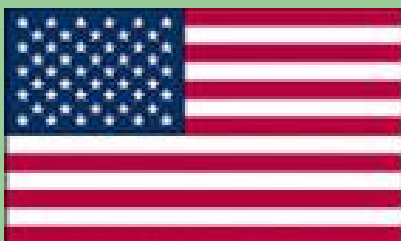




Semiconductor Bonding Tools

5075 Central Highway
Airport Industrial Park
Pennsauken, NJ 08109
USA



Phone
856-663-1855

Fax
856-663-8472

Web
www.pinevalleyprecision.com

Semiconductor Bonding Tools

Die Collets and Chip handling tools - Pine Valley Precision offers a wide range of die collets, vacuum pick-up tools and die ejection and special order testing probes to fit a variety of bonders, including K&S, Foton, AMI, Esec, Amedyne and others.

Pine Valley welcomes you to check out our full line of bonding tools.

Ejector Probes

Model 6600

Die Collets

Model 3648

Four Sided Collets: 6000 Series

6004 6007 6010

Open-ended Collets: 6500 Series

6504 6505 6507 6510

Die Collet Options

Additional Information:

Slotted Internal Corners Vertical Facets

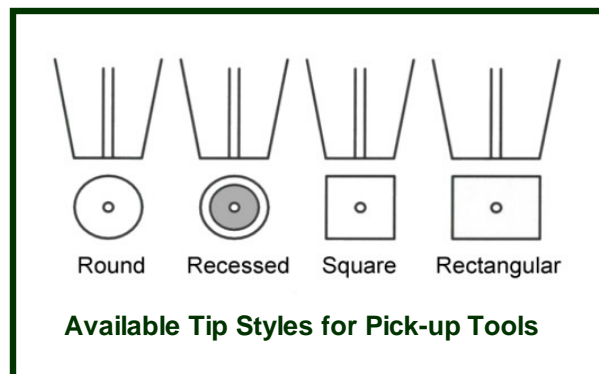
Vacuum Pick-up Tools

Model 4002 - Style 1	Model 4002 - Style 2	Model 4002 - Style 3
Model 4003 - Style 1	Model 4003 - Style 2	Model 4004
Model 4005	Model 2000	

New ASM Bonder Pick-up Tools from Pine Valley:

Model 4006 - Style 1
Model 4006 - Style 2

Bottleneck Styles



Our prices are very competitive!

Call 856-663-1855 (Extension 10) or

E-mail us at semiconductor@pinevalleyprecision.com to find out more about our pricing.

Model 6600

Ordering Information:

(For use when specifying tools which are not shown in standard parts table - see note 1)

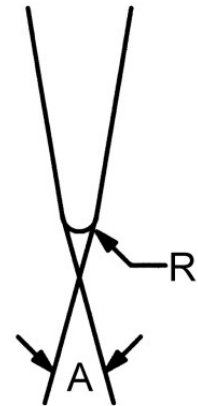
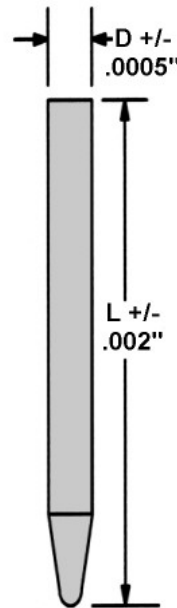
Material:

Fine Grain Tungsten Carbide

Example:

1 2 3 4 5
6600 - .046 - .562 - .0009 - 15°

1. Model
2. Tool Diameter (D)
3. Tool Length (L)
4. Tip Radius (R)
5. Tip Angle (A)



Tip Detail

Notes:

1. Probes with dimensional modifications may be specified as shown in the ordering information.
2. Tolerances, if other than those shown on drawing, shall also be specified.

Standard Ejector Probes				
Model #	Tool Dia. (D)	Tool Length (L)	Tip Radius (R)	Tip Angle (A)
6600-1	.0275"	.669"	.0005"	15°
6600-2	.0276"	.562"	.0006"	12.5°
6600-3	.0276"	.709"	.0008"	10°

Model 3648: Styles 1 & 2

Ordering Information:

See notes.

Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6
3648 - 90 - C2 - .020 - .020 - .005

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)

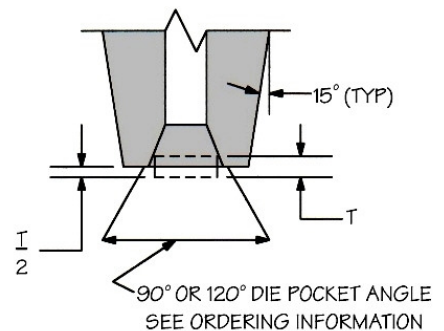
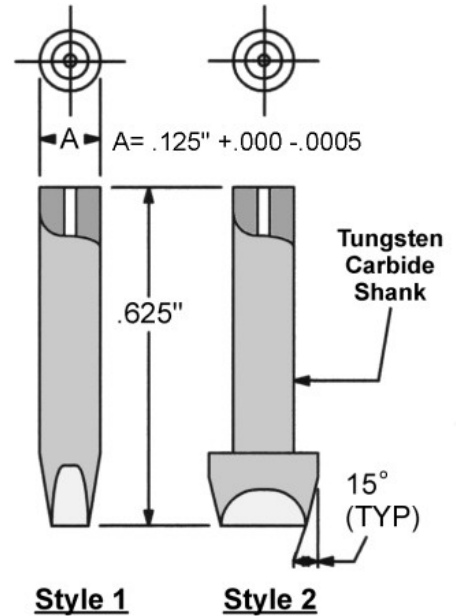
Notes:

1. This tool is designed for optimum die viewing and maximum vacuum pick-up as required on Foton 8030 and Elmont die bonders.
2. Vertical facets in lieu of standard 15° angle facets are optional. When specifying vertical facets, facet length must also be specified.
3. Vertical corner reliefs, which allow the die corners to extend beyond the die pocket, are also available but must be specified.

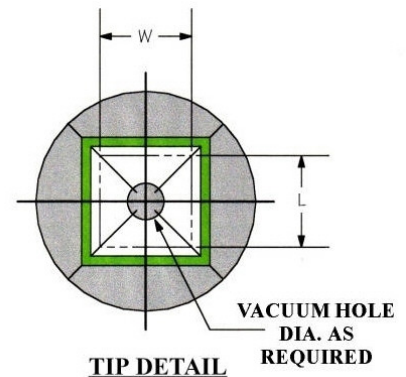
Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

Decimals = ±.005", Fractions = ± 1/64", Angles = ± 1° 0'



Die Pocket Angle



Model 6004: Styles 1 & 2

Ordering Information:

See notes.

Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6 7
6004 - 90 - C2 - .020 - .020 - .005 - .437

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)
7. Tool Length (when required: see note 6)

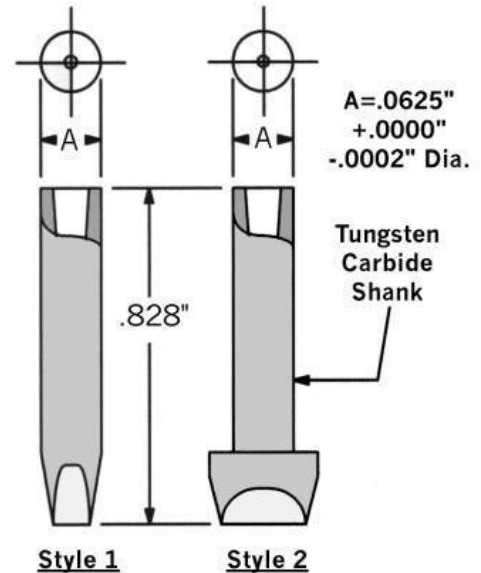
Notes:

1. Pine Valley's unique tapered internal shape provides for maximum vacuum pick-up. [Super fine grain material pressed & manufactured in house.]
2. Consult the factory for die size capabilities of individual shank styles.
3. For open-ended die collets with comparable shank styles see Series 6500 die collets.
4. Vertical facets in lieu of standard 15° angle facets are optional. When specifying vertical facets, facet length must also be specified.
5. Vertical corner reliefs which allow the die corners to extend beyond the die pocket, are also available but must be specified.
6. All tools will be supplied at the standard length shown on the drawing, unless otherwise specified.

