

Lance-N-Loc® Clinch Tooling

Standard Punches, Dies, Strippers, & Holders for clinching sheet metal



Strong mechanical joints without external fasteners or welding

Commonly used to join harder materials & multiple layers

Ideal when electrical conductivity is required



BTM®
COMPANY

btmcomp.com

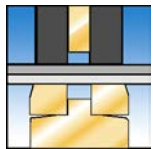
+1.810.364.4567

Fastening without Fasteners

Lance-N-Loc® is a sheet metal clinching system which creates a strong mechanical joint without the use of external fasteners or welding. The metals are lanced and squeezed to form an interlock below the bottom layer of the sheet metal.

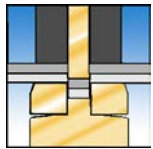
Lance-N-Loc® is good for joining harder materials, multiple layers, and is ideal for use where electrical conductivity is required.

The final result is a joint with a greater width than the drawn section of the metals. This accounts for the high strength of Lance-N-Loc® joints. The entire sequence takes place in a single press stroke.



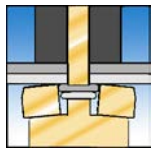
The first step in the process involves the clamping of the material with a punch side stripper.

CLAMPS



Next, the punch draws the material into the die.

DRAWS



As the material flows into the die, the die blades expand, allowing the metal to flow into a strong interlock below the bottom sheet.

LOCKS

PUNCH SIDE



BUTTON SIDE



Note: Lance-N-Loc® is not leak proof. See Tog-L-Loc®.

BEFORE YOU ORDER

Follow these steps to ensure your satisfaction with Lance-N-Loc®:

1. Submit a sample of your part and or material to the BTM sample department. A "Sample Data Sheet" will be used to record what tooling was used to make your sample, as well as the resulting shear and peel strengths.
2. Test your sample.
3. Upon your approval, contact the BTM application engineering department and we will help you select the correct punch, die, stripper, holders or other production solution. This catalog will be used as a reference.
4. Order the required Lance-N-Loc® or Tog-L-Loc® tooling for your application.

LANCE-N-LOC® DIE COMPARISON



940 Series Dies

940 Dies feature a built in die shield that surrounds an Elastomer ring and two die blades.



Two Bladed Elastomer Dies

These dies are ideal when the die guarding can be modified to incorporate contour features in a part.

SAFETY NOTE

It is the customer and/or user's responsibility to provide proper safety controls and/or guarding when a pinch point is present.

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4.6 LANCE-N-LOC® DIES

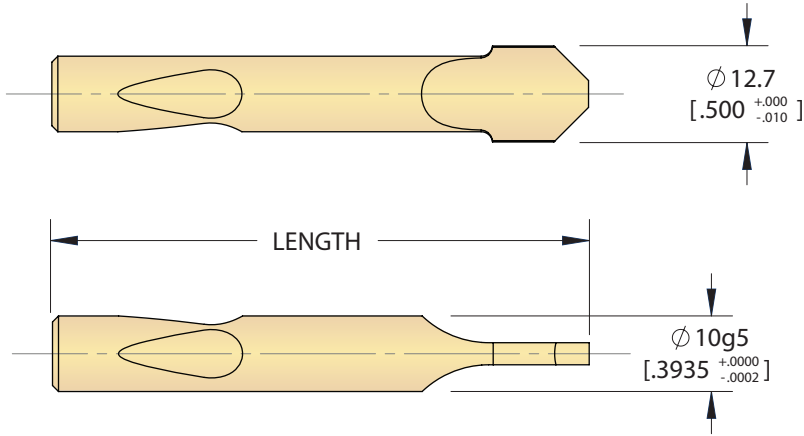
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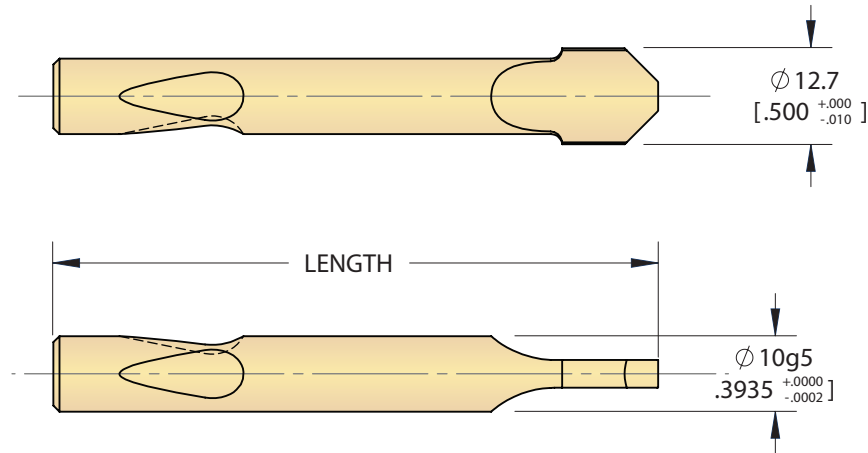
3.0

