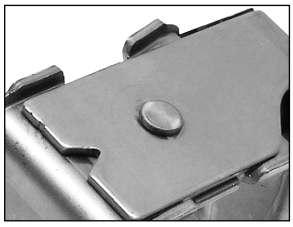
# Tog-L-Loc® Clinch Tooling

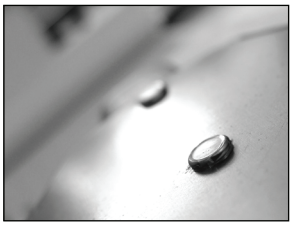
*Standard, Semi-Standard and Special Tog-L-Loc Solutions**

***NOTE:** Not all of the Tog-L-Loc® components shown in this catalog are stocked by BTM. Please contact the BTM Sales department with your delivery requirements.*









Features **3.0**, **3.8**, **4.6**, **5.5**, **6.4**, and **7.6**mm Tooling

Two Bladed and Three Bladed Elastomer Dies

**Whistle Notch Flat and Ball Lock Punches**





BTM® KOREA

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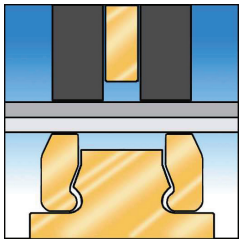
# Fastening without Fasteners

BTM's patented Tog-L-Loc® sheet metal joining system is the simple solution for fastening plain or coated sheet metals. Tog-L-Loc® forms a strong, leakproof "button" headed joint without welding or riveting in almost any combination of ductile sheet metals. The Tog-L-Loc® system is widely used in the manufacture of automobiles, appliances, furniture, electrical products, building supplies, and more.

For information on how to apply this tooling, or to inquire about other types of sheet metal clinch tooling, contact BTM Corporation.

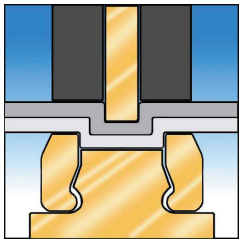
**NOTE: 940 Series tooling is not included in this catalog. Please reference BTM's *"Tog-L-Loc® 940 Series Tooling"* catalog for more information.**

## TOG-L-LOC® PROCESS



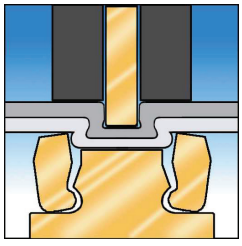
**CLAMPS**

The first step in the Tog-L-Loc® process involves clamping of the material with a punch side stripper.



**DRAWS**

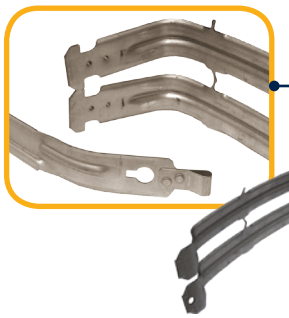
Next, the punch draws the material into the die.



**LOCKS**

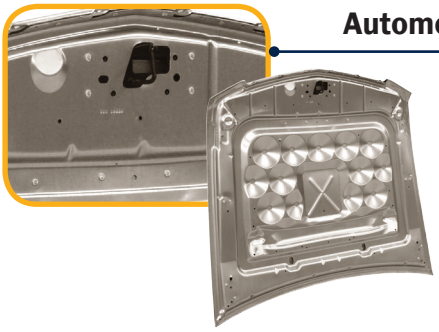
As the material flows into the die, the die blades expand, allowing the metal to flow into a strong interlock.

## A few examples of parts clinched using the Tog-L-Loc® sheet metal joining system.

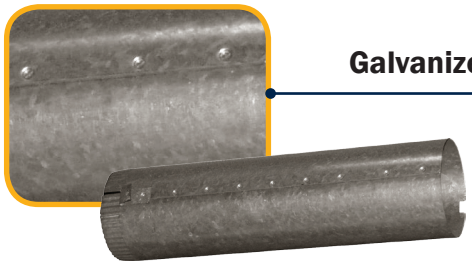


**Gas Tank Straps**

*Joined in a progressive die.*



**Automotive Hood**



**Galvanized Duct**



**Pre-Painted Air Conditioning Cabinet**

# TOG-L-LOC® DIE COMPARISON

## DIES FEATURED IN THIS CATALOG



### Three Bladed Elastomer Dies

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



### Two Bladed Dies

Ideal for very tight joining locations up against a flange, where the blades can operate parallel.

## OTHER TOG-L-LOC® DIES

### 940 Series Dies



940 Dies feature a built in die shield that surrounds an elastomer ring (or a canted coil spring) and three die blades.

*Contact BTM for more information.*

# BEFORE YOU ORDER

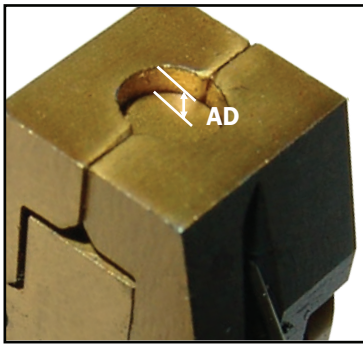
Follow these steps to ensure your satisfaction with Tog-L-Loc®:

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, and holders.
   This catalog will be used as a reference.

4. Order the required Tog-L-Loc® solution for your application.




### Anvil Depth

The Anvil Depth is the distance from the anvil to the top of the die blades. The correct anvil depth for an application is determined through testing and/or surrogate joint data at BTM, not by material thickness.

**Standard Die**
**(Contact BTM for compatibility.)**

**Dies intended for use with Aluminum.**

| AD | Standard | Aluminum |
|---|---|---|
| .020 | 711500[illegible] | 760[illegible] |

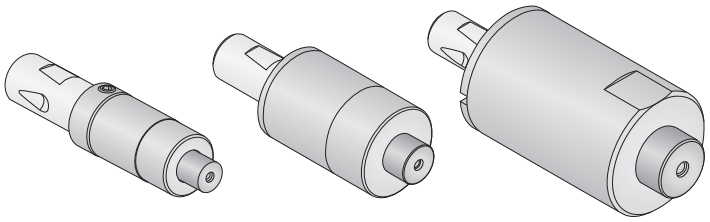
**Contact BTM to ensure that you order the correct tooling configuration for the material that you are joining.**

# SAFETY NOTE

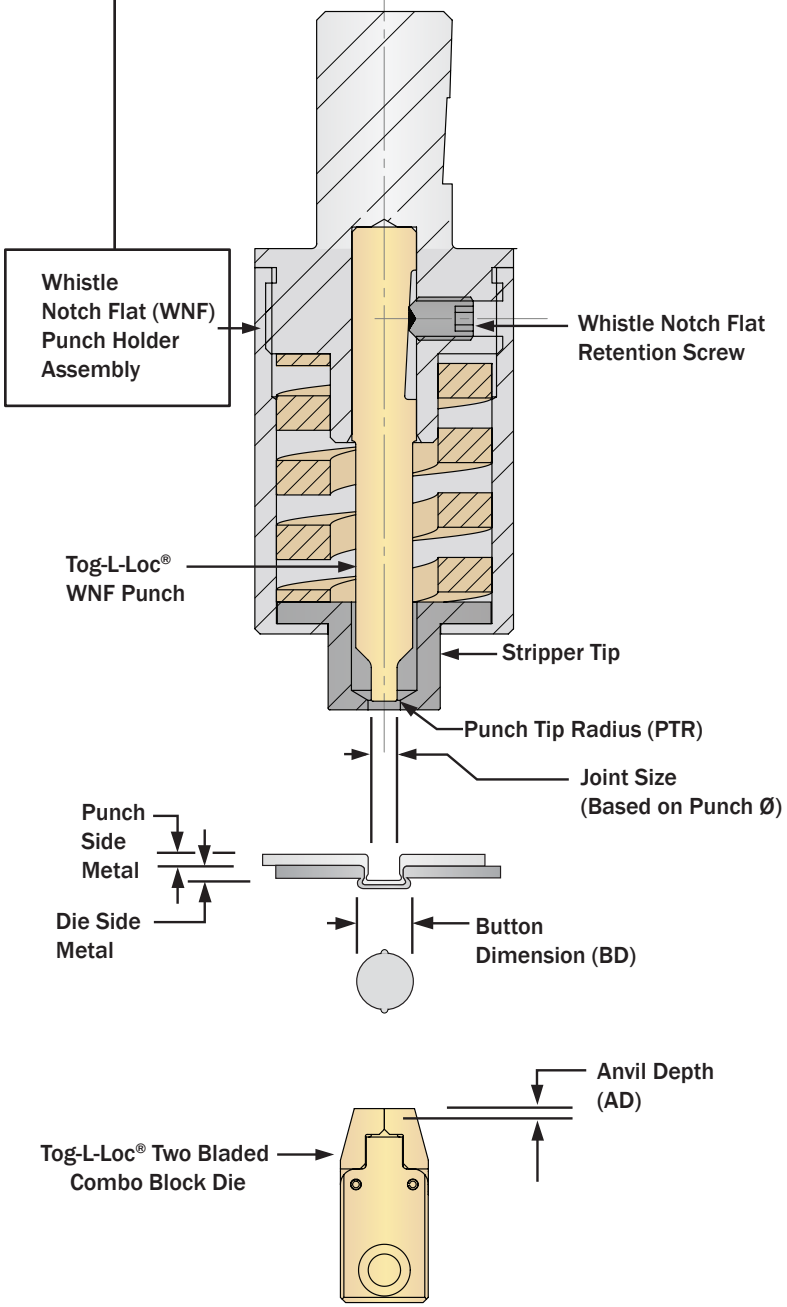
It is the customer and/or user's responsibility to provide proper safety controls and/or guarding when a pinch point is present.

# Tog-L-Loc® Tooling Terminology

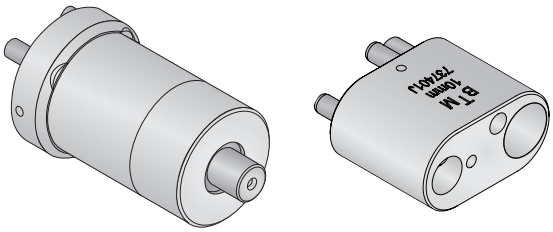
## Whistle Notch Flat Punch Holders



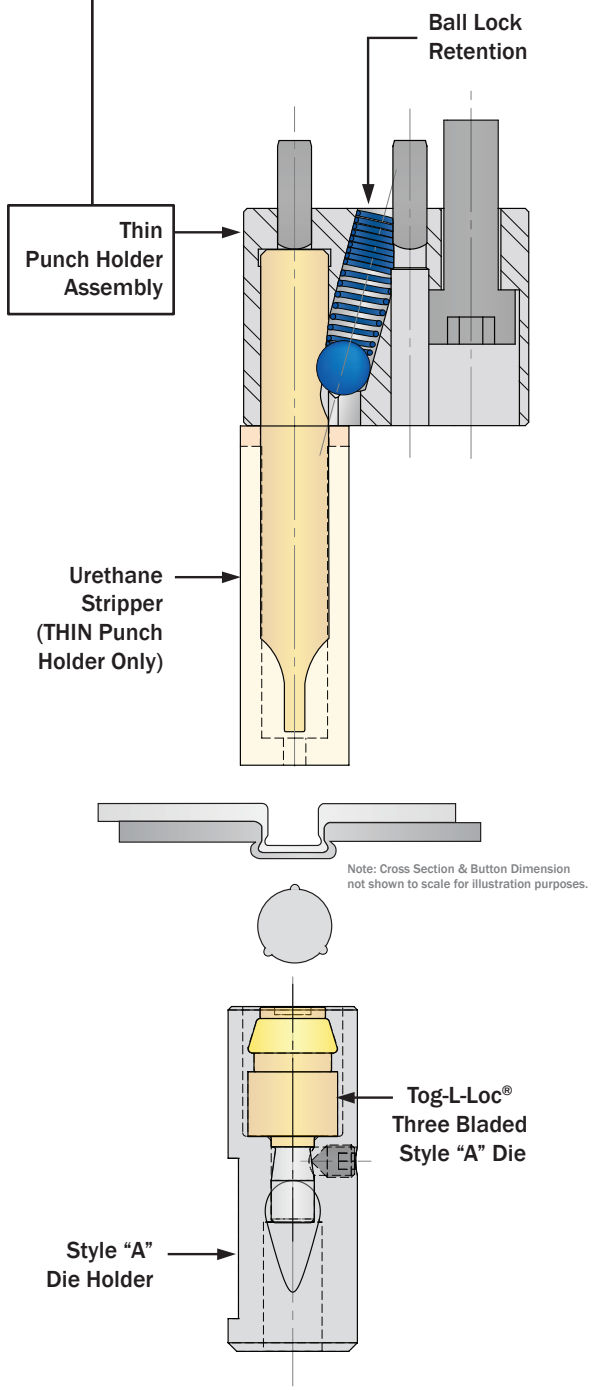
SS10 Shank Punch Holder | SS20 Shank Punch Holder | SS30 Shank Punch Holder




## Ball Lock Punch Holders



Round Punch Holder (For Die Set Mounting) | Thin Punch Holder



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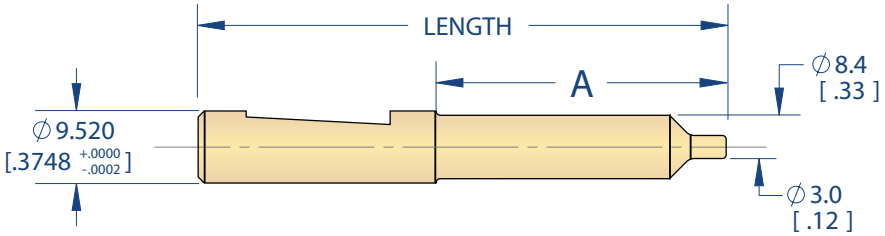
## TOG-L-LOC® DIE HOLDERS

Three Bladed Elastomer Dies ..... 28-29

## TOG-L-LOC® DIE MOUNTING ..... 30-35

**NOTE: Whistle Notch Flat Punch Holders come complete with a punch.**
**You do not need to order a punch seperately if you are ordering a Whistle Notch Flat punch holder.**

## 3.0 Whistle Notch Flat Punch




| Punch Length | PTR | "A" | Order No. |
|---|---|---|---|
| 69.85 [2.750"] | .010 | 38.4 [1.51"] | 004933 |
| | .020 | 38.4 [1.51"] | 006011 |
| 95.25 [3.750"] | .010 | 63.75 [2.51"] | 006622 |
| | .020 | 63.75 [2.51"] | 006623 |

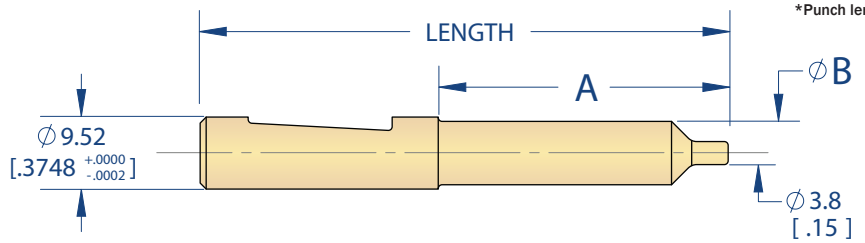
**Compatible Holder Styles**

Shank Mounting (SS10) ..... p.8-9

## 3.8 Whistle Notch Flat Punch

| Punch Length | PTR | "A" | "B" | Order No. |
|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 38.4 [1.51"] | Ø8.4 [.33"] | 797001A |
| | .020 | 38.4 [1.51"] | Ø8.4 [.33"] | 797001B |
| 95.25 [3.750"] | .010 | N/A* | Ø9.52 [.37"] | 797001C |
| | .020 | N/A* | Ø9.52 [.37"] | 797001D |

*Punch length maintains full diameter on 95.25 [3.75"] punch.



