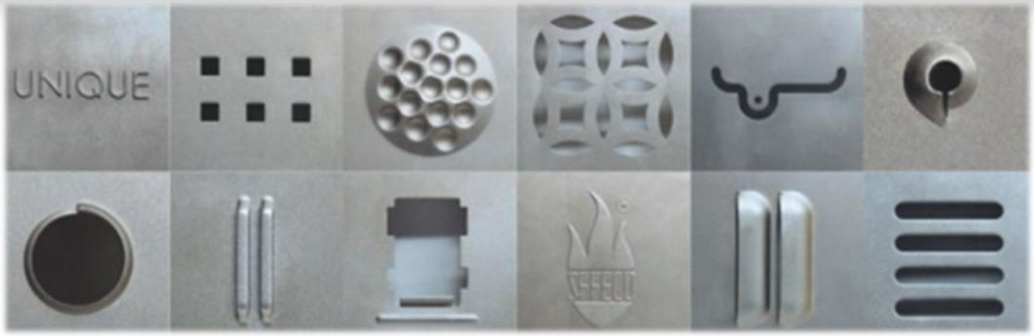
MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

Adding Value with Punching



Special Assemblies Gallery

Table of Contents (1)

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Click on the corresponding box to jump to the slide. Use  *to come back to this menu.*

Table of Contents (2)

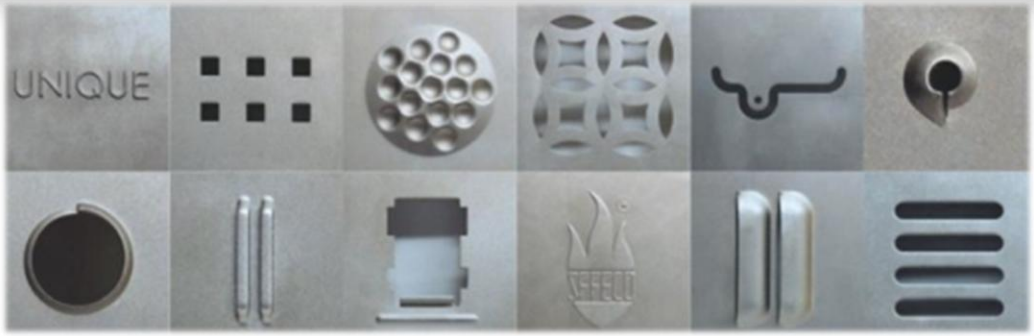
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Table of Contents (3)

MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

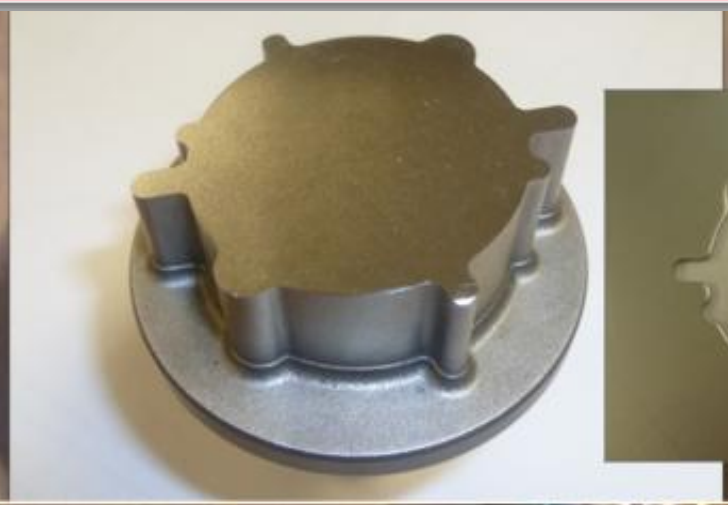
1. Special shapes, Clusters, Blanking

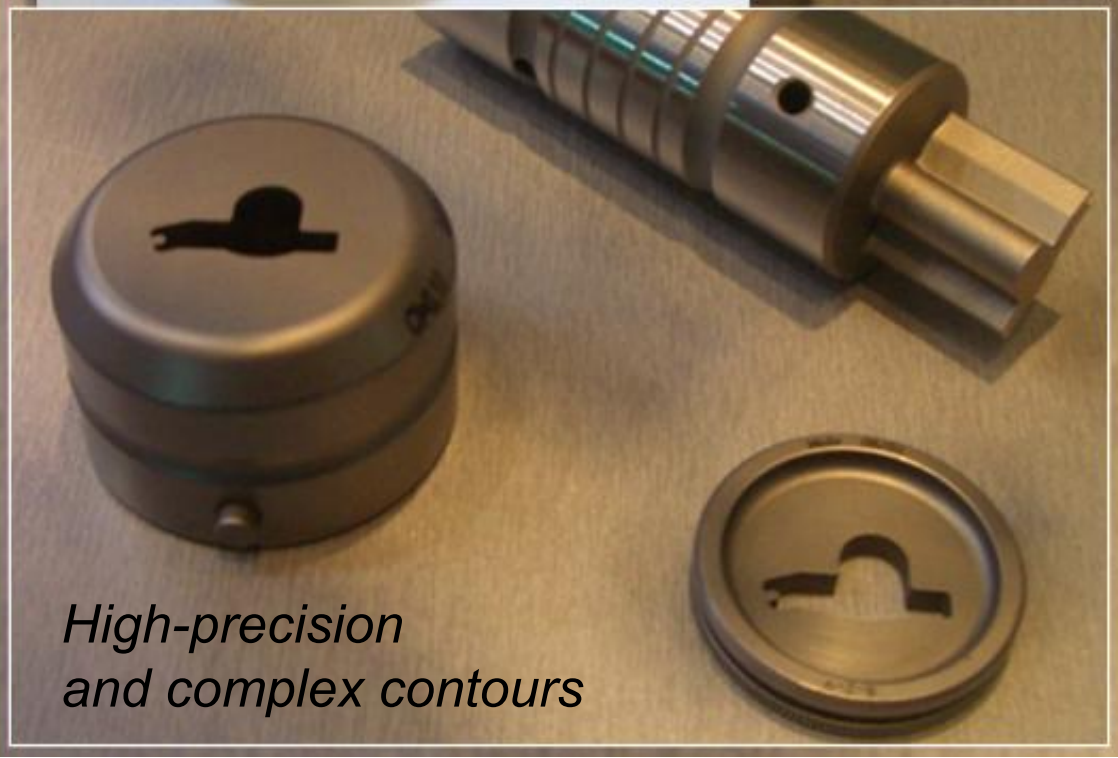


Special Assemblies Gallery

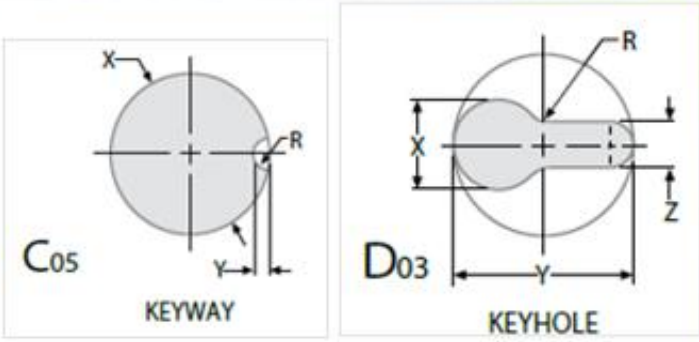
Special Shapes

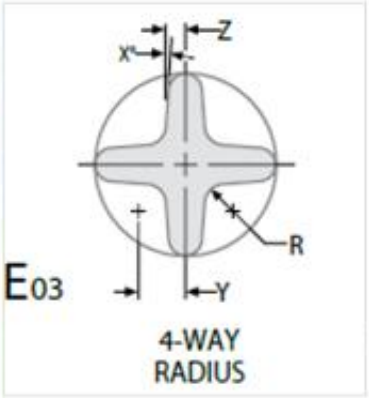
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

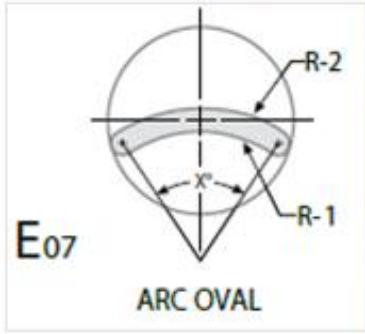


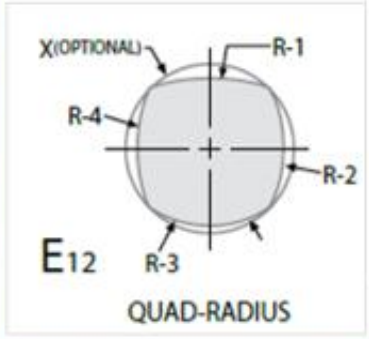


High-precision and complex contours









Special Shapes

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Special Shapes with 'Cantilever' in die

Special Shapes

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Fast and accurate punching of complex or multiple contours

Special Shapes

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Punch shape equal to contour line avoids nibbling and tool changing

