

Introducing the Mate Xcel™ Tooling System for 1-1/4" Thin Turret Stations. Mate Xcel is a high performance tooling system with features designed to reduce set-up time, improve piece part quality and maximize productivity.

Features include:

MATE XCEL™ CANISTER ASSEMBLY

- Quick punch length adjustment without disassembly for rapid tool change and maximum productivity.
- Push button mechanism allows punch length adjustment in 0.008(0.20) increments for quick and precise tool set-up.
- Superior engagement between canister and guide to prevent length adjustment during punching cycle.
- Self-contained, pre-loaded spring pack for consistent stripping pressure and reliable operation.
- Maximum punch-head surface area for positive contact with machine ram for reliable operation.
- Compatible with existing tooling inventory for added economy and maximum flexibility.

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 for extreme applications to reduce galling and improve stripping.

STRIPPER GUIDE

- Hardened and ground with superior concentricity for reduced friction and longer tool life.
- Smooth rounded edges to eliminate sheet marking and improve piece part quality.
- Compatible with existing conventional thin turret 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 service life.



- **Quality**
- **Durability**
- **Reliability**
- **Performance**
- **Compatibility**

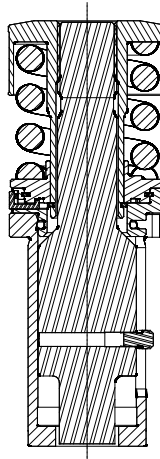
: " | +7.910.790.39.51 | info@mltech.ru | www.mltech.ru (Dimensions in Inches (mm))



Upper Assembly

Round
Shape

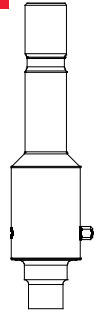
(Includes canister, punch and stripper)



Punch

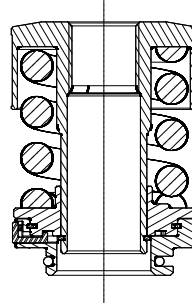
Round **PRSB0A**
Shape **PBSB_A**

DuraSteel™



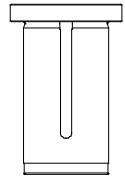
Hardware

1-1/4" Canister
MATE00690



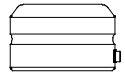
Stripper

Round **SRSB0A**
Shape **SBSB_A**



Slug Free® Die

Round **DASB00**
Shape **DASB_0**
Shim Pack **MSAB**



Urethane Slug Ejector—3.00mm	URE40002 (12 minimum)
Urethane Slug Ejector—6.00mm	URE40010 (12 minimum)
Medium India Oil Stone	STO29807

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):



[Dimensions in Inches (mm)]

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The Mate Xcel™ 2" Guide Assembly and Strippit Style Tooling for 2" thin turret stations is Mate's high performance tooling designed to improve piece part quality and maximize productivity. Punches, dies, and strippers are fully compatible with existing 2" thin turret Strippit Style holders.

MATE XCEL™ 2" GUIDE ASSEMBLY

- Quick length adjustment; push button on guide flange allows punch length adjustment in 0.005(0.13) increments without disassembly or additional tools
- Quick change stripper mechanism; lock button allows tool-less stripper removal and installation
- Hardened guide body reduces friction within the turret and guide key and keyways assure precise punch alignment for higher piece part quality
- Internal and external grooves for enhanced lubrication

PUNCH

- DuraSteel™ with superior hardness and toughness for extended interval between regrinds
- Hardened pin 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 for extreme applications

STRIPPER

- Smooth rounded edges to eliminate sheet marking and improve piece part quality
- Compatible with existing conventional thin turret 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 service life



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Holder

Mate Xcel™ 2" Guide Assembly

MATE01715

Punch

Round **PLSC0A**

Shape **PLSC_A**

Stripper

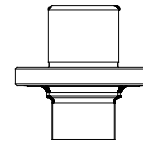
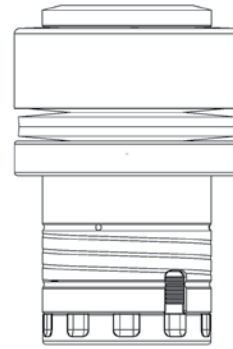
Round **SLSC0A**

Shape **SLSC_A**

SLUG FREE® Die

Round **DCSC00**

Shape **DCSC_0**



ADD-ONS FOR ROUNDS AND SHAPES:

Urethane Slug Ejector—3.00mm	URE40002 (12 minimum)
Urethane Slug Ejector—6.00mm	URE40010 (12 minimum)
Maxima™ Coating	