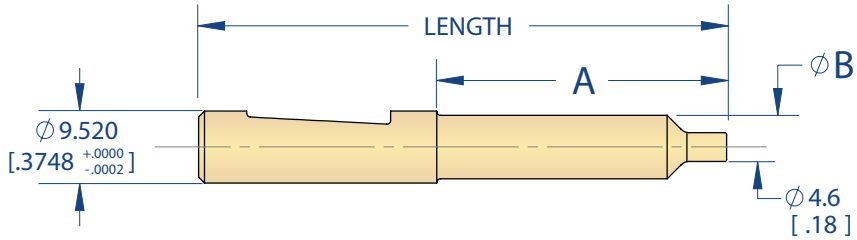

**Compatible Holder Styles**

Shank Mounting (SS20) ..... p. 10-11

## 4.6 Whistle Notch Flat Punch

| Punch Length | PTR | "A" | "B" | Order No. |
|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 38.4 [1.51"] | Ø8.4 [.33"] | 002798 |
| | .020 | 38.4 [1.51"] | Ø8.4 [.33"] | 002992 |
| 95.25 [3.750"] | .010 | N/A* | Ø9.52 [.37"] | 006624 |
| | .020 | N/A* | Ø9.52 [.37"] | 006636 |

*Punch length maintains full diameter on 95.25 [3.75"] punch.



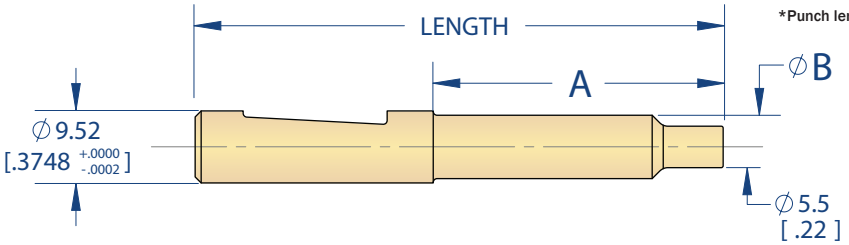

**Compatible Holder Styles**

Shank Mounting (SS10) ..... p.9
(SS20) ..... p.10-11

## 5.5 Whistle Notch Flat Punch

| Punch Length | PTR | "A" | "B" | Order No. |
|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 38.4 [1.51"] | Ø8.4 [.33"] | 018934 |
| | .020 | 38.4 [1.51"] | Ø8.4 [.33"] | 018935 |
| 95.25 [3.750"] | .010 | N/A* | Ø9.52 [.37"] | 018936 |
| | .020 | N/A* | Ø9.52 [.37"] | 018937 |

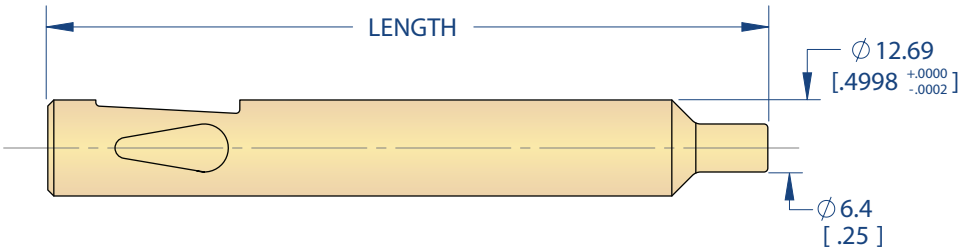
*Punch length maintains full diameter on 95.25 [3.75"] punch.




**Compatible Holder Styles**

Shank Mounting (SS20) ..... p.10-11

## 6.4 Combined Whistle Notch Flat & Ball Lock Punch

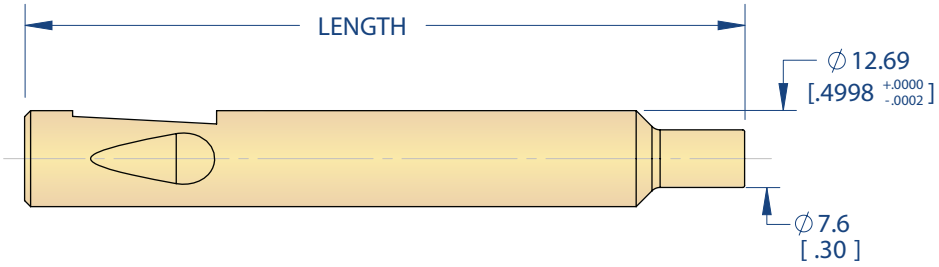



| Punch Length | PTR | Order No. |
|---|---|---|
| 95.25 [3.750"] | .010 | 014707 |
| | .020 | 012121 |
| 120.65 [4.750"] | .010 | 014708 |
| | .020 | 013905 |

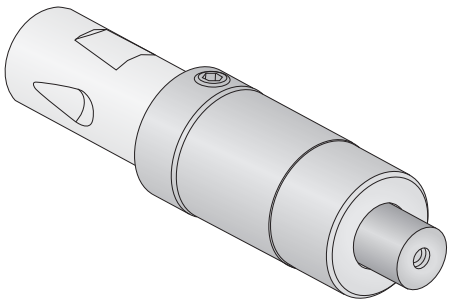
**Compatible Holder Styles**

Shank Mounting (SS20) ..... p.10-11
(SS30) ..... p.12-13

## 7.6 Combined Whistle Notch Flat & Ball Lock Punch

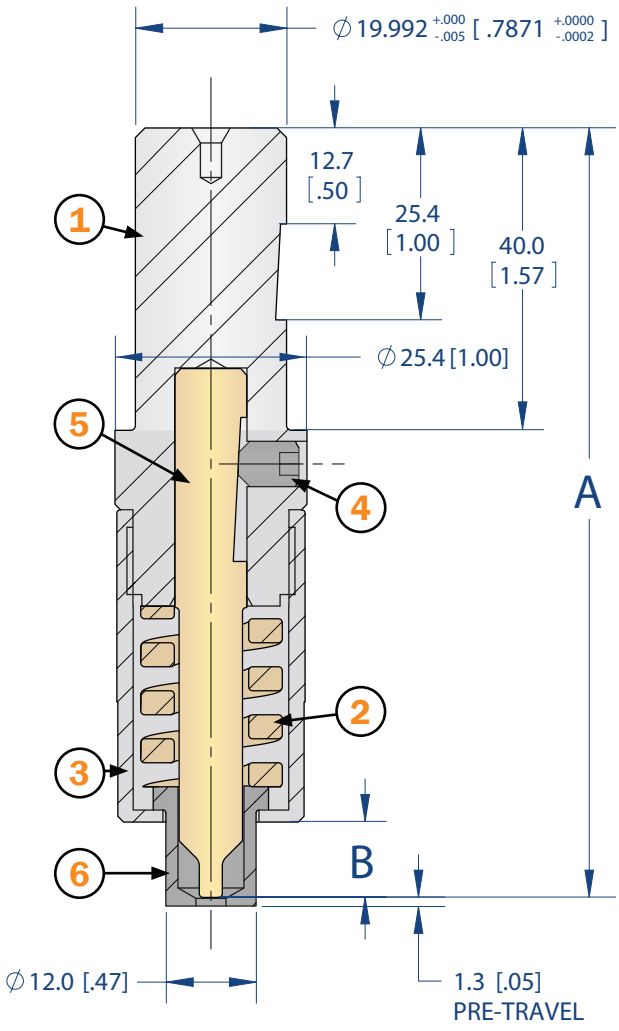



| Punch Length | PTR | Order No. |
|---|---|---|
| 95.25 [3.750"] | .010 | 768001A |
| | .020 | 768001B |
| 120.65 [4.750"] | .010 | 768001C |
| | .020 | 768001D |



**ASSEMBLY INCLUDES:**

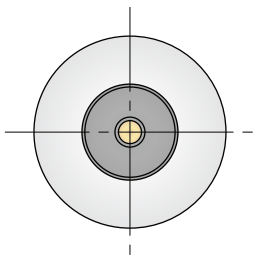
1. One (1) Punch Holder
2. One (1) Stripper Spring
3. One (1) Stripper Can
4. One (1) Punch Retaining Screw
5. One (1) Tog-L-Loc® Punch
6. One (1) Stripper Tip

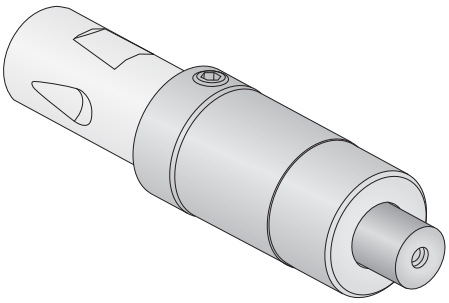



## 3.0 Tooling

| Punch Length | PTR | A | B | Order No. |
|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.60 [4.000"] | Ø9.5 (.38") | 018879 |
| | .020 | 101.60 [4.000"] | Ø9.5 (.38") | 018880 |
| 95.25 [3.750"] | .010 | 127 [5.000"] | Ø35.0 (1.38") | 018881 |
| | .020 | 127 [5.000"] | Ø35.0 (1.38") | 018882 |

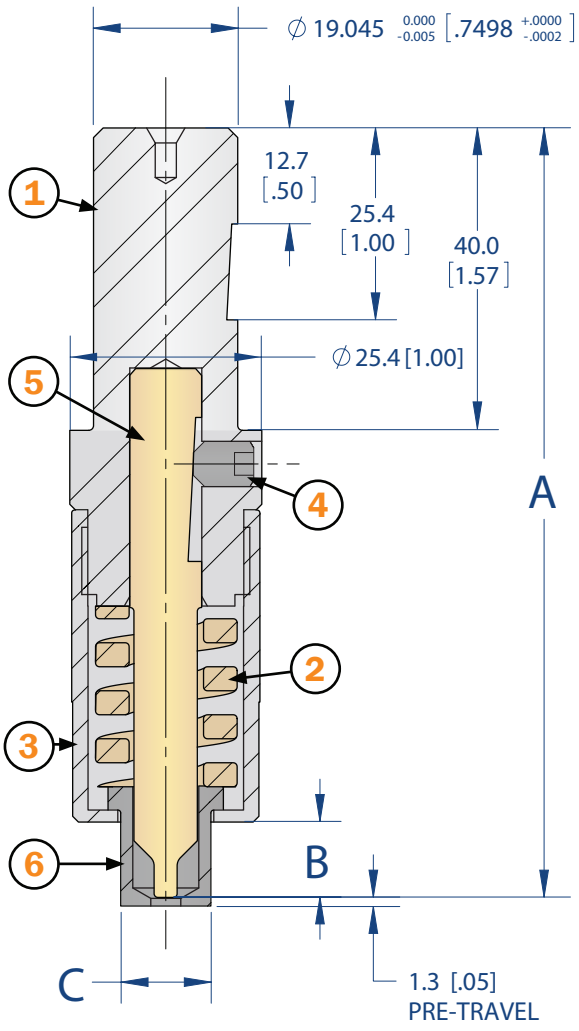
**PTR = Punch Tip Radius**





**ASSEMBLY INCLUDES:**

1. One (1) Punch Holder
2. One (1) Stripper Spring
3. One (1) Stripper Can
4. One (1) Punch Retaining Screw
5. One (1) Tog-L-Loc® Punch
6. One (1) Stripper Tip




## 3.0 Tooling

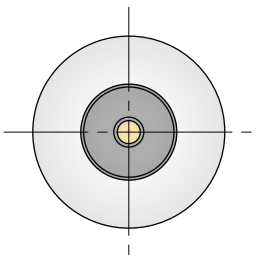
| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.60 [4.000"] | Ø9.5 [.38"] | Ø12.0 [.47"] | 006644 |
| | .020 | 101.60 [4.000"] | Ø9.5 [.38"] | Ø12.0 [.47"] | 006646 |
| 95.25 [3.750"] | .010 | 127.00 [5.000"] | Ø35.0 [1.38"] | Ø12.0 [.47"] | 006645 |
| | .020 | 127.00 [5.000"] | Ø35.0 [1.38"] | Ø12.0 [.47"] | 006647 |

**PTR = Punch Tip Radius**

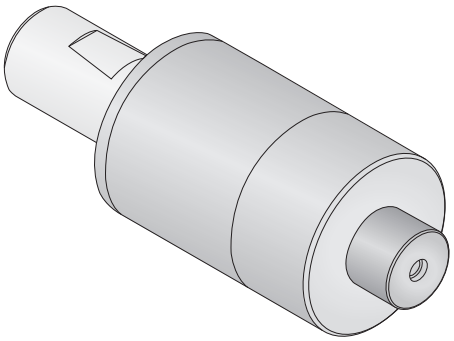
## 4.6 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.60 [4.000"] | Ø9.5 [.38"] | Ø16.5 (.65") | 006746 |
| | .020 | 101.60 [4.000"] | Ø9.5 [.38"] | Ø16.5 (.65") | 006748 |
| 95.25 [3.750"] | .010 | 127.00 [5.000"] | Ø35.0 [1.38"] | Ø16.5 (.65") | 006747 |
| | .020 | 127.00 [5.000"] | Ø35.0 [1.38"] | Ø16.5 (.65") | 006749 |

