



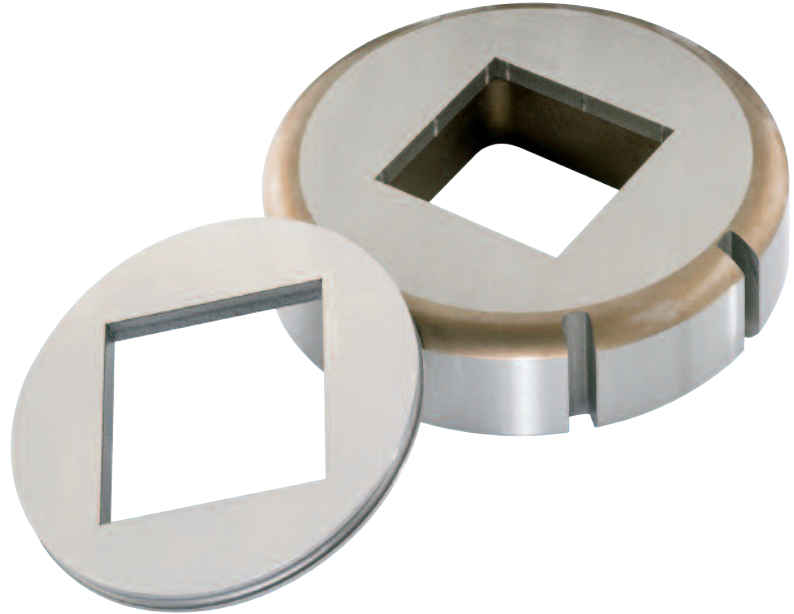
# PREMIUM THIN TURRET TOOLING SYSTEM



*Strength. Performance. Innovation.*

# The New Standard In Tooling Performance!

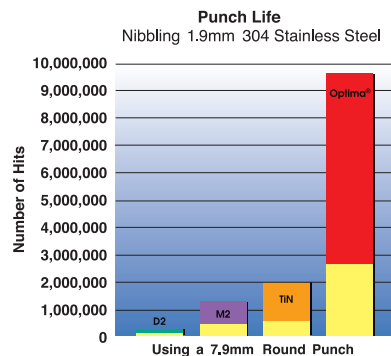
Optima® is a proprietary TiCN (titanium carbo-nitride) coating that was custom engineered at our in-house coating facilities. It features unique properties that significantly enhance turret tooling performance. Optima®, which is available only to Wilson Tool customers, provides a level of surface hardness, wear resistance and lubricity never before associated with coated or uncoated turret punch press tooling.



## Some of the many benefits you will enjoy with our Optima® coating include:

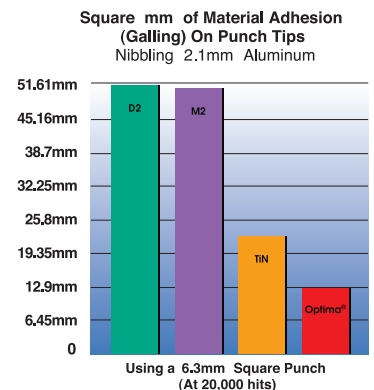
- ▼ Longer tool life
- ▼ Increased wear resistance
- ▼ More hits between sharpenings
- ▼ Reduced adhesion (galling)
- ▼ Reduced slug pulling
- ▼ Reduced corner breakdown
- ▼ Improved special tooling performance
- ▼ Lower overall tooling costs
- ▼ In-house coating facilities allow us to deliver faster and maintain total quality control

### Punch Life

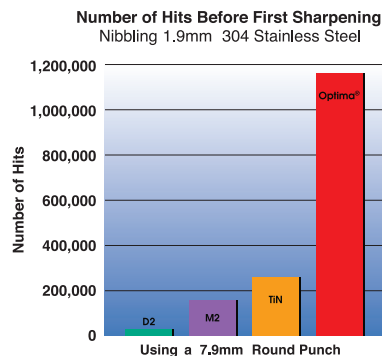


The yellow area indicates actual results achieved through three tool sharpenings of 0.25mm each. The complete graph indicates projected results with a total of 6mm removed for sharpening.

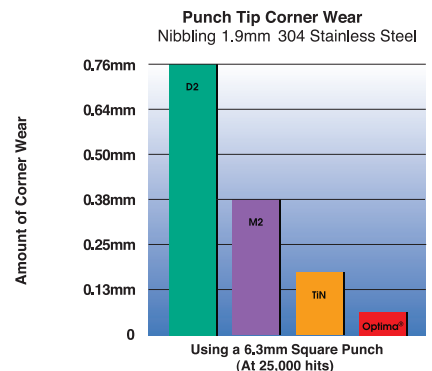
### Material Adhesion



### Number of Hits



### Tip Wear



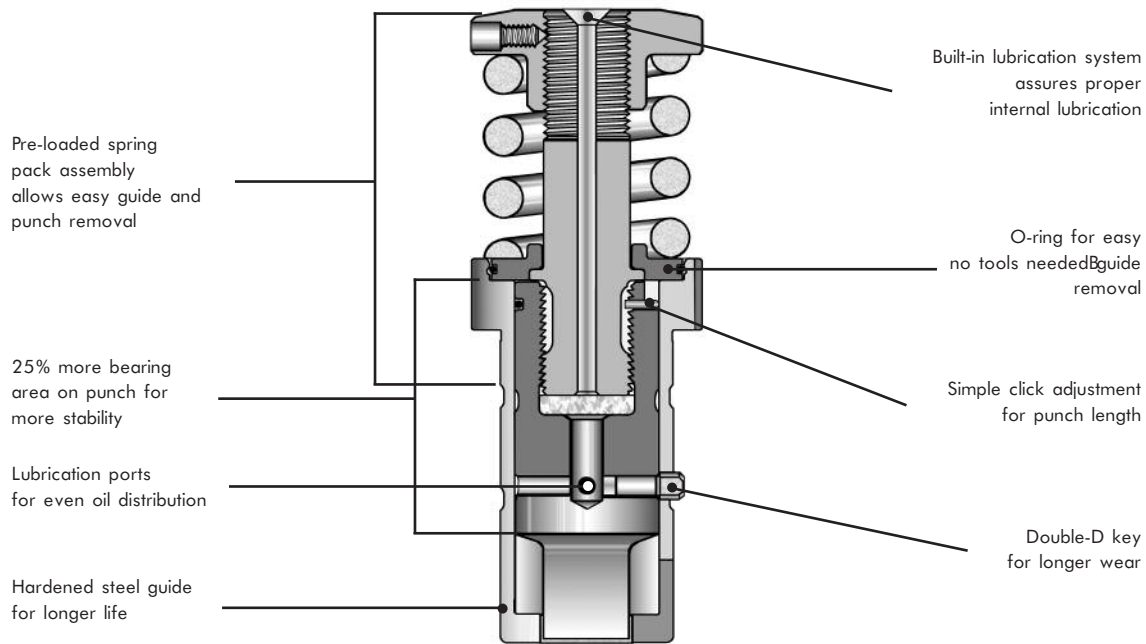
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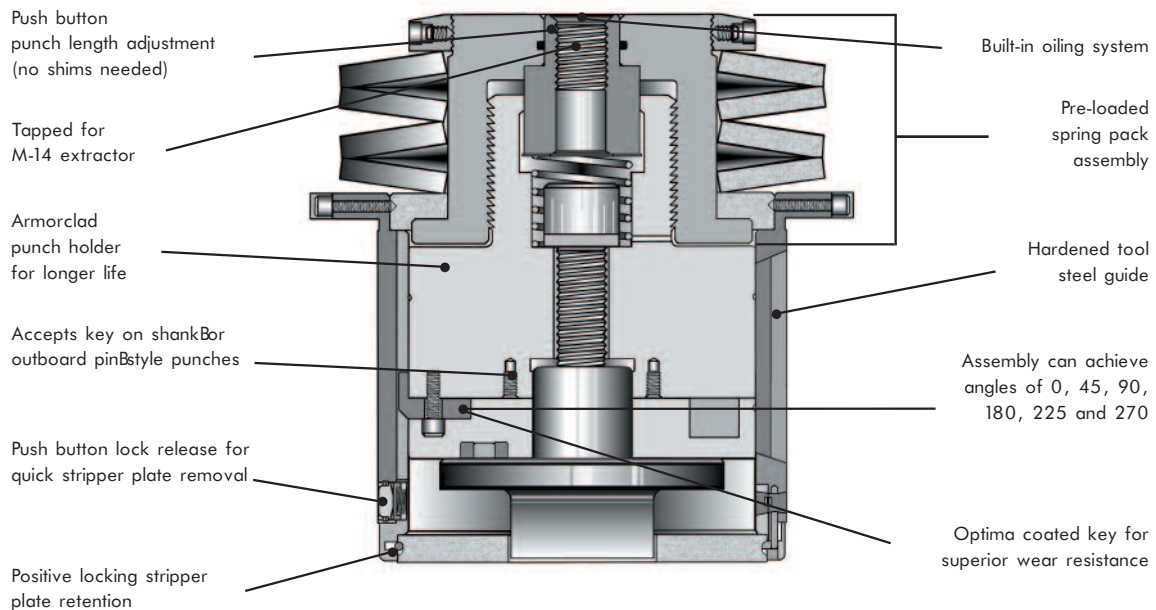
|                                           |           |
|-------------------------------------------|-----------|
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| <b>Features and Benefits</b> .....        | <b>1</b>  |
| <b>5/8" Drop In</b> .....                 | <b>2</b>  |
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# FEATURES AND BENEFITS