BALL LOCK PUNCHES



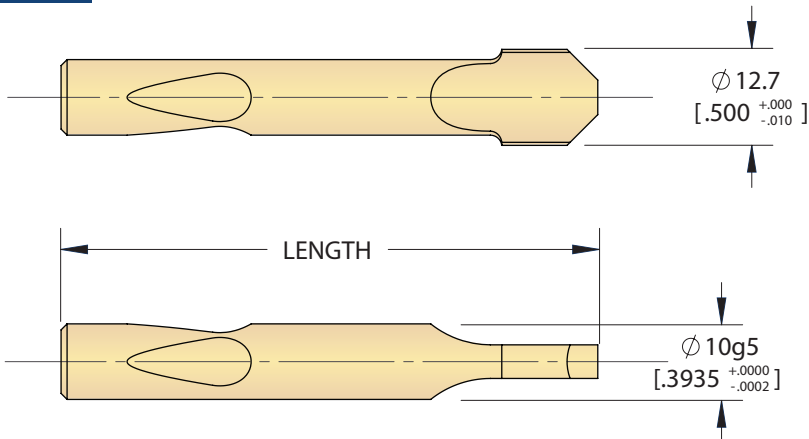
Length		BTM Order No.
mm	in	
71	[2.795]	768501A
100	[3.937]	768501D

3.8



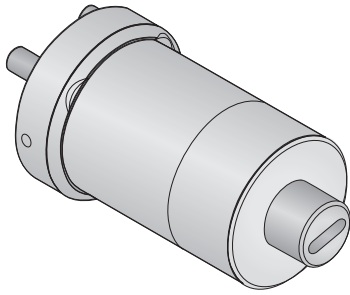
Length		BTM Order No.
mm	in	
71	[2.795]	PD253101A
100	[3.937]	PD253101D

4.6



Length		BTM Order No.
mm	in	
71	[2.795]	768601A
90	[3.543]	768601C
100	[3.937]	768601D

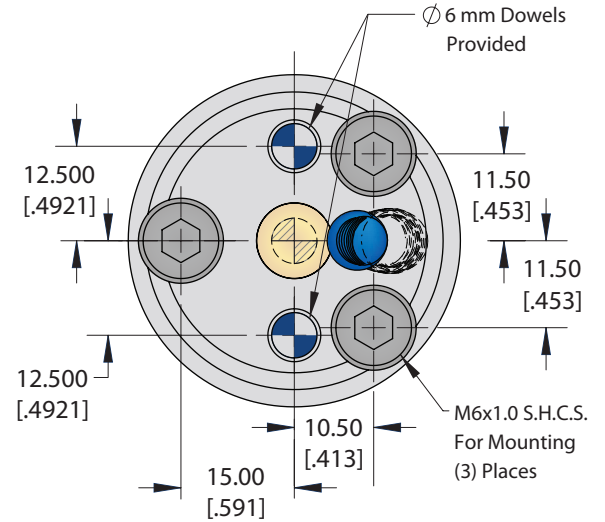
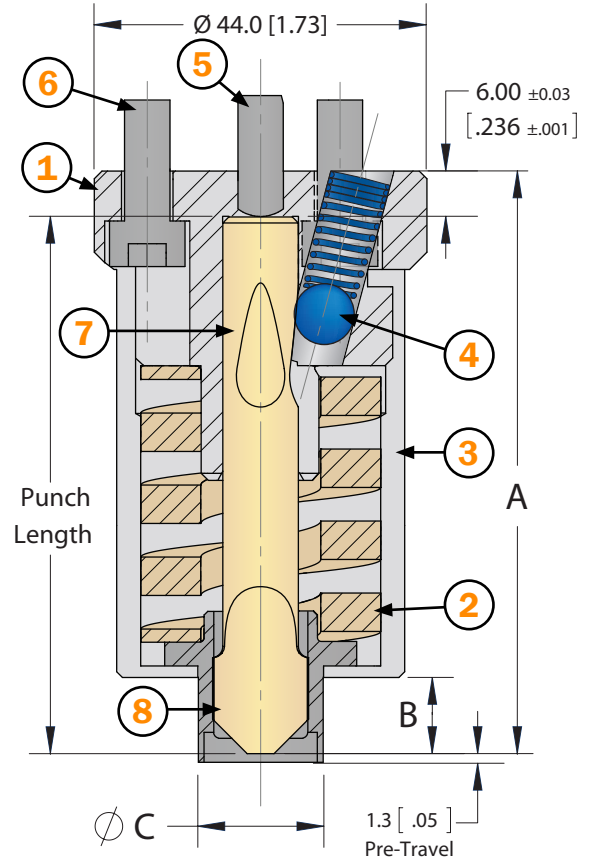
ROUND PUNCH HOLDER [Die Set Mounting]



