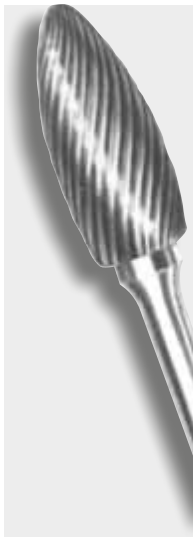


# Carbide Burs

## 1/4" Burs

1/8" X 1-1/2" Long Steel Shank

"EC" denotes end cutting bur

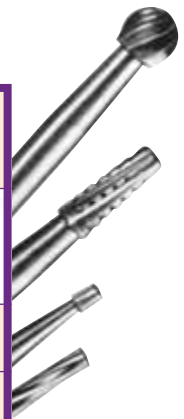


Shape	Cat. No. Cut #1	Cat. No. Cut #4	Cat. No. Cut #8	Head Diameter	Length of Cut	Included Taper
	SA51-1	SA51-4	SA51-8	1/4	1/2	—
	SA51-1EC	SA51-4EC	SA51-8EC	1/4	1/2	—
	SB51-1	SB51-4	SB51-8	1/4	3/16	—
	SB51-1EC	SB51-4EC	SB51-8EC	1/4	3/16	—
	SC51-1	SC51-4	SC51-8	1/4	1/2	—
	SD51-1	SD51-4	SD51-8	1/4	1/4	—
	SE51-1	SE51-4	SE51-8	1/4	3/8	—
	SF51-1	SF51-4	SF51-8	1/4	1/2	—
	SG51-1	SG51-4	SG51-8	1/4	1/2	—
	SM51-1	SM51-4	SM51-8	1/4	1/2	22°
	SN51-1	SN51-4	SN51-8	1/4	1/4	10°
	SN51-1EC	SN51-4EC	SN51-8EC			

## S.S. White Mini Carbide Dental Burs (HP)

— 3/32 Shanks (10 per pkg)

ROUND								WHEEL	INVERTED CONE				FLAT END FISSURE				ROUND END FISSURE	TAPER FISSURE			END CUTTING																		
1/4	1/2	1	2	3	4	5	6	7	8	DISCONTINUED				34	35	36	37	DISCONTINUED				38	39	59	557	558	DISCONTINUED			559	560	1557	1558	700	701	701L	702	703	957
.020	.024	.032	.034	.047	.055	.063	.072	.081	.091	DISCONTINUED				.032	.039	.047	.055	DISCONTINUED				.063	.072	.055	.039	.047	DISCONTINUED			.055	.063	.039	.047	.039	.047	.047	.063	.081	.039



## Carbide Burs

— 3/32" Miniatures

Shape	Cat. No. Cut #1	Cat. No. Cut #4	Cut Diameter	Length of Cut
	SA-61-1	SA-61-4	1/16	1/4
	SA-63-1	SA-63-4	3/32	3/8
	SC-61-1	SC-61-4	3/32	3/8
	SD61-1	SD61-4	3/32	3/32
	SE-61-1	SE-61-4	3/32	1/8
	SF-61-1	SF-61-4	3/32	1/4
	SG-61-1	SG-61-4	3/32	1/4
	SM-61-1	SM-61-4	3/32	1/4
	SN-61-1	SN-61-4	3/32	1/8






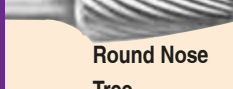
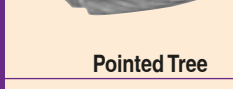
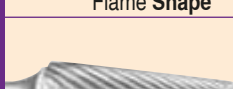



# Carbide Burs

## 1/4" Shank Burs

- All 1/4" cutting diameter burs are solid & 2" overall.
- All others have solid carbide heads brazed to 2" long steel shanks.

Sizes marked with (\*) are available on a 6" long steel shank as well. To order add "L6" to part number (example: SA-3-4L6).

Shape	Cat. No. Cut #1	Cat. No. Cut #4	Cat. No. Cut #8	Head Diameter	Length of Cut	
 <b>Cylindrical</b>	*SA-1-1	*SA-1-4	SA-1-8	1/4	5/8	
	*SA-3-1	*SA-3-4	SA-3-8	3/8	3/4	
	*SA-5-1	*SA-5-4	SA-5-8	1/2	1"	
	SA-6-1	SA-6-4	SA-6-8	5/8	1"	
	SA-7-1	SA-7-4	SA-7-8	3/4	1"	
	SA-9-1	SA-9-4	SA-9-8	1"	1"	
 <b>End Cutting Cylindrical</b>	SB-1-1	SB-1-4	SB-1-8	1/4	5/8	
	SB-3-1	SB-3-4	SB-3-8	3/8	3/4	
	SB-5-1	SB-5-4	SB-5-8	1/2	1"	
	SB-6-1	SB-6-4	SB-6-8	5/8	1"	
	SB-7-1	SB-7-4	SB-7-8	3/4	1"	
	SB-9-1	SB-9-4	SB-9-8	1"	1"	
 <b>Cylindrical Ball Nose</b>	*SC-1-1	*SC-1-4	SC-1-8	1/4	5/8	
	*SC-3-1	*SC-3-4	SC-3-8	3/8	3/4	
	*SC-5-1	*SC-5-4	SC-5-8	1/2	1"	
	SC-6-1	SC-6-4	SC-6-8	5/8	1"	
	SC-7-1	SC-7-4	SC-7-8	3/4	1"	
	 <b>Ball Shape</b>	*SD-1-1	*SD-1-4	SD-1-8	1/4	1/4
*SD-3-1		*SD-3-4	SD-3-8	3/8	3/8	
*SD-5-1		*SD-5-4	SD-5-8	1/2	1/2	
SD-6-1		SD-6-4	SD-6-8	5/8	5/8	
SD-7-1		SD-7-4	SD-7-8	3/4	3/4	
SD-9-1		SD-9-4	SD-9-8	1"	1"	
 <b>Egg Shape</b>	*SE-1-1	*SE-1-4	SE-1-8	1/4	3/8	
	*SE-3-1	*SE-3-4	SE-3-8	3/8	5/8	
	*SE-5-1	*SE-5-4	SE-5-8	1/2	7/8	
	SE-6-1	SE-6-4	SE-6-8	5/8	1"	
	SE-7-1	SE-7-4	SE-7-8	3/4	1"	
	 <b>Round Nose Tree</b>	*SF-1-1	*SF-1-4	SF-1-8	1/4	5/8
*SF-3-1		*SF-3-4	SF-3-8	3/8	3/4	
*SF-5-1		*SF-5-4	SF-5-8	1/2	1"	
SF-6-1		SF-6-4	SF-6-8	5/8	1"	
SF-7-1		SF-7-4	SF-7-8	3/4	1"	
 <b>Pointed Tree</b>		*SG-1-1	*SG-1-4	SG-1-8	1/4	5/8
	*SG-3-1	*SG-3-4	SG-3-8	3/8	3/4	
	*SG-5-1	*SG-5-4	SG-5-8	1/2	1"	
	SG-6-1	SG-6-4	SG-6-8	5/8	1"	
	SG-7-1	SG-7-4	SG-7-8	3/4	1"	
	 <b>Flame Shape</b>	*SH-2-1	*SH-2-4	SH-2-8	5/16	3/4
*SH-5-1		*SH-5-4	SH-5-8	1/2	1-1/4	
SH-6-1		SH-6-4	SH-6-8	5/8	1-7/16	
SH-7-1		SH-7-4	SH-7-8	3/4	1-5/8	
 <b>Corner Radius</b>		*SL-1-1	*SL-1-4	SL-1-8	1/4	5/8
		*SL-3-1	*SL-3-4	SL-3-8	3/8	1-1/16
	*SL-4-1	*SL-4-4	SL-4-8	1/2	1-1/8	
	SL-6-1	SL-6-4	SL-6-8	5/8	1-5/16	
	SL-7-1	SL-7-4	SL-7-8	3/4	1-1/2	




