

FULL PRODUCT CATALOG

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DIE BUTTON SHIMS—ENGLISH

Available in quantities of 20, 50 or 100

.003 - .005 under button size

(for easy assembly)

Full hard, cold rolled, low carbon 1008-1010

Die Button Size	Shim Size			Shim Size	Shim Size	Shim Size
	.010	.015	.020	.025	.030	.060
RS 1/4 Dia	X			X	X	
RS 5/16 Dia	X			X	X	
RS 3/8 Dia	X			X	X	
RS 7/16 Dia	X			X	X	
RS 1/2 Dia	X			X	X	X
RS 5/8 Dia	X			X	X	X
RS 3/4 Dia	X			X	X	X
RS 7/8 Dia	X			X	X	X
RS 1 Dia	X			X	X	X
RS 1-1/4 Dia	X			X	X	X
RS 1-1/2 Dia	X			X	X	X

Typical Order Example: RS 1/4 x .010

Kits available which include .010 .015 and .020 thickness - 720 shims total (RS Kit 720)

Kits available which include .025 .030 and .060 thickness - 620 shims total (RS Kit 620)

DIE BUTTON SHIMS—METRIC

Available in quantities of 20, 50 or 100

.10 - .12 under button size
(for easy assembly)

Full hard, cold rolled, low carbon 1008-1010

All dimensions in millimeters

Die Button Size	Shim Size			Shim Size	
	.25	.40	.50	.65	.80
RS 08 Dia	X			X	
RS 10 Dia	X			X	
RS 13 Dia	X			X	X
RS 16 Dia	X			X	X
RS 20 Dia	X			X	X
RS 22 Dia	X			X	X
RS 25 Dia	X			X	X
RS 32 Dia	X			X	X
RS 38 Dia	X			X	X

Typical Order Example: RS 08 x .25

Kits available which include .25 .40 and .50 thickness - 540 shims total (RS Kit 540)

Kits available which include .65 .80 and 1.5 thickness - 460 shims total (RS Kit 460)

DIE SPRINGS—INCH—MEDIUM PRESSURE BLUE

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
M-100	3/8" 3/16" 9.5mm 4.8mm	Wire .039 x .070	1	25.4	30	6
M-100A			1-1/4	31.8	33.8	5.4
M-101			1-1/2	38.1	30	4
M-101A			1-3/4	44.5	29.8	3.4
M-102			2	50.8	28	2.8
M-103			2-1/2	63.5	30	2.4
M-104			3	76.2	31.5	2.1
M-105			12	304.8	36	0.6

M-110	1/2" 9/32" 12.7mm 7.1mm	Wire .052 x .093	1	25.4	55	11
M-110A			1-1/4	31.8	51.3	8.2
M-111			1-1/2	38.1	51	6.8
M-111A			1-3/4	44.5	52.5	6
M-112			2	50.8	55	5.5
M-113			2-1/2	63.5	56.3	4.5
M-114			3	76.2	52.5	3.5
M-115			3-1/2	88.9	52.5	3
M-115A			4-1/2	114.3	56.3	2.5
M-115B			5-1/2	139.7	57.8	2.1
M-115C	6-1/2	165.1	45.5	1.4		
M-115D	7-1/2	190.5	45	1.2		
M-116	12	304.8	42	0.7		

M-120	5/8" 11/32" 15.9mm 8.7mm	Wire .069 x .109	1	25.4	82	16.4
M-120A			1-1/4	31.8	80	12.8
M-121			1-1/2	38.1	81	10.8
M-121A			1-3/4	44.5	84	9.6
M-122			2	50.8	88	8.8
M-123			2-1/2	63.5	75	6
M-124			3	76.2	84	5.6
M-125			3-1/2	88.9	84	4.8
M-126			4	101.6	88	4.4
M-127			12	304.8	96	1.6

M-1	3/4" 3/8" 19.1mm 9.5mm	Wire .075 x .165	1	25.4	156	31.2
M-1A			1-1/4	31.8	160	25.6
M-2			1-1/2	38.1	150	20
M-2A			1-3/4	44.5	154	17.6
M-3			2	50.8	144	14.4
M-4			2-1/2	63.5	150	12
M-5			3	76.2	144	9.6
M-6			3-1/2	88.9	140	8
M-7			4	114.3	144	7.2
M-8			4-1/2	114.3	144	6.4
M-9	5	127	150	6		
M-10	5-1/2	139.7	151.3	5.5		
M-11	6	152.4	150	5		
M-11B	6-1/2	165.1	146.3	4.5		
M-11C	7-1/2	190.5	142.5	3.8		
M-11A	12	304.8	144	2.4		

LOAD DEFLECTION	
Maximum Deflection	50% of Free Length
For Long Life	35% of Free Length
Maximum Operation	40% of Free Length
For Optimum Life	25% of Free Length

Tabulated load values shown are near solid and are for design info only

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
M-12	1" 1/2" 25.4mm 12.7mm	Wire .100 x .215	1	25.4	275	55
M-12A			1-1/4	31.8	281.3	45
M-13			1-1/2	38.1	262.5	35
M-13A			1-3/4	44.5	262.5	30
M-14			2	50.8	260	26
M-15			2-1/2	63.5	250	20
M-16			3	76.2	247.5	16.5
M-17			3-1/2	88.9	262.5	15
M-18			4	101.6	240	12
M-19			4-1/2	114.3	234	10.4
M-20	5	127	240	9.6		
M-21	5-1/2	139.7	242	8.8		
M-22	6	152.4	240	8		
M-23	7	177.8	252	7.2		
M-24	8	203.2	240	6		
M-24A	12	304.8	240	4		

M-36	1-1/4" 5/8" 31.8mm 15.9mm	Wire .115 x .285	1-1/2	38.1	372	49.6
M-36A			1-3/4	44.5	371	42.4
M-37			2	50.8	352	35.2
M-38			2-1/2	63.5	360	28.8
M-39			3	76.2	360	24
M-40			3-1/2	88.9	350	20
M-41			4	101.6	352	17.6
M-42			4-1/2	114.3	360	16
M-43			5	127	340	13.6
M-44			5-1/2	139.7	352	12.8
M-45	6	152.4	360	12		
M-46	7	177.8	364	10.4		
M-47	8	203.2	352	8.8		
M-48	10	254	360	7.2		
M-48A	12	304.8	360	6		

M-49	1-1/2" 3/4" 38.1mm 19.1mm	Wire .135 x .345	2	50.8	530	53
M-50			2-1/2	63.5	562.5	45
M-51			3	76.2	540	36
M-52			3-1/2	88.9	525	30
M-53			4	101.6	540	27
M-54			4-1/2	114.3	517.5	23
M-55			5	127	525	21
M-55A			5-1/2	139.7	508.8	18.5
M-56			6	152.4	510	17
M-56A			7	177.8	507.5	14.5
M-57	8	203.2	512	12.8		
M-58	10	254	500	10		
M-58A	12	304.8	480	8		

M-70	2" 1" 50.8mm 25.4mm	Wire .195 x .468	2-1/2	63.5	1250	100
M-71			3	76.2	1245	83
M-72			3-1/2	88.9	1134	64.8
M-73			4	101.6	1200	60
M-74			4-1/2	114.3	1192.5	53
M-75			5	127	1175	47
M-76			5-1/2	139.7	1078	3.2
M-77			6	152.4	1170	39
M-79			7	117.8	1092	31.2
M-80			8	203.2	1140	28.5
M-82	10	254	1040	20.8		
M-83	12	304.8	1050	17.5		

DIE SPRINGS—INCH—MEDIUM HEAVY PRESSURE RED

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
MHC-100	3/8" 9.5mm	3/16" 4.8mm	1	25.4	33.3	9
MHC-100A			1-1/4	31.8	33.8	7.3
MHC-101			1-1/2	38.1	37.2	6.7
MHC-101A			1-3/4	44.5	37.6	5.8
MHC-102			2	50.8	37	5
MHC-103			2-1/2	63.5	38.9	4.2
MHC-104			3	76.2	33.3	3
MHC-105			12	304.8	40	0.9

MHC-110	1/2" 12.7mm	9/32" 7.1mm	1	25.4	62.2	16.8
MHC-110A			1-1/4	31.8	60.1	13
MHC-111			1-1/2	38.1	52.7	9.5
MHC-111A			1-3/4	44.5	55	8.5
MHC-112			2	50.8	55.5	7.5
MHC-113			2-1/2	63.5	55.5	6
MHC-114			3	76.2	63.3	5.7
MHC-115			3-1/2	88.9	51.8	4
MHC-117			12	304.8	53.3	1.2

MHC-120	5/8" 15.9mm	11/32" 8.7mm	1	25.4	111	30
MHC-120A			1-1/4	31.8	99.4	21.5
MHC-121			1-1/2	38.1	105.5	19
MHC-121A			1-3/4	44.5	108.8	16.8
MHC-122			2	50.8	109.5	14.8
MHC-123			2-1/2	63.5	106.4	11.5
MHC-124			3	76.2	111	10
MHC-125			3-1/2	88.9	110.1	8.5
MHC-126			4	101.6	112.5	7.6
MHC-127			12	304.8	119.9	2.7

MHC-1	3/4" 19.1mm	3/8" 9.5mm	1	25.4	185	50
MHC-1A			1-1/4	31.8	175.8	38
MHC-2			1-1/2	38.1	177.6	32
MHC-2A			1-3/4	44.5	186.5	28.8
MHC-3			2	50.8	183.5	24.8
MHC-4			2-1/2	63.5	177.6	19.2
MHC-5			3	76.2	159.8	14.4
MHC-6			3-1/2	88.9	165.8	12.8
MHC-7			4	101.6	177.6	12
MHC-8			4-1/2	114.3	186.5	11.2
MHC-9			5	127	166.5	9
MHC-10			5-1/2	139.7	162.8	8
MHC-11	6	152.4	166.5	7.5		
MHC-11A	12	304.8	159.8	3.6		

LOAD DEFLECTION	
Maximum Deflection	37% of Free Length
For Long Life	25% of Free Length
Maximum Operation	30% of Free Length
For Optimum Life	20% of Free Length

Tabulated load values shown are near solid and are for design info only

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
MHC-12	1" 25.4mm	1/2" 12.7mm	1	25.4	281.2	76
MHC-12A			1-1/4	31.8	288.6	62.4
MHC-13			1-1/2	38.1	275.3	49.6
MHC-13A			1-3/4	44.5	284.9	44
MHC-14			2	50.8	296	40
MHC-15			2-1/2	63.5	286.8	31
MHC-16			3	76.2	277.5	25
MHC-17			3-1/2	88.9	279.7	21.6
MHC-18			4	101.6	272.3	18.4
MHC-19			4-1/2	114.3	283.1	17
MHC-20			5	127	266.4	14.4
MHC-21			5-1/2	139.7	260.5	12.8
MHC-22	6	152.4	266.4	12		
MHC-23	7	177.8	259	10		
MHC-24	8	203.2	260.5	8.8		
MHC-24A	12	304.8	275.3	6.2		

MHC-36	1-1/4" 31.8mm	5/8" 15.9mm	1-1/2	38.1	634.9	114.4
MHC-36A			1-3/4	44.5	652.7	100.8
MHC-37			2	50.8	639.4	86.4
MHC-38			2-1/2	63.5	577.2	62.4
MHC-39			3	76.2	568.3	51.2
MHC-40			3-1/2	88.9	569.8	44
MHC-41			4	101.6	544.6	36.8
MHC-42			4-1/2	114.3	532.8	32
MHC-43			5	127	536.5	29
MHC-44			5-1/2	139.7	537.2	26.4
MHC-45			6	152.4	555	25
MHC-46			7	177.8	518	20
MHC-47	8	203.2	544.6	18.4		
MHC-48	10	254	536.5	14.5		
MHC-48A	12	304.8	550.6	12.4		

MHC-49	1-1/2" 38.1mm	3/4" 19.1mm	2	50.8	799.2	108
MHC-50			2-1/2	63.5	791.8	85.6
MHC-51			3	76.2	692.6	62.4
MHC-52			3-1/2	88.9	683.8	52.8
MHC-53			4	101.6	710.4	48
MHC-54			4-1/2	114.3	719.3	43.2
MHC-55			5	127	680.8	36.8
MHC-55A			5-1/2	139.7	700	34.4
MHC-56			6	152.4	674.9	30.4
MHC-56A			7	177.8	683.8	26.4
MHC-57			8	203.2	651.2	22
MHC-58			10	254	651.2	17.6
MHC-58A	12	304.8	639.4	14.4		

MHC-70	2" 50.8mm	1" 25.4mm	2-1/2	63.5	1095.2	118.4
MHC-71			3	76.2	1065.6	96
MHC-72			3-1/2	88.9	1036	80
MHC-73			4	101.6	982.7	66.4
MHC-74			4-1/2	114.3	999	60
MHC-75			5	127	1036	56
MHC-76			5-1/2	129.7	1025.6	50.4
MHC-77			6	152.4	1047.8	47.2
MHC-79			7	177.8	1036	40
MHC-80			8	203.2	1041.9	35.2
MHC-82			10	254	962	26
MHC-83			12	304.8	994.6	22.4

DIE SPRINGS—INCH—HEAVY PRESSURE GOLD

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
H-100	3/8" 9.5mm	3/16" 4.8mm	1	25.4	33	11
H-100A			1-1/4	31.8	36.8	9.8
H-101			1-1/2	38.1	36	8
H-101A			1-3/4	44.5	44.1	8.4
H-102			2	50.8	43.2	7.2
H-103			2-1/2	63.5	41.3	5.5
H-104			3	76.2	37.8	4.2
H-105	12	304.8	43.2	1.2		