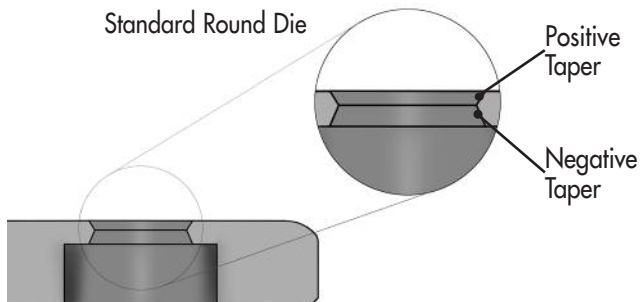
## 1/4" Station



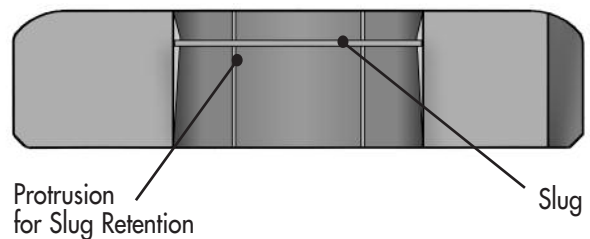
## 3 1/2" Station



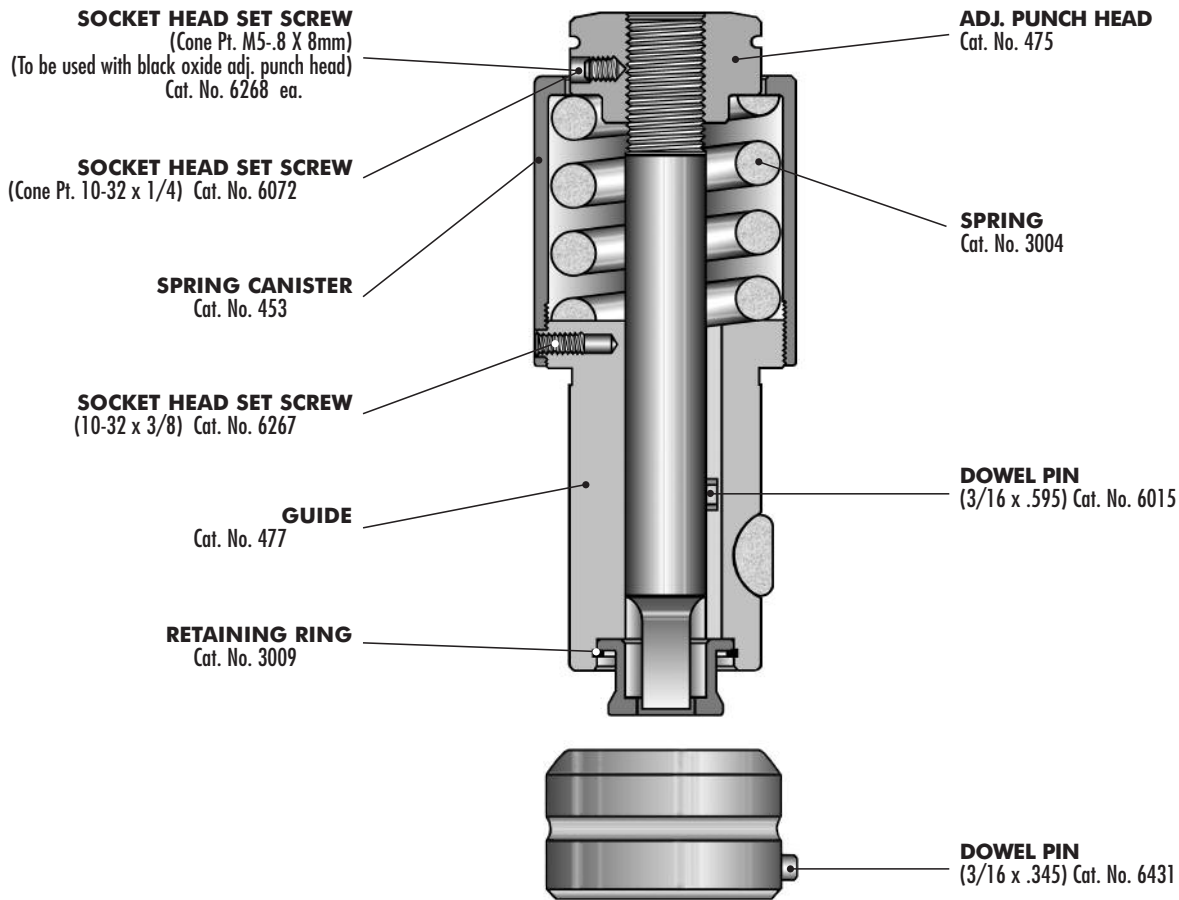
### Standard Round Die



### Slug Hugger 2® Die



(Not for use in Auto-Index stations)



| Description                                                                                                                                                                                      | Cat. No.                           | Price |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------|
| <b>GUIDE ASSEMBLY</b> <ul style="list-style-type: none"> <li>• w/.625 (15.88mm) dia. Closed Round Stripper Plate</li> </ul>                                                                      | 476                                |       |
| <b>PUNCHES</b> <ul style="list-style-type: none"> <li>• Round</li> <li>• Shape</li> <li>• Optima™ Add On</li> </ul>                                                                              | 445<br>446<br>-                    |       |
| <b>STRIPPERS</b> <ul style="list-style-type: none"> <li>• Round</li> <li>• Shape Fitted</li> </ul>                                                                                               | 478<br>479                         |       |
| <b>DIES</b> <ul style="list-style-type: none"> <li>• Round Slug Hugger®*</li> <li>• Round Positive</li> <li>• Shape Slug Hugger®*</li> <li>• Shape Positive</li> <li>• Shape Negative</li> </ul> | 454<br>3011<br>456<br>3039<br>3040 |       |

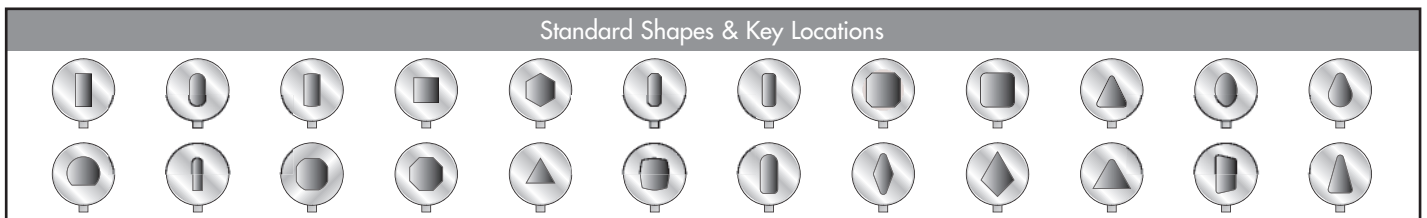
| Add Ons                                                                                           |       |     |          | Stubby Style                                                                                                                                                                                         |  |
|---------------------------------------------------------------------------------------------------|-------|-----|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Add ons for Rounds                                                                                |       |     |          |  Note: Must use stubby style die and stripper with stubby style punch<br>Use Standard Punch and Die Price Plus: |  |
| Small Diameter<br>0.79 - 1.50mm<br>Clearance < 0.10mm                                             | Punch | Die | Stripper |                                                                                                                                                                                                      |  |
| Add ons for Shapes                                                                                |       |     |          | Punch                                                                                                                                                                                                |  |
| Small Widths<br>0.79 - 1.0mm<br>Clearance < 0.10mm                                                | Punch | Die | Stripper | Round<br>(2.3mm max.dia.) add<br>Shape add                                                                                                                                                           |  |
|                                                                                                   |       |     |          | Die                                                                                                                                                                                                  |  |
| Add to round or shape punch for extra straight before radius, extra back taper, or no back taper. |       |     |          | Round add<br>Shape add                                                                                                                                                                               |  |

Notes:

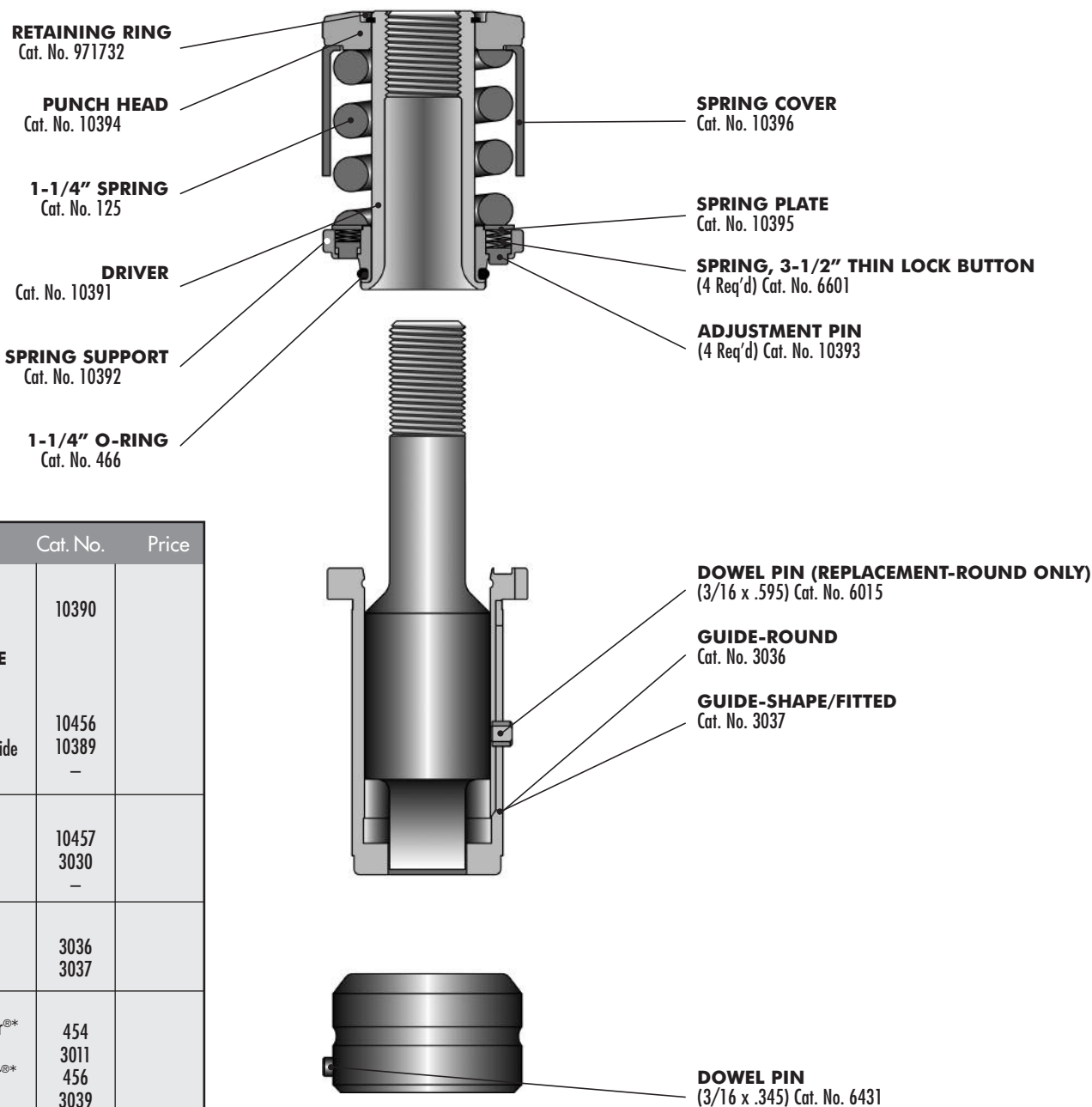
\* Slug Hugger dies must be ordered punch size plus clearance, 2.49mm min. dia. on rounds, 1.53mm min. width on shapes, 0.15mm min. clearance (patented).

Notes:

† 'A' Dimension = longest distance across shape.  
Maximum punching force: 9 tonnes

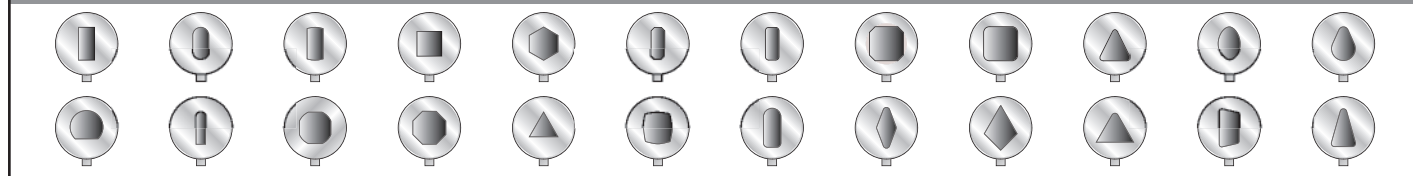


# QUICK ADJUST™ 1-1/4" STATION



| Description                        | Cat. No. | Price |
|------------------------------------|----------|-------|
| Quick Adjust™ Spring Pack Assembly | 10390    |       |
| <b>PUNCH &amp; GUIDE ASSEMBLY</b>  |          |       |
| • Round w/Closed Round Guide       | 10456    |       |
| • Shape w/Fitted Guide             | 10389    |       |
| • Optima™ Add On                   | —        |       |
| <b>PUNCHES</b>                     |          |       |
| • Round                            | 10457    |       |
| • Shape                            | 3030     |       |
| • Optima™ Add On                   | —        |       |
| <b>GUIDES</b>                      |          |       |
| • Round                            | 3036     |       |
| • Shape                            | 3037     |       |
| <b>DIES</b>                        |          |       |
| • Round Slug Hugger®*              | 454      |       |
| • Round Standard                   | 3011     |       |
| • Shape Slug Hugger®*              | 456      |       |
| • Shape Positive                   | 3039     |       |
| • Shape Negative                   | 3040     |       |

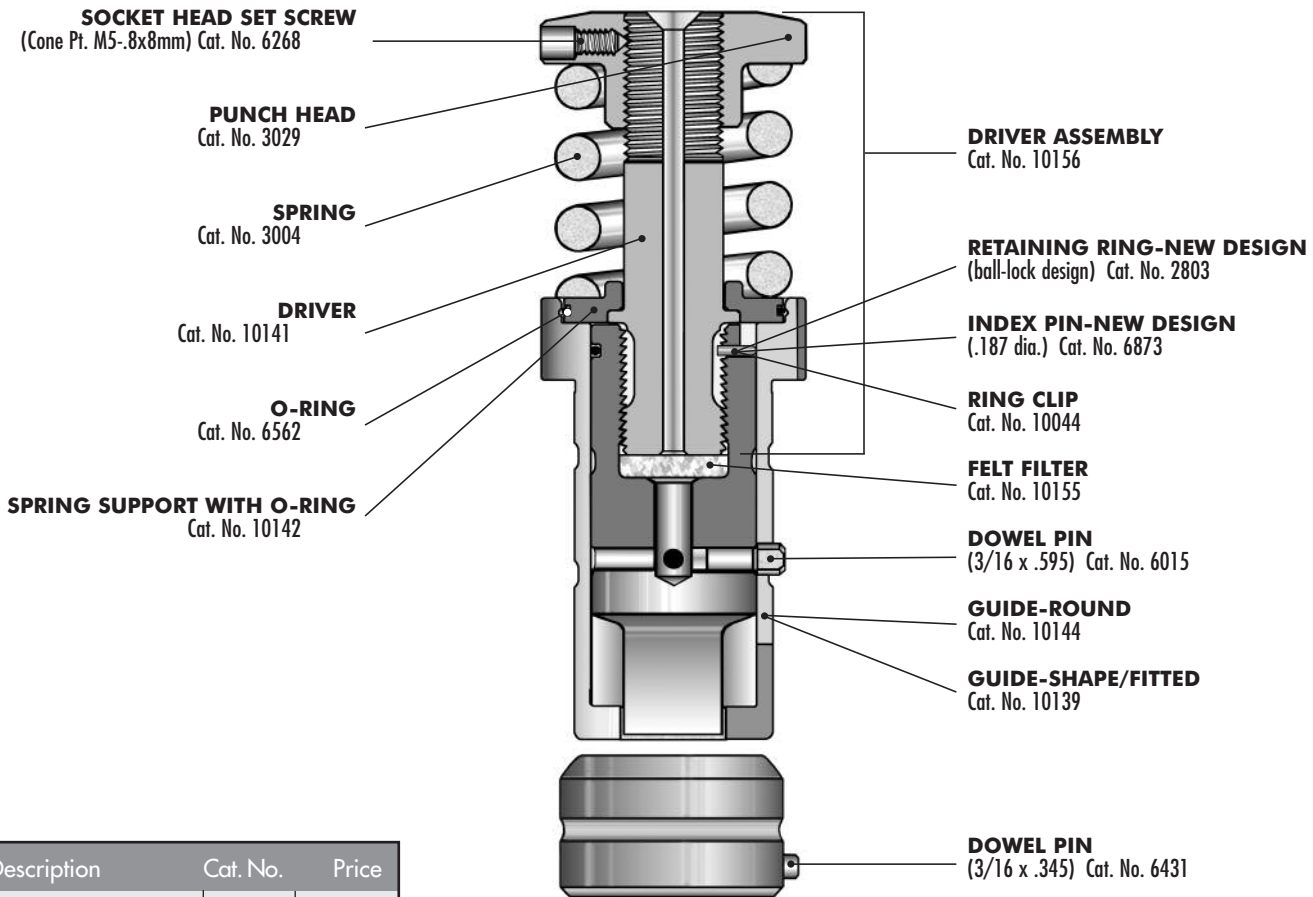
## Standard Shapes & Key Locations



Please refer to page 4 for restrictions and add ons for this product.

Please note that the Quick Adjust Spring Pack will only work with Wilson Tool Punches and Guides.





| Description                       | Cat. No. | Price |
|-----------------------------------|----------|-------|
| <b>PUNCH &amp; GUIDE ASSEMBLY</b> |          |       |
| • Round w/Closed Rd. Guide        | 10143    |       |
| • Shape w/Fitted Guide            | 10145    |       |
| • Optima™ Add On                  | —        |       |
| <b>PUNCHES</b>                    |          |       |
| • Round                           | 10137    |       |
| • Shape                           | 10136    |       |
| • Optima™ Add On                  | —        |       |
| <b>DIES</b>                       |          |       |
| • Round Slug Hugger®*             | 454      |       |
| • Round Standard                  | 3011     |       |
| • Shape Slug Hugger®*             | 456      |       |
| • Shape Positive                  | 3039     |       |
| • Shape Negative                  | 3040     |       |

| Add Ons                                                                                           |              |            |              | Stubby Style                                                                          |                                                                          |
|---------------------------------------------------------------------------------------------------|--------------|------------|--------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Add ons for Rounds                                                                                |              |            |              |  | <p>Note: Must use stubby style die and guide with stubby style punch</p> |
| <b>Small Diameter</b><br>0.79 - 1.50mm<br>Clearance < 0.10mm                                      | <b>Punch</b> | <b>Die</b> | <b>Guide</b> |                                                                                       |                                                                          |
| Use Standard Punch and Die Price Plus:                                                            |              |            |              |                                                                                       |                                                                          |
| Punch                                                                                             |              |            |              |                                                                                       |                                                                          |
| Add ons for Shapes                                                                                |              |            |              | <b>Round</b><br>(2.3mm max.dia.) add<br><b>Shape</b> add                              |                                                                          |
| <b>Small Widths</b><br>0.79 - 1.0mm<br>'A' Dimension <sup>†</sup> < 11.10mm<br>Clearance < 0.10mm | <b>Punch</b> | <b>Die</b> | <b>Guide</b> | Die                                                                                   |                                                                          |
|                                                                                                   |              |            |              | <b>Round</b> add<br><b>Shape</b> add                                                  |                                                                          |
| Add to round or shape punch for extra straight before radius, extra back taper, or no back taper. |              |            |              |                                                                                       |                                                                          |