Narrow Width

Round point diameter is less than 0.061(1.55) - add

Round point diameter is less than 0.092(2.35) - add

Shape point width is less than 0.079(2.00) - add

to punch, stripper and die

to punch, stripper and die

to punch, stripper and die

Non-Standard Angle Setting

Punches - add to price

Dies - add to price

STANDARD SHAPES (NUMBERING INDICATES SHAPE CODE):



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The Mate Xcel™ Tooling System for 3-1/2" stations deliver higher quality piece parts, with greater interval between regrinds. The two Xcel™ Punch Guide Assemblies combine innovative product design, superior material selection and high quality manufacturing processes to deliver unmatched punching performance.

Xcel Guide Assembly for Inch Shank Punches—fully compatible with existing inventory.

Xcel Guide Assembly for Slitting Punch Insert—accepts Mate Premium M4PM™ High Speed Steel inserts.

Both Mate Xcel punch guide assemblies can use conventional strippers (see page 7) for full compatibility with existing inventory, or new fully guided strippers (see page 11) to guide the tip of the punch for superior punching performance.

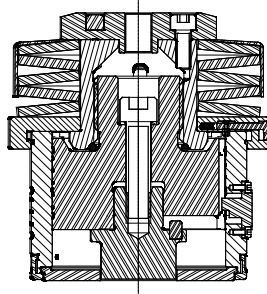
- **Quick Length Adjustment** —The push button on the flange of the guide allows the punch length to be adjusted in increments of 0.005(0.13) without disassembly or additional tools.
- **Stripper**—Toughened tool steel to maximize service life. Smooth rounded edges to eliminate sheet marking and improve piece part quality.
- **Fully Guided Stripper**—The punch guide assembly holds the stripper rigidly, while the stripper guides the tip of the punch, for truly exceptional fully guided punching performance. Punch to stripper clearance = 0.0017(0.04). Stripper to guide clearance = 0.0006(0.02).
- **Quick Change Stripper Mechanism**—The stripper lock button on the side of the guide releases the simple, replaceable stripper locking ring which allows the standard or fully guided stripper to be installed and removed without additional tools.
- **Hardened Guide Body**—Resists dents and scratches to reduce friction within the turret and extend machine and tool life.
- **Hardened Guide Key**— One-piece key and hardened keyways assure precise alignment of the punch within the guide and the guide within the turret for higher piece part quality and longer tool life.
- **Tool Lubrication**—The guide body includes internal and external grooves to allow efficient delivery of tool lubrication to all critical surfaces.
- **Quick Change Angle Settings**—The upper push button provides quick release of the guide body to allow multiple angle settings to be achieved without additional tooling.



Mate Xcel™ fully guided punch guide assembly, with inch shank punch.



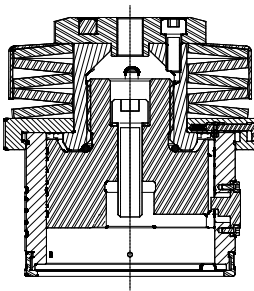
Mate Xcel™ fully guided punch guide assembly, with slitting punch insert.



Upper Punch Assembly

DIAGONAL	SHAPE
1.251 to 1.500	Round Shape
1.501 to 2.500	Round Shape
2.501 to 3.500	Round Shape

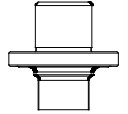
(Includes punch, stripper and hardware)



Hardware

3-1/2" Guide **MATE00869**

Inch Shank Punch

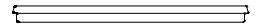


DIAGONAL	SHAPE	PART NUMBER
1.251 to 1.500	Round	PLSD0A
	Shape	PLSD_A
1.501 to 2.500	Round	PLSF0A
	Shape	PLSF_A
2.501 to 3.500	Round	PLSH0A
	Shape	PLSH_A

Maxima® Coating

Stripper

Round	SLSD0A
Shape	SLSD_A



Slug Free® Die

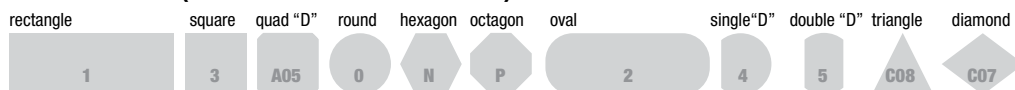
Round	DCSD00
Shape	DCSD_0
Shim Pack	MSAD