H-110	1/2" 12.7mm	9/32" 7.1mm	1	25.4	70.8	23.6
H-110A			1-1/4	31.8	69.8	18.6
H-111			1-1/2	38.1	69.8	15.5
H-111A			1-3/4	44.5	72.5	13.8
H-112			2	50.8	66	11
H-113			2-1/2	63.5	63	8.4
H-114			3	76.2	66.6	7.4
H-115	3-1/2	88.9	63	6		
H-117	12	304.8	57.6	1.6		

H-120	5/8" 15.9mm	11/32" 8.7mm	1	25.4	127.2	42.4
H-120A			1-1/4	31.8	111	29.6
H-121			1-1/2	38.1	122.4	27.2
H-121A			1-3/4	44.5	126	24
H-122			2	50.8	124.8	20.8
H-123			2-1/2	63.5	127.5	17
H-124			3	76.2	129.6	14.4
H-125	3-1/2	88.9	128.1	12.2		
H-126	4	101.6	129.6	10.8		
H-127	12	304.8	108	3		

H-1	3/4" 19.1mm	3/8" 9.5mm	1	25.4	324	108
H-1A			1-1/4	31.8	330	88
H-2			1-1/2	38.1	295.2	65.6
H-2A			1-3/4	44.5	315	60
H-3			2	50.8	297.6	49.6
H-4			2-1/2	63.5	300	40
H-5			3	76.2	306	34
H-6			3-1/2	88.9	294	28
H-7			4	101.6	300	25
H-8			1-1/2	114.3	297	22
H-9			5	127	292.5	19.5
H-10	5-1/2	139.7	280.5	17		
H-11	6	152.4	288	16		
H-11A	12	304.8	288	8		

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
H-12	1" 25.4mm	1/2" 12.7mm	1	25.4	624	208
H-12A			1-1/4	31.8	642	171.2
H-13			1-1/2	38.1	532.8	118.4
H-13A			1-3/4	44.5	546	104
H-14			2	50.8	540	90
H-15			2-1/2	63.5	510	68
H-16			3	76.2	489.6	54.4
H-17			3-1/2	88.9	478.8	45.6
H-18			4	101.6	480	40
H-19			4-1/2	114.3	475.2	35.2
H-20			5	127	468	31.2
H-20A			5-1/2	139.7	475.2	28.8
H-21			6	152.4	460.8	25.6
H-21A			7	177.8	470.4	22.4
H-22	8	203.2	460.8	19.2		
H-22A	12	304.8	432	12		

H-36	1-1/4" 31.8mm	5/8" 15.9mm	1-1/2	38.1	954	212
H-36A			1-3/4	44.5	953.4	181.6
H-37			2	50.8	897.6	149.6
H-38			2-1/2	63.5	882	117.6
H-39			3	76.2	856.8	95.2
H-40			3-1/2	88.9	789.6	75.2
H-41			4	101.6	796.8	66.4
H-42			4-1/2	114.3	788.4	58.4
H-43			5	127	795	53
H-44			5-1/2	139.7	778.8	47.2
H-45			6	152.4	763.2	42.4
H-46			7	177.8	772.8	36.8
H-47			8	203.2	787.2	32.8
H-48			10	254	768.9	25.6
H-48A	12	304.8	748.8	20.8		

H-49	1-1/2" 38.1mm	3/4" 19.1mm	2	50.8	1142.4	190.4
H-50			2-1/2	63.5	1162.5	155
H-51			3	76.2	1170	130
H-52			3-1/2	88.9	1117.2	106.4
H-53			4	101.6	1094.4	91.2
H-54			4-1/2	114.3	1058.4	78.4
H-55			5	127	1068	71.2
H-55A			5-1/2	129.7	1056	64
H-56			6	152.4	1051.2	58.4
H-56A			7	177.8	1041.6	49.6
H-57			8	203.2	1036.8	43.2
H-58			10	254	1032	34.4
H-58A	12	304.8	1036.8	28.8		

H-70	2" 50.8mm	1" 25.4mm	2-1/2	63.5	1950	260
H-71			3	76.2	1800	200
H-72			3-1/2	88.9	1785	170
H-73			4	101.6	1800	150
H-74			4-1/2	114.3	1620	120
H-75			5	127	1650	110
H-76			5-1/2	139.7	1650	100
H-77			6	152.4	1692	94
H-79			7	177.8	1722	82
H-80			8	203.2	1752	73
H-82			10	254	1650	55
H-83			12	304.8	1512	42

LOAD DEFLECTION

Maximum Deflection	30% of Free Length
For Long Life	20% of Free Length
Maximum Operation	25% of Free Length
For Optimum Life	15% of Free Length

Tabulated load values shown are near solid and are for design info only

DIE SPRINGS—INCH—EXTRA HEAVY PRESSURE GREEN

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
XH-100	3/8" 3/16" 9.5mm 4.8mm	Wire .059 x .080	1	25.4	55	22
XH-100A			1-1/4	31.8	50	16
XH-101			1-1/2	38.1	46.9	12.5
XH-101A			1-3/4	44.5	50.3	11.5
XH-102			2	50.8	45	9
XH-103			2-1/2	63.5	43.8	7
XH-104			3	76.2	48.8	6.5
XH-105			12	304.8	45	1.5

XH-110	1/2" 9/32" 12.7mm 7.1mm	Wire .084 x .097	1	25.4	80	32
XH-110A			1-1/4	31.8	75	24
XH-111			1-1/2	38.1	75	20
XH-111A			1-3/4	44.5	74.4	17
XH-112			2	50.8	70	14
XH-113			2-1/2	63.5	71.9	11.5
XH-114			3	76.2	67.5	9
XH-115			3-1/2	88.9	70	8
XH-116			12	304.8	5	2.5

XH-120	5/8" 11/32" 15.9mm 8.7mm	Wire .110 x .126	1	25.4	157.5	63
XH-120A			1-1/4	31.8	146.9	47
XH-121			1-1/2	38.1	142.5	38
XH-121A			1-3/4	44.5	140	32
XH-122			2	50.8	145	29
XH-123			2-1/2	63.5	137.5	22
XH-124			3	76.2	142.5	19
XH-125			3-1/2	88.9	140	16
XH-126			4	101.6	135	13.5
XH-127			12	304.8	135	4.5

XH-1	3/4" 3/8" 19.1mm 9.5mm	Wire .135 x .165	1	25.4	350	140
XH-1A			1-1/4	31.8	343.8	110
XH-2			1-1/2	38.1	333.8	89
XH-2A			1-3/4	44.5	328.1	75
XH-3			2	50.8	3430	68
XH-4			2-1/2	63.5	312.5	50
XH-5			3	76.2	303.8	40.5
XH-6			3-1/2	88.9	301.9	34.5
XH-7			4	101.6	300	30
XH-8			4-1/2	114.3	298.1	26.5
XH-9			5	127	293.8	23.5
XH-10			5-1/2	139.7	295.6	21.5
XH-11	6	152.4	292.5	19.5		
XH-11A	12	304.8	285	9.5		

Part No.	Diameter		Free Length		Load	
	Hole O.D.	Rod I.D.	Inch	Mm	0.5 Deflection (lb)	1/10" Deflection (lb)
XH-13	1" 1/2" 25.4mm 12.7mm	Wire .188 x .225	1-1/2	38.1	600	160
XH-14			2	50.8	580	116
XH-15			2-1/2	63.5	560	89.6
XH-16			3	76.2	552	73.6
XH-17			3-1/2	88.9	546	62.4
XH-18			4	101.6	552	55.2
XH-19			4-1/2	114.3	549	48.8
XH-20			5	127	540	43.2
XH-21			6	152.4	540	36
XH-22A			12	304.8	528	17.6

XH-37	1-1/4" 5/8" 31.8mm 15.9mm	Wire .225 x .295	2	50.8	960	192
XH-38			2-1/2	63.5	900	144
XH-39			3	76.2	888	118.4
XH-40			3-1/2	88.9	882	100.8
XH-41			4	101.6	840	84
XH-42			4-1/2	114.3	882	78.4
XH-43			5	127	850	68
XH-45			6	152.4	840	56
XH-47			8	203.2	832	41.6
XH-48			10	254	840	33.6
XH-48A			12	304.8	92	26.4

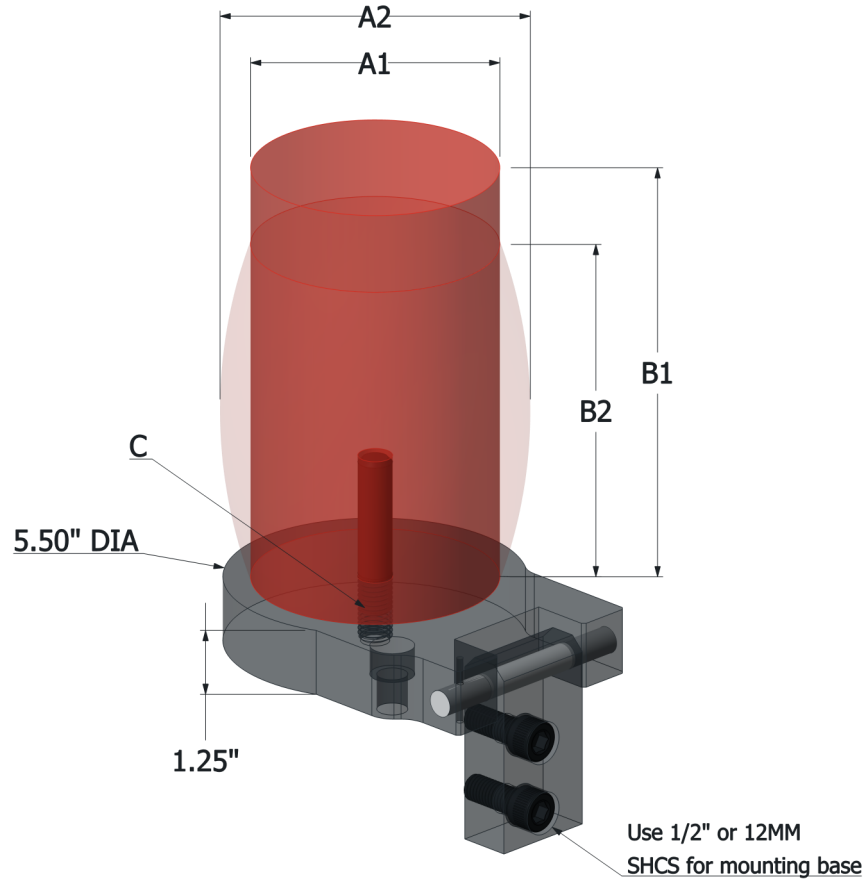
XH-49	1-1/2" 3/4" 38.1mm 19.1mm	Wire .300 x .350	2	50.8	1880	376
XH-50			2-1/2	3.5	1840	294.4
XH-51			3	76.2	1734	231.2
XH-52			3-1/2	88.9	1715	196
XH-53			4	101.6	1712	171.2
XH-54			4-1/2	114.3	1665	148
XH-55			5	127	1700	136
XH-56			6	152.4	1656	110.4
XH-57			8	203.2	1616	80.8
XH-58			10	254	1680	67.2
XH-58A			12	304.8	1632	54.4

XH-70	50.8mm 25.4mm	Wire .365 x .460	2-1/2	63.5	2385	381.6
XH-71			3	76.2	2340	312
XH-72			3-1/2	88.9	2226	254.4
XH-73			4	101.6	2200	220
XH-74			4-1/2	114.3	2124	188.8
XH-75			5	127	2160	172.8
XH-77			6	152.4	2124	141.6
XH-80			8	203.2	2000	100
XH-82			10	254	2100	84
XH-83			12	304.8	2136	71.2

LOAD DEFLECTION	
Maximum Deflection	25% of Free Length
For Long Life	17% of Free Length
Maximum Operation	20% of Free Length
For Optimum Life	15% of Free Length

Tabulated load values shown are near solid and are for design info only

DIE STORAGE BLOCKS



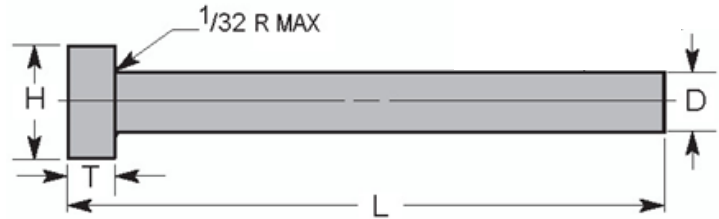
Part Number	A1 Diameter	A2 Compressed Diameter	B1 Free Height	B2 Compressed Height	C Stud	Compressed Tonnage	Durometer
55-350-A	3.50	4.50	5.50	4.00	5/8-11	5.0	80A
65-350-A	3.50	4.50	6.50	4.50	5/8-11	5.5	80A
65-400-A	4.00	5.00	6.50	4.50	5/8-11	6.0	80A
65-450-20M	4.50	5.13	6.50	4.00	M20x2.5	7.5	80A
M-1443	3.50	4.50	8.00	6.50	M16x2	5.0	92A
M-1444	4.50	5.60	8.00	6.50	M16x2	8.0	92A

Part Number	C Tap
65-450 BASE	5/8-11
65-450 BASE-16M	M16x2
65-450 BASE-20M	M20x2.5

*Steel, black oxide for corrosion resistance

EJECTOR PINS—ENGLISH—HARDENED & NITRIDED

Tolerances	
Pin Dia (D) P3 - P33	+ .0000/- .0003
Pin Dia (D) P34 - P47	+ .0000/- .0005
Head Dia (H)	+ .000/- .010
Head Thickness (T)	+ .000/- .002
Length (L)	+ .062/- .000