Notes:  
 \* Slug Hugger dies must be ordered punch size plus clearance, 2.49mm min. dia. on rounds, 1.53mm min. width on shapes, 0.15mm min. clearance (patented).  
 † 'A' Dimension = longest distance across shape.  
 Maximum punching force — 13.6 tonnes

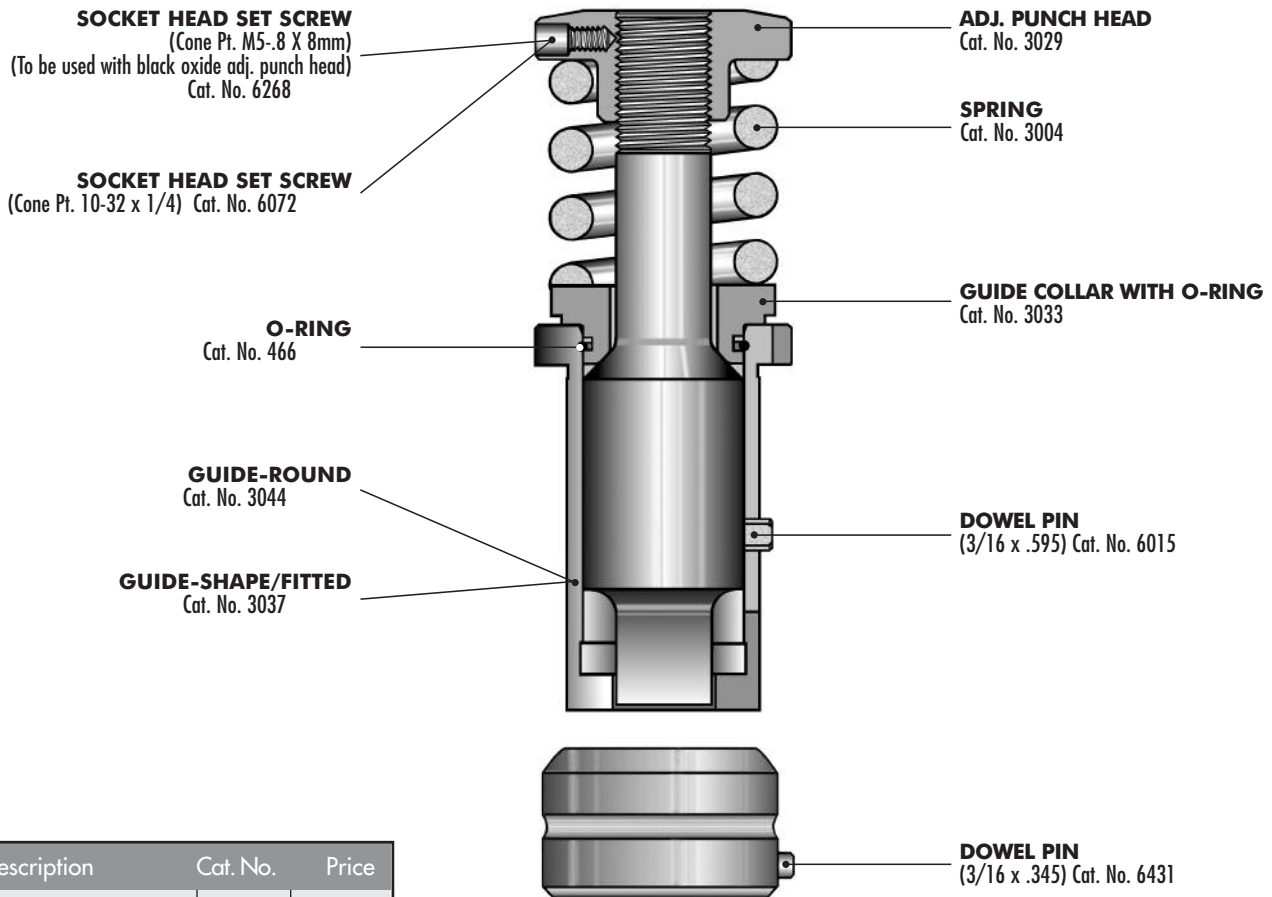
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 sales@wilsonsontool.eu.com





| Description                       | Cat. No. | Price |
|-----------------------------------|----------|-------|
| <b>PUNCH &amp; GUIDE ASSEMBLY</b> |          |       |
| • Round w/Closed Rd. Guide        | 3041     |       |
| • Shape w/Fitted Guide            | 3024     |       |
| • Optima™ Add On                  | —        |       |
| <b>PUNCHES</b>                    |          |       |
| • Round                           | 3043     |       |
| • Shape                           | 3030     |       |
| • Optima™ Add On                  | —        |       |
| <b>DIES</b>                       |          |       |
| • Round Slug Hugger®*             | 454      |       |
| • Round Standard                  | 3011     |       |
| • Shape Slug Hugger®*             | 456      |       |
| • Shape Positive                  | 3039     |       |
| • Shape Negative                  | 3040     |       |

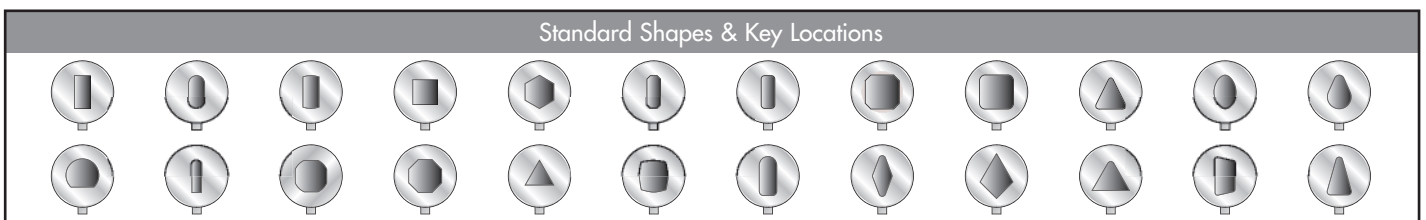
| Add Ons                                                                                                 |              |            |              | Stubby Style                                                                                                                                                   |  |                                        |
|---------------------------------------------------------------------------------------------------------|--------------|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------|
| Add ons for Rounds                                                                                      |              |            |              |  <p>Note: Must use stubby style die and guide with stubby style punch</p> |  |                                        |
| <b>Small Diameter</b><br>0.79 - 1.50mm<br>Clearance < 0.10mm                                            | <b>Punch</b> | <b>Die</b> | <b>Guide</b> |                                                                                                                                                                |  |                                        |
|                                                                                                         |              |            |              |                                                                                                                                                                |  | Use Standard Punch and Die Price Plus: |
| Add ons for Shapes                                                                                      |              |            |              | Punch                                                                                                                                                          |  |                                        |
| <b>Small Widths</b><br>0.79 - 1.0mm<br>'A' Dimension† < 11.10mm<br>Clearance < 0.10mm                   | <b>Punch</b> | <b>Die</b> | <b>Guide</b> | Round<br>(.090/2.3mm max.dia.) add<br>Shape add                                                                                                                |  |                                        |
|                                                                                                         |              |            |              | Die                                                                                                                                                            |  |                                        |
|                                                                                                         |              |            |              | Round add<br>Shape add                                                                                                                                         |  |                                        |
| Add _____ to round or shape punch for extra straight before radius, extra back taper, or no back taper. |              |            |              |                                                                                                                                                                |  |                                        |

