Superior Solutions for Sheet Metal Fabricators

HIGH PERFORMANCE TOOLING SYSTEMS FOR TRUMPF STYLE PRESSES

- **MATE NEXT™**
- **MATE QUICKLOCK™**
- **MATE TRUMPF STYLE**

IL PN 2012

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MATE®
PRECISION TOOLING
TRUSTED I QUALITY I SERVICE I SOLUTIONS

MACHINE GROUP MODEL CLASSIFICATION

	Non Keyed	Keyed	Rotational	Minimatic
	A CN 700 CN 900 CN 701 CN 901 **B** CN 901E CN 902 CS 75 CS 75.2 **C** CN 1200S CN 1200A CS 15 CS 20 CS 20A MP 25 MP 25D **D** 20 20A 202M **G** Trumatic	**E** 400 150K 151K 152K 180K 180.2K 180KD 180LK 180.2LK 202K 225K 235K 300K 300LK 300PK 400K **F** 150W 152W 180W 180.2W 180R 180LW 180.2LW ELX/SWIFT 185 240 240R 250 260R	**H** 190R 200R 500R 600L **I** 2000R 2010R 2020R 5000R 6000L 3000 3000L	**S** 100 120R 160
Alignment Rings				
Size 1	VANTD	VANTE	VANTE	VANTM
Size 2 and 3	VAPTD	VAPTE	VAPTE	-
Heavy Duty	-	VANTF	VANTF	-
Size 1-X	-	-	-	VAPTM
QuickLock™ Alignment Ring				
Size 1 and 2	-	MATE00480	MATE00480	-
NEXT™ Tool Holders				
Size 40	-	MATE00371	MATE00371	-
Size 76	-	MATE00372	MATE00372	-
Stripper Styles				
Size 1	SND1	SKD1	SRD1	SKDX
Size 2 and 3	SND2	SKD2	SRD2	-
Size 3	SND3	SKD3	-	-
Size 1-X	-	-	-	SKDX

TABLE OF CONTENTS

Mate Precision Tooling is the leading manufacturer of original and replacement tooling for Amada, Danobat, Euromac, Prima Finn-Power, LVD Strippit, Murata Wiedemann, Salvagnini, Nisshinbo, Trumpf, and other punch press machines.

Mate has been there from the beginning with products, service, and solutions. For the past five decades Mate has led the tooling industry in quality, price, delivery, and service. This dedication and expertise result in products that are long lasting, reliable and productive.

Mate's products and services are aimed at just one thing: helping customers manufacture sheet metal parts as productively and efficiently as possibl . All Mate products are 100% unconditionally customer satisfaction guaranteed. Standard tooling or special requests – anywhere in the world, Mate is there. Call us today, we look forward to working with you.

Dean A. Sundquist
Chairman and CEO

MATE TOOLING SYSTEMS FOR TRUMPF STYLE PUNCH PRESSES

Mate offers the most comprehensive range of tooling systems designed to accommodate any punching application in your Trumpf style punch press. Use this simple chart to determine which tooling system is right for your typical punching application.

LESS • •• ••• •••• MORE	Mate NEXT™ Tooling System	Mate QuickLock™ Tooling System	Mate Trumpf Style Tooling System
Overall Value – The combination of: the features, the purchase price, and the operating costs.	••••	•••	••
Cost Savings – The ongoing cost savings of operating the tooling system over an extended period of time.	••••	•••	••
Ease of Use – Design features that make it faster to install, simpler for the operator to set up, and more convenient to maintain.	••••	•••	••
Interchangeability – The ability of a tooling system to be compatible with popular systems from other major suppliers.	•••	•••	••••
Quick Set-up – Integral features which enable tools to be changed quickly and accurately, thus maximizing machine up time.	••••	•••	••
Grind Life – The sum of the number of holes punched between regrinds AND the total useable length of the punch tip.	••••	•••	•••
Features – Elements of a system that make it simple to use, easy to maintain, extend service life, and increase productivity.	••••	•••	••
Purchase Price – The initial purchase price of the system.	•••	••	••

Mate Trumpf Style Tooling System

The Mate Trumpf Style Tooling System is designed to enable fabricators to produce high quality piece parts, economically. Features include:

Standard System

- Alignment Ring: Shock-resistant tool steel for maximum accuracy and durability.
- Punches: Abrasion resistant High Speed Steel for increased tool life. 1/4-degree back taper for improved stripping performance.
- Urethane Strippers reduce punching noise and eliminate sheet marking.
- Metal Strippers: High-strength tool steel for superior strength and flatness
- Dies: Wear-resistant tool steel with uniform corner clearance radii for improved die strength and enhanced piece part quality.

Maxima™ Coating:
Maxima Coating-Titanium Zirconium Nitride Ti(Zr)N coating is available for extreme applications to eliminate galling.

Slug Free® Dies:
Mate Slug Free® die geometry is available to eliminate slug pulling in extreme applications. Clearing the slug during each cycle improves piece part quality and extends tool life.

See Pages 7 – 11

Mate QuickLock™ Tooling System for Trumpf Style Presses

Convenience

The Mate QuickLock™ tooling system for Trumpf style presses combines the economy of conventional Trumpf style tooling with the convenience of alignment via a keyed alignment ring. The keyed alignment ring engages the alignment key in the punch for quick tool alignment without an alignment fixtu e. This results in quicker tool set-ups and increased machine productivity.

Features include:

- High Speed Steel punches, with 1/4 degree back taper and near polished flanks for extended interval between regrinds.
- Punches include an alignment key for use with the Mate QuickLock alignment ring.
- Alignment ring with a keyway that engages the key on both Mate QuickLock size 1 and size 2 punches for quick and accurate tool alignment.
- Urethane strippers, in an extended size range, for quieter operation and improved piece part quality. Available as push-on or screw-on, depending on punch point size.
- Highly wear-resistant punches and dies for maximum productivity.

See Pages 26 – 31

Mate NEXT™ Insert Tooling System for Trumpf Style Presses

High Performance

The Mate NEXT™ Insert Tooling System for Trumpf style presses, is a high performance tooling system designed to maximize tool life, minimize tool set-up times, improve accuracy, reduce punching costs, and maximize productivity.

The Mate NEXT Insert Tooling System includes:

- Two sizes of insert punch holders with precision orientation features for quick tool change without alignment fixtu es.
  - Size 40: 0.031(0.80) to 1.575(40.00)
  - Size 76: 1.575(40.00) to 3.000(76.20)
- Interchangeable, highly abrasion-resistant, punch inserts for exceptional interval between regrinds. Size 40 punch inserts use exclusive M4PM™ tool steel for longest tool life.
- Precision ground shims which return the punch insert to the original length after 0.118(3.00) has been removed during regrinding.
- Push-on urethane stripper for Size 40 punch holders provide positive on-the-die stripping without marking. Ideal for decorative material.

See Pages 20 – 25

Dimensions in inches (millimeters)

MAXIMA™ COATING / MATE SLUG FREE® DIES

Maxima™ Coating

Maxima is a premium tool steel coating that has been specially formulated for punch press tooling applications. Maxima is a multilayer Zirconium Titanium Nitride (ZrTiN) 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.

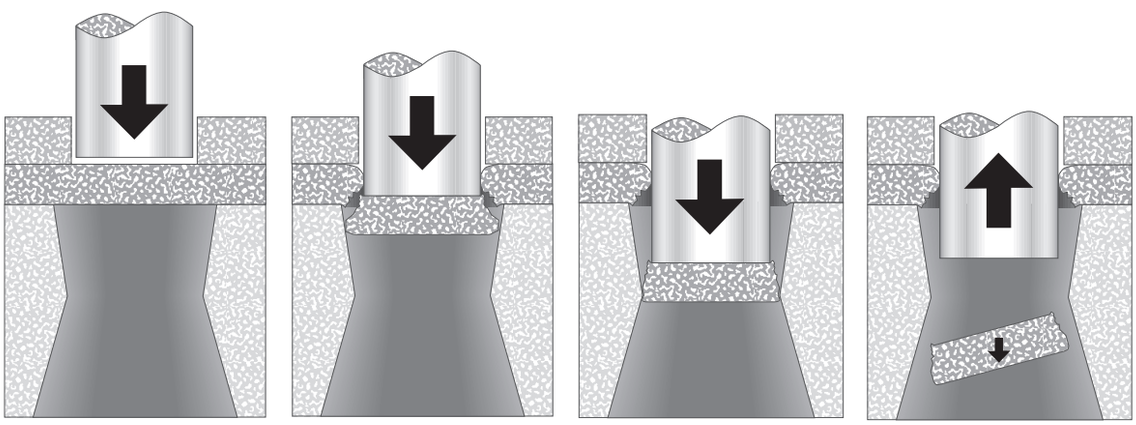
Maxima is applied to the precision ground surface of Mate's premium tool steel punches. Maxima is an extremely hard, wear resistant, slippery material which reduces the friction that occurs during the stripping portion of the punching cycle, it is particularly good for abrasive tooling applications. Less friction means less heat build up, less galling, and longer tool life.

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.

For more information visit www.mate.com/slugfree



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.

Slug Free® Dies:
- **Eliminate slug pulling**
- **Reduce tool breakage**
- **Improve tool life**
- **Increase quality**

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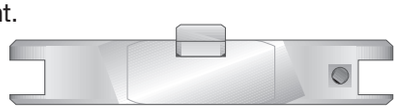
PRODUCT FEATURES AND BENEFITS

The sum of all of the features and benefits of each Mate product guarantee superior performance in every punching application. Here are just some of the features that make this a true statement.

Alignment Rings

- Precision machined and ground for accurate tool alignment.
- High impact-resistant steel to maintain superior flatnes and durability.

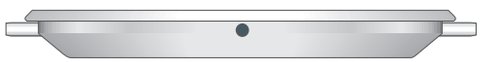


Punches

- Premium high speed tool steel for longer tool life.
- 1/4° back taper and near polished flanks to educe friction and eliminate galling.
- Minute corner radii on punch point to reduce chipping.
- Single point turned radii at base of punch point to reduce stress.
- Solid surface contact with alignment ring for superior alignment.
- Superior tolerances and surface finishes
- 0.118 (3.00) grind life in 0.250 (6.35) material.
- Three replacement lengths (small, long, extra-long)

Urethane Strippers

- Quiet.
- Cushions impact.
- Eliminates sheet rattle.
- Safe: will not shatter.
- Non-Marring even on polished aluminum.
- Improved flatter sheets, no puckering
- Positive stripping keeps sheets from moving.



Strippers

- Keyed, non-keyed, and rotational based on machine group
- High strength tool steel, will not deform or break.

Dies

- High chrome air hardened tool steel.
- 0.059 (1.50) grind life.
- Double-cut die opening to improve die strength.
- Uniform clearance radii in die corners.
- Precision slot orientation–die opening orientation and slot cut in single operation to improve accuracy.
- Improved die strength: Domed relief in size 1 and Stress Free® relief in size 2.
- Superior roundness and flatness

Die Adapters

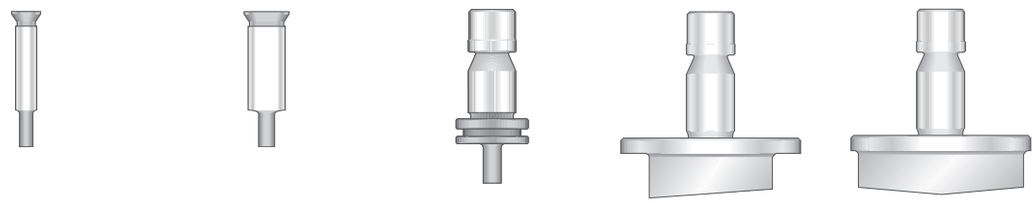
- Permits Size 1 dies to be used in machines with Size 2 die bases.
- Precision machined in shock resistant tool steel for greater accuracy, superior machine fit, and longer life

Dimensions in inches (millimeters)

TRUMPF STYLE TOOLING
ROUND SIZE 0, 1, 2, 3

All size 0 and size 1 punches made from Premium M4PM™ Steel, See Page 35 for information

Size 0-A | Size 0-B | Size 1 | Size 2 | Size 3



ROUND PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Rooftop Shear	Maxima™ Coating
Size 0-A	0.030(0.77) to 0.236(5.99)	PADA0A	•			•
Size 0-B	0.237(6.02) to 0.413(10.50)	PADB0A	•			•
Size 1-A	0.030(0.77) to 0.591(15.01)	PADC0A	•			•
Size 1-B	0.592(15.04) to 1.181(30.00)	PADD0A	•			•
Size 2-A	1.182(30.01) to 1.575(40.01)	PADE0A		•		•
Size 2-B	1.575(40.03) to 2.000(50.80)	PADF0A		•		•
Size 2-C	2.001(50.83) to 2.362(60.00)	PADG0A		•		•
Size 2-D	2.363(60.00) to 3.0063(76.36)	PADH0A		•		•
Size 3	3.006(76.36) to 4.134(105.00)	PADJ0A			•	•

ROUND MACHINE STRIPPERS

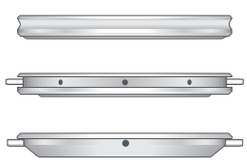
Size	Keyed	Non-Keyed	Rotational
Size 0	SKD00A	SND00A	SRD00A
Size 1	SKD10A	SND10A	SRD10A
Size 2	SKD20A	SND20A	SRD20A
Size 3	SKD30A	SND30A	N/A

PUSH-ON URETHANE STRIPPERS*

Size	Inside Diameter	Part Number
Size 0-A	0.250(6.35)	TP0A00US
Size 0-B	0.430(10.92)	TP0B00US
Size 1	0.590(14.98)	TP0106US
Size 1	0.890(22.60)	TP0109US
Size 1	1.065(27.05)	TP0112US

*For short (74,0) length; Custom molding available for most sizes

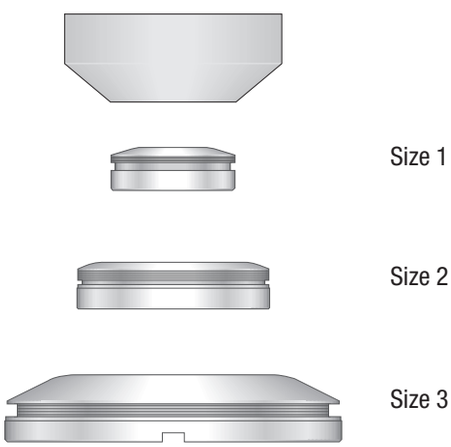
Type



Non-Keyed

Keyed

Rotational



Size 1

Size 2

Size 3

ROUND DIES

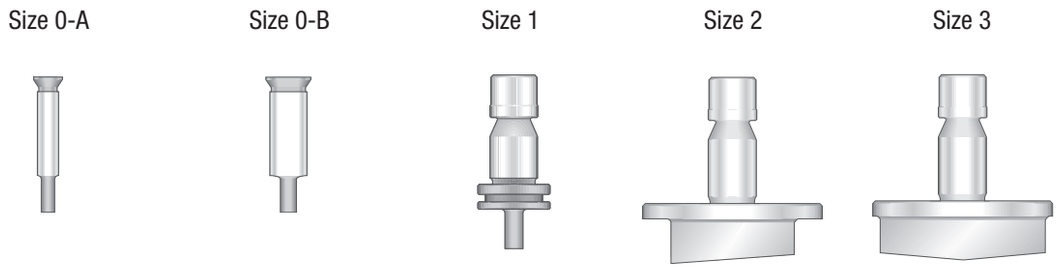
Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D100
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D200
Size 3	4.134(105.00) +0.079(2.00) Opening	D0D300