ASSEMBLY INCLUDES:

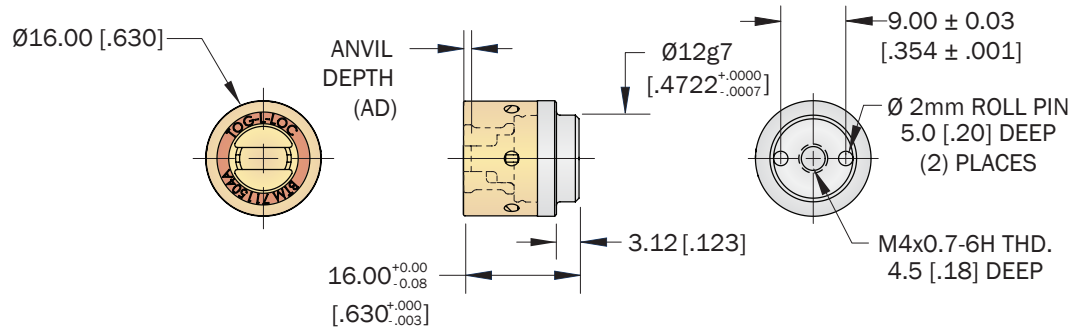
- ① One (1) Punch Holder
- ② One (1) Stripper Spring
- ③ One (1) Stripper Can
- ④ One (1) Ball & Retaining Spring
- ⑤ Two (2) Dowel Pins
- ⑥ Three (3) Mounting Screws
- ⑦ One (1) Ball Lock Punch
- ⑧ One (1) Stripper Tip

Tooling	Punch Length	A	B	C	BTM Order No.
3.0	71 [2.795"]	77.0 [3.031"]	10.0 [.39"]	Ø16.5 [.65"]	768500A
	100 [3.937"]	106.0 [4.173"]	39.0 [1.54"]		768500D
3.8	71 [2.795"]	77.0 [3.031"]	10.0 [.39"]	Ø19.0 [.75"]	PD253100A
	100 [3.937"]	106.0 [4.173"]	39.0 [1.54"]		PD253100D
4.6	90 [3.543"]	96.0 [3.780"]	29.0 [1.14"]	Ø22.2 [.88"]	768600A
	100 [3.937"]	106.0 [4.173"]	39.0 [1.54"]		768600C
					768600D



STANDARD Stepped
Short Insert (SSI) Die

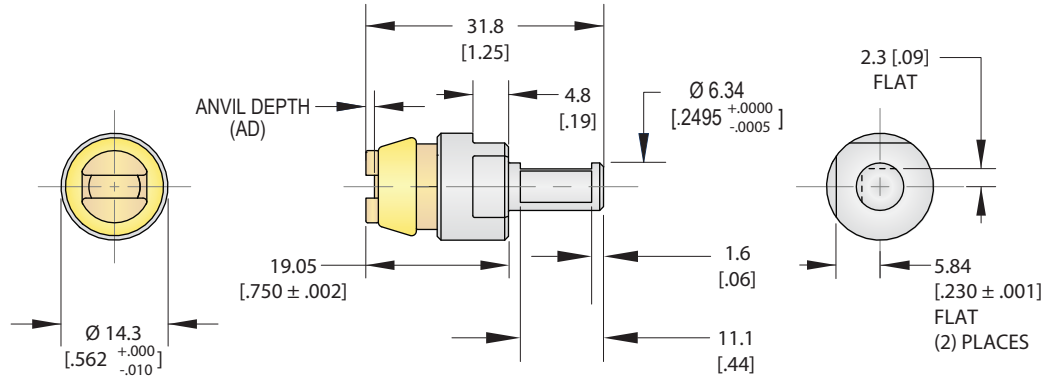
AD	Standard
.020	797700BE
.025	797700CE
.030	797700DE
.035	797700EE
.040	797700FE
.045	797700GE
.050	797700HE