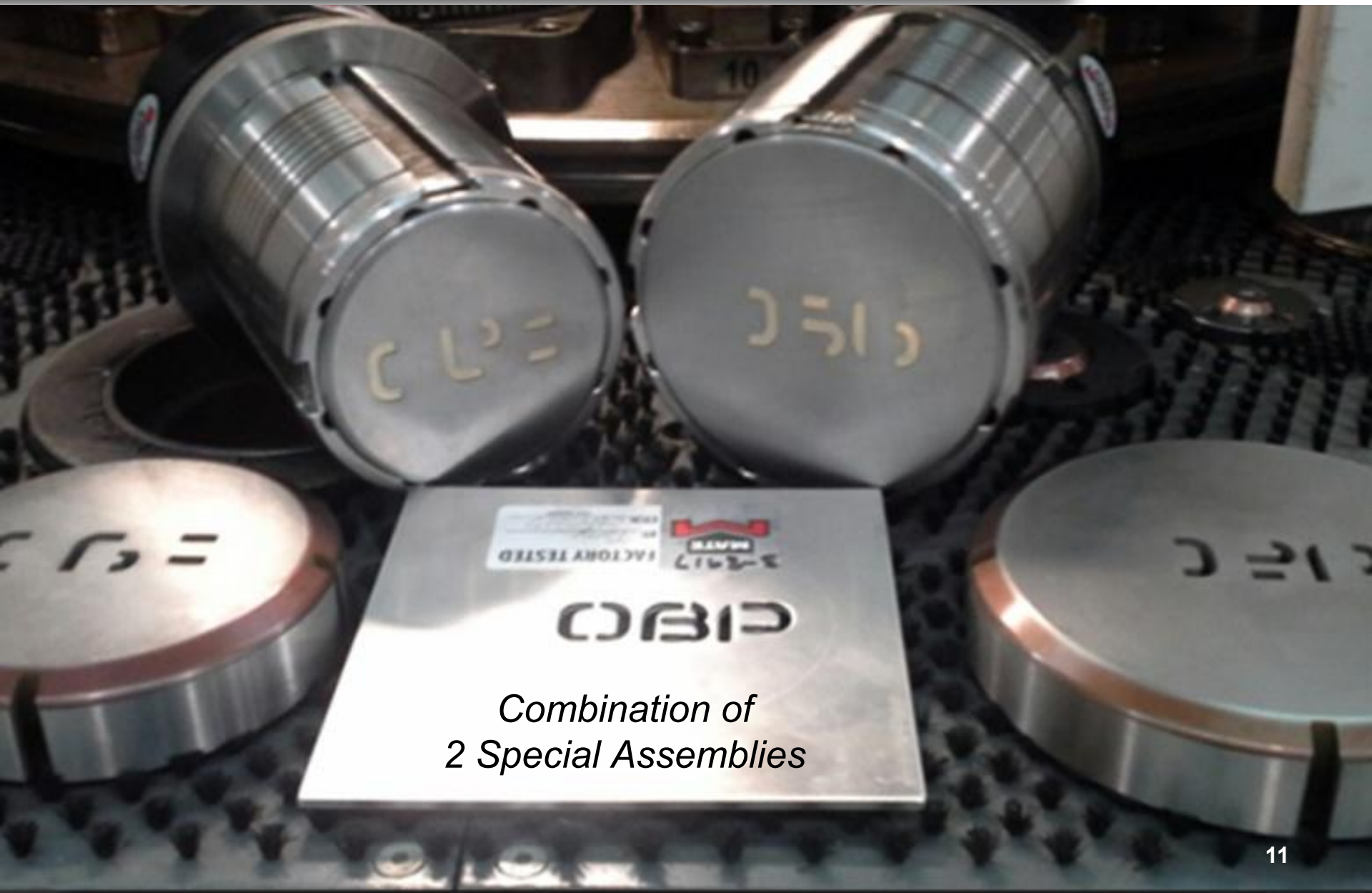
Special Shapes

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

One-hit cutting of complex corners with exact dimensions

Special Shapes

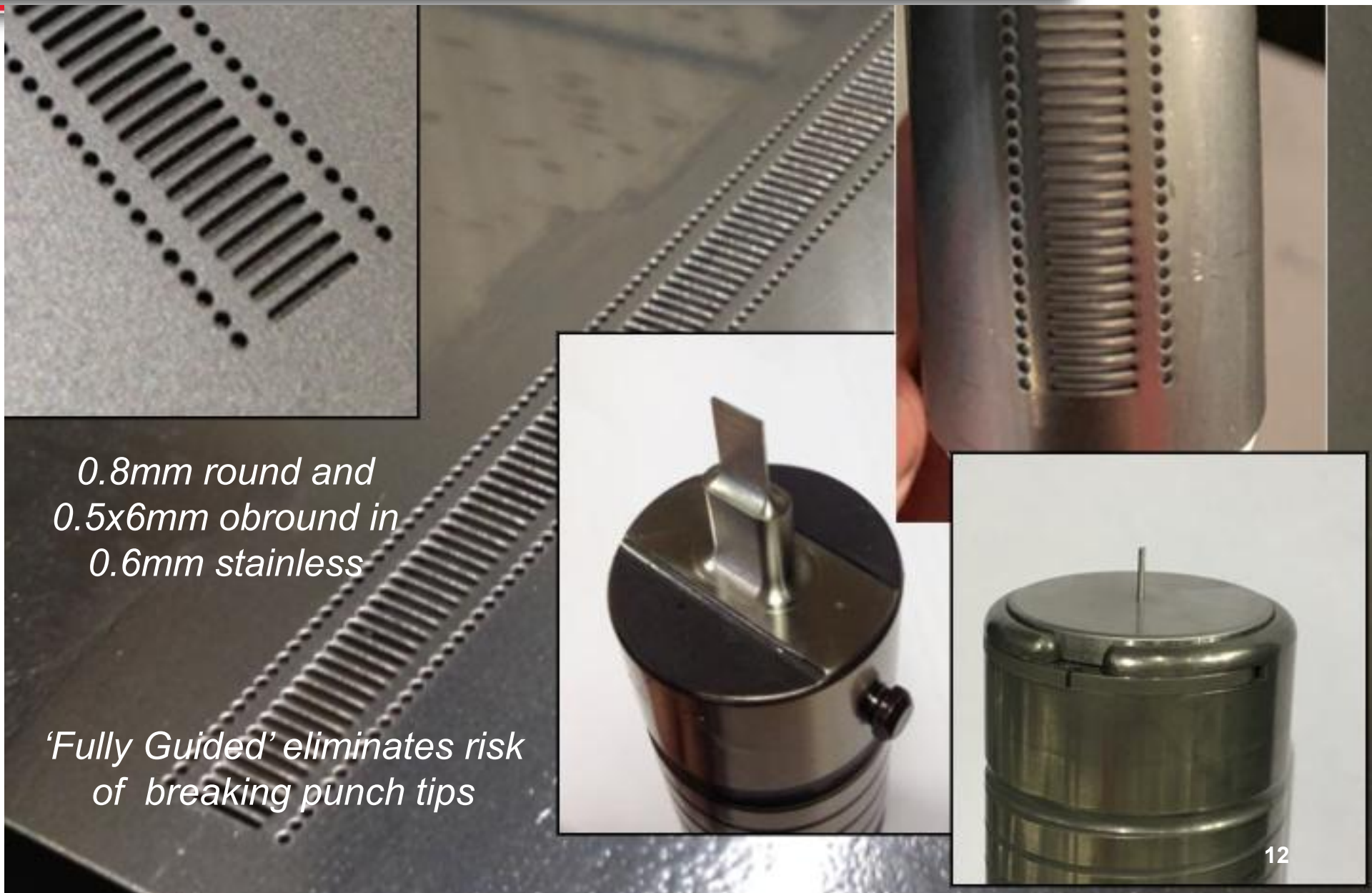
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Combination of