See Pages 12 – 13 for
- **Punch Chucks**
- **Alignment Rings**
- **Die Adapters**

See Page 54 for critical tool dimensions

TRUMPF STYLE TOOLING
RECTANGLE SIZE 0, 1, 2, 3

All size 0 and size 1 punches made from Premium M4PM™ Steel, See Page 35 for information

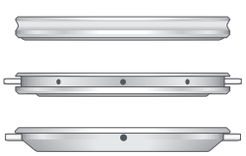


RECTANGLE PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Rooftop Shear	Maxima™ Coating
Size 0-A	0.030(0.77) to 0.236(5.99)	PADA1A	•			•
Size 0-B	0.237(6.02) to 0.413(10.50)	PADB1A	•			•
Size 1-A	0.030(0.77) to 0.591(15.01)	PADC1A	•			•
Size 1-B	0.592(15.04) to 1.181(30.00)	PADD1A	•			•
Size 2-A	1.182(30.01) to 1.575(40.01)	PADE1A		•		•
Size 2-B	1.576(40.03) to 2.000(50.80)	PADF1A		•		•
Size 2-C	2.001(50.83) to 2.362(60.00)	PADG1A		•		•
Size 2-D	2.363(60.00) to 3.0063(76.36)	PADH1A		•		•
Size 3	3.006(76.36) to 4.134(105.00)	PADJ1A			•	•

ROUND MACHINE STRIPPERS

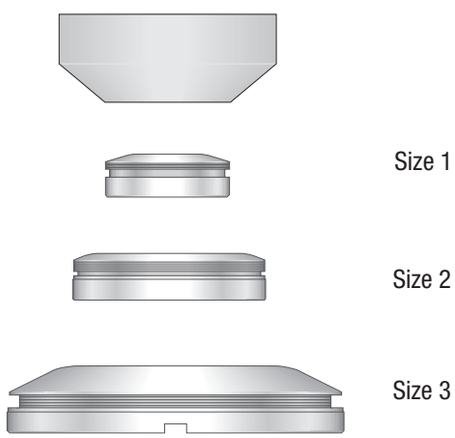
Size	Keyed	Non-Keyed	Rotational
Size 0	SKD01A	SND01A	SRD01A
Size 1	SKD11A	SND11A	SRD11A
Size 2	SKD21A	SND21A	SRD21A
Size 3	SKD31A	SND31A	N/A



PUSH-ON URETHANE STRIPPERS*

Size	Inside Diameter	Part Number
Size 0-A	0.250(6.35)	TP0A00US
Size 0-B	0.430(10.92)	TP0B00US
Size 1	0.590(14.98)	TP0106US
Size 1	0.890(22.60)	TP0109US
Size 1	1.065(27.05)	TP0112US

*For short (74,0) length;
Custom molding available for most sizes



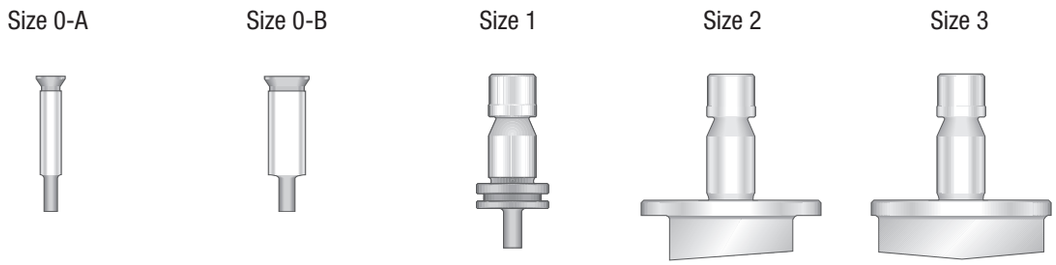
RECTANGLE DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D110
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D210
Size 3	4.134(105.00) +0.079(2.00) Opening	D0D310

Dimensions in inches (millimeters)

TRUMPF STYLE TOOLING
STANDARD SHAPE SIZE 0, 1, 2, 3

All size 0 and size 1 punches made from Premium M4PM™ Steel, See Page 35 for information



SHAPED PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Rooftop Shear	Maxima™ Coating
Size 0-A	0.030(0.76) to 0.236(5.99)	PADA_A	•			•
Size 0-B	0.237(6.02) to 0.413(10.49)	PADB_A	•			•
Size 1-A	0.030(0.76) to 0.591(15.01)	PADC_A	•			•
Size 1-B	0.592(15.04) to 1.181(30.00)	PADD_A	•			•
Size 2-A	1.182(30.02) to 1.575(40.01)	PADE_A		•		•
Size 2-B	1.576(40.03) to 2.000(50.80)	PADF_A		•		•
Size 2-C	2.001(50.83) to 2.362(60.00)	PADG_A		•		•
Size 2-D	2.363(60.01) to 3.0063(76.36)	PADH_A		•		•
Size 3	3.006(76.36) to 4.134(105.00)	PADJ_A			•	•

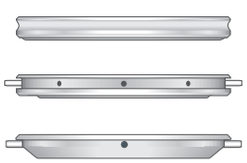
SHAPED MACHINE STRIPPERS

Size	Keyed	Non-Keyed	Rotational
Size 0	SKD0_A	SND0_A	SRD0_A
Size 1	SKD1_A	SND1_A	SRD1_A
Size 2	SKD2_A	SND2_A	SRD2_A
Size 3	SKD3_A	SND3_A	N/A

PUSH-ON URETHANE STRIPPERS*

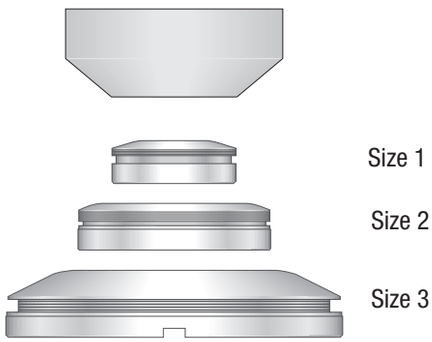
Size	Inside Diameter	Part Number
Size 0-A	0.250(6.35)	TP0A00US
Size 0-B	0.430(10.92)	TP0B00US
Size 1	0.590(14.98)	TP0106US
Size 1	0.890(22.60)	TP0109US
Size 1	1.065(27.05)	TP0112US

*For short (74,0) length; Custom molding available for most sizes

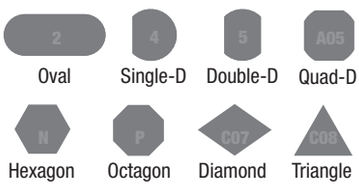


SHAPED DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D1_0
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D2_0
Size 3	4.134(105.00) +0.079(2.00) Opening	D0D3_0



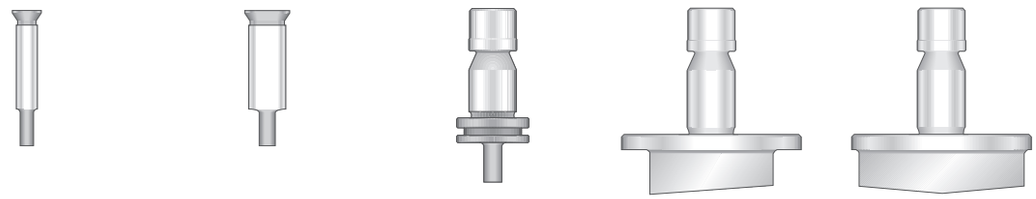
****STANDARD SHAPES**



TRUMPF STYLE TOOLING
SQUARE SIZE 0, 1, 2, 3

All size 0 and size 1 punches made from Premium M4PM™ Steel, See Page 35 for information

Size 0-A | Size 0-B | Size 1 | Size 2 | Size 3



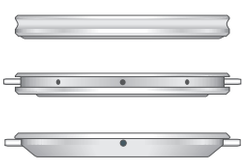
SQUARE PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Rooftop Shear	Maxima™ Coating
Size 0-A	0.030(0.76) to 0.236(5.99)	PADA3A	•			•
Size 0-B	0.237(6.02) to 0.413(10.50)	PADB3A	•			•
Size 1-A	0.030(0.76) to 0.591(15.01)	PADC3A	•			•
Size 1-B	0.592(15.04) to 1.181(30.00)	PADD3A	•			•
Size 2-A	1.182(30.01) to 1.575(40.01)	PADE3A		•		•
Size 2-B	1.576(40.03) to 2.000(50.80)	PADF3A		•		•
Size 2-C	2.001(50.83) to 2.362(60.00)	PADG3A		•		•
Size 2-D	2.363(60.00) to 3.0063(76.36)	PADH3A		•		•
Size 3	3.006(76.36) to 4.134(105.00)	PADJ3A			•	•

SQUARE MACHINE STRIPPERS

Size	Keyed	Non-Keyed	Rotational
Size 0	SKD03A	SND03A	SRD03A
Size 1	SKD13A	SND13A	SRD13A
Size 2	SKD23A	SND23A	SRD23A
Size 3	SKD33A	SND33A	N/A

Type



Non-Keyed

Keyed

Rotational

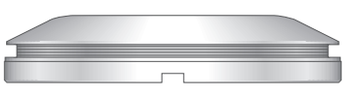
PUSH-ON URETHANE STRIPPERS*

Size	Inside Diameter	Part Number
Size 0-A	0.250(6.35)	TP0A00US
Size 0-B	0.430(10.92)	TP0B00US
Size 1	0.590(14.98)	TP0106US
Size 1	0.890(22.60)	TP0109US
Size 1	1.065(27.05)	TP0112US

*For short (74,0) length; Custom molding available for most sizes

Size 1

Size 2



Size 3

SQUARE DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D130
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D230
Size 3	4.134(105.00) +0.079(2.00) Opening	D0D330

See Page 54 for critical tool dimensions

Dimensions in inches (millimeters)

ALIGNMENT RINGS

Size 1
Manual Tool Change
VANTE

(RECESSED)

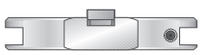
Sizes 2 and 3
Manual Tool Change
VAPTE

Replacement Dowel
8 x 16mm
DPI17304*

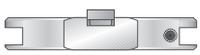
For all Sizes

Size 1
Automatic Tool Change
VANTD

(RECESSED)



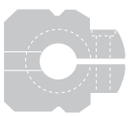
Sizes 2 and 3
Automatic Tool Change
VAPTD



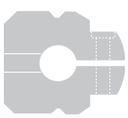
Alignment Key
For all Sizes
VKETE000

Size 1
Minimatic
VANTM

(RECESSED)

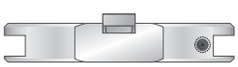


Size 1-X
Minimatic
VAPTM



Alignment Key
For Minimatic
VKETM000

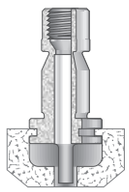
Size 1 and 2
Heavy Duty
VANTF



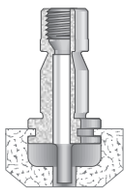
Alignment Key
For Heavy Duty
VKETF000

ACCESSORIES

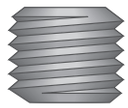
Size 0-A Punch Chuck
VINTS010



Sizes 0-B Punch Chuck
VINTS020

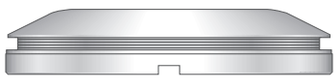


Punch Chuck Set Screw
VINSSS

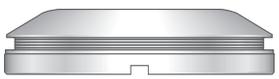


Size 2 Die Adapter
Accepts Size 1 Dies
MAT20000

Size 3 Die Adapter
Accepts Size 2 Dies
MAT30000



Size 3 Die Adapter
Accepts Size 1 Dies
MAT40000



Size 1 Die Shim Pack
2x 0.004(0.10) Thickness
1x 0.012(0.30) Thickness
1x 0.024(0.61) Thickness
MST1

Size 2 Die Shim Pack
2x 0.004(0.10) Thickness
1x 0.012(0.30) Thickness
1x 0.024(0.61) Thickness
MST2

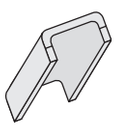
Size 1 Die Shims
0.004(0.1) Thickness MST1004 (6 minimum)
0.012(0.30) Thickness MST1012 (6 minimum)
0.020(0.50) Thickness MST1020 (6 minimum)

Size 2 Die Shims
0.004(0.1) Thickness MST2004 (6 minimum)
0.012(0.30) Thickness MST2012 (6 minimum)
0.020(0.50) Thickness MST2020 (6 minimum)

Size 3 Keyed Stripper Adapter
SKT3H00000

Size 3 Keyed Stripper Adapter
SNT3H00000

Die Slot Plug
MKPT000



Stripper Pins
MIS60003

Soft Face Urethane
Stripper Pads
T00200SF

Dimensions in inches (millimeters)

MINIMATIC TOOLING SYSTEM

MINIMATIC HSS PUNCHES - PUNCH CHUCKS

SIZE 0-A PART NUMBER

Punch Chuck Setscrew **VINSSS**
Size 0-A Punch Chuck **VINTS010**

Size range:
0.030(0.77) to
0.236(6.00)
Maximum Diagonal

PADA0A
PADA1A
PADA2A
PADA3A

Optional Push-On Stripper, .250(6.35) I.D. **TP0A00US**

SIZE 0-B

Punch Chuck Setscrew **VINSSS**
Size 0-B Punch Chuck **VINTS020**

Size range:
0.030(0.77) to
0.413(10.50)
Maximum Diagonal

PADB0A
PADB1A
PADB2A
PADB3A

Optional Push-On Stripper, .430(10.92) I.D. **TP0B00US**

SIZE 1-A

Size range:
0.030(0.77) to
0.590(15.00)
Maximum Diagonal

PADC0A
PADC1A
PADC2A
PADC3A

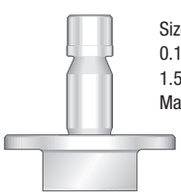
SIZE 1-B

Size range:
0.591(15.01) to
1.181(30.00)
Maximum Diagonal

PADD0A
PADD1A
PADD2A
PADD3A

Optional Push-On Stripper, .590(14.98) I.D. **TP0106US**
Optional Push-On Stripper, .890(22.60) I.D. **TP0109US**
Optional Push-On Stripper, 1.065(27.05) I.D. **TP0112US**

SIZE 1-X



Size range:
0.182(30.01) to
1.500(38.10)
Maximum Diagonal

PADX0A
PADX1A
PADX2A
PADX3A

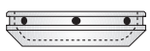
TRUMPF MACHINES THAT USE MINIMATIC STYLE TOOLS

AUTOMATIC TOOL CHANGE	KEYED
TRUMATIC	TRUMATIC
100	100
100M	100M
120	120
160	160

MINIMATIC STRIPPERS

SIZE 1 PART NUMBER

1.181 + .060(30.00 + 1.52) maximum



SKDX0A
SKDX1A
SKDX2A
SKDX3A

SIZE 1-X

1.500 + .060(38.10 + 1.52) maximum

SKDX0A
SKDX1A
SKDX2A
SKDX3A

MINIMATIC DIES

SIZE 1 PART NUMBER

1.181 + .079(30.00 + 2.00)
Maximum Actual Die Opening

D0D100
D0D110
D0D120
D0D130

SIZE 1-X

1.500 + .039(38.10 + 1.00)
Maximum Actual Die Opening

D0TX00
D0TX10
D0TX20
D0TX30

MINIMATIC ALIGNMENT RINGS

SIZE 1 PART NUMBER

(0-3) d, .030 - 1.181
(0.77 - 30.00)

VANTM

SIZE 1-X

(0-3) d, 1.182 - 1.500
(30.01 - 38.10)

VAPTM

HEAVY DUTY TOOLING

HEAVY DUTY HSS PUNCHES*

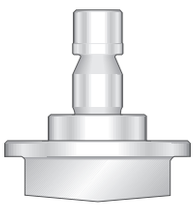
SIZE 1 PART NUMBER

(0-3) .250 - 1.181*
(6.35 - 30.00)
(3) .842(21.39)

PHDD0A
PHDD1A
PHDD2A
PHDD3A

*Punch width/diameter less than .250(6.35) NOT available in heavy duty style tooling

SIZE 2



0) d, 1.182 - 1.625
(30.01 - 41.27)
(1) d, 1.182 - 2.125
(30.01 - 53.97)
(2) d, 1.182 - 2.000
(30.01 - 50.80)
(3) d, 1.182 - 1.768
(30.01 - 44.90)
(3) a, 1.256(31.91)

PHDE0A
PHDE1A
PHDE2A
PHDE3A

*Punch width/diameter less than .250(6.35) NOT available in heavy duty style tooling

MACHINE STRIPPERS

	KEYED	NON-KEYED	ROTATIONAL
SIZE 1	**SND1_A**	**SKD1_A**	**SRD1_A**
SIZE 2I	**SND2_A**	**SKD2_A**	**SRD2_A**

HEAVY DUTY DIES

SIZE 1 PART NUMBER

.984 + .059(24.99 + 1.49)
Maximum Actual Die Opening

D4D100
D4D110
D4D120
D4D130

"Without Shear" and "Rooftop" are valid shear options for Size 1 punches less than or equal to 1.81(30.00).

