Thick Turret Style Tooling
ULTRA® AND THICK TURRET TOOLING
FIVE DECADES OF GLOBAL EXCELLENCE

Founded in 1962, Mate is a world-class manufacturer of superior sheet metal fabrication products and solutions. We manufacture tooling for every major CNC punch press. In North America, we also offer a complete line of press brake tooling and laser consumables including CO2 and fiber. Mate products and services are available worldwide, fully supported by more than 80 dealers in every industrialized country.

Headquartered in Anoka, Minnesota, in a 300,000 sq. ft. (28,000m²) state-of-the-art facility.

WE RESPECT YOU  PERSONAL CONNECTIONS
Mate does business with people, not companies. Our connection to you is personal. Mate’s team of manufacturing and sheet metal professionals knows what you go through. We know what it’s like to compete for that next job, manage deadlines or even need a rescue. With Mate you have a partner that respects your knowledge and is dedicated to helping you succeed.

WE SUPPORT YOU  YOUR GO-TO SOURCE
In your plant. Or on the phone. From our Sales Engineers and Customer Service, to our machinists and shipping department, Mate is pulling for YOU. Mate’s in-field sales engineers know from experience what happens on the shop floor. They speak your language, fully capable of helping you improve processes and solve problems. Inside Mate, Customer Service makes quoting and ordering tooling fast and easy, guiding it through our world class manufacturing systems to ensure you receive your order when you expect it.

WE INSPIRE YOU  THINK BOLD, WE’VE GOT YOU COVERED
Whether it’s on-site at your facility or in our Solution Center, Mate can inspire innovation from looking at new ways to use existing products or by developing new or specialty solutions that meet your specific requirements. Mate’s team will assist you with a fast solution, whether it’s a hinge, a building façade or a completely new challenge. Plus you’re BACKED by our no-risk 100% customer satisfaction guarantee.

MATE’S MISSION AND PROMISE TO YOU:
To personally respect, support and inspire sheet metal professionals around the world with high-quality precision tooling and services.
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*All prices in this catalog are subject to change without notice.*
Mate offers the most comprehensive range of thick turret tooling systems designed to accommodate any punching application. Use this simple chart to determine which system is right for your typical thick turret applications.

<table>
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<th>LESS</th>
<th>MORE</th>
<th>Ultra QCT™</th>
<th>Ultra TEC™</th>
<th>Ultra XT™</th>
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<td>Overall Value – The combination of features, purchase price, and operating costs.</td>
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<td>Cost Savings – The ongoing cost savings of operating the tooling system over time.</td>
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<td>Ease of Use – Design features included in the tooling system that make it faster to install, simpler for the operator to set up, and more convenient to maintain.</td>
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<td>Interchangeability – The ability of a tooling system to be compatible with other popular systems from other major suppliers.</td>
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<td>Quick Set-up – Integral features which enable tools to be changed quickly and accurately, thus maximizing machine up time.</td>
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<td>Grind Life – The sum of the number of holes punched between regrinds AND the total grindable length of the punch tip before it needs to be replaced.</td>
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<td>Slug Free® Die – Advanced die geometry that prevents the slug from being pulled back to the top of the sheet.</td>
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<td>Features – Elements of a tool system that affects its ease of use, performance and longevity.</td>
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<tr>
<td>Purchase Price – The initial purchase price of the system.</td>
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Mate Precision Tooling’s ULTRA® QCT™ Thick Turret Tooling takes insert-style punching systems to a whole new level! With its durable patent-pending design, tool-less punch retention mechanism and M4PM™ steel inserts, you’ll be on your way to faster, more cost effective punching in no time.

- Easy set-up & maintenance. No tools required!
- Longer lasting, superior insert performance
- Robust construction
- Simple
Mate’s Ultra TEC® precision tooling system is a thick turret punching system which increases tool performance and flexibility, offers extended tool life and allows interchangeability with existing systems. Some features of the Ultra® system include:

- Premium high speed tool steel punches
- Quick tool change strippers – no tools required
- Relieved strippers for extended grind life
  - 0.118(3.00) for 1/2” A and 1-1/4” B station
  - 0.078(2.00) for 2” C, 3-1/2” D and 4-1/2” E stations
- Easy click length adjustment - no shims or tooling required
- Internal and external tool lubrication
- Hardened guides
- Slug Free® die design

Option: M4PM™ steel available in A and B station punches for superior performance and longevity. (See page 93 for details and additional information.)

Mate’s Ultra XT™ precision tooling system is a thick turret punching system which increases tool performance and flexibility, offers extended tool life and allows interchangeability with existing systems. Features of the Mate Ultra XT™ system include:

- Premium high speed tool steel punches.
- Quick tool change strippers.
- Relieved strippers for extended grind life.
  - 0.118(3.00) for 1/2” A and 1-1/4” B station
- OEM compatible strippers 2” C, 3-1/2” D, 4-1/2” E and 6” F stations.
- Easy click length adjustment - no shims or tooling required.
- Internal and external lubrication.
- Slug Free® die design.

Original style thick turret tooling from Mate is OEM compatible, with several design enhancements, including:

- Premium high speed steel punches.
- Hexagon shaped punch heads in 1/2” A and 1-1/4” B stations for easier adjustment.
- Reversible spring retainers in 1/2” A and 1-1/4” B stations for additional tool life.
- Hardened guides for reduced friction and longer service life.
- Mate Slug Free® dies as standard.

Mate’s Ultraform® tooling system features adjustable length holders for 1-1/4” B, 2” C, 3-1/2” D and 4-1/2” E stations. Each Ultraform® holder can be used with a variety of special forming inserts.

Each Mate Ultraform® holder includes a precise and convenient length adjustment mechanism to allow the fine adjustment of any forming tool to achieve high quality piece parts.

The benefits of the Ultraform® tooling system include reduced tooling cost, increased flexibility and ease of length adjustment for accurate forms.
MATE SLUG FREE® DIES
Mate Slug Free® dies eliminate slug pulling. Slug pulling is a condition where the slug returns to the top of the sheet during the stripping portion of the punching cycle. The slug comes between the punch and the top of the sheet on the next cycle. This causes damage to the piece part and the tooling. Slug Free® dies eliminate this problem.

The Slug Free® die has been designed with an opening that has a constriction point below the surface so the slug cannot return once it passes this point. Once the slug is separated from the punch, it is free to fall away from the punching area. Slug pulling is eliminated.

Material held securely by stripper before punch makes contact. Punch penetrates the material. Slug fractures away from sheet. Pressure point constricts slug. Punch stroke bottoms out as slug squeezes past pressure point. Punch retracts and slug is free to fall down and away through exit taper of the Slug Free® die.

MATE SLUG FREE LIGHT™ DIES FOR THIN SHEET METAL
Mate Slug Free Light™ thick turret dies are designed to eliminate slug pulling when punching thin sheet metal material, where the recommended die clearance is less than 0.008(0.20).

The Mate Slug Free Light™ die works by introducing a series of small protrusions around the edge of the slug. Each protrusion is created by a small angled notch cut into the die opening (See photo 1). As the slug passes through the die, the position of the protrusion relative to the notch changes slightly. This change creates slight pressure between the slug and the die land, which traps the slug into the die and eliminates the possibility of the slug being pulled back through the die. By eliminating slug pulling with every punch cycle, the piece part quality is improved and tool life is increased.

Mate Slug Free Light™ dies are available for thick turret tooling and are particularly effective when the die clearance is less than 0.008(0.20).

- Eliminate slug pulling
- Reduce tool breakage
- Improve tool life
- Increase quality
ULTRA® PRECISION TOOLING SYSTEM – DESIGNED TO DRAMATICALLY IMPROVE ANY PUNCHING OPERATION

- 0.237(6.04) more grind life than original style tooling.
- No tools needed for quick disassembly and assembly of guide, punch and stripper.
- Quick length adjustment significantly reduces change over and set-up times.
- Fully compatible with alternative systems.
- Superior internal and external spiral grooved lubrication system ensures uniform distribution of oil for smooth friction free operation of punch to guide and guide to turret bore.
- Hardened and ground guides stay round and true to size which greatly reduces turret bore wear.
- Slug Free® dies eliminate slug pulling.

PUNCHES:
- Premium high speed tool steel for extended life between regrinds and maximum productivity.
- 1/4 degree back taper and near polished flanks to reduce friction, eliminate galling and extend punch life.
- External lubrication grooves to allow fluid flow.
- Available in multiple styles:
  - Ultra TEC® with lubrication grooves.
  - Ultra® QCT™ with lubrication grooves.
  - Ultra® Metric (original) style punches.
  - Inch style (1-1/4” B station only).

Option: M4PM™ steel available in A and B station punches for superior performance and longevity. (See page 89 for details and additional information.)

STRIPPERS:
- Relieved to allow 0.118(3.00) extra grind life.
- Quick-change mechanism to allow rapid tool change.
- Rounded edges to minimize sheet marking.

SLUG FREE® DIES:
- Slug Free die geometry eliminates slug pulling.
- Highly wear resistant, chrome air hardened tool steel
- Uniform clearance radii in die corners improve edge quality.
- Superior roundness and flatness with exceptional die strength.
- Up to 0.125(3.20) grind life.

CANISTER ASSEMBLIES:
- Quick length adjustment with positive engagement with the guide.
- Uniform spring pressure for reliable stripping.
- Available in multiple styles:
  - Ultra TEC® for use with Ultra TEC® and Ultra® QCT™ punches.
  - Ultra® Metric (Original) style punches.
  - Inch style (1-1/4” B station only) for Inch style punches.

UNIVERSAL GUIDES:
- Quick-change mechanism - no tools required.
- Tool remains assembled during tool length adjustment.
- Internal and external lubrication to reduce friction.
- Hardened and ground to reduce wear.
- Available in two styles:
  - Shaped – multiple precision internal keyways for shaped punches.
  - Round – internal keyway for round punches.

- Long Lasting
- Freedom
- Flexibility
- Convenience
- Economy
- Quick adjustments
- Lowest cost per hole
ULTRA® PRECISION TOOLING SYSTEM –
DESIGNED TO DRAMATICALLY IMPROVE ANY PUNCHING OPERATION

- 0.212(5.38) more punch grind life than original style tooling.
- Quick change strippers.
- Quick length adjustment.
- Internal lubrication within punch guide.
- External lubrication between guide and turret bore ensures uniform distribution of oil within the turret bore.
- Hardened guides to reduce turret bore wear.
- Slug Free® dies eliminate slug pulling.

PUNCHES:
- Premium high speed tool steel for extended life between regrinds and maximum productivity.
- 1/4 degree back taper and near polished flanks to reduce friction and eliminate galling.
- Superior angularity, concentricity, and dimensional accuracy.
- Robust full-body design.
- Fully compatible with original style thick turret tooling.

STRIPPERS:
- Relieved to allow 0.078(2.00) extra grind life.
- Recessed to allow collection of lubrication fluid at punch tip.
- Quick-change mechanism to allow rapid tool change.
- Rounded edges to minimize sheet marking.
- Optional urethane stripper pads to eliminate sheet marking.

SLUG FREE® DIES:
- Highly wear resistant, chrome air hardened tool steel to balance hardness and toughness.
- Slug Free® die geometry eliminates slug pulling.
- Uniform clearance radii in die corners to improve edge quality.
- Precision orientation keyway.
- Up to 0.125(3.20) grind life.
- Superior roundness and flatness with exceptional die strength.

PUNCH GUIDE ASSEMBLY:
- Quick-change stripper release mechanism allows stripper to be removed easily, without tools.
- Quick length adjustment mechanism on the side of the guide allows the punch length to be adjusted without disassembly.
- Hardened and ground to stay round and true to size to greatly reduce turret bore wear.
- Internal and external lubrication grooves to reduce friction.
- High performance disc springs to optimize stripping force throughout the service life of the machine.
### Ultra TEC®

**1/2" A STATION**
- No tools required. Each ‘click’ is 0.006(0.15)
- Self contained in canister
- Uses Ultra®, Ultra-QCT™ or Original style
- Snap in, self locking design. 0.118(3.00) additional grind life
- 3 internal slots: 90°, 180° and 315°. 1 external slot at 270°
- Quick release locking mechanism

**LENGTH ADJUSTMENT**
- Tools needed for adjustment

**SPRING ASSEMBLY**
- Spring retainer with reversible design

**PUNCH**
- Original style

**STRIPPER**
- One piece punch guide

**ANGLE ADJUSTMENT**
- External slots: 1 for rounds, 2 for shapes

**ASSEMBLY**
- O-ring snap fit

---

**1-1/4" B STATION**
- No tools required. Each ‘click’ is 0.008(0.20)
- Self contained in canister
- Uses Ultra®, Ultra-QCT™, Metric (Original) Style, Inch Style or HP (Series 90)
- Snap in, self locking design. 0.118(3.00) additional grind life
- 5 internal slots: 0°, 90°, 180°, 225° and 270°. 1 external slot at 270°
- Quick release locking mechanism

**LENGTH ADJUSTMENT**
- Tools needed for adjustment

**SPRING ASSEMBLY**
- Spring retainer with reversible design

**PUNCH**
- Original style

**STRIPPER**
- One piece punch guide

**ANGLE ADJUSTMENT**
- External slots: 1 for rounds, 2 for shapes and 4 for special shapes

**ASSEMBLY**
- O-ring snap fit

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**2" C, 3-1/2" D, 4-1/2" E STATION**
- No tools or shims required. Each ‘click’ is 0.008(0.20)*
- Uses Ultra®, original style or HP (Series 90)**
- Snap in, self locking design. 0.079(2.00) additional grind life
- 0° and 90° Two External Slots
- Ease out design helps punch removal

**LENGTH ADJUSTMENT**
- Tools and shims needed for adjustment

**PUNCH**
- Original style

**STRIPPER**
- Stripper held in place with external clips

**ANGLE ADJUSTMENT**
- 0° and 90° Two External Slots

**ASSEMBLY**
- Tools required to make adjustments

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**STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):**
- rectangle: 1
- square: 3
- quad “D”: A05
- round: 0
- hexagon: N
- octagon: P
- oval: 2
- single “D”: 4
- double “D” triangle: 5
- diamond: COS
- diamond: C07

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* Holders made prior to June 1999 have length adjustment settings of 0.016(0.40) per ‘click’
** Requires punch adapter and/or drawbolt change
FEATURES INCLUDE:

- Extended grind life
- Interchangeable components
- Multiple angle settings
- Quick length adjustment
- Quick tool change
- Premium high speed tool steel punches
- Slug Free® die

[Dimensions in Inches (mm)]
FEATURES INCLUDE:

- Extended grind life
- Interchangeable components
- Multiple angle settings
- Quick length adjustment
- Quick tool change
- Premium high speed tool steel punches
- Slug Free® die

ULTRA TEC® SYSTEM OVERVIEW

2" C STATION

3-1/2" D STATION

4-1/2" E STATION

Ultra TEC® Guide Assembly

Original Style Punch Body

Amada Original Style Punch Body

HP (Series 90)* Punch Body

Ultra TEC® Stripper Plate

Slug Free® Die

Die Shim

Ultra TEC® Guide Assembly

Original Style Punch Body

Amada Original Style Punch Body

HP (Series 90)* Punch Body

Ultra TEC® Stripper Plate

Slug Free® Die

Die Shim

Ultra TEC® Guide Assembly

Original Style Punch Body

Amada Original Style Punch Body

HP (Series 90)* Punch Body

Ultra TEC® Stripper Plate

Slug Free® Die

Die Shim

Ultra TEC® Guide Assembly

Original Style Punch Body

Amada Original Style Punch Body

HP (Series 90)* Punch Body

Ultra TEC® Stripper Plate

Slug Free® Die

Die Shim
QUICK CHANGE TOOLING
Mate Precision Tooling’s QCT™ thick turret tooling takes insert-style punching systems to a whole new level! With its durable patent-pending design, tool-less punch retention mechanism and M4PM™ steel inserts, you’ll be on your way to faster, more cost effective punching in no time.

EASY SET-UP & MAINTENANCE. NO TOOLS REQUIRED!
QCT™ is designed to minimize effort and maximize uptime. There are no tools to use, break or lose to change the punch insert. Simply flip the durable latch to remove and snap the new insert into place. It’s really that easy!

Maintenance is a breeze. Use compressed air to clean away debris without damage.

LONGER LASTING, SUPERIOR INSERT PERFORMANCE
QCT™ punch inserts are made from Mate’s proprietary M4PM™ steel, the longest lasting tool steel in the industry. At .770(19.56), the SBR is longer than our standard length punches, for more grind life. The punch is keyed at the perimeter providing better angularity control. Since the punch insert OD interfaces with the guide ID, punch guiding is superior, too.

ROBUST CONSTRUCTION
The punch driver is made from high speed steel and comes standard with Mate’s proprietary next generation SuperMax™ coating for extended life*. To ensure durability, Mate’s complete line of QCT™ Quick Change Tooling has undergone extensive product testing in customer locations.

FULLY COMPATIBLE
There’s no need to purchase a special or captive system. Mate’s QCT™ works with all existing Ultra TEC®, Ultra XT™ and Ultra TEC® Fully Guided guides and canisters. Metric QCT™ is fully compatible with Mate Original Style and other long stem systems. AMX QCT™ is fully compatible with AMADA® Air Blow Systems (ABS) assemblies and holders. MXC QCT™ is fully compatible with Wilson Series 90™ and HP™ tooling systems.

SIMPLE
Mate’s QCT™ Quick Change Tooling simplifies your tooling storage needs. Only one punch driver is required for rounds or shapes with Ultra® QCT™, Metric QCT™ and AMX QCT™ drivers. Punch inserts take up less space than standard punches and waste less material.

OVERVIEW
- Patent pending, durable design that’s easy to maintain
- Punch driver manufactured from tough material, then coated with SuperMax™ for extended life.
- Punch insert made from long-lasting M4PM™ tool steel
- Longer SBR than Mate standard length punches for more grind life.
- One Ultra® QCT™, Metric QCT™ or keyed AMX QCT™ driver for rounds and shapes simplifies inventory
- Tool-less punch retention mechanism that’s simple and intuitive
- Punch keyed at perimeter of the tool, not the center for better angularity control
- Punch shoulder still guided by guide when punching
- Green: inserts require less storage space and wastes less material

WEAR RESISTANCE INDEX
- Mate QCT™ Quick Change Tooling
- Mate Ultra® Standard
- Standard Conventional Steel

Dimensions in Inches (mm)
**ULTRA® QCT™ THICK TURRET TOOLING SYSTEM**
Mate's Ultra® QCT™ tooling is the flagship of our Quick Change Tooling (QCT™) product line. Available in both A and B station, Ultra QCT is fully compatible in all standard Ultra TEC® guides and canisters.

**FULLY COMPATIBLE WITH:**
- Mate Ultra TEC guides and canisters
- Mate Ultra XT guides and canisters
- Mate Ultra Fully Guided guides and canisters

**METRIC QCT™ THICK TURRET TOOLING SYSTEM**
Mate's Metric QCT™ A and B Station punch drivers include all the benefits of our Ultra® tooling family with expanded compatibility to metric canisters that accept long stem punches also known as Mate Original Style and Amada Style.