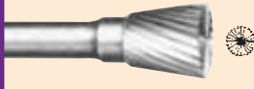
# Carbide Burs

- All 1/4" cutting diameter burs are solid & 2" overall.
- All others have solid carbide heads brazed to 2" long steel shanks.

## Aluminum Cut Carbide Burs

For cutting softer non-ferrous metals and non-metallic materials such as: aluminum, magnesium alloys, plastics, hard rubber & zinc alloy.

## 1/4" Shank Burs - "EC" denotes end cutting

Shape	Cat. No. Cut #1	Cat. No. Cut #4	Cat. No. Cut #8	Head Diameter	Length of Cut	Included Taper
 Pointed Cone	SM-1-1	SM-1-4	SM-1-8	1/4	1/2	22
	SM-3-1	SM-3-4	SM-3-8	1/4	1"	10
	SM-4-1	SM-4-4	SM-4-8	3/8	5/8	28
	SM-5-1	SM-5-4	SM-5-8	1/2	7/8	28
	SN-1-1	SN-1-4	SN-1-8	1/4	5/16	10
 Inverted Taper	SN-1-1-EC	SN-1-4-EC	SN-1-8-EC	1/4	5/16	10
	SN-4-1	SN-4-4	SN-4-8	1/2	1/2	28
	SN-4-1-EC	SN-4-4-EC	SN-4-8-EC	1/2	1/2	28

Cat. No.	Size	Shank
SA1-NF	1/4 X 3/4	1/4
SA3-NF	3/8 x 3/4	1/4
SA5-NF	1/2 x 1"	1/4
SA6-NF	5/8 x 1"	1/4
SA7-NF	3/4 x 1"	1/4
SA7-NF38	3/4 x 1"	3/8



Cat. No.	Size	Shank
SE3-NF	3/8 x 3/4	1/4
SE5-NF	1/2 x 7/8	1/4
SE6-NF	5/8 x 1"	1/4
SE7-NF	3/4 x 1"	1/4
SE7-NF38	3/4 x 1"	3/8



Cat. No.	Size	Shank
SC1-NF	1/4 X 3/4	1/4
SC3-NF	3/8 x 3/4	1/4
SC5-NF	1/2 x 1"	1/4
SC7-NF	3/4 x 1"	1/4
SC7-NF38	3/4 x 1"	3/8



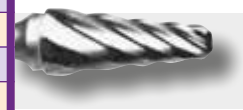
Cat. No.	Size	Shank
SF1-NF	1/4 X 3/4	1/4
SF3-NF	3/8 x 3/4	1/4
SF5-NF	1/2 x 1"	1/4
SF6-NF	5/8 x 1"	1/4
SF7-NF	3/4 x 1-1/4	1/4
SF7-NF38	3/4 x 1-1/4	3/8



Cat. No.	Size	Shank
SD1-NF	1/4	1/4
SD3-NF	3/8	1/4
SD5-NF	1/2	1/4
SD6-NF	5/8	1/4
SD7-NF	3/4	1/4
SD7-NF38	3/4	3/8



Cat. No.	Size	Shank
SL3-NF	3/8 x 1-1/16	1/4
SL4-NF	1/2 x 1-1/8	1/4
SL6-NF	5/8 x 1-5/16	1/4
SL7-NF	3/4 x 1-1/2	1/4
SL7-NF38	3/4 x 1-1/2	3/8



## CARBIDE BLANKS Fractional Blanks

- Ground from solid carbide

Cat. No.	Diameter	Length
DB12150	1/8	1-1/2
DB12225	1/8	2-1/4
DB18200	3/16	2"
DB18275	3/16	2-3/4
DB18400	3/16	4"
DB25200	1/4	2"
DB25325	1/4	3-1/4
DB31200	5/16	2"
DB37250	3/8	2-1/2
DB50300	1/2	3"

Tolerance: +.0000 -.0005

## CARBIDE BLANKS Etching, Engraving Blanks

- Ground from solid carbide

Catalog Number		Dimensions		
Single End	Double End	Diameter	OAL	Length of Flat
EB06SE	EB06DE	1/16	1-1/2	1/4
EB09SE	EB09DE	3/32	1-1/2	1/4
EB12SE	EB12DE	1/8	1-1/2	1/4
EB18SE	EB18DE	3/16	2"	3/8
EB25SE	EB25DE	1/4	2"	3/8
EB31SE	EB31DE	5/16	2"	1/2
EB37SE	EB37DE	3/8	2-1/2	1/2
EB50SE	EB50DE	1/2	2-1/2	1/2

Tolerance on flat: +.001 -.000



# Steel Files

## STEEL FILES DIPROFIL

For use with profiling machines. Available in cuts #00(coarse) & #1 (medium) with 1/8" Shanks

	Style	Cat. No. Cut #00	Cat. No. Cut #1
		STL-1-00	STL-1-01
		STL-2-00	STL-2-01
		STL-3-00	STL-3-01
		STL-4-00	STL-4-01
		STL-5-00	STL-5-01
		STL-6-00	STL-6-01
		STL-101-00	STL-101-01

## NEEDLE FILES

With round handles. 6-1/4" available in cuts 0 & 2.