"Without Shear" and "Whisper" are valid shear options for Size 1 punch inserts greater than 1.81(30.00).

SIZE 2

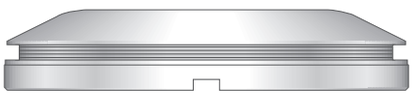
2.047 + .079(52.00 + 2.00)
Maximum Actual Die Opening

D4D200
D4D210
D4D220
D4D230

"Without Shear" and "Whisper" are valid shear options for Size 2 punch inserts.

SIZE 3

4.134 + .079(105.00 + 2.00)
Maximum Actual Die Opening



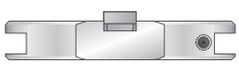
Size 3 dies specify 0°, 90°, or special angle setting

D0D300
D0D310
D0D320
D0D330

STANDARD STRIPPERS ARE USED WITH THE HEAVY DUTY TOOLING SYSTEM, SEE PAGES 8-11 OF THIS CATALOG

HEAVY DUTY ALIGNMENT RING

SIZE 1 AND 2 PART NUMBER



VANTF

TRUMPF MACHINE GROUPS BY ALIGNMENT RING STYLE

TRUMATIC	180W	235	300W
150K	180WD	240	400K
150W	185	260	400W
180K	200R	300K	500R
180LK	202K	300LW	600L
180LW	202W	300PK	2000R
180PK	225	300PW	5000

AUTOMATIC TOOL CHANGE

KEY FOR HEAVY DUTY ALIGNMENT RING - ALL SIZES

(Not interchangeable with OEM) **VKETF000**

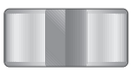
*Minimum width/diameter in heavy duty is 0.250(6.35)

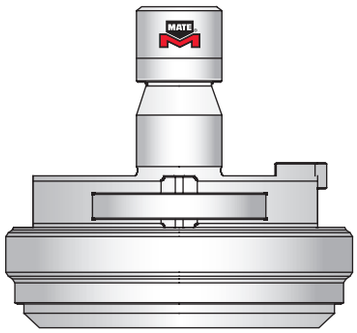
Dimensions in inches (millimeters)

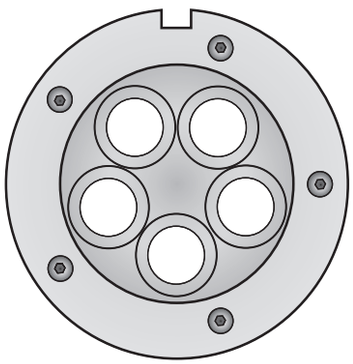
5-STATION MULTI TOOL SYSTEM

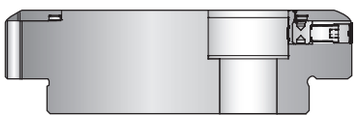
All sizes Multi Tool punches and dies made from Premium M4PM™ Steel, See Page 35 for information

Punch Holder	MATE00559
Stripper	MATE00560
Die Holder	MATE00561









ROUND		
Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PADV0A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	DADV00
RECTANGLE		
Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PADV1A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	DADV10
SHAPED*		
Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PADV_A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	DADV_0
SQUARE		
Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PADV3A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	DADV30
DIE SHIMS		
Shims	0.004(0.10mm) Thick, 10 PCS	MTST501
Shims	0.012(0.30mm) Thick, 5 PCS	MTST502
Shims	0.020(0.51mm) Thick, 5 PCS	MTST503

Punches

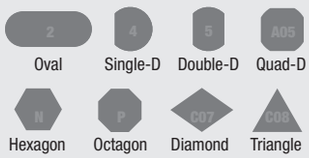
- Premium particle metallurgy tool steel for exceptional interval between regrinds and maximum machine up time.
- 1/4 degree back taper and near polished punch flank to reduce friction and extend tool life.
- Maxima™ coating available for extreme applications.

Dies

- High Speed Steel for extended life between regrinds.
- Uniform corner clearance radii for increased die strength and improved piece part quality.

Note: 5 and 10 Station Multi Tools are not compatible with 260A machines.

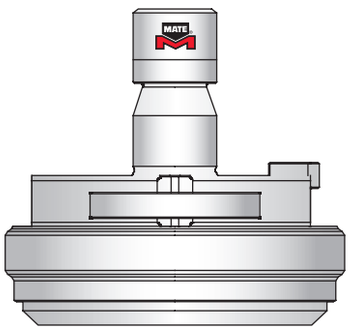
****STANDARD SHAPES**

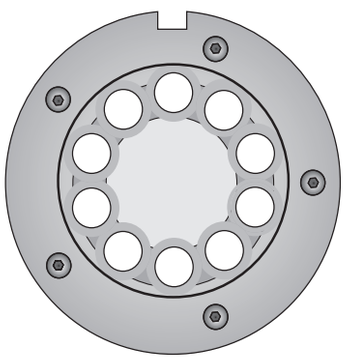


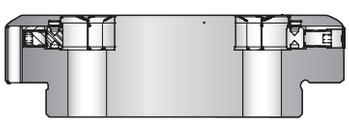
10-STATION MULTI TOOL SYSTEM

All sizes Multi Tool punches and dies made from Premium M4PM™ Steel, See Page 35 for information

Punch Holder	MATE00555
Stripper	MATE00556
Die Holder	MATE00550







ROUND		
Punch	0.030(0.77) to 0.413(10.49) Maxima™ Coating	PADT0A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	DADT00
RECTANGLE		
Punch	0.030(0.77) to 0.413(10.49) Maxima™ Coating	PADT1A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	DADT10
SHAPED*		
Punch	0.030(0.77) to 0.413(10.49) Maxima™ Coating	PADT_A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	DADT_0
SQUARE		
Punch	0.030(0.77) to 0.413(10.49) Maxima™ Coating	PADT3A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	DADT30
DIE SHIMS		
Shims	0.004(0.10mm) Thick, 20 PCS	MTST1001
Shims	0.012(0.30mm) Thick, 10 PCS	MTST1002
Shims	0.020(0.51mm) Thick, 10 PCS	MTST1003

Punches
- M4PM™ particle metallurgy High Speed Steel with excellent edge-wear resistance for exceptional interval between regrinds.
- 1/4 degree back taper and near polished punch flank to reduce friction and extend tool life.
- Maxima™ coating available for extreme applications.

Dies
- High Speed Steel for maximum life between regrinds.
- Uniform corner clearance radii for increased die strength and improved piece part quality.

Note: 5 and 10 Station Multi Tools are not compatible with 260A machines.

Dimensions in inches (millimeters)

4-STATION MULTI TOOL TOOLING

1-PIECE PUNCH STYLE

ROUND

Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD50A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D400

RECTANGLE

Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD51A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D410

SHAPED - SEE STANDARD SHAPES

Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD5_A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D4_0

SQUARE

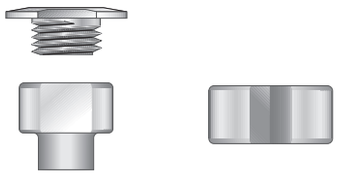
Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD53A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D430

SHIM PACKAGE

Die	Shim Assortment 8x 0.004(0.10) 8x 0.012(0.03) 8x 0.024(0.60)	MSD4

Punch Cap
PAT4CAP

2-PIECE PUNCH STYLE



ROUND

Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD40A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D400

RECTANGLE

Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD41A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D410

SHAPED - SEE STANDARD SHAPES

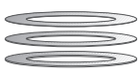
Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD43A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D4_0

SQUARE

Punch	0.030(0.77) to 0.630(16.00) Maxima™ Coating	PAD43A •
Die	0.630(16.00) +0.024(0.60) Maximum Die Opening	D0D430

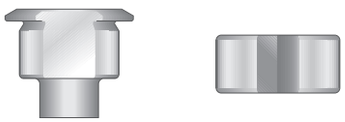
SHIM PACKAGE

Punch	Shim Assortment 6x 0.004(0.10) 6x 0.012(0.03) 6x 0.024(0.60) 6x 0.040(1.00)	VTST
Die	Shim Assortment 8x 0.004(0.10) 8x 0.012(0.03) 8x 0.024(0.60)	MTST4



6-STATION MULTI TOOL TOOLING

1-PIECE PUNCH STYLE



ROUND

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD70A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D600

RECTANGLE

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD71A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D610

SHAPED*

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD7_A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D6_0

SQUARE

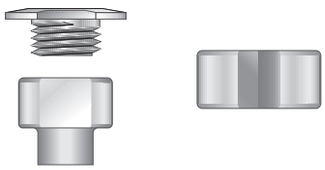
Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD73A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D630

SHIM PACKAGE

Die	Shim Assortment 8x 0.004(0.10) 8x 0.012(0.03) 8x 0.024(0.60)	MST6

Punch Cap
PAT6CAP

2-PIECE PUNCH STYLE



ROUND

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAT60A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0T600

RECTANGLE

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD61A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D610

SHAPED*

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD6_A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D6_0

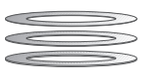
SQUARE

Punch	0.030(0.77) to 0.413(10.50) Maxima™ Coating	PAD63A •
Die	0.413(10.50) +0.024(0.60) Maximum Die Opening	D0D630

SHIM PACKAGE

Punch	Shim Assortment 6x 0.004(0.10) 6x 0.012(0.03) 6x 0.024(0.60) 6x 0.040(1.00)	VTST

Die	Shim Assortment 8x 0.004(0.10) 8x 0.012(0.03) 8x 0.024(0.60)	MST6



Dimensions in inches (millimeters)

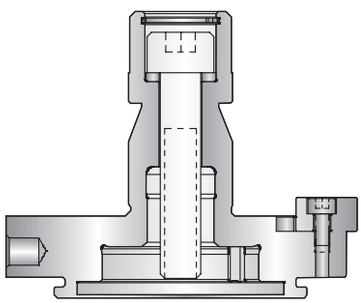
MATE NEXT™ INSERT TOOLING SYSTEM

The new NEXT™ Insert Tooling System for Trumpf style presses, is designed to dramatically increase tool life and reduce punching costs.

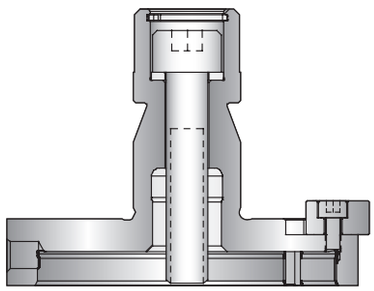
The NEXT™ Insert Tooling System includes:
- Interchangeable, abrasion-resistant, punch inserts
- Two sizes of insert punch holders with precision orientation features
- Precision ground punch shim returns the NEXT™ punch assembly to the original length after 0.118(3.00) has been removed during routine grinding.

SIZE 40

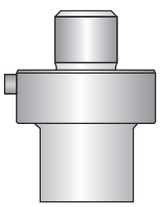
SIZE 76



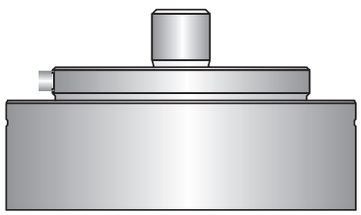
Insert Punch Holder
Available in two sizes.
Size 40 0.030-1.575(0.76-40.01)
Size 76 1.576-3.0063(40.03-76.36)



Precision Ground Shim



NEXT™ Punch Inserts
M4PM™ from 0.031(0.80) to 1.181(30.00)
M2 HSS from 1.182(30.01) to 3.000(76.20)

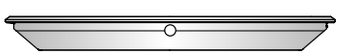


Push-on Urethane Stripper

The NEXT™ Insert Tooling System is fully compatible with existing strippers and dies.

High strength steel strippers for reliable operation.

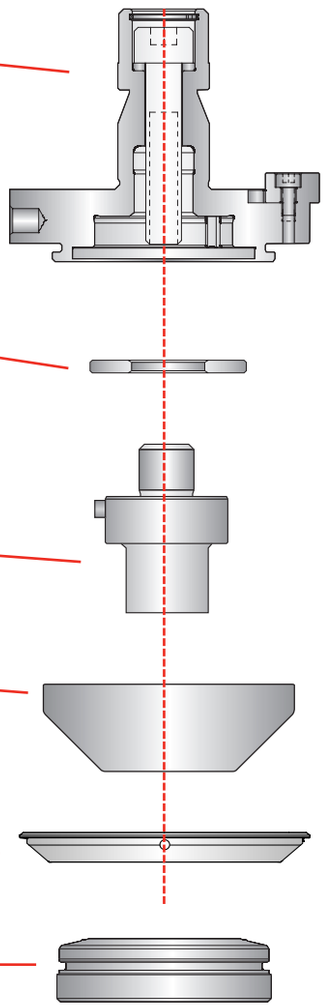
High wear resistant steel dies for exceptional tool life.



MATE NEXT™ INSERT TOOLING SYSTEM

The NEXT™ Insert Tooling System holders, with integral precision alignment features and captive draw bolt, accept interchangeable punch inserts for faster and more accurate machine set-ups.

Size 40 0.030(0.77) to 1.575(40.01)
Size 76 1.576(40.03) to 3.0063(76.36)



Precision ground punch shim returns the NEXT™ punch assembly to the original length after 0.118(3.00) has been removed during routine grinding.