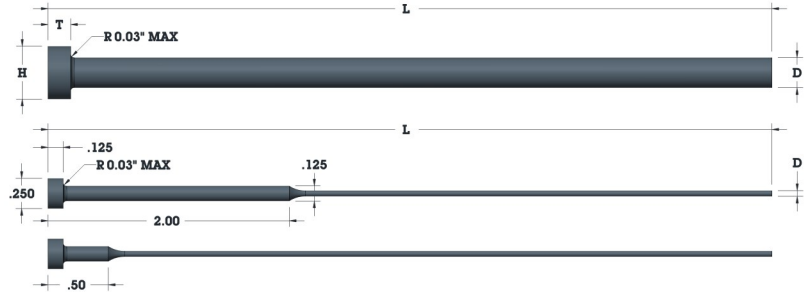
Sample Part No. P5-10

PART NO.	D PIN DIA	-.0003 ACTUAL SIZE	H HEAD DIA	T HEAD THICK.	L = LENGTH																	
					4"			6"			8"			10"			12"			14"		
					STD	STD	.005 OS	STD	STD	.005 OS	STD	STD	.005 OS	STD	STD	.005 OS	STD	STD	.005 OS			
P3-	1/32	.0307	1/8	1/8	X	X	X															
P4-	3/64	.0464	5/32	1/8	X	X	X															
P5-	1/16	.0620	3/16	1/8	X	X	X	X	X	X												
P6-	5/64	.0776	13/64	1/8	X	X	X	X	X	X												
P7-	3/32	.0933	7/32	1/8	X	X	X	X	X	X												
P8-	7/64	.1089	15/64	1/8	X	X	X	X	X	X												
P9-	1/8	.1245	1/4	1/8	X	X	X	X	X	X												
P10-	9/64	.1401	1/4	1/8	X	X	X		X	X	X	X	X									
P11-	5/32	.1557	9/32	5/32	X	X	X	X	X	X				X	X	X						
P12-	11/64	.1714	11/32	3/16	X	X	X		X	X	X	X	X									
P13-	3/16	.1870	3/8	3/16	X	X	X	X	X	X				X	X	X						
P14-	13/64	.2026	3/8	3/16	X	X	X		X	X	X	X	X									
P15-	7/32	.2183	13/32	3/16	X	X	X	X	X	X				X	X	X						
P16-	15/64	.2339	13/32	3/16	X	X			X	X				X	X							
P17-	1/4	.2495	7/16	3/16	X	X	X	X	X	X				X	X	X						
P18-	17/64	.2651	7/16	1/4	X	X			X	X	X	X	X									
P19-	9/32	.2807	7/16	1/4	X	X	X	X	X	X				X	X							
P20-	19/64	.2964	1/2	1/4	X	X			X	X				X	X							
P21-	5/16	.3120	1/2	1/4	X	X	X	X	X	X				X	X							
P22-	21/64	.3276	9/16	1/4	X	X	X		X	X	X	X	X									
P23-	11/32	.3433	9/16	1/4	X	X	X		X	X	X	X	X									
P24-	23/64	.3589	5/8	1/4	X	X			X	X				X	X							
P25-	3/8	.3745	5/8	1/4	X	X	X	X	X	X				X	X							
P26-	25/64	.3901	37/64	1/4	X	X			X	X	X	X	X									
P27-	13/32	.4057	11/16	1/4	X	X	X		X	X				X	X							
P28-	27/64	.4214	11/16	1/4	X	X			X	X				X	X							
P29-	7/16	.4370	11/16	1/4	X	X			X	X				X	X							
P30-	29/64	.4526	45/64	1/4	X	X			X	X				X	X							
P31-	15/32	.4683	3/4	1/4	X	X	X		X	X	X	X	X									
P32-	31/64	.4839	3/4	1/4	X	X			X	X				X	X							
P33-	1/2	.4995	3/4	1/4	X	X	X	X	X	X	X	X	X									
P34-	17/32	.5307	25/32	1/4	X	X			X	X				X	X							
P35-	9/16	.5620	13/16	1/4	X	X			X	X				X	X							
P37-	5/8	.6245	7/8	1/4	X	X			X	X				X	X							
P39-	11/16	.6870	15/16	1/4	X	X			X	X				X	X							
P41-	3/4	.7495	1	1/4	X	X			X	X				X	X							
P45-	7/8	.8745	1-1/8	1/4	X	X			X	X				X	X							
P47-	1	.9995	1-1/4	1/4	X	X			X	X				X	X							

- Surface is hardened to 65-70 Rc
- Core is hardened to 50-52 RC
- Reduces "dishing" effect common to nitrided pins
- Precision ground to 4-10 micro-inch finish
- Manufactured from premium hotwork steel
- Etched for easy identification
- Can be used as an ejector or core pin

EJECTOR PINS—ENGLISH

Tolerances (Inch)	
Pin Dia (D)	+.000/-.001
Head Dia (H)	+.000/-.001
Head Thickness (T)	+.000/-.001
Length (L)	+.000/-.001



Steel is heat treated, ground, nitrided and polished. Pin body has a surface hardness of 65-80 Rc and a core hardness of 35-40 Rc. Head hardness is 25-30 Rc

Sample Part No. EP14L10
EP14L105 for Oversized Pin

***2" Shoulder standard on pins under 1/8" Dia. Add P to the end of the part number for no shoulder. Add S to part number for 1/2" shoulder.

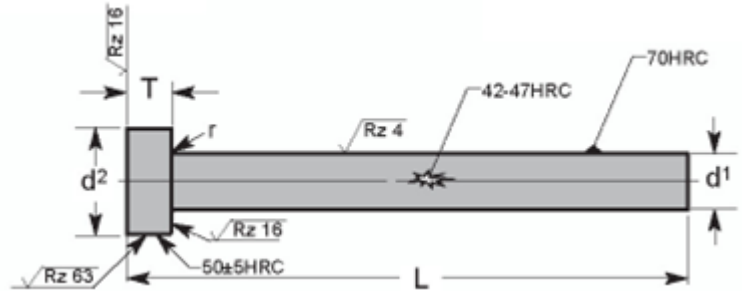
Example: EP06L06P (No Shoulder)
Example: EP06L06S (1/2" Shoulder)

PART NO.	D Pin Diameter	H Head Diameter	T Head Thickness	L = Length										
				4"	6"	10"	10"	14"	14"	18"	18"	25"		
				L04	L06	L10	L105 "D" .005 Oversized	L14	L145 "D" .005 Oversized	L18	L185 "D" .005 Oversized	L25		
EP04	3/64	1/4	1/8		X***									
EP06	1/16	1/4	1/8		X***									
EP07	5/64	1/4	1/8		X***									
EP09	3/32	1/4	1/8		X***	X***								
EP10	7/64	1/4	1/8		X***	X***								
EP12	1/8	1/4	1/8	X	X	X	X	X	X					
EP14	9/64	1/4	1/8			X		X						
EP15	5/32	9/32	5/32	X	X	X	X	X	X					
EP17	11/64	11/32	3/16			X		X						
EP18	3/16	3/8	3/16	X	X	X	X	X	X					X
EP20	13/64	3/8	3/16			X		X						
EP21	7/32	13/32	3/16	X	X	X	X	X						X
EP23	15/64	13/32	3/16			X		X						
EP25	1/4	7/16	3/16	X	X	X	X	X	X	X	X	X	X	X
EP26	17/64	7/16	1/4			X		X						X
EP28	9/32	7/16	1/4		X	X	X	X		X				X
EP29	19/64	1/2	1/4			X		X						
EP31	5/16	1/2	1/4	X	X	X	X	X	X	X	X	X	X	X
EP32	21/64	9/16	1/4			X		X						X
EP34	11/32	9/16	1/4		X	X	X	X						X
EP35	23/64	5/8	1/4			X		X						
EP37	3/8	5/8	1/4	X	X	X	X	X	X	X	X	X	X	X
EP40	13/32	11/16	1/4		X	X	X	X		X				X
EP43	7/16	11/16	1/4		X	X	X	X	X	X				X
EP46	15/32	3/4	1/4			X	X			X				X
EP50	1/2	3/4	1/4	X	X	X	X	X	X	X				X
EP56	9/16	13/16	1/4		X	X		X		X				X
EP62	5/8	7/8	1/4		X	X		X		X	X			
EP68	11/16	15/16	1/4			X				X				X
EP75	3/4	1	1/4		X	X		X		X				X
EP87	7/8	1-1/8	1/4			X				X				X
EP90	1	1-1/4	1/4		X	X		X		X				X

EJECTOR PINS—METRIC—NITRIDED

Tolerances (mm)	
Pin Dia (d1)	g6
Head Dia (d2)	-0.2
Head Thickness (T)	-0.05
Length (L)	+0.2
Radius (r)	+0.2

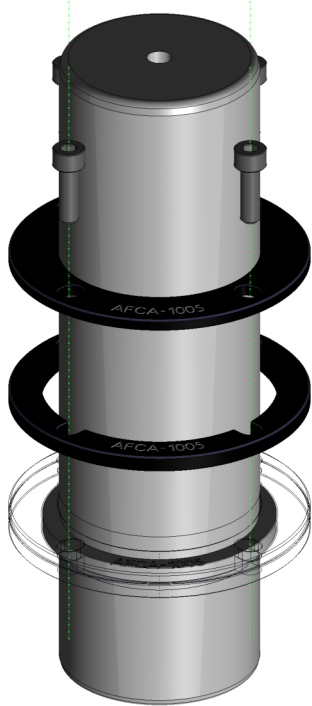
TYPE	A
DIN	1530
ISO	6751
MATERIAL	H-13
NITRIDED	



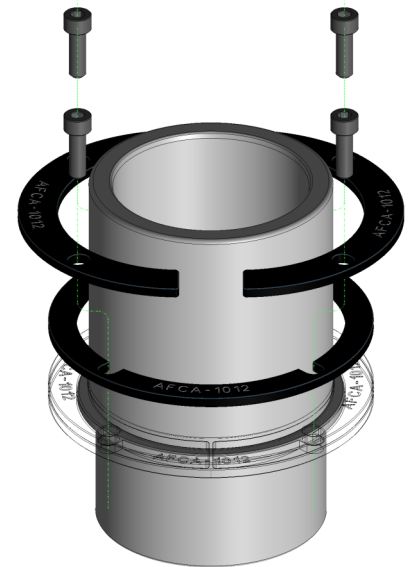
Sample Part No. MP10-125

PART NO.	d1 PIN DIA	d2 HEAD DIA	T HEAD THICKNESS	r RADIUS	L = LENGTH									
					125	160	200	250	315	400	500	630	800	1000
MP015-	1.5	3	1.5	0.2	X	X	X							
MP02-	2	4	2	0.2	X	X	X	X						
MP022-	2.2	4	2	0.2	X		X							
MP025-	2.5	5	2	0.3	X	X	X	X	X					
MP027-	2.7	5	2	0.3	X	X	X							
MP03-	3	6	3	0.3	X	X	X	X	X		X			
MP032-	3.2	6	3	0.3	X	X	X	X	X	X				
MP035-	3.5	7	3	0.3	X	X	X	X	X	X				
MP037-	3.7	7	3	0.3	X	X	X	X	X	X				
MP04-	4	8	3	0.3	X	X	X	X	X	X	X			
MP042-	4.2	8	3	0.3	X	X	X	X	X					
MP045-	4.5	8	3	0.3	X	X	X	X		X				
MP05-	5	10	3	0.3	X	X	X	X	X	X	X	X	X	
MP052-	5.2	10	3	0.3	X	X	X	X	X	X	X			
MP055-	5.5	10	3	0.3	X	X	X	X	X	X	X			
MP06-	6	12	5	0.5	X	X	X	X	X	X	X	X	X	
MP062-	6.2	12	5	0.5	X	X	X		X	X	X	X		
MP065-	6.5	12	5	0.5	X	X	X	X	X	X	X			
MP07-	7	12	5	0.5	X	X	X		X	X	X	X		
MP08-	8	14	5	0.5	X	X	X	X	X	X	X	X	X	X
MP082-	8.2	14	5	0.5	X		X		X	X	X	X	X	
MP085-	8.5	14	5	0.5	X		X	X	X	X	X			
MP09-	9	14	5	0.5	X	X	X	X	X	X	X	X	X	
MP10-	10	16	5	0.5	X	X	X	X	X	X	X	X	X	X
MP102-	10.2	16	5	0.5	X	X	X	X	X	X	X	X	X	
MP105-	10.5	16	5	0.5	X	X	X	X	X	X	X	X		
MP11-	11	16	5	0.5	X	X	X		X	X	X	X		
MP12-	12	18	7	0.8	X	X	X	X	X	X	X	X	X	X
MP122-	12.2	18	7	0.8	X	X	X	X	X	X	X	X	X	
MP125-	12.5	18	7	0.8	X	X	X	X	X	X	X	X	X	
MP14-	14	22	7	0.8	X	X		X	X		X	X	X	X
MP16-	16	22	7	0.8	X	X	X	X	X	X	X	X	X	X
MP18-	18	24	7	0.8		X	X	X		X	X	X	X	X
MP20-	20	26	8	1		X	X	X	X	X	X	X	X	X
MP25-	25	32	10	1			X	X	X		X	X	X	X
MP32-	32	40	10	1			X	X	X	X	X	X	X	X

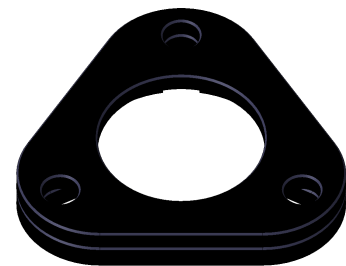
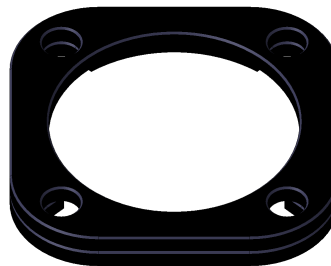
FLANGE CLAMP ASSEMBLY