Style		Cat. No. Cut #0	Cat. No. Cut #2	
Equalling		24010	24012	
Half-round		24020	24022	
Crossing		24030	24032	
Knife		24050	24052	
Warding		24060	24062	
Three-Square		24070	24072	
Square		24080	24082	
Round		24100	24102	
Crochet		24150	24152	



# Steel Files

## DIEMAKERS' & SILVERSMITHS' FILES

7" overall, available in cuts 0 & 2.



					Cat. No. Cut #0	Cat. No. Cut #2
		701			7010	7012
		711			7110	7112
		712			7120	7122
		713			7130	7132
		731			7310	7312
		732			7320	7322
		741			7410	7412
		750			7500	7502
		781			7810	7812

## DIESINKERS' REGULAR RIFFLE FILES

Cat. No.  
Cut #0

Cat. No.  
Cut #2

7" overall, available in cuts 0 & 2.



Cat. No.  
Cut #0

Cat. No.  
Cut #2

		900			9000	9002
		901			9010	9012
		905			9050	9052
		911			9110	9112
		912			9120	9122
		913			9130	9132
		914			9140	9140
		915			9150	9152
		918			9180	9182
		930			9300	9302
		931			9310	9312
		941			9410	9412
		942			9420	9422
		950			9500	9502
		951			9510	9512
		952			9520	9522
		956			9560	9562
		958			9580	9582
		965			9650	9652
		981			9810	9812
		983			9830	9832
		984			9840	9842
		985			9850	9852
		986			9860	9862
		987			9870	9872
		988			9880	9882



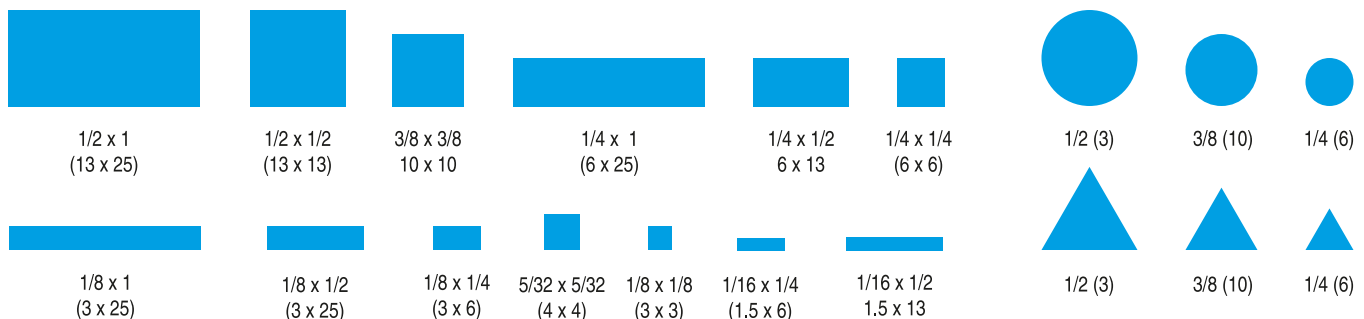


# Stone Selection Suggestions

TYPE OF STONE		SURFACE	SURFACE					METHOD	METHOD			USE	USE		BREAKDOWN	HARDNESS	
			Tool Steel	Aluminum	Non-Ferrous	Stainless	EDM		Hand	Profiler	Ultrasonic		Wet	Dry		0=slow/5=fast	0=soft/5=hard
EDM Polishing Stones	AM-8		●			●	●		●	●	●		●		2		4
	AS-9		●			●	●		●	●			●	●	3		3
	Orange EDM		●			●	●		●	●			●	●	3		3
	GOLD		●			●	●		●	●			●		3		3
General Purpose Stones	AM-2		●	●	●	●			●	●			●	●	4		2
	Die Stone		●			●			●	●			●	●	3		3
	AM-K		●	●					●	●			●	●	3		3
	AS-H		●	●	●	●			●	●			●	●	4		2
	CS		●		●				●				●	●	5		2
	CS-M		●	●	●				●	●			●	●	4		2
	CS-HD		●			●	●		●	●			●	●	3		3
Specialty Stones	RASP		●	●	●	●			●	●			●	●	4		2
	PC		●	●	●	●			●	●			●		4		3
	T2		●			●	●		●	●			●		2		4
	T4		●	●	●	●			●	●			●		4		3
	TH		●				●		●	●			●		3		3
	AO		●				●		●	●			●		3		3
	900-F		●						●				●		5		0
Detail Stones	Ceramics		Detail Areas, Ribs & Slots										●				
	CNB- 80 & 120		Agressive - Fast Cutting / Welds-Blending EDM										●	●			
	CRISTONE®		Extremely Strong and Thin - Fine Detail Polishing										●	●			

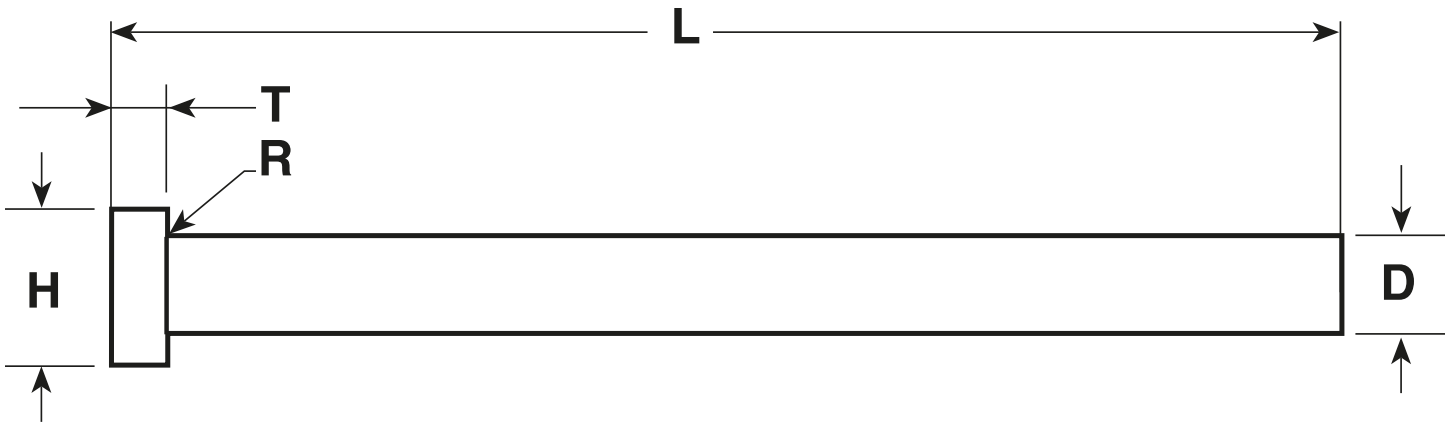
## Popular Stone Shapes

inches (mm)