M4 HSS from 0.031(0.80) to 1.181(30.00)
M2 HSS from 1.182(30.01) to 3.000(76.20)
High speed steel (HSS) NEXT™ punch inserts provide superior abrasion resistance to extend the interval between regrinds.

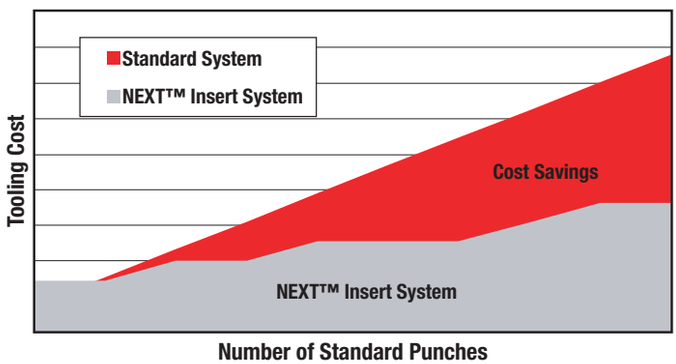
Push-on urethane stripper for Size 40 punch insert holders provide positive on-the-die stripping without sheet marking. Ideal when punching soft or decorative materials.

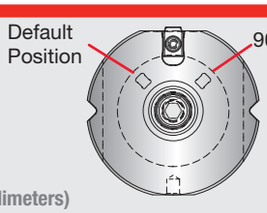
High strength steel stripper for reliable operation.

High wear resistant steel die for exceptional tool life. Optional Slug Free® die geometry available.

Mate NEXT™ Insert System Delivers Value!

The High Speed Steel punch inserts deliver exceptional edge wear resistance. The M4PM™ HSS Insert in sizes up to 0.031-1.181(0.80-30.00) delivers the longest possible interval between regrinds. In addition, by installing the shim after 0.118(3.00) has been removed from the punch during regrinding, the punch assembly is returned to its original length instead of being replaced. The result is that a single punch insert would last the same as multiple standard punches. The chart at right demonstrates the real value delivered by the NEXT™ Insert Tooling System from Mate.





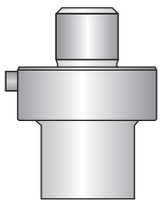
Dimensions in inches (millimeters)

Torque Settings (Pre-set torque wrench recommended)
6mm NEXT™ Holder Draw Bolt – 288 in-lbs (22Nm)
6mm Alignment Ring Bolt – 132 in-lbs (15Nm)
Punch Check Set Screw – 240 in-lbs (27Nm)

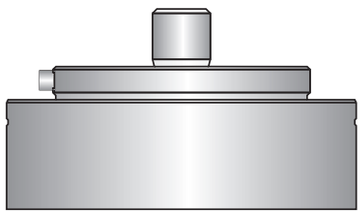
MATE NEXT™ TOOLING SYSTEM
ROUND SIZE 40 AND SIZE 76

All NEXT™ Size 40 and size 76 punches made from Premium M4PM™ Steel, See Page 35 for information

SIZE 40



SIZE 76



ROUND PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 40	0.030 (0.76) to 1.181 (30.00)	PBTD0A	•		•
Size 40	1.182 (30.02) to 1.575 (40.01)	PBTE0A		•	•
Size 76	1.576 (40.03) to 2.205 (56.01)	PBTF0A		•	•
Size 76	2.206 (56.03) to 2.599 (66.01)	PBTG0A		•	•
Size 76	2.600 (66.04) to 3.0104 (76.464)	PBTH0A		•	•

Size	Keyed	Rotational
Size 1	SKD10A	SRD10A
Size 2	SKD20A	SRD20A

PUSH-ON URETHANE STRIPPERS

Size	Inside Diameter	Part Number
Size 40	0.984 (25.00)	MATE00374
Size 40	1.181 (30.00)	MATE00375
Size 40	1.378 (35.00)	MATE00376
Size 40	1.575 (40.00)	MATE00377

Type

Keyed

Rotational

ROUND DIES

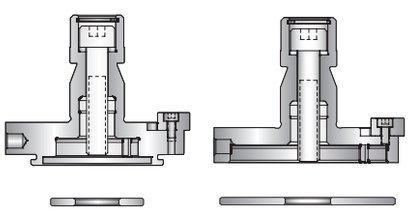
Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D100
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D200

Size 1

Size 2

PUNCH HOLDER AND SHIM

Size 40	Punch Holder with Shim	MATE00371
Size 40	Shim	MATE00364
Size 76	Punch Holder with Shim	MATE00372
Size 76	Shim	MATE00365
Draw Bolt		SHC12191
Snap Ring		SRI00001

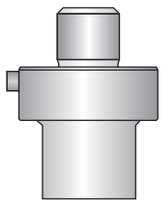


See Page 54 for critical tool dimensions

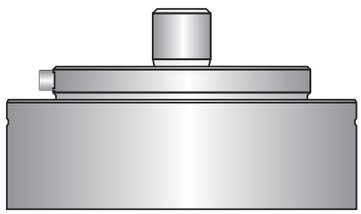
MATE NEXT™ TOOLING SYSTEM
RECTANGLE SIZE 40 AND SIZE 76

All NEXT™ Size 40 and size 76 punches made from Premium M4PM™ Steel, See Page 35 for information

SIZE 40



SIZE 76



RECTANGLE PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 40	0.030 (0.76) to 1.181 (30.00)	PBTD1A	•		•
Size 40	1.182 (30.02) to 1.575 (40.01)	PBTE1A		•	•
Size 76	1.576 (40.03) to 2.205 (56.01)	PBTF1A		•	•
Size 76	2.206 (56.03) to 2.599 (66.01)	PBTG1A		•	•
Size 76	2.600 (66.04) to 3.0104 (76.464)	PBTH1A		•	•

RECTANGLE MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD11A	SRD11A
Size 2	SKD21A	SRD21A

PUSH-ON URETHANE STRIPPERS

Size	Inside Diameter	Part Number
Size 40	0.984 (25.00)	MATE00374
Size 40	1.181 (30.00)	MATE00375
Size 40	1.378 (35.00)	MATE00376
Size 40	1.575 (40.00)	MATE00377

Type

Keyed

Rotational

RECTANGLE DIES

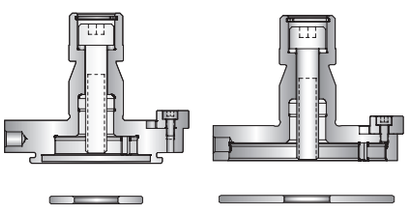
Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D110
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D210

Size 1

Size 2

PUNCH HOLDER AND SHIM

Size 40	Punch Holder with Shim	MATE00371
Size 40	Shim	MATE00364
Size 76	Punch Holder with Shim	MATE00372
Size 76	Shim	MATE00365
Draw Bolt		SHC12191
Snap Ring		SRI00001

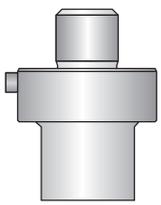


Dimensions in inches (millimeters)

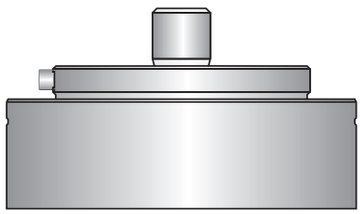
MATE NEXT™ TOOLING SYSTEM
STANDARD SHAPE SIZE 40 AND SIZE 76

All NEXT™ Size 40 and size 76 punches made from Premium M4PM™ Steel, See Page 35 for information

SIZE 40



SIZE 76



SHAPED PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 40	0.030 (0.76) to 1.181 (30.00)	PBTD_A	•		•
Size 40	1.182 (30.02) to 1.575 (40.01)	PBTE_A		•	•
Size 76	1.576 (40.03) to 2.205 (56.01)	PBTF_A		•	•
Size 76	2.206 (56.03) to 2.599 (66.01)	PBTG_A		•	•
Size 76	2.600 (66.04) to 3.0104 (76.464)	PBTH_A		•	•

SHAPED MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD1_A	SRD1_A
Size 2	SKD2_A	SRD2_A

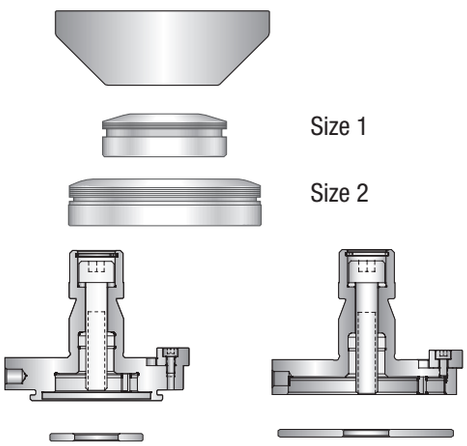
PUSH-ON URETHANE STRIPPERS

Size	Inside Diameter	Part Number
Size 40	0.984 (25.00)	MATE00374
Size 40	1.181 (30.00)	MATE00375
Size 40	1.378 (35.00)	MATE00376
Size 40	1.575 (40.00)	MATE00377

Type

Keyed

Rotational



Size 1

Size 2

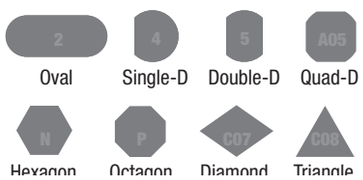
SHAPED DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D1_0
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D2_0

PUNCH HOLDER AND SHIM

Size 40	Punch Holder with Shim	MATE00371
Size 40	Shim	MATE00364
Size 76	Punch Holder with Shim	MATE00372
Size 76	Shim	MATE00365
Draw Bolt		SHC12191
Snap Ring		SRI00001

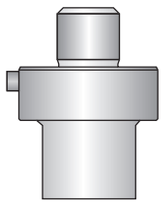
****STANDARD SHAPES**



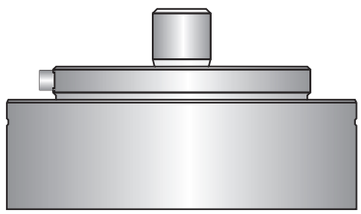
MATE NEXT™ TOOLING SYSTEM
SQUARE SIZE 40 AND SIZE 76

All NEXT™ Size 40 and size 76 punches made from Premium M4PM™ Steel, See Page 35 for information

SIZE 40



SIZE 76



SQUARE PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 40	0.030 (0.76) to 1.181 (30.00)	PBTD3A	•		•
Size 40	1.182 (30.02) to 1.575 (40.01)	PBTE3A		•	•
Size 76	1.576 (40.03) to 2.205 (56.01)	PBTF3A		•	•
Size 76	2.206 (56.03) to 2.599 (66.01)	PBTG3A		•	•
Size 76	2.600 (66.04) to 3.0104 (76.464)	PBTH3A		•	•

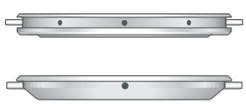
SQUARE MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD13A	SRD13A
Size 2	SKD23A	SRD23A

PUSH-ON URETHANE STRIPPERS

Size	Inside Diameter	Part Number
Size 40	0.984 (25.00)	MATE00374
Size 40	1.181 (30.00)	MATE00375
Size 40	1.378 (35.00)	MATE00376
Size 40	1.575 (40.00)	MATE00377

Type



Keyed

Rotational

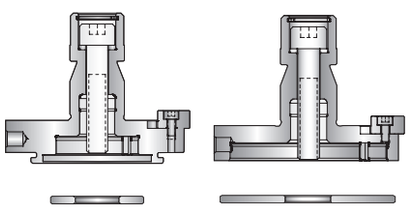
SQUARE DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D130
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D230

Size 1

Size 2

Size 40	Punch Holder with Shim	MATE00371
Size 40	Shim	MATE00364
Size 76	Punch Holder with Shim	MATE00372
Size 76	Shim	MATE00365
Draw Bolt		SHC12191
Snap Ring		SRI00001

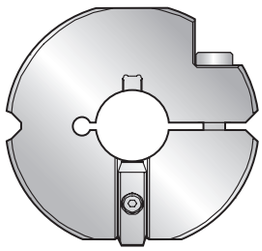


See Page 54 for extended length and shear options

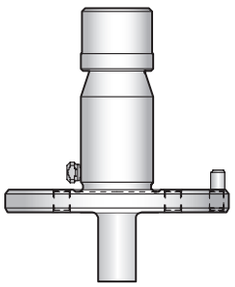
Dimensions in inches (millimeters)

MATE QUICKLOCK™ TOOLING SYSTEM

Introducing Mate QuickLock™ Tooling System
Mate QuickLock™ is a new tooling system for Trumpf style presses that combines the economy of conventional Trumpf style tooling with the convenience of alignment via a keyed alignment ring. The hardened and ground key (located in the shank or shoulder, depending on punch point size) engages the keyway in the alignment ring for fast and accurate alignment without a dedicated alignment fixtu e.

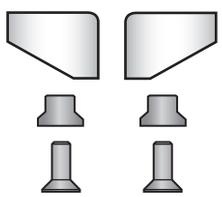


Mate QuickLock™ Tooling System Features:
- High-speed steel punches for extended interval between sharpening.
- Punches include an alignment key for use with the Mate Quick-Lock™ alignment ring.
- Alignment ring with a keyway that engages the key on both Mate QuickLock™ size 1 and size 2 punches for quick and accurate tool alignment of both.
- Urethane strippers, in an extended size range, for quieter operation and improved piece part quality.
- Highly wear-resistant punches and dies for maximum productivity.



Mate QuickLock™ Universal Alignment Ring
- Precision machined keyway to accept the hardened punch key for accurate alignment, relative to the die aperture, without the need for a fixtu e.
- Precision ground upper and lower surfaces for positive contact with the punch shoulder for reduced tool stress and maximum service life.
- Elimination of the possibility of punch rotation, with a solid contact between the punch key and the alignment ring keyway.
- Shock resistant tool steel to eliminate cracking, for longer service life.
- Compatible with conventional Trumpf style size 2 punches.
- Universal for both Mate QuickLock™ size 1 and size 2 punches.

Mate QuickLock™ Push-On Urethane Stripper

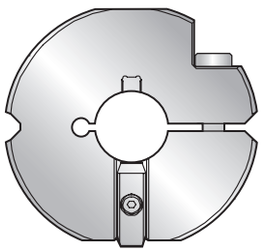


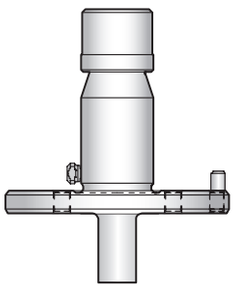
Mate QuickLock™ Screw-On Urethane Stripper. Supplied in pairs. Fixed to the punch shoulder with a retainer and fl t head screw.

MATE QUICKLOCK™ TOOLING SYSTEM

Mate QuickLock™ Punches

- High speed steel, for extended intervals between sharpening.
- Hardened and ground key for quick and accurate punch alignment.
  - For punches with a diagonal dimension up to 2.000(50.80) the alignment pin is located on the shank.
  - For punches with a diagonal dimension greater than 2.000(50.80) the alignment pin is located on the shoulder.
- 1/4-degree back taper and near polished punch flank to reduce friction, eliminate galling, and extend punch grind life.
- Maxima™ coating or Nitride treatment available for extreme punching applications.
- Optional extended length punch available, with 3.057(77.60) overall length.