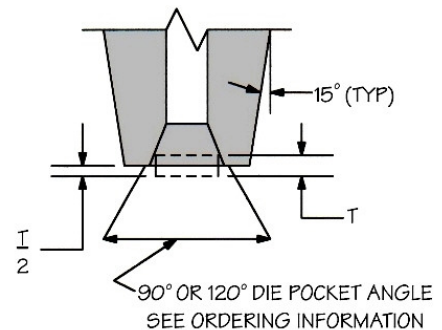
Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

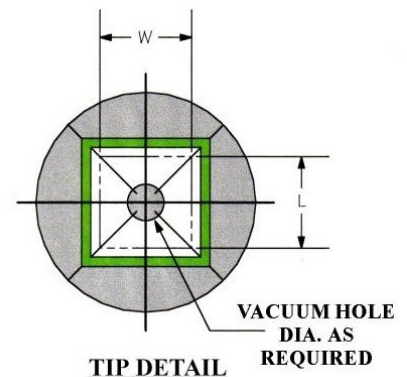
Decimals = ±.005", Fractions = ± 1/64", Angles = ± 1° 0'



Other Lengths Available
.319", .437", & .562"



Die Pocket Angle



Model 6007: Styles 1 & 2

Ordering Information:

See notes.

Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6 7
6007 - 90 - C2 - .020 - .020 - .005 - .437

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)
7. Tool Length (when required: see note 6)

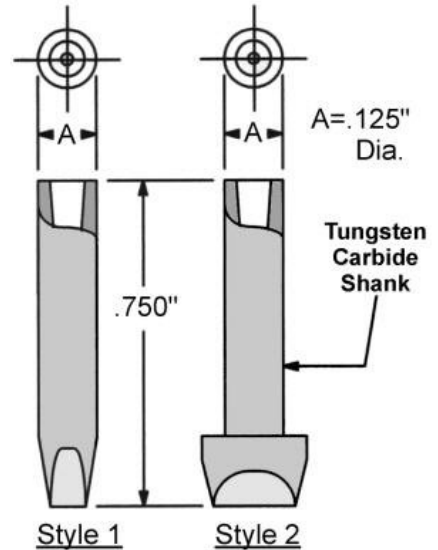
Notes:

1. Pine Valley's unique tapered internal shape provides for maximum vacuum pick-up. [Super fine grain material pressed & manufactured in house.]
2. Consult the factory for die size capabilities of individual shank styles.
3. For open-ended die collets with comparable shank styles see Series 6500 die collets.
4. Vertical facets in lieu of standard 15° angle facets are optional. When specifying vertical facets, facet length must also be specified.
5. Vertical corner reliefs which allow the die corners to extend beyond the die pocket, are also available but must be specified.
6. All tools will be supplied at the standard length shown on the drawing, unless otherwise specified.

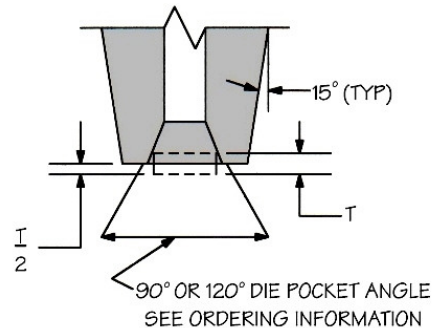
Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

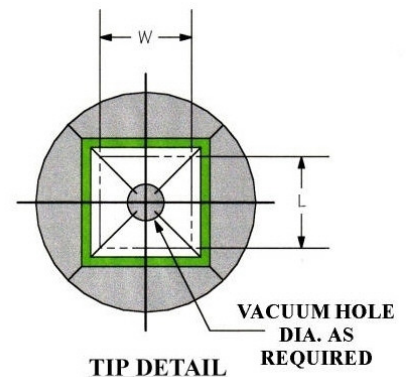
Decimals = ±.005", Fractions = ± 1/64", Angles = ± 1° 0'



Other Lengths Available
.625", .725", & 1"



Die Pocket Angle



TIP DETAIL

VACUUM HOLE
DIA. AS
REQUIRED

Model 6010: Styles 1 & 2

Ordering Information:

See notes.

Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6 7
6010 - 90 - C2 - .020 - .020 - .005 - .437

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)
7. Tool Length (when required: see note 6)

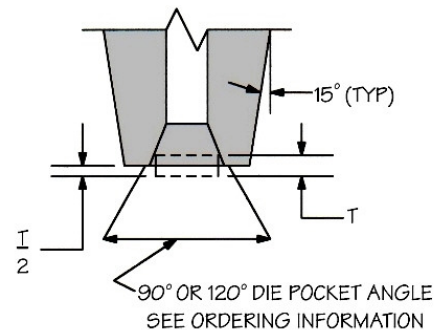
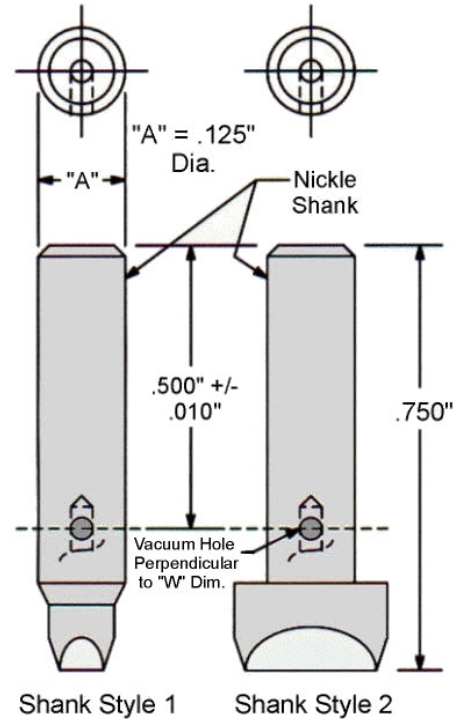
Notes:

1. Pine Valley's unique tapered internal shape provides for maximum vacuum pick-up. [Super fine grain material pressed & manufactured in house.]
2. Consult the factory for die size capabilities of individual shank styles.
3. For open-ended die collets with comparable shank styles see Series 6500 die collets.
4. Vertical facets in lieu of standard 15° angle facets are optional. When specifying vertical facets, facet length must also be specified.
5. Vertical corner reliefs which allow the die corners to extend beyond the die pocket, are also available but must be specified.
6. All tools will be supplied at the standard length shown on the drawing, unless otherwise specified.

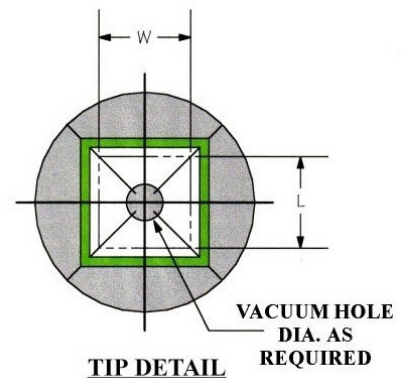
Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

Decimals = $\pm .005$ ", Fractions = $\pm 1/64$ ", Angles = $\pm 1^\circ 0'$



Die Pocket Angle



Model 6504: Styles 1 & 2

Ordering Information:

Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6
6504 - 90 - C2 - .020 - .020 - .005

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)