**FULLY COMPATIBLE WITH:**
- Mate's Ultra® family of guides and standard canisters
- Mate's Original Style guides and Rapidset™ canisters
- Mate's Original Style guides and spring packs
- Amada NCT, NEX and Z-Tooling systems
- Wilson thick turret metric punch systems

**MXC QCT™ THICK TURRET TOOLING SYSTEM FOR WILSON HP/SERIES 90**
Mate's MXC tooling system is replacement thick turret tooling for Wilson HP™ and Series 90™ tooling systems. These high-precision products increase tool performance and flexibility, offer extended tool life and are interchangeable with other systems. Features of the MXC system include:

**100% COMPATIBLE WITH:**
- HP™
- HP™ WLS®

**COMPATIBILITY WITH:**
- UltraTEC®
- Ultra XT™

**B Station Driver:**
Uses standard QCT punch inserts (PAQB)

**A Station Driver:**
Wilson’s HP/Series 90 A station product design uses a slightly narrower diameter than all other thick turret systems. As a result, the standard QCT A station punch insert cannot be used with the MXC QCT driver. This means that the MXC QCT A station driver requires a unique QCT punch insert (PXQA). To aid customers in identifying these inserts, we etch MXC QCT on the side of the insert.

The drivers are available in both Standard and (for HP WLS® style) ABS style.

**AMX QCT™ THICK TURRET TOOLING SYSTEM FOR AMADA® ABS**
Mate's AMX QCT™ tooling is a replacement tooling system for AMADA® Air Blow Systems (ABS) assemblies and holders. AMX QCT tooling provides all of the advantages of the QCT system for air blow systems. It delivers the flexibility of using the AMX QCT system with Mate’s AMX guides, spring packs and Rapidset canisters, as well as Amada NCT, NEX and Z-Tooling air blow systems.

**FULLY COMPATIBLE WITH:**
- Mate's Ultra® family of guides and standard canisters
- Mate’s Original Style guides and Rapidset™ canisters
- Mate’s Original Style guides and spring packs
- Amada NCT, NEX and Z-Tooling systems
- Wilson thick turret metric punch systems
# ULTRA® QCT™ ORDER GUIDE

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATE02401</td>
<td>ULTRA QCT B Station Punch Driver</td>
</tr>
<tr>
<td>MATE02404</td>
<td>ULTRA QCT A Station Punch Driver</td>
</tr>
</tbody>
</table>

**PUNCH INSERTS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAQB0A</td>
<td>ULTRA QCT B Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQB_A</td>
<td>ULTRA QCT B Station Shaped Punch Insert</td>
</tr>
<tr>
<td>PAQA0A</td>
<td>ULTRA QCT A Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQA_A</td>
<td>ULTRA QCT A Station Shaped Punch Insert</td>
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</tbody>
</table>

# METRIC QCT™ ORDER GUIDE

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATE02519</td>
<td>Metric QCT A Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02520</td>
<td>Metric QCT A Station Punch Driver for Keyless Rounds</td>
</tr>
<tr>
<td>MATE02521</td>
<td>Metric QCT B Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02522</td>
<td>Metric QCT B Station Punch Driver for Keyless Rounds</td>
</tr>
</tbody>
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**PUNCH INSERTS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAQB0A</td>
<td>QCT B Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQB_A</td>
<td>QCT B Station Shaped Punch Insert</td>
</tr>
<tr>
<td>PAQA0A</td>
<td>QCT A Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQA_A</td>
<td>QCT A Station Shaped Punch Insert</td>
</tr>
</tbody>
</table>

# MXC QCT™ ORDER GUIDE

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>MATE02546</td>
<td>MXC QCT A Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02545</td>
<td>MXC QCT A Station Punch Driver for Keyless Rounds</td>
</tr>
<tr>
<td>MATE02544</td>
<td>MXC QCT ABS Style A Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02543</td>
<td>MXC QCT ABS Style A Station Punch Driver for Keyless Rounds</td>
</tr>
<tr>
<td>MATE02525</td>
<td>MXC QCT B Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02524</td>
<td>MXC QCT B Station Punch Driver for Keyless Rounds</td>
</tr>
<tr>
<td>MATE02526</td>
<td>MXC QCT ABS Style B Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02568</td>
<td>MXC QCT ABS Style B Station Punch Driver for Keyless Rounds</td>
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**QCT MXC A STATION INSERTS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXQA0A</td>
<td>QCT MXC A Station Round Punch Insert</td>
</tr>
<tr>
<td>PXQA_A</td>
<td>QCT MXC A Station Shaped Punch Insert</td>
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</table>

**QCT B STATION INSERTS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>PAQB0A</td>
<td>QCT B Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQB_A</td>
<td>QCT B Station Shaped Punch Insert</td>
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# AMX QCT™ ORDER GUIDE

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<tbody>
<tr>
<td>MATE02551</td>
<td>AMX QCT A Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02553</td>
<td>AMX QCT A Station Punch Driver for Keyless Rounds</td>
</tr>
<tr>
<td>MATE02552</td>
<td>AMX QCT B Station Punch Driver for Shapes and Keyed Rounds</td>
</tr>
<tr>
<td>MATE02554</td>
<td>AMX QCT B Station Punch Driver for Keyless Rounds</td>
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**PUNCH INSERTS**

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<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>PAQB0A</td>
<td>QCT B Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQB_A</td>
<td>QCT B Station Shaped Punch Insert</td>
</tr>
<tr>
<td>PAQA0A</td>
<td>QCT A Station Round Punch Insert</td>
</tr>
<tr>
<td>PAQA_A</td>
<td>QCT A Station Shaped Punch Insert</td>
</tr>
</tbody>
</table>
AVAILABLE OPTIONS

GENERAL
- Radius Corners
- Non-Standard Straight before Radius (SBR) Dimension
- Special Angle Settings
- Optional Shear

SMALL DIAMETER ROUND TOOLS
- Diameter 0.020(0.51) to 0.061(1.55)
- Diameter 0.062(1.56) to 0.092(2.34)

NARROW WIDTH SHAPE TOOLS
- Widths under 0.079(2.00)

SUPERMAX™ COATING
- ½” A Station
- 1-¼” B Station

MAXIMA™ COATING
- ½” A Station
- 1-¼” B Station

ULTRA TEC® STRIPPERS
- S6K0A Ultra TEC Stripper Plate, A Station, Round
- S6KA_A Ultra TEC Stripper Plate, A Station, Shape
- S6KB0A Ultra TEC Stripper Plate, B Station, Round
- S6KB_A Ultra TEC Stripper Plate, B Station, Shape

ORIGINAL STYLE STRIPPER GUIDES
- S6A0A Thick Turret A Station Stripper Guide for Shapes and Rounds
- S6AA_A Thick Turret A Station Stripper Guide for Shapes and Rounds
- S6AB0A Thick Turret B Station Stripper Guide for Rounds
- S6AB_A Thick Turret B Station Stripper Guide for Shapes

SLUG FREE® DIES
- D0A00 Slug Free Die, A Station, Round
- D0AA_D Slug Free Die, A Station, Shape
- D0AB00 Slug Free Die, B Station, Round
- D0AB_D Slug Free Die, B Station, Shape

AVAILABLE SHAPES

<table>
<thead>
<tr>
<th>STANDAR D</th>
<th>SPECIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>Arc Oval</td>
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<tr>
<td>Rectangle</td>
<td>Arc U-Shape</td>
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<tr>
<td>Oval</td>
<td>Band aid</td>
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<tr>
<td>Square</td>
<td>Break-Away</td>
</tr>
<tr>
<td>Single D</td>
<td>Cable Opening</td>
</tr>
<tr>
<td>Double D</td>
<td>Cable Opening with Tabs</td>
</tr>
<tr>
<td>Hexagon</td>
<td>Bi-Diameter</td>
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<tr>
<td>Octagon</td>
<td>Tri-Diameter</td>
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<td></td>
<td>Quad-Diameter</td>
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<tr>
<td></td>
<td>Diamond</td>
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<td>Ellipse</td>
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<td></td>
<td>Football</td>
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<td></td>
<td>Keyways</td>
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<td>Keyholes</td>
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<td>Parallelogram</td>
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<td>Pentagon</td>
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<td>Quad D</td>
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<tr>
<td></td>
<td>2-Way Radius</td>
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<td></td>
<td>4-Way Radius</td>
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<tr>
<td></td>
<td>9-Way Radius</td>
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<td>Rect/Oval</td>
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<tr>
<td></td>
<td>Double Rectangle</td>
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<td></td>
<td>Rectangle with Chamfered Corners</td>
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<tr>
<td></td>
<td>Rectangle with Rounded Corners</td>
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<tr>
<td></td>
<td>Rectangle with Tabs</td>
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<td>Teardrop</td>
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<td></td>
<td>Trapezoid</td>
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<tr>
<td></td>
<td>Triangle</td>
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TONNAGE LIMITATIONS

<table>
<thead>
<tr>
<th>STATION</th>
<th>LIMITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A STATION</td>
<td>5 U.S. TONS / 4.54 METRIC TONS</td>
</tr>
<tr>
<td>B STATION</td>
<td>14 U.S. TONS / 12.70 METRIC TONS</td>
</tr>
</tbody>
</table>

*MXC QCT™ A STATION ETCH
Canister Assembly - Metric
MATE01362

Canister Assembly
MATE01361

Metric (Original) Style Punch Body
Round PAAA0A
Shaped PAAA_A

Ultra' QCT™ Metric Punch Driver
Keyed MATE02519
Keyless MATE02520

Ultra TEC® Punch Body
Round PAUA0A
Shaped PAUA_A

Ultra‘ QCT™ Punch Insert
Round PAQA0A
Shaped PAQA_A

Ultra TEC® Guide
Round A0VA0SGU
Shaped A0VA00GU

Ultra TEC® Stripper Plate
Round S6KA0A
Shaped S6KA_A

Slug Free® Die
Round D0AA00
Shaped D0AA_0

Die Shims
MSAA
Package of 12 total, 3 each of:
0.008(0.20)
0.016(0.40)
0.032(0.80)
0.048(1.20)

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):
rectangle square quad “D” round hexagon octagon oval single “D” double “D” triangle diamond

1 3 A05 0 N P 2 4 5 C08 C07

[Dimensions in inches (mm)]
QUICKHIT™ Canister Assembly-Metric
MATE01076

QUICKHIT™ Canister Assembly-Inch
A0VBWSCA

Canister Assembly
MATE01078

Ultra® QCT™ Metric Punch Driver
Keyed MATE02521
Keyless MATE02522

Metric (Original) Style Punch Body
Round PAAB0A
Shaped PAAB_A

Inch Style Punch Body
Round PAJB0A
Shaped PAJB_A

Ultra® QCT™ Punch Driver
MATE02401

Ultra® QCT™ Punch Inserts
Round PAQB0A
Shaped PAQB_A

Ultra TEC® Punch Body
Round PAUB0A
Shaped PAUB_A

Ultra TEC® Punch Guide
Round A0VB0SGU
Shaped A0VB00GU

Ultra TEC® Stripper Plate
Round S6KB0A
Shaped S6KB_A

Die Shims
MSAB
Package of 12 total, 3 each of:
0.008(0.20)
0.016(0.40)
0.032(0.80)
0.048(1.20)

Ultra TEC® Punch Body
Round PAAB0A
Shaped PAAB_A

Ultra TEC® Punch Guide
Round A0VB0SGU
Shaped A0VB00GU

ULTRA TEC®
1-¼” B STATION ASSEMBLY

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons
ULTRA TEC®
GUIDE ASSEMBLIES FOR THICK TURRET STYLE PUNCHES

2" C STATION

Ultra TEC® Guide Assembly
AGVC1Y

Maximum 2.000(50.80) diameter/diagonal

3-1/2" D STATION

Ultra TEC® Guide Assembly
AGVD1Y

Maximum 3.500(88.90) diameter/diagonal

4-1/2" E STATION

Ultra TEC® Guide Assembly
AGVERZ

Maximum 4.500(114.30) diameter/diagonal

Original Style Punch Body
Round PAAC0A
Shaped PAAC_A

Original Style Punch Body
Round PAAD0A
Shaped PAAD_A

Original Style Punch Body
Round PAAE0A
Shaped PAAE_A

Ultra TEC® Stripper Plate
Round S6KC0A
Shaped S6KC_A

Ultra TEC® Stripper Plate
Round S6KD0A
Shaped S6KD_A

Ultra TEC® Stripper Plate
Round S6KE0A
Shaped S6KE_A

Slug Free® Die
Round DOAC00
Shaped DOAC_0

Slug Free® Die
Round DOAD00
Shaped DOAD_0

Slug Free® Die
Round DOAE00
Shaped DOAE_0

Die Shims
MSAC
Package 3 each:
0.016(0.40), 0.032(0.80), 0.048(1.20)

Die Shims
MSAD
Package 3 each:
0.016(0.40), 0.032(0.80), 0.048(1.20)

Die Shims
MSAE
Package 3 each:
0.016(0.40), 0.032(0.80), 0.048(1.20)

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle 1 3 A05 0 N P 2 4 5 COS C07
square 0.016(0.40), 0.032(0.80), 0.048(1.20)
quad “D”
round 0.016(0.40), 0.032(0.80), 0.048(1.20)
hexagon 0.016(0.40), 0.032(0.80), 0.048(1.20)
octagon 0.016(0.40), 0.032(0.80), 0.048(1.20)
diamond 0.016(0.40), 0.032(0.80), 0.048(1.20)
single “D”
double “D”
triangle
1/2" A STATION

Canister Assembly
Standard: MATE01866
Metric: MATE01867

Ultra TEC® Heavy Duty Punch Body
Round PHUA0A
Shaped PHU_A

Ultra TEC® Heavy Duty Guide
Round A0VA0SGU
Shaped A0VA00GU

Ultra TEC® Heavy Duty Stripper Plate
Round SHKA0A
Shaped SHKA_A

Heavy Duty Slug Free® Die
Round DHAA00
Shaped DHAA_0

Die Shims
MSAA
Package of 12 total, 3 each of:
0.008(0.20)
0.016(0.40)
0.032(0.80)
0.048(1.20)

Maximum Heavy Duty Punch Size
0.500(12.70) diameter/diagonal

Maximum Heavy Duty Die Size
0.559(14.20) diameter/diagonal (includes clearance)

1-1/4" B STATION

Heavy Duty Canister Assembly-Metric
A0VBHMCA

Heavy Duty Canister Assembly
A0VBHSCA

Heavy Duty Punch Body
Round PHAB0A
Shaped PHA_B

Ultra TEC® Heavy Duty Punch Body
Round PHUB0A
Shaped PHU_B

Ultra TEC® Guide
Round A0VB0SGU
Shaped A0VB00GU

Ultra TEC® Heavy Duty Stripper Plate
Round SHKB0A
Shaped SHK_B

Heavy Duty Slug Free® Die
Round DHA00
Shaped DHA_0

Die Shims
MSAB
Package of 12 total, 3 each of:
0.008(0.20)
0.016(0.40)
0.032(0.80)
0.048(1.20)

Maximum Heavy Duty Punch Size
1.250(31.75) diameter/diagonal

Maximum Heavy Duty Die Size
1.309(33.25) diameter/diagonal (includes clearance)

Minimum width/diameter in heavy duty is 0.250(6.35)

Features include:
- 1 Degree back taper on punches (per side)
- Quick tool change
- Heavy duty Slug Free® die design
- Premium high speed tool steel punches
- Heavy duty springs (1-1/4" B Station)
- Rooftop shear • Quick length adjustment
- HD designation marked on heavy duty die

[Dimensions in inches (mm)]
ULTRA TEC® HEAVY DUTY

2" C STATION

Ultra TEC® Guide Assembly
AGVC1Y

Maximum Heavy Duty Punch Size 1.752(44.50) diameter/diagonal

Heavy Duty Punch Body
Round PHAC0A
Shaped PHAC_A

Ultra TEC® Heavy Duty Stripper Plate
Round SHKC0A
Shaped SHKC_A

Maximum Heavy Duty Die Size 1.791(45.50) diameter/diagonal (includes clearance)

Heavy Duty Slug Free® Die
Round DHAC00
Shaped DHAC_0

Minimum width/diameter in heavy duty is 0.250(6.35)

See page 94 for Add-Ons

Lifter “T” Handle
A0LEH

3-1/2" D STATION

Ultra TEC® Guide Assembly
AGVD1Y

Maximum Heavy Duty Punch Size 3.169(80.50) diameter/diagonal

Heavy Duty Punch Body
Round PHAD0A
Shaped PHAD_A

Ultra TEC® Heavy Duty Stripper Plate
Round SHKD0A
Shaped SHKD_A

Maximum Heavy Duty Die Size 3.209(81.50) diameter/diagonal (includes clearance)

Heavy Duty Slug Free® Die
Round DHAD00
Shaped DHAD_0

4-1/2" E STATION

Ultra TEC® Guide Assembly
AGVERZ

Maximum Heavy Duty Punch Size 4.173(106.00) diameter/diagonal

Heavy Duty Punch Body
Round PHAE0A
Shaped PHAE_A

Ultra TEC® Heavy Duty Stripper Plate
Round SHKE0A
Shaped SHKE_A

Maximum Heavy Duty Die Size 4.213(107.00) diameter/diagonal (includes clearance)

Heavy Duty Slug Free® Die
Round DHAE00
Shaped DHAE_0

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orders@mate.com

[Dimensions in inches (mm)]
Ultra Light™ Spring Canister Ultra® Style MATE00276

Ultra Light™ Spring Canister Metric Style MATE00278

Ultra Light™ Spring Canister Ultra® Style MATE00277

Ultra Light™ Spring Canister Metric Style MATE00279

Ultra Light™ 1/2” A station canisters apply 70% of the stripping force of the standard Ultra TEC® 1/2” A station canisters.

Ultra Light™ 1-1/4” B station canisters apply 60% of the stripping force of the standard Ultra TEC® 1-1/4” B station canisters.

Ultra Light™ Spring Assembly MATE00038

(Package of 9) Heavy Pressure Gold Springs* MATE00280

Ultra Light™ Spring Assembly MATE00033

(Package of 9) Medium Heavy Pressure Red Springs* MATE00281

MATE00038 is assembled with 9 medium pressure blue springs.

MATE00033 is assembled with 9 medium pressure blue springs.

*See page 44 for details on spring selection.

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):

rectangle 3 square 0 quad “D” 5 round 2 hexagon 4 octagon 3 oval 1 single “D” 5 double “D” 1 triangle 4 diamond 2
**Also Available**

(3-1/2" D Station Only)

LGVT3
External keyways at 0°, 45° and 90°

---

AOLEH
Lifter “T” Handle
• Fully guided assembly
  Accurate and close tolerances between guide and stripper hold punches rigid, control against hole distortion and saw toothing.

• Premium high speed tool steel punches at 60-62 Rockwell C
  Specially formulated high speed steel and specially developed heat treatment processes result in unusually high tool performance, superior dimensional accuracy and maximum tool life.

• Stripper opening 0.0015(0.04) TC to point
  Guiding at punch point supports punches, increases hole accuracy, improves stripping and prevents scrap from rising into the assembly.

• Quick length adjustment
  The external quick length adjustment button on the side of the guide allows the punch length to be adjusted without disassembly.

• Hardened and ground guide
  Reduces abrasive action of punching, diffuses heat effectively, resists galling, extends tool life, increases turret life and improves up time.

• Interior and exterior spiral grease grooves
  Even and consistent tool lubrication increases tool life.

• Tool Lubrication
  Interior vertical fluid grooves and fluid through holes provide even and efficient transfer of lubrication fluid to internal surfaces and to external guide surface area, increases lubrication and tool life.