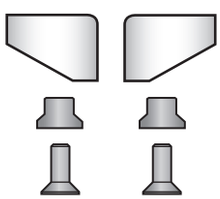




Mate QuickLock™ Urethane Strippers

- Positive, on-the-die stripping to eliminate sheet rattle and reduce punching noise.
- Two types available (dependent on punch point size).
  - Push-On Urethane Stripper
    - Locks securely onto punch and alignment ring for reliable operation.
    - Available for all extended length punches with a diagonal dimension up to 2.000(50.80).
  - Screw-On Urethane Stripper
    - Available in two sizes: for shaped punches with width up to 0.394(10.00) and length up to 2.362(60.00), or length up to 3.000(76.20).
    - Supplied in pairs, and fixe to the punch shoulder with a fla head screw.
    - Punch must have rooftop shear, and length over 2.000(5.08)

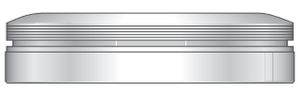
Mate QuickLock™ Push-On Urethane Stripper



Mate QuickLock™ Screw-On Urethane Stripper. Supplied in pairs. Fixed to the punch shoulder with a retainer and fl t head screw.

Mate Dies

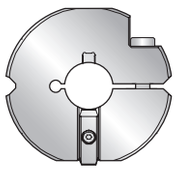
- Highly wear-resistant tool steel with optimized heat treatment for perfect balance of wear and toughness for maximum interval between regrinds. Up to 0.059(1.50) grind life.
- Double-cut die opening for improved accuracy.
- Uniform clearance radii in die corners for improved component edge quality.
- Improved die strength with domed relief to evenly distribute punching forces.
- Superior roundness and flatnes for improved piece part quality.



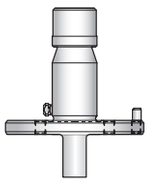
Dimensions in inches (millimeters)

MATE QUICKLOCK™ TOOLING SYSTEM
ROUND SIZE 1 AND SIZE 2

QuickLock™ size 1 punches made from Premium M4PM™ Steel, See Page 35 for information



Mate QuickLock™ Universal Alignment Ring
The integral keyway allows for fast and accurate alignment of the Mate QuickLock™ punch for faster machine set-up without a dedicated alignment fixtu e. Also compatible with conventional size 2 punches.



Mate QuickLock™ Punch with Alignment Pin.
The hardened and ground key (located in the shank or shoulder, depending on punch point size) engages the keyway in the alignment ring for fast and accurate alignment without a dedicated alignment fixtu e.

QUICKLOCK™ UNIVERSAL ALIGNMENT RING

Size 1 and 2	Universal Alignment Ring	MATE00480

ROUND QUICKLOCK™ PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 1	0.030 (0.76) to 1.181 (30.00)	PDTD0A	•		•
Size 2	1.182 (30.02) to 1.575 (40.01)	PDTE0A		•	•
Size 2	1.576 (40.03) to 2.000 (50.80)	PDTF0A		•	•
Size 2	2.001 (50.83) to 2.362 (60.00)	PDTG0A		•	•
Size 2	2.363 (60.00) to 3.0104 (76.464)	PDTH0A		•	•

ROUND MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD10A	SRD10A
Size 2	SKD20A	SRD20A

QUICKLOCK™ PUSH-ON URETHANE STRIPPERS*

Inside Diameter	Part Number
0.590 (15.00)	MATE00532
0.787 (20.00)	MATE00533
1.181 (30.00)	MATE00534
1.378 (35.00)	MATE00548
1.574 (40.00)	MATE00535
2.047 (52.00)	MATE00536

Type

Keyed

Rotational

ROUND DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D100
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D200

Size 1

Size 2

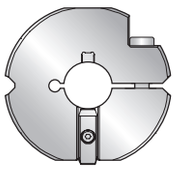
*Standard length QuickLock™ punches use standard push-on urethane strippers.
Extended length QuickLock punches use QuickLock™ urethane strippers.

See Page 54 for critical tool dimensions

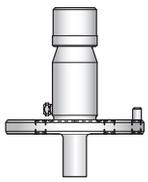
Dimensions in inches (millimeters)

MATE QUICKLOCK™ TOOLING SYSTEM
RECTANGLE SIZE 1 AND 2

QuickLock™ size 1 punches made from Premium M4PM™ Steel, See Page 35 for information



Mate QuickLock™ Universal Alignment Ring The integral keyway allows for fast and accurate alignment of the Mate QuickLock™ punch for faster machine set-up without a dedicated alignment fixtu e. Also compatible with conventional size 2 punches.



Mate QuickLock™ Punch with Alignment Pin. The hardened and ground key (located in the shank or shoulder, depending on punch point size) engages the keyway in the alignment ring for fast and accurate alignment without a dedicated alignment fixtu e.

QUICKLOCK™ UNIVERSAL ALIGNMENT RING

Size 1 and 2	Universal Alignment Ring	MATE00480

RECTANGLE PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 1	0.030 (0.76) to 1.181 (30.00)	PDTD1A	•		•
Size 2	1.182 (30.02) to 1.575 (40.01)	PDTE1A		•	•
Size 2	1.576 (40.03) to 2.000 (50.80)	PDTF1A		•	•
Size 2	2.001 (50.83) to 2.362 (60.00)	PDTG1A		•	•
Size 2	2.363 (60.00) to 3.0104 (76.464)	PDTH1A		•	•

RECTANGLE MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD1_A	SRD1_A
Size 2	SKD2_A	SRD2_A

Type

Keyed

Rotational

QUICKLOCK™ PUSH-ON URETHANE STRIPPERS*

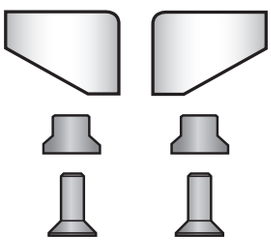
Inside Diameter	Part Number
0.590 (15.00)	MATE00532
0.787 (20.00)	MATE00533
1.181 (30.00)	MATE00534
1.378 (35.00)	MATE00548
1.574 (40.00)	MATE00535
2.047 (52.00)	MATE00536

Size 1

Size 2

RECTANGLE DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D1_0
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D2_0



MATE QUICKLOCK™ Screw-On Urethane Stripper

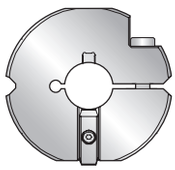
For use with shaped Mate QuickLock™ Punches with optional rooftop shear and width up to 0.394(10.00). Two sizes available.

G-Station with punch length 2.001(5.08) – 2.362 (60.00)	MATE00538
H-Station with punch length up to 3.000 (76.20)	MATE00539
Retainer – pair	MATE00578
Screw – pair	MATE00579

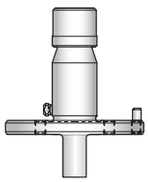
*Standard length QuickLock™ punches use standard push-on urethane strippers. Extended length QuickLock punches use QuickLock™ urethane strippers.

MATE QUICKLOCK™ TOOLING SYSTEM
STANDARD SHAPE SIZE 1 AND SIZE 2

QuickLock™ size 1 punches made from Premium M4PM™ Steel, See Page 35 for information



Mate QuickLock™ Universal Alignment Ring
The integral keyway allows for fast and accurate alignment of the Mate QuickLock™ punch for faster machine set-up without a dedicated alignment fixtu e. Also compatible with conventional size 2 punches.



Mate QuickLock™ Punch with Alignment Pin.
The hardened and ground key (located in the shank or shoulder, depending on punch point size) engages the keyway in the alignment ring for fast and accurate alignment without a dedicated alignment fixtu e.

QUICKLOCK™ UNIVERSAL ALIGNMENT RING

Size 1 and 2	Universal Alignment Ring	MATE00480	$179.00

SHAPED PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 1	0.030 (0.76) to 1.181 (30.00)	PDTD_A	•		•
Size 2	1.182 (30.02) to 1.575 (40.01)	PDTE_A		•	•
Size 2	1.576 (40.03) to 2.000 (50.80)	PDTF_A		•	•
Size 2	2.001 (50.83) to 2.362 (60.00)	PDTG_A		•	•
Size 2	2.363 (60.00) to 3.0104 (76.464)	PDTH_A		•	•

SHAPED MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD1_A	SRD1_A
Size 2	SKD2_A	SRD2_A

QUICKLOCK™ PUSH-ON URETHANE STRIPPERS*

Inside Diameter	Part Number
0.590 (15.00)	MATE00532
0.787 (20.00)	MATE00533
1.181 (30.00)	MATE00534
1.378 (35.00)	MATE00548
1.574 (40.00)	MATE00535
2.047 (52.00)	MATE00536

Type

Keyed

Rotational

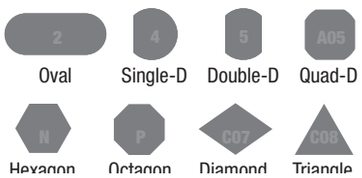
SHAPED DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D1_0
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D2_0

Size 1

Size 2

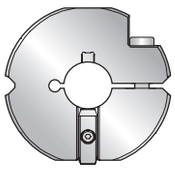
**STANDARD SHAPES



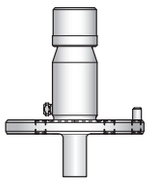
*Standard length QuickLock™ punches use standard push-on urethane strippers. Extended length QuickLock punches use QuickLock™ urethane strippers.

MATE QUICKLOCK™ TOOLING SYSTEM
SQUARE SIZE 1 AND SIZE 2

QuickLock™ size 1 punches made from Premium M4PM™ Steel, See Page 35 for information



Mate QuickLock™ Universal Alignment Ring The integral keyway allows for fast and accurate alignment of the Mate QuickLock™ punch for faster machine set-up without a dedicated alignment fixtu e. Also compatible with conventional size 2 punches.



Mate QuickLock™ Punch with Alignment Pin. The hardened and ground key (located in the shank or shoulder, depending on punch point size) engages the keyway in the alignment ring for fast and accurate alignment without a dedicated alignment fixtu e.

QUICKLOCK™ UNIVERSAL ALIGNMENT RING

Size 1 and 2	Universal Alignment Ring	MATE00480

SQUARE QUICKLOCK™ PUNCHES

Size	Range	Part Number	Without Shear	Whisper Shear	Maxima™ Coating
Size 1	0.030 (0.76) to 1.181 (30.00)	PDTD3A	•		•
Size 2	1.182 (30.02) to 1.575 (40.01)	PDTE3A		•	•
Size 2	1.576 (40.03) to 2.000 (50.80)	PDTF3A		•	•
Size 2	2.001 (50.83) to 2.362 (60.00)	PDTG3A		•	•
Size 2	2.363 (60.00) to 3.0104 (76.464)	PDTH3A		•	•

SQUARE MACHINE STRIPPERS

Size	Keyed	Rotational
Size 1	SKD13A	SRD13A
Size 2	SKD23A	SRD23A

QUICKLOCK™ PUSH-ON URETHANE STRIPPERS*

Inside Diameter	Part Number
0.590 (15.00)	MATE00532
0.787 (20.00)	MATE00533
1.181 (30.00)	MATE00534
1.378 (35.00)	MATE00548
1.574 (40.00)	MATE00535
2.047 (52.00)	MATE00536

Type

Keyed

Rotational

Size 1

Size 2

SQUARE DIES

Size	Range	Part Number
Size 1	1.181(30.00) +0.079(2.00) Opening	D0D130
Size 2	3.000(76.20) +0.079(2.00) Opening	D0D230

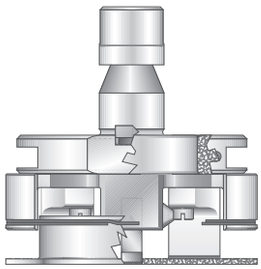
*Standard length QuickLock™ punches use standard push-on urethane strippers. Extended length QuickLock punches use QuickLock™ urethane strippers.

See Page 54 for critical tool dimensions

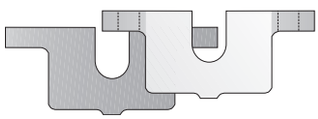
Dimensions in inches (millimeters)

EUROSTYLE™ TOOLING SYSTEM

	5.00 X 56.00mm Slitting Assembly	5.00 X 76.20mm Slitting Assembly
PUNCH ASSEMBLY		
RECTANGLE	XPD2170500M5600	XPD2170500M7620
RECTANGLE, WITH MAXIMA® COATING	XPD21M0500M5600	XPD21M0500M7620
OVAL	XPD2270500M5600	XPD2270500M7620
OVAL, WITH MAXIMA® COATING	XPD22M0500M5600	XPD22M0500M7620

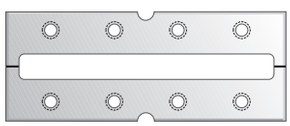


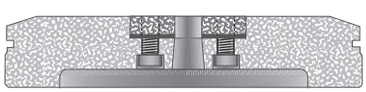
URETHANE SPRINGS		
URETHANE SPRINGS	UTSI	UTSI
REPLACEMENT SSTRIPPERS (NOT SHOWN)		
OVAL 5.00 X 61.00	MATE00459	N/A
OVAL 5.00 X 76.20	N/A	MATE00460



REPLACEMENT PUNCH INSERT		
RECTANGLE	PADS1A0500M5600	PADS1A0500M7620
RECTANGLE, WITH MAXIMA® COATING	PADS1M0500M5600	PADS1M0500M7620
OVAL	PADS2A0500M5600	PADS2A0500M7620
OVAL, WITH MAXIMA® COATING	PADS2M0500M5600	PADS2M0500M7620

REPLACEMENT DIE INSERT		
RECTANGLE	D0DS1_0500M5600*	D0DS1_0500M7620*
RECTANGLE WITH 1.500MM RADIUS CORNERS	D0DS8_0500M5600*	D0DS8_0500M7620*
	*PLUS TOTAL CLEARANCE	
RECTANGLE	XDD21_0500M5600*	D0DS1_0500M7620*
RECTANGLE WITH 1.500MM RADIUS CORNERS	XDD28_0500M5600*	XDD28_0500M7620*
	*PLUS TOTAL CLEARANCE	





NOT FOR TC500
AND NEWER MACHINES

EUROSTYLE™ TOOLING SYSTEM

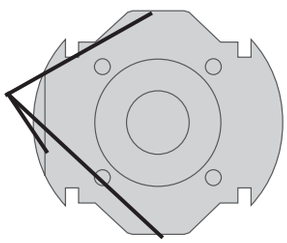
Precision and rigidity of the guided shearing assembly extend punch and die life *up to three times* more than non-guided assemblies...

A guided, spring-loaded stripper with on-the-die performance is built into the punching assembly. The stripper is guided by the inside surface of the retainer and by the sides of the punch insert. The punch point is guided by the stripper as it enters the material. This protects slitting punches against deflection at the point of impact so they last much longer. Spring pressure yields positive stripping action and clamps material against the die for clean, accurate punching, and flatter piece parts.

Three Alignment Flats...

- Three alignment flats on the punch holder allow immediate 0° or 90° alignment without disassembly.
- The guided stripper allows for on-die stripping which is essential for material control with minimal slippage. The greater accuracy eliminates secondary finishing, while the punching operation can be accomplished in fewer hits.