# FAXABLE QUOTE FORM PARALLEL EJECTOR PINS



	Size	Tolerance	Special Tolerance	Quantity
<b>D =</b>	<input type="text"/>	-.0003 -.0008	or <input type="text"/>	<input type="text"/>
<b>H =</b>	<input type="text"/>	+.000 -.010	or <input type="text"/>	Material <input type="text"/>
<b>T =</b>	<input type="text"/>	+.000 -.002	or <input type="text"/>	Hardness/Heat Treatment <input type="text"/>
<b>L =</b>	<input type="text"/>	+.062 -.000	or <input type="text"/>	Required by <input type="text"/>
<b>R =</b>	<input type="text"/>	1/32 MAX	or <input type="text"/>	<input type="text"/>

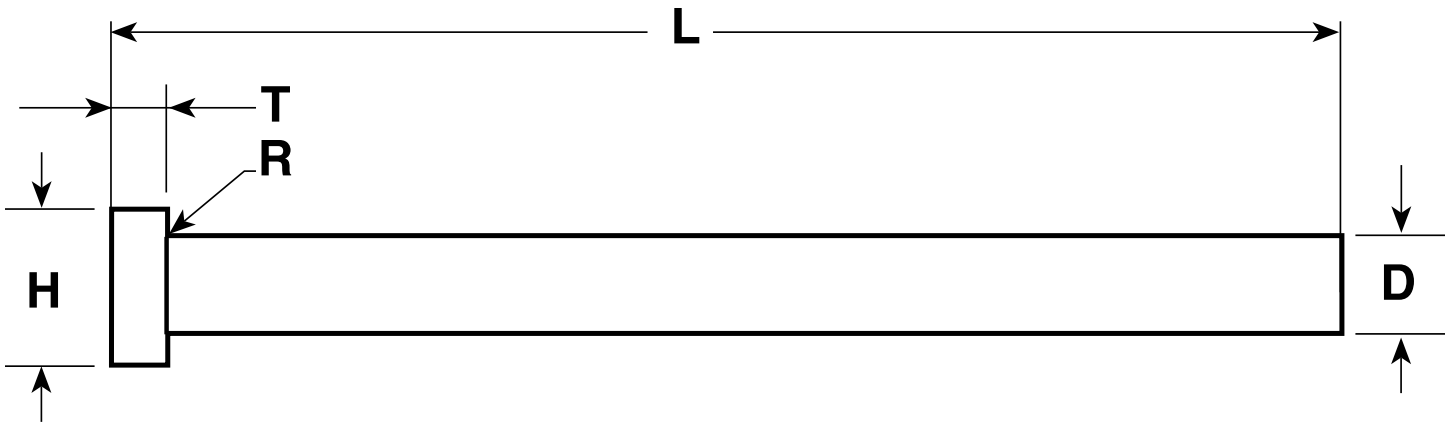
Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199



# FAXABLE QUOTE FORM PARALLEL EJECTOR PINS METRIC



Size	Tolerance	✓	Special Tolerance
D =	g6		or
H =	+0,0 -0,2		or
T =	+0,0 -0,5		or
L =	+2,0 -0,0		or
R =	+0,2 -0,0		or

Nominal Size		g6	
Over	To	Tolerance (mm)	
0mm	3mm	-.002	-.008
3mm	6mm	-.004	-.012
6mm	10mm	-.005	-.014
10mm	18mm	-.006	-.017
18mm	30mm	-.007	-.020
30mm	50mm	-.009	-.025

Quantity \_\_\_\_\_

Material \_\_\_\_\_

Hardness/Heat Treatment \_\_\_\_\_

Required by \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

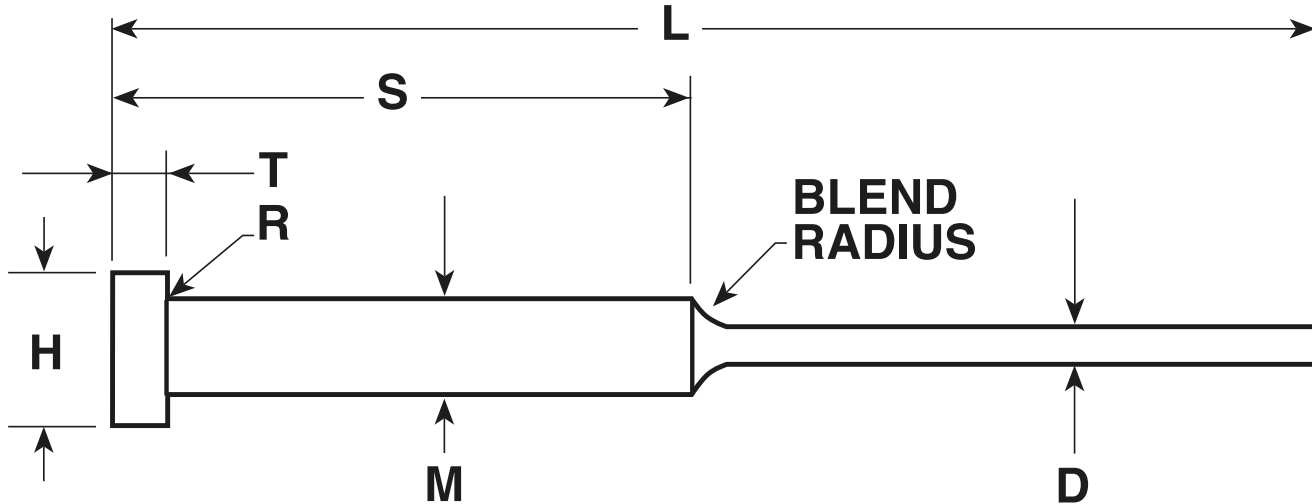
Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199