**PTR = Punch Tip Radius**

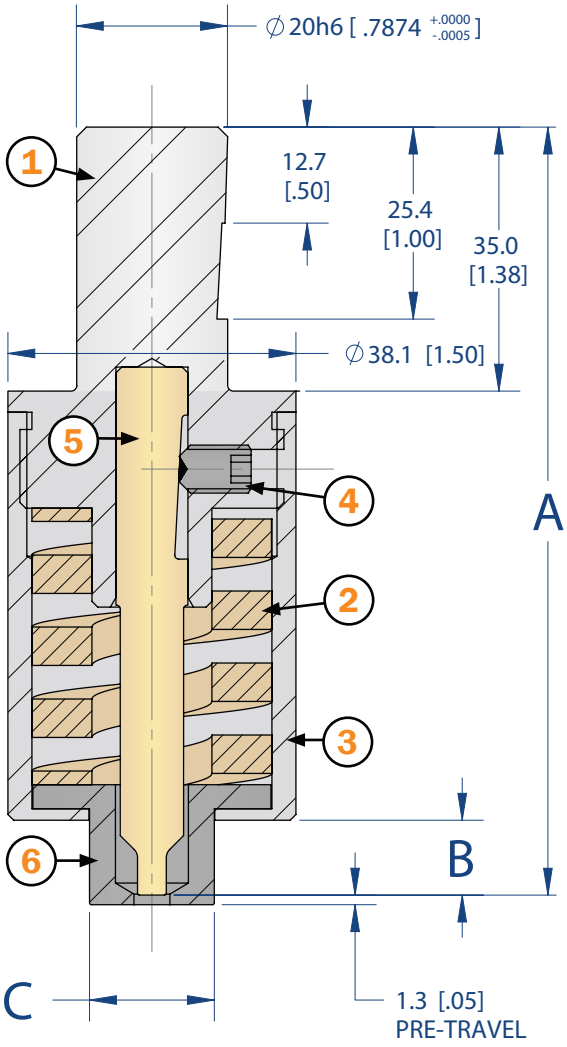


# Tog-L-Loc® SS20 Shank METRIC Mounting for Whistle Notch Flat Punches



**ASSEMBLY INCLUDES:**

1. One (1) Punch Holder
2. One (1) Stripper Spring
3. One (1) Stripper Can
4. One (1) Punch Retaining Screw Assembly
5. One (1) Tog-L-Loc® Punch
6. One (1) Stripper Tip




## 3.8 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 797000E |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 797000F |
| 95.25 [3.750"] | .010 | 127.0 [5.000"] | 35 [1.38"] | Ø16.5 [.65"] | 797000G |
| | .020 | 127.0 [5.000"] | 35 [1.38"] | Ø16.5 [.65"] | 797000H |

**PTR = Punch Tip Radius**

## 4.6 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 021745 |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 021746 |
| 95.25 [3.750"] | .010 | 127.0 [5.000"] | 35 [1.38"] | Ø16.5 [.65"] | 021747 |
| | .020 | 127.0 [5.000"] | 35 [1.38"] | Ø16.5 [.65"] | 021748 |

**PTR = Punch Tip Radius**

## 5.5 Tooling

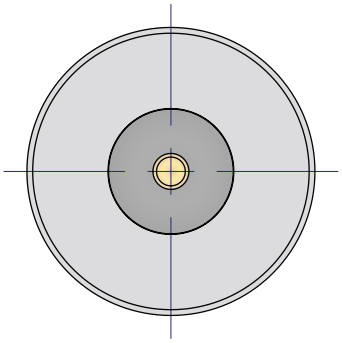
| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø19.1 [.75"] | PD244800A |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø19.1 [.75"] | PD244800B |
| 95.25 [3.750"] | .010 | 127.0 [5.000"] | 35 [1.38"] | Ø19.1 [.75"] | PD244800C |
| | .020 | 127.0 [5.000"] | 35 [1.38"] | Ø19.1 [.75"] | PD244800D |

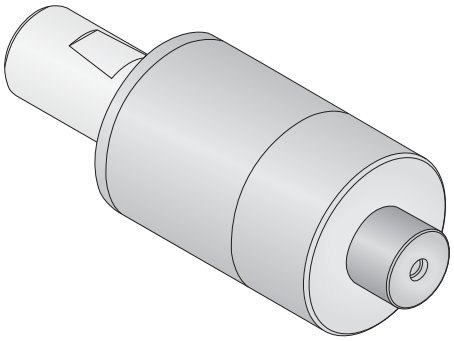
**PTR = Punch Tip Radius**

## 6.4 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 95.25 [3.750"] | .010 | 127.0 [5.000"] | 29.0 [1.14"] | Ø16.0 [.63"] | 020533 |
| | .020 | 127.0 [5.000"] | 29.0 [1.14"] | Ø16.0 [.63"] | 020534 |
| 120.65 [4.750"] | .010 | 137.0 [5.394"] | 39.0 [1.54"] | Ø16.0 [.63"] | 021478 |
| | .020 | 137.0 [5.394"] | 39.0 [1.54"] | Ø16.0 [.63"] | 021479 |

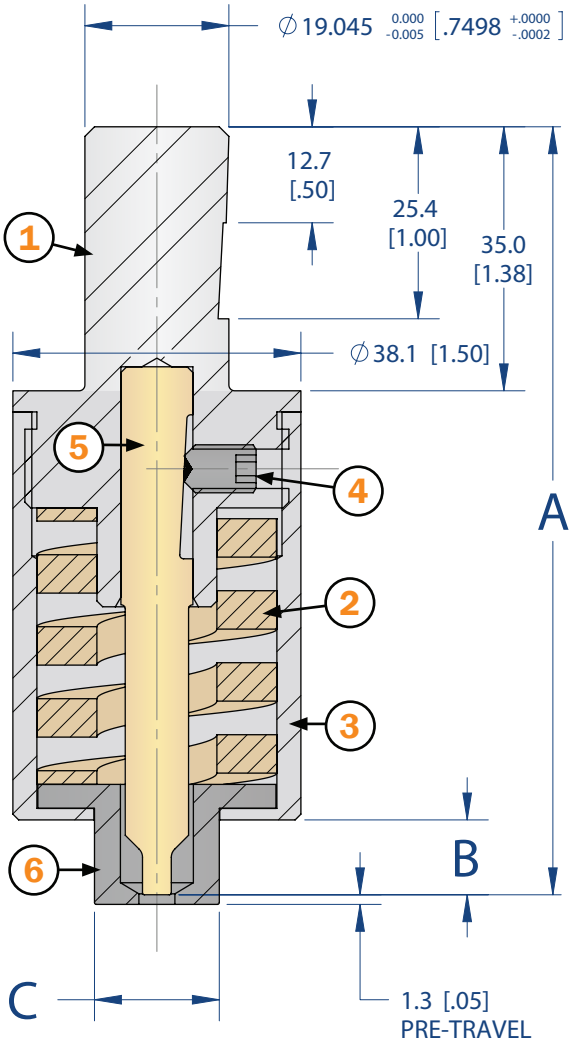
**PTR = Punch Tip Radius**





**ASSEMBLY INCLUDES:**

1. One (1) Punch Holder
2. One (1) Stripper Spring
3. One (1) Stripper Can
4. One (1) Punch Retaining Screw Assembly
5. One (1) Tog-L-Loc® Punch
6. One (1) Stripper Tip




## 3.8 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 797000A |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 797000B |
| 95.25 [3.750"] | .010 | 127.0 [5.000"] | 35.0 [1.38"] | Ø16.5 [.65"] | 797000C |
| | .020 | 127.0 [5.000"] | 35.0 [1.38"] | Ø16.5 [.65"] | 797000D |

**PTR = Punch Tip Radius**

## 4.6 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 015405 |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø16.5 [.65"] | 015406 |
| 95.25 [2.750"] | .010 | 127.0 [5.000"] | 35.0 [1.38"] | Ø16.5 [.65"] | 015408 |
| | .020 | 127.0 [5.000"] | 35.0 [1.38"] | Ø16.5 [.65"] | 015409 |

**PTR = Punch Tip Radius**

## 5.5 Tooling

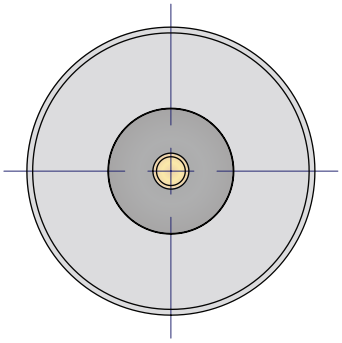
| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø19.1 [.75"] | PD244600A |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø19.1 [.75"] | PD244600B |
| 95.25 [3.150"] | .010 | 127 [5.000"] | 35.0 [1.38"] | Ø19.1 [.75"] | PD244600C |
| | .020 | 127 [5.000"] | 35.0 [1.38"] | Ø19.1 [.75"] | PD244600D |

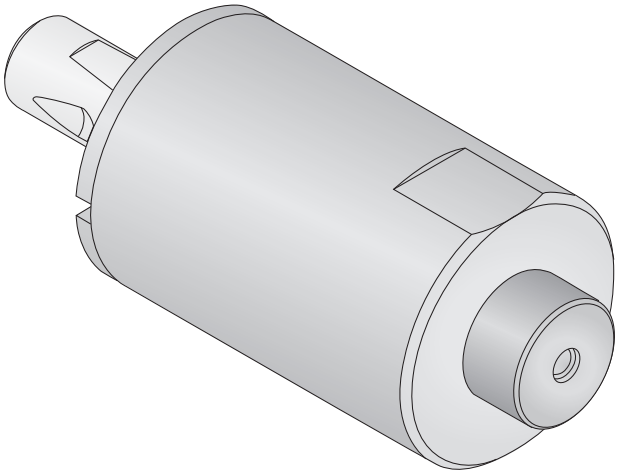
**PTR = Punch Tip Radius**

## 6.4 Tooling

| Punch Length | PTR | A | B | C | Order No. |
|---|---|---|---|---|---|
| 69.85 [2.750"] | .010 | 101.6 [4.000"] | 9.5 [.38"] | Ø27.0 [1.06"] | 015369 |
| | .020 | 101.6 [4.000"] | 9.5 [.38"] | Ø27.0 [1.06"] | 013737 |
| 95.25 [3.750"] | .010 | 127 [5.000"] | 35.0 [1.38"] | Ø27.0 [1.06"] | 015370 |
| | .020 | 127 [5.000"] | 35.0 [1.38"] | Ø27.0 [1.06"] | 015371 |

**PTR = Punch Tip Radius**





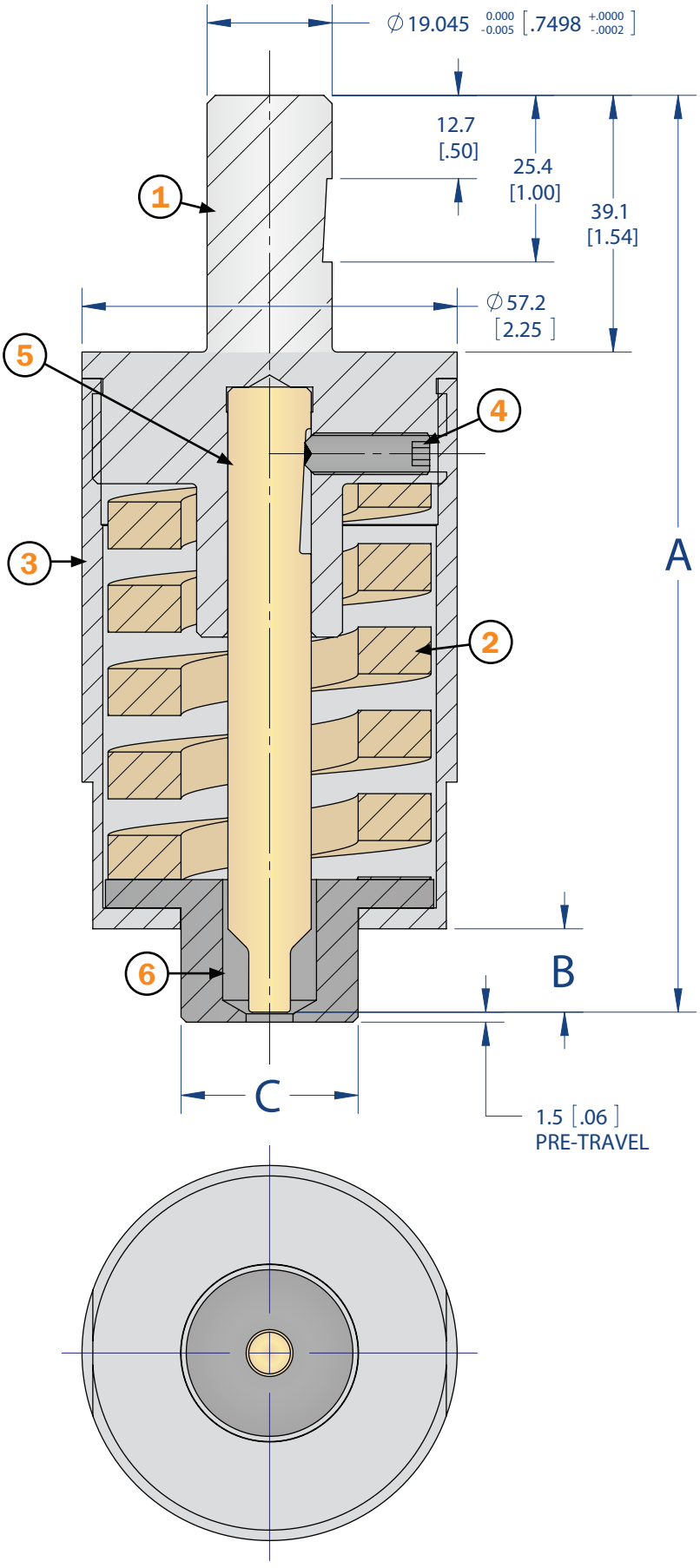
**ASSEMBLY INCLUDES:**

1. One (1) Punch Holder
2. One (1) Stripper Spring
3. One (1) Stripper Can
4. One (1) Punch Retaining Screw Assembly
5. One (1) Tog-L-Loc® Punch
6. One (1) Stripper Tip

## 6.4 Tooling

| Punch Length | PTR | A | B | C | BTM Order No. |
|---|---|---|---|---|---|
| 95.25 [3.750"] | .010 | 139.7 [5.500"] | 12.7 [.50"] | Ø27.0 [1.06"] | 015374 |
| | .020 | 139.7 [5.500"] | 12.7 [.50"] | Ø27.0 [1.06"] | 013732 |
| 120.65 [4.750"] | .010 | 165.1 [6.500"] | 38.1 [1.50"] | Ø27.0 [1.06"] | 015375 |
| | .020 | 165.1 [6.500"] | 38.1 [1.50"] | Ø27.0 [1.06"] | 015376 |

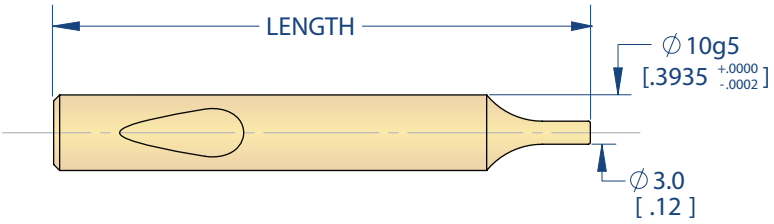
**PTR = Punch Tip Radius**


∅19.045 0.000 -0.005 [.7498 +.0000 -.0002]
12.7
[.50]
25.4
[1.00]
39.1
[1.54]
∅57.2
[2.25]
1
2
3
4
5
6
A
B
C
1.5 [.06]
PRE-TRAVEL

**NOTE:** Round (Die Set Mounting) Punch Holders come complete with a punch.
You do not need to order a punch seperately if you are ordering a Round (Die Set Mounting) Punch Holder.