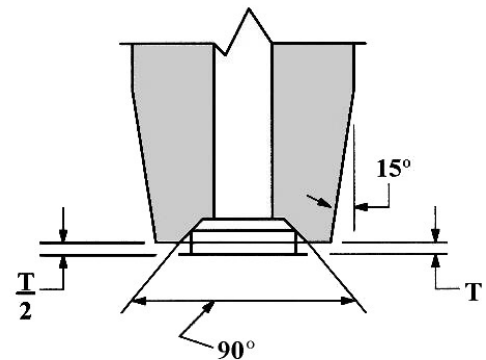
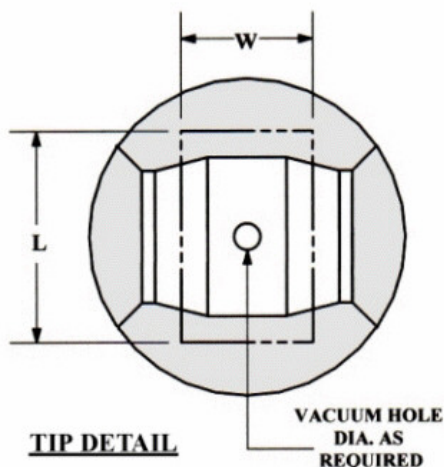
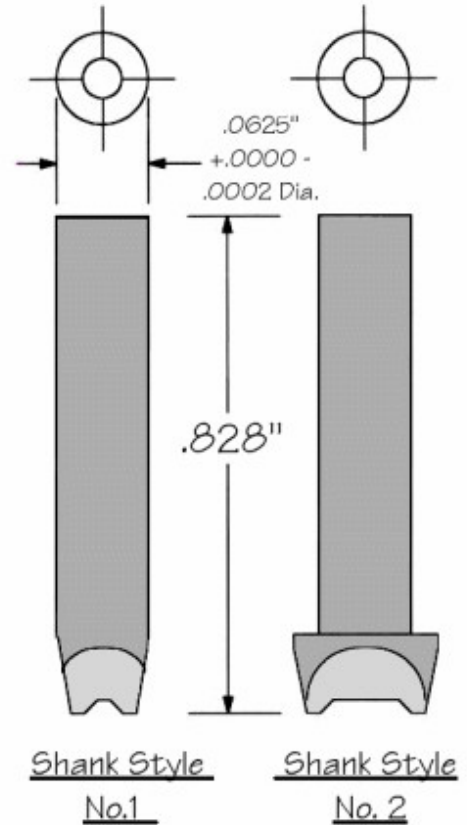
Notes:

1. Consult the factory for die size capabilities of individual shank styles.
2. For four sided die collets with comparable shank styles see Model 6004 die collet.
3. Die pocket will be oriented as shown in tip detail, unless otherwise specified.

Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

Decimals = $\pm .005$ ", Fractions = $\pm 1/64$ ", Angles = $\pm 1^\circ 0'$



Model 6505: Styles 1 & 2

Ordering Information:

Shank Material:

Stainless Steel

Tip Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6
6505 - 90 - C2 - .020 - .020 - .005

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)

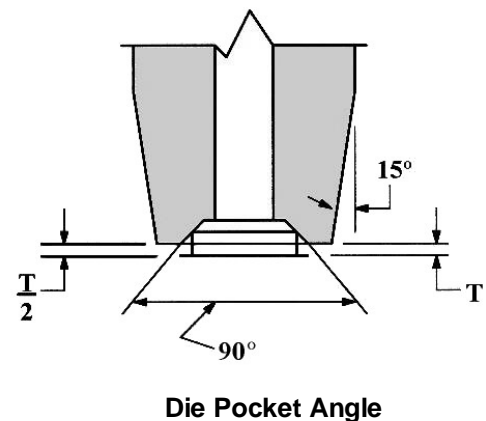
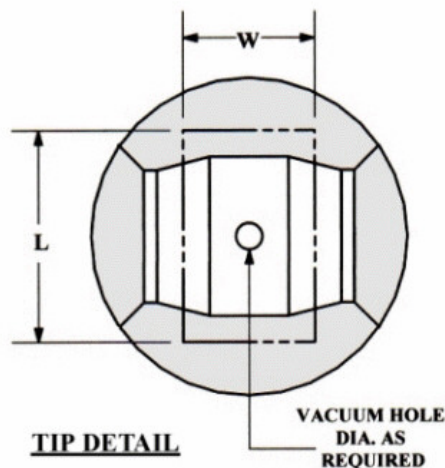
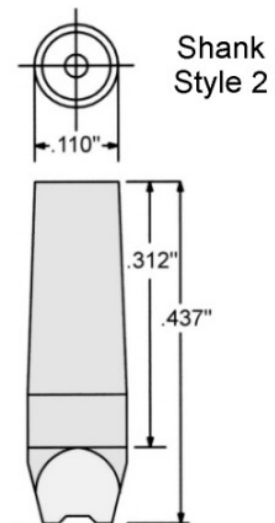
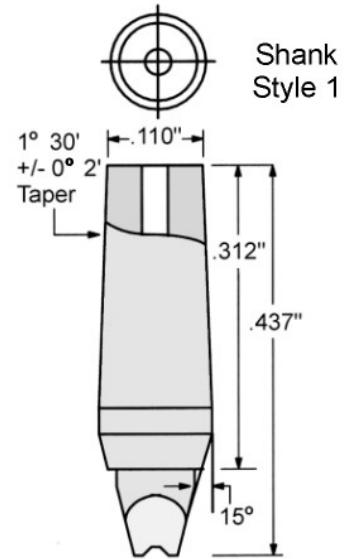
Notes:

1. Consult the factory for die size capabilities of individual shank styles.
2. For four sided die collets with comparable shank styles see Series 6000 die collets.
3. Die pocket will be oriented as shown in tip detail, unless otherwise specified.

Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

Decimals = $\pm .005"$, Fractions = $\pm 1/64"$, Angles = $\pm 1^{\circ} 0'$



Model 6507: Styles 1 & 2

Ordering Information:

Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6
6507 - 90 - C2 - .020 - .020 - .005

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)

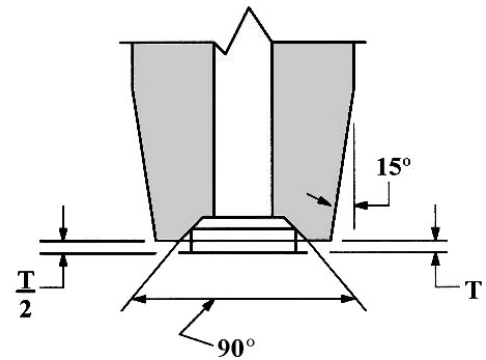
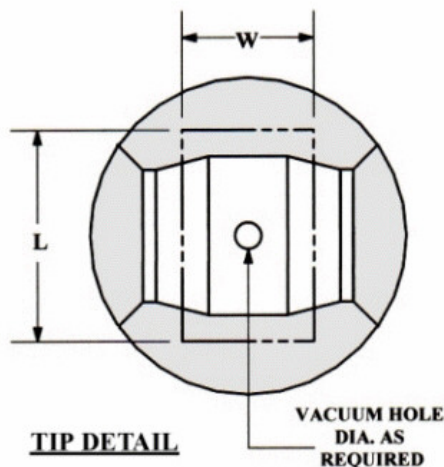
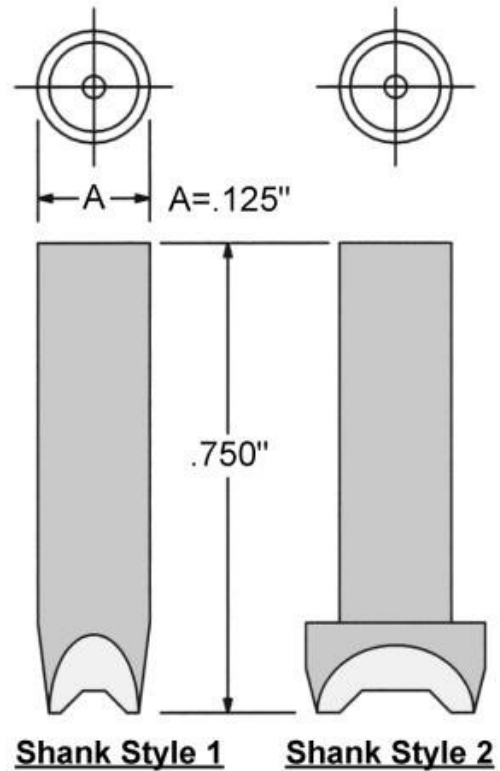
Notes:

1. Consult the factory for die size capabilities of individual shank styles.
2. For four sided die collets with comparable shank styles see Model 6007 die collet.
3. Die pocket will be oriented as shown in tip detail, unless otherwise specified.

Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

Decimals = $\pm .005$ ", Fractions = $\pm 1/64$ ", Angles = $\pm 1^\circ 0'$



Die Pocket Angle

Model 6510: Styles 1 & 2

Ordering Information:

Shank Material:

Nickel

Tip Material:

C2 - Fine Grain Tungsten Carbide

Example:

1 2 3 4 5 6
6510 - 90 - C2 - .020 - .020 - .005

1. Model
2. Die Pocket Angle (90° Standard or 120°)
3. Tip Material
4. Die Width (W)
5. Die Length (L)
6. Die Thickness (T)

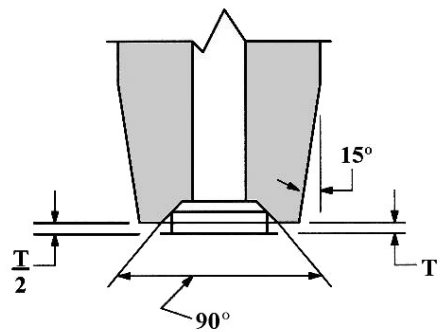
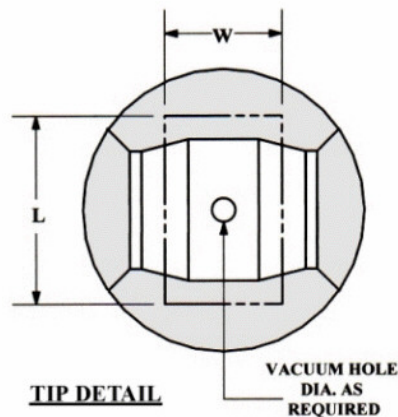
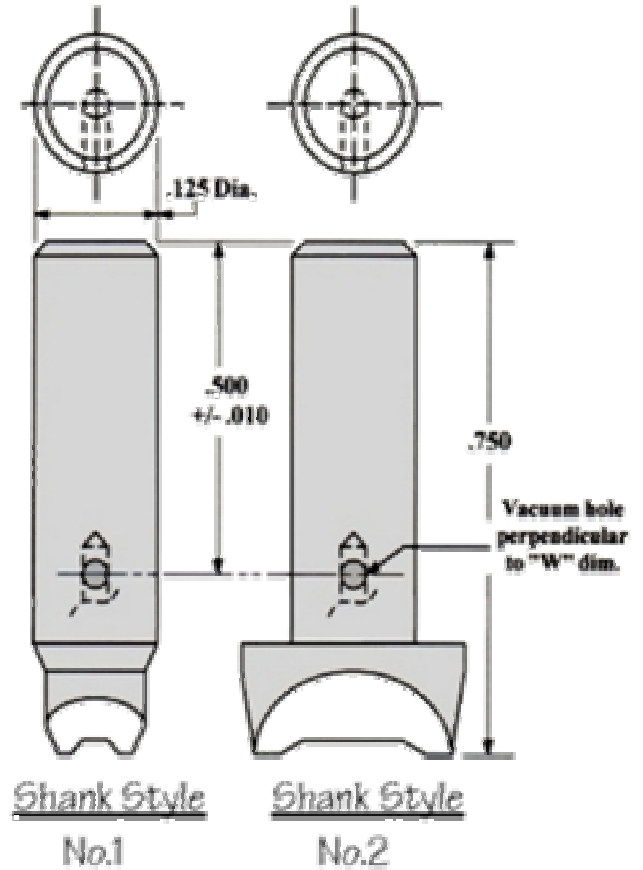
Notes:

1. Consult the factory for die size capabilities of individual shank styles.
2. For four sided die collets with comparable shank styles see Model 6010 die collet.
3. Die pocket will be oriented as shown in tip detail, unless otherwise specified.

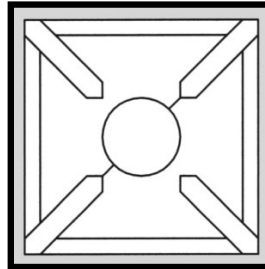
Tolerances:

Unless otherwise specified, tolerances are as follows and dimensions are in inches.

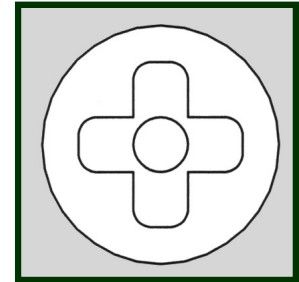
Decimals = $\pm .005$ ", Fractions = $\pm 1/64$ ", Angles = $\pm 1^\circ 0'$



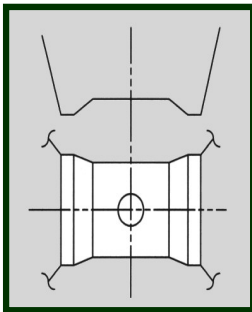
Die Collet Options



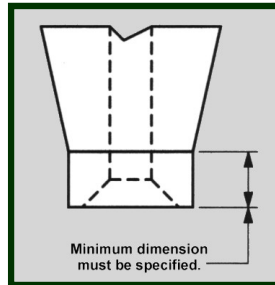
Slotted Internal
Corner Relief



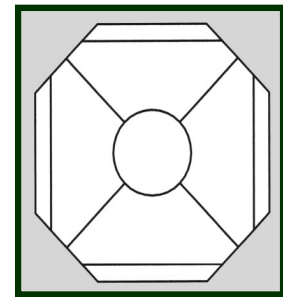
Maxi-Vac Design



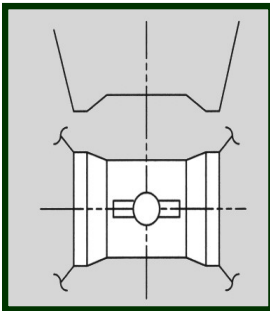
Open-ended
Configuration



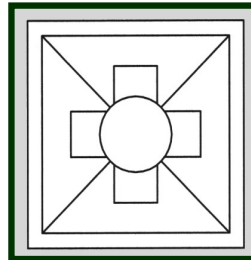
Vertical Facets



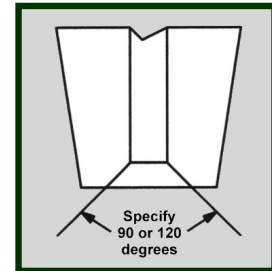
Vertical Corner
Relief



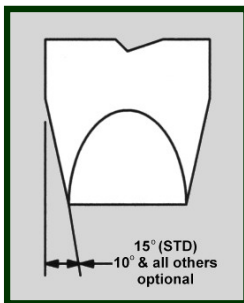
Open-ended
Maxi-Vac



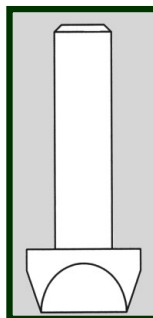
Four-sided
Maxi-Vac



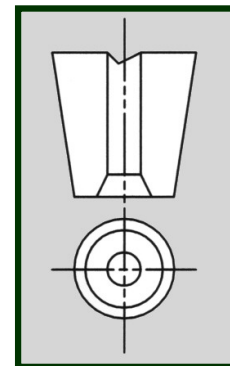
Collet Angles



Facet Angles



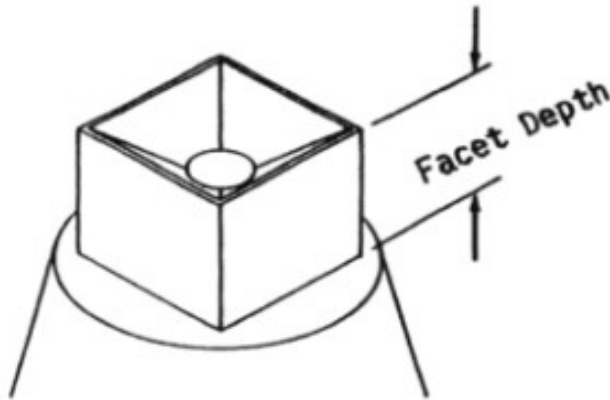
3648 & 6007 Two
piece Construction



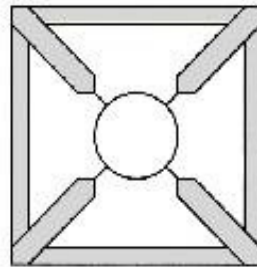
Conical Die
Pocket

Vertical Facets

The facets from the die collet face are ground vertical to the face rather than at the normal 15 degree angle to allow bonding where package size dimensions are critical. When ordering this option, please specify minimum facet length required.