# FAXABLE QUOTE FORM SHOULDER EJECTOR PINS METRIC



	Size	Tolerance	✓	Special Tolerance
<b>D =</b>		<b>g6</b>		or _____
<b>M =</b>		<b>+0,0 -0,1</b>		or _____
<b>L =</b>		<b>+2,0 -0,0</b>		or _____
<b>S =</b>				or _____
<b>T =</b>		<b>+0,0 -0,5</b>		or _____
<b>H =</b>		<b>+0,0 -0,2</b>		or _____
<b>R =</b>		<b>0,3</b>		or _____

Nominal Size		g6	
Over	To	Tolerance (mm)	
0mm	3mm	-0,02	-0,08
3mm	6mm	-0,04	-0,12
6mm	10mm	-0,05	-0,14
10mm	18mm	-0,06	-0,17
18mm	30mm	-0,07	-0,20
30mm	50mm	-0,09	-0,25

Quantity \_\_\_\_\_

Material \_\_\_\_\_

Hardness/Heat Treatment \_\_\_\_\_

Required by \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

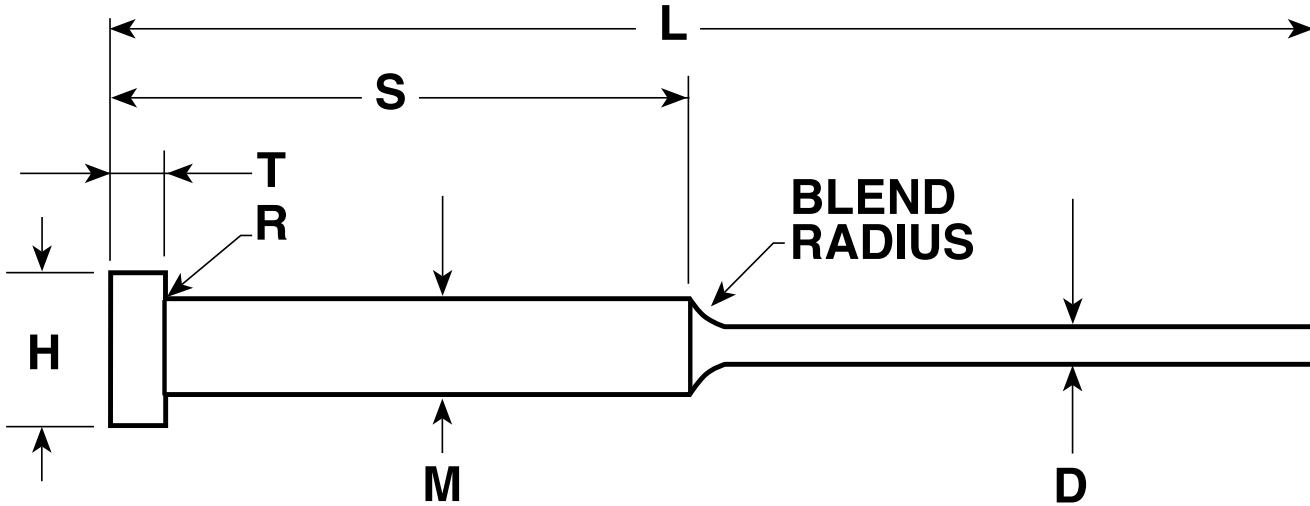
Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199



# FAXABLE QUOTE FORM SHOULDER EJECTOR PINS METRIC



	Size	Tolerance	✓	Special Tolerance
<b>D =</b>		<b>g6</b>		or _____
<b>M =</b>		<b>+0,0 -0,1</b>		or _____
<b>L =</b>		<b>+2,0 -0,0</b>		or _____
<b>S =</b>				or _____
<b>T =</b>		<b>+0,0 -0,5</b>		or _____
<b>H =</b>		<b>+0,0 -0,2</b>		or _____
<b>R =</b>		<b>0,3</b>		or _____

Nominal Size		g6	
Over	To	Tolerance (mm)	
0mm	3mm	-0,02	-0,08
3mm	6mm	-0,04	-0,12
6mm	10mm	-0,05	-0,14
10mm	18mm	-0,06	-0,17
18mm	30mm	-0,07	-0,20
30mm	50mm	-0,09	-0,25

