

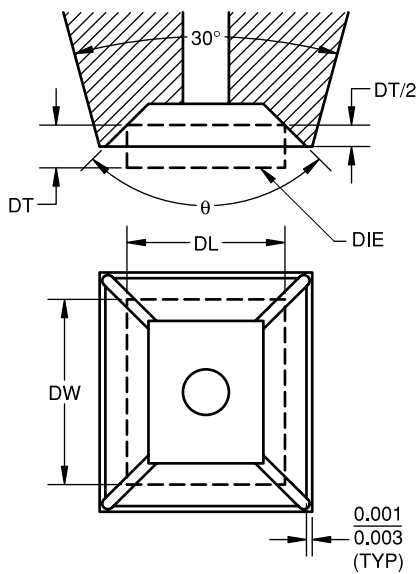
Eutectic die collets are used to attach the die to a substrate. Die collets are designed to pick up the die by the edges, not the face. The inside of the collets have slanted sides, usually 90° but can be user specified as needed. Four-sided collets are referred to as “inverted pyramid” style and two-sided collets are known as “channel” design.

The four-sided collet has the advantage of absolute control of positioning of the die because it is contained on all four sides.

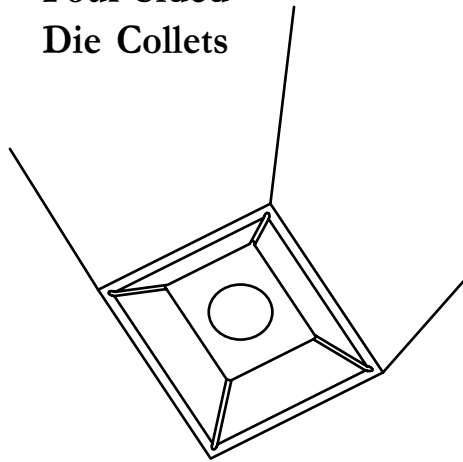
The two-sided channel design is advantageous because of the additional clearance on each end used to place the die adjacent to a wall or another device.

Both collets are manufactured so that 50% of the die thickness is engaged and 50% is exposed (of the die thickness specified in the part number). Under some conditions, either the eutectic or epoxy material may extrude up onto the collet face and contaminate it. To eliminate this problem, the collet should be ordered by calling out a thinner die size than is actually being used. The collet will be made with smaller and allow for more of the die to be exposed away from the face.

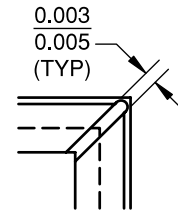
All die collets are available on shanks listed on the shank styles pages for die collets and vacuum pick-up tools. If a particular shank is not listed, Gaiser Tool Co. can manufacture it per customer specifications.



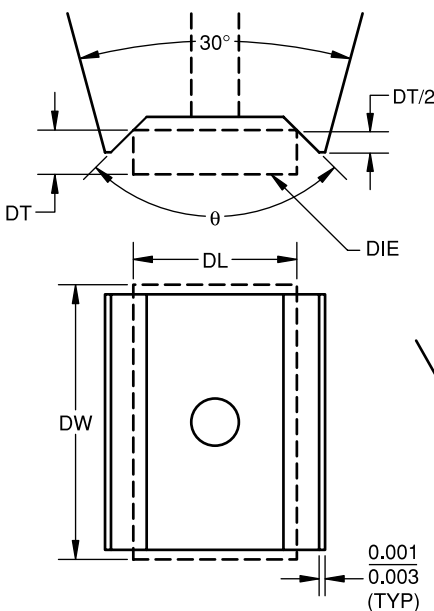
**3600 Series
 Four-Sided
 Die Collets**



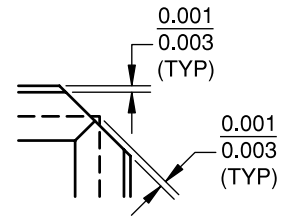
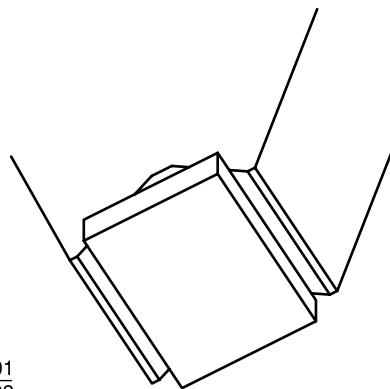
Corner Reliefs



Internal Corner Reliefs
 Standard for Small Collets



**3700 Series
 Two-Sided
 Die Collets**



External Corner Reliefs
 Standard for Large Collets
 (0.060 x 0.060 or larger die size)

On the 3700 two-sided die collet, the DW is contacted (touched) by the collet. The DL is not contacted by the collet. The vacuum leaks at the DL side.