THIN Punch Holders do NOT come with a punch, a punch must be ordered seperately.

## 3.0 Ball Lock Punch

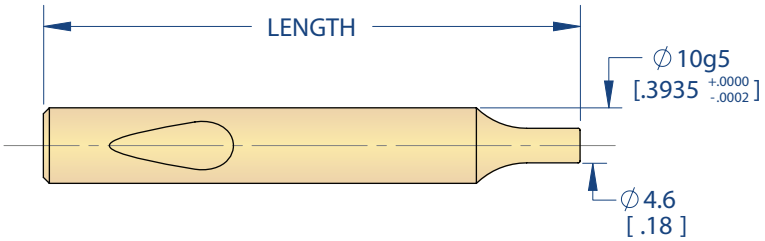



| | Length | | Punch Tip Radius | |
|---|---|---|---|---|
| | mm | in | .010 | .020 |
| Preferred | 71 | [2.795] | 769000A | 769000E |
| Preferred | 80 | [3.150] | 769000B | 769000F |
| Preferred | 90 | [3.543] | 769000C | 769000G |
| Preferred | 100 | [3.937] | 769000D | 769000H |

**Compatible Holder Styles**

Die Set Mounting ..... p.16
THIN Holder ..... p.17

## 4.6 Ball Lock Punch

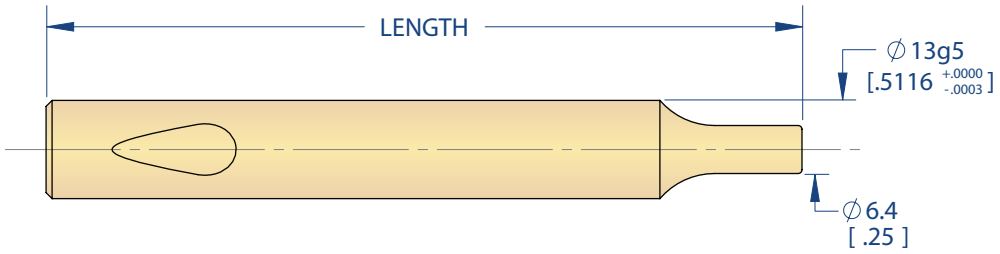



| | Length | | Punch Tip Radius | |
|---|---|---|---|---|
| | mm | in | .010 | .020 |
| Preferred | 71 | [2.795] | 769100A | 769100E |
| Preferred | 80 | [3.150] | 769100B | 769100F |
| Preferred | 90 | [3.543] | 769100C | 769100G |
| Preferred | 100 | [3.937] | 769100D | 769100H |

**Compatible Holder Styles**

Die Set Mounting ..... p.16
THIN Holder ..... p.17

## 6.4 Ball Lock Punch

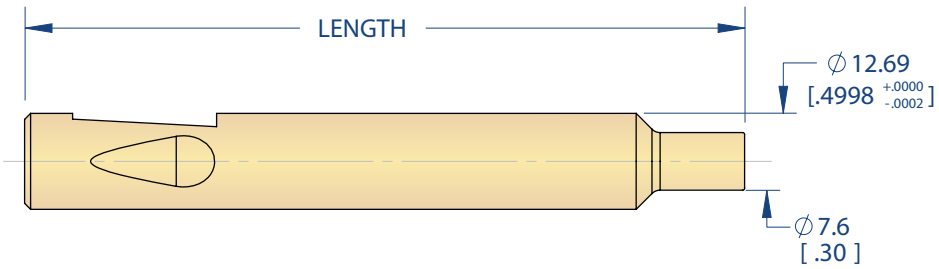



| Length | | Punch Tip Radius | |
|---|---|---|---|
| mm | in | .010 | .020 |
| 100 | [3.937] | 792901A | 792901C |
| 125 | [4.921] | 792901B | 792901D |

**Compatible Holder Styles**

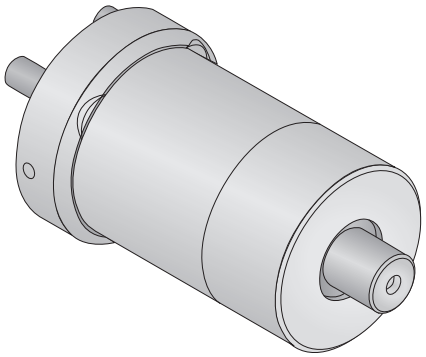

Die Set Mounting ..... p.16
THIN Holder ..... p.17


## 7.6 Combined Ball Lock & Whistle Notch Flat Punch



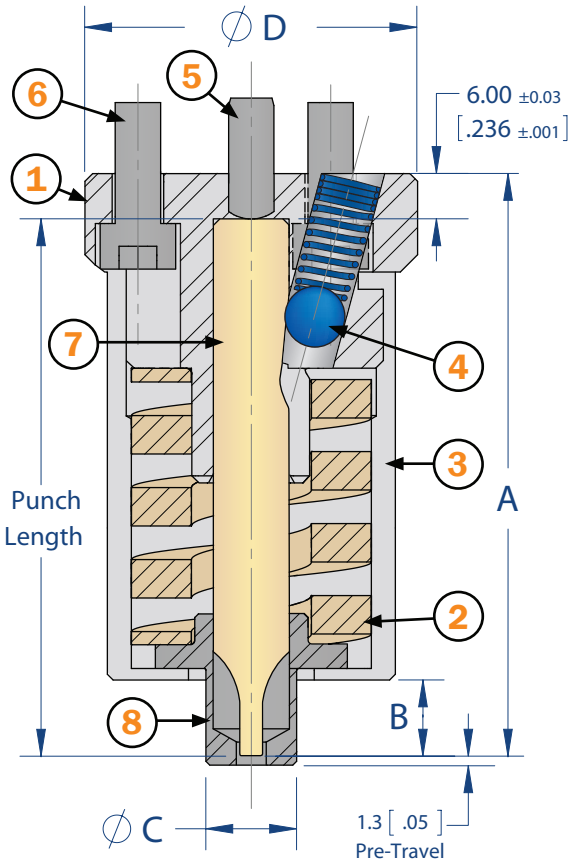

| Length | | Punch Tip Radius | |
|---|---|---|---|
| mm | in | .010 | .020 |
| 95.25 | [3.750] | 768001A | 768001B |
| 120.65 | [4.750] | 768001C | 768001D |

# Tog-L-Loc® Round (Die Set Mounting) Holders for Ball Lock Punches



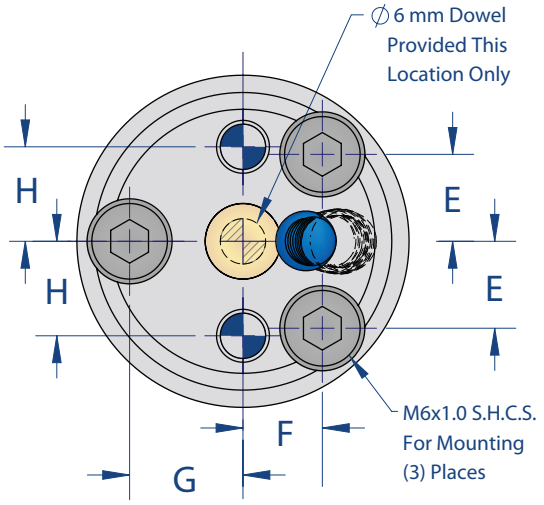
**ASSEMBLY INCLUDES:**

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




| Tooling | Punch Length | A | B | C | D |
|---|---|---|---|---|---|
| 3.0 | 71 [2.795"] | 77.0 [3.031"] | 10.0 [.39"] | Ø12.0 [.47"] | Ø44 [1.73"] |
| | 80 [3.150"] | 86.0 [3.386"] | 19.0 [.75"] | | |
| | 90 [3.543"] | 96.0 [3.780"] | 29.0 [1.14"] | | |
| | 100 [3.937"] | 106.0 [4.173"] | 39.0 [1.54"] | | |
| 4.6 | 71 [2.795"] | 77.0 [3.031"] | 10.0 [.39"] | Ø16.0 [.63"] | Ø44 [1.73"] |
| | 80 [3.150"] | 86.0 [3.386"] | 19.0 [.75"] | | |
| | 90 [3.543"] | 96.0 [3.780"] | 29.0 [1.14"] | | |
| | 100 [3.937"] | 106.0 [4.173"] | 39.0 [1.54"] | | |
| 6.4 | 100 [3.937"] | 106.0 [4.173"] | 12.0 [.47"] | Ø22.0 [.87"] | Ø57 [2.25"] |
| | 125 [4.921"] | 131.0 [5.157"] | 37.0 [1.46"] | | |

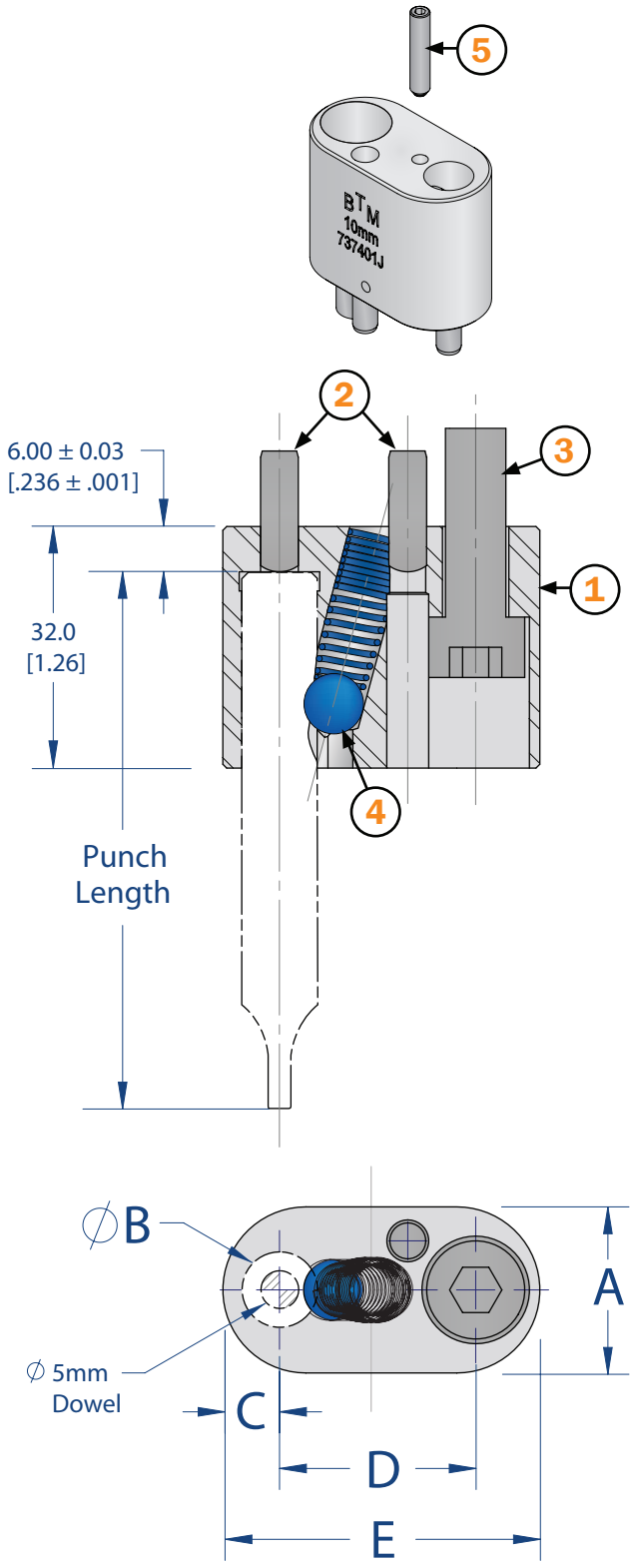
| | E | F | G | H |
|---|---|---|---|---|
| 3.0 | 11.5 [.453"] | 10.5 [.413"] | 15.0 [.591"] | 12.500 [.4921"] |
| 4.6 | 11.5 [.453"] | 10.5 [.413"] | 15.0 [.591"] | 12.500 [.4921"] |
| 6.4 | 14.5 [.571"] | 13.0 [.512"] | 19.5 [.768"] | 19.500 [.7677"] |




Punch Length

| Tooling Size | | 71mm [2.795"] | | 80mm [3.150"] | | 90mm [3.543"] | | 100mm [3.937"] | | 125mm [4.921"] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | .010 PTR | .020 PTR | .010 PTR | .020 PTR | .010 PTR | .020 PTR | .010 PTR | .020 PTR | .010 PTR | .020 PTR |
| 3.0 | SS20 Assembly | 772100A | 772100B | 772100C | 772100D | 772100E | 772100F | 772100G | 772100H | N/A | N/A |
| 4.6 | SS20 Assembly | 772200A | 772200B | 772200C | 772200D | 772200E | 772200F | 772200G | 772200H | N/A | N/A |
| 6.4 | SS30 Assembly | N/A | | | | | | 792900A | 792900C | 792900B | 792900D |

**PTR = Punch Tip Radius**




## ASSEMBLY INCLUDES:

1. One (1) Punch Holder
2. Two (2) Dowel Pin
3. One (1) Mounting Screw
4. One (1) Ball & Retaining Spring
5. One (1) Ball Release Set Screw

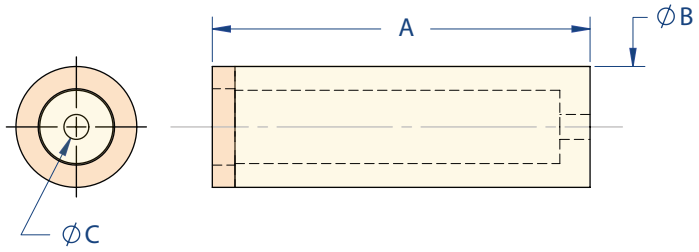
## NOT INCLUDED

*One (1) Punch (see p. 14-15)*

*One (1) Urethane Stripper*

## Urethane Strippers

**Designed for low volume applications**




### 3.0 Tooling

| Punch Length | A | B | C | BTM Order No. |
|---|---|---|---|---|
| 71 [2.795"] | 50.01 [1.969"] | Ø 16.0 [.63 +.000 -.015] | Ø3.30 [.130] | 737413B |
| 80 [3.150"] | 59.00 [2.323"] | | | 737414B |
| 90 [3.543"] | 69.01 [2.717"] | | | 737415B |
| 100 [3.937"] | 78.99 [3.110"] | | | 737416B |

### 4.6 Tooling

| Punch Length | A | B | C | BTM Order No. |
|---|---|---|---|---|
| 71 [2.795"] | 50.01 [1.969"] | Ø 20.0 [.79 +.000 -.015] | Ø4.83 [.190] | 737404D |
| 80 [3.150"] | 59.00 [2.323"] | | | 737405D |
| 90 [3.543"] | 69.01 [2.717"] | | | 737406D |
| 100 [3.937"] | 78.99 [3.110"] | | | 737407D |