Urethane Slug Ejector—3.00mm	URE40002 (12 minimum)
Urethane Slug Ejector—6.00mm	URE40010 (12 minimum)
2.5mm Hex Wrench	MIS98896
Medium India Oil Stone	STO29807

Note: This product is manufactured under license from Wilson Tool (Pat. 5,127,293)

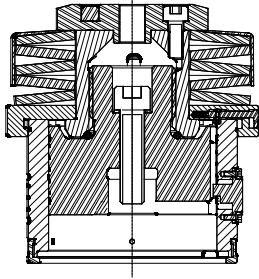
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[Dimensions in Inches (mm)]

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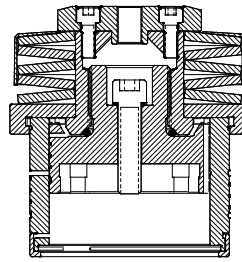
Xcel™ Guide Assembly for Inch Shank Punches



- External length adjustment
- Six angle settings
- Quick change stripper

MATE00869

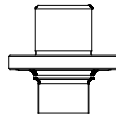
Xcel™ Guide Assembly for Slitting Punch Inserts



- External length adjustment
- Four angle settings
- Quick change stripper

MATE00868

Inch Shank Punch



Diagonal	Shape	Part Number
1.251 to 1.500	Round	PLSD0A
	Shape	PLSD_A
1.501 to 2.500	Round	PLSFOA
	Shape	PLSF_A
2.501 to 3.500	Round	PLSH0A
	Shape	PLSH_A

Slitting Punch Insert

Front view



Side view



Shape **PJSQ_A**

Maxima® Coating

Mate M4PM™ High Speed Steel is a very homogeneous, high quality tool steel, with superior wear resistance and increased toughness. Users prove it outperforms conventional tool steels.

The Mate Xcel™ Fully Guided tooling system is the only system to deliver true fully guided punching performance.

- The clearance between the punch and the stripper is 0.0017(0.04).
- The clearance between the stripper and the guide is 0.0006(0.02).

The guide holds the stripper rigidly, while the stripper guides the tip of the punch.

Fully Guided Stripper



Round **SJSD0A**
Shape **SJSD_A**

Slug Free® Die



Round **DCSD00**
Shape **DCSD_0**
Shim Pack **MSAD**

Mate Slug Free® dies supplied as standard.

- eliminate slug pulling
- reduce tool breakage
- improve tool life
- increase piece part quality

Mate Xcel™ 3-1/2" Station Punch Guide Accessories

Xcel™ Replacement Locking Ring

MATE00402

Fully compatible with all Xcel punch guide assemblies.

Xcel™ Punch Guide Field Service Kit

MATE00894

Replacement guide body kit for Xcel Slitting Punch Insert Guide Assembly (MATE00868), and Xcel Inch Shank Punch Guide Assembly (MATE00869). Kit includes guide body, guide key and stripper lock button. Also allows Xcel guides (MATE00340) manufactured before July 2007, to be converted to accept fully guided strippers.

Fully compatible with all Xcel punch guide assemblies.

Xcel™ Slitting Insert Punch Driver Kit

MATE00807

Convert existing Xcel Inch Shank Punch Guide Assembly (MATE00869), to accept Slitting Punch Inserts.

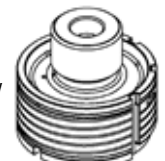
Fully compatible with all Xcel punch guide assemblies.

Xcel™ Inch Shank Punch Driver Kit

MATE00896

Convert existing Xcel Slitting Punch Insert Guide Assembly (MATE00868), to accept inch shank punches.

Fully compatible with all Xcel punch guide assemblies.



Note: This product is manufactured under license from Wilson Tool (Pat. 5,187,298)

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(Dimensions in Inches (mm))



Mate Xcel™ Cluster Assemblies are designed to take advantage of the many features offered by the Mate Xcel 3-1/2" Punch Guide Assembly. They combine convenience of replaceable inserts, the precision of the integrated punch driver, and the performance of the Mate Xcel 3-1/2" Punch Guide Assembly.