3.0 TWO BLADE ELASTOMER DIES

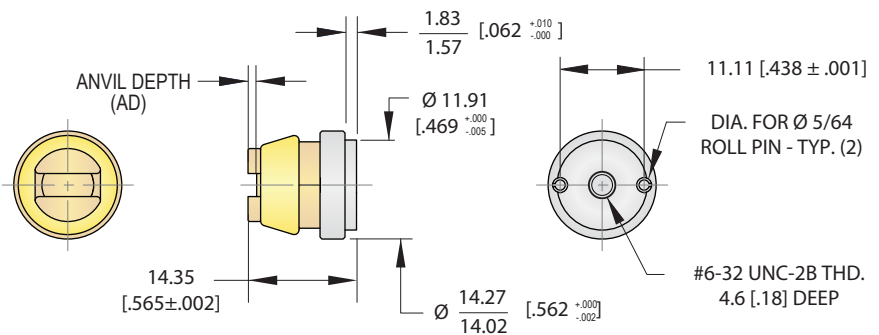
Style "A" Die

AD	Standard
.015	016932
.020	013798
.025	013799
.030	013800
.035	013801
.040	013802
.045	013803
.050	013804
.055	016167
.060	016168
.065	016169
.070	016170
.075	017318
.080	017319



Short Insert Die

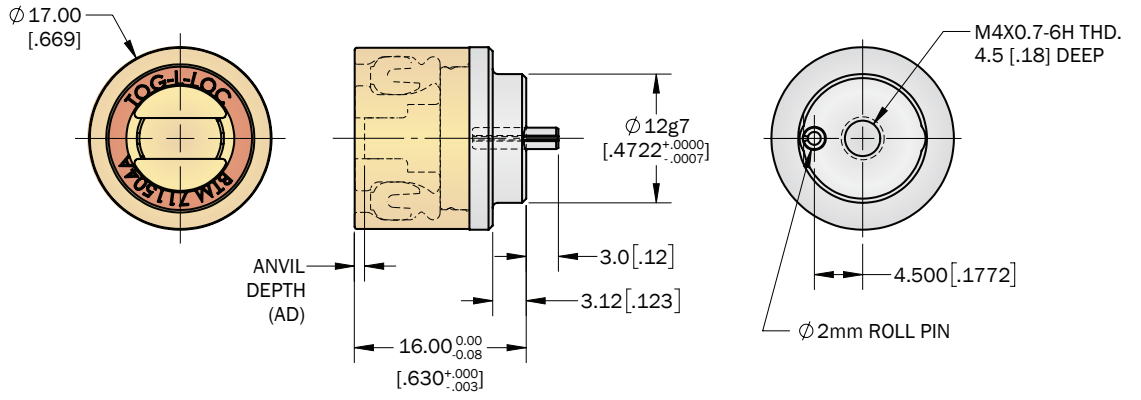
AD	Standard
.020	013753
.025	013754
.030	013755
.035	013756
.040	013757
.045	013232
.050	013758



3.8 940 SERIES DIE

STANDARD Stepped
Short Insert (SSI) Die

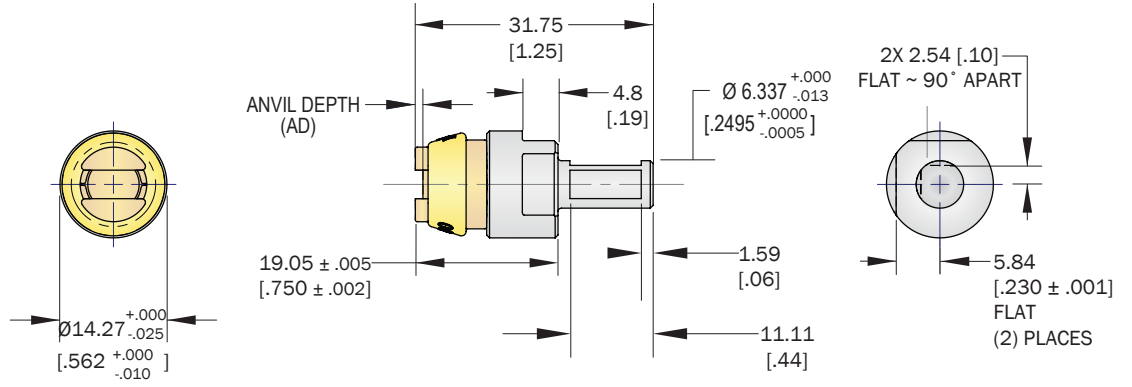
AD	Standard
.020	PD386300BE
.025	PD386300CE
.030	PD386300DE
.035	PD386300EE
.040	PD386300FE
.045	PD386300GE
.050	PD386300HE
.055	PD386300JE
.060	PD386300KE
.065	PD386300LE
.070	PD386300ME
.090	PD386300RE