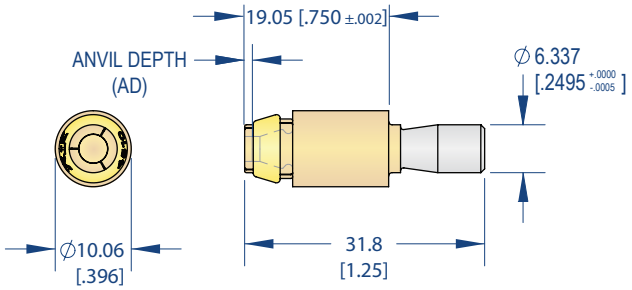
### 6.4 Tooling

| Punch Length | A | B | C | BTM Order No. |
|---|---|---|---|---|
| 100 (3.937") | 78.99 [3.110"] | Ø 33.0 [1.30 +.000 -.015] | Ø6.60 [.260] | 737406F |
| 125 (4.921") | 103.99 (4.094") | | | 737407F |

| Tooling Size | A | B | C | D | E | BTM Order No. |
|---|---|---|---|---|---|---|
| 3.0 | 22.0±0.4 [.87"±.015] | Ø10H6 | 7.5 [.30"] | 26.00 [1.024"] | 42.0 [1.65"] | 737400J |
| 4.6 | 22.0±0.4 [.87"±.015] | Ø10H6 | 7.5 [.30"] | 26.00 [1.024"] | 42.0 [1.65"] | 737400J |
| 6.4 | 26.0±0.4 [1.02"±.015] | Ø13H6 | 9.5 [.37"] | 27.50 [1.083"] | 46.0 [1.81"] | 737400K |

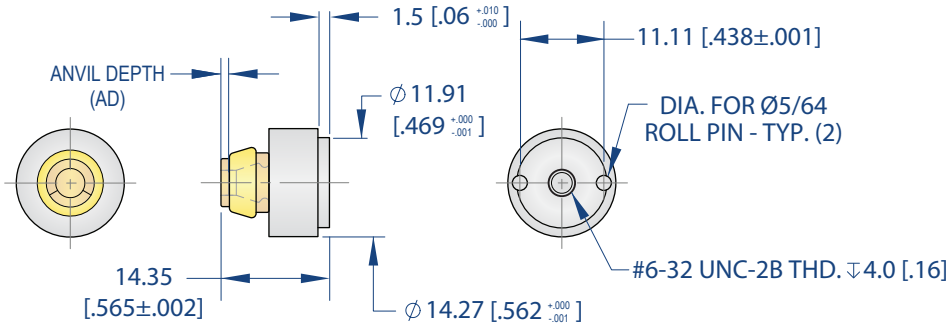
## Style “A” Die

| AD | Standard |
|---|---|
| .020 | 013741 |
| .025 | 012744 |
| .030 | 006709 |
| .035 | 006711 |
| .040 | 006713 |
| .045 | 006715 |
| .050 | 006717 |
| .055 | 006719 |
| .060 | 006721 |



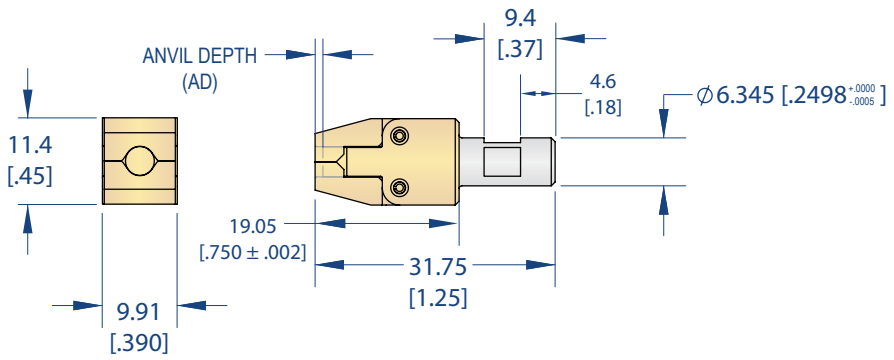

## Short Insert Die

| AD | Standard |
|---|---|
| .020 | 013743 |
| .025 | 013311 |
| .030 | 013312 |
| .035 | 013313 |
| .040 | 013314 |
| .045 | 013315 |
| .050 | 013316 |



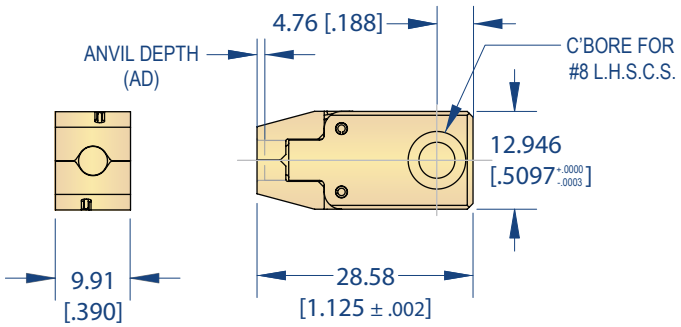
## Style “A” Two Bladed Die

| AD | Standard |
|---|---|
| .020 | 021169 |
| .025 | 021170 |
| .030 | 021171 |
| .035 | 021172 |
| .040 | 021183 |
| .045 | 021184 |
| .050 | 021185 |



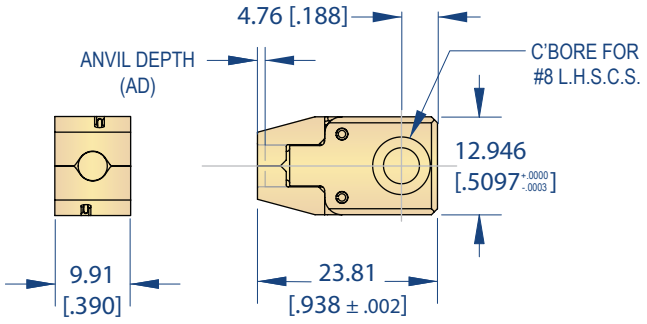

## Two Bladed Combo Block Die

| AD | Standard |
|---|---|
| .020 | 013766 |
| .025 | 013767 |
| .030 | 013768 |
| .035 | 013769 |
| .040 | 013770 |
| .045 | 013771 |
| .050 | 013772 |



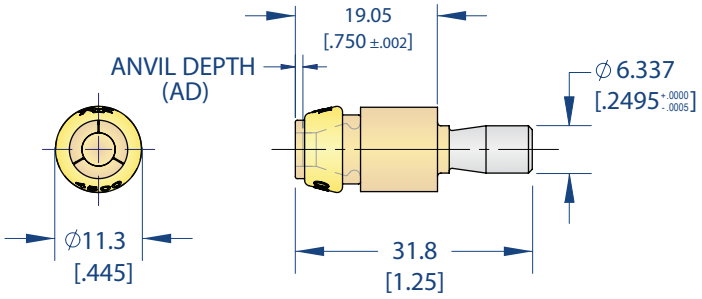

## Handheld Two Bladed Combo Block Die

| AD | Standard |
|---|---|
| .020 | 014410 |
| .025 | 014411 |
| .030 | 014412 |
| .035 | 014413 |
| .040 | 014414 |
| .045 | 014415 |
| .050 | 014416 |



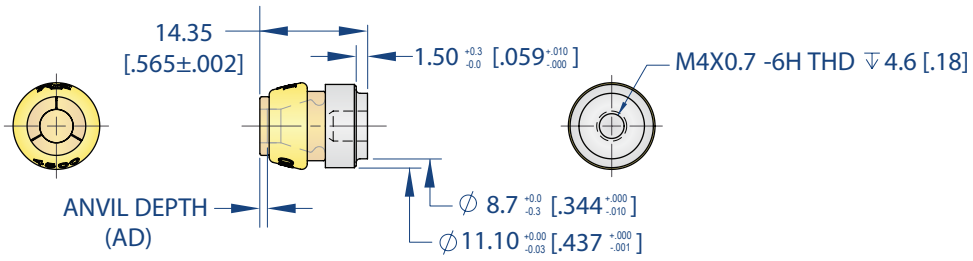
## Style “A” Die

| AD | Standard |
|---|---|
| .020 | 796900B |
| .025 | 796900C |
| .030 | 796900D |
| .035 | 796900E |
| .040 | 796900F |
| .045 | 796900G |
| .050 | 796900H |
| .055 | 796900J |



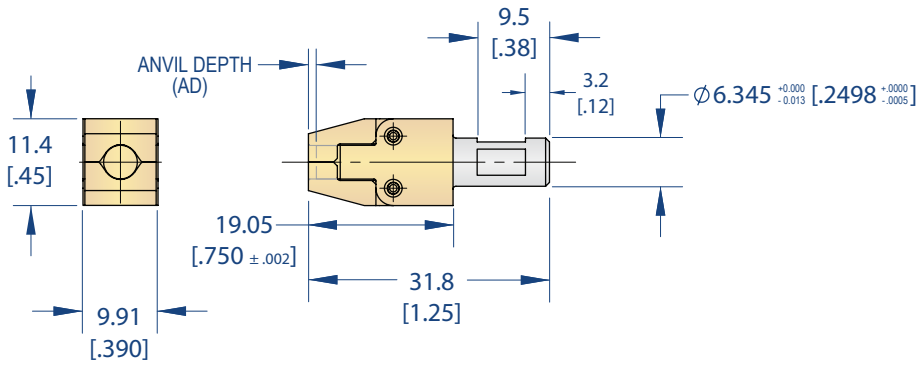

## Short Insert Die

| AD | Standard |
|---|---|
| .020 | PD217300B |
| .025 | PD217300C |
| .030 | PD217300D |
| .035 | PD217300E |
| .040 | PD217300F |
| .045 | PD217300G |
| .050 | PD217300H |
| .055 | PD217300J |



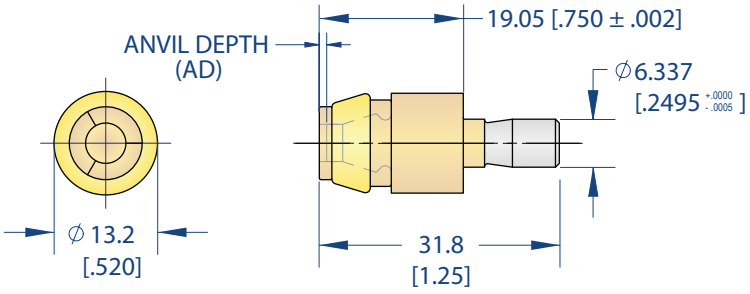
## Style “A” Two Bladed Die

| AD | Standard |
|---|---|
| .020 | PD204200B |
| .025 | PD204200C |
| .030 | PD204200D |
| .035 | PD204200E |
| .040 | PD204200F |
| .045 | PD204200G |
| .050 | PD204200H |
| .055 | PD204200J |



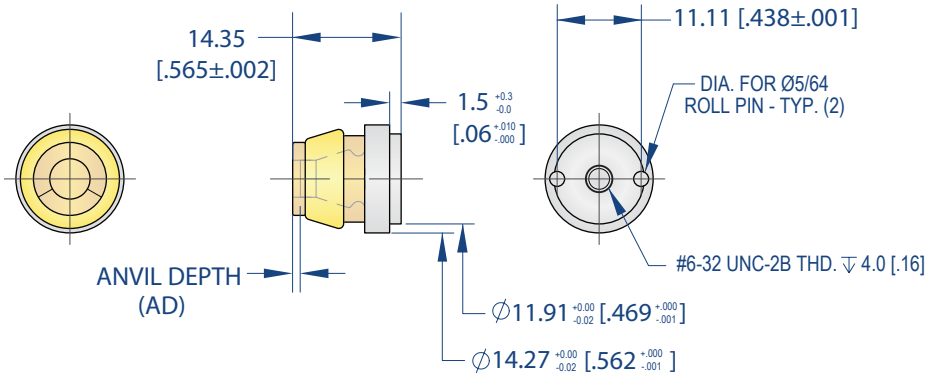
## Style "A" Die

| AD | Standard | Aluminum |
|---|---|---|
| .020 | 003933 | N/A |
| .025 | 003940 | 019387 |
| .030 | 003947 | 017897 |
| .035 | 003954 | 017898 |
| .040 | 003961 | 017899 |
| .045 | 003969 | 017900 |
| .050 | 003977 | 017901 |
| .055 | 004037 | 017902 |
| .060 | 006601 | 017903 |



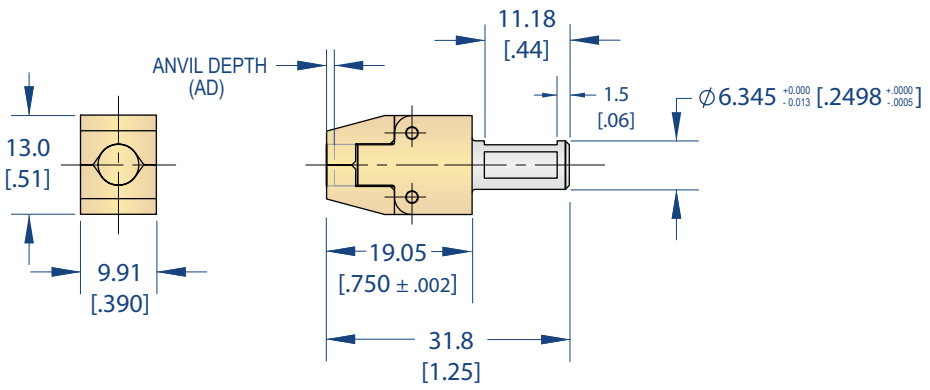

## Short Insert Die

| AD | Standard | Aluminum |
|---|---|---|
| .025 | 018062 | N/A |
| .030 | 013264 | 017917 |
| .035 | 013265 | 017918 |
| .040 | 013266 | 017919 |
| .045 | 013267 | 017920 |
| .050 | 013268 | 017921 |
| .055 | 013269 | 017922 |
| .060 | 013270 | 017923 |



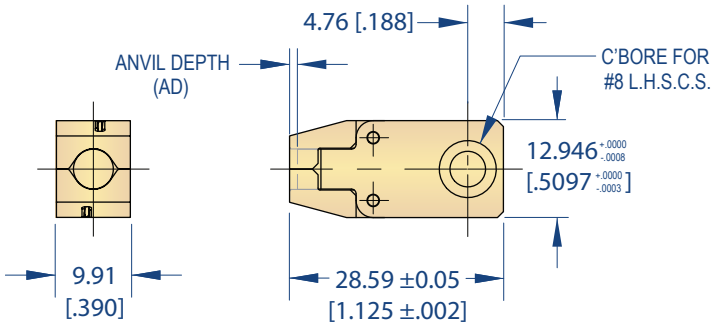
## Style “A” Two Bladed Die

| AD | Standard |
|---|---|
| .030 | 014858 |
| .035 | 014859 |
| .040 | 014860 |
| .045 | 014861 |
| .050 | 014862 |
| .055 | 014863 |
| .060 | 014864 |