**Notes:**

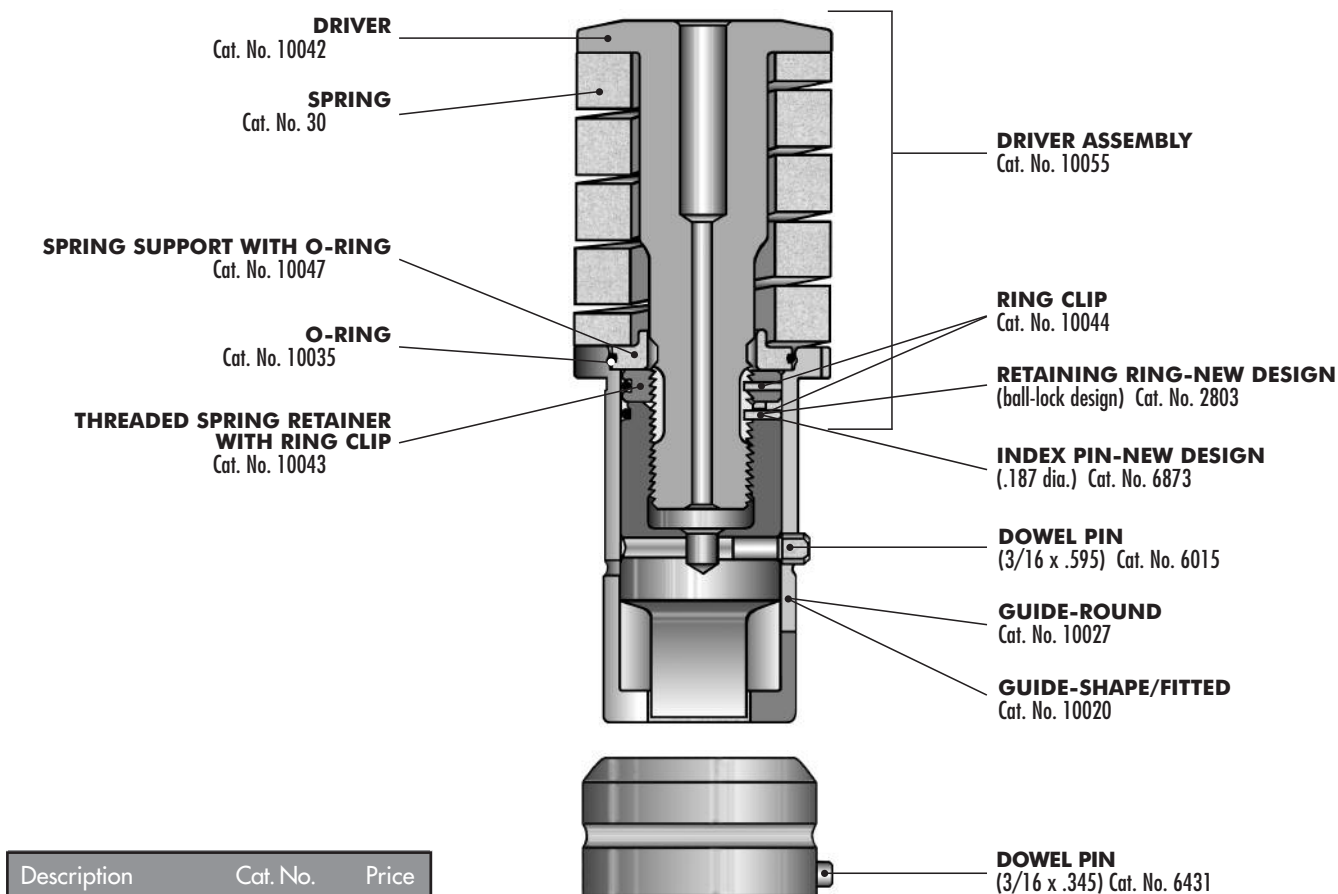
\* Slug Hugger dies must be ordered punch size plus clearance, 2.49mm min. dia. on rounds, 1.53mm min. width on shapes, 0.15mm min. clearance (patented).  
† 'A' Dimension = longest distance across shape.

**Notes:**

Urethane spring assemblies available upon request.  
Maximum punching force - 13.6 tonnes







| Description                       | Cat. No. | Price |
|-----------------------------------|----------|-------|
| <b>PUNCH &amp; GUIDE ASSEMBLY</b> |          |       |
| • Round w/Closed Rd. Guide        | 10039    |       |
| • Shape w/Fitted Guide            | 10040    |       |
| • Optima™ Add On                  | —        |       |
| <b>PUNCHES</b>                    |          |       |
| • Round                           | 10046    |       |
| • Shape w/Ring Clip               | 10045    |       |
| • Optima™ Add On                  | —        |       |
| <b>DIES</b>                       |          |       |
| • Round Slug Hugger®*             | 454      |       |
| • Round Standard                  | 3011     |       |
| • Shape Slug Hugger 2®*           | 456      |       |
| • Shape Positive                  | 3039     |       |
| • Shape Negative                  | 3040     |       |

| Add Ons                                                                                           |       |     |       |
|---------------------------------------------------------------------------------------------------|-------|-----|-------|
| Add ons for Rounds                                                                                |       |     |       |
| Small Diameter<br>0.79 - 1.50mm<br>Clearance < 0.10mm                                             | Punch | Die | Guide |
| Add ons for Shapes                                                                                |       |     |       |
| Small Widths<br>0.79 - 1.0mm<br>'A' Dimension† < 11.10mm<br>Clearance < 0.10mm                    | Punch | Die | Guide |
| Add to round or shape punch for extra straight before radius, extra back taper, or no back taper. |       |     |       |

\* Slug Hugger dies must be ordered punch size plus clearance, 2.49mm min. dia. on rounds,

1.53mm

min. width on shapes, 0.15mm min. clearance (patented).

† 'A' Dimension = longest distance across shape.

Notes:

Spherical concave shear & Optima™ standard on 25.4mm, 25mm, and 31.75mm diameters.

Maximum material thickness 9.5mm mild steel

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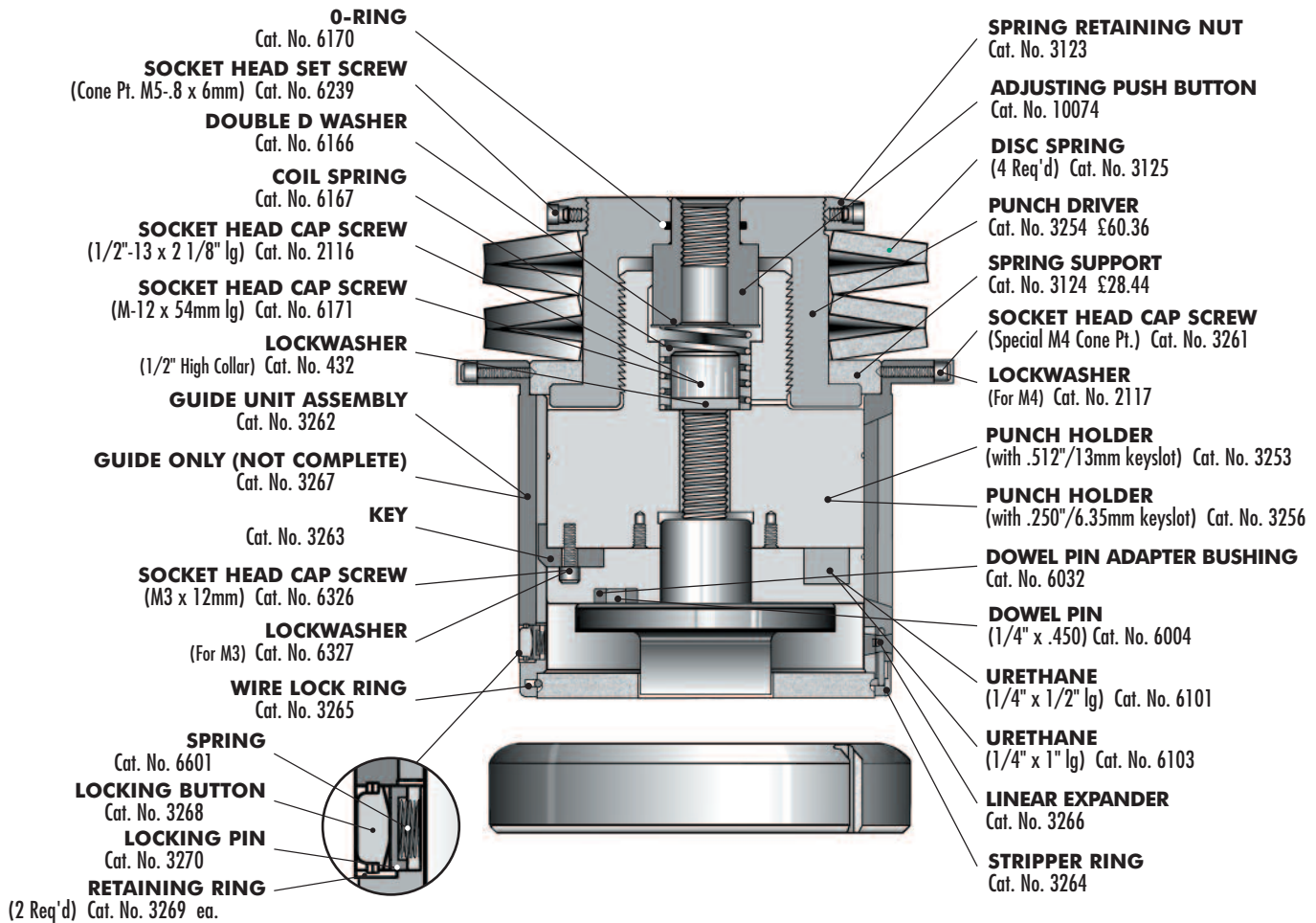
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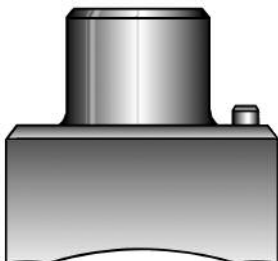
# SERIES 90® 3-1/2" STATION