Quantity \_\_\_\_\_

Material \_\_\_\_\_

Hardness/Heat Treatment \_\_\_\_\_

Required by \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199

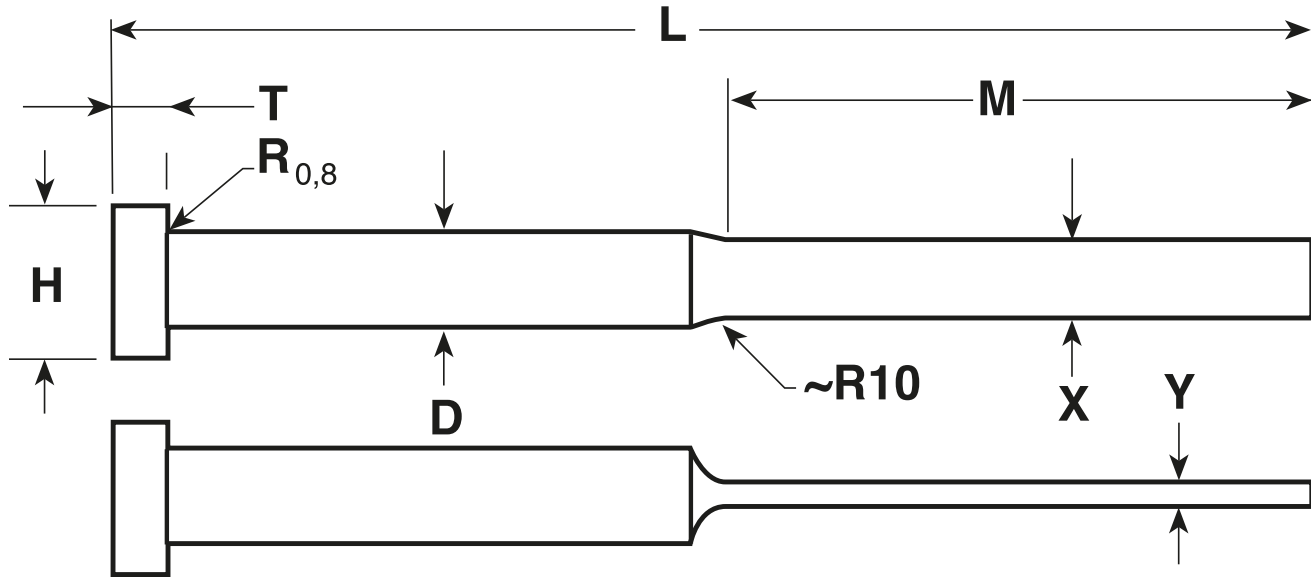




# FAXABLE QUOTE FORM

## BLADE EJECTORS

### METRIC



	Size	Tolerance	✓	Special Tolerance	Quantity
D =		-.006 -.017		or	
L =		+1,0 -0,0		or	Material
T =		+0,00 -0,05		or	
H =		+0,0 -0,2		or	Hardness/Heat Treatment
M =		+2,0 +1,0		or	
X =		+0,000 -0,015		or	Required by
Y =		+0,000 -0,015		or	

Company: \_\_\_\_\_

Address: \_\_\_\_\_

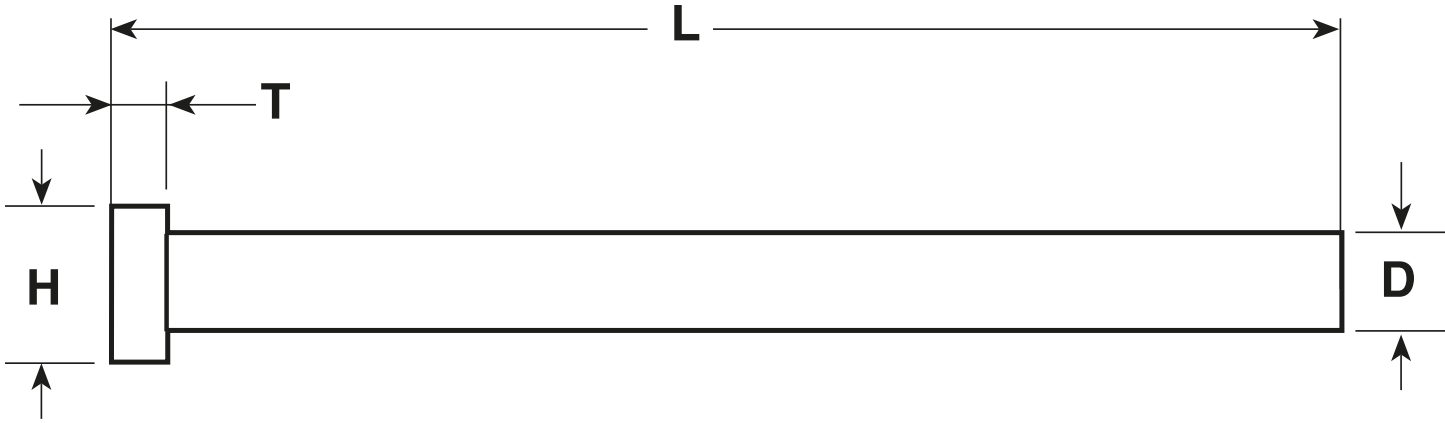
City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_



# FAXABLE QUOTE FORM CORE PINS



	Size	Tolerance	✓	Special Tolerance	Quantity
D =	<input type="text"/>	+ .001 - .000	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
H =	<input type="text"/>	+ .000 - .010	<input type="checkbox"/>	<input type="text"/>	Material <input type="text"/>
T =	<input type="text"/>	+ .000 - .002	<input type="checkbox"/>	<input type="text"/>	Hardness/Heat Treatment <input type="text"/>
L =	<input type="text"/>	+ .030 - .000	<input type="checkbox"/>	<input type="text"/>	Required by <input type="text"/>

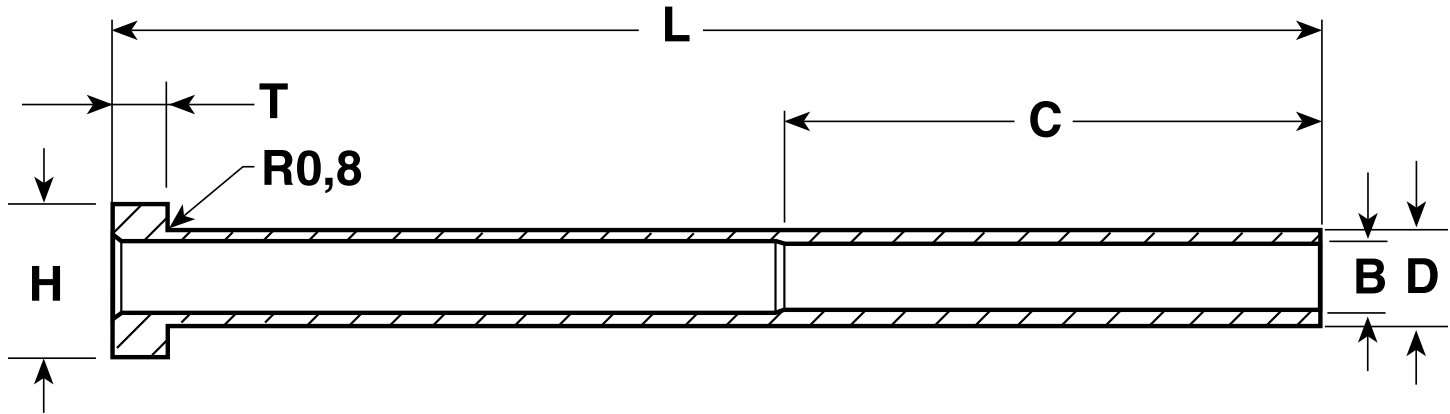
Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199



# FAXABLE QUOTE FORM PARALLEL EJECTOR SLEEVES – METRIC



Size	Tolerance	✓	Special Tolerance	Quantity
D =	-0,006 -0,017	<input type="checkbox"/>	or <input type="text"/>	_____
B =	+0,008 -0,000	<input type="checkbox"/>	or <input type="text"/>	Material _____
H =	+0,0 -0,2	<input type="checkbox"/>	or <input type="text"/>	_____
T =	+0,00 -0,05	<input type="checkbox"/>	or <input type="text"/>	Hardness/Heat Treatment _____
L =	+1,0 -0,0	<input type="checkbox"/>	or <input type="text"/>	_____
C =	+ -	<input type="checkbox"/>	or <input type="text"/>	Required by _____

Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

**DMS (Windsor)**  
 Fax: 800-845-3807

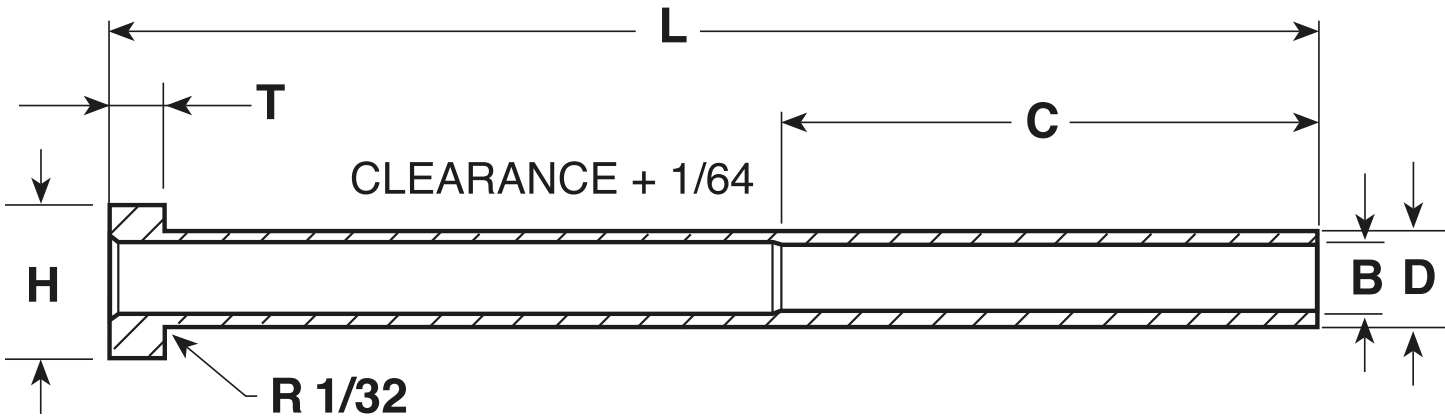
**DMS (Schaumburg)**  
 Fax: 847-466-0108  
 800-367-4199

**DMS (Fountain Valley)**  
 Fax: 714-751-3861  
 800-953-9561

**DMS (Taunton)**  
 Fax: 508-822-6547  
 888-469-1999



# FAXABLE QUOTE FORM PARALLEL EJECTOR SLEEVES - INCH

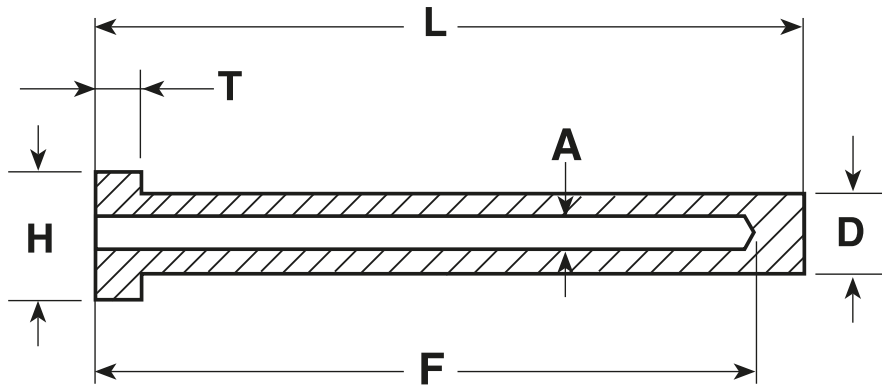


	Size	Tolerance	✓	Special Tolerance	Quantity
D =		-.0003 -.0008		or	
B =		+.0003 --.0000		or	Material
H =		+.000 -.010		or	
T =		+.000 -.002		or	Hardness/Heat Treatment
L =		+.031 -.000		or	
C =		+ -		or	Required by

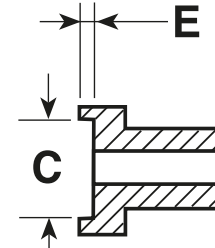
Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_



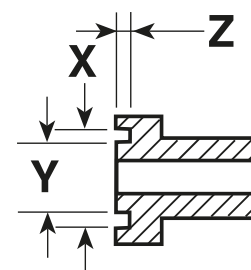
# FAXABLE QUOTE FORM WATER COOLED CORES



## C-BORE



## O-RING



	Size	Tolerance
D =	<input type="text"/>	+ _____ - _____
H =	<input type="text"/>	+ _____ - _____
T =	<input type="text"/>	+ _____ - _____
L =	<input type="text"/>	+ _____ - _____
F =	<input type="text"/>	+ _____ - _____
A =	<input type="text"/>	+ _____ - _____
C =	<input type="text"/>	+ _____ - _____
E =	<input type="text"/>	+ _____ - _____
X =	<input type="text"/>	+ _____ - _____
Y =	<input type="text"/>	+ _____ - _____
Z =	<input type="text"/>	+ _____ - _____