• Slug Free® die design
  Clearing the slug every cycle eliminates slug pulling, extends tool life, improves piece part quality and reduces scrap.
1-1/4" B STATION

Ultra® QCT™ Punch Driver
Keyed MATE02521
Keyless MATE02522

Ultra® QCT™ Punch Insert
Round PAQB0A
Shaped PAQB_A

Ultra TEC® Punch Body
Round PAUB0A
Shaped PAUB_A

Ultra TEC® Fully Guided
Punch Guide A0VBO0GG

Ultra TEC® Fully Guided
Stripper Plate
Round S6KK0A
Shaped S6KK_A

Canister Assembly-Metric MATE01076

Canister Assembly MATE01078

1-1/4" B Station
Maximum 1.250(31.75) diameter/diagonal

Metric (Original) Style Punch Body
Round PAAB0A
Shaped PAAB_A

Ultra® QCT™ Metric Punch Driver

Heavy Duty Canister Assembly-Metric A0VBMCA
Recommended when material thickness exceeds 0.118(3.00)

Heavy Duty Canister Assembly A0VBHSCA
Recommended when material thickness exceeds 0.118(3.00)

A clip tool (MIS59723) is included in the purchase of an Ultra TEC® fully guided punch guide (A0VBO0GG).

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):
rectangle square quad “D” round hexagon octagon oval single “D” double “D” triangle diamond

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orders@mate.com

LIT00569 Rev F PN 2020
ULTRA TEC® FULLY GUIDED
2” C, 3-½” D AND 4-½” E STATION

2” C STATION

Maximum 2.000 (50.80) diameter/diagonal

Ultra TEC® Fully Guided Guide Assembly*
AGVS1Z

Original Style Punch Body
Round PAAC0A
Shaped PAAC_A

Fully Guided Stripper Plate
Round S2KL0A
Shaped S2KL_A

Slug Free® Die
Round D0AC00
Shaped D0AC_0

*Also Available (2” C Station Only)
AGVS3Z
External keyways at 0°, 45° and 90°

3-½” D STATION

Maximum 3.500 (88.90) diameter/diagonal

Ultra TEC® Fully Guided Guide Assembly**
AGVT1Y

Original Style Punch Body
Round PAAD0A
Shaped PAAD_A

Fully Guided Stripper Plate
Round S2KM0A
Shaped S2KM_A

Slug Free® Die
Round D0AD00
Shaped D0AD_0

**Also Available (3-½” D Station Only)
AGVT3Y
External keyways at 0°, 45° and 90°

4-½” E STATION

Maximum 4.500 (114.30) diameter/diagonal

Ultra TEC® Fully Guided Guide Assembly
AGVURZ

Original Style Punch Body
Round PAAE0A
Shaped PAAE_A

Fully Guided Stripper Plate
Round S2KN0A
Shaped S2KN_A

Slug Free® Die
Round D0AE00
Shaped D0AE_0

Lifter “T” Handle
AOLEH

[Dimensions in inches (mm)]
3-1/2" D STATION

- Fully guided assembly
  Accurate and close tolerances between guide and stripper hold punches rigid, control against hole distortion and saw toothing.

- Premium high speed tool steel punches at 60-62 Rockwell C
  Specially formulated M4PM™ high speed steel and specially developed heat treatment processes result in unusually high tool performance, superior dimensional accuracy and maximum tool life.

- Stripper opening 0.0015(0.04) TC to point
  Guiding at punch point supports punches, increases hole accuracy, improves stripping and prevents scrap from rising into the assembly.

- Clamp clearing relief
  Use this tool close to work holder clamps. The stripper and the die are relieved so the clamp can pass between the upper and the lower unit. No need to reposition the clamps, saves time, improves piece part quality.

- Quick length adjustment
  The external quick length adjustment button on the side of the guide allows the punch length to be adjusted without disassembly. Guide will adjust punch point length by 0.008(0.20) per click.

- Hardened and ground guide
  Reduces abrasive action of punching, diffuses heat effectively, resists galling, extends tool life, increases turret life and improves up time.

- Interior and exterior spiral grease grooves
  Even and consistent tool lubrication increases tool life.

- Tool Lubrication
  Interior vertical fluid grooves and fluid through holes provide even and efficient transfer of lubrication fluid to internal surfaces and to external guide surface area, increases lubrication and tool life.

- Additional 0.079(2.00) punch grind life
  Use insert style punches from Mate in combination with this specially designed stripper to gain additional grind life.

- Slug Free® die design
  Clearing the slug every cycle eliminates slug pulling, extends tool life, improves piece part quality and reduces scrap.

4-1/2" E STATION

- Fully guided assembly
  Accurate and close tolerances between guide and stripper hold punches rigid, control against hole distortion and saw toothing.

- Premium high speed tool steel punches at 60-62 Rockwell C
  Specially formulated M4PM™ high speed steel and specially developed heat treatment processes result in unusually high tool performance, superior dimensional accuracy and maximum tool life.

- Stripper opening 0.0015(0.04) TC to point
  Guiding at punch point supports punches, increases hole accuracy, improves stripping and prevents scrap from rising into the assembly.

- Clamp clearing relief
  Use this tool close to work holder clamps. The stripper and the die are relieved so the clamp can pass between the upper and the lower unit. No need to reposition the clamps, saves time, improves piece part quality.

- Quick length adjustment
  The external quick length adjustment button on the side of the guide allows the punch length to be adjusted without disassembly. Guide will adjust punch point length by 0.008(0.20) per click.

- Hardened and ground guide
  Reduces abrasive action of punching, diffuses heat effectively, resists galling, extends tool life, increases turret life and improves up time.

- Interior and exterior spiral grease grooves
  Even and consistent tool lubrication increases tool life.

- Tool Lubrication
  Interior vertical fluid grooves and fluid through holes provide even and efficient transfer of lubrication fluid to internal surfaces and to external guide surface area, increases lubrication and tool life.

- Additional 0.079(2.00) punch grind life
  Use insert style punches from Mate in combination with this specially designed stripper to gain additional grind life.

- Slug Free® die design
  Clearing the slug every cycle eliminates slug pulling, extends tool life, improves piece part quality and reduces scrap.
ULTRA® CLAMP CLEARING SLITTING TOOL

This tool is specially designed for slitting and parting applications. Separating piece parts, trimming sheet edges, and reducing sheet sizes often requires the use of a tool with long narrow dimensions. Rectangles with radius corners or ovals are recommended.

Slitting and parting applications require the tool to pierce material cleanly and accurately while overcoming various side load and twisting pressures. For example, parting a sheet will include an amount of overlap in each step where sheet resistance is absent. This causes the force of resistance to build on one side which can cause the hole to distort or saw tooth. The same is true when trimming the edge of a sheet.

The Ultra clamp clearing slitting tool is designed to overcome these side load and twisting pressures. The advantage comes from punch point guiding. By squarely and tightly controlling the punch point where it contacts the sheet, the punch can accurately pierce a hole, even when punching partial hits.

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons
## ULTRA TEC® FULLY GUIDED CLAMP CLEARING

### 3-1/2" D STATION

- **Ultra TEC® Fully Guided Guide Assembly**
  - AGVT1Y

- **Dimensions**
  - 3.500(88.90) maximum punch diagonal/length
  - 0.315(8.00) maximum punch width
  - 3.560(90.40) maximum die diagonal/length
  - 0.374(9.50) maximum die width

- **Components**
  - Punch Retainer
    - A0LD00PR
  - Slitting Insert
    - Shaped P4AQ_A
  - Clamp Clearing
    - “DD” Stripper Plate
      - Shaped S6KW_A
  - Clamp Clearing
    - “D” Stripper Plate
      - Shaped S6KT_A
  - Clamp Clearing
    - “DD” Slug Free Die
      - Shaped D0AW_0
  - Clamp Clearing
    - “D” Slug Free Die
      - Shaped D0AT_0
  - Lifter “T” Handle
    - A0LEH

### 4-1/2" E STATION

- **Ultra TEC® Fully Guided Guide Assembly**
  - AGVURZ

- **Dimensions**
  - 4.500(114.30) maximum punch diagonal/length
  - 0.315(8.00) maximum punch width
  - 4.560(115.80) maximum die diagonal/length
  - 0.374(9.50) maximum die width

- **Components**
  - Punch Retainer
    - A0LE00PR
  - Slitting Insert
    - Shaped P4AR_A
  - Clamp Clearing
    - “DD” Stripper Plate
      - Shaped S6KX_A
  - Clamp Clearing
    - “D” Stripper Plate
      - Shaped S6KU_A
  - Clamp Clearing
    - “DD” Slug Free Die
      - Shaped D0AX_0
  - Clamp Clearing
    - “D” Slug Free Die
      - Shaped D0AU_0

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*Also Available (3-1/2" D Station Only)*
- **AGVT3Y**
  - External keyways at 0°, 45° and 90°

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[Dimensions in inches (mm)]
The Mate Ultra TEC® precision tooling system for thick turret punch presses increases tool performance and flexibility, offers extended tool life, and allows interchangeability with existing tooling inventory.

Mate Ultra TEC® punch guide assemblies with M14 bolts provide many important benefits:

- Quick length adjustment – no shims or tooling required.
- Internal and external grooves for superior lubrication.
- Hardened and ground surfaces for maximum turret bore life.
- High performance stripping springs for extended service life.
- Full compatibility with existing M14 threaded punches.
- Conversion kit for compatibility with M12 threaded punches.

Mate Ultra TEC® guides with M14 bolts are available in two versions:

**ULTRA TEC®**
- Quick-change stripper release mechanism allows stripper to be removed quickly and easily, without tools.
- Quick length adjustment mechanism on the side of the guide allows the punch length to be adjusted without disassembly.

**ULTRA TEC® FULLY GUIDED**
- Fully guided stripper to guide the punch tip for improved piece part quality and extended punch life. Ideal for slitting and nibbling applications.
- Quick length adjustment mechanism on the side of the guide allows the punch length to be adjusted without disassembly.

Also available is an M14 punch driver conversion kit to convert existing Mate Ultra TEC® guides with M12 bolts to suit punches with an M14 thread.

<table>
<thead>
<tr>
<th>Tool Style / Station</th>
<th>2&quot; C Station</th>
<th>3-1/2&quot; D Station</th>
<th>4-1/2&quot; E Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mate Ultra TEC® Guide with M14 bolt</td>
<td>MATE02396</td>
<td>MATE00655</td>
<td>MATE01809</td>
</tr>
<tr>
<td>Mate Ultra TEC® Fully Guided Guide with M14 bolt</td>
<td>MATE00657</td>
<td>MATE00658</td>
<td>MATE01813</td>
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<tr>
<td>Mate Ultra TEC®/Ultra XT® M14 Punch Driver Conversion Kit</td>
<td>MATE00651</td>
<td>MATE00652</td>
<td>MATE00653</td>
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</tbody>
</table>
Mate's Ultra XT™ Precision Tooling System is a thick turret punching system which increases tool performance and flexibility, offers extended tool life and allows interchangeability with existing systems. Some features of the Ultra XT™ system include:

- Premium high speed tool steel punches
- Quick tool change
- Easy click length adjustment - no punch shims required
- Grooved guides for better lubrication
- Slug Free® die design
- 0.118(3.00) additional punch grind life.

**PUNCHES:**
- Premium high speed tool steel for extended life between regrinds and maximum productivity.
- 1/4 degree back taper and near polished flanks to reduce friction, eliminate galling and extend punch life.
- External lubrication grooves to allow fluid flow.
- Available in multiple styles:
  - Ultra TEC® with lubrication grooves.
  - Ultra® QCT™ with lubrication grooves.
  - Ultra® Metric compatible with original style punches.
  - Inch Style (1-1/4” B station only).

*Option:* M4PM™ steel available in Ultra TEC® A and B station punches for superior performance and longevity. (See page 93 for details and additional information.)

**STRIPPERS:**
- Fully compatible with Ultra TEC® tooling system.
- Relieved to allow 0.118(3.00) extra grind life.
- Quick-change mechanism to allow rapid tool change.

**SLUG FREE® DIES:**
- Slug Free® die geometry eliminates slug pulling. See page 9.
- Highly wear resistant, chrome air hardened tool steel.
- Uniform clearance radii in die corners improve edge quality.
- Up to 0.125(3.20) grind life.

**CANISTER ASSEMBLIES:**
- Quick length adjustment with positive engagement with the guide.
- Uniform spring pressure for reliable stripping.
- Available in multiple styles:
  - Ultra TEC® for use with Ultra TEC® and Ultra® QCT™ punches.
  - Ultra® Metric for original style punches.
  - Inch Style (1-1/4” B station only) for Inch style punches.

**GUIDES WITH EXTERNAL ORIENTATION SLOTS:**
- Quick-change mechanism with no tools require.
- Tool remains assembled during tool length adjustment.
- Internal and external lubrication to reduce friction.
- Hardened and ground to reduce wear.
- Available in three styles:
  - Round – internal keyway for round punches only.
  - Shaped – one precision internal keyway, 0° and 90° external keyways.
  - Shaped – one precision internal keyway, 0° and 45° external keyways.
Mate’s Ultra XT™ Precision Tooling System is a thick turret punching system which increases tool performance and flexibility, offers extended tool life and allows interchangeability with existing systems. Some features of the Ultra XT™ system include:

- Premium high speed tool steel punches.
- Quick tool change.
- Easy click length adjustment - no punch shims required.
- Grooved guides for better lubrication.
- Slug Free® die design.
- Compatible with machine tool lubrication systems.
- OEM compatible strippers in the 2” C, 3-1/2” D, 4-1/2” E stations.

**PUNCHES:**

- Premium high speed tool steel for extended life between regrinds and maximum productivity.
- 1/4 degree back taper and near polished flanks to reduce friction and eliminate galling.
- Superior angularity, concentricity, and dimensional accuracy.
- Robust full-body design.
- Fully compatible with original style thick turret tooling.

**STRIPPERS:**

- Fully OEM compatible.
- Close tolerance opening for superior piece part quality.
- Radiused face to ease installation and reduce sheet marking.

**SLUG FREE® DIES:**

- Highly wear resistant, chrome air hardened tool steel to balance hardness and toughness.
- Slug Free® die geometry eliminates slug pulling. See page 14.
- Uniform clearance radii in die corners to improve edge quality.
- Precision orientation keyway.
- Up to 0.125(3.20) grind life.
- Superior roundness and flatness with exceptional die strength.

**PUNCH GUIDE ASSEMBLY:**

- Fully compatible with original style strippers.
- Quick length adjustment mechanism on the side of the guide allows the punch length to be adjusted without disassembly.
- Hardened and ground to stay round and true to size to greatly reduce turret bore wear.
- Internal and external lubrication grooves to reduce friction.
- High performance disc springs to optimize stripping force.
*HP WLS and HP ABS are not compatible with Ultra XT guides. Use Ultra TEC® guides.
ULTRA XT™ ½” A STATION ASSEMBLY FOR ULTRA TEC® AND THICK TURRET STYLE PUNCHES

- Canister Assembly-Metric MATE01362
- Canister Assembly MATE01361
- Ultra® QCT™ Metric Punch Driver
  - Keyed MATE02519
  - Keyless MATE02520
- Metric (Original) Style Punch Body
  - Round PAAA0A
  - Shaped PAAA_A
- Ultra® QCT™ Driver MATE02404
- Ultra® QCT™ Punch Insert
  - Round PAQA0A
  - Shaped PAQA_A
- Ultra TEC® Punch Body
  - Round PAUA0A
  - Shaped PAUA_A
- Ultra XT™ Guide
  - Round A0VA0SGU
  - Shaped MATE00204
- Ultra TEC® Stripper Plate
  - Round S6KA0A
  - Shaped S6KA_A
- Slug Free® Die
  - Round DOAA00
  - Shaped DOAA_0
- Die Shims MSAA
  - Package of 12 total, 3 each of:
    - 0.008(0.20)
    - 0.016(0.40)
    - 0.032(0.80)
    - 0.048(1.20)

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):
- rectangle
- square
- quad “D”
- round
- hexagon
- octagon
- oval
- single “D”
- double “D”
- triangle
- diamond

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons

1/2” A Station
Maximum 0.500(12.70) diameter/diagonal
ULTRA XT™ 1-¼” B STATION ASSEMBLY FOR ULTRA TEC® AND THICK TURRET STYLE PUNCHES

Canister Assembly-Metric
MATE01076

Canister Assembly-Inch
A0VBWSCA

Canister Assembly
MATE01078

Ultra’ QCT™ Metric Punch Driver
Keyed MATE02521
Keyless MATE02522

Metric (Original) Style Punch Body
Round PAAB0A
Shaped PAAB_A

Inch Style Punch Body
Round PAJB0A
Shaped PAJB_A

Ultra’ QCT™ Driver MATE02401

Ultra’ QCT™ Punch Insert
Round PAQB0A
Shaped PAQB_A

Ultra TEC® Punch Body
Round PAUB0A
Shaped PAUB_A

Ultra XT™ Guide
Round A0VB0SGU
Shaped MATE00206
Shaped MATE00207

Ultra TEC® Stripper Plate
Round S6KB0A
Shaped S6KB_A

Slug Free® Die
Round D0AB00
Shaped D0AB_0

Die Shims
MSAB
Package of 12 total, 3 each of:
0.008(0.20)
0.016(0.40)
0.032(0.80)
0.048(1.20)

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons

[Dimensions in inches (mm)]
2" C STATION

- Ultra XT™ Guide Assembly
  - MATE00209
- Original Style Punch Body
  - Round: PAAC0A
  - Shaped: PAAC_A
- Original Style Stripper Plate
  - Round: S6AC0A
  - Shaped: S6AC_A
- Slug Free® Die
  - Round: D0AC00
  - Shaped: D0AC_0
- Die Shims
  - MSAC
  - Package 3 each:
    - 0.016(0.40), 0.032(0.80), 0.048(1.20)

3-1/2" D STATION

- Ultra XT™ Guide Assembly
  - MATE00211
- Original Style Punch Body
  - Round: PAAD0A
  - Shaped: PAAD_A
- Original Style Stripper Plate
  - Round: S6AD0A
  - Shaped: S6AD_A
- Slug Free® Die
  - Round: D0AD00
  - Shaped: D0AD_0
- Die Shims
  - MSAD
  - Package 3 each:
    - 0.016(0.40), 0.032(0.80), 0.048(1.20)

4-1/2" E STATION

- Ultra XT™ Guide Assembly
  - MATE01814
- Original Style Punch Body
  - Round: PAAE0A
  - Shaped: PAAE_A
- Original Style Stripper Plate
  - Round: S6AE0A
  - Shaped: S6AE_A
- Slug Free® Die
  - Round: D0AE00
  - Shaped: D0AE_0
- Die Shims
  - MSAE
  - Package 3 each:
    - 0.016(0.40), 0.032(0.80), 0.048(1.20)

6" F STATION ULTRA XT ASSEMBLY

- Ultra XT™ Guide Assembly
  - MATE02070
- Original Style Punch Body
  - Round: PAAF0A
  - Shaped: PAAF_A
- Original Style Stripper Plate
  - Round: S6AF0A
  - Shaped: S6AF_A
- Slug Free® Die
  - Round: D0AF0A
  - Shaped: D0AF_A
- Die Shims
  - MSAF
  - Package 3 each:
    - 0.016(0.40), 0.032(0.80), 0.048(1.20)

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):
- rectangle
- square
- quad “D”
- round
- hexagon
- octagon
- oval
- single “D”
- double “D”
- triangle
- diamond

See page 6 for Slug Free Light™ Dies
See page 94 for Add-Ons

[Dimensions in inches (mm)]
Mate’s Original Style Thick Turret Tooling is fully OEM compatible tooling with several design enhancements. Premium High Speed Tool Steel is a standard feature in all Mate Thick Turret punches.