| Description                                                                                                                                                                                  | Cat. No.                             | Price | 3 1/2" Station Add Ons                                                                                                                                                                                                                                                                                                                      |              |            |                 | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GUIDE ASSEMBLY</b><br>(.512"/13mm Keyslot)                                                                                                                                                | 3358                                 |       | Add ons for Rounds                                                                                                                                                                                                                                                                                                                          |              |            |                 | <p>Note: Series 90® Guide Assemblies are keyed for shapes at 0°, 45°, 90°, 180°, 225°, 270°.</p> <ul style="list-style-type: none"><li>1.6mm Rooftop shear is given to all punches with 'A' dimension* greater than 50.8mm, and width greater than 6.35mm, at no extra charge.</li><li>All punches 6.35mm and under in width will be shipped with no shear unless specified.</li><li>Square dies are keyed for shape at 0° and 45°; all other shaped dies are keyed for shape at 0° and 90°.</li><li>Slug Hugger dies must be ordered punch size plus clearance, 1.53mm min. width on shapes, 0.15mm min. clearance (patented).</li></ul> <p>† 'A' Dimension = longest distance across shape.</p> |
| <b>PUNCHES</b> <ul style="list-style-type: none"><li>• Round</li><li>• Shape</li><li>• Optima™ Add On</li></ul>                                                                              | 3181<br>3190<br>—                    |       | <b>Small Diameter</b><br><br>< 25.4mm<br>25.4 - 31.72mm<br>Clearance < 0.10mm                                                                                                                                                                                                                                                               | <b>Punch</b> | <b>Die</b> | <b>Stripper</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                              |                                      |       | Add ons for Shapes                                                                                                                                                                                                                                                                                                                          |              |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>STRIPPERS</b> <ul style="list-style-type: none"><li>• Round Closed</li><li>• Shape Fitted</li></ul>                                                                                       | 3116<br>3115                         |       | <b>Small Width</b><br><br>0.79 - 1.0mm<br>1.02 - 2.34mm                                                                                                                                                                                                                                                                                     | <b>Punch</b> | <b>Die</b> | <b>Stripper</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>DIES</b> <ul style="list-style-type: none"><li>• Round Slug Hugger®*</li><li>• Round Standard</li><li>• Shape Slug Hugger 2®*</li><li>• Shape Positive</li><li>• Shape Negative</li></ul> | 2198<br>1865<br>2199<br>1870<br>1871 |       | <b>Small 'A' Dimension†</b><br><br>< 29.21mm<br>29.21 - 31.72mm<br>Clearance < 0.10mm                                                                                                                                                                                                                                                       |              |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                              |                                      |       | Add       round or shape punch for extra straight before radius, extra back taper,<br>or no back taper.                                                                                                                                                                                                                                     |              |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                              |                                      |       | To convert Amada manufactured 3 1/2" station shank style holders to use standard thread punches, a special bolt (1/2" - 13") Cat No. 6002 (£6.30), must be substituted with the M-12 already in the holder. Also, the M-6 x 16mm Long Cap Screw which holds the key must be substituted with a Button Head Cap Screw Cat No. 03156 (£3.33). |              |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                              |                                      |       |                                                                                                                                                                                                                                                                                                                                             |              |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

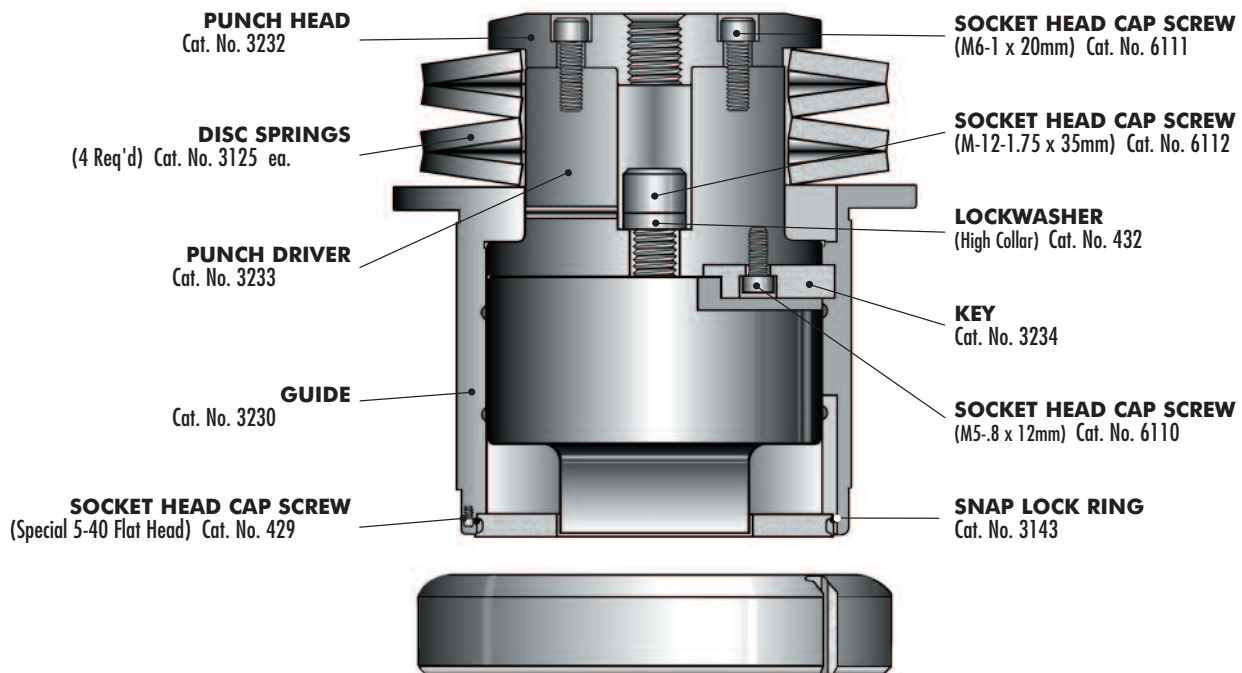
## 3 1/2" Station Notcher

(For Series 90 Guide Assemblies)

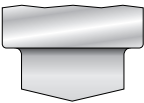
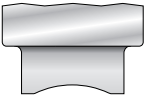
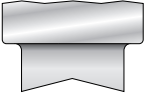
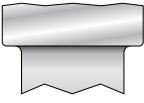
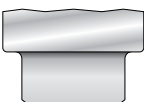


| Description                                                                            | Cat. No. | Price |
|----------------------------------------------------------------------------------------|----------|-------|
| <b>PUNCH</b><br>• Square<br>2" (50.8mm) or 50mm w/ 1/16"<br>(1.6mm) dbl. concave shear |          |       |

Note: Optima standard on notcher punches



| Description                                                                                                                                                                                | Cat. No.                             | Price | Add Ons                                                                                           |       |     |          | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------|---------------------------------------------------------------------------------------------------|-------|-----|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GUIDE ASSEMBLY</b><br>Keyed for shapes at 0° & 90°                                                                                                                                      | 3231                                 |       | Add ons for Rounds                                                                                |       |     |          | <ul style="list-style-type: none"><li>• 1.6mm Rooftop shear is given to all punches with 'A' dimension† greater than 50.8mm, and width greater than 6.35mm, at no extra charge.</li><li>• All punches 6.35mm and under in width will be shipped with no shear unless specified.</li><li>• Square dies are keyed for shape at 0° and 45°; all other shaped dies are keyed for shape at 0° and 90°.</li><li>• Slug Hugger dies must be ordered punch size plus clearance, 1.53mm min. width on shapes, 0.15mm min. clearance (patented).</li></ul> † 'A' Dimension = longest distance across shape. |
| <b>PUNCHES</b> <ul style="list-style-type: none"><li>• Round (M-12 Thread)</li><li>• Shape (M-12 Thread)</li><li>• Optima™ Add On</li></ul>                                                | 3183<br>3184<br>—                    |       | Small Diameter<br>< 29.21mm<br>29.21 - 31.72mm<br>Clearance < 0.10mm                              | Punch | Die | Stripper |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                            |                                      |       | Add ons for Shapes                                                                                |       |     |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>STRIPPERS</b> <ul style="list-style-type: none"><li>• Round</li><li>• Shape</li></ul>                                                                                                   | 3116<br>3115                         |       | Small Width<br>0.79 - 1.0mm<br>1.01 - 2.34mm                                                      | Punch | Die | Stripper |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>DIES</b> <ul style="list-style-type: none"><li>• Round Slug Hugger®*</li><li>• Round Standard</li><li>• Shape Slug Hugger®*</li><li>• Shape Positive</li><li>• Shape Negative</li></ul> | 2198<br>1865<br>2199<br>1870<br>1871 |       | Small 'A' Dimension†<br>< 29.21mm<br>29.21 - 31.72mm<br>Clearance < 0.10mm                        |       |     |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                            |                                      |       | Add to round or shape punch for extra straight before radius, extra back taper, or no back taper. |       |     |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Type of Shear                                                                     |                           | Benefit                                                                                                     | Limitation                                                                                           |
|-----------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|  | Rooftop                   | Best shear for punching at maximum tonnages.                                                                | When nibbling, bite must be 75% of punch dimension or excessive side loading will result.            |
|  | Concave or Double Concave | Best shear for nibbling because it inverts stresses.                                                        | The punch is less resistant to breakage when punching at high tonnages because of inverted stresses. |
|  | Inverted Rooftop          | Also good shear for nibbling because it inverts stresses.                                                   | More susceptible to breakage because of a sharp focal point for stresses. Use great care.            |
|  | Double Valley Shear       | Best shear for nibbling when shape is long and narrow.                                                      | The punch is less resistant to breakage when punching at high tonnages because of inverted stresses. |
|  | JK Shear                  | A special punch tip shear that allows you to punch high strength materials with a reduced risk of breakage. | Can only be used on punches up to 1.000" (25.4mm) diameter or 'A' dimension.                         |