Quantity

\_\_\_\_\_

Material

\_\_\_\_\_

Hardness/Heat Treatment

\_\_\_\_\_

Required by

\_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

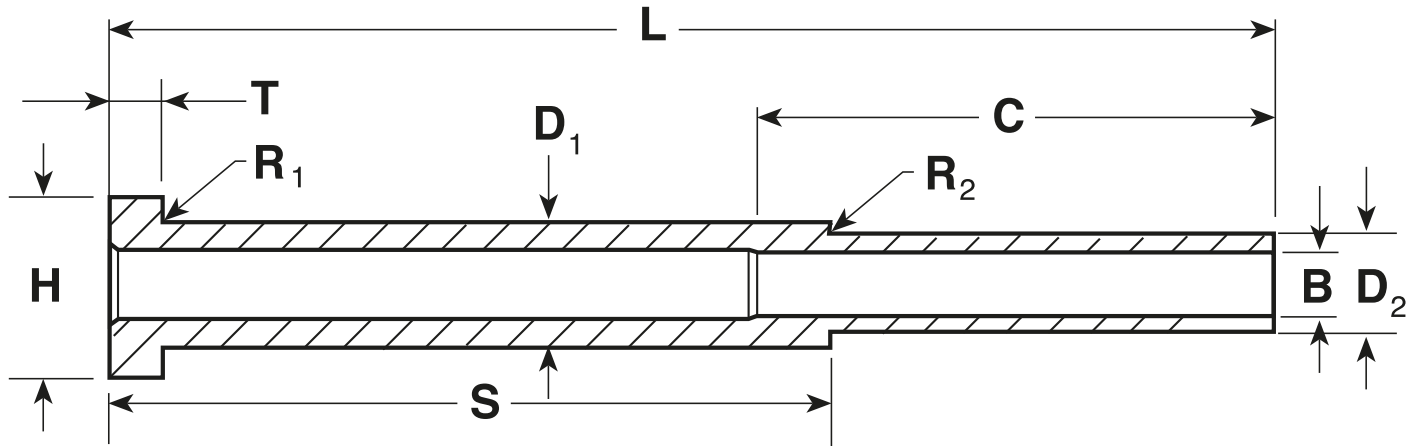
DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199





# FAXABLE QUOTE FORM SHOULDER EJECTOR SLEEVES



	Size	Tolerance	✓	Special Tolerance
$D_1 =$		+ .000 - .001	<input type="checkbox"/>	or <input type="text"/>
$D_2 =$		- .0003 - .0006	<input type="checkbox"/>	or <input type="text"/>
$B =$		+ .0003 - .0000	<input type="checkbox"/>	or <input type="text"/>
$H =$		+ .000 - .010	<input type="checkbox"/>	or <input type="text"/>
$T =$		+ .000 - .002	<input type="checkbox"/>	or <input type="text"/>
$L =$		+ .031 - .000	<input type="checkbox"/>	or <input type="text"/>
$C =$		+ -	<input type="checkbox"/>	or <input type="text"/>
$R_1 =$		1/32	<input type="checkbox"/>	or <input type="text"/>
$R_2 =$		1/32	<input type="checkbox"/>	or <input type="text"/>
$S =$		+ -	<input type="checkbox"/>	or <input type="text"/>

Quantity \_\_\_\_\_

Material \_\_\_\_\_

Hardness/Heat Treatment \_\_\_\_\_

Required by \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

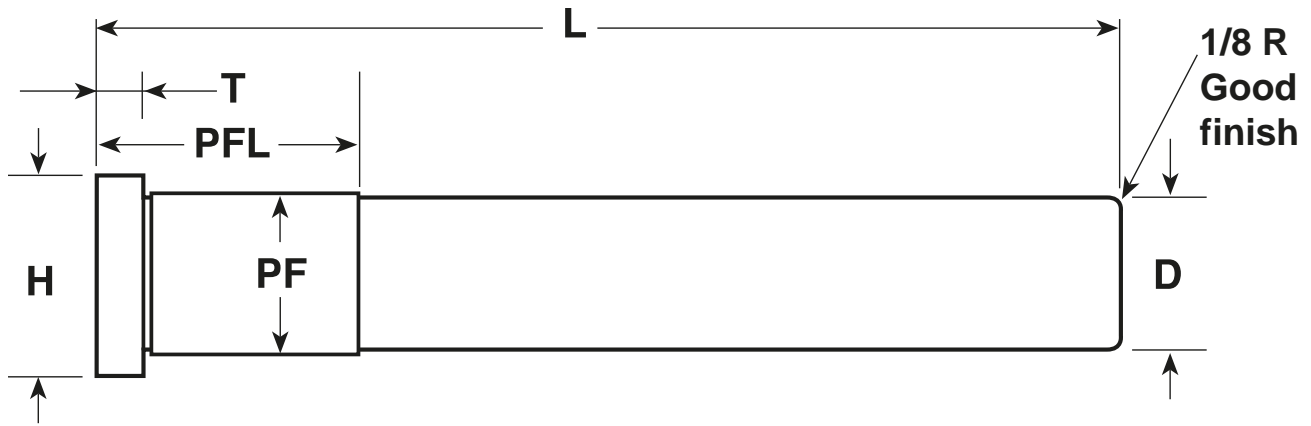
Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199



# FAXABLE QUOTE FORM STRAIGHT LEADER PINS



	Size	Tolerance	✓	Special Tolerance	Quantity
D =		-.0000 -.0005		or	_____
H =		+.000 -.010		or	Material _____
T =		+.000 -.005		or	_____
PF =		+.0005 -.0000		or	Hardness/Heat Treatment _____
PFL =					_____
L =		+.010 -.000			Required by _____

Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State/Prov.: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_ Reference #: \_\_\_\_\_

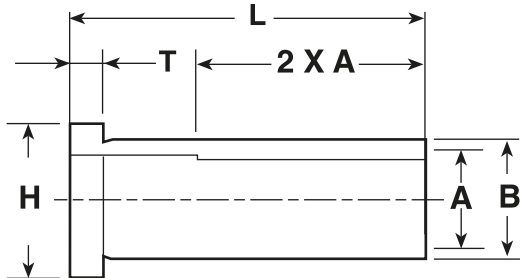
DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199

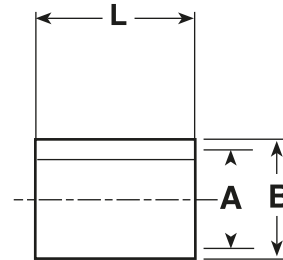


# FAXABLE QUOTE FORM BUSHINGS

## Shoulder Bushings



## Straight Bushings



	Size	Tolerance	✓	Quantity
A =		+0.0005 -0.0000		Material
H =		+0.000 -0.010		
T =		+0.000 -0.005		
B =		+0.0005 -0.0000		Hardness/Heat Treatment
L =		+0.015 -0.030		

	Size	Tolerance	✓
A =		+0.0005 -0.0000	
B =		+0.0005 -0.0000	
L =		+0.015 -0.030	

Required by \_\_\_\_\_

Company: _____			
Address: _____			
City: _____	State/Prov.: _____	Zip/Postal Code: _____	
Phone: _____	Fax: _____	Email: _____	
Contact Name: _____	Reference #: _____		

DMS (Windsor) Fax: 800-845-3807

DMS (Elk Grove Village, IL) Fax: 800-367-4199