- Standardize and simplify clamping for demountable pins and bushings
- Clamps the entire perimeter of the flange
- Bolt patterns match OEM bolt circles and fastener sizes (*fasteners not included*)
- Number of fasteners will meet or exceed standard OEM bolt patterns
- Current offering covers Danly IEM, Lamina, and Lempco brand components
- Clamp assemblies are treated with black oxide to resist rust and corrosion



Square and triangle flanges designed for smaller diameter pins and bushings to conserve space



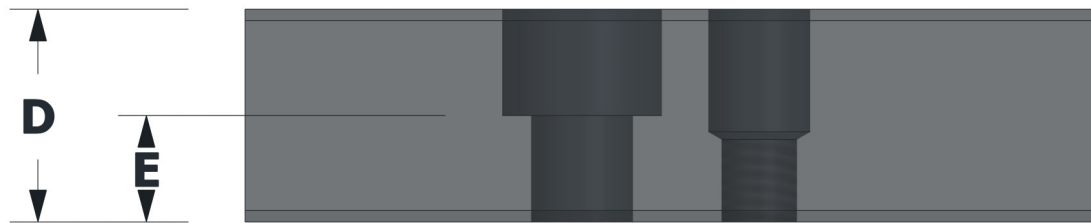
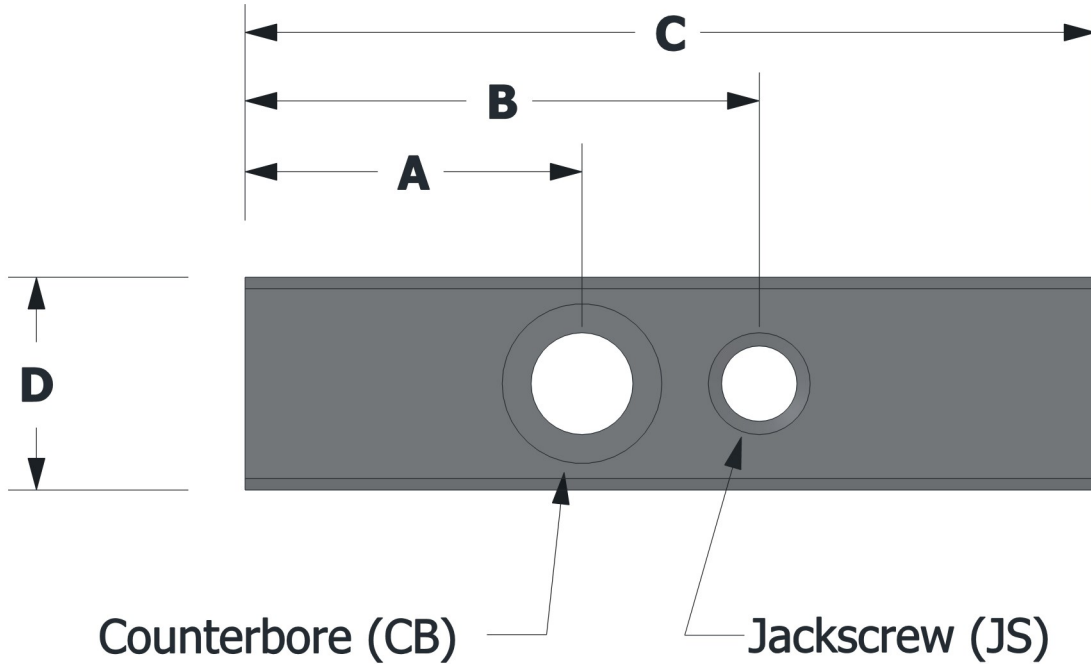
Circle, square, and triangle flanges pre-determined based on engineering data. CAD model will reflect what flange style corresponds with your pin or bushing selection

How to Order: Call out the standard demountable pin or bushing part number and add a second line item to the BOM with the same callout –AFC

Quantity	Part Number	Description
4	6-6314-85	Demountable Ball Bearing Bushing
4	6-6314-85-AFC	Flange Clamp Assembly

***While spacer thickness incorporates the OEM manufacturing tolerance for flange thickness, it's the responsibility of the installer to ensure the spacer falls at or below the thickness of the component's flange*

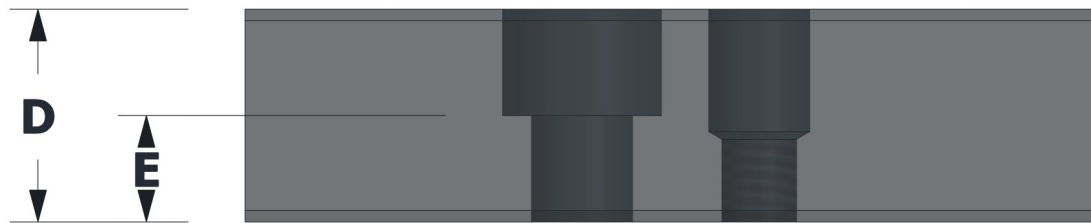
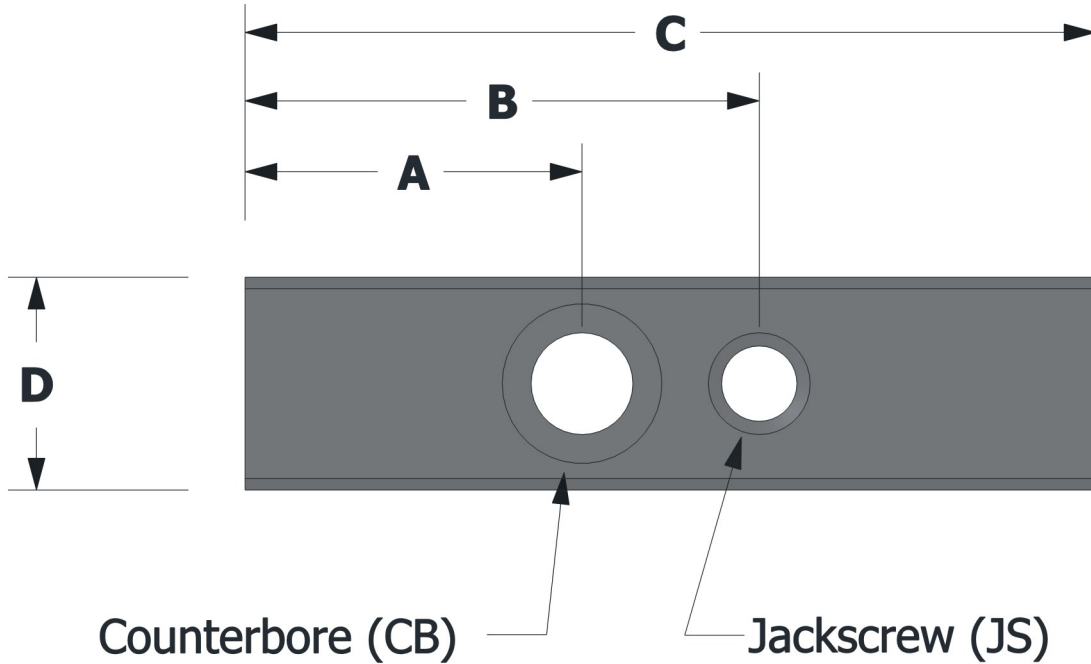
KEYS—ENGLISH



Part Number	A	B	C	D	E	CB	JS
AT500K-1.25	0.375	0.875	1.25	0.50	0.20	1/4 SHCS	1/4-20
AT750K-2.00	0.688	1.331	2.00	0.75	0.38	5/16 SHCS	5/16-18
AT750K-3.00	1.188	1.831	3.00	0.75	0.38	5/16 SHCS	5/16-18
AT750K-5.00	2.188	2.831	5.00	0.75	0.38	5/16 SHCS	5/16-18
AT750K-7.00	3.188	3.831	7.00	0.75	0.38	5/16 SHCS	5/16-18
AT100K-3.00	1.125	1.875	3.00	1.00	0.50	3/8 SHCS	3/8-16
AT100K-5.00	2.125	2.875	5.00	1.00	0.50	3/8 SHCS	3/8-16
AT100K-7.00	3.125	3.875	7.00	1.00	0.50	3/8 SHCS	3/8-16

*Cold Rolled Steel

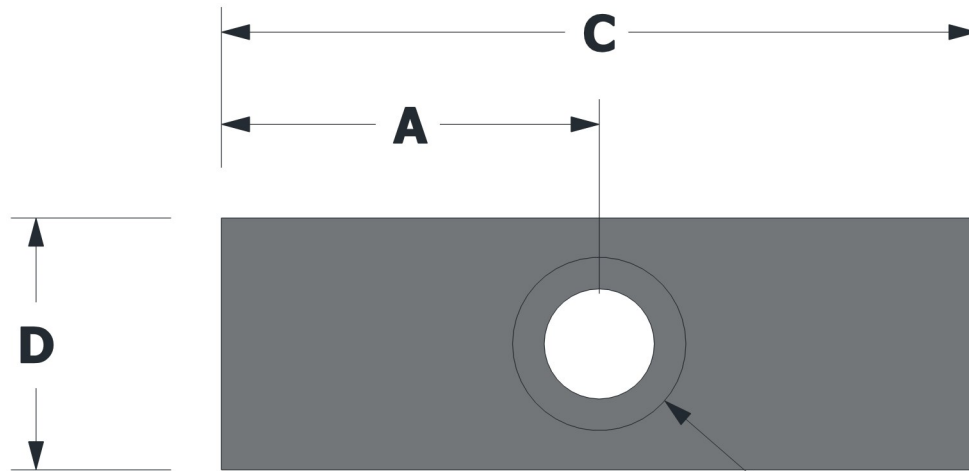
KEYS—METRIC



Part Number	A	B	C	D	E	CB	JS
AT500K-M-1.25	0.375	0.875	1.25	0.5	0.2	M6 SHCS	M6
AT750K-M-2.00	0.688	1.331	2	0.75	0.38	M8 SHCS	M8
AT750K-M-3.00	1.188	1.831	3	0.75	0.38	M8 SHCS	M8
AT750K-M-5.00	2.188	2.831	5	0.75	0.38	M8 SHCS	M8
AT750K-M-7.00	3.188	3.831	7	0.75	0.38	M8 SHCS	M8
AT100K-M-3.00	1.125	1.875	3	1	0.5	M10 SHCS	M10
AT100K-M-5.00	2.125	2.875	5	1	0.5	M10 SHCS	M10
AT100K-M-7.00	3.125	3.875	7	1	0.5	M10 SHCS	M10

*Cold Rolled Steel

KEYS—HARD METRIC



Counterbore (CB)



Part Number	A	C	D	E	CB
AT202080K	40	80	20	10	M8 SHCS
AT252550K	25	50	25	14	M10 SHCS
AT252580K	40	80	25	14	M10 SHCS

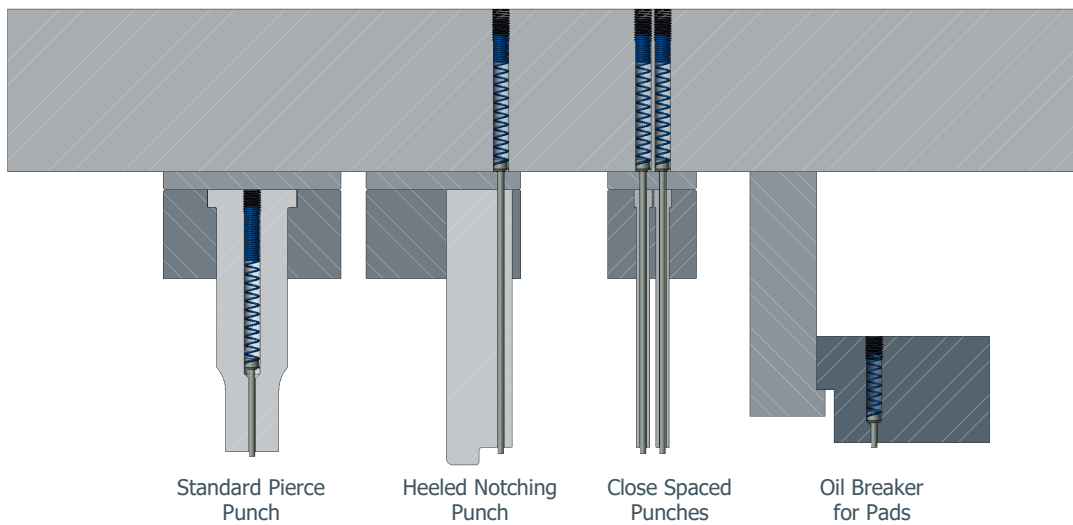
*Cold Rolled Steel

KICKER SPRING PINS

Economy - Versatility - Ease of Assembly
Available in English and Metric Sizes

Reduce your costs with this simple slug ejection method. Just cut the spring and pin to suit your application.