Specify: Series/Shank Style - Shank Length - Inside Wall Angle - Die Length - Die Width - Die Thickness - Options

Example:

3602-750-90-055-065-005

3702-500-90-055-095-010

Dimensions in inches unless otherwise specified

The flat face series vacuum pick-up tools hold the die against the face of the tool and are used for die attach. Generally, this process is used for epoxy die attach but can be used in some cases for eutectic bonding on smaller die sizes.

Tungsten carbide can be used for the tip material but may cause undesirable scratching on the die surface in some cases. When die scratching is a concern, Vespel or Delrin plastic-tipped tools are recommended.

Delrin is the softest of the materials but can be easily damaged if mishandled. Also, Delrin can pick up a static charge which may be detrimental to some types of devices such as CMOS.

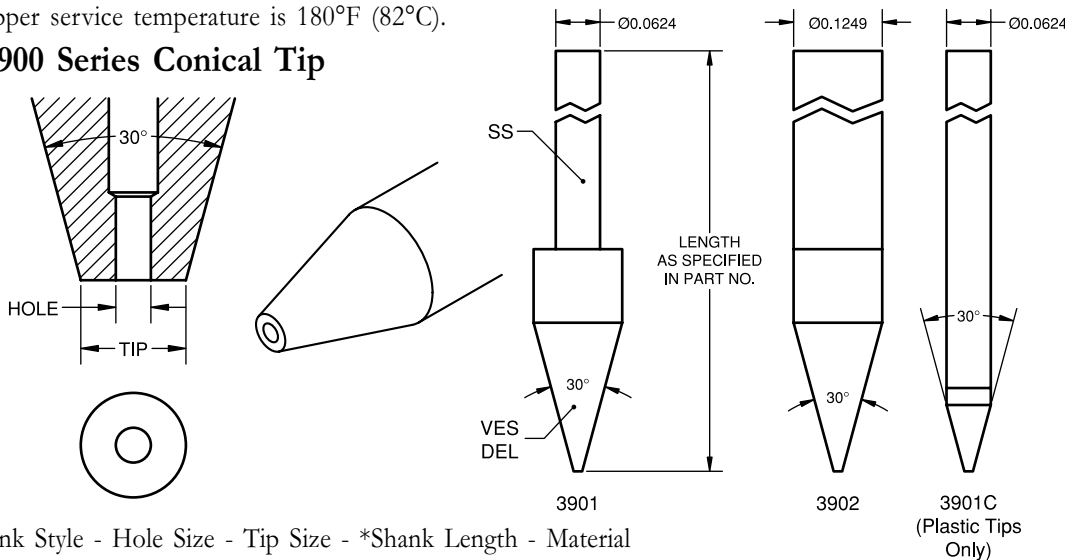
Delrin's upper service temperature is 180°F (82°C).

Vespel is a more durable, rigid plastic that generally does not hold a static charge and is rated for continuous operation at 500°F (260°C).

If the die is rotating during pick-up with a larger die, then a rectangular face pick-up tool may be used to help reduce the problem.

All vacuum pick-up tools are available on shanks listed on the shank styles pages for die collets and vacuum pick-up tools. If a particular shank is not listed, Gaiser Tool Co. can manufacture it per customer specifications.

3900 Series Conical Tip



TYPICAL TIP CONFIGURATIONS	
HOLE DIAMETER in./μ	TIP DIAMETER in./μ
.005/127	.010/254
.006/152	.012/305
.008/203	.012/305
.008/203	.014/356
.010/254	.018/457
.010/254	.025/635
.015/381	.030/762
.020/308	.040/1016

Specify:

Series/Shank Style - Hole Size - Tip Size - *Shank Length - Material

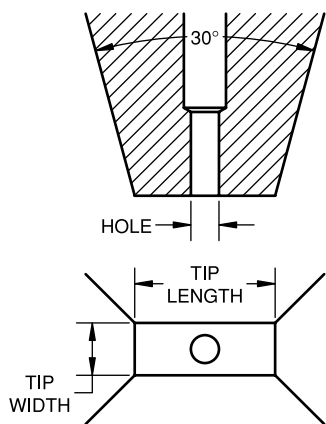
Example:

3901-006-012-625-DEL

*Specify length for 01, 02, & 60 shanks only

VES, DEL, or WC material. Polish face standard for WC material

3800 Series Rectangular Tip



Specify:

Series/Shank Style - Hole - Tip Length - Tip Width - *Length - Matl

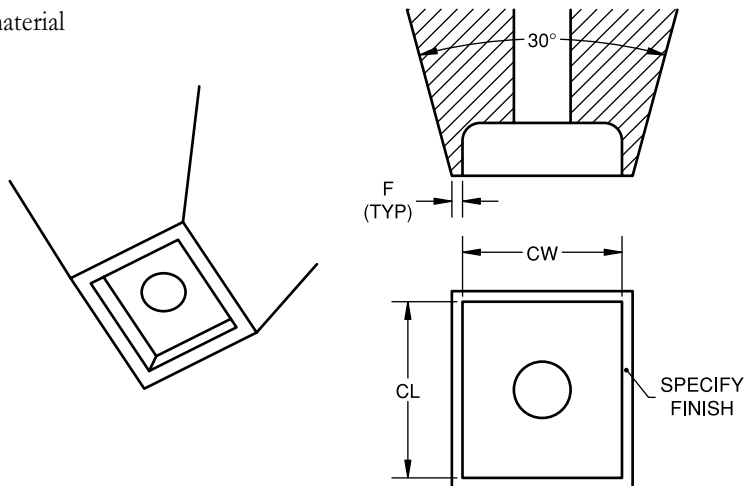
Example:

3802-010-025-035-750-VES

*Specify length for 01, 02, & 60 shanks only

VES or WC only. Polish face standard for WC material

3300 Series Perimeter Pick-Up



Specify:

Series/Shank Style - *Shank Length - CL - CW - F - Finish

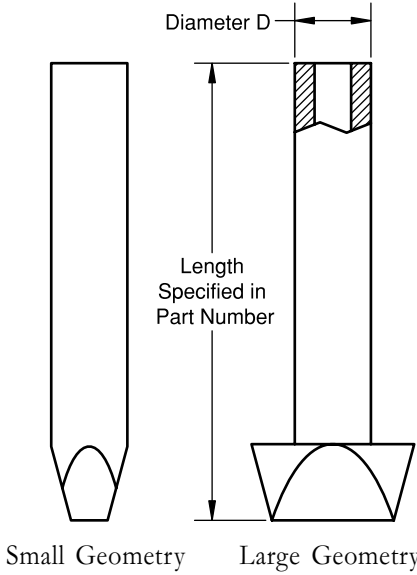
Example:

3302-1.0-050-040-003-P

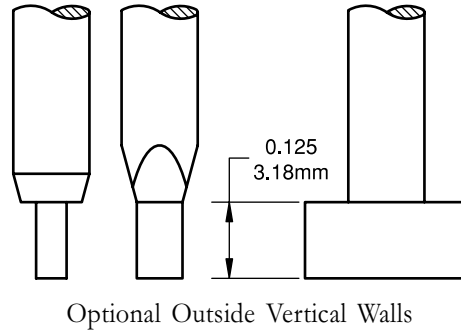
*Specify length for 01, 02, & 60 shanks only