Slotted Internal Corners



Slotted Internal Corners
For Die Collet Opening
.015" and Larger.

Reports state large die collets with Slotted Internal Corner Relief yield maximum vacuum pick-up and more uniform vacuum control.

When ordering, specify with Slotted Internal Corner Relief.

Our prices are extremely competitive.

Note: Our Internal Corners run through outside corners to prevent silicon dust build-up.

Model 4002 Style 1

Ordering Information:

Tool Style:

- 1 - .625" long tool with .062" Dia. shank

Example:

1 2 3 4 5 6
4002 - 1 - .006 -.012 - T - .625

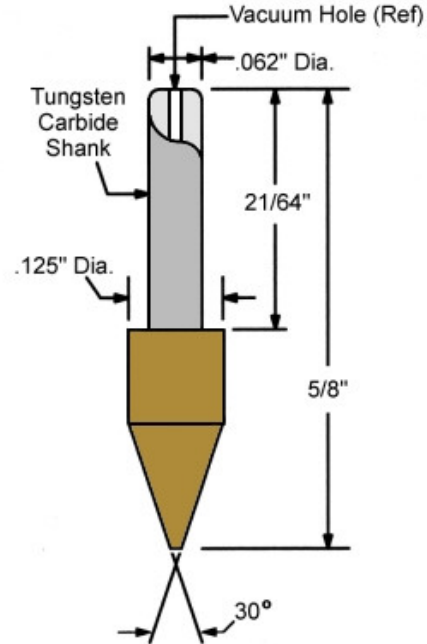
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material
6. Special length when required

Available Materials:

D - Delrin
T - Torlon
V - Vespel
C - Carbon
C2 - Tungsten Carbide
TF - Teflon
BD - Black Delrin

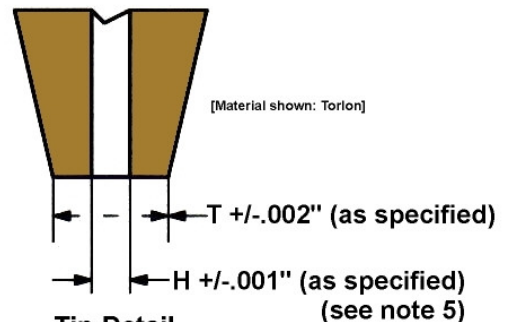
Notes:

1. Rectangular and square face tools are available as special orders. Consult factory for details.
2. Style 3 tools shall be supplied when Tip diameter (T) is larger than .125".
3. Tip diameter (T) must be at least .006" larger than hole size (H).
4. Tool Styles 2 & 3 are supplied in a standard length of .750"; but are also available in .500" and .625" lengths, when specified.
5. Tolerance on Hole size (H) of .041" and larger is $\pm .002$ ".
6. Tools with Bottleneck, although not shown, are also available. Consult factory for details.



Style 1

[Material shown: Torlon]



Tip Detail
Styles 1 & 2

Standard Pick-up Tools (Pine Valley can also customize parts to your needs.)			
Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
1	.006"	.012"	.012" - .025"
1	.006"	.024"	.025" - .040"
1	.012"	.040"	.032" - .080"
1	.020"	.070"	.040" - .120"
1	.040"	.120"	.080" - .200"

Model 4002 Style 2

Ordering Information:

Tool Style:

- 2 - .750" long tool (STD) or as specified
(see note 4)

Example:

1 2 3 4 5 6
4002 - 2 - .006 -.012 - T - .625

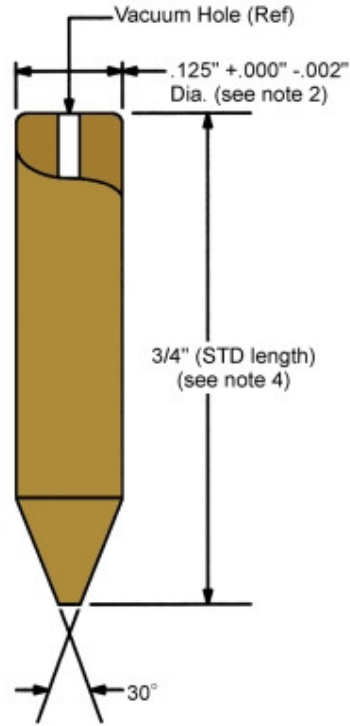
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material
6. Special length when required

Available Materials:

D - Delrin
T - Torlon
V - Vespel
C - Carbon
C2 - Tungsten Carbide
TF - Teflon
BD - Black Delrin

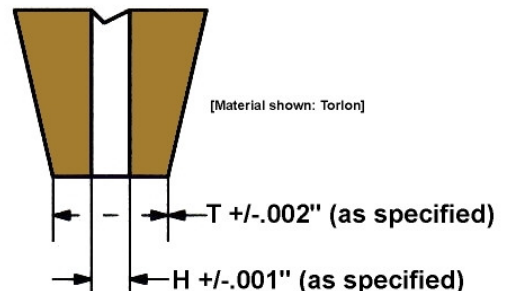
Notes:

1. Rectangular and square face tools are available as special orders. Consult factory for details.
2. Style 3 tools shall be supplied when Tip diameter (T) is larger than .125".
3. Tip diameter (T) must be at least .006" larger than hole size (H).
4. Tool Styles 2 & 3 are supplied in a standard length of .750"; but are also available in .500" and .625" lengths, when specified.
5. Tolerance on Hole size (H) of .041" and larger is $\pm .002$ ".
6. Tools with Bottleneck, although not shown, are also available. Consult factory for details.



Style 2

[Material shown: Torlon]



Tip Detail
Styles 1 & 2

Standard Pick-up Tools (Pine Valley can also customize parts to your needs.)			
Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
2	.006"	.012"	.012" - .025"
2	.006"	.024"	.025" - .040"
2	.012"	.040"	.032" - .080"
2	.020"	.070"	.040" - .120"
2	.040"	.120"	.080" - .200"

Model 4002 Style 3

Ordering Information:

Tool Style:

- 3 - .750" long tool (STD) or as specified
(see note 4)

Example:

1 2 3 4 5 6
4002 - 3 - .062 - .250 - T - .625

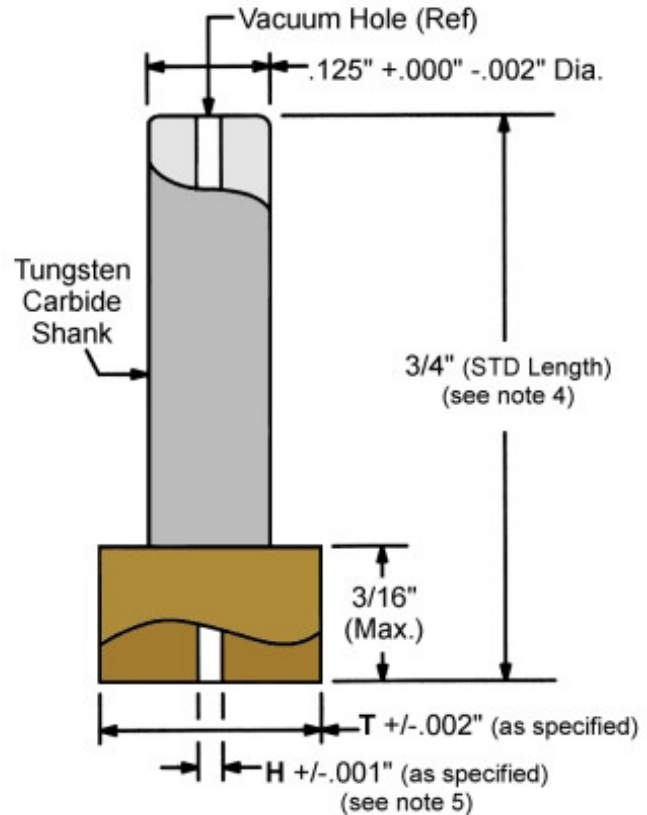
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material
6. Special length when required

Available Materials:

- D - Delrin
- T - Torlon
- V - Vespel
- C - Carbon
- C2 - Tungsten Carbide
- TF - Teflon
- BD - Black Delrin

Notes:

1. Rectangular and square face tools are available as special orders. Consult factory for details.
2. Style 3 tools shall be supplied when Tip diameter (T) is larger than .125".
3. Tip diameter (T) must be at least .006" larger than hole size (H).
4. Tool Styles 2 & 3 are supplied in a standard length of .750"; but are also available in .500" and .625" lengths, when specified.
5. Tolerance on Hole size (H) of .041" and larger is $\pm .002$ ".
6. Tools with Bottleneck, although not shown, are also available. Consult factory for details.