Typical Applications



Part No.	Quantity	Pin	Pin Hole	Spring	Spring Hole	Screw
GP-20	25	.020 Dia. x 3	0.025	.082 Dia. x 2	0.086	3-48 x 3/16
GP-26	25	.026 Dia. x 3	0.031	.105 Dia. x 2-1/4	0.109	5-40 x 3/16
GP-41	25	.041 Dia. x 3	0.046	.140 Dia. x 2-1/2	0.144	8-32 x 3/16
GP-55	25	.055 Dia. x 4	0.062	.162 Dia. x 2-3/4	0.166	10-32 x 3/16
GP-86	25	.086 Dia. x 4	0.094	.217 Dia. x 3	0.221	1/4-28 x 1/4
GP-148	25	.148 Dia. x 4	0.156	.308 Dia. x 3-1/2	0.312	3/8-16 x 5/16

Part No.	Quantity	Pin	Pin Hole	Spring	Spring Hole	Screw
GPM-508	25	0.508 Dia. x 76.2	0.635	1.96 Dia. x 57.2	2.06	M2.5x0.45 x 5mm
GPM-660	25	0.660 Dia. x 76.2	0.787	2.39 Dia. x 57.2	2.49	M3x0.50 x 5mm
GPM-1040	25	1.004 Dia. x 76.2	1.17	3.20 Dia. x 59.2	3.3	M4x0.70 x 5mm
GPM-1400	25	1.40 Dia. x 101.6	1.57	4.10 Dia. x 69.9	4.19	M5x0.80 x 5mm
GPM-2180	25	2.18 Dia. x 101.6	2.39	4.90 Dia. x 76.2	5	M6x1 x 6mm
GPM-3760	25	3.76 Dia. x 101.6	3.96	8.41 Dia. x 88.9	8.51	M10x1.50 x 8mm

LIGHT CURTAIN MOUNTING BRACKETS

New Style Flags are now Strong and Lighter
1-1/4 Electric Welded Round Mechanical
Tubing is half the weight and twice as strong

Typical installation requires 2 each of a
HUB200/L for emitter/receiver installation

Corner applications require 4 each of a
HUB200/L for emitter/receiver installation and
2 mirrors

The patent pending universal mounting system
allows configuration to any light curtain on the
market.

Each Hub Includes

- 1 Flag
- 1 Mounting Plate
- 1 Swivel Block
- 2 Mirror Blocks
- 1 Complete Bolt Set with Thread-Lock Applied



Universal "Light Curtain" Mounting Brackets

- Standard Length 36"
- Mounting Blocks for Most Brands of Lights
- Comes with 2 Mirror Blocks, 36" Flag, Swivel Block and Mounting Plate

Part No.	Description
HUB200	36" Flag
HUB200L	52" Flag

CASE HARDENED LINEAR SHAFING

Carbon (1060) English Sizes

Nominal Diameter	Tolerance				Weight Per Inch	Surface Hardness	Depth of Hardness	Bar Lengths
	Grade 1 (L)	Grade 2 (S)	Grade 3 (S)	Grade 4 (D)				
1/4	.2495 / .2490	.2490 / .2485			.014	60/65 RC	.040	144"
3/8	.3745 / .3740	.3740 / .3735			.031	60/65 RC	.040	144"
1/2	.4995 / .4990	.4990 / .4985	.5000 / .4998		.055	60/65 RC	.060	184"
5/8	.6245 / .6240	.6240 / .6235	.6250 / .6248		.070	60/65 RC	.060	184"
3/4	.7495 / .7490	.7490 / .7485	.7500 / .7498		.125	60/65 RC	.060	184"
7/8	.8745 / .8740				.170	60/65 RC	.060	208"
1	.9995 / .9990	.9990 / .9985	1.0000 / .9998		.222	60/65 RC	.080	208"
1-1/8	1.1245 / 1.1240				.282	60/65 RC	.080	208"
1-1/4	1.2495 / 1.2490	1.2490 / 1.2485	1.2500 / 1.2498		.348	60/65 RC	.080	208"
1-3/8	1.3745 / 1.3740				.421	60/65 RC	.080	208"
1-1/2	1.4994 / 1.4989	1.4989 / 1.4984	1.5000 / 1.4997		.500	60/65 RC	.080	208"
1-3/4	1.7495 / 1.7490				.681	60/65 RC	.100	208"
2	1.9994 / 1.9987	1.9987 / 1.9980	2.0000 / 1.9997	2.0000 / 2.0003	.890	60/65 RC	.100	208"
2-1/4	2.2493 / 2.2486				1.127	60/65 RC	.100	208"
2-1/2	2.4993 / 2.4985	2.4985 / 2.4997			1.392	60/65 RC	.100	208"
3	2.9992 / 2.9983	2.9983 / 2.9974	3.0000 / 2.9996		2.004	60/65 RC	.100	208"
3-1/2	3.4990 / 3.4980				2.728	60/65 RC	.100	208"
4	3.9988 / 3.9976	3.9976 / 3.9964			3.565	60/65 RC	.100	208"

Carbon (1060) Metric Sizes

Nominal Diameter	Tolerance		Weight Per Inch	Surface Hardness	Depth of Hardness	Bar Lengths
	Grade M					
6	.2362 / .2358		.012	60/65 RC	.040	144"
8	.3150 / .3146		.022	60/65 RC	.040	144"
10	.3937 / .3933		.035	60/65 RC	.040	144"
12	.4724 / .4720		.050	60/65 RC	.060	184"
14	.5512 / .5508		.069	60/65 RC	.060	184"
16	.6299 / .6295		.088	60/65 RC	.060	184"
18	.7087 / .7083		.112	60/65 RC	.060	184"
20	.7874 / .7869		.138	60/65 RC	.080	184"
25	.9843 / .9838		.216	60/65 RC	.080	208"
30	1.1811 / 1.1806		.311	60/65 RC	.080	208"
32	1.2598 / 1.2593		.349	60/65 RC	.080	208"
35	1.3780 / 1.3775		.417	60/65 RC	.080	208"
40	1.5748 / 1.5743		.553	60/65 RC	.080	208"
45	1.7717 / 1.7710		.698	60/65 RC	.100	208"
50	1.9685 / 1.9679		.864	60/65 RC	.100	208"
60	2.3622 / 2.3615		1.240	60/65 RC	.100	208"
63	2.4803 / 2.4799		1.343	60/65 RC	.100	208"
80	3.1496 / 3.1489		2.210	60/65 RC	.100	208"
100	3.9370 / 3.9363		3.397	60/65 RC	.100	208"

MOLD SOLUTION PRODUCTS



MOLD SOLUTION PRODUCTS™

Paintable Release Agent #1504

Support Ended
2-7-2022

Release for all plating. It permits plating of components, provides more releases per application at less cost and saves time in high speed plastic production by eliminating the product clean-up operation. It is recommended for use with polystyrene, polycarbonate, Noryl, ABS, PVC and polyolefins.

Net Wt. 11 oz - NO CFC

Mold Saver #1706

Support Ended
2-7-2022

corrosion rate parts to metal with corrosion inhibitors to protect metal surfaces. No sticky residue, cleans, protects, lubricates, and displaces moisture.

Net Wt. 15 oz - NO CFC

Tool Towels #7001

Specifically designed and engineered for the plastic molding and mold building environments. TOOL TOWELS wipe away all particles found in normal molding applications. No need to potentially contaminate your mold with a dirty shop rag while cleaning a vent, runner, parting line or the mold while the tool is in production. TOOL TOWELS are designed to clean this grime and more. The best part is how you throw them away! Perfect for all non-porous tool steels, aluminum and most surfaces found in manufacturing environments. Non-abrasive, cloth free and disposable. Works even more effectively when used in conjunction with Mold Degreaser #1605



Degreaser #1605

Support Ended
2-7-2022

ing, effective, no build-up, no grime and no residues are encountered. This strong action product can be sprayed on the surface to breakdown, wash away and clean grease from equipment, work areas, metal parts and any surface needing to be degrease in the manufacturing process only.

Net Wt. 14 oz - NO CFC

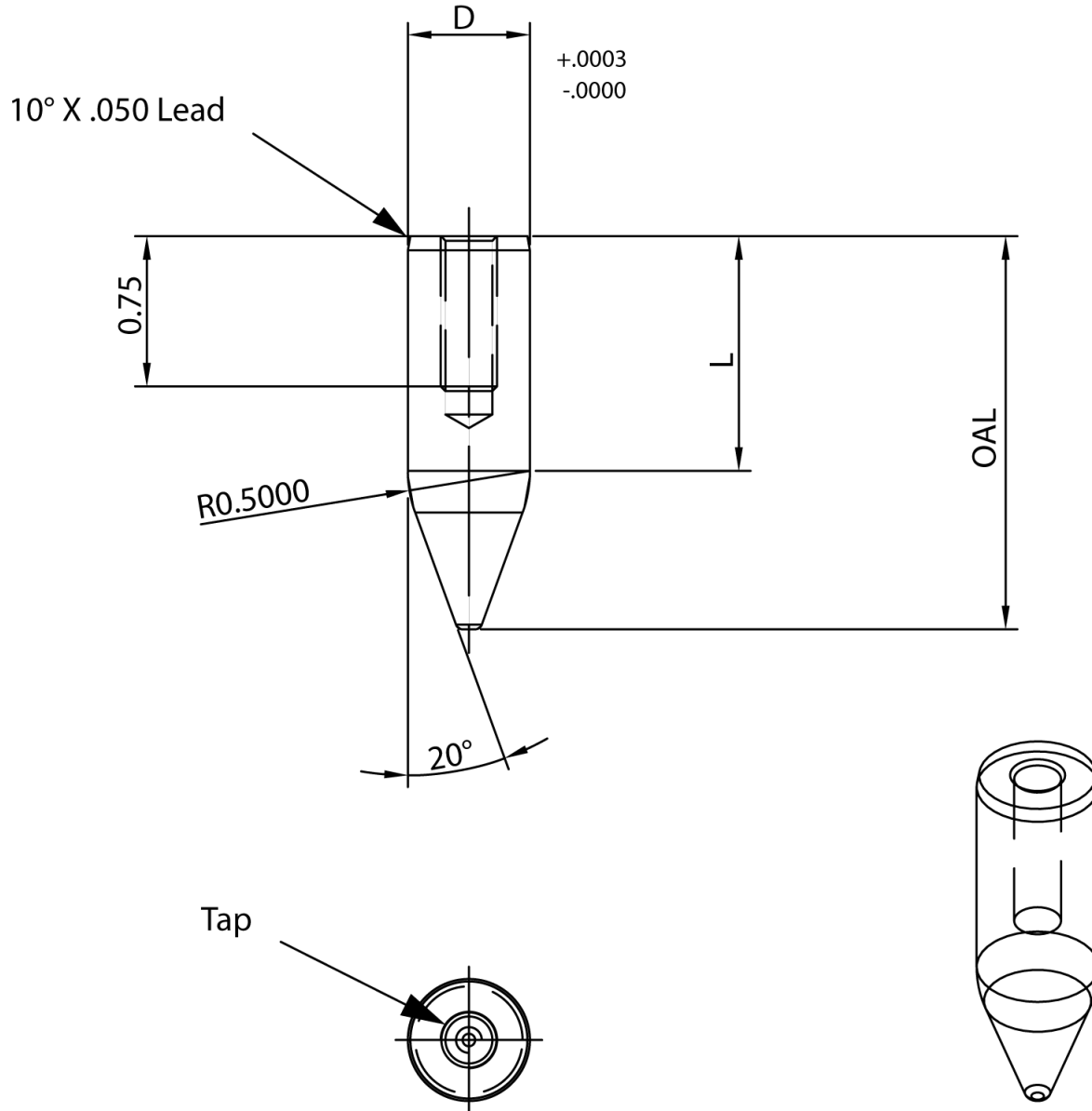
Silicon Mold Release #1302

Support Ended
2-7-2022

silicone-type release agent for injection, RIM, rotational extruders and vacuum casting. It can be used with all common resins. This silicone, as well as all others, may interfere with a post-decorating step. Not recommended where painting, metalizing, or bonding of components may be required.

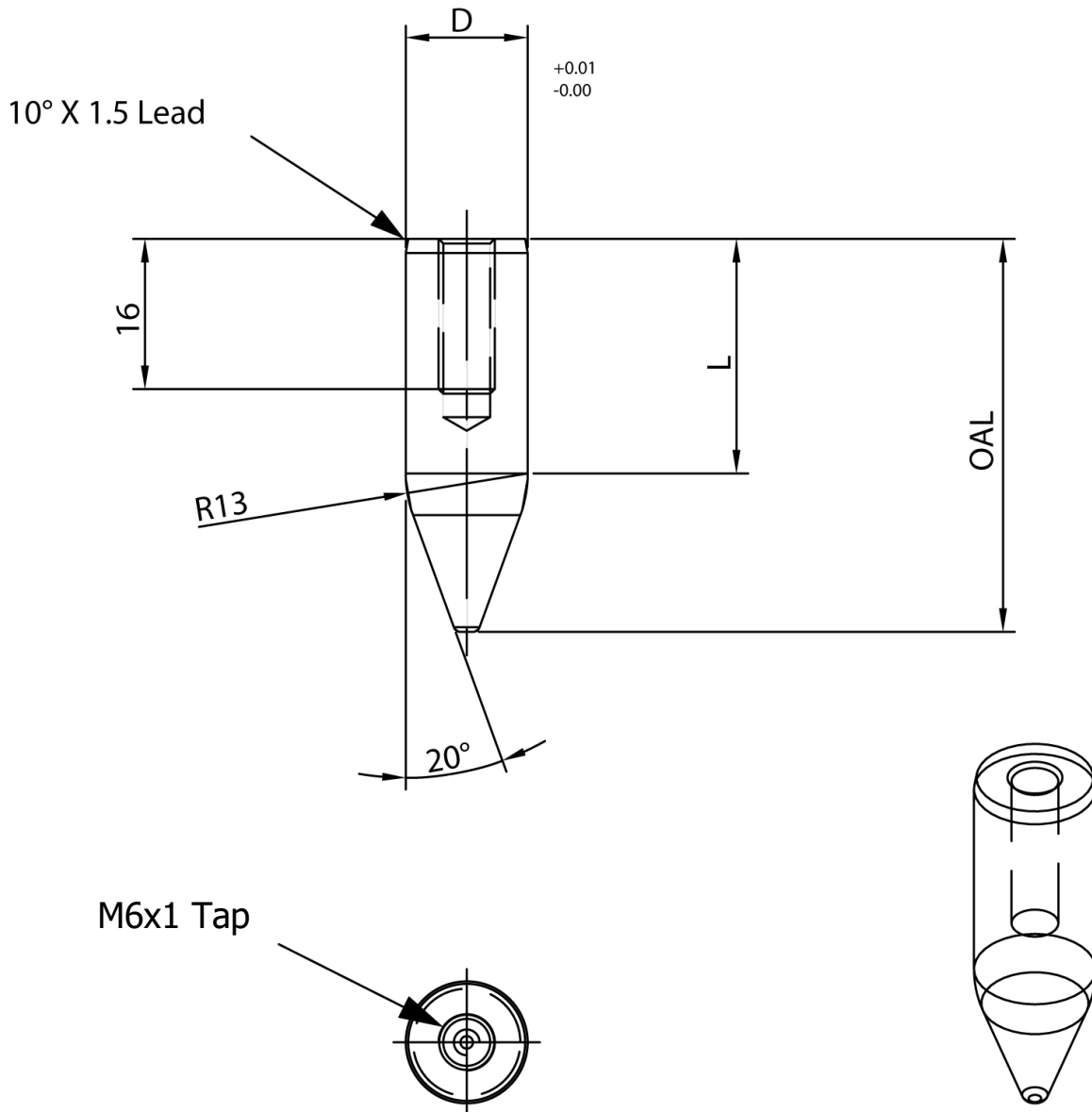
Net Wt. 9 oz - NO CFC

PAD MOUNTED PILOTS—ENGLISH



Part No.	D	L	OAL	Tap	Material	Hardness
DP-37	0.375	1	1.5	10-24 x .75	A2	58/63 RC
DP-50	0.5	1	1.625	1/4-20 x .75	A2	58/63 RC
DP-62	0.625	1	1.75	1/4-20 x .75	A2	58/63 RC
DP-75	0.75	1	1.875	5/16-18 x .75	A2	58/63 RC