**P=Polish GM=Gaiser Matte

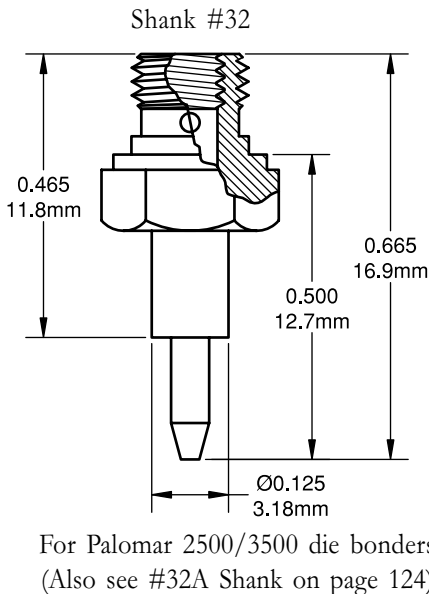
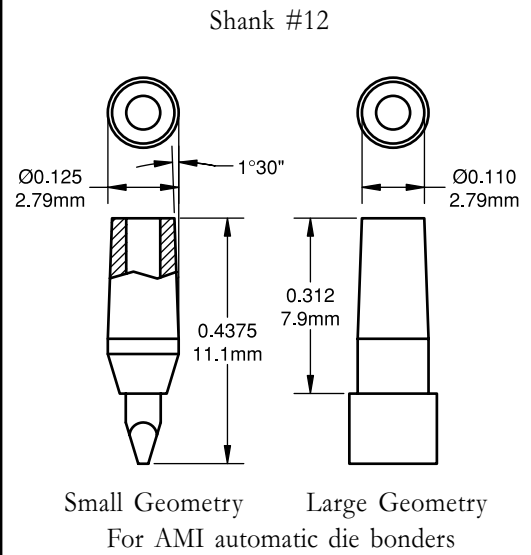
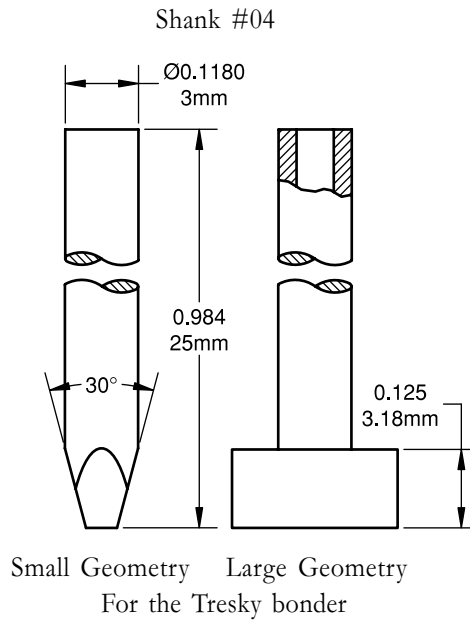
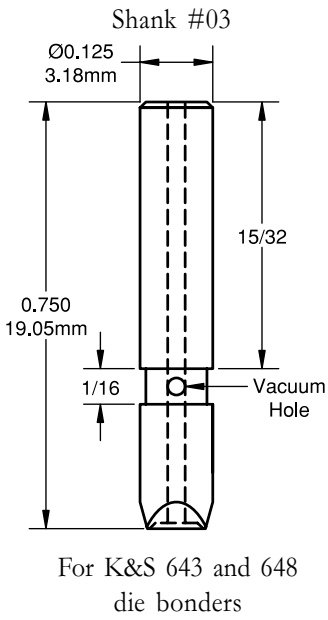
WC only



SHANK NUMBER	DIAMETER D in./mm
01	.0625/1.58
02	.125/3.18

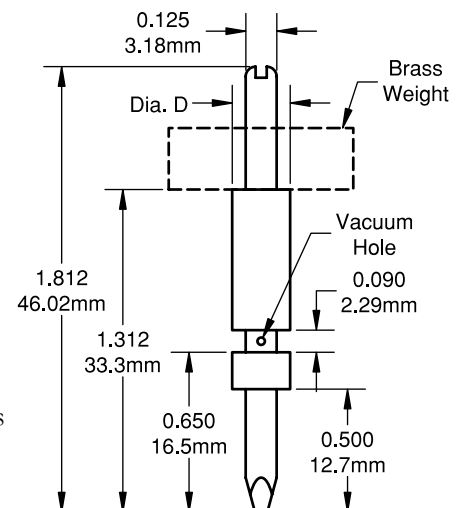


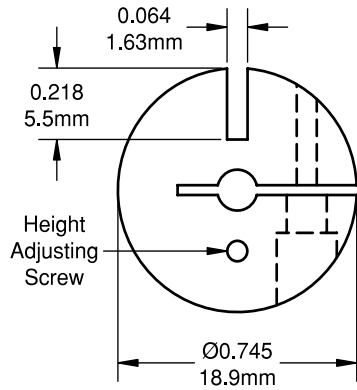
MACHINE	SHANK NUMBER	LENGTH in./mm
Esec	01	.315/8.00
West Bond 7300	01	Specify
K&S 642	02	.750/19.05
Mech El 703	02	.750/19.05
Mullen 8-140	02	.750/19.05
SEC 4000	02	1.00/25.4