3.8 TWO BLADE ELASTOMER DIE

Style "A" Die

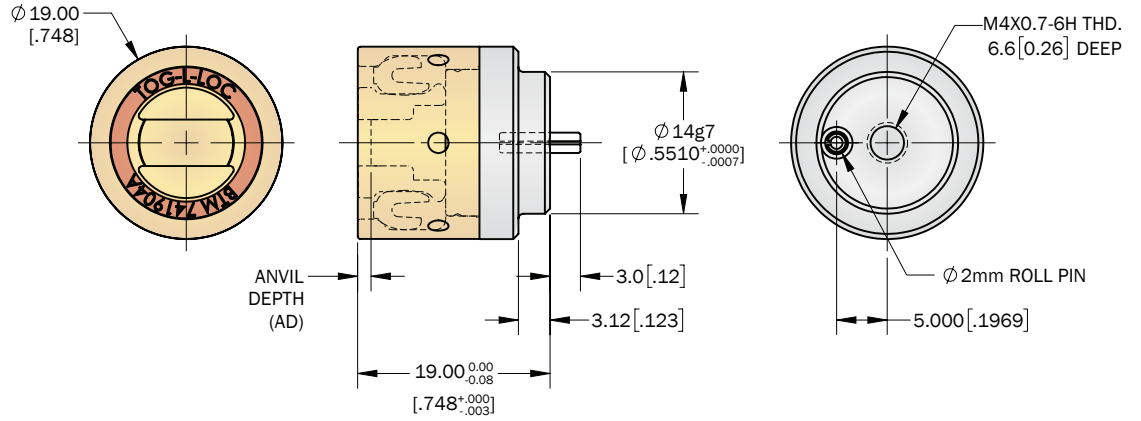
AD	Standard
.020	PD222900B
.025	PD222900C
.030	PD222900D
.035	PD222900E
.040	PD222900F
.045	PD222900G
.050	PD222900H
.055	PD222900J
.060	PD222900K
.065	PD222900L
.070	PD222900M
.075	PD222900N
.080	PD222900P



4.6 940 SERIES DIE

STANDARD Stepped Short Insert (SSI) Die

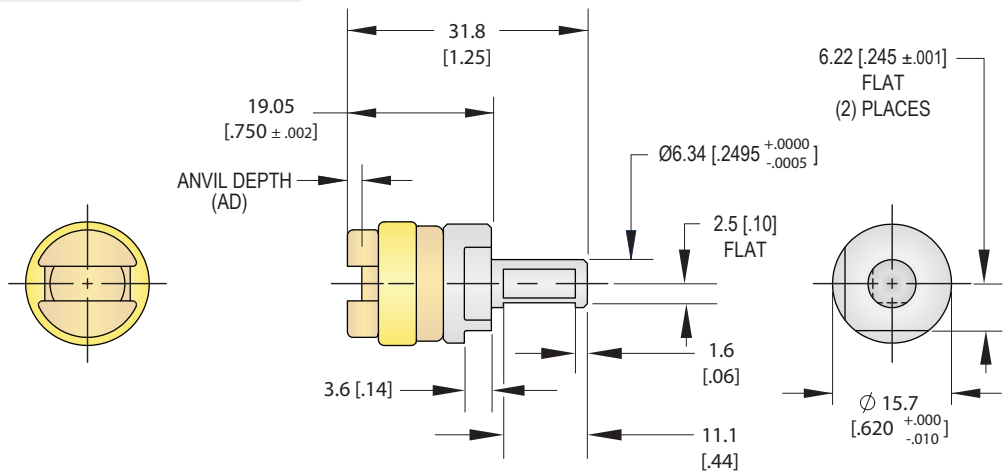
AD	Standard
.020	PD265000BE
.025	PD265000CE
.030	PD265000DE
.035	PD265000EE
.040	PD265000FE
.045	PD265000GE
.050	PD265000HE
.055	PD265000JE
.060	PD265000KE
.065	PD265000LE
.070	PD265000ME
.075	PD265000NE
.080	PD265000PE