External alignment flats allow for simple 0 and 90 degree alignment ring setting without disassembly

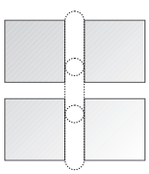


Slitting Options...

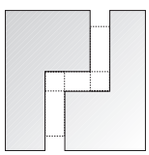
Standard with radius corners for smooth blending of successive cuts in slitting operations.

Shake-and-break (See D06 on Page 36) with square corners for precise gaps needed for holding corner tabs.

The oval punch is used for a smooth transition between punch hits. No “pips” or edge irregularities.



The rectangular punch is used for precision corner cutting.



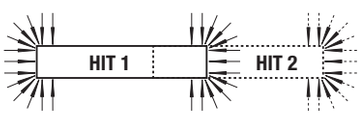
Smooth Slitting Tip...

To reduce edge irregularities left by square ended tools, it is common practice to order oval punches and rectangular dies with 0.060 (1.50) radius corners as sets.

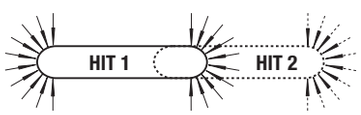
Slitting with a rectangular punch and die can result in small “pips” which are visually undesirable. This is the result of natural forces that take place when performing this operation.

The sharp corners of a rectangular punch and die force an abrupt change in the direction that the material flows prior to the fracture of the slug from the sheet. This abrupt change in the direction of flow can be decreased by placing a radius on the corners of the rectangle. As the radius increases in size, a more uniform flow of material is achieved.

When the size of the radius is increased to 1/2 the width of the rectangle, the shape becomes an oval. This oval shaped punch and die will result in an improved edge appearance when slitting.



Abrubt change in material fl w occurs at the sharp corners of the rectangle



Material fl ws uniformly at the ends of the oval

Punch insert can be removed from tool without disassembly to facilitate sharpening and punch replacement.

Dimensions in inches (millimeters)

LONGLIFE™ SLITTING TOOL SYSTEM

Mate's LongLife™ slitting tool system for Trumpf style punch presses is designed to deliver exceptional value combining premium tool steel punch and die inserts with robust punch and die holders. Fully OEM compatible, Mate LongLife provides you with the most cost-effective slitting tool solution.

PUNCH INSERT

- LongLife™ Premium M4PM™ high speed steel provides maximum interval between regrinds and improves piece part quality
- Available in four standard shapes: rectangle, oval, dovetail and trapezoid
- Metric and inch sizes: Size 56 0.787(19,98) to 2.205(56,00) Size 76 2.206(56,01) to 3.000(76,20)
- Widths up to 0.250(6,35)
- Optional Maxima™ coating available
- Compatible with Trumpf style

PUNCH HOLDER

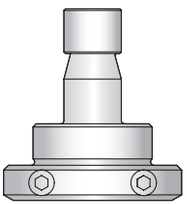
- LongLife™ tool system offers two styles of punch holders:
  - Integral alignment ring for fast, precise tool set up
  - Separate heavy duty alignment ring (additional) to allow manual angle setting flexibilit
- Works with conventional machine strippers

DIE INSERT

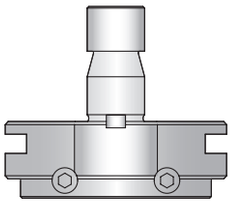
- Premium M4PM™ high speed steel for high wear resistance and exceptional die strength
- Metric and inch sizes: Size 56 0.787(19,98) to 2.205(56,00) 1-piece or 2-piece insert Size 76 0.787(19,98) to 3.000(76,20) 1-piece or 2-piece insert
- Widths up to 0.250(6,35)
- 11 standard discrete die clearances 0.004(0,10) to 0.024(0,60) in 0.002(0,05) increments
- Compatible with Trumpf style

DIE HOLDER ASSEMBLY

- Includes full shim set with two thicknesses
- Two sizes: Size 56 for up to .250 x 2.000(6,35 x 56,00) Size 76 for up to .250 x 3.000(6,35 x 76,20)

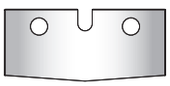


DESCRIPTION	PART NUMBER
SLITTING PUNCH HOLDER	**PPD2H**

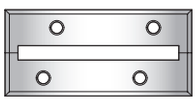


DESCRIPTION	PART NUMBER
SLITTING PUNCH HOLDER WITH INTEGRATED ALIGNMENT RING	**PPD2HAVANTF**

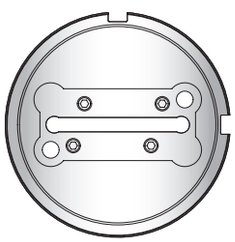
5.00 X 56.00 mm



DESCRIPTION	PART NUMBER
PUNCH INSERT	**PPDS1A0500M5600**

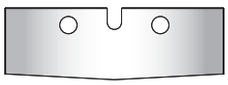


DESCRIPTION	PART NUMBER
RECTANGLE	**DPDS1_0500M5600***



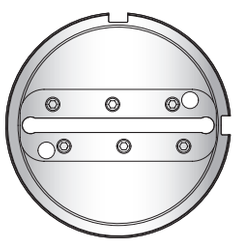
DESCRIPTION	PART NUMBER
DIE BASE ASSEMBLY	**DPD2H056**

5.00 X 76.20 mm



DESCRIPTION	PART NUMBER
PUNCH INSERT	**PPDS1A0500M7620**

DESCRIPTION	PART NUMBER
RECTANGLE	**DPDS1_0500M7620***



DESCRIPTION	PART NUMBER
DIE BASE ASSEMBLY	**DPD2H076**

Die Shims

5,00 x 56,00 (0.30mm thickness)	MATE1326
5,00 x 56,00 (0.51mm thickness)	MATE1327
5,00 x 76,20 (0.30mm thickness)	MATE1328
5,00 x 76,20 (0.51mm thickness)	MATE1329

Available Shapes:

*Solid size 2 die, Rectangle or Oval only D0D2_0

MATE M4PM™ TOOL STEEL

M4PM™ is a high speed, particle metallurgy tool steel designed for use in high performance tooling systems.

The chemical composition of M4, the particle metallurgy manufacturing process, and a triple temper heat treatment process produce 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:

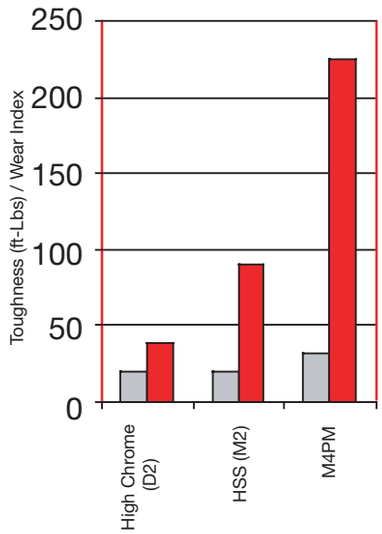
Superior Wear Resistance – 100% better wearing, M4PM offers superior resistance to adhesive- and abrasive-wear to maximize the interval between regrinds.

- 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 educed tool breakage and edge chipping. See micrograph.

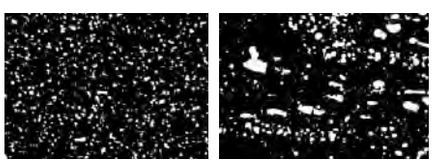
Better Value – customer trials have shown that tools manufactured in M4PM last 100% longer between regrinds than tools manufactured using conventional High Speed Steel. By increasing the interval between regrinds, the tooling lasts longer and punches many more holes before needing to be replaced.



International Material Standards			
	D2	M2	M4PM
JIS	SKD 11	SKH 51	SKH 54
WNr	1.2379	1.3343	none
DIN	X155 CrVMo 12-1	HS 6-5-2	none

M4PM Chemical Composition	
Carbon	1.42%
Chromium	4.00%
Vanadium	4.00%
Tungsten	5.50%
Molybdenum	5.25%

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

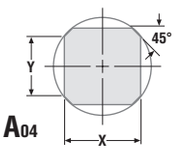


M4PM | conventional tool steel

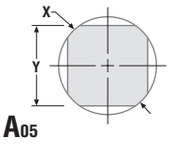
*Toughness: Charpy C-Notch impact strength test.
**Relative Wear Resistance: 10x Cross cylinder adhesive wear test.
Based upon steel manufacturers data.

Dimensions in inches (millimeters)

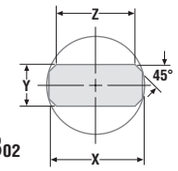
SPECIAL SHAPES



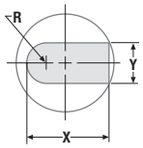
A04 SQUARE WITH CHAMFERED CORNERS



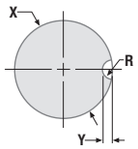
A05 QUAD D



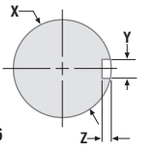
B02 RECTANGLE WITH CHAMFERED CORNER



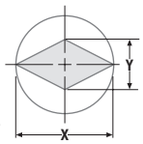
B03 RECT/OVAL



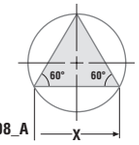
C05 KEYWAY



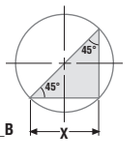
C06 KEYWAY



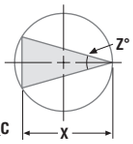
C07 DIAMOND



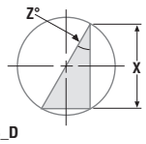
C08_A EQUILATERAL TRIANGLE



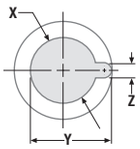
C08_B 45° RIGHT TRIANGLE



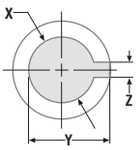
C08_C ISOSCELES TRIANGLE



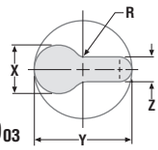
C08_D RIGHT TRIANGLE



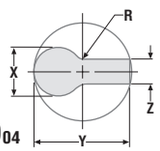
D01 KEYHOLE



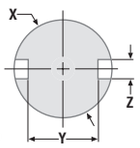
D02 KEYHOLE



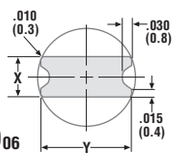
D03 KEYHOLE



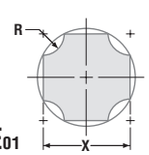
D04 KEYHOLE



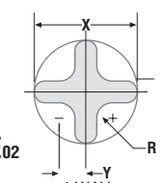
D05 DOUBLE KEYWAY



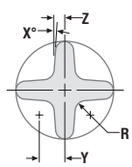
D06 SHAKE AND BREAK



E01 4-WAY RADIUS

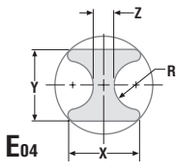


E02 4-WAY RADIUS

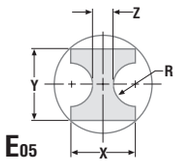


E03 4-WAY RADIUS

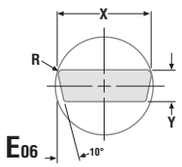
SPECIAL SHAPES



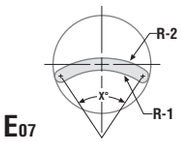
E04 2-WAY RADIUS



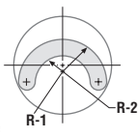
E05 2-WAY RADIUS



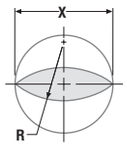
E06 CABLE CONNECTOR



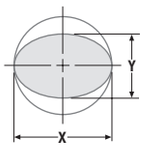
E07 ARC OVAL



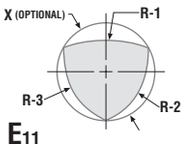
E08 ARC OVAL



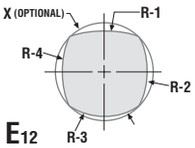
E09 FOOTBALL



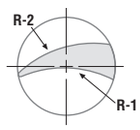
E10 ELLIPSE



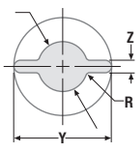
E11 TRI-RADIUS



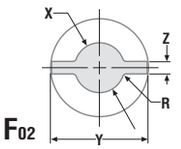
E12 QUAD-RADIUS



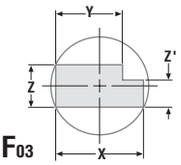
E13 INSIDE/OUTSIDE RADIUS



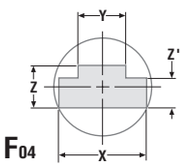
F01 DOUBLE KEYHOLE



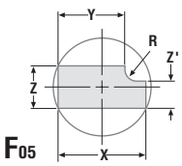
F02 DOUBLE KEYHOLE



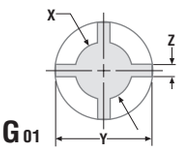
F03 RECT ONE NOTCH



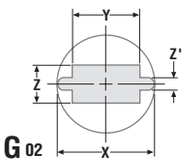
F04 RECTANGLE WITH TWO NOTCHES



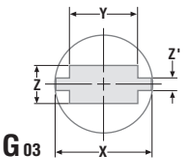
F05 RECTANGLE WITH RADIUS NOTCH



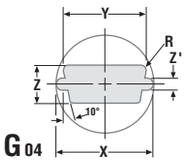
G01 4-WAY SQUARE KEYHOLE



G02 RECTANGLE WITH TABS



G03 DOUBLE RECTANGLE



G04 CABLE CONNECTOR WITH TABS

G05 9-WAY CORNER ROUNDING

ADD-ONS

General	
Radius Corner	Add 10% to punch and die
Non-Standard Straight Before Radius (SBR) Dimension	Add 25% to punch
Extra Back Taper (1 degree per side)	Add 25% to punch
Special Angle Settings	Add 25% to die
Optional Shear (Limited Options)	No charge
Shock Steel - for rectangles and squares when total clearance is greater than 0.024(0.60)	Add 25% to die
Optional 77,00mm (long) or 77,50mm (extended) lengths	
Flat shear only; Size 1, Size 2, Size 40 and Size 76	No charge
Small Diameter Round Tools	
Diameter 0.031 (0.79) to 0.061 (1.55)	Add 25% to punch and die
Diameter 0.062 (1.56) to 0.092 (2.34)	Add 10% to punch and die
Narrow Width Shaped Tools	
Widths under 0.125 (3.18)	Add 25% to punch, stripper, and die
Maxima™ Coating or Nitride Treatment	
Trumpf Style Tooling	
Size 0-A and Size 0-B	Additional cost to punch price
Size 1 and Size 1-X	Additional cost to punch price
Size 2	Additional cost to punch price
Size 3	Additional cost to punch price
Slitting Insert	Additional cost to punch price
Multi Tool: 4, 5, 6, and 10 station	Additional cost to punch price
Mate QuickLock™	
Size 1	Additional cost to punch price
Size 2	Additional cost to punch price
Mate NEXT™	
Size 40	Additional cost to punch price
Size 76	Additional cost to punch price
Non-Standard Design Features:	Call for Quote

EASYVIEW O-RINGS

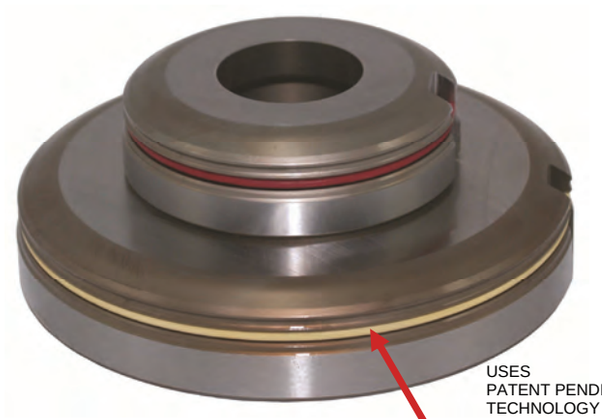
Introducing Lean Visual Management Capability for size 1 and size 2 Trumpf style dies.
Mate's patent pending EasyView™ technology uses a colored O-ring for clear and instant identification.