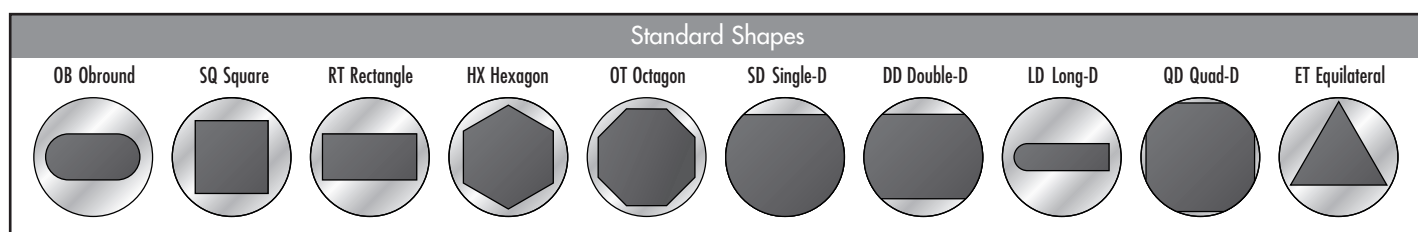
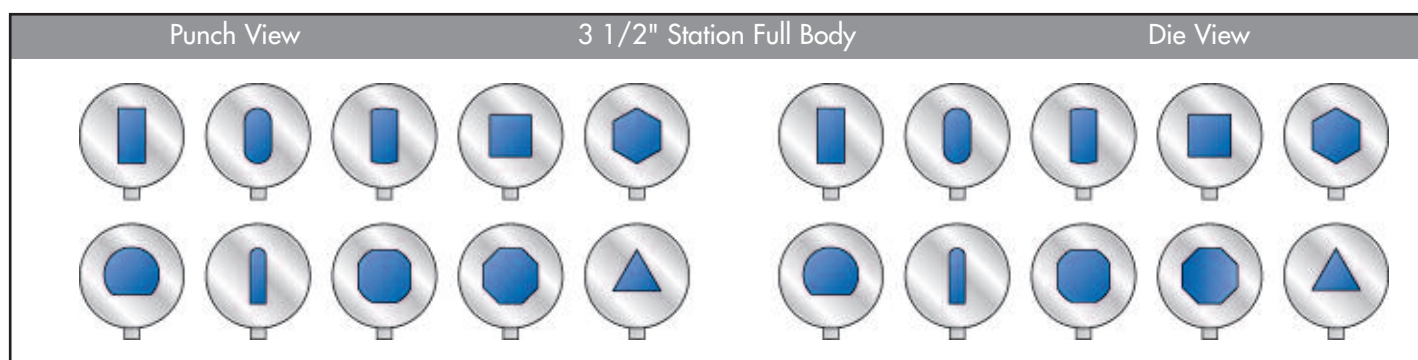
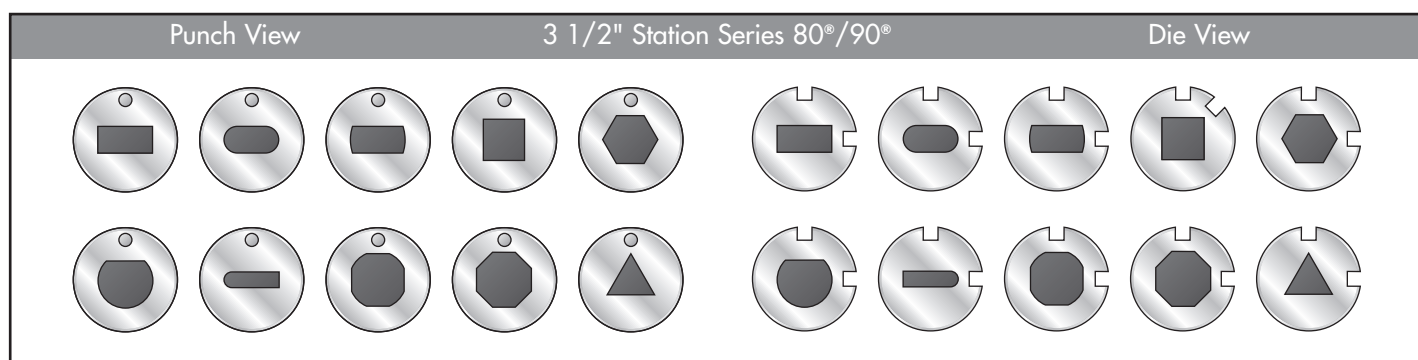
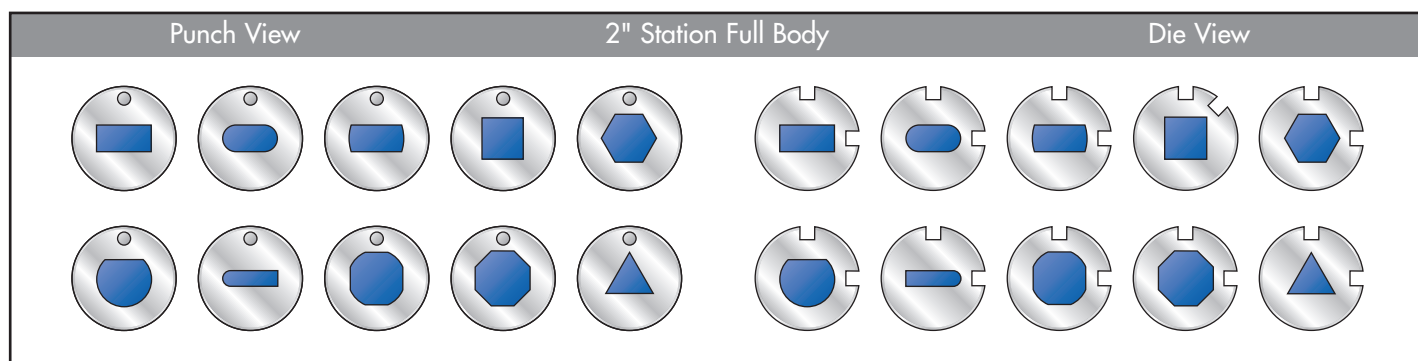
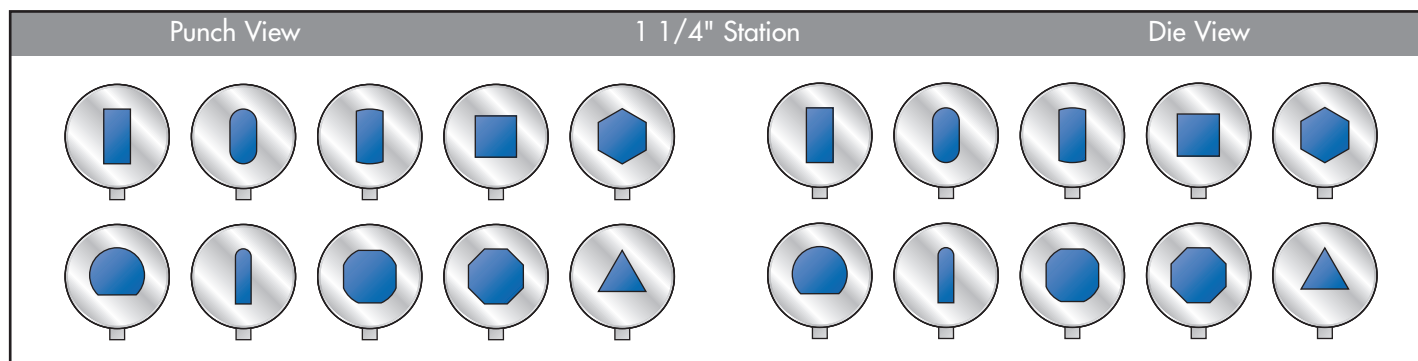
| Special Shears |                  |                                    |             |                                 |             |
|----------------|------------------|------------------------------------|-------------|---------------------------------|-------------|
| Station        | 'A' Dimensions † | Inverted Rooftop or Single Concave |             | Double Valley or Double Concave |             |
|                |                  | 1.6mm Shear                        | 2.4mm Shear | 1.6mm Shear                     | 2.4mm Shear |
| 1 1/4"         | Within 31.75mm   |                                    |             |                                 |             |
| 3 1/2"         | Within 88.9mm    |                                    |             |                                 |             |

1.6mm rooftop shear is given to all punches with 'A' dimension † greater than 50.8mm and width greater than 6.35mm at no extra charge. All punches 6.35mm and under in width will be shipped with no shear unless specified.

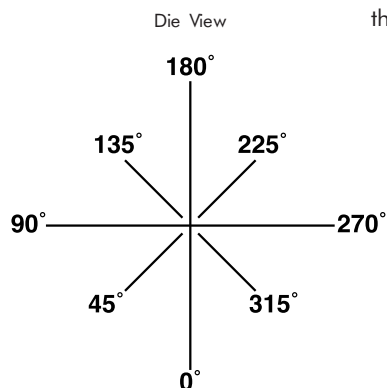
NOTE: In some instances, inverted rooftop is substituted for single and double concave shears.

| JK Shear                                          |              |
|---------------------------------------------------|--------------|
| Shape                                             | Add On Price |
| Round                                             |              |
| Rectangle, Square, Hexagon<br>Single DB Double DB |              |
| Oround                                            |              |

† 'A' Dimension = Longest dimension across shape.

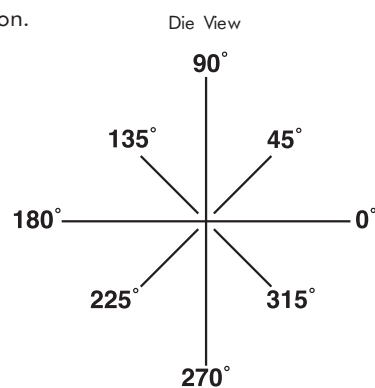


When ordering shapes at non-standard angles, use the diagram below to eliminate any confusion.



## Front of Machine

Wilson Tools keying diagram.