4.6 TWO BLADE ELASTOMER DIES

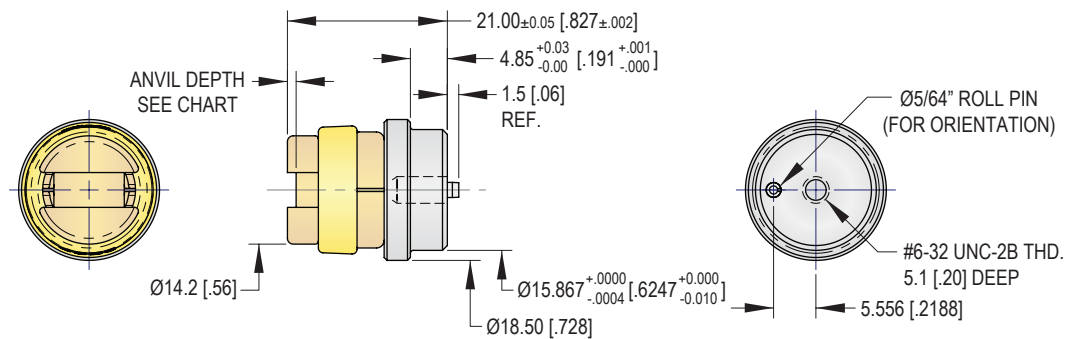
Style "A" Die

AD	Standard	AD	Standard
.020	017357	.110	016388
.025	017358	.115	016389
.030	017359	.120	016390
.035	017360	.125	016391
.040	017361	.130	016392
.045	017362	.135	016393
.050	017363	.140	016394
.055	017364	.145	016395
.060	017365	.150	016396
.065	017366		
.070	017367		
.075	016381		
.080	016382		
.085	016383		
.090	016384		
.095	016385		
.100	016386		
.105	016387		



Short Insert Die

AD	Standard
.030	PD225400B
.035	PD225400C
.040	PD225400D
.045	PD225400E
.050	PD225400F
.055	PD225400G
.060	PD225400H
.065	PD225400J
.070	PD225400K
.075	PD225400L
.080	PD225400M
.085	PD225400N
.090	PD225400P
.095	PD225400R
.100	PD225400S