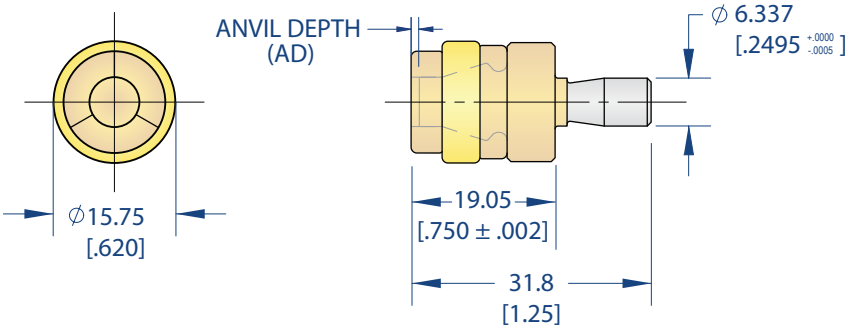

## Two Bladed Combo Block Die

| AD | Standard |
|---|---|
| .025 | 017556 |
| .030 | 013405 |
| .035 | 013406 |
| .040 | 013407 |
| .045 | 013408 |
| .050 | 013409 |
| .055 | 013410 |
| .060 | 013411 |



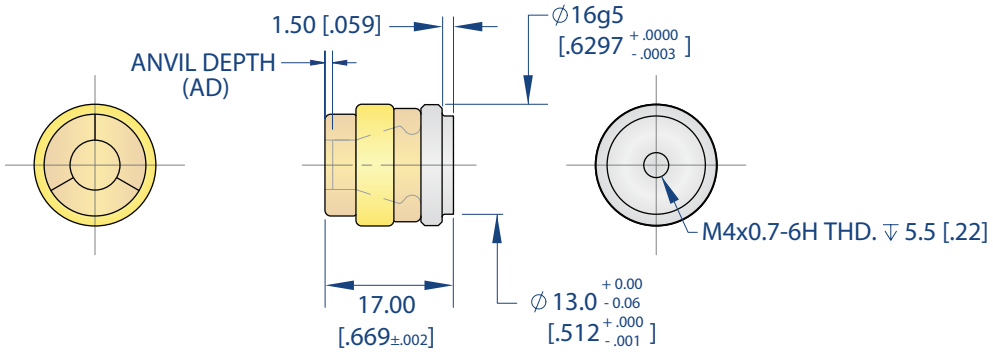
## Style “A” Die

| AD | Standard |
|---|---|
| .025 | 739100B |
| .030 | 739100C |
| .035 | 739100D |
| .040 | 739100E |
| .045 | 739100F |
| .050 | 739100G |
| .055 | 739100H |
| .060 | 739100J |
| .065 | 739100K |
| .070 | 739100L |



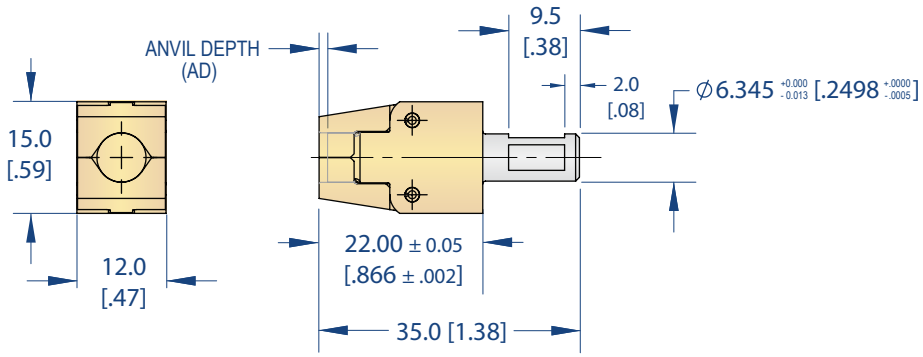

## Short Insert Die

| AD | Standard |
|---|---|
| .025 | 742200B |
| .030 | 742200C |
| .035 | 742200D |
| .040 | 742200E |
| .045 | 742200F |
| .050 | 742200G |
| .055 | 742200H |
| .060 | 742200J |
| .065 | 742200K |
| .070 | 742200L |



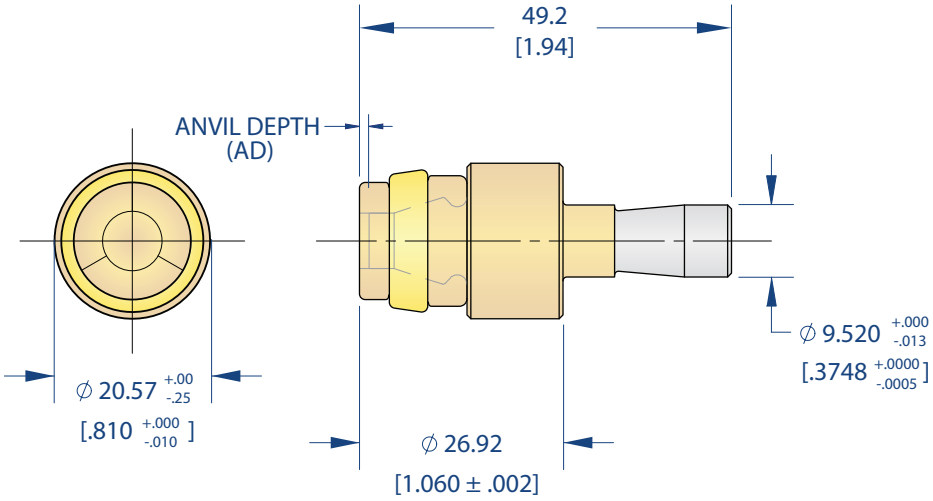
## Style “A” Two Bladed Die

| AD | Standard |
|---|---|
| .025 | PD239200B |
| .030 | PD239200C |
| .035 | PD239200D |
| .040 | PD239200E |
| .045 | PD239200F |
| .050 | PD239200G |
| .055 | PD239200H |
| .060 | PD239200J |
| .065 | PD239200K |
| .070 | PD239200L |



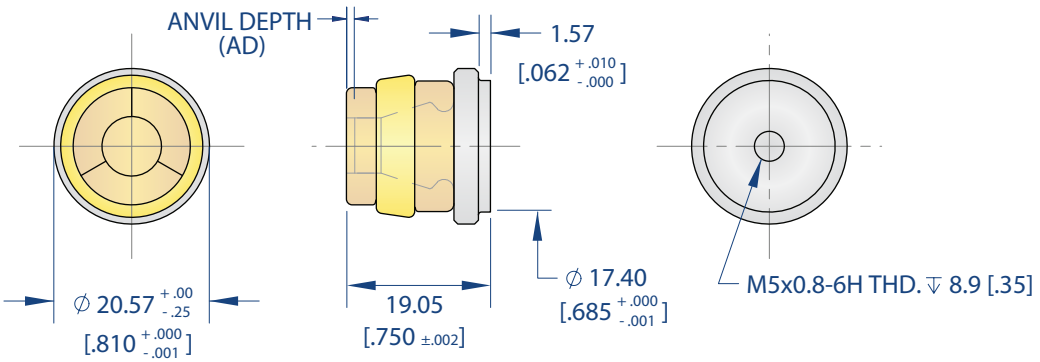
## Style “A” Die

| AD | Standard | Aluminum |
|---|---|---|
| .020 | 016124 | 018309 |
| .025 | 016125 | 018310 |
| .030 | 013908 | 018311 |
| .035 | 013909 | 018312 |
| .040 | 013910 | 018313 |
| .045 | 013911 | 018314 |
| .050 | 013912 | 018315 |
| .055 | 013913 | 018316 |
| .060 | 013914 | 018317 |
| .065 | 013915 | 018318 |
| .070 | 013916 | 018319 |
| .075 | 013917 | 018320 |
| .080 | 013918 | 018321 |
| .085 | 013919 | N/A |
| .090 | 013920 | N/A |



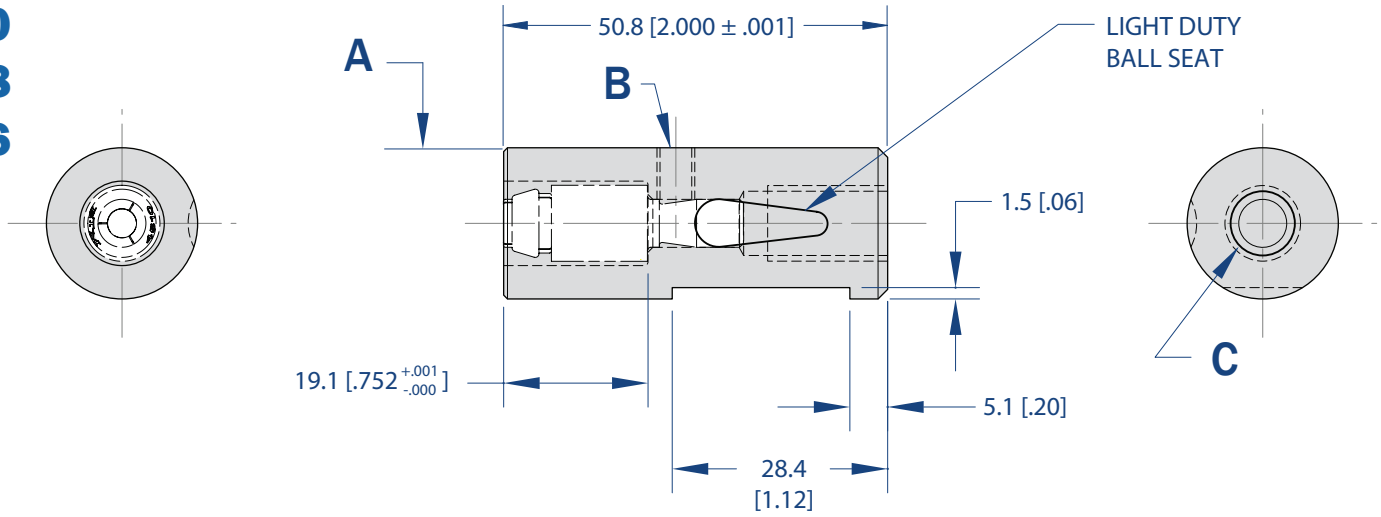
## Short Insert Die

| AD | Standard | Aluminum |
|---|---|---|
| .025 | 017460 | 018178 |
| .030 | 015072 | 018179 |
| .035 | 015073 | 018180 |
| .040 | 015074 | 018181 |
| .045 | 015075 | 018182 |
| .050 | 015076 | 018183 |
| .055 | 015077 | 018184 |
| .060 | 015078 | 018185 |
| .065 | 015079 | 018186 |
| .070 | 015080 | 018187 |
| .075 | N/A | 018188 |
| .080 | 017308 | 018189 |



## Style "A" Die Holders - For Three Blade Elastomer style "A" dies.

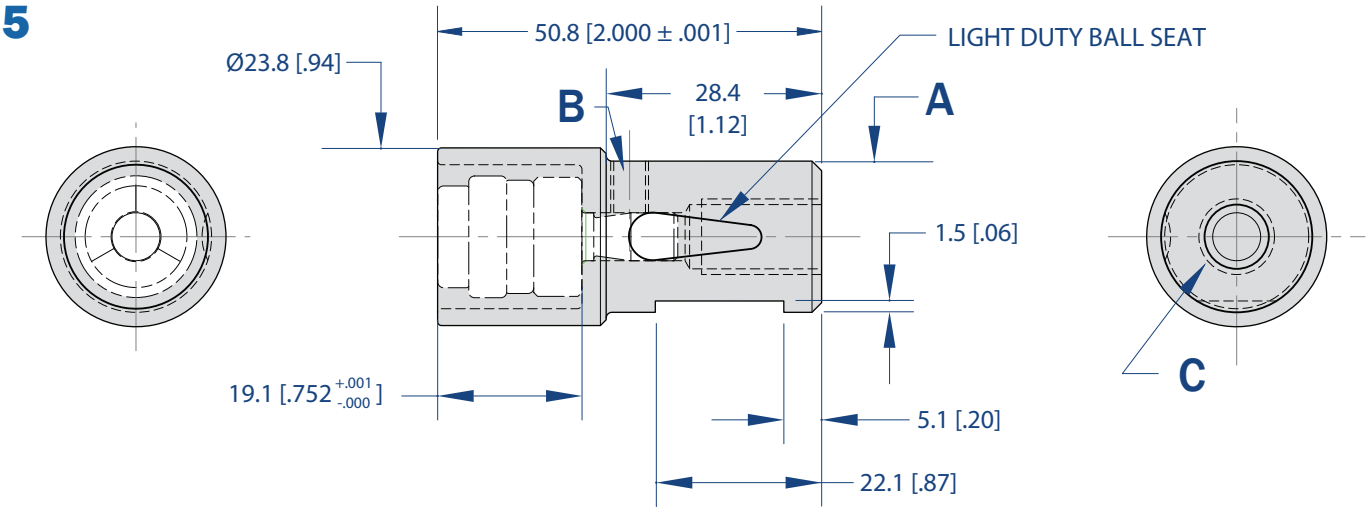
**3.0**
**3.8**
**4.6**




| Tooling Size | Mounting Type | A | B | C | Order No. |
|---|---|---|---|---|---|
| 3.0 | Metric | Ø 20H6 [.7874" +.0000 -.0005] | M5x0.8-6H TAP | M10x1.5 THD-6H ~ 15.8 [.62"] DP. | 018891 |
| | Imperial | Ø 19.042 [.7497" +.0000 -.0004] | #10-32 UNF-2B TAP | 3/8-24 UNF -2B TAP ~ 15.8 [.62"] DP. | 013681 |