- **Fully compatible with existing Trumpf die inventories**
- **No die key interference**
- **O-rings manufactured from oil resistant butyl rubber for years of service life**
- **Available in five distinct colors for optimum differentiation**

Use the simple removable O-ring to identify a specific feature of the die making it faster and easier for the user to make the correct decision every time. Eliminate wasted time looking for the correct tool.

Order Trumpf EasyView™ today!

Examples of Use	Criteria	Color
Material Type	Mild Steel	Black
	Aluminum	Red
	Stainless Steel	Yellow
Material Thickness	0.040(1.00)	Green
	0.059(1.50)	Yellow
	0.078(2.00)	White
Die Clearance	0.008(0.20)	Red
	0.012(0.30)	Yellow
	0.016(0.40)	Green
Machine Location	Machine #1	Red
	Machine #2	White
	Machine #3	Black
Shift	Days	White
	Nights	Black
Status	OK to use	Green
	To be Sharpened	Red



Ordering Information		BLACK	RED	GREEN	YELLOW	WHITE
TRUMPF SIZE 1 O-RING	PACK OF 5	MATE01349	MATE01350	MATE01351	MATE01352	MATE01353
TRUMPF SIZE 2 O-RING	PACK OF 5	MATE01354	MATE01355	MATE01356	MATE01357	MATE01358

Not available for Minimatic dies.

TRUMPF STYLE SPECIAL APPLICATIONS AVAILABLE FROM STOCK!

Mate now has a huge inventory of Special Applications in stock for immediate delivery! Mate special applications from stock enable you to produce your parts sooner, more efficientl , and more profitabl . Order yours today!

Tapping Extrusion

Station	Inside Diameter	Material Thickness	Stock Part Number
Size 2	M4 - 0.131(3.32) +/-0.001(0.02)	0.056(1.42) to 0.062(1.57)	XTT2D0D100-0005
Size 2	M4 - 0.131(3.32) +/-0.001(0.02)	0.035(0.89) to 0.039(0.99)	XTT2D0D100-0006
Size 2	M5 - 0.166(4.22) +/-0.001(0.02)	0.056(1.42) to 0.062(1.57)	XTT2D0D100-0003
Size 2	M5 - 0.166(4.22) +/-0.001(0.02)	0.035(0.89) to 0.039(0.99)	XTT2D0D100-0004
Size 2	M6 - 0.197(5.00) +/-0.001(0.02)	0.056(1.42) to 0.062(1.57)	XTT2D0D100-0001
Size 2	M6 - 0.197(5.00) +/-0.001(0.02)	0.035(0.89) to 0.039(0.99)	XTT2D0D100-0002

Shearbutton

Station	Inside Diameter	Material Thickness	Stock Part Number
Size 2	0.197(5.00)	0.188(4.77) Max	XTT2D0S100-0001
Size 2	0.200(5.08)	0.188(4.77) Max	XTT2D0S100-0002

Centerpoint

Station	Inside Diameter	Material Thickness	Stock Part Number
Size 1	Down	0.250(6.35) Max	XTT1D0P200-0001

Universal Countersink

Station	Inside Diameter	Material Thickness	Stock Part Number
Size 1	82 deg	0.250(6.35) Max	XTT1D0B201-0001
Size 1	90 deg	0.250(6.35) Max	XTT1D0B201-0002
Size 1	120 deg	0.250(6.35) Max	XTT1D0B201-0003

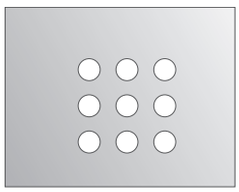
Custom Applications

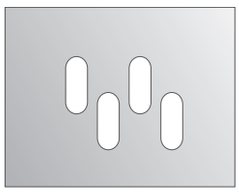
Station	Inside Diameter	Material Thickness	Stock Part Number
Size 2	Mate Rollerball®		XTT2D0RB99
Size 2	Mate Sheetmarker®		XTT2D0SM99
Size 2	Mate Rollerball® Deburr		XTT2D0RD99

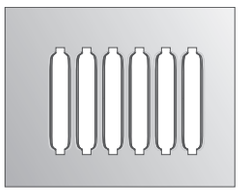
*Stock Ground Symbol Stamp is not compatible with newer Trumpf machines. Contact Mate Customer Service for more information.

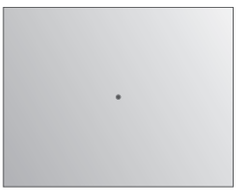
Dimensions in inches (millimeters)

SPECIAL APPLICATIONS


Cluster – Round


Cluster – Shape


Card Guide


Centerpoint


Countersink – Round


Countersink – Shape

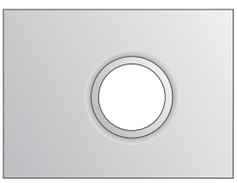

Emboss – Beading


Emboss – Edgeform

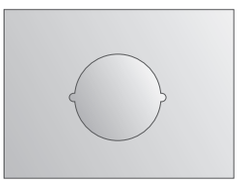

Emboss – Formed (Round and Shaped)

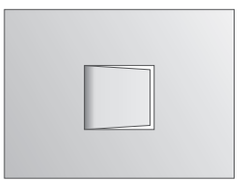
Emboss – Cold Forged


Extrusion – Tapping

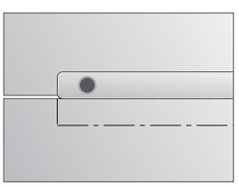

Extrusion – Flanged Hole

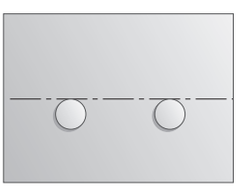

Hinge Tool


Knockout


Lance And Form


Louver


Scissortool™

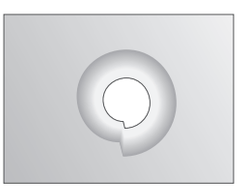

Shearbutton (Round and Shaped)


Rollerball™

Sheetmarker™

Stamping – Alpha Numeric


Stamping – V-line


Threadform

See **MATE** Forming Tool Order Guide for forming tool ordering specifications..

Ask for part number **LIT00002**

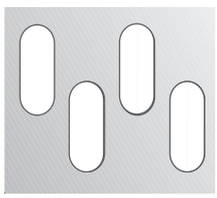
SPECIAL APPLICATIONS

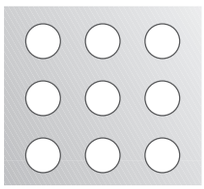
Cluster

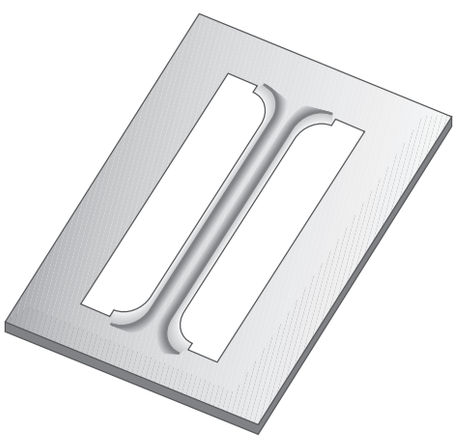
Produce multiple holes with minimal hits.

Typical Application:
- Material thickness from 0.020(0.50) to 0.157(4.00).
- Other restraints 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.







Card Guide

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.

Dimensions in inches (millimeters)

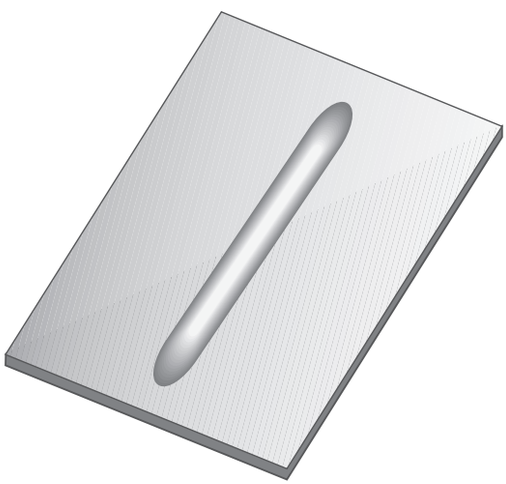
SPECIAL APPLICATIONS

Countersink—Dedicated

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—Beading

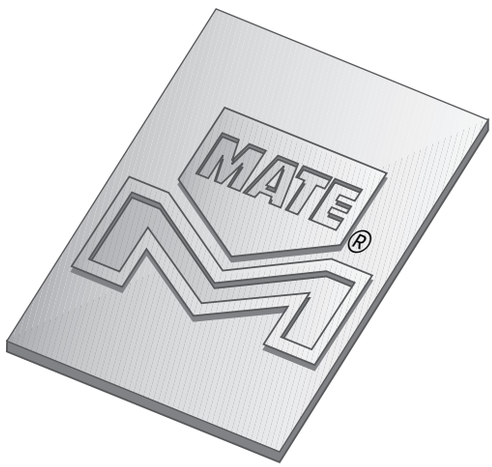
A stiffener to add rigidity to sheet metal panels.

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.

SPECIAL APPLICATIONS

Emboss—Cold Forged



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.

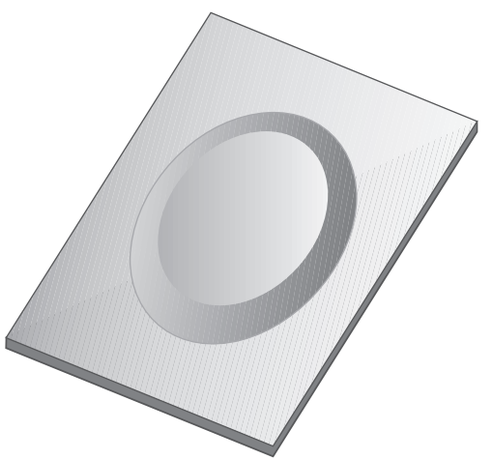
Comments:
- An exact drawing, CAD file, or artwork of logo is required to produce this type of assembly.

Emboss—Formed

Provide 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.



Dimensions in inches (millimeters)

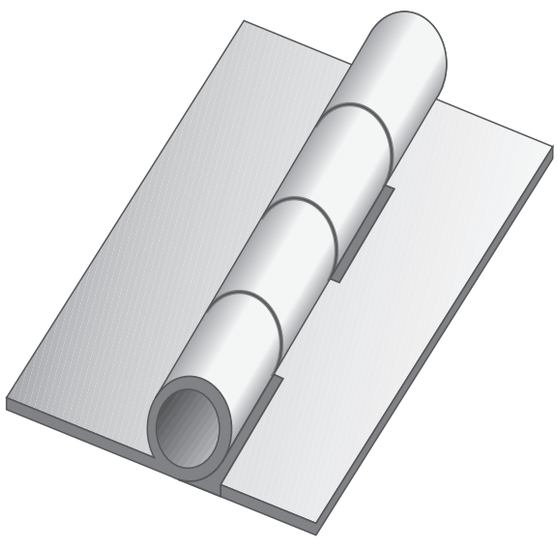
SPECIAL APPLICATIONS

Extrusion—Tapping

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.
- Diameter – 0.374(9.50) (M10 Screw thread).

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



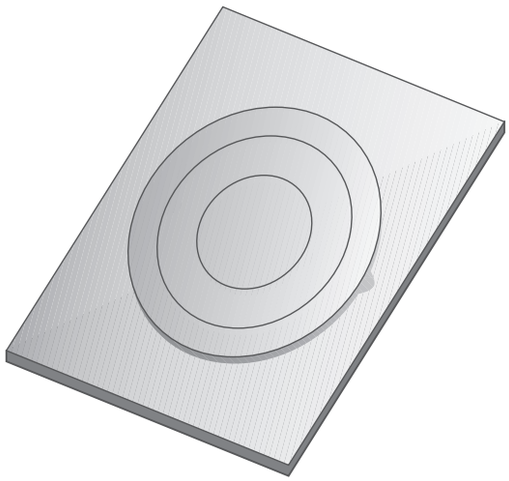
Hinge

Creates 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.

SPECIAL APPLICATIONS



Knockout

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.

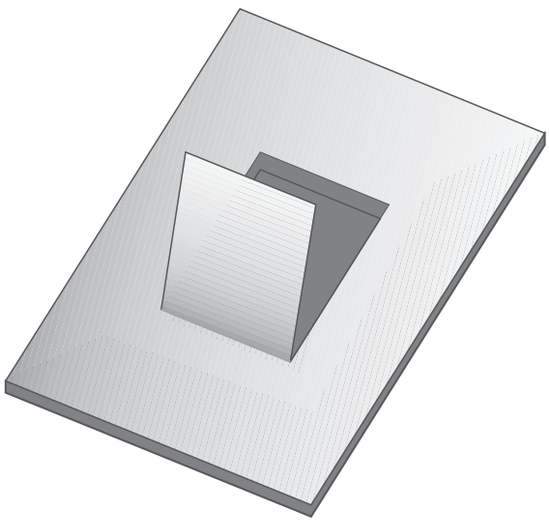
Comments:
- The tool can normally be used with other material thickness within a range of + or - 0.016(0.41) from design thickness.
- Maintain 0.236(6.00) difference between diameters used for knockout.

Lance And Form

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.



Dimensions in inches (millimeters)

See **MATE** Forming Order Tool Guide for forming tool ordering specific tions...

Ask for part number
LIT00002

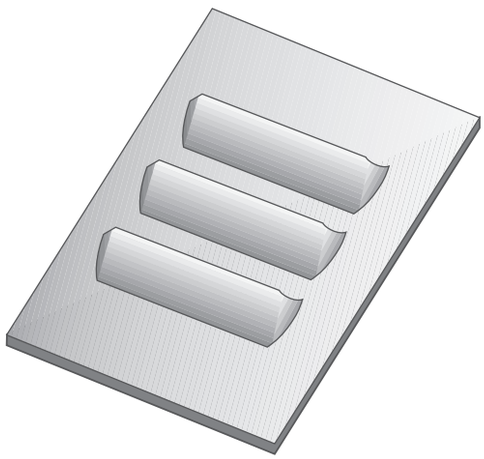
SPECIAL APPLICATIONS

Louver

Provides 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.



Insert Sizes Available

Fractional	Decimal	Metric
3/32	0.094	2.40
1/8	0.125	3.12
3/16	0.188	4.50
1/4	0.250	6.34

Stamp—Alpha Numeric

Provides indelible marking of alpha-numeric characters on the top or bottom of a 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.

See **MATE** Forming Order Tool Guide for forming tool ordering specific tions...