SHANK NUMBER	DIAMETER D in./mm
21	.125/3.18
22	.187/4.75
23	.234/5.94
24	.312/7.92

For Mullen/Unitek die bonders
 Model 8-157 heated

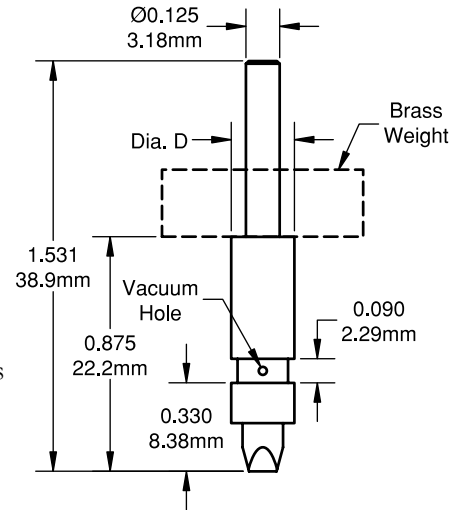




Weights used with collet shanks #21 through #29, #62, and #63 (ordered separate)

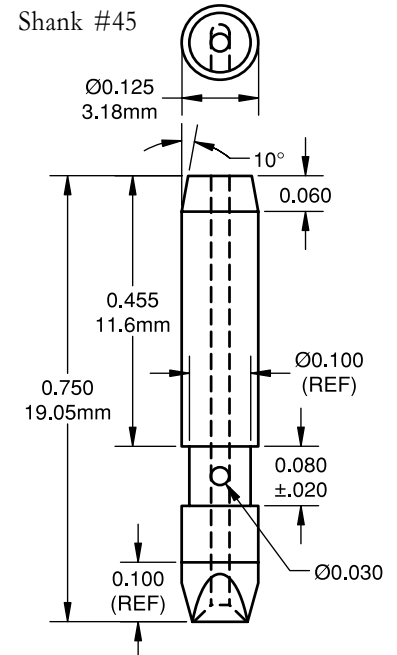
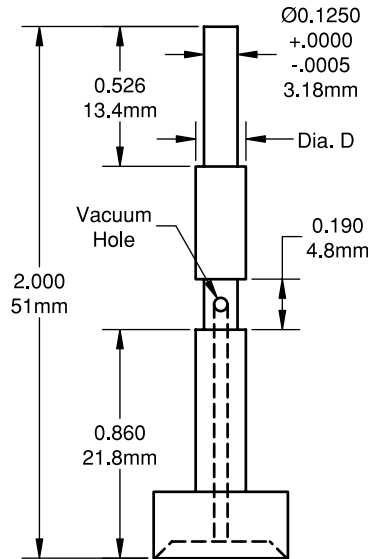
SHANK NUMBER	DIAMETER D in./mm
25	.125/3.18
26	.187/4.75
27	.234/5.94
28	.312/7.92
63	.500/12.7

For Mullen/Unitek die bonders Model 8-140 heated



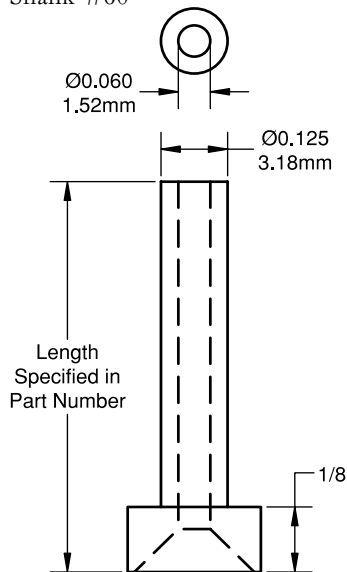
SHANK NUMBER	DIAMETER D in./mm
29	.125/3.18
62	.312/7.92

For Mullen/Unitek die bonders Model 8-140 heated



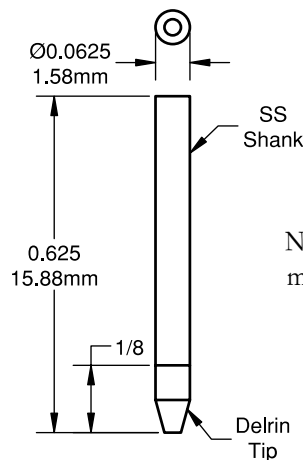
Combination for Mech El 703 and K&S 643 die bonders