PAD MOUNTED PILOTS—METRIC

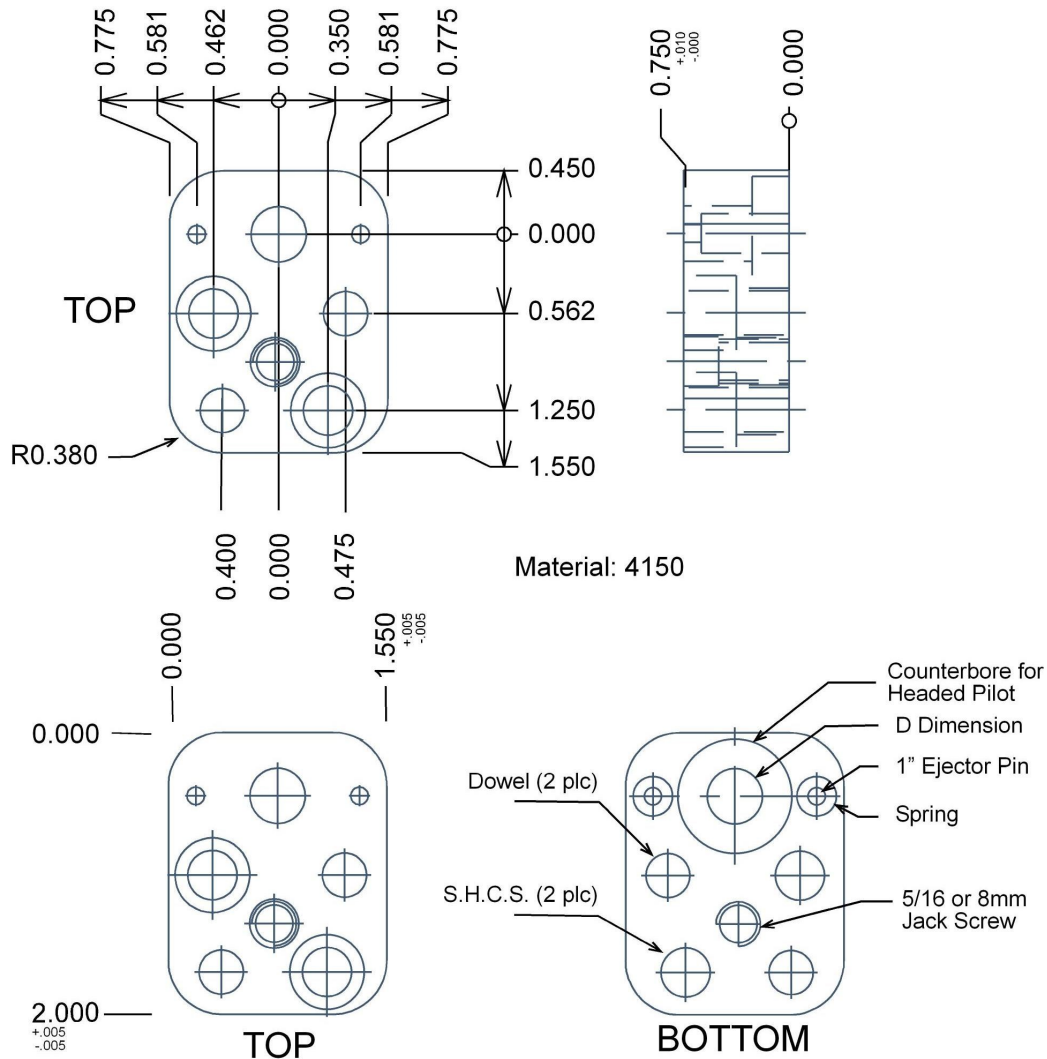


Part No.	D	L	OAL	Tap	Material	Hardness
DP-10	10	25	37.76	M6x1 x 16mm	A2	58/63 RC
DP-13	13	25	41.88	M6x1 x 16mm	A2	58/63 RC
DP-16	16	25	46	M6x1 x 16mm	A2	58/63 RC

PILOT RETAINERS

Saves Time and Money
Standardize Components
No Hand Fitting Required

Ejector Pins and Springs Included
Pilot Sold Separately



English			Metric		
Part No.	D	Screw/Dowel	Part No.	D	Screw Dowel
AT-375P	.375	5/16	AT-10P	10mm	8mm
AT-500P	.500	5/16	AT-13P	13mm	8mm
AT-625P	.625	5/16	AT-16P	16mm	8mm

*All locations are same English or Metric **Specials available upon request

ALUMINUM BRONZE—C954 & C959



Width C	Thickness B													
	1/4	3/8	1/2	5/8	3/4	1	1-1/4	1-1/2	1-3/4	2	2-1/2	3	3-1/2	4
1	X	X	X	X	X	X								
1-1/4	X		X	X	X	X								
1-1/2	X	X	X	X	X	X	X							
1-3/4			X		X	X	X	X						
2	X	X	X	X	X	X	X	X	X					
2-1/2	X	X	X	X	X	X	X	X	X	X				
3	X	X	X	X	X	X	X	X	X	X	X			
3-1/2		X	X		X	X	X	X	X	X				
4	X	X	X	X	X	X	X	X	X	X	X	X		
5	X	X	X	X	X	X	X	X	X	X	X	X		
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	X	X	X	X	X	X	X							
8	X	X	X	X	X	X	X	X	X	X	X	X		
10	X	X	X	X	X	X	X	X	X	X	X			
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X

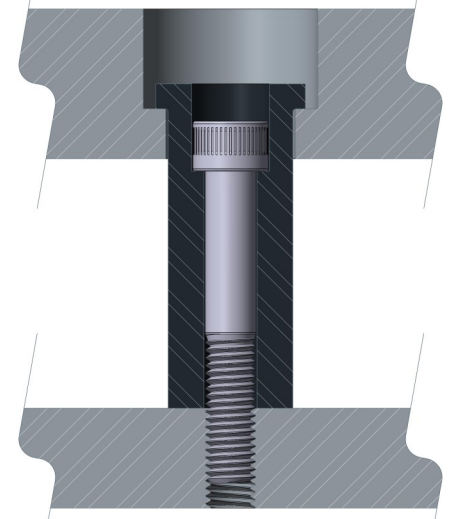
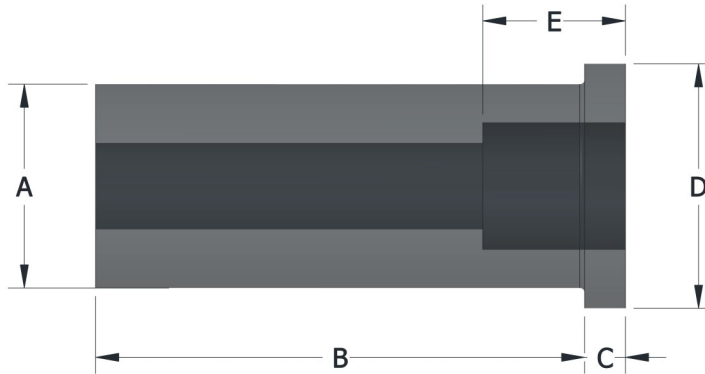
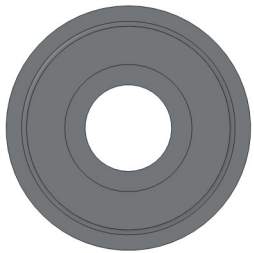
X — Available Sizes

Lengths up to 144" available

Special sizes available—please contact Ajacs Customer Service for details

Cast on outside dimensions with $\pm .030$ minimum stock—saw cut to special length

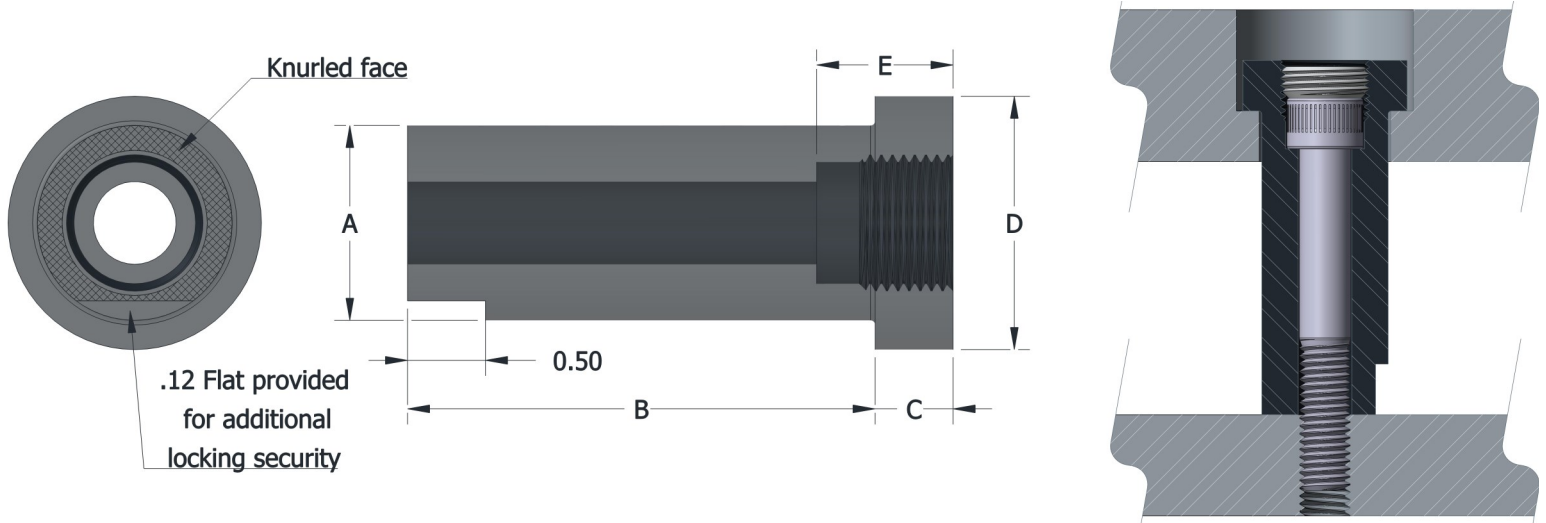
SPOOLS—INCH COUNTERBORED STYLE



Part No.	B +/- .005	E	Part No.	B +/- .005	E	Part No.	B +/- .005	E
MAJ-1000	1.000	0.50	LAJ-1000	1.000	0.50			
MAJ-1250	1.250	0.50	LAJ-1250	1.250	0.50			
MAJ-1500	1.500	0.50	LAJ-1500	1.500	0.50	XAJ-1500	1.500	0.50
MAJ-1750	1.750	0.50	LAJ-1750	1.750	0.50	XAJ-1750	1.750	0.50
MAJ-2000	2.000	0.50	LAJ-2000	2.000	0.50	XAJ-2000	2.000	0.50
MAJ-2250	2.250	0.50	LAJ-2250	2.250	0.50	XAJ-2250	2.250	0.50
MAJ-2500	2.500	0.50	LAJ-2500	2.500	0.50	XAJ-2500	2.500	0.50
MAJ-2750	2.750	0.50	LAJ-2750	2.750	0.50	XAJ-2750	2.750	0.50
MAJ-3000	3.000	0.50	LAJ-3000	3.000	0.50	XAJ-3000	3.000	0.50
MAJ-3250	3.250	0.50	LAJ-3250	3.250	0.50	XAJ-3250	3.250	0.50
MAJ-3500	3.500	0.75	LAJ-3500	3.500	0.75	XAJ-3500	3.500	0.75
MAJ-3750	3.750	1.00	LAJ-3750	3.750	1.00	XAJ-3750	3.750	1.00
MAJ-4000	4.000	1.25	LAJ-4000	4.000	1.25	XAJ-4000	4.000	1.25
MAJ-4500	4.500	1.75	LAJ-4500	4.500	1.75	XAJ-4500	4.500	1.75
MAJ-5000	5.000	2.25	LAJ-5000	5.000	2.25	XAJ-5000	5.000	2.25
A = .750 +.000 / -.010 C = .250 D = 1.000 Screw Size = 5/16			A = 1.000 +.000 / -.010 C = .250 D = 1.250 Screw Size = 3/8			A = 1.250 +.000 / -.010 C = .250 D = 1.500 Screw Size = 1/2		