**PUNCHES:**
- Premium high speed tool steel - optimum edge wear resistance.
- 1/4 degree back taper and near polished flanks to reduce friction and eliminate galling.
- Exceptional dimensional accuracy and tool life.
- Minute corner radii to reduce chipping.
- Superior angularity and concentricity.

**STRIPPERS:**
- Fully OEM compatible.
- Close tolerance opening - superior piece part quality.
- Precision alignment slots - superior piece part quality.
- Hardened and ground - to reduce friction.
- Radiused face - to reduce sheet marking.

**SLUG FREE® DIES:**
- Highly wear resistant, chrome air hardened tool steel.
- Slug Free® die geometry eliminate slug pulling.
- Uniform clearance radii in die corners for improved piece part quality.
- Precision orientation with hardened pin.
- Up to 0.125(3.20) grind life.
- Improved die strength.
- Superior roundness and flatness.

**PUNCH HEAD:**
- Hexagonal design and 12.9 grade socket head cap screw for easier installation and adjustment.

**SPRING:**
- High performance spring shot peened prior to painting for extended service life.

**SPRING RETAINER:**
- Reversible design returns the punch point to “new” position by turning over retainer after 0.078(2.00) has been removed during regrinding.
Mate’s Original Style Thick Turret Tooling is fully OEM compatible tooling with several design enhancements. Premium High Speed Tool Steel is a standard feature in all Mate Thick Turret punches.

**PUNCHES:**
- Premium high speed tool steel - optimum edge wear resistance.
- 1/4 degree back taper and near polished flanks to reduce friction and eliminate galling.
- Exceptional dimensional accuracy and tool life.
- Minute corner radii to reduce chipping.
- Superior angularity and concentricity.

**SLUG FREE® DIES:**
- Highly wear resistant, chrome air hardened tool steel.
- Slug Free® die geometry eliminates slug pulling.
- Uniform clearance radii in die corners for improved piece part quality.
- Precision orientation with external keyway.
- Up to 0.125(3.20) grind life.
- Improved die strength.
- Superior roundness and flatness.

**STRIPPER:**
- Fully OEM compatible.
- Close tolerance opening for superior piece part quality.
- Radiused face to ease installation and reduce sheet marking.

**PUNCH GUIDE ASSEMBLY:**
- Fully OEM compatible.
- Hardened and ground to reduce turret bore wear.
- Internal and external lubrication grooves to reduce friction.
- High performance disc springs to optimize stripping force throughout the service life of the machine.
FEATURES INCLUDE:
- OEM compatible
- Hardened and ground guides
- Premium high speed tool steel punches
- Slug Free® die
1/2" A STATION ASSEMBLY

Punch Head
A0LA00PH

Stripping Spring
SPR33662

Spring Retainer
A0LA00SR

O-Ring
Round  MIS60548*
(12 minimum)
Shaped  MIS60468*
(12 minimum)

Punch Body
Round  PAAA0A
Shaped  PAAA_A

Punch Guide (Includes O-Ring)
Round  S6AA0A
Shaped  S6AA_A

Slug Free* Die
Round  D0AA00
Shaped  D0AA_0

Die Shims
MSAA
Package of 12 total, 3 each of:
0.008(0.20)
0.016(0.40)
0.032(0.80)
0.048(1.20)

See page 94 for Add-Ons

* Items sold separately beyond minimum quantity

Hardware
XPAAAA

Punch Assembly
Round
Shaped

Complete Assembly
Round
Shaped

[Dimensions in Inches (mm)]
See page 94 for Add-Ons

* Items sold separately beyond minimum quantity
Punch Guide Assembly
AGLC1

Punch Shims
VSAC
Package 3 each:
0.016(0.40), 0.032(0.80), 0.048(1.20)

Punch Body
Round PAAC0A
Shaped PAAC_A

Stripper Plate
Round S6AC0A
Shaped S6AC_A

Slug Free® Die
Round DOAC00
Shaped DOAC_0

Die Shims
MSAC
Package 3 each:
0.016(0.40), 0.032(0.80), 0.048(1.20)

Punch Retainer
A0LC00PR

Slitting Insert
Shaped P4AP_A

Die Inserts
Shaped D0KP_0

Slitting Die Body
A0LC00SD

Set Assembly
Round
Shaped

Slitting Tool Components

D/L = Diagonal/Length
R C = Radius Corners

Slitting Insert with Slug Free® Die
2.000(50.80) max. D/L
0.709(18.00) max. width

Slug Free® Die
2.059(52.30) max. D/L
0.768(19.50) max. width

Slitting Insert with Die Inserts
2.000(50.80) max. D/L
0.268(6.80) max. width

Die Inserts, Rectangles and Ovals
2.028(51.50) max. D/L
0.295(7.50) max. width

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):
rectangle square quad “D” round hexagon octagon oval single “D” double “D” triangle diamond

[Dimensions in inches (mm)]
**Punch Guide Assembly**  
AGLE1

**Punch Shims**  
VSAE  
Package 3 each:  
0.016(0.40), 0.032(0.80), 0.048(1.20)

**Punch Body**  
Round PAAE0A  
Shaped PAAE_A

**Stripper Plate**  
Round S6AE0A  
Shaped S6AE_A

**Slug Free® Die**  
Round D0AE00  
Shaped D0AE_0

**Die Shims**  
MSAE  
Package 3 each:  
0.016(0.40), 0.032(0.80), 0.048(1.20)

**Punch Retainer**  
AOLE00PR

**Slitting Insert**  
Shaped P4AR_A

**Die Inserts**  
Shaped D0KR_0

**Slitting Die Body**  
AOLE00SD

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**Slitting Tool Components**

**D/L = Diagonal/Length**  
**R C = Radius Corners**

**Slitting Insert with Slug Free® Die**  
4.500(114.30) max. D/L  
0.709(18.00) max. width

**Slug Free® Die**  
4.559(115.80) max. D/L  
0.768(19.50) max. width

**Slitting Insert with Die Inserts**  
4.500(114.30) max. D/L  
0.315(8.00) max. width  
**OR**  
4.539(115.30) max. length  
0.236(6.00) max. width

**Die Inserts R C ≤ .125(3.18)**  
4.539(115.30) max. length  
0.335(8.50) max. width

**Die Inserts R C > .125(3.18) and Ovals**  
4.539(115.30) max. length  
0.335(8.50) max. width

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**Standard Shapes (Numbering Indicates Shape Code):**

<table>
<thead>
<tr>
<th>rectangle</th>
<th>square</th>
<th>quad “D”</th>
<th>round</th>
<th>hexagon</th>
<th>octagon</th>
<th>oval</th>
<th>single “D”</th>
<th>double “D”</th>
<th>triangle</th>
<th>diamond</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>A05</td>
<td>0</td>
<td>N</td>
<td>P</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>C08</td>
<td>C07</td>
</tr>
</tbody>
</table>

[Dimensions in inches [mm]]

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orders@mate.com  
LIT00569 Rev F PN 2020
Punch Guide Assembly:
This punch guide assembly is designed to fit all thick turret machines with a 6” F station. The guide assembly incorporates many performance features including:

- Hardened guide body.
- High performance disc springs.
- High tensile draw bolt.
- Precision internal punch key.
- Internal and external lubrication grooves.
- Spring steel stripper clips.
- Fully OEM compatible.

Punches, Strippers, and Dies
Mate offers a comprehensive range of punches, strippers and dies to suit the thick turret 6” F Station.

- High Speed Steel Punches.
- Toughened Strippers.
- Shock Steel Dies.

Special Assembly Applications
Available on request. Contact your Mate applications specialist.

PUNCH GUIDE ASSEMBLY
AGLF1

PUNCH
Round PAAF0A
Shaped PAAF_A

STRIPPER
Round S6AF0A
Shaped S6AF_A

DIE
Round D0KF00
Shaped D0KF_0

PUNCH SHIMS
VSAF
Mate Ultra Light™ spring packs provide precise control of the stripping pressure when using any thick turret guide assembly manufactured by Mate. Benefits include:

- Reduced spring pressure to eliminate unwanted sheet marking.
  Designed for thin or decorative materials.
- Ideal for high polish, textured, pre-painted or reflective metals where finish appearance is critical.
- Quieter punching in all applications. Noise levels reduced by as much as 10 decibels.
- Maximum control over total spring pressure.
  Combine two sets of springs for nine pressure variations. See table.

Mate punch guide assemblies complete with Mate Ultra Light™ spring packs are now available for popular thick turret tooling styles including:

- Mate Ultra TEC®
- Mate Ultra TEC® Fully Guided
- Mate Ultra XT™
- Original Style Thick Turret

Note: Your existing Mate thick turret guides can be retrofitted with Mate Ultra Light™ spring packs.

<table>
<thead>
<tr>
<th>TOOL STYLE</th>
<th>STATION</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mate Ultra TEC®</td>
<td>2” C</td>
<td>MATE02395</td>
</tr>
<tr>
<td></td>
<td>3-1/2” D</td>
<td>MATE00488</td>
</tr>
<tr>
<td></td>
<td>4-1/2” E</td>
<td>MATE01807</td>
</tr>
<tr>
<td>Mate Ultra TEC® Fully Guided</td>
<td>2” C</td>
<td>MATE00490</td>
</tr>
<tr>
<td></td>
<td>3-1/2” D</td>
<td>MATE00491</td>
</tr>
<tr>
<td></td>
<td>4-1/2” E</td>
<td>MATE01811</td>
</tr>
<tr>
<td>Mate Ultra XT™</td>
<td>2” C</td>
<td>MATE00496</td>
</tr>
<tr>
<td></td>
<td>3-1/2” D</td>
<td>MATE00497</td>
</tr>
<tr>
<td></td>
<td>4-1/2” E</td>
<td>MATE01815</td>
</tr>
<tr>
<td></td>
<td>6” F</td>
<td>MATE02072</td>
</tr>
<tr>
<td>Original Style Thick Turret</td>
<td>2” C</td>
<td>MATE00493</td>
</tr>
<tr>
<td></td>
<td>3-1/2” D</td>
<td>MATE00494</td>
</tr>
<tr>
<td></td>
<td>4-1/2” E</td>
<td>MATE00495</td>
</tr>
<tr>
<td></td>
<td>6” F</td>
<td>MATE02328</td>
</tr>
<tr>
<td>Additional springs for heavier application. (pack of 9)</td>
<td>2” C</td>
<td>MATE00280</td>
</tr>
<tr>
<td></td>
<td>3-1/2” D</td>
<td>MATE00281</td>
</tr>
<tr>
<td></td>
<td>4-1/2” E</td>
<td>MATE00281</td>
</tr>
</tbody>
</table>

Mate Ultra Light™ spring packs are supplied with 9 blue springs. The spring pressure can be altered by removing and/or replacing the springs. Additional red and gold springs are available.

Use the table below to select the spring combination to achieve the desired stripping pressure. The spring pressure is stated as the percentage achieved in the Ultra Light™ guide as compared to an Ultra TEC® disc spring stack.

<table>
<thead>
<tr>
<th>Tool Style</th>
<th>Station</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2” C Station</td>
<td>3 blue</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>6 blue</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>9 blue</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>3 gold</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>3 blue + 3 gold</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>6 blue + 3 gold</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>6 gold</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>3 blue + 6 gold</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>9 gold</td>
<td>36%</td>
</tr>
<tr>
<td>3-1/2” D Station</td>
<td>3 blue</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>6 blue</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>3 red</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>9 blue</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>3 blue + 3 red</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>6 blue + 3 red</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>6 red</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>3 blue + 6 red</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>9 red</td>
<td>33%</td>
</tr>
<tr>
<td>4-1/2” E Station</td>
<td>6 blue</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>6 red</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>3 blue + 6 red</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>9 red</td>
<td>33%</td>
</tr>
</tbody>
</table>
Mate’s new AMX™ Thick Turret ABS Tooling offers the superior replacement alternative fabricators have been waiting for! AMX Tooling provides 100% worry free compatibility with AMADA® ABS assemblies and holders. PLUS, you have the flexibility of using AMX punches with Mate’s Ultra TEC® Tooling System. Mate incorporated advanced metallurgy and lubrication delivery systems to prevent galling, slivering, and slug pulling. As with all Mate products, AMX is backed by Best-in-Class service and our 100% Customer Satisfaction Guarantee.

**AMX™ PUNCHES**
- 100% worry free compatibility with Amada assemblies.
- Holder compatible with Mate Ultra TEC® and Ultra TEC®
  - Fully Guided systems.
- M2 High Speed Steel - OEM equivalent. Superior to other after-market replacements, M2 lasts longer between regrinds.
- Precision gun drilled ABS channels on A and B-station punches.
- Standard external spiral lubrication grooves on A & B-station punches ensures uniform fluid flow for friction free punch-to-guide operation.
- 1/4 degree total back taper reduces galling.
- Hardened pin for precise orientation of punches for improved piece part quality.
- Maxima™ coating and Nitride treatment available for special application needs.

**AMX™ A AND B-STATION STRIPPER GUIDES**
- Available for A and B-station punches.
- Stripper opening incorporates blips for ABS compatibility.
- Fully hardened and ground for maximum precision and long life.
- Two styles:
  - Rounds, with internal keyway.
  - Shapes, with multiple precision keyways.
- Stripper relieved to allow 0.118(3,00) extra grind life.
- Rounded edges to minimize sheet marking.

**AMX™ C, D, AND E STRIPPERS**
- Fully compatible with AMADA ABS systems.
- Relieved to allow 0.078(2,00) extra grind life.
- Rounded edges to minimize sheet marking.
- Blips around stripper opening for ABS functionality.
**A-STATION PUNCH**
- ROUND: PMXA0A
- SHAPE: PMXA_A

**A-STATION STRIPPER GUIDE**
- ROUND: SMXA0A
- SHAPE: SMXA_A

**B-STATION PUNCH**
- ROUND: PMXB0A
- SHAPE: PMXB_A

**B-STATION STRIPPER GUIDE**
- ROUND: SMXB0A
- SHAPE: SMXB_A

**C-E-STATION PUNCHES**
- ROUND: PMXC0A
- SHAPE: PMXC_A
- ROUND: PMXD0A
- SHAPE: PMXD_A
- ROUND: PMXE0A
- SHAPE: PMXE_A

**C-E-STATION STRIPPERS**
- ROUND: SMXC0A
- SHAPE: SMXC_A
- ROUND: SMXD0A
- SHAPE: SMXD_A
- ROUND: SMXE0A
- SHAPE: SMXE_A

**PUNCH HEAD ASSEMBLIES**
- A-STATION: XPAAMX
- B-STATION: XPABMX

**AMX SEAL KIT**
- A-STATION: MATE01880
- B-STATION: MATE01883

**D-E STATION SLITTING SYSTEMS**
- D-STATION AMX Punch Insert Retainer Assembly: MATE01988
- E-STATION AMX Punch Insert Retainer Assembly: MATE01990
- D-STATION Slitting Insert with M4 Material: P4AQ_A
- E-STATION Slitting Insert with M4 Material: P4AR_A

*To make your existing Mate A & B-Station Original Style punch head assemblies ABS compatible, use this AMX Seal Kit.*

**STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):**
- rectangle
- square
- quad “D”
- round
- hexagon
- octagon
- oval
- single “D”
- double “D”
- triangle
- diamond

**Dimensions in Inches (mm)**
MATE DURASTEEL™ HIGH PERFORMANCE TOOL STEEL

Mate DuraSteel™ is an air hardening tool steel designed specifically for use in high performance tooling systems.

A combination of the chemical composition of Mate DuraSteel and the closely controlled manufacturing process results in an upgrade to conventional High Chrome D2 tool steel. It offers better wear resistance, greater toughness, better compressive strength, and higher attainable hardness.

Mate DuraSteel is a high quality tool steel which has many advantages when compared to alternative tool steels commonly available. These advantages include:

**Superior Wear Resistance** – Mate DuraSteel offers superior resistance to adhesive- and abrasive-wear to maximize the interval between regrinds.
- Increased Vanadium carbides – harder wearing than chromium carbides for greater resistance to abrasive-wear.
- Increased Tungsten carbides – harder wearing and offer better red hardness; increased resistance to high temperatures which may anneal or damage the material.
- Higher hardness – increased alloy content results in higher effective hardness for better wear resistance.

**Increased Toughness** – the chemical composition and heat treatment processes used with Mate DuraSteel make it tougher than conventional tool steels in impact strength tests.
- The inclusion of tungsten and vanadium allows the carbon content to be reduced, which increases the toughness.

**Better Value** – Customer trials have shown that tools manufactured in Mate DuraSteel last 100% longer between regrinds than tools manufactured using conventional tool steels. By increasing the interval between regrinds, the tooling lasts longer and punches many more holes before needing to be replaced.

**DuraSteel™ Chemical Composition**

<table>
<thead>
<tr>
<th>Element</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon</td>
<td>1.10%</td>
</tr>
<tr>
<td>Chromium</td>
<td>7.50%</td>
</tr>
<tr>
<td>Vanadium</td>
<td>2.40%</td>
</tr>
<tr>
<td>Tungsten</td>
<td>1.15%</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>1.60%</td>
</tr>
</tbody>
</table>
Mate’s MXC™ Tooling System is a thick turret punching system which increases tool performance and flexibility, offers extended tool life and allows interchangeability with existing systems. Some features of the MXC system include:

- **DuraSteel™ punches**
- **100% Compatible with:**
  - Ultra TEC®
  - Ultra XT™
  - HP™
  - HP™ WLS®
  - HP™ ABS
- **Slug Free® die design**

*ABS Style also works in WLS environment

Mate MXC™ A and B-station tooling is produced under license from Wilson Tool International, Inc.

See page 53 for Add-Ons and Accessories
### MXC™ Punch - Standard

<table>
<thead>
<tr>
<th>MXC™ Punch - Standard</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>PXCB0A</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>PXCB_A</td>
<td></td>
</tr>
<tr>
<td>Maxima™ Coating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-Rotation Pin</td>
<td>MATE00752</td>
<td></td>
</tr>
<tr>
<td>Retaining Ring</td>
<td>RR100010</td>
<td></td>
</tr>
</tbody>
</table>

### MXC™ Punch - ABS Style

<table>
<thead>
<tr>
<th>MXC™ Punch - ABS Style</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round***</td>
<td>PLCB0A</td>
<td></td>
</tr>
<tr>
<td>Shape***</td>
<td>PLCB_A</td>
<td></td>
</tr>
<tr>
<td>Maxima™ Coating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-Rotation Pin</td>
<td>MATE00752</td>
<td></td>
</tr>
<tr>
<td>Retaining Ring</td>
<td>RR100010</td>
<td></td>
</tr>
<tr>
<td>Felt Pad**</td>
<td>FLT00001</td>
<td></td>
</tr>
</tbody>
</table>

### MXC™ Stripper

<table>
<thead>
<tr>
<th>MXC™ Stripper</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>SXCB0A</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>SXCB_A</td>
<td></td>
</tr>
<tr>
<td>retaining Ring*</td>
<td>MATE00754</td>
<td></td>
</tr>
</tbody>
</table>

### Slug Free® Die

<table>
<thead>
<tr>
<th>Slug Free® Die</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>DOAB00</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>DOAB_0</td>
<td></td>
</tr>
</tbody>
</table>

### Slug Free Light™ Die Option

<table>
<thead>
<tr>
<th>Slug Free Light™ Die Option</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Die Shim</th>
<th>MSAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package of 12 total, 3 each of:</td>
<td></td>
</tr>
<tr>
<td>0.008(0.20)</td>
<td></td>
</tr>
<tr>
<td>0.016(0.40)</td>
<td></td>
</tr>
<tr>
<td>0.032(0.80)</td>
<td></td>
</tr>
<tr>
<td>0.048(1.20)</td>
<td></td>
</tr>
</tbody>
</table>

* Stripper retaining ring not included with stripper

** Add felt pad (not included with punch) to ABS style punch to work in WLS® environment

*** MXC™ ABS B-station punches are compatible with Wilson Fully Indexable R series 3 station MT for Finn-Power

**Option:** M4PM™ steel available for superior performance and longevity. (See page 93 for details and additional information.)