Style 3

(see note 2)

[Material shown: Torlon]

Standard Pick-up Tools

(Pine Valley can also customize parts to your needs.)

Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
3	.062"	.250"	Over .200"

Model 4003 Style 1

Ordering Information:

Tool Style:

- 2 - .437" long tool with tip diameter larger than .125"

Example:

1 2 3 4 5
4003 - 1 - .006 - .012 - D

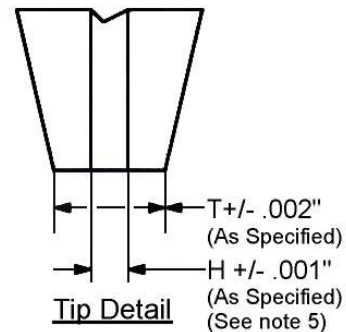
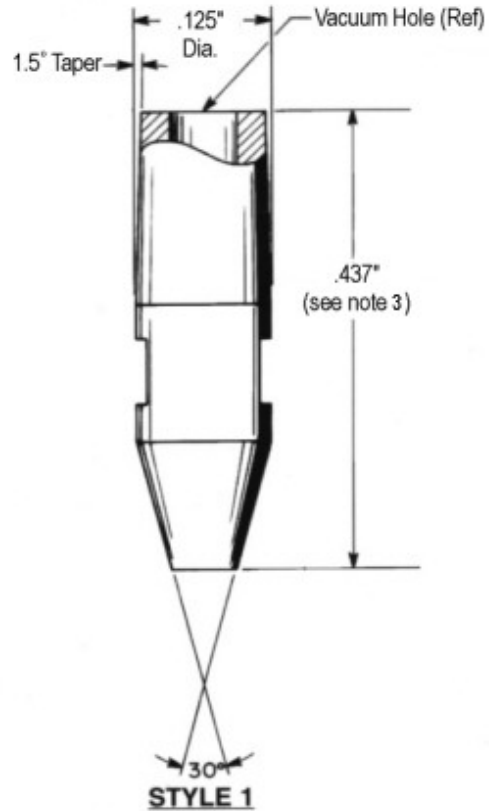
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material

Available Materials:

D - Delrin **T** - Torlon
V - Vespel **C** - Carbon
C2 - Tungsten Carbide
BD - Black Delrin

Notes:

1. Style 2 tools will be supplied when tip diameter (T) is larger than .125".
2. Tip diameter (T) must be at least .006" larger than hole diameter (H).
3. Tools are normally supplied .437" long, unless otherwise specified.
4. Tool material is normally Delrin. Tungsten carbide shank tools with Delrin tips are also available upon request.
5. Tolerance on hole size (H) of .041" and larger is +/- .002".
6. Tools with bottleneck tip, although not shown, are also available. Consult factory for details.



Standard Pick-up Tools

(Pine Valley can also customize parts to your needs.)

Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
1	.006"	.012"	.012" - .025"
1	.006"	.024"	.025" - .040"
1	.012"	.040"	.032" - .080"
1	.020"	.070"	.040" - .120"
1	.040"	.120"	.080" - .200"

Model 4003 Style 2

Ordering Information:

Tool Style:

- 2 - .437" long tool with tip diameter larger than .125"

Example:

1 2 3 4 5
4003 - 2 - .062 - .250 - D

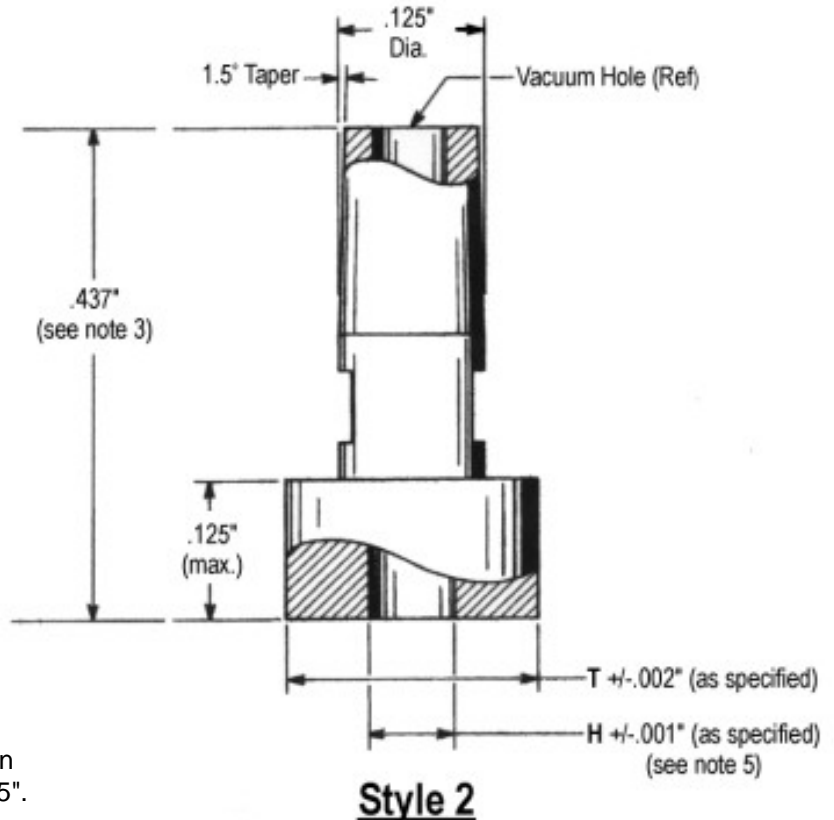
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material

Available Materials:

D - Delrin **T** - Torlon
V - Vespel **C** - Carbon
C2 - Tungsten Carbide
BD - Black Delrin

Notes:

1. Style 2 tools will be supplied when tip diameter (T) is larger than .125".
2. Tip diameter (T) must be at least .006" larger than hole diameter (H).
3. Tools are normally supplied .437" long, unless otherwise specified.
4. Tool material is normally Delrin. Tungsten carbide shank tools with Delrin tips are also available upon request.
5. Tolerance on hole size (H) of .041" and larger is +/- .002".
6. Tools with bottleneck tip, although not shown, are also available. Consult factory for details.



Standard Pick-up Tools

(Pine Valley can also customize parts to your needs.)

Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
2	.062"	.250"	Over .200"

Model 4004 Styles 1 & 2

Ordering Information:

Tool Style:

- 1 - .062" Dia. Tools
- 2 - Tool tip Dia. (T) larger than .062"

Example:

1 2 3 4 5 6
4004 - 1 - .006 - .012 - T - .625

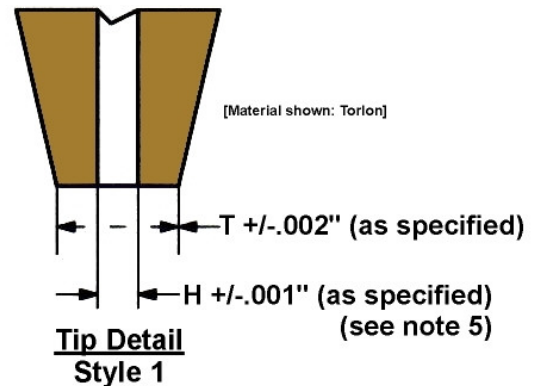
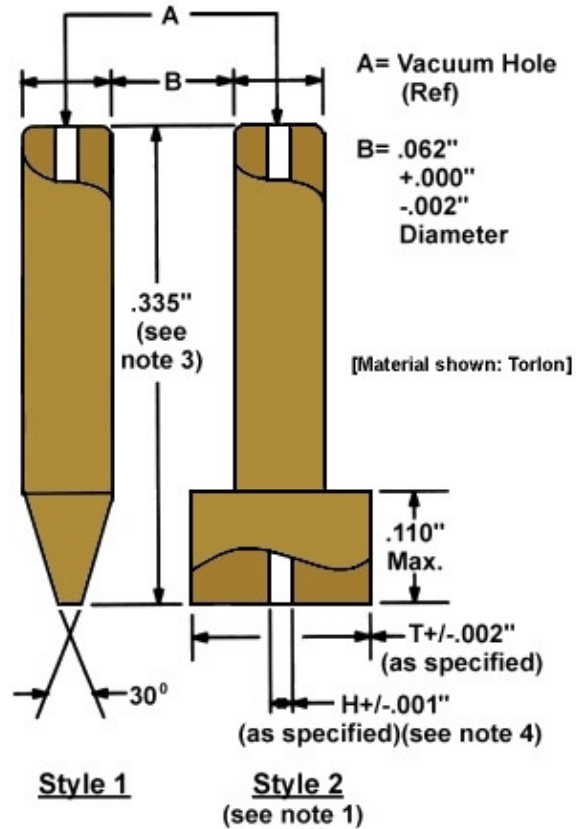
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material
6. Special length when required