Mate Xcel Cluster Assemblies combine many components including:

- **Integrated Punch Driver**—Designed with the same precision as the original punch driver, for precise interchangeability.
- **Punch Inserts**—High Speed Steel punch inserts maximize the interval between regrinds. The near polished punch flanks with 1/4 degree back taper reduce friction and extend punch life. Maxima® coating available for extreme punch applications.
- **Retainer Plate**—Produced using advance Electro Discharge Machining (EDM) technology to guarantee the angularity and concentricity that is essential when using a high performance cluster assembly.
- **Stripper Plate**—Toughened tool steel to maximize service life. Smooth rounded edges to eliminate sheet marking and improve piece part quality.
- **Slug Free® Die**—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 service life.
- **Mate Xcel™ Guide Assembly**—Complete interchangeability between cluster assemblies and conventional Strippit Style tooling applications. Quick length adjustment and quick change stripper mechanism for rapid tool changes.

Mate Xcel guide assembly required for compatibility with Mate cluster assembly. Allows user to use inch shank punches when not using the cluster assembly.



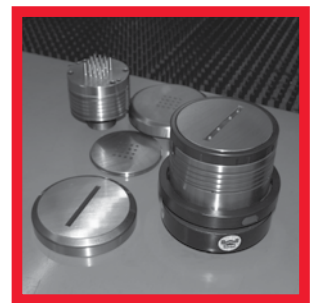
Cluster assembly is designed to take full advantage of the many features offered by the Xcel 3-1/2" Guide assembly.



Use the quick release features on the guide assembly to disassemble the cluster. Unscrew the integral punch driver assembly.



Re-install the original punch driver supplied with the guide to convert the guide for use with conventional Strippit style tooling.



The Mate Xcel 3-1/2" is now ready for use with your conventional Strippit style tooling.

[Dimensions in Inches (mm)]

MATE XCEL™ MAINTENANCE FIXTURE

MATE XCEL™

The Mate Xcel™ maintenance fixture is a multi-function fixture designed to make installation and maintenance of thin turret tooling quick, simple, and reliable. The fixture includes a universal clamp and three Quick-Set locations.

- The universal clamp allows 1/2" Snap-Apart, 5/8" Drop-In, and 1-1/4" Full Body punches to be held securely to allow the installation and adjustment of punch heads, springs, and spring retainers.
- Quick-Set positions 1 and 2 enable tooling with an orientation key to be installed and adjusted without using the universal clamp for added speed. (see drawing below)
- Quick-Set position 3 holds the Mate Xcel™ 3-1/2" guide securely in place to allow the punch draw bolt to be tightened to the correct torque setting for reliable operation. (see drawing below)

The Mate Xcel maintenance fixture can be mounted to a bench, or clamped in a vice, for maximum convenience.

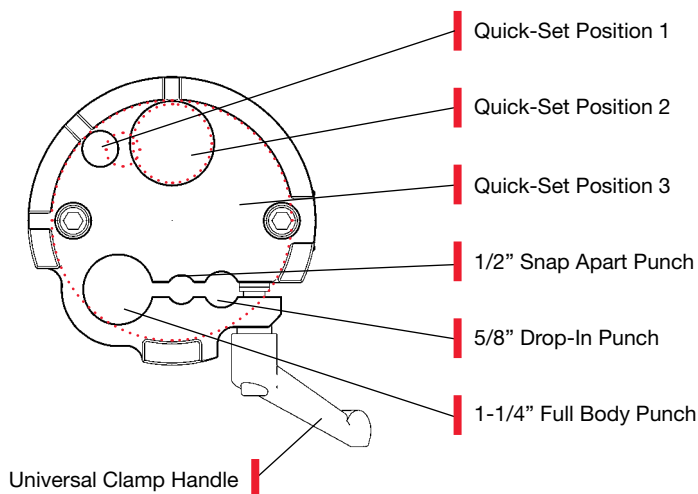


MATE00700

Installation and Use Instructions.

The Mate Xcel™ Maintenance Fixture is simple to install.

- **Bench Mounted**—Use the 3/8-16 x 4" (100mm) bolts supplied to attach the clamp bar, through the bench, to the body of the fixture. Ideal for more permanent installations.
- **Vice Mounted**—Use the 3/8-16 x 2" (50mm) bolts supplied to attach the clamp bar to the body. Then mount the fixture into a vice. Ideal for temporary installations.



Tooling Description	Feature
1/2" Snap-Apart Punch	Clamp
1/2" Snap-Apart Shaped Punch	Quick-Set 1
5/8" Drop-In Punch	Clamp
5/8" Drop-In Shaped Punch	Quick-Set 1
1-1/4" Full Body Punch	Clamp
1/2" Snap-Apart Assembly	Quick-Set 2
5/8" Drop-In Assembly	Quick-Set 2
1-1/4" Full Body Assembly	Quick-Set 2
3-1/2" Xcel Guide Assembly	Quick-Set 3