---

Mate MXC™ A and B-station tooling is produced under license from Wilson Tool International, Inc.

See page 53 for Add-Ons and Accessories
### MXC™ Punch - Standard

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXCC0A</td>
<td></td>
</tr>
<tr>
<td>PXCC_A</td>
<td></td>
</tr>
</tbody>
</table>

### Maxima™ Coating

- Ultra TEC® Adapter: A0VCWSPA

### MXC™ Stripper

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXCC0A</td>
<td></td>
</tr>
<tr>
<td>SXCC_A</td>
<td></td>
</tr>
</tbody>
</table>

### Slug Free® Die

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOAC00</td>
<td></td>
</tr>
<tr>
<td>DOAC_0</td>
<td></td>
</tr>
</tbody>
</table>

### Slug Free Light™ Die Option

<table>
<thead>
<tr>
<th>Die Shim</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package of 9 total, 3 each of: 0.016(0.40) 0.032(0.80) 0.048(1.20)</td>
<td>MSAC</td>
</tr>
</tbody>
</table>

---

**PUNCH**

- DuraSteel™ with superior hardness and toughness for extended interval between regrinds.
- Hardened double-D key for precise orientation of punches for improved piece part quality.
- 1/4 degree back taper and near polished punch flanks to reduce friction, eliminate galling, and maximize punch life.
- Maxima™ coating available to reduce friction in extreme applications. Less friction means less heat build up, less galling and longer tool life.

**STRIPPER**

- Smooth rounded edges to eliminate sheet marking and improve piece part quality.
- Compatible with existing conventional tooling inventory for maximum flexibility.

**SLUG FREE® DIE**

- Slug Free die geometry eliminates slug pulling to improve piece part quality and increase tool life.
- Highly wear-resistant tool steel provides optimum balance between hardness and toughness, for extended life.

See page 53 for Add-Ons and Accessories
PUNCH
- DuraSteel™ with superior hardness and toughness for extended interval between regrinds.
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See page 53 for Add-Ons and Accessories

<table>
<thead>
<tr>
<th>STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):</th>
</tr>
</thead>
<tbody>
<tr>
<td>rectangle</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

[Dimensions in inches (mm)]
### MXC™ Punch - Standard

<table>
<thead>
<tr>
<th>Shape</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>PXCE0A</td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td>PXCE_A</td>
<td></td>
</tr>
</tbody>
</table>

### Maxima™ Coating

| Ultra TEC® Adapter | A0VEWSPA |

### MXC™ Clamp Clearing Option

| E Station | PXCX       |

### MXC™ Stripper

| Round    | SXCE0A     |
| Shape    | SXCE_A     |

### Slug Free® Die

| Round    | D0AE00     |
| Shape    | D0AE_0     |

### Slug Free Light™ Die Option

| Die Shim Package 3 each: 0.016(0.40) 0.032(0.80) 0.048(1.20) | MSAE |

---

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---

See page 53 for Add-Ons and Accessories

<table>
<thead>
<tr>
<th>STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE): rectangle</th>
<th>square</th>
<th>quad “D”</th>
<th>round</th>
<th>hexagon</th>
<th>octagon</th>
<th>oval</th>
<th>single “D”</th>
<th>double “D”</th>
<th>triangle</th>
<th>diamond</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>A05</td>
<td>0</td>
<td>N</td>
<td>P</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>C08</td>
<td>C07</td>
</tr>
</tbody>
</table>

[Dimensions in inches (mm)]
### Small Diameter Round Tools
- Point diameter 0.031(0.79) - 0.061(1.55) - to punch, stripper and die
- Point diameter 0.062(1.56) - 0.092(2.35) - to punch, stripper and die

### Narrow Width Shaped Tools
- Width is less than 0.079(2.00) - to punch, stripper and die

### Angle Setting
- Non-Standard Angle Setting - to punch, stripper and die

### Coatings
- 1/2” A Station
- 1-1/4” B Station
- 2” C Station
- 3-1/2” D Station
- 4-1/2” E Station

### MXC™ THICK TURRET TOOLING SYSTEM PARTS & ACCESSORIES

<table>
<thead>
<tr>
<th>1-1/4” B Station Punch Retaining Ring</th>
<th>1-1/4” B Station Punch Anti Rotation Pin</th>
<th>1-1/4” B Station Punch Felt Pad</th>
<th>1-1/4” B Station Stripper Retaining Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRI00010</td>
<td>MATE00752</td>
<td>FLT00001</td>
<td>MATE00754</td>
</tr>
</tbody>
</table>

- **Replacement Part**
- **To convert ABS punch to WLS® style**
- **Replacement Part**

### Round Punches Only Anti-rotation Clip
- AOV8WBAC

- **Replacement Part**

### 2” C Station HP™ Punch Adapter
- A0VCWSPA

### 3-1/2” D Station HP™ Punch Adapter
- A0VDWSPA

### 4-1/2” E Station HP™ Punch Adapter
- A0VEWSPA

- **Replacement Part**

These Punch Adapters allow an HP™ and/or MXC™ punch to be used in an Original Style Thick Turret, Ultra TEC® or Ultra ABS® holder.

**HP™** is a trademark of Wilson Tool International, Inc.
### MXC™ PUNCH

<table>
<thead>
<tr>
<th>Station</th>
<th>1/2&quot; A</th>
<th>1-1/4&quot; B</th>
<th>2&quot; C</th>
<th>3-1/2&quot; D</th>
<th>4-1/2&quot; E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>PXCA or PLCA</td>
<td>PXCB or PLCB</td>
<td>PXCC</td>
<td>PXCD</td>
<td>PXCE</td>
</tr>
<tr>
<td>Maximum Punch Diagonal</td>
<td>0.500(12.70)</td>
<td>1.250(31.75)</td>
<td>2.000(50.80)</td>
<td>3.500(88.90)</td>
<td>4.500(114.30)</td>
</tr>
<tr>
<td>Overall Length</td>
<td>4.640(117.86)</td>
<td>3.957(100.51)</td>
<td>2.360(59.94)</td>
<td>2.360(59.94)</td>
<td>2.360(59.94)</td>
</tr>
<tr>
<td>Shank Diameter</td>
<td>0.624(15.85)</td>
<td>1.249(31.72)</td>
<td>1.250(31.75)</td>
<td>1.250(31.75)</td>
<td>1.250(31.75)</td>
</tr>
<tr>
<td>Shoulder Diameter</td>
<td>n/a</td>
<td>n/a</td>
<td>2.000(50.80)</td>
<td>3.500(88.90)</td>
<td>4.500(114.30)</td>
</tr>
<tr>
<td>Straight Before Radius</td>
<td>0.740(18.80)</td>
<td>0.740(18.80)</td>
<td>1.004(25.50)</td>
<td>1.004(25.50)</td>
<td>1.004(25.50)</td>
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</table>

### MXC™ STRIPPER

<table>
<thead>
<tr>
<th>Part Number</th>
<th>SXCA</th>
<th>SXCB</th>
<th>SXCC</th>
<th>SXCD</th>
<th>SXCE</th>
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<tbody>
<tr>
<td>Outside Diameter</td>
<td>0.768(19.51)</td>
<td>1.497(38.02)</td>
<td>2.356(59.84)</td>
<td>4.011(101.88)</td>
<td>4.866(123.60)</td>
</tr>
<tr>
<td>Thickness</td>
<td>0.272(6.91)</td>
<td>0.272(6.91)</td>
<td>0.390(9.91)</td>
<td>0.390(9.91)</td>
<td>0.390(9.91)</td>
</tr>
<tr>
<td>Stripper Land</td>
<td>0.157(3.99)</td>
<td>0.157(3.99)</td>
<td>0.315(8.00)</td>
<td>0.315(8.00)</td>
<td>0.315(8.00)</td>
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</table>

### Slug Free® and Slug Free LIGHT™ DIES

<table>
<thead>
<tr>
<th>Part Number</th>
<th>DOAA</th>
<th>DOAB</th>
<th>DOAC</th>
<th>DOAD</th>
<th>DOAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Diameter</td>
<td>1.000(25.40)</td>
<td>1.875(47.63)</td>
<td>3.500(88.90)</td>
<td>4.938(125.43)</td>
<td>6.249(158.72)</td>
</tr>
<tr>
<td>Overall Height</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
</tr>
<tr>
<td>Die Penetration</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
</tr>
</tbody>
</table>

For 1/2" A and 1-1/4" B Station (B station shown)

For 2" C, 3-1/2" D and 4-1/2" E Station (C station shown)
Inch Style tooling is designed with features to enhance punching performance, including:

- Premium High Speed Steel which is specially formulated to deliver superior abrasion resistance to extend the interval between regrinds.
- Near polished punch flanks with a 1/4 degree back taper to minimize friction, eliminate galling during stripping and improve piece part quality.
- Minute corner radii to eliminate chipping and extend punch life.
- Superior angularity and concentricity for improved hole quality.
- Thread size clearly marked for ease of use.
- Maxima™ coating available.

**1/2" A STATION**
Maximum Diagonal 0.500(12.70)
Round PAJA0A
Shaped PAJA_A
HeavyDuty
Round PHJA0A
Shaped PHJA_A
Replacement Clip MATE02094

**1-1/4" B STATION**
Maximum Diagonal 1.250(31.75)
Round PAJB0A
Shaped PAJB_A
HeavyDuty
Round PHJB0A
Shaped PHJB_A

**2" C STATION**
Maximum Diagonal 2.000(50.80)
Round PAJC0A
Shaped PAJC_A
HeavyDuty
Round PHJC0A
Shaped PHJC_A

**3-1/2" D STATION**
Maximum Diagonal 3.500(88.90)
Round PAJD0A
Shaped PAJD_A
HeavyDuty
Round PHJD0A
Shaped PHJD_A

**4-1/2" E STATION**
Maximum Diagonal 4.500(114.30)
Round PAJE0A
Shaped PAJE_A
HeavyDuty
Round PHJE0A
Shaped PHJE_A

Fully Compatible with Wilson Inch Style

**STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):**
rectangular 3 square 8 quad “D” round 5 hexagon 10 octagon 15 oval
1 single “D” 4 double “D” 6 triangle 11 diamond 19

[Dimensions in inches (mm)]
**MATE ULTRA® MULTI TOOL 8 STATION ASSEMBLY**

**UPPER:**
- **MATE00967**

**LOWER:**
- **MATE00968**  
  - Achieved angles:  
    - Stations 1, 3, 5, 7: Rounds only  
    - Stations 2, 4, 6, 8: 0°, 90°, 225°

- **MATE01764**  
  - Achieved angles:  
    - Station 1, 3, 7: 90°  
    - for Danobat machines  
    - Station 2, 4, 6, 8: 0°, 90°, 225°  
    - Station 5: Rounds Only

**SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punch point range:</td>
<td>0.020(.80) to 0.618(15.70)</td>
</tr>
<tr>
<td>Tooling</td>
<td>Ultra® TEC® &amp; Ultra® QCT™ 1/2&quot; A station punches, strippers, and Slug Free® dies</td>
</tr>
<tr>
<td>Maximum tonnage:</td>
<td>U.S. 6 Tons - 54 kN - 5.4 Metric Tons</td>
</tr>
<tr>
<td>Max material thickness:</td>
<td>6mm (.236&quot;)</td>
</tr>
</tbody>
</table>

---

**MATE ULTRA MULTI TOOL 3 STATION ASSEMBLY**

**UPPER:**
- **MATE00969**

**LOWER:**
- **MATE00970**  
  - Achieved angles:  
    - Each station: 0°, 45°, 90°

- **MATE01030**  
  - Achieved angles:  
    - Station 1, 3: 0°, 90°, 315°  
    - Station 2: 0°, 315°

- **MATE02371***  
  - Achieved angles:  
    - Each station: 0°, 45°, 90°  
    - for Ermaksan single head machines with 103 mm slug hole.

* if slug hole is 90mm, use MATE00970

**SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punch point range:</td>
<td>0.020(.80) to 1.250(31.70)</td>
</tr>
<tr>
<td>Tooling</td>
<td>Ultra TEC® &amp; Ultra® QCT™ 1-1/4&quot; B station punches, strippers, and Slug Free® dies</td>
</tr>
<tr>
<td>Maximum tonnage:</td>
<td>U.S. 12 Tons - 107 kN - 11 Metric Tons</td>
</tr>
<tr>
<td>Max material thickness:</td>
<td>6mm (.236&quot;)</td>
</tr>
</tbody>
</table>

**PATENT INFORMATION:**

US 7726554, 8152052
US 8464928, 8376215
CA 2664784
MX 305729, 306976, 305727
CN 101528427
PAT. PEND

**USAGE NOTES:**

Requires compatibility with machine ram and programming software.

Contact your punch press machine supplier for compatibility.

Part numbers for Multi Tool assemblies do not include punches and dies.

**3 or 8 Station Hardened Shim**

MATE02330

[D]imension in [I]nches (mm)
### MATE FULLY INDEXABLE ULTRA UMT-8A MULTI TOOL 8 STATION ASSEMBLY

**Upper:** MATE02467  
**Lower:** MATE02463  

#### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Punch point range</td>
<td>.020(.51mm) to .618(15.70mm)</td>
</tr>
<tr>
<td>Maximum tonnage</td>
<td>U.S. 6 Tons - 54 kN - 5.4 Metric Tons.</td>
</tr>
<tr>
<td>Max material thickness:</td>
<td>6mm (.236”).</td>
</tr>
</tbody>
</table>
| Achieved angles (if not using a rotating ram machine) | Station 1: 90°  
Station 2: 135°  
Station 3: 180°  
Station 4: 225°  
Station 5: 300°  
Station 6: 315°  
Station 7: 0°  
Station 8: 45°  

### MATE FULLY INDEXABLE ULTRA UMT-3B MULTI TOOL 3 STATION ASSEMBLY

**Upper:** MATE02460  
**Lower:** MATE02455  

#### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Punch point range</td>
<td>.020(.51mm) to 1.250(31.70mm)</td>
</tr>
<tr>
<td>Tooling:</td>
<td>Ultra TEC® &amp; Ultra® QCT™ 1-1/4&quot; B station punches, strippers, and Slug Free® dies</td>
</tr>
<tr>
<td>Maximum tonnage</td>
<td>U.S. 12 Tons – 107 kN – 11 Metric Tons</td>
</tr>
<tr>
<td>Max material thickness:</td>
<td>6mm (.236”)</td>
</tr>
</tbody>
</table>
| Achieved angles (if not using a rotating ram machine) | Station 1: 90°  
Station 2: 180°  
Station 3: 0°  

[Dimensions in inches (mm)]
MATE FULLY INDEXABLE ULTRA IMT-8A MULTI TOOL 8 STATION ASSEMBLY

Ultra IMT™ 8-Station (not machine specific)
Upper: MATE01840
Lower: MATE00050

Ultra IMT™ 8-Station (machine specific uppers & lowers)
Upper Only: MATE02068 JFY MACHINES
Upper Only: MATE02007 BAYKAL MACHINES
Lower Only: MATE02060 DURMA MACHINES

SPECIFICATIONS

| Punch point range: | .020(.51mm) to .618(15.70mm) |
| Maximum tonnage: | U.S. 7 Tons – 62 kN – 6.3 Metric Tons |
| Max material thickness: | 6mm (.236”) |

The fully indexable Ultra IMT™ 8-Station multi tool works with Ultra TEC® & Ultra® QCT™ A station punch, strippers and Thick Turret Slug Free® dies up to a maximum punch diagonal of .618” (15,70 mm). The multi tool accepts 8 “mini” stations. The multi tool can achieve any angle setting on the work piece.

MATE FULLY INDEXABLE ULTRA IMT-3B MULTI TOOL 3 STATION ASSEMBLY

Ultra IMT™ 3-Station (not machine specific)
Upper: MATE01850
Lower: MATE00697

Ultra IMT™ 3-Station (machine specific uppers & lowers)
Upper Only: MATE02069 JFY MACHINES
Upper Only: MATE02010 BAYKAL MACHINES
Lower Only: MATE02058 DURMA MACHINES

SPECIFICATIONS

| Punch point range: | .020(.51mm) to 1.250(31.75mm) |
| Tooling: | Ultra TEC® & Ultra® QCT™ 1-1/4” B station punches, strippers, and Slug Free® dies |
| Maximum tonnage: | U.S. 12 Tons – 107kN – 11 Metric Tons |
| Max material thickness: | 6mm (.236”) |

The fully indexable Ultra IMT™ 3-Station multi tool works with Ultra TEC® & Ultra® QCT™ B Station punch, strippers and Thick Turret Slug Free® dies up to a maximum punch diagonal of 1.250” (31,75 mm). The multi tool can achieve any angle setting on the work piece.

See Ultra® IMT Product Bulletin for additional information (LIT00745)

*Ultra® IMT is patented under:
US: 7,726,554 and 8,152,052 and 8,464,928 and 8,413,561
China: CN 101528427B
Mexico: 306,976 and 305,729
Canada: CA 2,664,784
**Concept:** One adjustable length holder can be used with a variety of special forming inserts. The benefits include reduced tooling cost, increased flexibility, and the length of the assembly can be accurately pre-set.

**Quick Length Adjustment:**
The push-button length adjustment mechanism allows the overall length of the assembly to be set in 0.002(0.05) increments, without disassembly or removal from the machine.

**Adjustment Below the Shoulder:**
The length adjustment is made below the shoulder of the assembly, thus maintaining the gap between the ram and the tool at top of stroke to prevent the ram from hitting the tool.

**Hardened Guides:**
The hardened guides, combined with the lubrication grooves, reduce friction and extend turret bore life.

**Multiple Angle Settings:**
All Ultraform® holders can be set at 0, 90, 180 and 270 degrees as a standard, for maximum flexibility.

**Tool Lubrication:**
Ultraform® holders provide internal channels and external grease grooves to allow lubrication of forming tools. Ultraform® is compatible with all popular punch press machine tool lubrication systems.

**One Holder – Multiple Applications:**
The Ultraform® holder system is designed to allow an unlimited number of forming tools to be used with the same holder, which reduces tooling inventory costs.