Available Materials:

D - Delrin **T** - Torlon
V - Vespel **C** - Carbon
C2 - Tungsten Carbide
TF - Teflon
BD - Black Delrin

Notes:

1. Style 2 tools will be supplied when tip diameter (T) is greater than .062".
2. Tip diameter (T) must be at least .006" larger than hole size (H).
3. Tools are normally supplied in a standard length of .335"; for special lengths consult factory.
4. Tolerance on hole size (H) of .041" and larger is +/- .002".



Standard Pick-up Tools (Pine Valley can also customize parts to your needs.)			
Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
1	.006"	.012"	.012" - .025"
1	.006"	.024"	.025" - .040"
1	.012"	.040"	.032" - .080"
1	.020"	.062"	.040" - .120"

Model 4005 Styles 1 & 2

Ordering Information:

Tool Style: (See note 1)

- 1 - .062" Diameter Tool
- 2 - .125" Diameter Tool

Example:

1 2 3 4 5 6
4005 - 1 - .006 - .012 - .020 - D

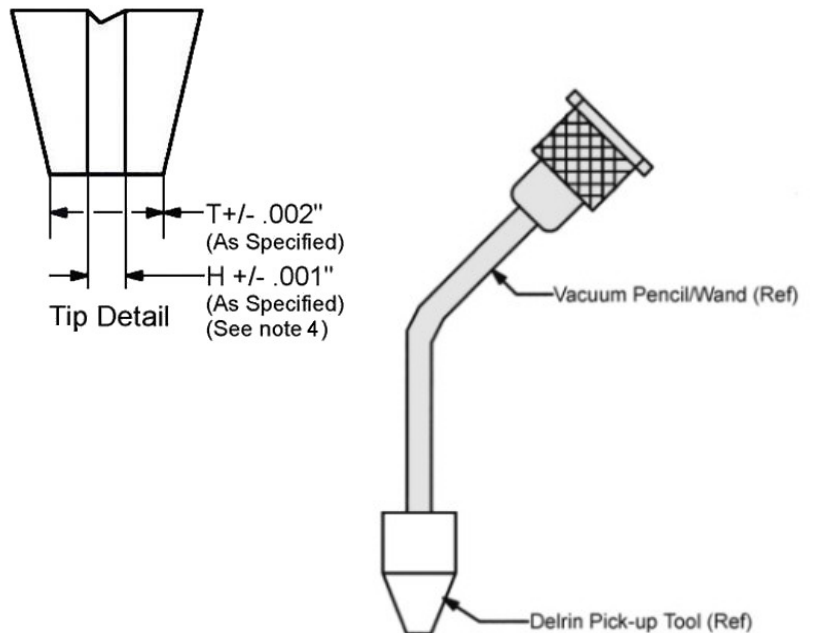
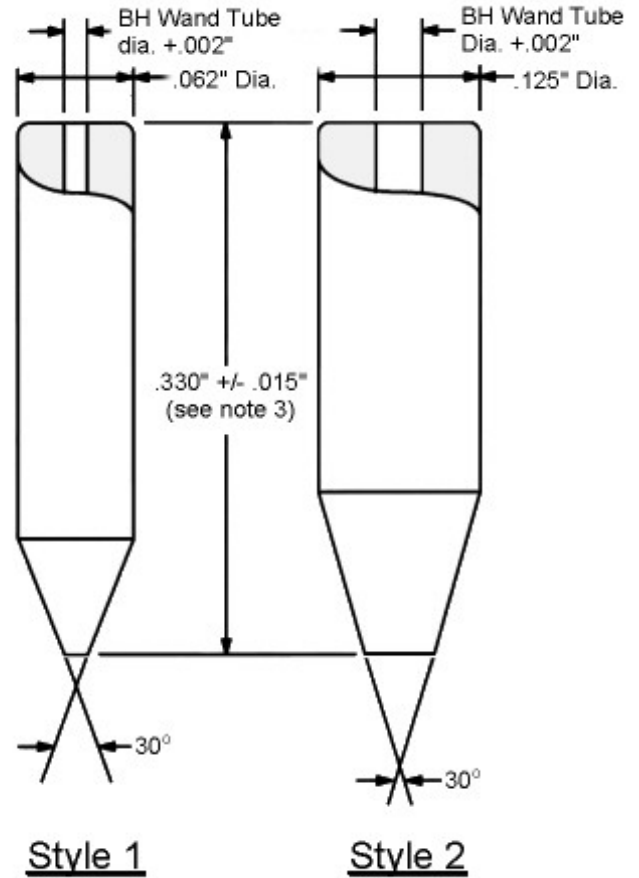
1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Wand tube diameter
6. Material

Available Materials:

D - Delrin T - Torlon
V - Vespel C - Carbon
TF - Teflon BD - Black Delrin

Notes:

1. Style 2 tools will be supplied when tip diameter (T) is greater than .062" or when back hole (BH) is larger than .042".
2. Tip diameter (T) must be at least .006 larger than hole size (H).
3. Tools are normally supplied .330" long, unless otherwise specified.
4. Tolerance on hole size (H) of .041" and larger is +/- .002".
5. Tools with bottleneck tip, although not shown, are also available. Consult factory for details.



Model 2000

Ordering Information:

Tool Style:

- 1 - .375" Long tool

Example:

1 2 3
2000-010-1 - 1 - 1

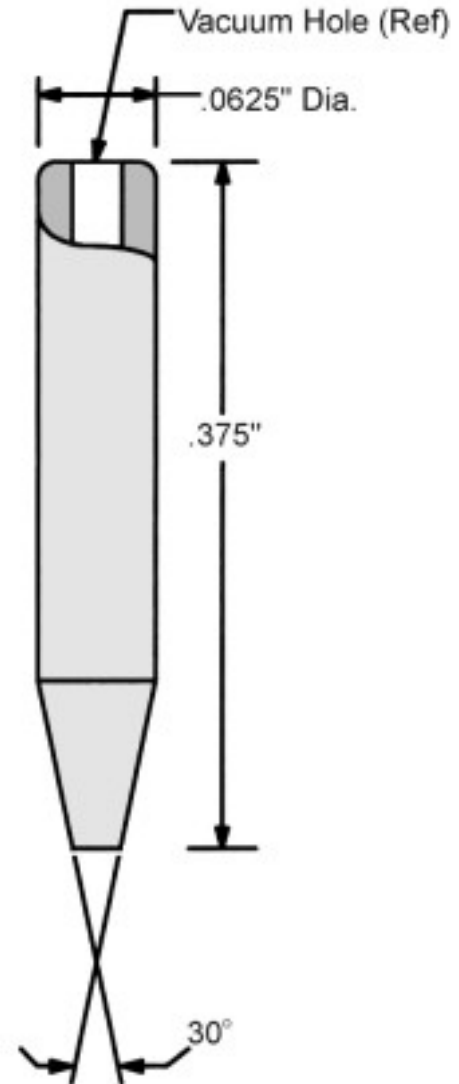
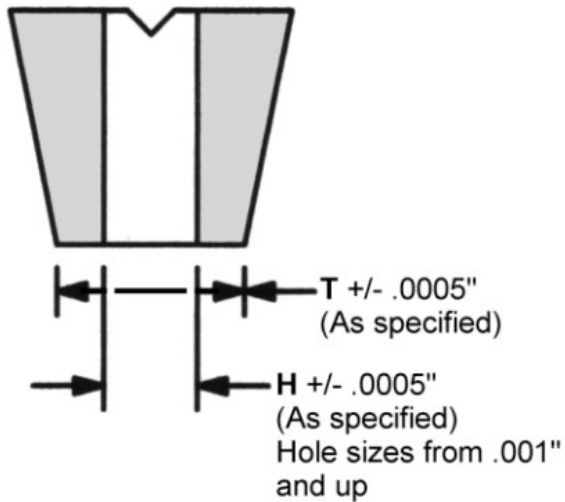
1. Model
2. Tool Style
3. Material