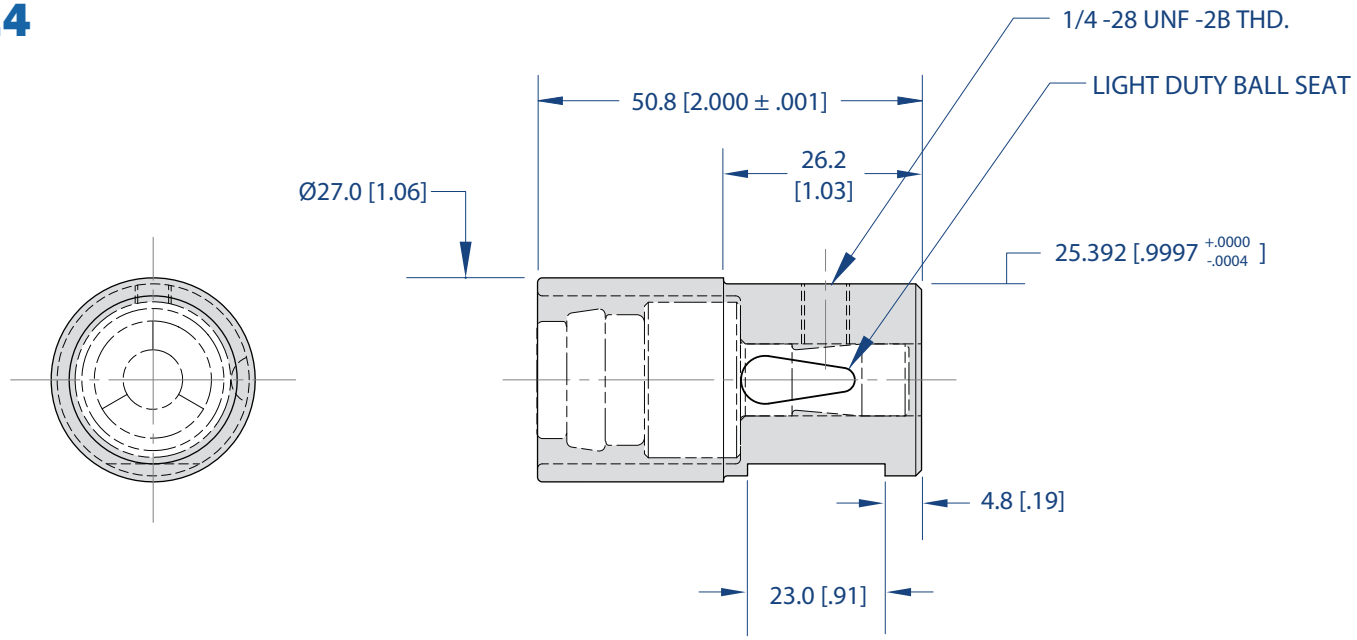
| Tooling Size | Mounting Type | A | B | C | Order No. |
|---|---|---|---|---|---|
| 3.8<br>4.6 | Metric | Ø 20H6 [.7874" +.0000 -.0005] | M5x0.8-6H TAP | M10x1.5 THD-6H ~ 15.8 [.62"] DP. | 018892 |
| | Imperial | Ø 19.042 [.7497" +.0000 -.0004] | #10-32 UNF-2B TAP | 3/8-24 UNF -2B TAP ~ 15.8 [.62"] DP. | 007689 |

**5.5**



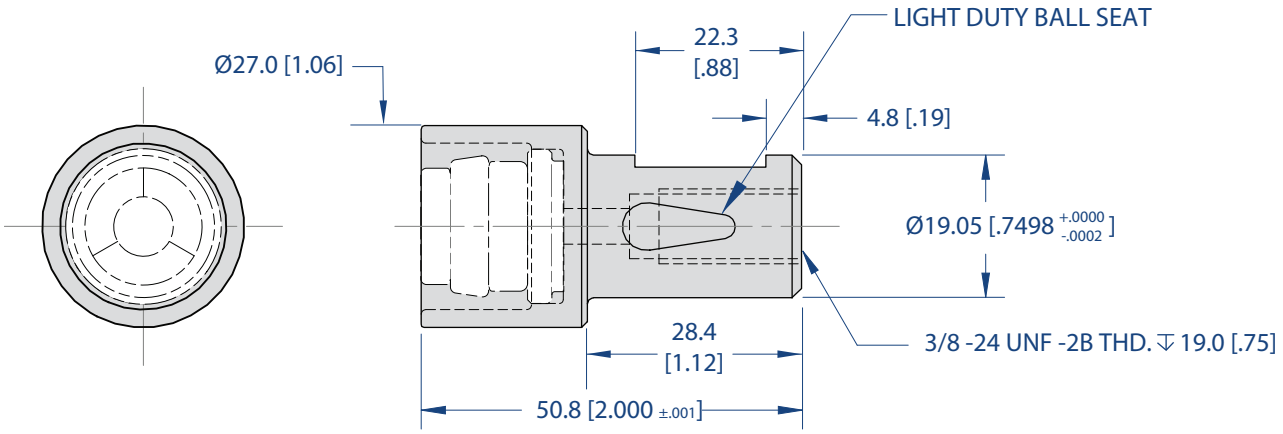

| Mounting Type | A | B | C | Order No. |
|---|---|---|---|---|
| Metric | Ø 19.992 (.7871" +.0000 -.0005) | M5x0.8-6H TAP | M10x1.5 -6H TAP ~ 15.8 [.62"] DP. | 018893 |
| Imperial | Ø 19.045 (.7498" +.0000 -.0002) | M5x0.8-6H TAP | 3/8-24 UNF -2B TAP ~ 15.8 [.62"] DP. | 013888 |

## 6.4




| Mounting Type | A | Order No. |
|---|---|---|
| Imperial | 6.35 (.25") -2B THD ~ 12.7 (.50) DP. | 013906 |

## Short Insert Die Holder - For Three Blade Elastomer Short Insert Dies.




| Tool Size | Mounting Type | Order No. |
|---|---|---|
| 6.4 | Imperial | 015097 |

## 3 Blade Elastomer Die Assembly

The location tolerance to the centerline of the die hole should be ±0.013mm [±.0005”].

3 bladed Style “A” dies require a knock out hole from the back side.

3 bladed Style “A” dies should have as much perimeter guarding protecting the blades as possible.

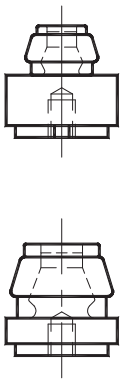
360º of guarding is preferred, but not necessarily required.
Contact BTM for more information.