**Available for:**
- 1-1/4” B Station
- 2” C Station
- 3-1/2” D Station
- 4-1/2” E Station
**ULTRAFORM®**

<table>
<thead>
<tr>
<th>B Station</th>
<th>C Station</th>
<th>D Station</th>
<th>E Station</th>
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</thead>
<tbody>
<tr>
<td>AFBK2</td>
<td>AFKC2</td>
<td>AFD2</td>
<td>AFKE2</td>
</tr>
<tr>
<td>B Station</td>
<td>C Station</td>
<td>D Station</td>
<td>E Station</td>
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<tr>
<td>MATE01755</td>
<td>MATE01821</td>
<td>MATE01824</td>
<td>MATE01827</td>
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<tr>
<td>B Station</td>
<td>C Station</td>
<td>D Station</td>
<td>E Station</td>
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<td>MATE01798</td>
<td>MATE01800</td>
<td>MATE01802</td>
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<table>
<thead>
<tr>
<th>Feature</th>
<th>Ultraform®</th>
<th>Ultraform XT™</th>
<th>Ultraform FX™</th>
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<tbody>
<tr>
<td>Ultraform inserts</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Angle setting of 0°, 90°, 180° and 270°</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Upper holder, fine length adjustment (0.05 mm)</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper holder, adjustable length (&gt;0.2 mm)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Length</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length adjustment without tools</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper holder, adjustable length in turret possible</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardened guide</td>
<td>✔</td>
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<td></td>
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<tr>
<td>Length adjustment under the upper turret</td>
<td>✔</td>
<td>✔</td>
<td></td>
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<tr>
<td>Usable with lubricating system of the machine</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Available for B - E Station</td>
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<tr>
<td>Available for F Station</td>
<td>✔</td>
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</table>

[LIT00569 Rev F PN 2020]

[Dimensions in Inches (mm)]
Combine the economy of original style thick turret tooling, with the convenience of integrated tool body construction, and the simplicity of the hexagon shaped punch head. Ideal for hydraulic punch presses with programmable ram control.

**Dedicated Countersink Down**
Complete Assembly with blank die
Replacement Countersink Tip
XAABD0B399
XAABD0B316

**Dedicated Countersink Up**
Complete Assembly with non-spring loaded lower.
XAABD0B199

**Round Emboss with Dome Top**
Complete Assembly with spring loaded lower
XAABD0E099

**Round Emboss with Flat Top**
Complete Assembly with spring loaded lower
XAABD0E199

**Round Embossed Countersink Up**
Complete Assembly with spring loaded lower
XAABD0E999

**Round Extrude Up**
Complete Assembly with spring loaded lower
Replacement Lower Insert
XAABD0D199
XAABD0D104

**Single Round Knockout Up**
Complete Assembly with spring loaded lower
XAABD0K199

**Shear Button Up**
Complete Assembly with spring loaded lower
Replacement Lower Insert
XAABD0S199
XAABD0S104

All 1-1/4" B station original style forming tools are designed to your specific material type, thickness, and machine model requirements. Interchangeability between machines is not recommended due to the variations in the shut height between different machines. For fully adjustable and interchangeable forming tools, we recommend the Mate Ultraform® forming tool system.
Clamp clearing dies are necessary when maximum sheet usage is required. The ability to punch as close to the clamps as possible reduces both material cost and waste.

Mate Versadie™ takes clamp clearing solutions to a new level with several unique design features. First, with replaceable die inserts, there is no need to replace the entire die. Versadie’s inserts are designed to allow for the greatest lengths currently available in the industry, accommodating lengths up to 4.560(115.82mm) for E Stations and 3.560(90.42mm) for D Stations.

With its tighter tolerances of the insert to the holder, Versadie has superior overall quality.

For superior performance and longevity, Versadie’s slitting die insert is made from MPM82 tool steel. Designed for use in high performance tooling systems, MPM82 is a high speed, particle metallurgy steel intended to provide high value and exceptional versatility making it perfect for slitting operations.

MPM82 TOOL STEEL OFFERS:
- Stronger dies that can withstand the most demanding punching operations
- Sharper edges on the die opening
- Increased machine uptime
- Reduced overall tooling costs
- Lower overall production costs

For maximum longevity, the die body allows shimming after the insert is sharpened during routine maintenance. There’s no need for special shims—simply use standard thick turret die shims.

DIE INSERT
- Premium MPM82 tool steel for superior performance and longevity
- Inch and metric sizes
  - D Station from up to 3.560(90.42mm)
  - E Station from up to 4.560(115.82mm)
- Widths up to .509(12.93mm)
- Mate Slug Free® design

DIE BODY
- S7 Shock-Resisting Tool Steel

SHIMS
- D Station, package of 3 each: 0.016(0.41); 0.032(0.81); 0.048(1.22)
- E Station, package of 3 each: 0.016(0.41); 0.032(0.81); 0.048(1.22)

PRICING AND PART NUMBERS:

MATE02223  D Station Die Body Assembly
MATE02225  E Station Die Body Assembly
D8AQ_A     D Station Slitting Insert
D8AR_A     E Station Slitting Insert
MSAD       D Station Die Shims (set of 9)
MSAE       E Station Die Shims (set of 9)
MATE02338  D Station Insert Shims (set of 9)
MATE02339  E Station Insert Shims (set of 9)
Mate Eliminator™ (patents pending) punch tip lubrication pads assist in keeping the punch tip lubricated during the punching process.

Studies have shown that properly lubricated punch tips help extend tool life and keep the punch from overheating. In many situations, lubrication helps eliminate unwanted galling during the punching process.

Mate Eliminator lubrication pads are easy to install, especially on Mate Ultra TEC® A and B stations. Simply use the punch and stripper to “punch” the hole into the foam. Saturate the pad with 46-68 ISO viscosity hydraulic oil and you’re ready for gall-free punching.

**MATE ELIMINATOR LUBRICATION PADS:**
- Made from polyether filter foam
- Available in A through E stations
- Compatible with all thick turret punch presses
- Made in U.S.A.

### STATION | PART NUMBER
--- | ---
A station, qty of 5 | MATE02028
B station, qty of 5 | MATE02029
C station, qty of 5 | MATE02030
D station, qty of 4 | MATE02031
E station, qty of 4 | MATE02032
The Mate Pilot™ Turret Calibration System is the most accurate system for ensuring precision concentric and angular alignment of thick turret punch press stations available. The Mate Pilot Turret Calibration System operates in two modes:

- **Verification Mode** – Confirm the precise concentric and angular alignment of your turret to maintain high quality piece part production and maximum tool life.
- **Alignment Mode** – Restore the concentric and angular alignment of each station with the same or better precision as the initial machine installation.

THE MATE PILOT™ TURRET CALIBRATION SYSTEM IS SIMPLY THE BEST SYSTEM AVAILABLE.

**Accurate:**
Each calibration instrument is machined from a single piece of high quality tool steel. The upper and lower halves are separated near the end of the production process, just prior to installation of the hardware. This eliminates the possibility of cumulative tolerances adversely affecting the accuracy of the finished instrument.

**Simple to Use:**
Install the two halves of the calibration instrument into the turret station to be aligned. Rotate turret to position the station to be aligned under the machine ram. Use the integral adjustment handle to draw the two halves of the calibration instrument together.

The interlocking design of the interface between the two halves causes the loosened die holder assembly to be drawn into concentric and angular alignment relative to the upper bore as the two halves of the calibration instrument engage.

The tri-color light indicates alignment.
- Engaged, but not aligned
- Angularity and concentricity within 0.0012(0.030)
- Angularity and concentricity within 0.0003(0.008)*

<table>
<thead>
<tr>
<th>Station</th>
<th>Part Number</th>
<th>Package A</th>
<th>Package F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2” A</td>
<td>MATE00670</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>1-1/4” B</td>
<td>MATE00666</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>2” C</td>
<td>MATE00667</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>3-1/2” D</td>
<td>MATE00668</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>4-1/2” E</td>
<td>MATE00669</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Multi-Tool</td>
<td>MATE00671</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Accessory Kit</td>
<td>MATE00662</td>
<td>•</td>
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</tr>
<tr>
<td></td>
<td>MATE00665</td>
<td>•</td>
<td>MATE00672</td>
</tr>
</tbody>
</table>

**MATE THICK TURRET LINE UP TOOL ALIGNMENT BAR UPGRADE.**
The upgraded bar is larger and easier to use. It allows for easier access for the alignment process.

Line Up Tool Bar **MATE02227**

*Angularity and concentricity within 0.0003(0.008) - Green Indicator Light - is recommended when punching materials with a thicknesses of 0.048(1.20) or less.
MATE RAPIDSET ADJUSTABLE CANISTERS FOR ORIGINAL STYLE AND AMX™ TOOLING SYSTEMS ARE DESIGNED TO REDUCE YOUR SET-UP TIME AND MAXIMIZE PRODUCTIVITY.

FEATURES INCLUDE:
- Fast, easy punch length adjustment without removal from the guide*...reduces downtime and increases productivity.
- Self-contained, constant pre-loaded spring pack for consistent stripping pressure and reliable operation.
- Consistent die penetration reduces slug pulling.
- Canisters feature textured surface with knurled Gription™ ring for ease of handling.
- Only 1 clamping screw to adjust length.
- 0.315”(8,00mm) grind life in 0.039”(1,00mm) material with 0.118”(3,00mm) die penetration.
- Existing Mate Original Style grind life is much less...only 0.189” 4,82mm)

FULLY COMPATIBLE WITH:
- Mate Original Style tooling
- Mate AMX™ tooling
- Amada Standard Style tooling
- Amada Standard Style ABS tooling
- Wilson Standard Style tooling

MATE02044 Rapidset A Station Canister
MATE02040 Rapidset A Station Seal Kit**
MATE02050 Rapidset B Station Canister
MATE02043 Rapidset B Station Seal Kit**

Available for: 1/2” A-station and 1-1/4” B-station
* Shapes only **Required for use in AMX/ABS Environments
### Thick Turret and Ultra® Adapters

<table>
<thead>
<tr>
<th>Non-Indexable Upform Station</th>
<th>Indexable Upform Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piercing</td>
<td>Forming</td>
</tr>
<tr>
<td>3-1/2” D to 1-1/4” B</td>
<td>MATE00727</td>
</tr>
<tr>
<td>3-1/2” D to 2” C</td>
<td>MATE00721</td>
</tr>
</tbody>
</table>

*Use this table to select the appropriate die adapter for use in the Prima Power upforming station. When using a die adapter in an upforming station, the press upper ram stroke may need to be reduced by 0.079 (2.00).*
ULTRA® SYSTEM ANTI-ROTATION CLAMPS FOR ROUND PUNCHES

1/2" A Station
Original Style Round Punch Anti-Rotation Clamp
AOVAASAC

1-1/4" B Station
Original Style Round Punch Anti-Rotation Clamp
A0VBASAC

1-1/4" B Station HP (Series 90)
Style Punch with hook ring Anti-Rotation Clip
A0VBWBAC**

1-1/4" B Station Punch
Length Adjustment Clamp
HP (Series 90) Driver Assembly
A0VBWGAC***

Ultra TEC B Station Anti-Rotation Clip For Wilson HP Double D Canister
A0VBWHAC***

Ultra TEC B Station Anti-Rotation Clip For Wilson HP2 Canister Assembly
A0VBWKAC***

SOFT FACE STRIPPER PADS - ADHESIVE BACKED URETHANE

Soft faced stripper pads for thick turret and Ultra style tooling - 0.009(0.25) thick adhesive backed urethane to prevent material scratching and reduce noise levels.

MORE ACCESSORIES FOR ULTRA® AND ULTRAFORM®

Roller Die for Ultraform® System Special Applications (1-1/4" B Station Only)
A0LB000FG

Brush Die for Ultraform System Special Applications (B thru E Stations)
B Station ADLB0001
C Station ADLC0001
D Station ADLD0001
E Station ADLE0001

Pin for Original Style Round Punch when used with Ultra® Guide 1/2" A and 1-1/4" B Station (12 minimum)
MIS60256*

Replacement Brush Assembly for Brush Dies (3 minimum)
*Not compatible with the new plastic Thick Turret brush dies.

Urethane Slug Ejectors
3 and 6 mm Diameters
(12 minimum)
3 mm Urethane Slug Ejectors
URE40002*

6 mm Urethane Slug Ejectors
URE40010*

Medium India Oil Stone
ST029807

6" Cratex Rubber Abrasive Stick
ST029911

Clip Tool for Ultra® 1-1/4" B Station Fully Guided Punch Guide Stripper Clip
MIS59723

Lifter “T” Handle
A0LEH

* Items sold separately beyond minimum quantity
** Order A0VBWBAC when using Series 90 punches with wire ring and pin or ball.
*** A0VBWGAC, A0VBWHAC & A0VBWKAC adapt canister to allow using Ultra punches but only in Wilson shape guides. Round guides will not work.
THICK TURRET, ULTRA® AND ULTRA TEC® ACCESSORIES

LVD STYLE TO ACCEPT LVD, THICK TURRET AND ULTRA TEC® GUIDE ASSEMBLIES

2” to 1-1/4”  
LVD C Station to  
Thick Turret B Station  
Punch Guide  
Adapter Assembly  
LPLH00AD

3-1/2” to 1-1/4”  
LVD D Station to  
Thick Turret B Station  
Punch Guide  
Adapter Assembly  
LPLK00AD

3-1/2” to 2”  
LVD D Station to  
LVD C Station  
Punch Guide  
Adapter Assembly  
LPJP00AD

3-1/2” to 2”  
LVD D Station to  
Thick Turret C Station  
Punch Guide  
Adapter Assembly  
LPJJ00AD

2” to 1-1/4”  
C to B Station  
Die Adapter  
ADLH00AD

3-1/2” to 1-1/4”  
D to B Station  
Die Adapter  
ADLK00AD

3-1/2” to 2”  
D to C Station  
Die Adapter  
ADLJ00AD

3-1/2” to 2”  
D to C Station  
Die Adapter  
ADLJ00AD

HP (SERIES 90) PUNCH ADAPTERS

C Station HP (Series 90)  
Punch Adapter  
A0VCWSPA

D Station HP (Series 90)  
Punch Adapter  
A0VDWSPA

E Station HP (Series 90)  
Punch Adapter  
A0VEWSPA

THICK TURRET - ULTRA® 2” C, 3-1/2” D AND 4-1/2” E STATION  
TORQUE STAND ASSEMBLY AND ACCESSORIES

Ultra TEC® / Thick Turret Torque Stand  
Assembly with 3/8” Drive 10mm Hex Key  
2” C, 3-1/2” D and 4-1/2” E Stations  
MATE00083

Torque Wrench  
for use with Torque Stand  
Fixed setting at 75 lbs. ft. (102 N•m)  
MIS99030

Ultra TEC® Spacer for  
Amada Tightening  
Fixture 2” C Station  
APLEP

10mm Hex Key  
also available separately  
MIS9483
### Ultra TEC® Replacement Locking Ring Kit

- 2" C: MATE00628
- 3-1/2" D: MATE00629
- 4-1/4" E: MATE00630

### Ultra TEC® Replacement Guide Body Kit

- 2" C: MATE00631
- 3-1/2" D: MATE00632
- 4-1/4" E: MATE01808

### Ultra TEC® Fully Guided Replacement Guide Body Kit

- 2" C: MATE00634
- 3-1/2" D: MATE00636
- 4-1/4" E: MATE01812

### Ultra TEC® Fully Guided Replacement Guide Body Kit (3-slot)

- 2" C: MATE00635
- 3-1/2" D: MATE00637

### Ultra TEC® Replacement Spring Kit

- 2" C: MIS61647P (18 springs)
- 3-1/2" D: MATE00270 (7 springs)
- 4-1/4" E: MATE00270 (7 springs)

### Ultra TEC® Replacement Spring Cover

- 2" C: MIS99709
- 3-1/2" D: A0VDSTCV
- 4-1/4" E: A0VDSTCV
Increase your efficiency and protect your punch press tooling with Mate tooling cabinets, made in the USA exclusively for Mate by Versatility Tool Works. Mate tooling cabinets feature robotically mig-welded 14-, 16- and 18-gauge construction for strength and durability. Mate tooling cabinets use Versatility’s exclusive 1-ata-Time™ drawer lock safety system that provides best-in-class safety by preventing cabinet and cart tip-over. The standard integrated retainer top keeps items from falling off the cabinet. The drawer divider system is completely user configurable offering virtually unlimited combinations.

Options include mounted fixture kit with torque wrench; maple top; mobile base with T-handle; and drawer inserts to better organize upper assemblies

8-Drawer Configuration (MATE02424)
- Stores up to 460 tools and guide assemblies in 8 lockable drawers
- 2 — 3-inch drawer for A station tooling
- 3 — 3-inch drawers for B station tooling
- 1 — 5-inch drawer for C and D station tooling
- 1 — 5-inch drawer for D and E station tooling
- 1 — 9-inch drawer for guide assemblies and large station forming tooling
- Standard vinyl mat top
- Dimensions: 39” (990,6 mm) wide X 27.5" (698,5 mm) deep X 43” (1092,20 mm) high
- Weight: 600 pounds (272,6 kg)

6-Drawer Configuration (MATE02423)
- Stores up to 382 tools and guide assemblies in 6 lockable drawers
- 2 — 3-inch drawer for A station tooling
- 2 — 3-inch drawers for B station tooling
- 1 — 5-inch drawer for C, D and E station tooling
- 1 — 9-inch drawer for guide assemblies and large station forming tooling
- Standard vinyl mat top
- Dimensions: 39” (990,6 mm) wide X 27.5” (698,5 mm) deep X 33” (838,2 mm) high
- Weight: 485 pounds (220,0 kg)

<table>
<thead>
<tr>
<th>Product</th>
<th>8-drawer cabinet</th>
<th>6-drawer cabinet</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATE02424</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATE02423</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NORTH AMERICA ONLY
Want to organize your tool room? How about managing jobs on the shop floor? Designed for lean visual management, Mate EasyView™ tooling carts can help you reduce costs by increasing your shop’s productivity.

Mate EasyView™ carts keep your tooling protected and organized, reducing tool damage and set-up time. Because all tooling is visible to the user, operators can eliminate wasted time looking for the correct tool. Users can quickly locate the correct tool, making it faster and easier for them to make the correct decision every time.

Built from heavy duty 14-gauge steel and powder-coated for durability, these carts can withstand the harshest locations. With shelves available in a number of standard configurations, the Mate EasyView™ cart is completely modular, allowing you to configure it to your specific needs. Shelves are adjustable in 1 inch increments.

The base assembly provides mobility on all EasyView™ carts. Equipped with four 700-pound capacity casters, this base allows you to carry an amazing 2,800 pound load. This means you can stage your jobs ahead of time and locate the cart near the machine, saving you valuable set-up time.
SPECIAL APPLICATIONS

Cluster – Round
Cluster – Shape
Card Guide
Centerpoint

Countersink – Round
Countersink – Shape
Emboss – Beading
Emboss – Edgeform

Emboss – Formed (Round and Shaped)
Emboss – Cold Forged
Extrusion – Tapping
Extrusion – Flanged Hole

Hinge Tool
Knockout
Lance And Form
Louver

Scissortool™
Shearbutton (Round and Shaped)
Rollerball™
Sheetmarker™

Stamping – Alpha Numeric
Stamping – V-line
Threadform

Dimensions in Inches (mm)
Countersink—Dedicated

**Use:**
Allows screw and rivet head to sit flush or below the surface of the material.

**Typical Application:**
- Material thickness from 0.048(1.22) to 0.250(6.35), dependent upon press tonnage capacity.

**Comments:**
- The shoulder (dedicated) style is generally ordered for one material thickness and screw size.
- The shoulder style coins the surrounding area, producing a clean flat countersink with minimal burring.

---

Emboss—Continuous

**Use:**
As a stiffener to add rigidity to sheet metal panels.

**Typical Application:**
- Material thickness from 0.027(0.70) to 0.250(6.35), dependent upon press tonnage capacity.

**Comments:**
- The increment between hits is determined by the cosmetic requirements for the finished part. Smaller increments result in improved appearance.
- The form height should be as low as possible to minimize sheet distortion.
**Card Guide**

**Use:**
As a retainer for printed circuit boards.

**Typical Application:**
- Material thickness from 0.040 (1.00) to 0.078 (2.00).
- Maximum recommended top-of-sheet to top-of-form height is 0.125 (3.20).