Shank #60

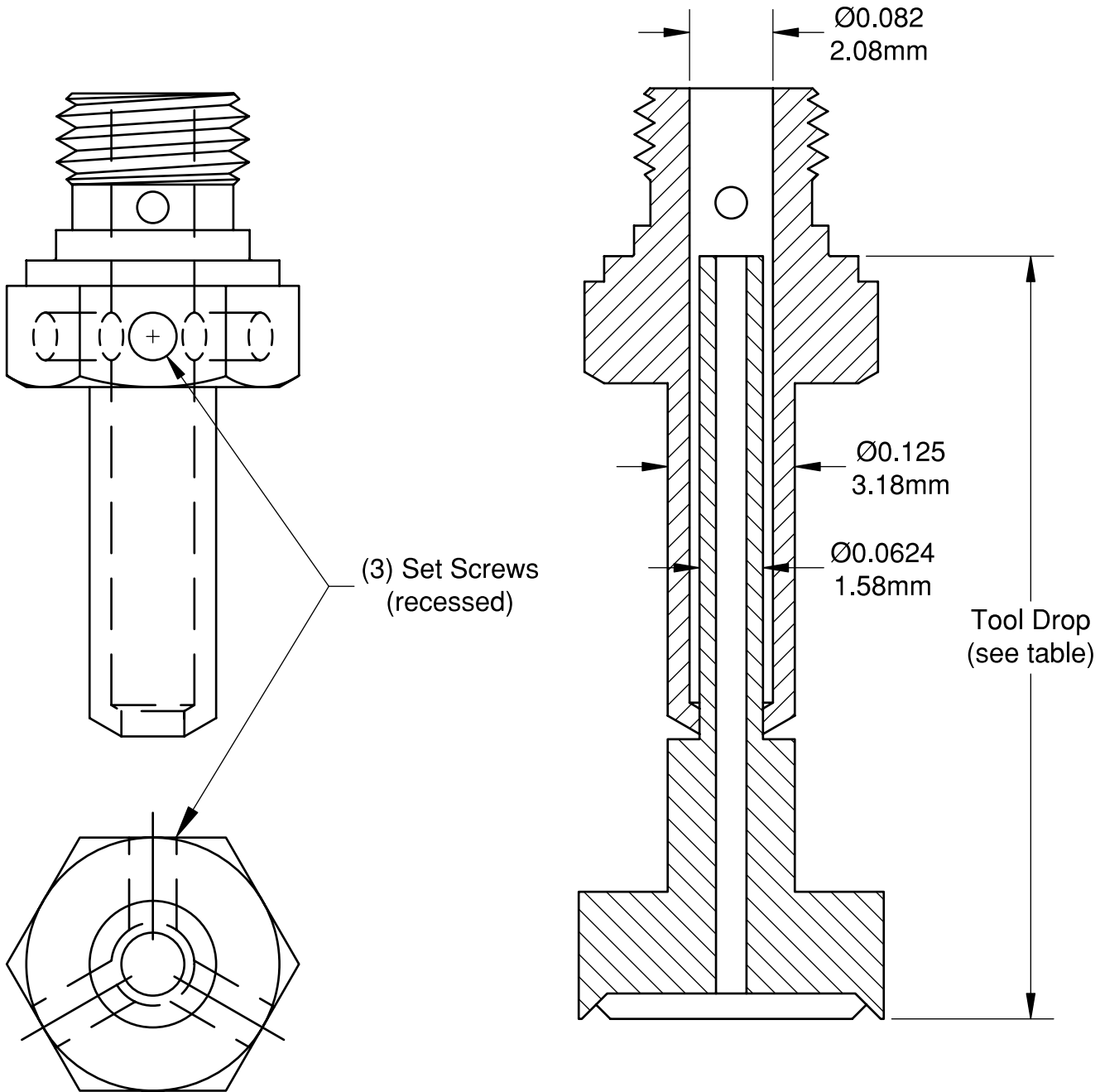


For the K&S 6300 bonder

Shank #61



Note: For other lengths or materials, use 3901C shank

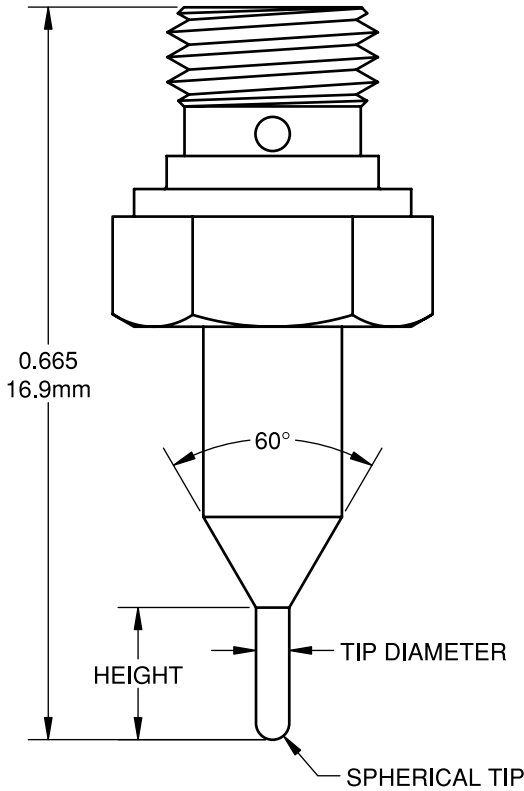


Specify: 3632A or 3732A - Tool Drop - Inside Wall Angle - Die Length - Die Width - Die Thickness
 3832A - Tool Drop - Hole Diameter - Tip Length - Tip Width - Tip Material
 3932A - Tool Drop - Hole Diameter - Tip Diameter - Tip Material
 3332A - Tool Drop - Cavity Length - Cavity Width - Wall Thickness - Finish

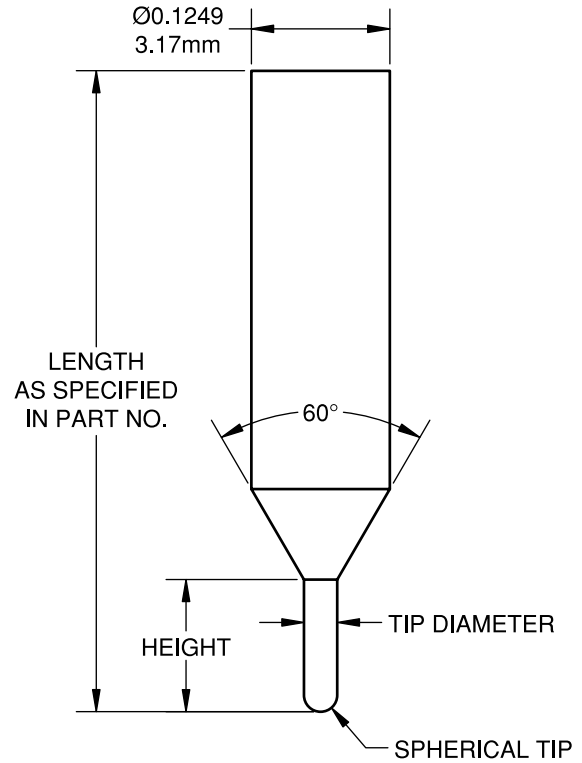
Example:

3632A-750TD-90-040-060-005
 3732A-750TD-90-050-120-004
 3832A-500TD-010-040-050-VES
 3932A-600TD-015-030-DEL
 3332A-700TD-050-040-003-P

TOOL DROP DESIGNATION	TOOL DROP DIMENSION in./mm
-750TD	.750/19.05
-700TD	.700/17.8
-600TD	.600/15.2
-500TD	.500/12.7



32 Shank
 (For the Palomar 2500/3500)



02 Shank
 (Available to all shank styles)

Specify: Series/Shank Style - Tip Diameter - Height of Diameter - *Shank Length - **Material

Example:

3D32-030-120-SS

3D02-030-120-625-SS

*Specify length for 01, 02, & 60 shanks only

**Material is standard as Stainless Steel ("-SS")

Note: For tip diameters less than 0.010 in./0.25mm, the tip height should not exceed three times the tip diameter.

TYPICAL TIP CONFIGURATIONS	
TIP DIAMETER in./mm	HEIGHT in./mm
.005/0.13	.015/0.38
.010/0.25	.050/1.27
.015/0.38	.070/1.78
.020/0.51	.080/2.03
.025/0.64	.100/2.54
.030/0.76	.120/3.05
.035/0.89	.140/3.56
.040/1.02	.200/5.1
.045/1.14	
.050/1.27	
.055/1.40	
.060/1.52	
.065/1.65	
.070/1.78	
.075/1.90	
.080/2.03	

Dimensions in inches unless otherwise specified