12L14CRS Material - Hardened to .005/.010 Case Depth

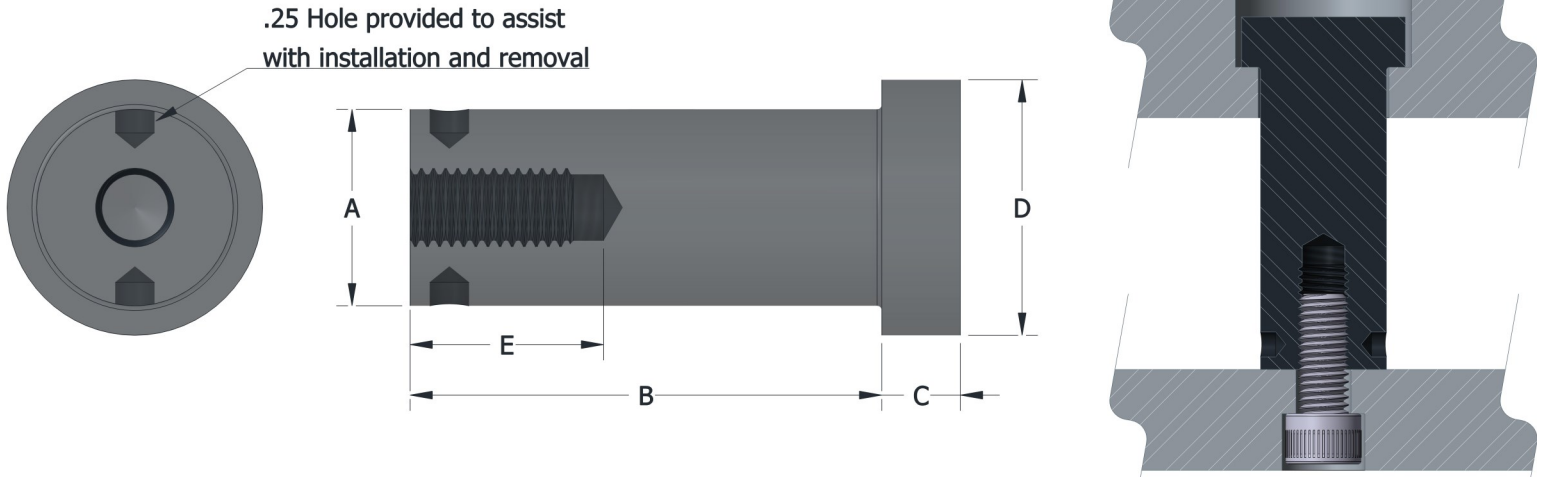
SPOOLS—INCH LOCKING STYLE



Part No.	B +/- .005	Part No.	B +/- .005	Part No.	B +/- .005	Part No.	B +/- .005
AJ-60810	1.000	AJ-61010	1.000	AJ-61110	1.000		
AJ-60811	1.250	AJ-61011	1.250	AJ-61111	1.250	AJ-61211	1.250
AJ-60812	1.500	AJ-61012	1.500	AJ-61112	1.500	AJ-61212	1.500
AJ-60813	1.750	AJ-61013	1.750	AJ-61113	1.750	AJ-61213	1.750
AJ-60820	2.000	AJ-61020	2.000	AJ-61120	2.000	AJ-61220	2.000
AJ-60821	2.250	AJ-61021	2.250	AJ-61121	2.250	AJ-61221	2.250
AJ-60822	2.500	AJ-61022	2.500	AJ-61122	2.500	AJ-61222	2.500
AJ-60823	2.750	AJ-61023	2.750	AJ-61123	2.750	AJ-61223	2.750
AJ-60830	3.000	AJ-61030	3.000	AJ-61130	3.000	AJ-61230	3.000
AJ-60831	3.250	AJ-61031	3.250	AJ-61131	3.250	AJ-61231	3.250
AJ-60832	3.500	AJ-61032	3.500	AJ-61132	3.500	AJ-61232	3.500
		AJ-61033	3.750	AJ-61133	3.750	AJ-61233	3.750
		AJ-61040	4.000	AJ-61140	4.000	AJ-61240	4.000
		AJ-61042	4.500	AJ-61142	4.500	AJ-61242	4.500
		AJ-61050	5.000	AJ-61150	5.000	AJ-61250	5.000
		AJ-61052	5.500	AJ-61152	5.500	AJ-61252	5.500
		AJ-61060	6.000	AJ-61160	6.000	AJ-61260	6.000
A = .8125 +.000 / -.010 C = .375 D = 1.062 E = 1.000 Lock Screw and 5/16 Cap Screw Included		A = 1.000 +.000 / -.010 C = .500 D = 1.250 E = 1.125 Lock Screw and 3/8 Cap Screw Included		A = 1.250 +.000 / -.010 C = .500 D = 1.625 E = 1.125 Lock Screw and 1/2 Cap Screw Included		A = 1.500 +.000 / -.010 C = .500 D = 1.875 E = 1.250 Lock Screw and 5/8 Cap Screw Included	

12L14CRS Material - Hardened to .005/.010 Case Depth

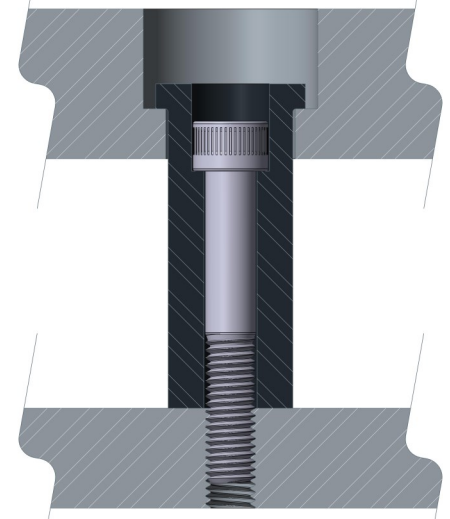
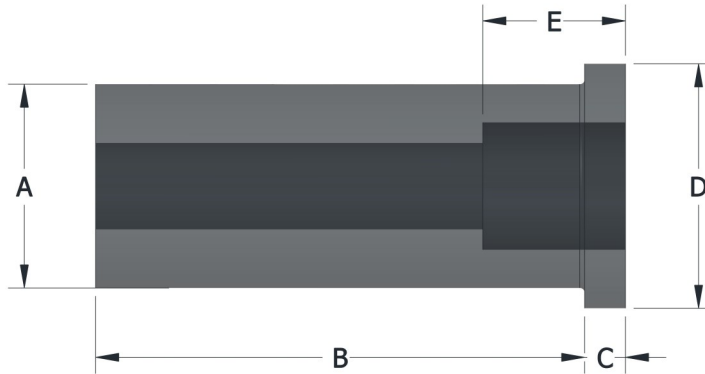
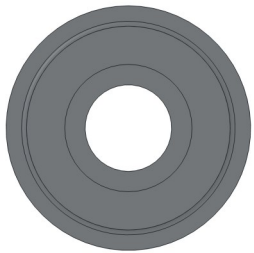
SPOOLS—INCH THREADED STYLE



Part No.	B +/- .005	Part No.	B +/- .005	Part No.	B +/- .005	Part No.	B +/- .005
T-0710	1.000						
T-0711	1.250	T-1011	1.250	T-1111	1.250		
T-0712	1.500	T-1012	1.500	T-1112	1.500	T-1212	1.500
T-0713	1.750	T-1013	1.750	T-1113	1.750	T-1213	1.750
T-0720	2.000	T-1020	2.000	T-1120	2.000	T-1220	2.000
T-0721	2.250	T-1021	2.250	T-1121	2.250	T-1221	2.250
T-0722	2.500	T-1022	2.500	T-1122	2.500	T-1222	2.500
T-0723	2.750	T-1023	2.750	T-1123	2.750	T-1223	2.750
T-0730	3.000	T-1030	3.000	T-1130	3.000	T-1230	3.000
T-0731	3.250	T-1031	3.250	T-1131	3.250	T-1231	3.250
T-0732	3.500	T-1032	3.500	T-1132	3.500	T-1232	3.500
T-0733	3.750	T-1033	3.750	T-1133	3.750	T-1233	3.750
T-0740	4.000	T-1040	4.000	T-1140	4.000	T-1240	4.000
T-0742	4.500	T-1042	4.500	T-1142	4.500	T-1242	4.500
T-0750	5.000	T-1050	5.000	T-1150	5.000	T-1250	5.000
T-0752	5.500	T-1052	5.500	T-1152	5.500	T-1252	5.500
T-0760	6.000	T-1060	6.000	T-1160	6.000	T-1260	6.000
A = .750 +.000 / -.010 C = .250 D = 1.000 E = 1.000 Tap Size = 5/16-18	A = 1.000 +.000 / -.010 C = .250 D = 1.250 E = 1.250 Tap Size = 3/8-16	A = 1.250 +.000 / -.010 C = .500 D = 1.625 E = 1.250 Tap Size = 1/2-13	A = 1.500 +.000 / -.010 C = .500 D = 1.875 E = 1.250 Tap Size = 5/8-11				

12L14CRS Material - Hardened to .005/.010 Case Depth

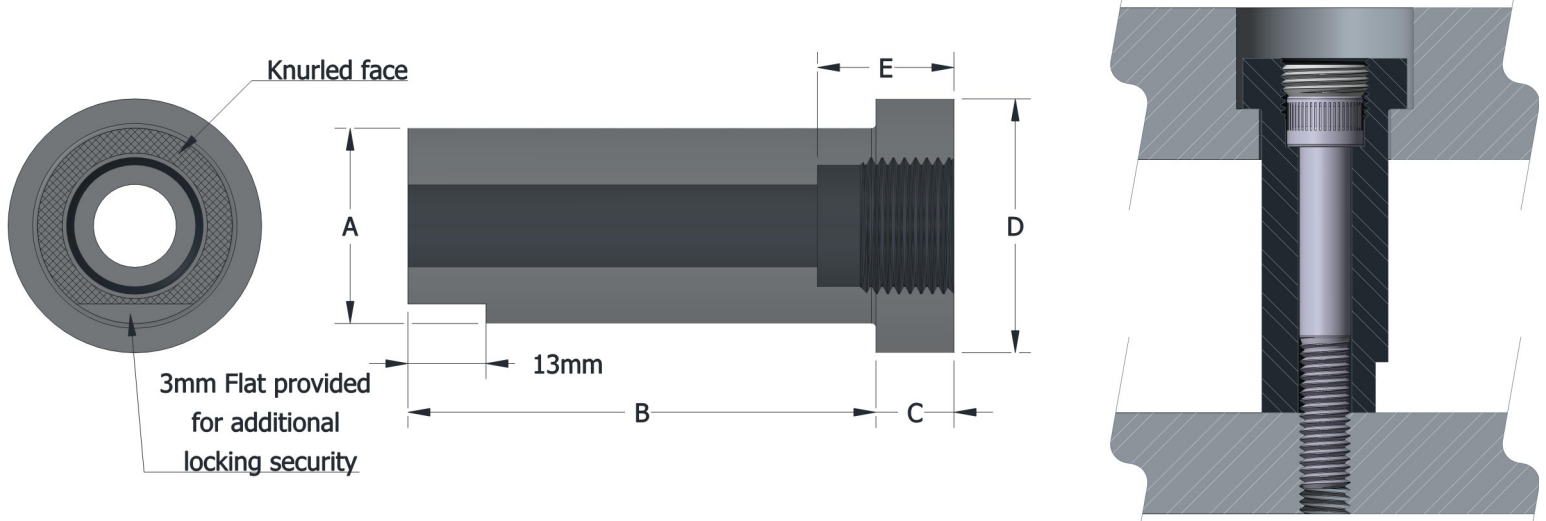
SPOOLS—METRIC COUNTERBORED STYLE



Part No.	B +/- .13	E	Part No.	B +/- .13	E	Part No.	B +/- .13	E
MCB-2030	30	15	MCB-2530	30	15			
MCB-2035	35	15	MCB-2535	35	15			
MCB-2040	40	15	MCB-2540	40	15	MCB-3240	40	16
MCB-2045	45	15	MCB-2545	45	15	MCB-3245	45	16
MCB-2050	50	15	MCB-2550	50	15	MCB-3250	50	16
MCB-2060	60	15	MCB-2560	60	15	MCB-3260	60	16
MCB-2065	65	15	MCB-2565	65	15	MCB-3265	65	16
MCB-2070	70	15	MCB-2570	70	15	MCB-3270	70	16
MCB-2080	80	27	MCB-2580	80	27	MCB-3280	80	32
MCB-2090	90	27	MCB-2590	90	27	MCB-3290	90	32
MCB-20100	100	27	MCB-25100	100	27	MCB-32100	100	32
MCB-20110	110	27	MCB-25110	110	27	MCB-32110	110	32
MCB-20120	120	27	MCB-25120	120	27	MCB-32120	120	32
MCB-20130	130	27	MCB-25130	130	27	MCB-32130	130	32
MCB-20140	140	27	MCB-25140	140	27	MCB-32140	140	32
MCB-20150	150	27	MCB-25150	150	27	MCB-32150	150	32
A = 20 +.00 / -.26 C = 10 D = 28 Screw Size = M8			A = 25 +.00 / -.26 C = 13 D = 33 Screw Size = M10			A = 32 +.00 / -.26 C = 13 D = 40 Screw Size = M12		