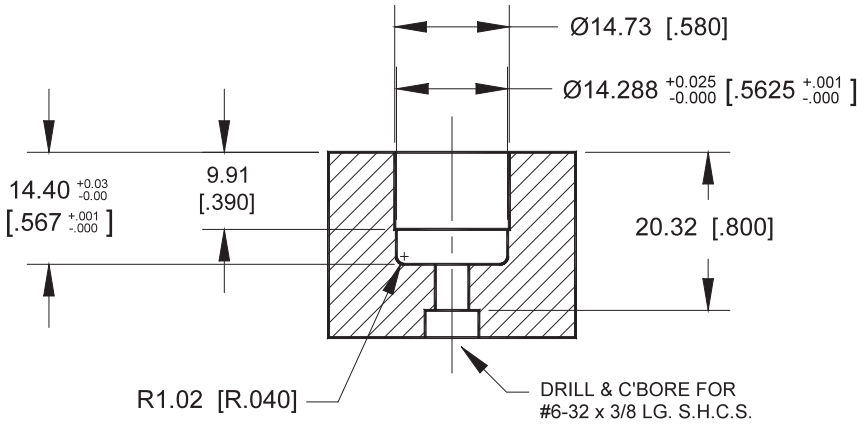
**GUARDING ALTERED FROM STANDARD**



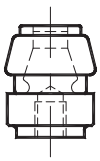


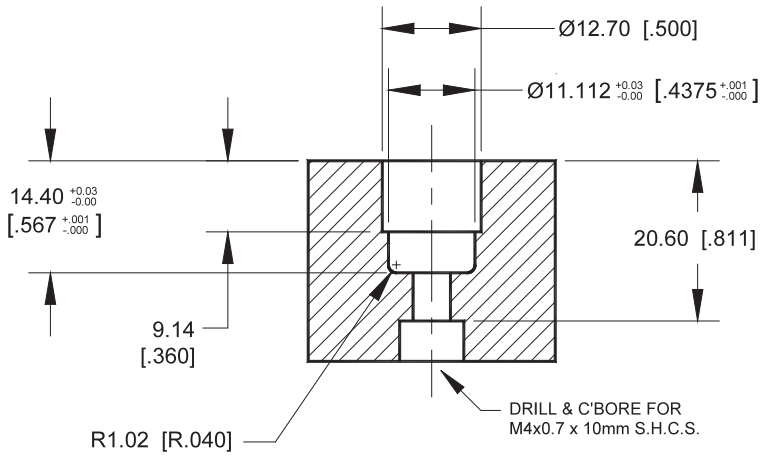
## 3.0 & 4.6 Short Insert Die Mounting



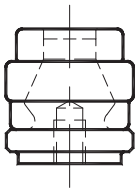


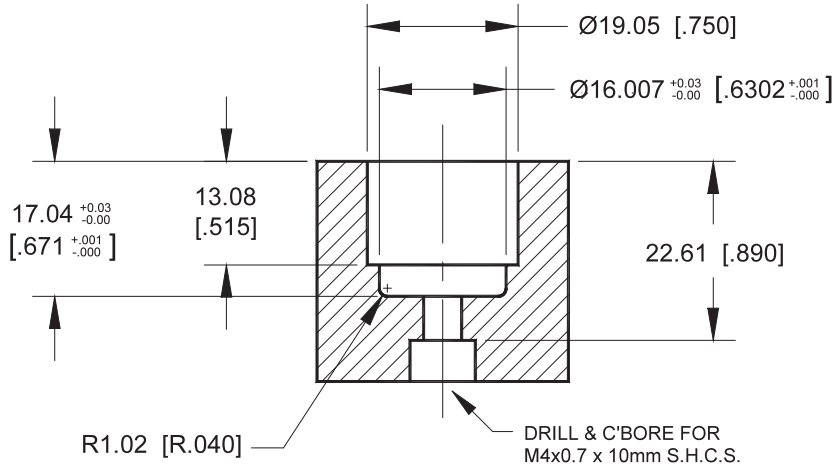

## 3.8 Short Insert Die Mounting



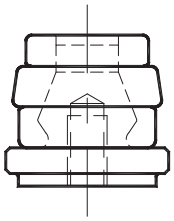


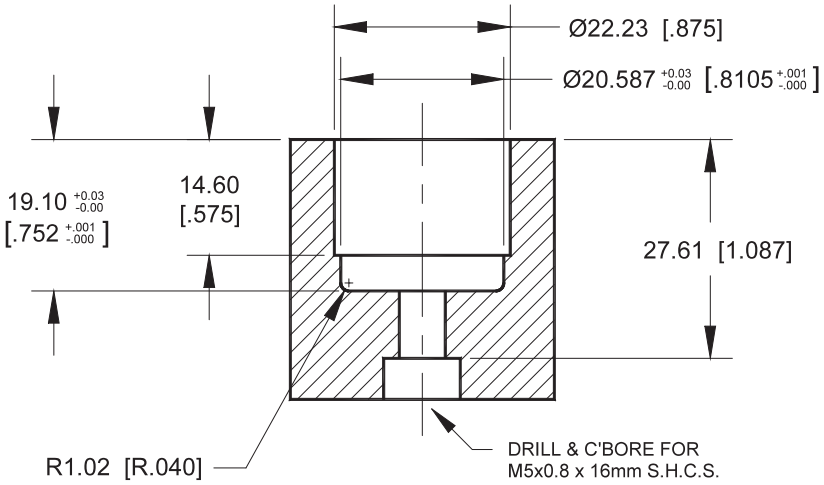
## 5.5 Short Insert Die Mounting



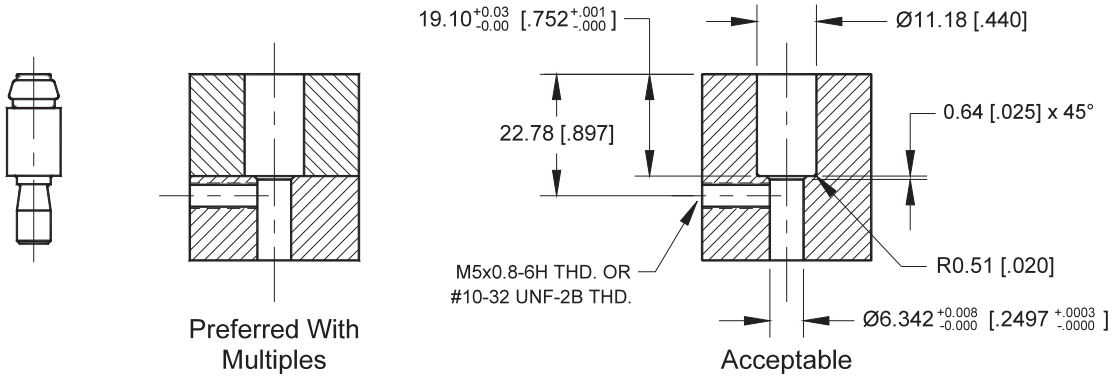



## 6.4 Short Insert Die Mounting

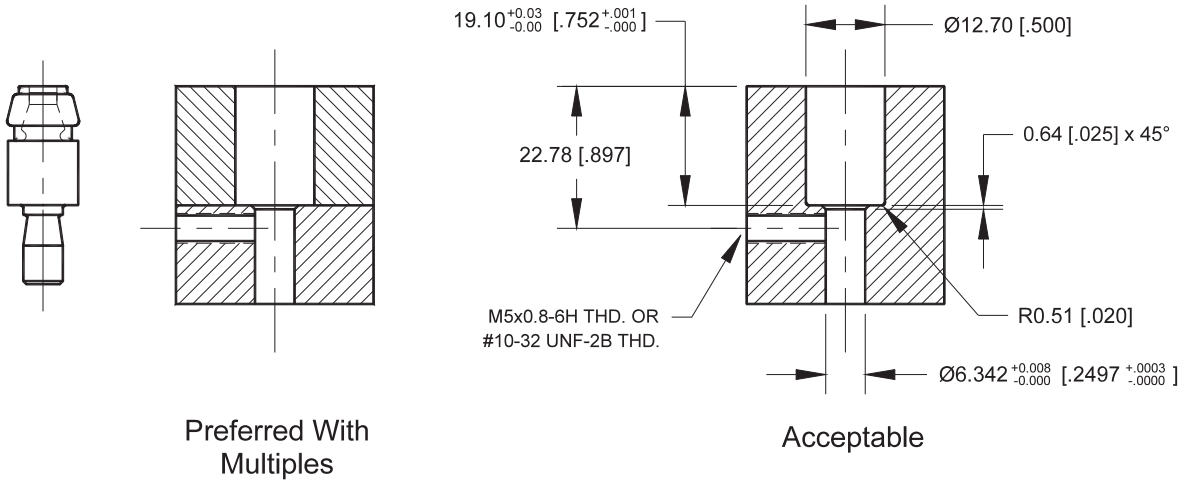




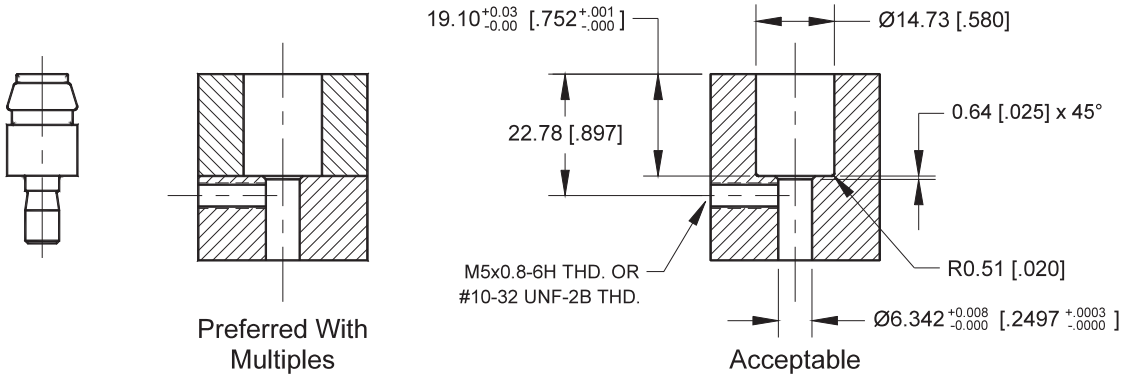
## **3.0** Style "A" Die Mounting



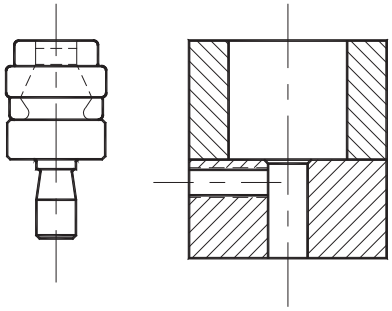

## **3.8** Style "A" Die Mounting



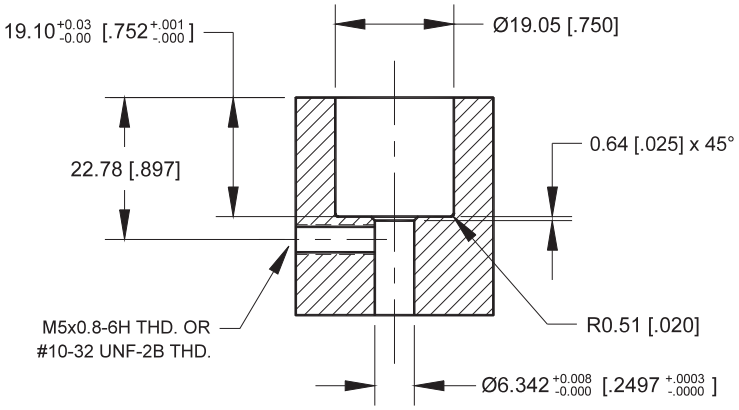

## **4.6** Style "A" Die Mounting



## 5.5 Style “A” Die Mounting

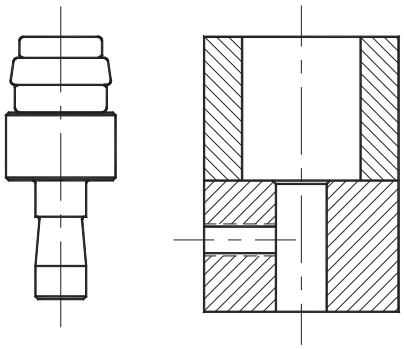


Preferred With Multiples

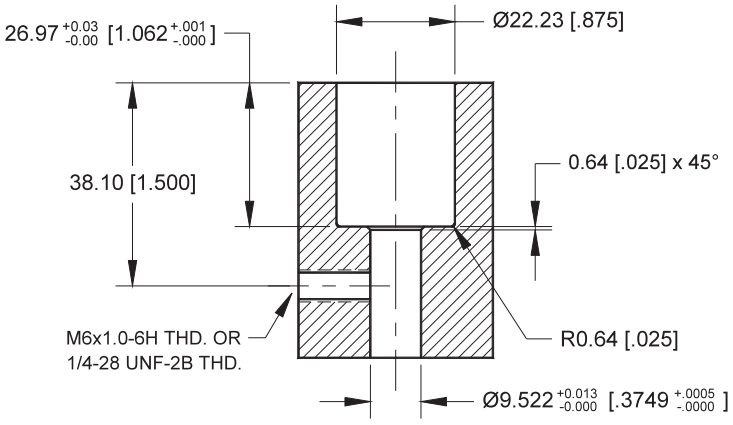



Acceptable

## 6.4 Style “A” Die Mounting



Preferred With Multiples



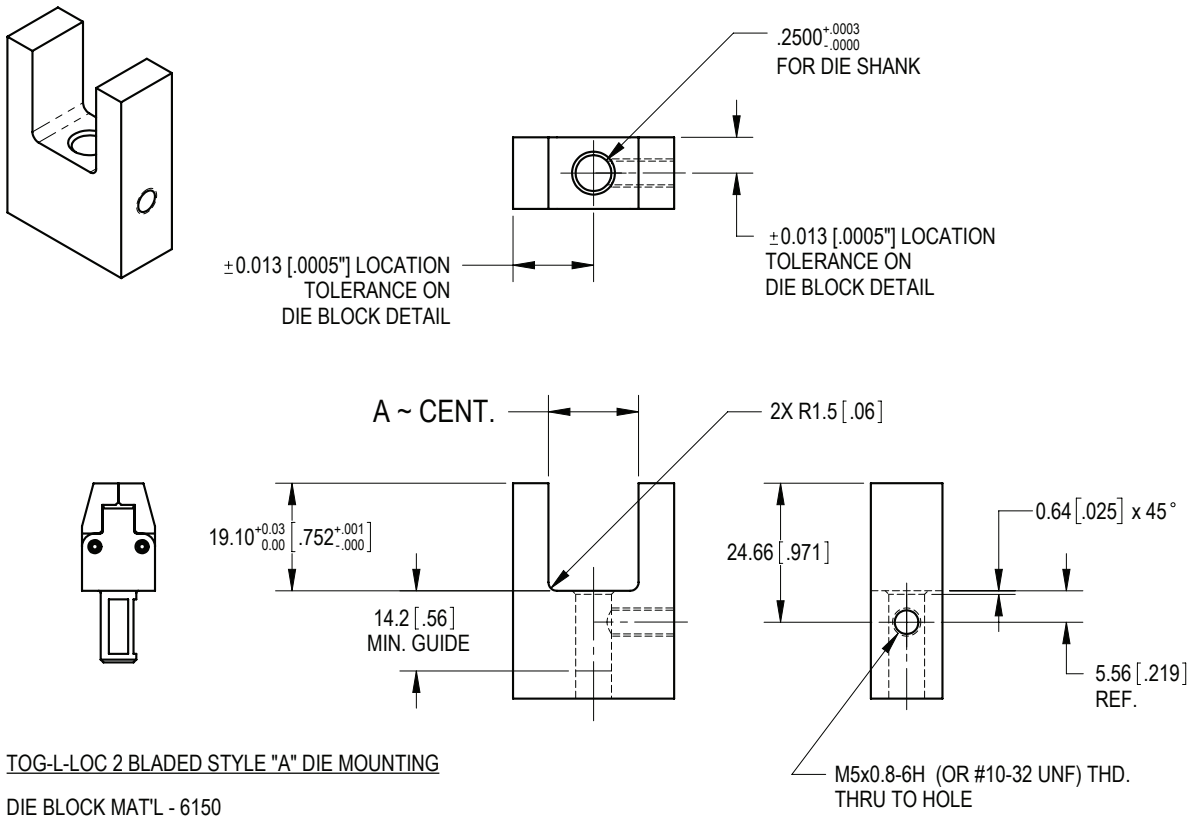

Acceptable

## Two Blade Die Assembly

**2 bladed dies require a clearance pocket for the blades to open freely.**

**The locational tolerance to the centerline of the die should be ±0.013 [.0005”].**

## 3.0 Style “A” Die Mounting
## 3.8
## 4.6




TOG-L-LOC 2 BLADED STYLE "A" DIE MOUNTING

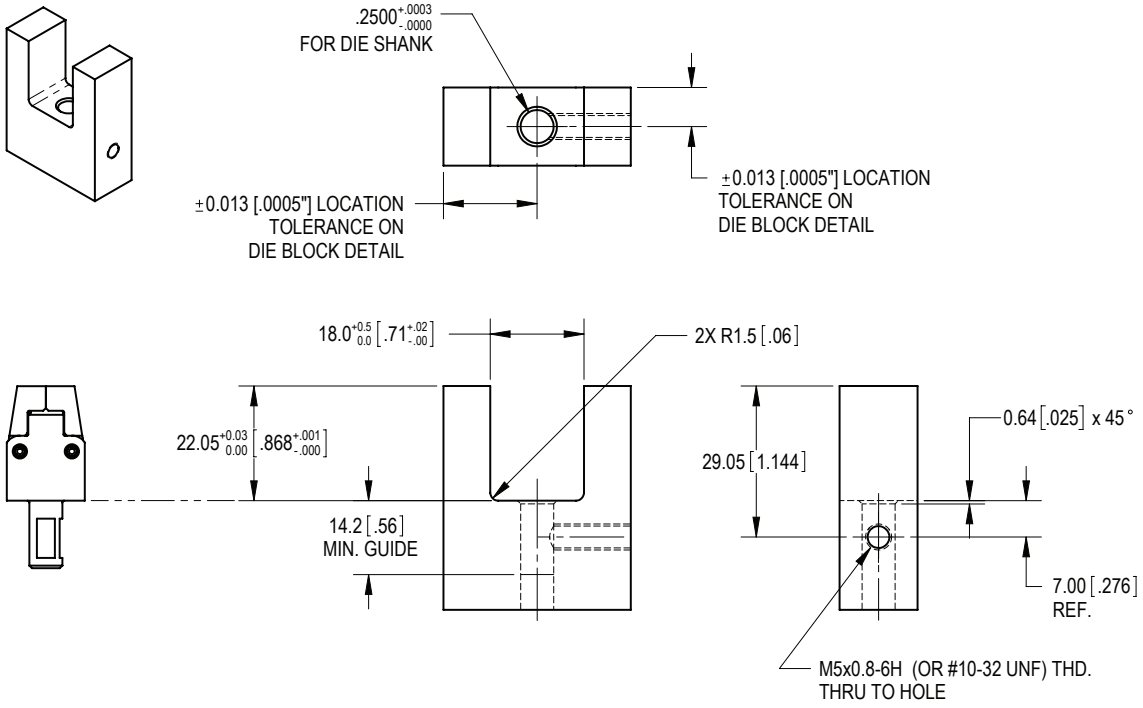
DIE BLOCK MAT'L - 6150
DIE BLOCK HARDNESS - Rc 50-54

| Tooling Size | A |
|---|---|
| 3.0 | 14.5 +0.5 -0.0 (.57” +.02 -.00 ) |
| 3.8 | 14.5 +0.5 -0.0 (.57” +.02 -.00 ) |
| 4.6 | 16.0 +0.5 -0.0 (.63” +.02 -.00 ) |

NOTE:

DRAWING PROVIDES DIE MOUNTING DIMENSIONS AND SPECIFICATIONS ONLY. DESIGN OF REMAINDER OF DIE BLOCK IS BASED ON SPECIFIC CUSTOMER APPLICATION.

## 5.5




5.5 TOG-L-LOC 2 BLADED STYLE "A" DIE MOUNTING

REF. BTM DIE ASSEMBLY #PD239200A

DIE BLOCK MAT'L - 6150
DIE BLOCK HARDNESS - Rc 50-54

NOTE:

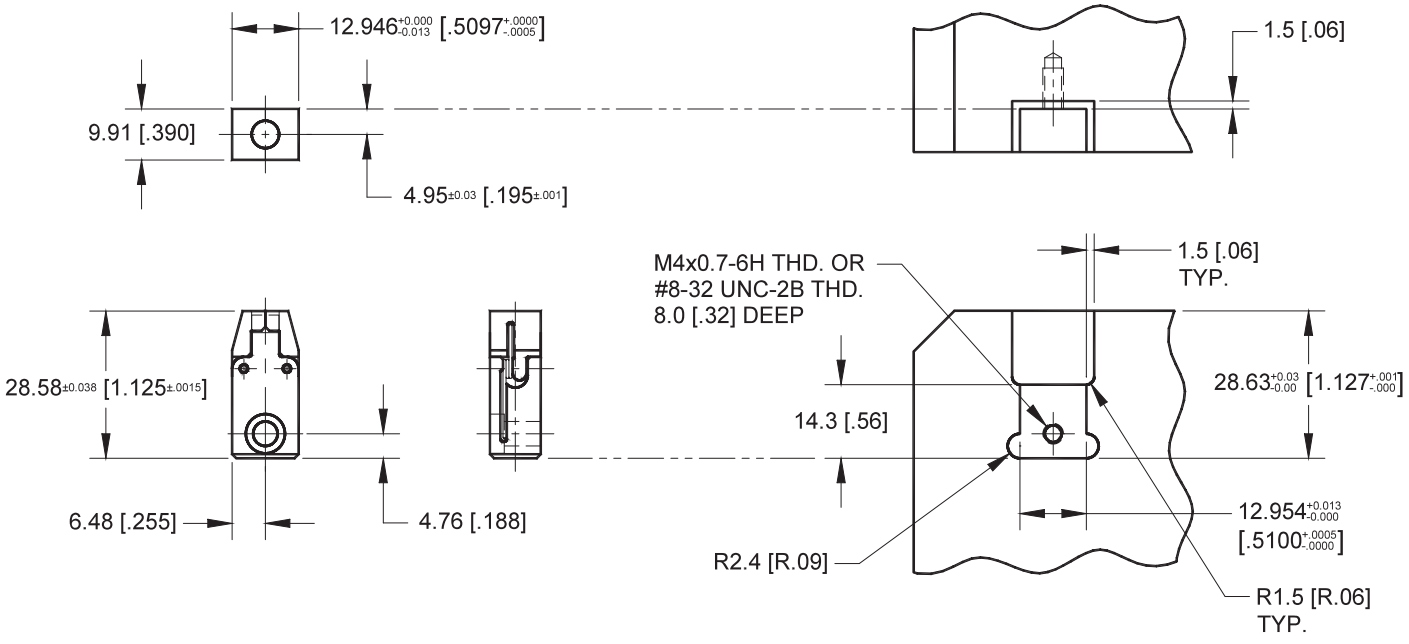
DRAWING PROVIDES DIE MOUNTING DIMENSIONS AND SPECIFICATIONS ONLY. DESIGN OF REMAINDER OF DIE BLOCK IS BASED ON SPECIFIC CUSTOMER APPLICATION.

# 3.0 Combo Block Mounting

## 4.6

**A hardened die block or anvil should be used; preferably 4150HT steel.**

**TOP OF DIE BLADES MUST BE FLUSH WITH SURROUNDING AREA FOR PROTECTION.**



BTM KOREA

BTM has a wide range of products for applying Tog-L-Loc® tooling including:

## Handheld Units



BTM's handheld units are an economical approach to fastening sheet metal assemblies. Pneumatic, Hydraulic, and Self-Contained Units in a variety of styles are available. The units can be set up to join a range of thicknesses or optimized for a specific metal thickness.

## Die Sets



Tog-L-Loc® tooling can be inexpensively designed into single or compound motion die set packages.

## Universal Presses



Universal presses are hydraulically operated presses that easily adapt to join a variety of parts.

## Special Fixtures



Manually loaded and unloaded dedicated tooling can be built for a single part or a family of parts.

## Specialized Units



BTM provides pneumatic, hydraulic, air/oil, and electrically driven units with single or dual motions for both stationary and robotic applications.

## Special Systems



Achieve faster cycle times with automatic parts handling and/or by combining processes.

For more information, or to see our full line of products, please visit:

# www.BTMKOREA.com