**Comments:**
- Length of the card guide is dependent upon station size and machine tonnage.
- Also available as a continuous form to increase productivity and flexibility.

---

**Cluster**

**Use:**
To produce multiple holes with minimal hits.

**Typical Application:**
- Material thickness from 0.020 (0.50) to 0.157 (4.00).
- Other constraints dependent upon station size, punch size and shape and press tonnage.

**Comments:**
- For greater hole uniformity and flatter sheets, spread the punches to avoid punching adjacent holes in the same hit.
- Do not re-punch through previously punched holes to complete a pattern. A single hit tool may be necessary.
Emboss—Cold Forged

Use:
To produce a logo or design on a part.

Typical Application:
• Material thickness from 0.018(0.46) to 0.118(3.00).
• Best results in material thickness from 0.040(1.00) to 0.078(2.00).
• Maximum size dependent on the tooling style, station size and press tonnage capacity.

Comments:
• An exact drawing, CAD file, or artwork of logo is required to produce this type of assembly.

Emboss—Formed

Use:
Provides a recess or a protrusion.

Typical Application:
• Material thickness from 0.027(0.70) to 0.250(6.35), dependent upon press tonnage capacity.

Comments:
• Best results are attained when the side wall angle is 45° or less.
• Optimum form height is 3 x the material thickness or less.
Extrusion—Tapping

Use:
Threading for screws and increased bearing area for tubes, etc.

Typical Application:
- Material thickness from 0.031(0.80) to 0.106(2.70).
- Overall Height – 2x to 2.5x material thickness.

Comments:
- Additional inverted dies are required to accommodate different material thickness.

Hinge

Use:
To create hinge knuckles as integral elements on sheet metal components.

Typical Application:
- The range of this application is dependent on a combination of the material thickness, pin diameter and feed gap of the press.

Comments:
- An integral hinge knuckle on a component will eliminate the costly process of purchasing and assembling separate hinges.
**Knockout**

**Use:**
Allows optional pathway for electrical cable.

**Typical Application:**
- Material thickness from 0.024(0.60) to 0.118(3.00).
- Maximum size dependent upon material type, thickness and press tonnage capacity.

**Comments:**
- The tool can normally be used with other material thickness within a range of + or - 0.016(0.41) from design thickness.
- Maintain 0.236(6.00) difference between diameters used for knockout.

---

**Lance And Form**

**Use:**
For air flow, decoration, as card guides, location markers, shear tabs, wire harnesses or clip attachments.

**Typical Application:**
- Material thickness from 0.020(0.50) to 0.118 (3.00).
- Maximum recommended top-of-sheet to top-of-form height is 0.250(6.40).
- Other limitations include material type, station size, and press tonnage capacity.

**Comments:**
- The inclusion of a 5° draft angle is recommended to assure reliable operation of open ground forms.
Louver

Use:
To provide air flow or ventilation.

Typical Application:
• Material thickness from 0.028(0.70) to 0.106(2.70).
• Maximum recommended top-to-top height is 0.255(6.50).

Comments:
• One tool cuts the sheet and produces the form in the same operation.
• The tool is designed for a specific material thickness.

<table>
<thead>
<tr>
<th>Insert Sizes Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fractional</td>
</tr>
<tr>
<td>3/32</td>
</tr>
<tr>
<td>1/8</td>
</tr>
<tr>
<td>3/16</td>
</tr>
<tr>
<td>1/4</td>
</tr>
</tbody>
</table>

Stamp—Alpha Numeric

Use:
To provide indelible marking of alpha-numeric characters on the top or bottom of the sheet.

Typical Application:
• Material thickness 0.032(0.80) up to machine capacity.
• Characters available in 4 popular sizes.
  See table.

Comments:
• Individual characters can be easily changed.
Threadform

Use:
To provide a form to accept a sheet metal screw.

Typical Application:
- Material thickness 0.020(0.50) to 0.048(1.20).
- Size is dependent upon screw size selected.
- Thicker material requires a countersink operation or thinning prior to threadforming.

V-Line Inscription

Use:
To produce logos, messages, or symbols.

Typical Application:
- Material thickness from 0.032(0.80) up to machine capacity.
- Maximum size is dependent on station size, size of symbols and characters, and press tonnage capacity.

Comments:
- V-Line Stamping – renders the image with a sharp line stamped into the surface.
- An exact drawing, CAD file, or artwork of logo is required in order to produce this type of assembly.
Mate Rollerball™

Use:
The Rollerball™ is an exciting new concept designed by Mate Precision Tooling to take advantage of the extended programming capabilities of hydraulic and other punch presses capable of operating in the x and y axis with the ram down. The Rollerball™ gives you the benefit of making forms not possible with single hit forming tools.

Typical Application:
• Maximum workable material thickness is 0.105(2.70) mild steel.

Comments:
• The press must be capable of holding the ram down while the sheet is moved in the x and/or y.

Mate Sheetmarker™

Use:
For markings or etchings on the surface of sheet metal. The tool uses a diamond pointed insert in a spring loaded holder to create the marking.

Typical Application:
• The Sheetmarker™ Tool can be used on all material types and thicknesses.

Comments:
• A wide variety of results can be produced, ranging from very light etching to fairly deep grooves in the sheet.
• Variations are achieved with a combination of three spring pressures and two insert point angles.

Comments:
• The press must be capable of holding the ram down while the sheet is moved in the x and/or y.
Mate SnapLock™

Use:
For joining materials, thus eliminating secondary operations such as spot welding, riveting, or fastening with threaded hardware.

Typical Application:
- Material thickness from 0.020(0.50) up to 0.118(3.00).
- Other limitations include material type, station size, and press tonnage capacity.

Comments:
- Suitable for joining materials of dissimilar type and/or thickness.
- Positive locking and locating feature for fast and accurate assembly.

Mate HexLock™

Use:
To provide a reliable and secure method of retaining common threaded fasteners in sheet metal.

Typical Application:
- Material thickness from 0.020(0.50) up to 0.118(3.00).
- Other limitations include material type, station size, and press tonnage capacity.

Comments:
- Suitable for hexagon nuts and hexagon headed bolts that conform to DIN933 or DIN934.
Mate EasySnap™

Use:
Scrapless retention system to allow fabricator to snap punched parts out of sheet metal.

Typical Application:
- Material thickness from 0.020(0.50) up to 0.078(2.00) for mild steel and aluminium, and 0.020(0.50) up to 0.059(1.50) for stainless steel.
- Maximum length of form is 36.00(914.40) depending on material type and thickness.

Comments:
- Reduces the need for slitting and micro joints for part retention.
- Material type and thickness must be specified at time of order.

Mate EasyBend™

Use:
Create bend lines suitable for subsequent hand bending operations. Ideal for intricate fabricated assemblies where conventional press break forming techniques are impractical. Simply bend along the bend line for quick, accurate, and convenient forms.

Typical Application:
- Material thickness from 0.020(0.50) up to 0.078(2.00) for mild steel and aluminium, and 0.020(0.50) up to 0.059(1.50) for stainless steel.
- Maximum length of form is 36.00(914.40) depending on material type and thickness.

Comments:
- Eliminates secondary operations.
- Material type and thickness must be specified at time of order.
**Mate Square ShearButton™**

**Use:**
Square ShearButton reduces the need for slitting and micro-joints for part retention in thicker materials. Simply snap punched components out of thicker sheet metal with a clean, smooth edge.

**Typical Application:**
- Nesting parts in a large sheet
- Square ShearButton may be used with a variety of material types, including stainless steel, aluminum, cold roll steel and more.
- Very large or heavy parts with minimal micro-joints. The Square Shearbutton tabs are much stronger than the traditional micro-joint, so fewer are needed.
- Rounded part corners where a corner micro-joint is not possible

**Comments:**
- Available in form up and form down.
- Depths and heights may be adjusted to suit the user’s application.

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**Mate Hybrid ThreadForm™**

**Use:**
In many industries, there’s a need to join two pieces of material using a threaded machine screw. If the thread pitch is greater than the material thickness, then a conventional threadform tool is a great solution. Unlike a conventional threadform tool, the Hybrid Threadform tool thins the material in the center of the form, and creates the threadform helix in just one operation.

**Typical Application:**
- Eliminates secondary operations
- Eliminates tapping operations
- Reduces debris in the machine caused by tapping
- Reduces component cost by eliminating any special fasteners

**Comments:**
### CRITICAL DIMENSIONS

<table>
<thead>
<tr>
<th>Station</th>
<th>1/2&quot; A</th>
<th>1-1/4&quot; B</th>
<th>2&quot; C</th>
<th>3-1/2&quot; D</th>
<th>4-1/2&quot; E</th>
<th>6&quot; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Punch Diagonal</td>
<td>0.500(12.70)</td>
<td>1.250(31.75)</td>
<td>2.000(50.80)</td>
<td>3.500(88.90)</td>
<td>4.500(114.30)</td>
<td>6.000(152.40)</td>
</tr>
</tbody>
</table>

**Ultra TEC® Punch**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>PAUA</th>
<th>PAUB</th>
<th>PAAC</th>
<th>PAAD</th>
<th>PAAE</th>
<th>PAAF</th>
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</thead>
<tbody>
<tr>
<td>Overall Length</td>
<td>4.245(107.82)</td>
<td>3.957(100.51)</td>
<td>3.786(96.16)</td>
<td>3.313(84.15)</td>
<td>3.353(85.17)</td>
<td>3.745(95.12)</td>
</tr>
<tr>
<td>Shank Diameter</td>
<td>0.630(15.99)</td>
<td>1.250(31.75)</td>
<td>2.007(50.98)</td>
<td>3.520(89.41)</td>
<td>4.520(114.81)</td>
<td>6.043(153.49)</td>
</tr>
<tr>
<td>Straight Before Radius*</td>
<td>0.740(18.80)</td>
<td>0.740(18.80)</td>
<td>1.005(25.53)</td>
<td>1.005(25.53)</td>
<td>1.043(26.49)</td>
<td>1.045(26.54)</td>
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</tbody>
</table>

**Ultra TEC® Stripper**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>S6KA</th>
<th>S6KB</th>
<th>S6KC</th>
<th>S6KD</th>
<th>S6KE</th>
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<tbody>
<tr>
<td>Outside Diameter</td>
<td>0.751(19.07)</td>
<td>1.500(38.10)</td>
<td>2.249(57.12)</td>
<td>3.825(97.16)</td>
<td>4.759(120.88)</td>
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<tr>
<td>Thickness</td>
<td>0.272(6.91)</td>
<td>0.272(6.91)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
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<tr>
<td>Stripper Land</td>
<td>0.157(3.99)</td>
<td>0.157(3.99)</td>
<td>0.315(8.00)</td>
<td>0.315(8.00)</td>
<td>0.315(8.00)</td>
</tr>
</tbody>
</table>

**Metric (Original) Style Punch**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>PAAA</th>
<th>PAAB</th>
<th>PAAC</th>
<th>PAAD</th>
<th>PAAE</th>
<th>PAAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Length</td>
<td>8.169(207.49)</td>
<td>8.169(207.49)</td>
<td>3.786(96.16)</td>
<td>3.313(84.15)</td>
<td>3.353(85.17)</td>
<td>3.745(95.12)</td>
</tr>
<tr>
<td>Shank Diameter</td>
<td>0.630(16.00)</td>
<td>1.250(31.75)</td>
<td>2.007(50.98)</td>
<td>3.520(89.41)</td>
<td>4.520(114.81)</td>
<td>6.043(153.49)</td>
</tr>
<tr>
<td>Straight Before Radius*</td>
<td>0.664(16.87)</td>
<td>0.740(18.80)</td>
<td>1.005(25.53)</td>
<td>1.005(25.53)</td>
<td>1.043(26.49)</td>
<td>1.045(26.54)</td>
</tr>
</tbody>
</table>

**Original Style Stripper**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>S6AA</th>
<th>S6AB</th>
<th>S6AC</th>
<th>S6AD</th>
<th>S6AE</th>
<th>S6AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide/Stripper Outside Diameter</td>
<td>1.020(25.91)</td>
<td>1.883(47.83)</td>
<td>2.007(50.98)</td>
<td>3.520(89.41)</td>
<td>4.520(114.81)</td>
<td>6.450(163.83)</td>
</tr>
<tr>
<td>Guide Length/Stripper Thickness</td>
<td>4.448(112.98)</td>
<td>4.528(115.01)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
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<tr>
<td>Stripper Land</td>
<td>0.197(5.00)</td>
<td>0.197(5.00)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
<td>0.394(10.01)</td>
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**Slug Free® Die**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>DOAA</th>
<th>DOAB</th>
<th>DOAC</th>
<th>DOAD</th>
<th>DOAE</th>
<th>DOAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Diameter</td>
<td>1.000(25.40)</td>
<td>1.875(47.63)</td>
<td>3.500(88.90)</td>
<td>4.938(125.43)</td>
<td>6.249(158.72)</td>
<td>8.265(209.93)</td>
</tr>
<tr>
<td>Overall Height</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
<td>1.187(30.15)</td>
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<tr>
<td>Die Penetration</td>
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<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
</tr>
</tbody>
</table>

* The Straight Before Radius (SBR) dimension may be reduced for small diameters and narrow widths. Consult your application specialists.
**PUNCH MAINTENANCE**

You can greatly extend overall punch life by sharpening whenever the edge dulls to a 0.005(0.13) radius. At this point, just a small amount of sharpening will “touch up” the cutting edge. Frequent touch up works better than waiting for the punch to become very dull. The tool lasts longer and cuts cleaner with less punching force.

Maximum amount of sharpening depends on thickness of material being punched, size of punch (length and width), and punch press station.

1. To sharpen, clamp the punch squarely in a Vee Block on the magnetic chuck of a surface grinder. Only 0.001 to 0.002 (0.03 to 0.05) should be removed in one “pass”. Repeat until tool is sharp, normally 0.005-0.010(0.13-0.25) total.
2. Use a standard vitrified bond, aluminum oxide wheel: hardness range “D” to “J”; grain size 46 to 60. A “ROSE” wheel made especially for grinding high speed steel is a good choice but not mandatory.
3. Dress the wheel using a rigid single or multi-point diamond: downfeed 0.0002-0.0008 (0.005-0.020); crossfeed quickly 20-30 in/min (508-762 mm/min).
4. Apply coolant with as much force and as close to the tool and wheel as is practical. Use a good general purpose grinding coolant used to the manufacturer’s specifications.
5. Feeds and feed rates: A, Downfeed (wheelhead), 0.001 - 0.003 (0.03-0.08); B, Crossfeed (infeed), 0.005-0.010 (0.13-0.25); for nitrided punches, 0.002-0.007(0.05-0.18); C, Traverse (sideways), 100-150 in/min (2,540-3,810 mm/min).
6. After the sharpening, lightly stone the sharp cutting edges to remove any grinding burrs and to leave a 0.001-0.002 (0.03-0.05) radius. This reduces risk of chipping.
7. Demagnetize the punch and spray on a light oil to prevent corrosion.

**DIE MAINTENANCE**

As with punches, keep dies clean and watch for wear. Use the same sharpening procedures — hold die on surface grinder’s magnetic chuck; use same wheel and feed rates. Check die thickness after each sharpening and add shims as necessary.

**CONSIDERATIONS IN GRINDING**

A grinding wheel’s abrasive particles, in effect, are break-away “teeth”. These teeth can be made from a variety of very hard, abrasion resistant materials, such as diamond, borozon and, most commonly, aluminum oxide.

The abrasive particles are embedded in a softer matrix material and meant to fracture loose from the matrix as cutting pressure becomes greater. Cutting pressure can increase from raising the feed rate or from dulling of abrasive particles. Pressure causes surface particles to fracture or break free from the wheel matrix and expose new sharp edges, resulting in the wheel’s sharpness.

For our purposes, in selecting a vitrified bond aluminum oxide wheel, we need only be concerned with two variables: hardness and coarseness of the wheel. Hardness refers to the bond strength of the matrix. Coarseness refers to the size and concentration of the abrasive particles (grit).

Generally speaking, harder materials require softer wheels — softer materials require harder wheels. Grinding a harder and/or more abrasive resistant material, such as hardened tool steel, dulls abrasive particles quickly. The wheel then needs increased feed forces. A softer wheel allows spent particles to break loose from the matrix more easily. The newly exposed sharp edges will cut rather than rub and tear at the workpiece. Less pressure is required and the wheel runs cooler.

Coarse wheels with large, widely spaced abrasive particles perform less cutting per revolution and allow greater “chip” clearance. The wheel stays cleaner. Friction is reduced.

Balancing hardness and coarseness results in a wheel that stays sharp and clean to optimize cutting action. It meets the grinding objective of removing material from the workpiece while expending a minimal amount of wheel energy. Wheel energy losses largely translate to workpiece heating. Workpiece heating, in turn, will result in softened and/or highly stressed tools which will not perform well. Hardened tool steels are particularly vulnerable.

It is generally desirable to use a softer “G” or “H” hardness wheel with a grit concentration/size of about forty-six.

---

**A-2 and S-7 STEEL**

Grinding Wheel Hardness: **G-J**

Grit: **46-60**

**M-2 and M4PM™ STEEL**

Grinding Wheel Hardness: **D-G**

Grit: **46-60**
**FIXING SHARPENING PROBLEMS**

**PROBLEM:** Discoloration** and/or surface cracks

**CAUSE:** Insufficient coolant

**CURE:** Increase or redirect flow.

Improper wheel

Use coarser grain, softer grade grinding wheel.

Improper dress

Drop wheelhead 0.0002-0.0004 (0.005-0.010) and redress. Move crossfeed approx. 50 in/min. (1.25 m/min.)

Harsh cutting sound and/or poor surface finish

**CAUSE:** Excessive stock removal

**CURE:** Less downfeed; lower crossfeed rate.

Improper wheel

Use coarser grain, softer grade grinding wheel.

Improper dress or glazed wheel

Redress wheel, break glaze on wheel surface

---

**ALTERNATIVE SHEARS**

<table>
<thead>
<tr>
<th>ROOFTOP</th>
<th>2-WAY CONCAVE</th>
<th>4-WAY</th>
</tr>
</thead>
</table>

**FEED RATES PER PASS**

- **Downfeed:** 0.001-0.003 (0.03-0.08)
- **Crossfeed:** 0.010 (0.25)
- **Traverse:** 100-150 in/min. (2.50-3.80 m/min.)

---

**DIMENSIONS IN INCHES (mm)**
## Ultra TEC® Grind Life Comparison ½” A Station

### Value Comparison - 0.408(10.36) grind life when used with 0.059(1.50) material

<table>
<thead>
<tr>
<th>Material Thickness</th>
<th>Die Penetration</th>
<th>Achievable Grind Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.059(1.50)</td>
<td>0.157(3.99)</td>
<td>0.408(10.36)</td>
</tr>
<tr>
<td>0.118(3.00)</td>
<td>0.118(3.00)</td>
<td>0.330(8.38)</td>
</tr>
</tbody>
</table>

*Limited by punch head position*
VALUE COMPARISON - 0.408(10.36) grind life when used with 0.059(1.50) material
VALUE COMPARISON - 0.512(13.00) grind life when used with 0.059(1.50) material
Machines equipped with tool lubrication systems introduce a lubrication fluid (oil, or an oil/air mixture) into the top of the tooling system. This diagram shows the method of transporting this fluid throughout the Ultra® tooling system in the 1/2” A (not show) and 1-1/4” B station (as shown) system.