12L14CRS Material - Hardened to .13/.25 Case Depth

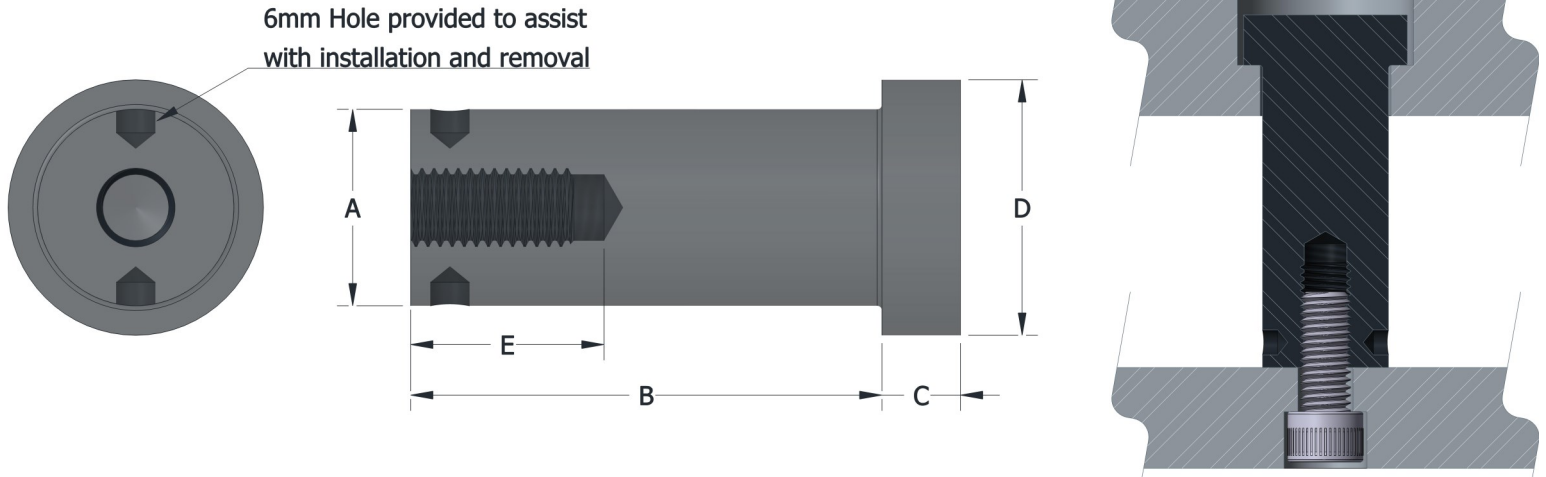
SPOOLS—METRIC LOCKING STYLE



Part No.	B +/- .13mm	Part No.	B +/- .13mm
AJ-2540M	40	AJ-3240M	40
AJ-2545M	45	AJ-3245M	45
AJ-2550M	50	AJ-3250M	50
AJ-2555M	55	AJ-3255M	55
AJ-2560M	60	AJ-3260M	60
AJ-2565M	65	AJ-3265M	65
AJ-2570M	70	AJ-3270M	70
AJ-2580M	80	AJ-3280M	80
AJ-2590M	90	AJ-3290M	90
AJ-25100M	100	AJ-32100M	100
AJ-25110M	110	AJ-32110M	110
AJ-25120M	120	AJ-32120M	120
AJ-25130M	130	AJ-32130M	130
AJ-25140M	140	AJ-32140M	140
AJ-25150M	150	AJ-32150M	150
A = 25 +.00 / -.26 C = 13 D = 33 E = 25 Lock Screw and M10 Cap Screw Included		A = 32 +.00 / -.26 C = 13 D = 40 E = 32 Lock Screw and M12 Cap Screw Included	

12L14CRS Material - Hardened to .13/.25 Case Depth

SPOOLS—METRIC THREADED STYLE



Part No.	B +/- .13mm	Part No.	B +/- .13mm	Part No.	B +/- .13mm
T-2040M	40	T-2540M	40	T-3240M	40
T-2045M	45	T-2545M	45	T-3245M	45
T-2050M	50	T-2550M	50	T-3250M	50
T-2055M	55	T-2555M	55	T-3255M	55
T-2060M	60	T-2560M	60	T-3260M	60
T-2065M	65	T-2565M	65	T-3265M	65
T-2070M	70	T-2570M	70	T-3270M	70
T-2080M	80	T-2580M	80	T-3280M	80
T-2090M	90	T-2590M	90	T-3290M	90
T-20100M	100	T-25100M	100	T-32100M	100
T-20110M	110	T-25110M	110	T-32110M	110
T-20120M	120	T-25120M	120	T-32120M	120
T-20130M	130	T-25130M	130	T-32130M	130
T-20140M	140	T-25140M	140	T-32140M	140
T-20150M	150	T-25150M	150	T-32150M	150
A = 20 +.00 / -.26 C = 10 D = 26 E = 25 Tap Size = M8		A = 25 +.00 / -.26 C = 10 D = 31 E = 32 Tap Size = M10		A = 32 +.00 / -.26 C = 13 D = 38 E = 32 Tap Size = M12	

12L14CRS Material - Hardened to .13/.25 Case Depth

SPRING PROBES, BLOCK PROBES & MAGNETIC BASES



KBP2001 Block Probe Assembly

Replacement Spring:
KBP2001 SPRING



KSP2000 Spring Probe Assembly

Replacement Spring Options:
KSP2000 SPRING
Standard Spring Included with Assembly

KSP2000HD SPRING
Heavy Duty Spring



KMP38 Probe Stand Post and Magnet
****Probe and Spring Not Included****

Components:

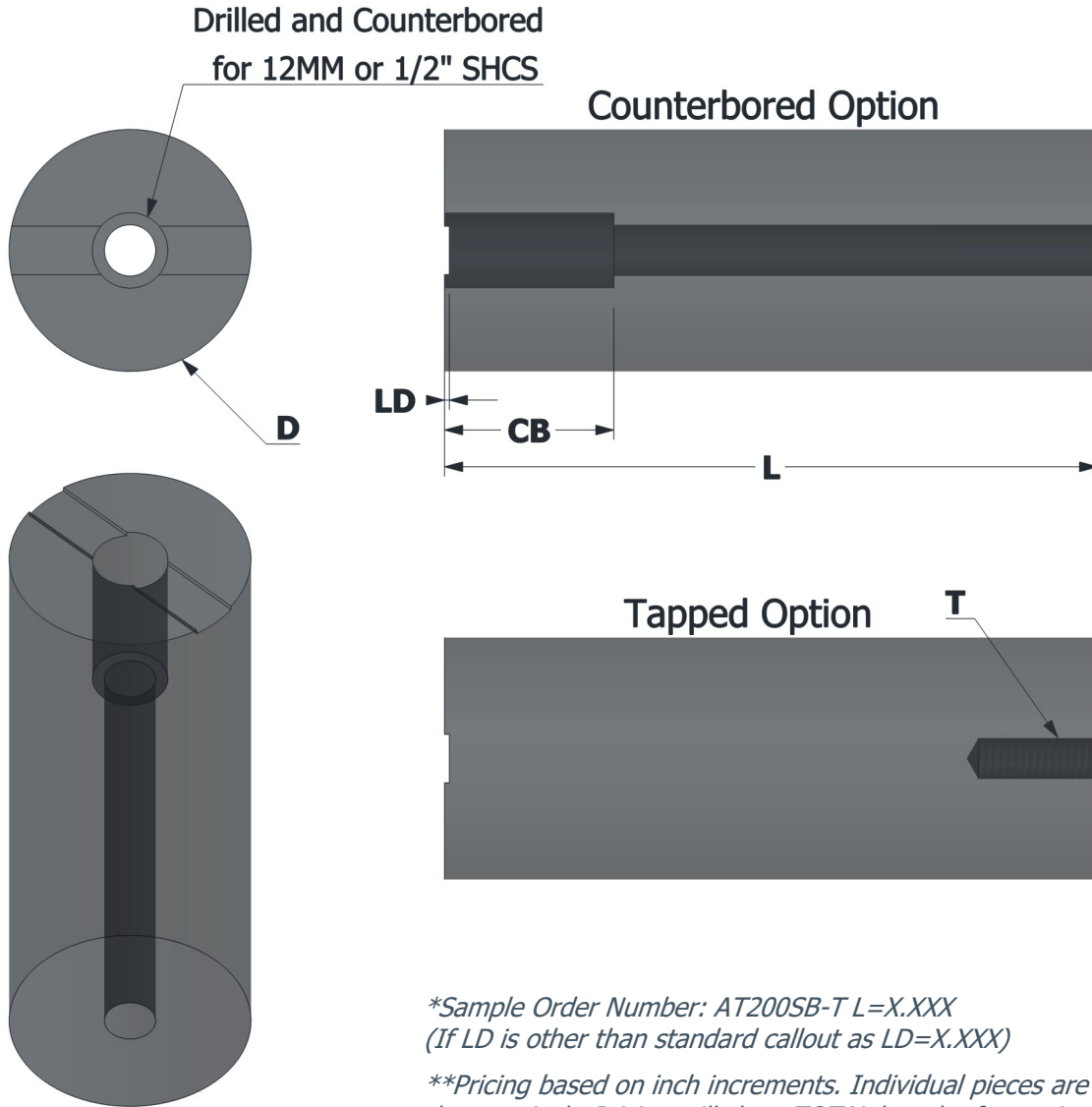
KMP38-SJ8 Swivel Joint
(1/2" Post Hole, 3/8" Spring Probe, One Hole)

KMP38-SJ11 Swivel Joint
(1/2" Post Hole, 1/2" Spring Probe, Two Hole)

KMP38-ROD
(1/2" Rod)

KMP38-1200
(200lb "Stay-Put" Magnet)

STOP BLOCKS



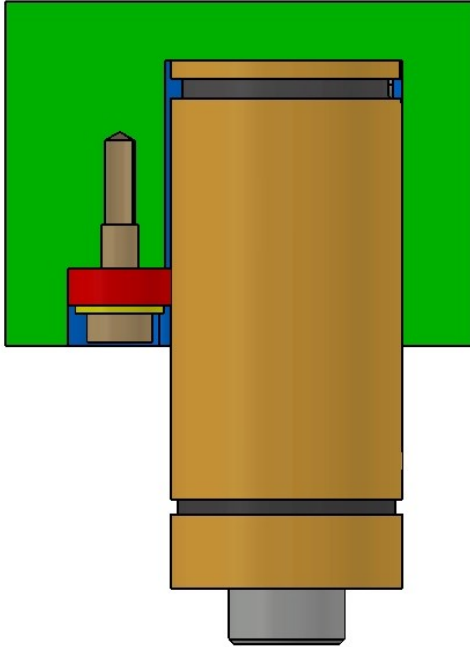
*Sample Order Number: AT200SB-T L=X.XXX
(If LD is other than standard callout as LD=X.XXX)

**Pricing based on inch increments. Individual pieces are rounded to the next inch. Pricing will show TOTAL length of quantity ordered.

Part Number	D	L +/- .002 Milled Finish	LD Lead Groove Depth	CB	T
AT250SB-CB	2.50"	1.250 - 10.000"	0.050"	0.75"	
AT300SB-CB	3.00"	1.250 - 10.000"	0.050"	0.75"	
AT200SB-T	2.00"	1.250 - 10.000"	0.050"		1/2-13"
AT250SB-T	2.50"	1.250 - 10.000"	0.050"		1/2-13"
AT300SB-T	3.00"	1.250 - 10.000"	0.050"		1/2-13"
AT250SB-MT	2.50"	1.250 - 10.000"	0.050"		M12 x 1.75
AT300SB-MT	3.00"	1.250 - 10.000"	0.050"		M12 x 1.75

*CRS Material

URETHANE NITROGEN LOCKS



The Urethane Nitrogen Lock Advantage

- ◆ No Studs or Screws required to hold Gas Spring
- ◆ Eliminates need to counter bore punch holder
- ◆ Simple In-Press removal of Gas Springs
- ◆ Reduces machining time and cost
- ◆ Compatible with ALL Brands
- ◆ Reduced footprint provides numerous design advantages

Installation and Design Recommendations

Put quadrant of Nitro to the quadrant of clearance pocket opposite side put quadrant of 7/8" urethane to quadrant of nitro

Clearance dia. For urethane $.880 + .005/.010$
min. depth .375

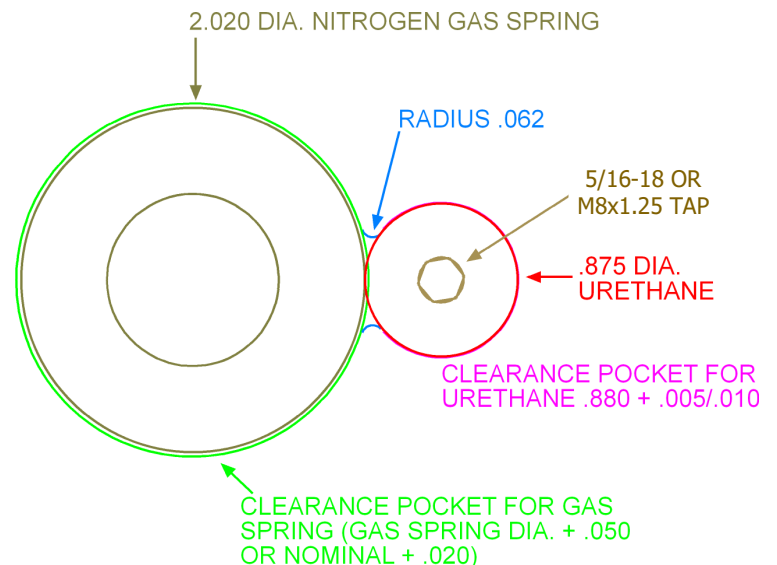
Connecting radius .062

Tighten shoulder bolt till it bottoms out causing urethane to press against nitro gas spring

Note:

* The Designer is responsible for determining the appropriate spring can length to account for the potential failure of the gas spring and nitrogen lock in order to prevent the spring from falling out of the pocket.

** 4" Cylinder or larger, Use 2 Urethane Nitrogen Locks in a triangle configuration



English Part No. UNL-87

Metric Part No. UNL-87M