Ask for part number
LIT00002

SPECIAL APPLICATIONS

Threadform

Provides 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 Stamping

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.

Dimensions in inches (millimeters)

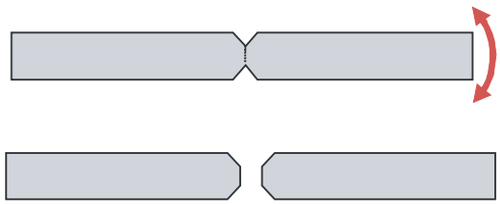
SPECIAL APPLICATIONS

Mate EasySnap™

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)

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



Mate HexLock™

Provides 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.

SPECIAL APPLICATIONS

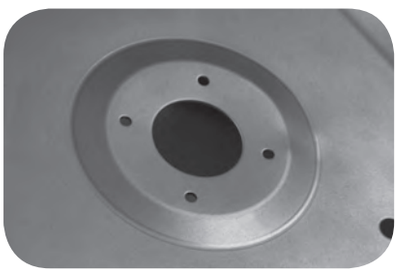
Rollerball™

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 is capable 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.

Patent Pending



Rollerball Deburr™

Punching processes frequently cause burrs on sheet metal parts. They are unavoidable. Removing them requires secondary deburring operations that are either performed manually or use specialized equipment. Now Mate helps you eliminate these costly secondary operations with the new Rollerball Deburr™ tool!

Typical Application:
- Materials of any thickness in mild steel, stainless steel and alum

Comments:
- The Mate Rollerball Deburr tool takes advantage of Mate's Rollerball™ technology by using the extended programming capabilities of punch presses that can operate in the x and y axis with the ram down.

  Rollerball Deburr pushes the burr away and creates a radius on the side of the part. Sold as a set, Rollerball Deburr comes complete with everything you need.

Patent Pending

XTT2D0RD00

Dimensions in inches (millimeters)

SPECIAL APPLICATIONS

Sheetmarker™

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

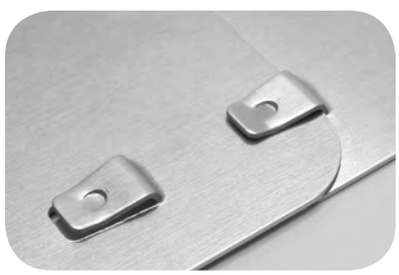
Patent Numbers: US 7,168,364 B2.
Europe 1 099 509. Singapore: 88336

Mate SnapLock™

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

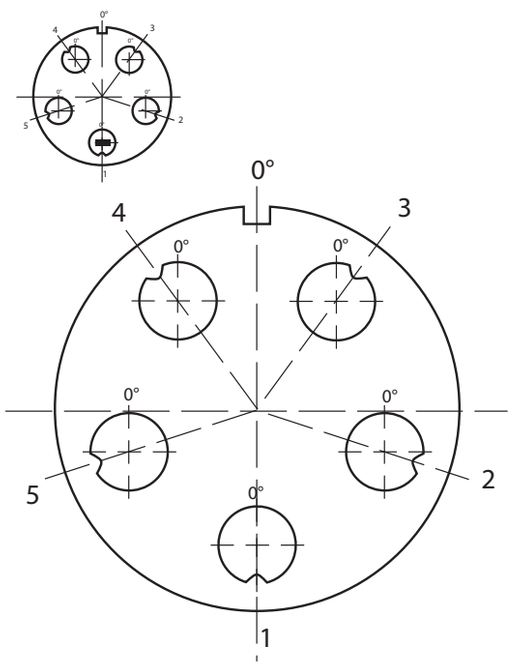
Typical Application:
- Material thickness from 0.020(0.50) up to 0.118(3.00).
- Other limitations include material type, station size, and press tonnage capacity.

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

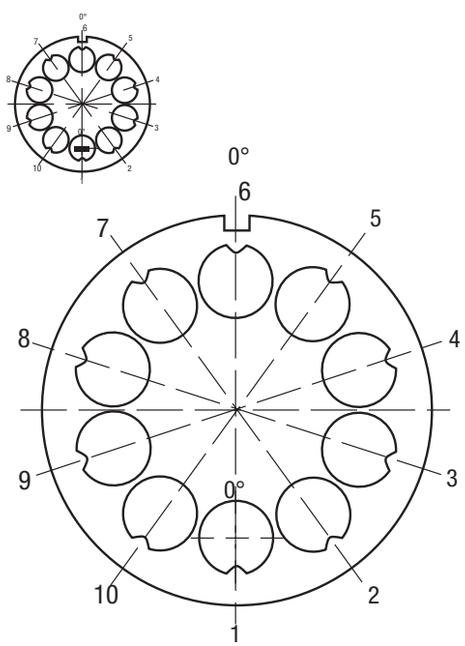


MULTI TOOL ANGLE SETTING

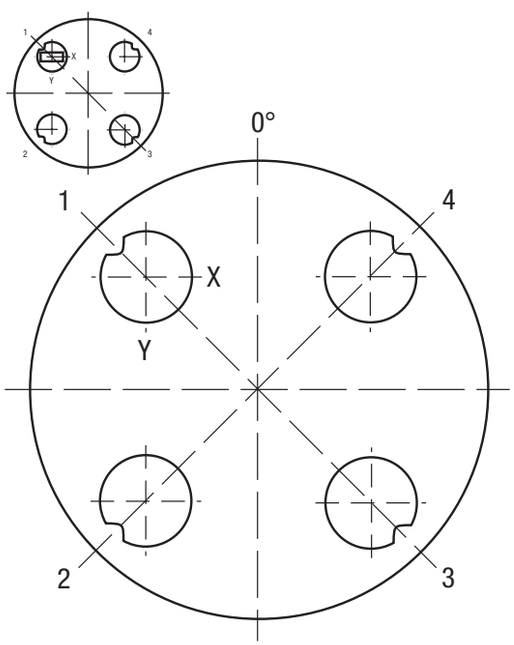
5-Station



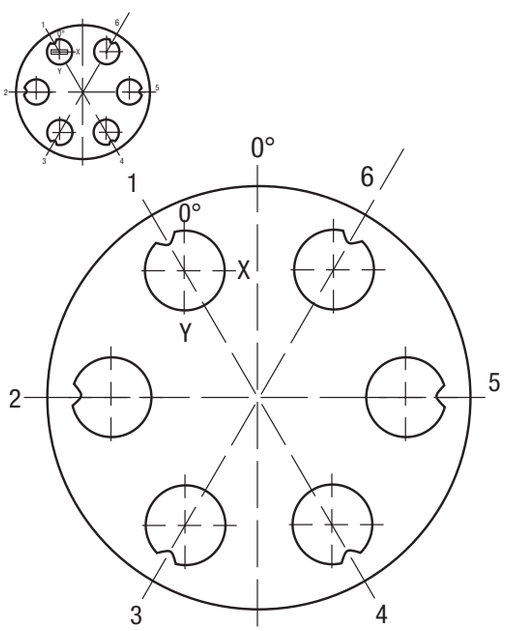
10-Station



4-Station



6-Station



Custom angle settings

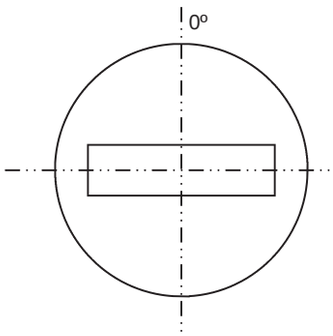
Custom angle settings are achieveable. Contact your customer service representative to discuss your specific needs.

Dimensions in inches (millimeters)

STANDARD SHAPE ANGLE SETTING

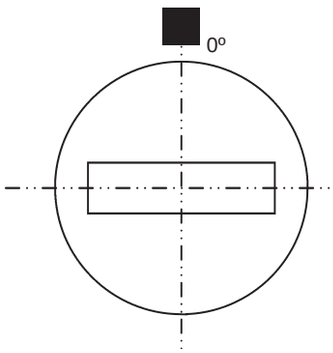
This page shows the location of the primary or (zero degree) orientation feature for punches, strippers, and dies. The orientation feature of a punch is a pin which engages with the alignment ring (Quicklock™) or punch holder (NEXT™). The orientation of a die is via a keyway, and strippers are oriented by a pair of pins.

Standard Punch



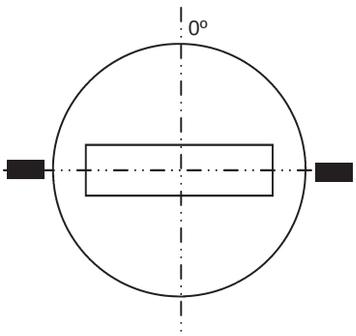
The standard punch is aligned with the alignment ring, and thus does not require an orientation feature.

Size 1 or 2 Die



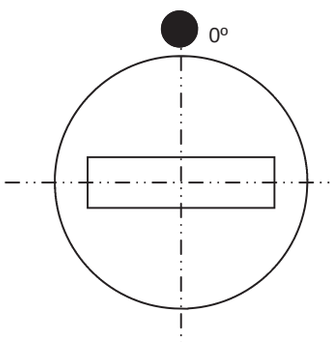
Additional keyways are provided dependant on shape symmetry, with the zero degree position on the longest flat edge, which is at the top. Examples: Rectangle has two keyways and the single-D has four keyways. The default angle setting is 90 degrees, as shown.

Size 1 or 2 Stripper



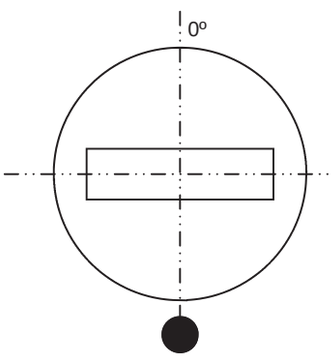
Additional pin locations are provided dependant on shape symmetry. The default angle setting is 90 degrees, as shown.

QuickLock™ Punch



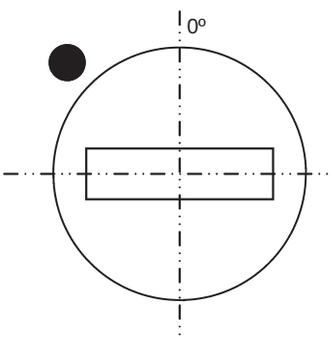
Where punch point diagonal is <2.000(50.80) the pin is positioned on the shank of the punch. The default angle setting is 90 degrees, as shown.

QuickLock™ Punch



Where punch point diagonal is >2.000(50.80) this pin is positioned on the shoulder of the punch. The default angle setting is 90 degrees, as shown.

NEXT™ Punch



The orientation pin is positioned on the shoulder of the punch. The default angle setting is 90 degrees, as shown.

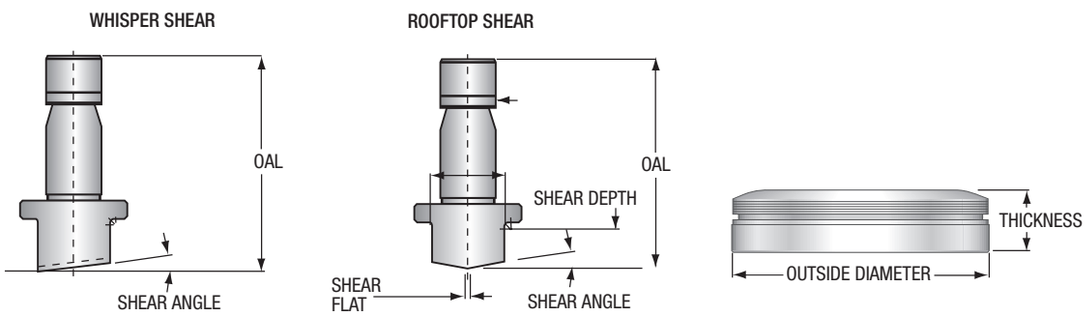
CRITICAL TOOL DIMENSIONS

			Flat (without shear)			Whisper		Rooftop	
Overall Punch Length Inch			2.910	3.030	3.050	3.030	3.050	3.030	3.050
Overall Punch Length Millimeters			74.00	77.00	77.50	77.00	77.50	77.00	77.50
Trumpf Style	Size 0-A	PATA_A*	●	❍	-	-	-	-	-
	Size 0-B	PATB_A*	●	❍	-	-	-	-	-
	Size 1	PATD_A	●	❍	❍	❍	-	❍	-
	Size 1-X	PATX_A	●	-	-	-	-	-	-
	Size 2	PATE_A	❍	❍	❍	●	-	❍	-
	Size 2	PATF_A	❍	❍	❍	●	-	❍	-
	Size 3	PATJ_A	-	-	-	-	-	●	-
QuickLock™	Size 1	PCTD_A	●	❍	❍	❍	❍	❍	❍
	Size 2	PCTE_A	❍	❍	❍	●	❍	❍	❍
	Size 2	PCTF_A	❍	❍	❍	●	❍	❍	❍
	Size 2	PCTG_A	❍	❍	❍	●	❍	❍	❍
	Size 2	PCTH_A	❍	❍	❍	●	❍	❍	❍
NEXT™	Size 40	PBTD_A**	●	❍	❍	❍	-	❍	-
	Size 40	PBTE_A**	●	❍	❍	❍	-	❍	-
	Size 76	PBTF_A**	❍	❍	❍	●	-	❍	-
	Size 76	PBTG_A**	❍	❍	❍	●	-	❍	-
	Size 76	PBTH_A**	❍	❍	❍	●	-	❍	-

● Standard ❍ No Charge Option - Option not available.

* Overall length when assembled into punch chuck

** Overall length when assembled into NEXT™ punch holder



	Station	Maximum Punch Point Diagonal	Whisper Shear Depth/Angle	Rooftop Shear Depth/Angle	Rooftop Shear Shear Flat	Die Dimensions Outside Diameter	Die Dimensions Thickness
Trumpf Style	Size 1	0.591(15.01)	5 degrees	10 degrees	0.050(1.27)	2.362(60.00)	0.709(18.00)
	Size 1	1.181(30.00)	5 degrees	5 degrees	0.050(1.27)	2.362(60.00)	0.709(18.00)
	Size 2	3.0063(76.36)	0.110(2.79)	0.110(2.79)	0.100(2.54)	3.937(100.00)	0.789(20.00)
	Size 3	4.134(105.00)	0.110(2.79)	0.110(2.79)	0.100(2.54)	5.905(150.00)	
QuickLock™	Size 1	0.643(16.33)	5 degrees	10 degrees	0.050(1.27)	2.362(60.00)	0.709(18.00)
	Size 1	1.181(30.00)	5 degrees	5 degrees	0.050(1.27)	2.362(60.00)	0.709(18.00)
	Size 2	3.000(76.20)	0.110(2.79)	0.110(2.79)	0.100(2.54)	3.937(100.00)	0.789(20.00)
NEXT™	Size 40	0.643(16.33)	5 degrees	10 degrees	0.050(1.27)	See size 1	
	Size 40	1.181(30.00)	5 degrees	5 degrees	0.050(1.27)	See size 2	
	Size 40	1.575(40.01)	0.110(2.79)	0.110(2.79)	0.100(2.54)	See size 2	
	Size 76	3.0063(76.36)	0.110(2.79)	0.110(2.79)	0.100(2.54)	See size 2	

Dimensions in inches (millimeters)

NOTES

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