1. The lubrication fluid – is introduced at the top of the tool by the machine mechanism.

2. It travels through the center of the assembly.

3. It flows through four fluid transportation holes in the punch. Two holes have been shown here. The four holes are at 90 degrees from each other.

4. The lubrication fluid reaches the interior wall of the Ultra guide.

5. The lubrication fluid also reaches the exterior of the guide.

6. There are internal keyways (Three for 1/2 A, Five for 1-1/4 B-Station) in the Ultra guide for punch angle settings. One keyway will be obstructed with the key of the punch. The lubrication fluid moves through the remaining four unobstructed keyways to the stripper pooling area.

7. The punch spiral grooves evenly distribute the lubrication fluid around the entire interior of the guide.

8. The exterior spiral grooves evenly distribute the lubrication fluid around the entire guide between the guide and the turret bore.

9. The exterior spiral grooves do not extend beyond the turret bore. This keeps the lubrication on the contact surfaces and prevents the fluid from draining onto the work surface.

10. Stripper pooling area.

11. For Ultra ABS® Only:
Fluid is expelled through the small reliefs in the stripper next to the punch.
Machines equipped with tool lubrication systems introduce a lubrication fluid (oil, or an oil/air mixture) into the top of a tooling system. This diagram shows the method of transporting this mixture throughout the Ultra® tooling system in the 2” C, 3-½” D (as shown), and the 4-½” E station system.

1. The lubrication fluid is introduced at the top of the tool by the machine mechanism.
2. It travels through the center of the assembly.
3. It flows through three fluid transportation holes. Two holes have been shown here. The three holes are at 120 degrees from each other.
4. The lubrication fluid reaches the interior wall of the guide as it flows through three channels.
5. The lubrication fluid also reaches the exterior of the guide.
6. The interior spiral grooves evenly distribute the lubrication fluid around the entire punch between the punch and the guide.
7. The exterior spiral grooves evenly distribute the lubrication fluid around the entire guide between the guide and the turret bore.
8. The exterior spiral grooves do not extend beyond the turret bore. This keeps the lubrication on the contact surfaces and prevents the fluid from draining onto the work surface.
9. There are three vertical interior guide grooves that transport the fluid to the stripper pooling area.
10. Stripper pooling area.
11. For Ultra ABS® Only: Fluid is expelled through the small reliefs in the stripper next to the punch.

Ultra ABS® is licensed under U.S. Patent No. 4,977,804 and corresponding foreign patents and patent applications, and authorized for use only on punch press machines manufactured by, for, or under license from Amada Company, Ltd.
WHAT IS MATE’S SUPERMAX™ COATING? Mate SuperMax™ is a proprietary next generation coating applied using the latest nano-layer technology. Specifically formulated for punch press tooling, SuperMax’s harder, denser film provides a lubricious coating greatly increasing wear resistance and lowering friction coefficients about 20%. Lower friction means less heat build-up, less galling and longer tool life. SuperMax is particularly good for adhesive wear tooling applications. The lubricity is also beneficial when punching sharp cornered shapes with a 90 degree or smaller angle.

In customer testing, SuperMax outperforms currently available premium coatings by 2 to 8 times, depending on the application. SuperMax can be applied to M4PM™, M2, and Durasteel™ punches.

WHAT IS MAXIMA™ COATING?
Maxima is a multilayer Zirconium Titanium Nitride coating that is hard, wear resistant, and lubricious. It acts as a barrier between the punch and the sheet metal being punched and, because of its exceptional lubricity, greatly improves stripping. Maxima is an extremely hard, wear resistant, slippery material which reduces the friction that occurs during the stripping portion of the punching cycle, it is particularly good for adhesive wear tooling applications. Less friction means less heat build up, less galling and longer tool life. The lubricity is also beneficial when punching sharp cornered shapes with a 90 degree or smaller angle.

In real life applications, Maxima has increased tool life by a factor of 2 to 10 times, keeping tools in production longer with increased up time. Maxima can be applied to M-2, M4PM™, and Durasteel™.

WHAT IS NITRIDE TREATMENT?
Nitride is an optional heat treatment for abrasive and adhesive wear environments when punching thin materials. It is a surface treatment which becomes an integral component of the structure of the material itself, therefore extending tool life.

Punches with Nitride Treatment are recommended for punching abrasive materials such as fiberglass or materials that cause galling such as stainless steel, galvanized steel, and aluminum. It is also recommended for high speed punching (see below for nibbling limitations). Nitride can be applied to M-2 and M4PM™ tool steel.

APPLICATION RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>COATING OR TREATMENT</th>
<th>3000 &amp; 5000 Series Aluminum</th>
<th>Galvanized Steel</th>
<th>Stainless Steel</th>
<th>Stainless Steel Under 14 gauge</th>
<th>Cold Rolled Steel</th>
<th>Vinyl Coated Materials</th>
<th>Pre-painted Materials Under 16 gauge</th>
<th>Fiberglass</th>
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<tr>
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<td>X</td>
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SHAPE

<table>
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<tr>
<th>SHAPE</th>
<th>MINIMUM PUNCH SIZE FOR SUPERMAX™ COATING</th>
<th>MINIMUM PUNCH SIZE FOR MAXIMA™ COATING</th>
<th>MINIMUM PUNCH SIZE FOR NITRIDE TREATMENT</th>
<th>MINIMUM PUNCH SIZE FOR NITRIDE WHEN NIBBLING</th>
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<tr>
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<td>Minimum diameter = 0.098(2.50)</td>
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<td>If length is &gt; 0.250(6.35)</td>
<td>If length is &gt;0.250(6.35)</td>
<td>Minimum width is 0.060(1.50)</td>
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<td>The minimum width is 0.060(1.50)</td>
<td>Minimum width is 0.098(2.50)</td>
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<td>If length is &gt;0.250(6.35)</td>
<td>Minimum width is 0.060(1.50)</td>
<td>Minimum width is 0.500(12.70)</td>
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<tr>
<td></td>
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<td>The minimum width is 0.060(1.50)</td>
<td>Minimum width is 0.098(2.50)</td>
<td>Minimum width is 0.500(12.70)</td>
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<td></td>
<td>The minimum width is 0.098(2.50)</td>
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<tr>
<td>Oval</td>
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<td>If length is &gt;0.250(6.35)</td>
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<tr>
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<td>The minimum width is 0.060(1.50)</td>
<td>Minimum width is 0.098(2.50)</td>
<td>Minimum width is 0.500(12.70)</td>
</tr>
<tr>
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<td>Minimum width = 0.158(4.01)</td>
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<tr>
<td>Others</td>
<td>Consult a Mate Application Specialist</td>
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* Mate’s SuperMax tooling can be identified by its subtle matte finish and a protective green tip when shipped.

** If you require a smaller minimum punch size, contact a Mate Application Specialist
M4PM™ is a high speed, particle metallurgy tool steel designed for use in high performance tooling systems.

A combination of the chemical composition of M4, the particle metallurgy manufacturing process, and the triple temper heat treatment process, produces M4PM: the world’s finest tool steel for use in punching tools.

M4PM is a very homogeneous, high quality tool steel which has many advantages when compared to alternative tool steels commonly available. These advantages include:

**Superior Wear Resistance** – 100% better wearing, M4PM offers superior resistance to adhesive- and abrasive-wear to maximize the interval between regrinds.

- More uniform distribution of smaller carbides—results in improved ductility (adhesive-wear) while still providing abrasive-wear resistant carbides over the entire surface of the material.
- 100% more Vanadium carbides—harder wearing for greater resistance to abrasive-wear.
- Increased Tungsten carbides—harder wearing and offer better red hardness; increased resistance to high temperatures which may anneal or damage the material.
- Higher hardenability—increased alloy content results in higher effective hardness for better wear resistance.

**Increased Toughness** – the molecular structure of M4PM is 50% tougher than conventional tool steels in impact strength tests.

- Triple temper heat treatment process—ensures full conversion of the material matrix. Results in fully tempered martensite and reduced internal stress, together with better dimensional stability.
- More uniform distribution of smaller carbides—offsets the effects of increased alloy content. Results in a more “interlocked” material matrix for significantly reduced tool breakage and edge chipping. See micrograph.

**Better Value** – customer trials have shown that tools manufactured in M4PM last 100% longer between regrinds than tools manufactured using conventional High Speed Steel. By increasing the interval between regrinds, the tooling lasts longer and punches many more holes before needing to be replaced.

---

**International Material Standards**

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<th>M4PM</th>
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<td>SKH 51</td>
<td>SKH 54</td>
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<td>HS 6-5-2</td>
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**M4PM Chemical Composition**

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<tr>
<th>Element</th>
<th>Composition</th>
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<tbody>
<tr>
<td>Carbon</td>
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<tr>
<td>Chromium</td>
<td>4.00%</td>
</tr>
<tr>
<td>Vanadium</td>
<td>4.00%</td>
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<tr>
<td>Tungsten</td>
<td>5.50%</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>5.25%</td>
</tr>
</tbody>
</table>

Micrograph shows that the particle metallurgy process produces a very homogeneous, high quality tool steel with superior wear resistance, toughness and dimensional stability.

---

*Toughness: Charpy C-Notch impact strength test.
**Relative Wear Resistance: 10x Cross cylinder adhesive wear test.
Based upon steel manufacturers data.
**General**
Radius Corners
Non-Standard Straight Before Radius (SBR) Dimension
Special Angle Settings
Optional Shear (Limited Options)

**Small Diameter Round Tools**
Diameter 0.031(0.79) to 0.061(1.55)
Diameter 0.062(1.56) to 0.092(2.34)

**Narrow Width Shaped Tools**
Widths under 0.079(2.00)

**Station Jumper**
1-1/4” B Station - if diagonal dimension is <0.500(12.70)
2” C Station - if diagonal dimension is <1.250(31.70)
3-1/2” D Station - if diagonal dimension is <2.000(50.80)
4-1/2” E Station - if diagonal dimension is <3.500(88.90)
6” F Station - if diagonal dimension is <4.500(114.30)

**SuperMax™ Coating**
1/2” A Station
1-1/4” B Station
2” C Station
3-1/2” D Station
4-1/2” E Station
6” F Station
Slitting Punch Insert

**Maxima™ Coating / Nitride Treatment**
1/2” A Station
1-1/4” B Station
2” C Station
3-1/2” D Station
4-1/2” E Station
6” F Station
Slitting Punch Insert

**Slug Free Light™ Die Geometry - See page 9**
1/2” A Station
1-1/4” B Station
2” C Station
3-1/2” D Station
4-1/2” E Station

**M4PM™ Tool Steel**
Ultra TEC — 1/2” A Station
Ultra TEC — 1-1/4” B Station
MXC™ — 1/2” A Station
MXC™ — 1-1/4” B Station
## TECHNICAL DATA

### STATION | CONFIGURATION
--- | ---
**ULTRA TEC**
1/2" A | Canister and guide with Ultra® punch and stripper
1-1/4" B | Canister and guide with Ultra® punch and stripper
2" C | Original punch and Ultra® stripper
3-1/2" D | Original punch and Ultra® stripper
4-1/2" E | Original punch and Ultra® stripper
**MATE ULTRA QCT™**
1/2" A | Canister and guide with QCT punch driver and insert, and Ultra stripper
1-1/4" B | Canister and guide with QCT punch driver and insert, Ultra stripper
**MATE ULTRA TEC® METRIC**
1/2" A | Canister and guide with Metric punch and stripper
1-1/4" B | Canister and guide with Metric punch and stripper
**MATE ULTRA TEC® QCT METRIC**
1/2" A | Canister and guide with Metric QCT punch driver and insert, and Ultra stripper
1-1/4" B | Canister and guide with Metric QCT punch driver and insert, Ultra stripper
**ULTRA TEC® FULLY GUIDED**
1-1/4" B | Canister and guide with Ultra® punch and guided stripper
2" C | Original punch and guided stripper
3-1/2" D | Original punch and guided stripper
4-1/2" E | Original punch and guided stripper
**ULTRA TEC® FULLY GUIDED CLAMP CLEARING**
3-1/2" D | Punch insert, Clamp Clearing stripper
4-1/2" E | Punch insert, Clamp Clearing stripper
**ULTRA XT**
1/2" A | Canister and guide with Ultra® punch and Ultra® stripper
1-1/4" B | Canister and guide with Ultra® punch and Ultra® stripper
2" C | Original punch and Original stripper
3-1/2" D | Original punch and Original stripper
4-1/2" E | Original punch and Original stripper
6" F | Original punch and Original stripper
**MATE ULTRA XT QCT™**
1/2" A | Canister and guide with QCT punch driver and insert, and Ultra stripper
1-1/4" B | Canister and guide with QCT punch driver and insert, Ultra stripper
**ULTRA XT METRIC**
1/2" A | Canister and guide with Metric punch and Ultra® stripper
1-1/4" B | Canister and guide with Metric punch and Ultra® stripper
**MATE ULTRA XT METRIC QCT™**
1/2" A | Canister and guide with Metric QCT punch driver and insert, and Ultra stripper
1-1/4" B | Canister and guide with Metric QCT punch driver and insert, Ultra stripper
**RAPIDSET METRIC QCT™**
1/2" A | Canister and Original stripper guide with Metric QCT punch driver and insert
1-1/4" B | Canister and Original stripper guide with Metric QCT punch driver and insert
**RAPIDSET OS**
1/2" A | Canister with Original punch and stripper guide
1-1/4" B | Canister with Original punch and stripper guide
**RAPIDSET AMX**
1/2" A | Canister with AMX punch and stripper guide
1-1/4" B | Canister with AMX punch and stripper guide
**RAPIDSET AMX QCT™**
1/2" A | Canister and AMX stripper guide with AMX QCT punch driver and insert
1-1/4" B | Canister and AMX stripper guide with AMX QCT punch driver and insert
**ORIGINAL STYLE THICK TURRET**
1/2" A | Upper Assembly, including Original punch and stripper
1-1/4" B | Upper Assembly, including Original punch and stripper
2" C | Original punch and Original stripper
3-1/2" D | Original punch and Original stripper
4-1/2" E | Original punch and Original stripper
**METRIC QCT™ THICK TURRET**
1/2" A | Upper Assembly, including Original punch and stripper
1-1/4" B | Upper Assembly, including Original punch and stripper
**AMX**
1/2" A | Upper Assembly, including AMX punch and stripper
1-1/4" B | Upper Assembly, including AMX punch and stripper
2" C | AMX punch and stripper
3-1/2" D | AMX punch and stripper
4-1/2" E | AMX punch and stripper
## THICK TURRET COMPATIBILITY CHART

<table>
<thead>
<tr>
<th>Tool Style</th>
<th>1/2&quot; A Station</th>
<th>1-1/4&quot; B Station</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ultra TEC®</strong></td>
<td>MATE02404*</td>
<td>MATE02401*</td>
</tr>
<tr>
<td><strong>Mate Part Number</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ultra XT™</strong></td>
<td>MATE02551*</td>
<td>MATE02550*</td>
</tr>
<tr>
<td><strong>Ultra ABS®</strong></td>
<td>MATE02552*</td>
<td>MATE02553*</td>
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<tr>
<td><strong>Mate OS</strong></td>
<td>MATE02554*</td>
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<tr>
<td><strong>Ultra ABS 14mm Bolt Guide Assembly</strong></td>
<td>MATE02556*</td>
<td>MATE02557*</td>
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<td><strong>RapidSet™</strong></td>
<td>MATE02558*</td>
<td>MATE02559*</td>
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<tr>
<td><strong>Ultra MT, UMT and IMT 3 or 8 Station</strong></td>
<td>MATE02560*</td>
<td>MATE02561*</td>
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<td><strong>HP™ &amp; HP2™</strong></td>
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<td><strong>HP™ WLS &amp; HP2™ WLS®</strong></td>
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### Critical Dimensions

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<td>Standard Die</td>
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<td>D6AC</td>
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### For Metric Original Round Punch

| A009849AC | | |

### For Metric (Original) Round Punch

| AOVBASAC | | |

### For HP Round Punch Retaining Ring

| A0VBWBAC | | |

### For HP Round Punch Wire Hook

| A0VBWSAC | | |

### For Wilson HP Canister

| A0VBWGAC | | |

### For Wilson HP2 Canister

| A0VBWKAC | | |

### For Wilson HP Double D Canister

<p>| A0VBWHAC | | |</p>
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</table>

1. Ultra round or shape punches only work in shape guides using clip A0VBWHAC for HP canisters and clip A0VBWKAC for HP2 canisters.
2. Requires the optional M12 bolt to be installed into the guide assembly
3. Requires use of optional Original style strippers
4. Pin must be removed from stripper guide
5. Clip attaches to competitive round punches without pin or key
6. Requires use of Ultra Metric canister
7. Requires the M14 bolt option
8. Must switch to the M12 bolt and centering washer
9. Requires Inch Style Canister
10. Clip attaches to Wilson HP punch after removing original hardware
11. Clip attaches to Wilson HP canister
12. Clip attaches to Wilson HP2 canister
13. Shapes only: Remove retaining ring assembly. Rounding will not work (IMT manufactured after 07/2014 and UMT — Round & Shapes work with ring attached)
14. Rounding only
15. Requires using punch adapter A0VCWSPA (C station), A0VDWSPA (D station), A0VEWSPA (E station)
16. 3 station only
17. Compatible if guide has horizontal groove on lower lead-in diameter

* QCT™ (Quick Change Tooling) punch drivers require compatible punch inserts for operation. See mate.com for more details.
** Wilson Adjustable Length HP ABS punches 3 station 35307 for Strippit
SPECIAL SHAPES FOR THICK TURRET TOOLING

- SQUARE WITH CHAMFERED CORNERS
- QUAD D
- RECTANGLE WITH CHAMFERED CORNER
- RECT/oval
- KEYWAY
- KEYWAY
- DIAMOND
- EQUILATERAL TRIANGLE
- 45° RIGHT TRIANGLE
- ISOSCELES TRIANGLE
- RIGHT TRIANGLE
- KEYHOLE
- KEYHOLE
- KEYHOLE
- DOUBLE KEYWAY
- SHAKE AND BREAK
- 4-WAY RADIUS
- 4-WAY RADIUS
- 2-WAY RADIUS
- 2-WAY RADIUS
- CABLE CONNECTOR
- ARC OVAL
- ARC OVAL
- FOOTBALL
- TRIANGLE
- EQUILATERAL TRIANGLE
- 45° RIGHT TRIANGLE
- TRIANGLE
- EQUILATERAL TRIANGLE
- RIGHT TRIANGLE
- INSIDE/OUTSIDE RADIUS
- DOUBLE KEYHOLES
- DOUBLE KEYHOLES
- RECTANGLE WITH ONE NOTCH
- RECTANGLE WITH TWO NOTCHES
- RECTANGLE WITH RADIUS NOTCH
- 4-WAY SQUARE KEYHOLE
- RECTANGLE WITH TABS
- DOUBLE RECTANGLE
- CABLE CONNECTOR WITH TABS
- 9-WAY CORNER ROUNDELING

[Dimensions in Inches (mm)]
# ULTRA® SYSTEM & THICK TURRET

## STANDARD ANGLE SETTINGS

<table>
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<tr>
<th></th>
<th>1/2” A STATION</th>
<th>2” C STATION</th>
<th>3 1/2” D STATION</th>
<th>4 1/2” E &amp; F STATION</th>
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</table>

**TOP DIE VIEW**

**CARTESIAN COORDINATE SYSTEM**

- 90°
- 60°
- 0°
- 180°
- 270°

**TOP DIE OF TURRET**

- WORKPIECE
- WORKHOLDER CLAMPS

[Dimensions in Inches (mm)]

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