Available Materials:

C2 - Tungsten Carbide

Notes:

1. Part can be made with a .125" diameter and 1" in length.



Style 1

Model 4006 Style 1

Ordering Information:

Example:

1 2 3 4 5
4006 - 1 - .006 - .012 - C2

1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material

Available Materials:

One piece construction:

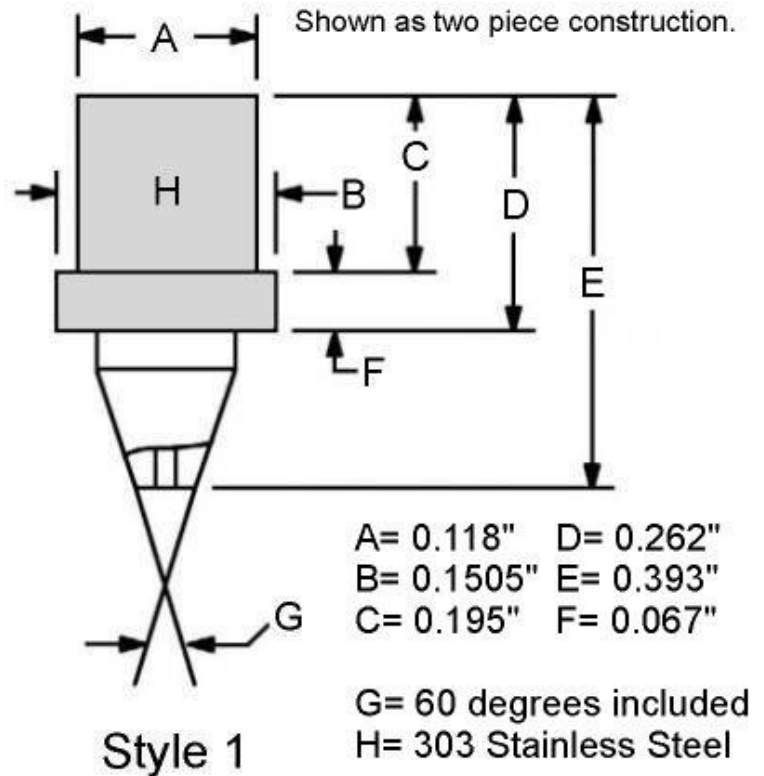
D - Delrin **T** - Torlon

TF - Teflon **BD** - Black Delrin

Two piece construction:

V - Vespel

C2 - Tungsten Carbide



Notes:

1. Part can be made with one piece construction but only in material specified above.
2. Tip diameter (T) must be at least .006" larger than hole size (H).
3. Tolerance on Hole size (H) of .041" and larger is +/- .002".

Standard Pick-up Tools (Pine Valley can also customize parts to your needs.)			
Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
1	.006"	.012"	.012" - .025"
1	.006"	.024"	.025" - .040"
1	.012"	.040"	.032" - .080"
1	.020"	.070"	.040" - .120"
1	.040"	.120"	.080" - .200"

Model 4006 Style 2

Ordering Information:

Example:

1 2 3 4 5
4006 - 2 - .006 - .012 - C2

1. Model
2. Tool Style
3. Hole Diameter (H)
4. Tip Diameter (T)
5. Material

Available Materials:

One piece construction:

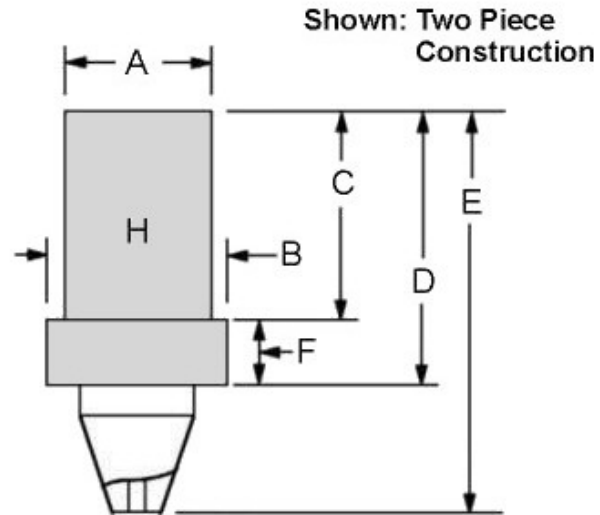
D - Delrin **T** - Torlon

TF - Teflon **BD** - Black Delrin

Two piece construction:

V - Vespel

C2 - Tungsten Carbide



A = 0.1245"

B = 0.157"

C = 0.357"

D = 0.424"

E = 0.555"

F = 0.067"

G = 60 degrees included

H = 303 Stainless Steel

Style 2

Notes:

1. Part can be made with one piece construction but only in material specified above.
2. Tip diameter (T) must be at least .006" larger than hole size (H).
3. Tolerance on Hole size (H) of .041" and larger is +/- .002".

Standard Pick-up Tools (Pine Valley can also customize parts to your needs.)			
Tool Style	Hole Size (H)	Tip Dia. (T)	Recommended Chip Size
2	.006"	.012"	.012" - .025"
2	.006"	.024"	.025" - .040"
2	.012"	.040"	.032" - .080"
2	.020"	.070"	.040" - .120"
2	.040"	.120"	.080" - .200"

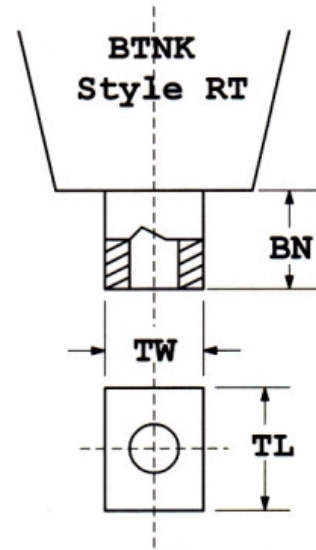
Bottleneck Styles

Bottleneck Vacuum Pick-up Tools for all Dies.
Excellent for Tight Packages!
Fast Service to meet your requirements.

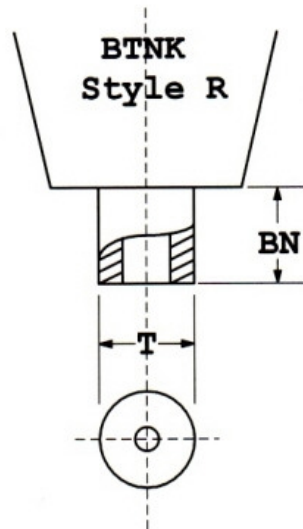
When ordering Bottleneck Pick-up tools,
along with standard part number,
please specify the following:

BTNK Style R	T=	BN=	
BTNK Style S	T=	BN=	
BTNK Style RT	TW=	TL=	BN=

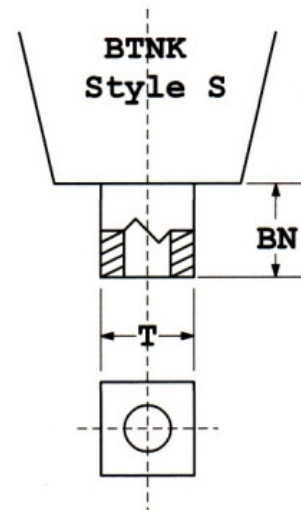
Call or Fax your Specifications for
immediate quote.



Rectangular Face



Round Face



Square Face