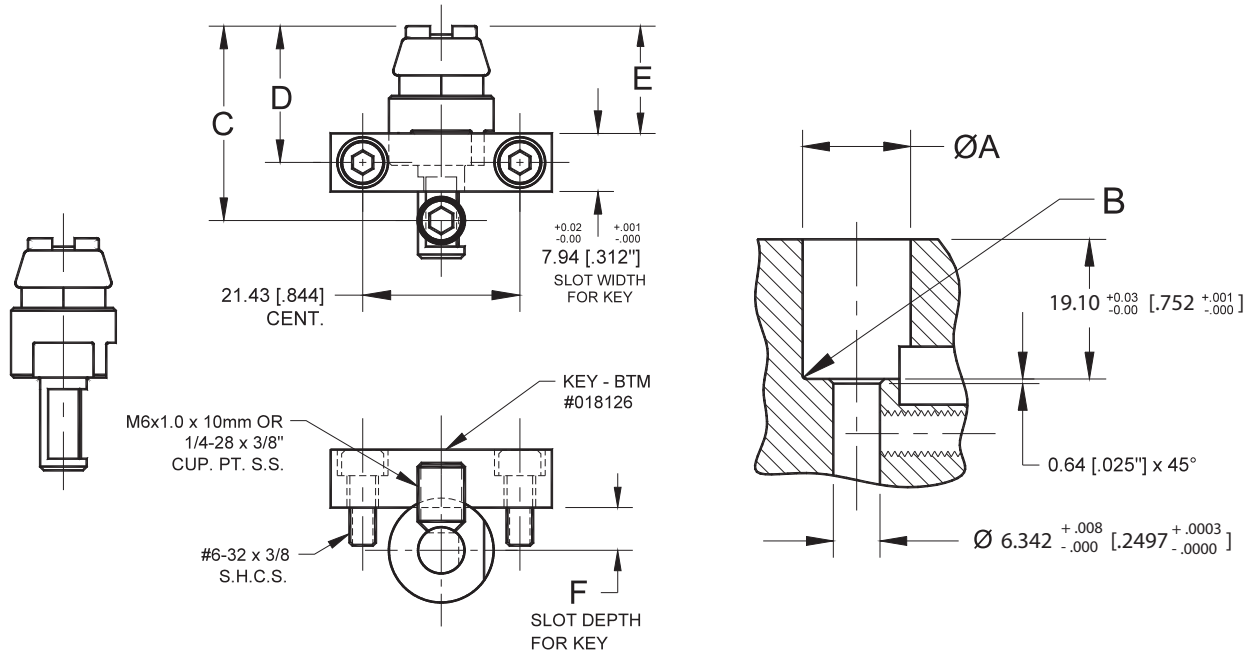
DIE MOUNTING INFORMATION

Elastomer Style "A" Die Pocket Information

3.0

3.8

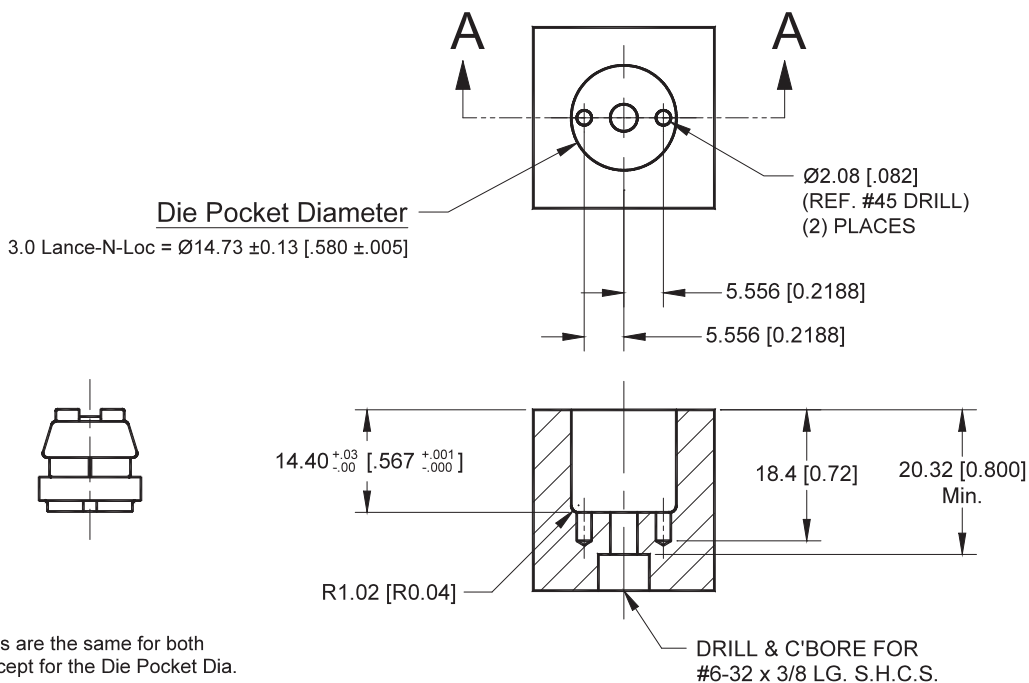
4.6



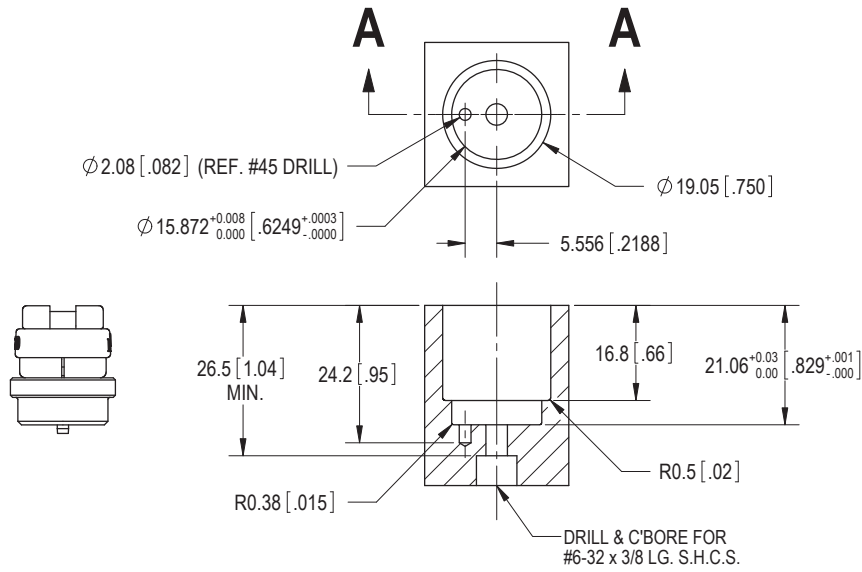
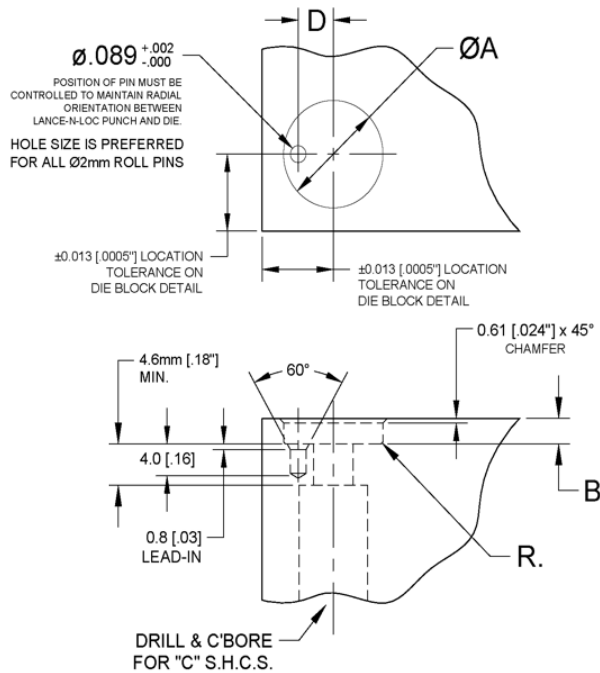
Tooling Size	A	B	C	D	E	F
3.0	14.73 [.580]	R0.51 [.020]	26.59 [1.047]	18.64 [.734]	14.68 [.578]	5.84 ± 0.02 [.230 ± .001]
3.8	15.88 [.625]	R0.64 [.025]	26.59 [1.047]	18.64 [.734]	14.68 [.578]	5.84 ± 0.02 [.230 ± .001]
4.6	19.05 [.750]	R0.64 [.025]	27.79 [1.094]	19.84 [.781]	15.88 [.625]	6.22 ± 0.02 [.245 ± .001]

3.0

Elastomer Short Insert Die Pocket Information



Note:
All dimensions are the same for both joint sizes except for the Die Pocket Dia.

4.6
Elastomer Short Insert Die Pocket Information

940 Stepped Short Insert (SSI) Die Mounting Information


	A	B	C	D	R
3.0	Ø12H6 [.4724 ^{+0.004} _{-0.0000}]	2.84 ± 0.13 [.112 ± .005]	M4 x 0.7	4.500 ± 0.013 [.1772 ± .0005]	R0.33 ± 0.13 [0.013 ± .005]
3.8	Ø12H6 [.4724 ^{+0.004} _{-0.0000}]	2.84 ± 0.13 [.112 ± .005]	M4 x 0.7	4.500 ± 0.013 [.1772 ± .0005]	R0.33 ± 0.13 [0.013 ± .005]
4.6	Ø14H6 [.5115 ^{+0.004} _{-0.0000}]	2.84 ± 0.13 [.112 ± .005]	M4 x 0.7	5.000 ± 0.013 [.1969 ± .0005]	R0.33 ± 0.13 [0.013 ± .005]

BTM has a wide range of standard products to meet your needs including:

PNEUMATIC CLAMPS & GRIPPERS

Light & Heavy Duty Clamps

Clamps range from light duty omni-directional head clamps to heavy duty precision sealed power clamps.



Light & Heavy Duty Grippers

BTM Gripper line ranges from compact light duty models to locking & non-locking heavy duty models.



Pin Locator Clamps

BTM Pin Locator Clamps and Single Finger clamps are used in stationary part nests, welding fixtures, transfer systems, robot end effectors and numerous other clamping applications. These clamps locate and hold the work while other operations are performed.



Standard pin sizes range from 12.5mm - 40mm.

SHEET METAL JOINING

Tog-L-Loc[®]

BTM Tog-L-Loc[®] sheet metal joining system is a cold forming process that quickly joins pre-painted, galvanized, coated, and dissimilar metals.



Lance-N-Loc[®]

BTM Lance-N-Loc[®] Joining System produces clean, strong and consistent joints in most coated or uncoated metals.



Ways to Tog-L-Loc[®]



Die Sets



Hand-Held Units



Hydraulic Units



Universal Presses



Specialized Units

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