## Front of Machine

Shape at single angles other than standard or 45°  
(Note: no additional charge for shape at 45°)

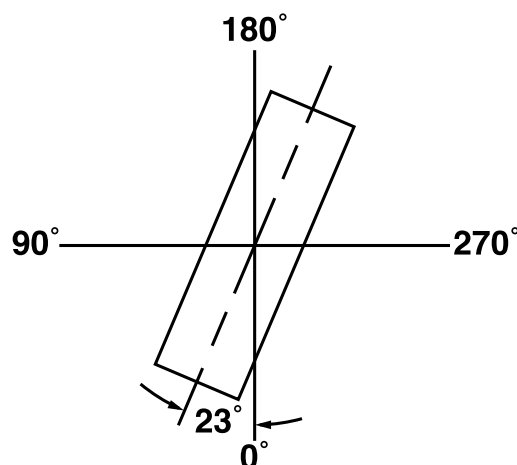
| Station                 | Punches | Dies | Guides or Strippers |
|-------------------------|---------|------|---------------------|
| 1 1/4"                  |         |      |                     |
| 3 1/2" Std. & Full Body |         |      |                     |

Standard keying, plus extra pins or keys for shapes at other than 45° increments

| Station                 | Punches | Dies | Guides or Strippers |
|-------------------------|---------|------|---------------------|
| 5/8"                    |         |      |                     |
| 1 1/4"                  |         |      |                     |
| 3 1/2" Std. & Full Body |         |      |                     |

## Example

Shape at 23°



Standard keying, plus extra pins or keys for shapes at 45° increments

| Standard keying, plus extra pins or keys for shapes at 45° increments |                   |              |                   |              |                                                   |              |
|-----------------------------------------------------------------------|-------------------|--------------|-------------------|--------------|---------------------------------------------------|--------------|
| Station                                                               | Punches           |              | Dies              |              | Guides or Strippers                               |              |
|                                                                       | Available Options | Add On Price | Available Options | Add On Price | Available Options                                 | Add On Price |
| 5/8"                                                                  | Not Available     |              | 0° & 45°          |              | *0° & 45° or<br>0° & 180°                         |              |
|                                                                       |                   |              | 0° & 180°         |              |                                                   |              |
| 1 1/4"                                                                | 0° & 45°          |              | 0° & 45°          |              | Closed round guide or 2<br>fitted guides required |              |
|                                                                       | 0° & 180°         |              | 0° & 180°         |              |                                                   |              |
| 3 1/2" Std.<br>& Full Body                                            | 45° Increments    |              | 45° Increments    |              | Not Applicable                                    |              |

\*Snap-Apart only.



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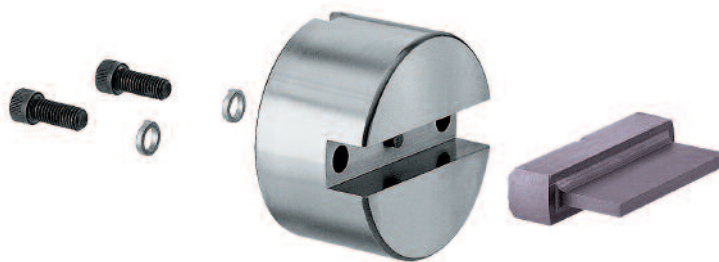
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**FOR 3-1/2" STATION**

| Replaceable Insert Assembly                 |               |       |              |       |              |       |
|---------------------------------------------|---------------|-------|--------------|-------|--------------|-------|
| Station                                     | Body (M - 12) |       | Punch Insert |       | Set (M - 12) |       |
|                                             | Cat. No.      | Price | Cat. No.     | Price | Cat. No.     | Price |
| 3 1/2"<br>Full Body                         | 3192          |       | 3193         |       | 3191         |       |
| Parts Description                           |               |       |              |       | Cat. No.     | Price |
| Socket Head Cap Screw – 3/8" - 16 x 1" long |               |       |              |       | 6019         |       |
| High Collar Lock Washer for 3/8" screw      |               |       |              |       | 2129         |       |
| Dowel Pin – 1/4" Dia. x .450" long          |               |       |              |       | 6004         |       |

**Notes**

Optima™ is standard on punch inserts.

- Blade insert punches under 9.53mm in width will be shipped with no shear unless specified.
- Double Valley Shear is recommended for widths of 4.75mm thru 9.53mm and minimum lengths of 50.8mm when used for nibbling. See Shear chart page 17.

- For widths less than 2.36mm, consult the sales desk.

- Maximum width 19mm.

- Inserts are available as obround to be used with rectangle dies, to eliminate "Saw Tooth Effect."



| Aligning Tools |          |       |
|----------------|----------|-------|
| Description    | Cat. No. | Price |
| 1 1/4" Station |          |       |
| Upper Unit     | 494      |       |
| Lower Unit     | 495      |       |
| 2" Station     |          |       |
| Upper Unit     | 3350     |       |
| Lower Unit     | 1841     |       |
| 3 1/2" Station |          |       |
| Upper Unit     | 3251     |       |
| Lower Unit     | 1948     |       |

Note: Not for use in Auto Index Station.



| 3 1/2" Station - Series 80 Plus®<br>Relieved Guide Assembly For<br>Punching Close to Clamps |          |       |
|---------------------------------------------------------------------------------------------|----------|-------|
| Description                                                                                 | Cat. No. | Price |
| <b>GUIDE ASSEMBLY</b>                                                                       | 3248     |       |
| <b>GUIDE ONLY</b>                                                                           | 3249     |       |
| <b>PUNCHES</b>                                                                              | 3250     |       |
| <b>STRIPPERS</b>                                                                            |          |       |
| Relieved both sides                                                                         | 3245     |       |
| Relieved one side only                                                                      | N/A      |       |
| <b>DIES</b>                                                                                 |          |       |
| Slug Hugger®**<br>(relief 2 sides, shp at 90°)                                              | 5157     |       |
| Slug Hugger®**<br>(relief 2 sides, shp at 0°-90°)                                           | 5330     |       |
| Slug Hugger®**<br>(relief 1 side, shp at 90°)                                               | 2464     |       |
| Slug Hugger®**<br>(relief 1 side, shp at 0°-90°)                                            | 5333     |       |
| Positive<br>(relief 2 sides, shp at 90°)                                                    | 5101     |       |
| Positive<br>(relief 2 sides, shp at 0°-90°)                                                 | 5328     |       |
| Positive<br>(relief 1 side, shp at 90°)                                                     | 2462     |       |
| Positive<br>(relief 1 side, shp at 0°-90°)                                                  | 5331     |       |
| Negative<br>(relief 2 sides, shp at 90°)                                                    | 5156     |       |
| Negative<br>(relief 2 sides, shp at 0°-90°)                                                 | 5329     |       |
| Negative<br>(relief 1 side, shp at 90°)                                                     | 2463     |       |
| Negative<br>(relief 1 side, shp at 0°-90°)                                                  | 5332     |       |

- All punches 6.35mm and under in width will be shipped with no shear unless specified.
- \* Slug Hugger® dies must be ordered punch size plus clearance, 1.53mm min. width on shapes, 0.15mm min & Slug Hugger® 2 0.1mm. clearance (patented).

| Punch Shims        |      |          |       |
|--------------------|------|----------|-------|
| .060 Thick (1.5mm) |      |          |       |
| Individually       |      |          |       |
| Station            | Qty. | Cat. No. | Price |
| 1/2"               | 1    | 100      |       |
| 1 1/4"             | 1    | 152      |       |
| 3 1/2" Full Body   | 1    | 2088     |       |
| Package            |      |          |       |
| Station            | Qty. | Cat. No. | Price |
| 1/2"               | 25   | 99       |       |
| 1 1/4"             | 25   | 98       |       |
| 2" Full Body       | 10   | 2169     |       |
| 3 1/2" Full Body   | 5    | 2170     |       |

| Die Shims    |      |          |       |
|--------------|------|----------|-------|
| 0.25mm Thick |      |          |       |
| Individually |      |          |       |
| Station      | Qty. | Cat. No. | Price |
| 1-1/4"       | 1    | 2097     |       |
| 3-1/2"       | 1    | 2081     |       |
| Package      |      |          |       |
| Station      | Qty. | Cat. No. | Price |
| 1-1/4"       | 25   | 2209     |       |
| 3-1/2"       | 5    | 2211     |       |

| Die Shims    |      |          |       |
|--------------|------|----------|-------|
| 0.76mm Thick |      |          |       |
| Individually |      |          |       |
| Station      | Qty. | Cat. No. | Price |
| 1-1/4"       | 1    | 2723     |       |
| 3-1/2"       | 1    | 2727     |       |
| Package      |      |          |       |
| Station      | Qty. | Cat. No. | Price |
| 1-1/4"       | 25   | 2724     |       |
| 3-1/2"       | 5    | 2728     |       |

| Die Shims    |      |          |       |
|--------------|------|----------|-------|
| 1.5mm Thick  |      |          |       |
| Individually |      |          |       |
| Station      | Qty. | Cat. No. | Price |
| 1-1/4"       | 1    | 2100     |       |
| 3-1/2"       | 1    | 2084     |       |
| Package      |      |          |       |
| Station      | Qty. | Cat. No. | Price |
| 1-1/4"       | 25   | 2173     |       |
| 3-1/2"       | 5    | 2175     |       |

| Die Shims For Multi-Tools® |                |       |           |            |       |                   |       |
|----------------------------|----------------|-------|-----------|------------|-------|-------------------|-------|
| Machine Type               |                |       |           | Individual |       | Package of 15 ea. |       |
|                            | Station        | Shape | Thickness | Cat. No.   | Price | Cat. No.          | Price |
| FINN-POWER®                | MT 12 & 20 - 8 | ROUND | 0.25 mm   | 6802       |       | 6817              |       |
| FINN-POWER®                | MT 12 & 20 - 8 | ROUND | 0.76 mm   | 6803       |       | 6818              |       |
| FINN-POWER®                | MT 12 & 20 - 8 | SHAPE | 0.25 mm   | 6804       |       | 6819              |       |
| FINN-POWER®                | MT 12 & 20 - 8 | SHAPE | 0.76 mm   | 6805       |       | 6820              |       |
| FINN-POWER®                | MT 6 & 10 - 16 |       | 0.25 mm   | 6806       |       | 6821              |       |
| FINN-POWER®                | MT 6 & 10 - 16 |       | 0.76 mm   | 6807       |       | 6822              |       |
| FINN-POWER®                | MT 6 & 8 - 24  |       | 0.25 mm   | 6808       |       | 6823              |       |
| FINN-POWER®                | MT 6 & 8 - 24  |       | 0.76 mm   | 6809       |       | 6824              |       |

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