2 Special Assemblies

‘Fully Guided’ for smallest possible holes

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

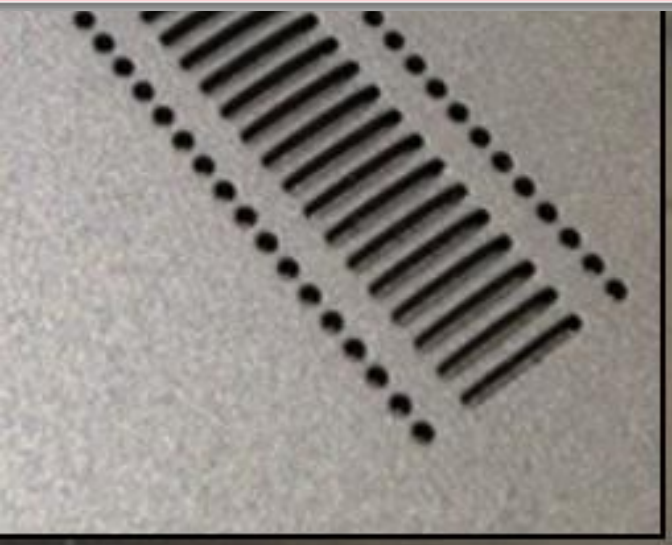


0.8mm round and
0.5x6mm obround in
0.6mm stainless

‘Fully Guided’ eliminates risk of breaking punch tips

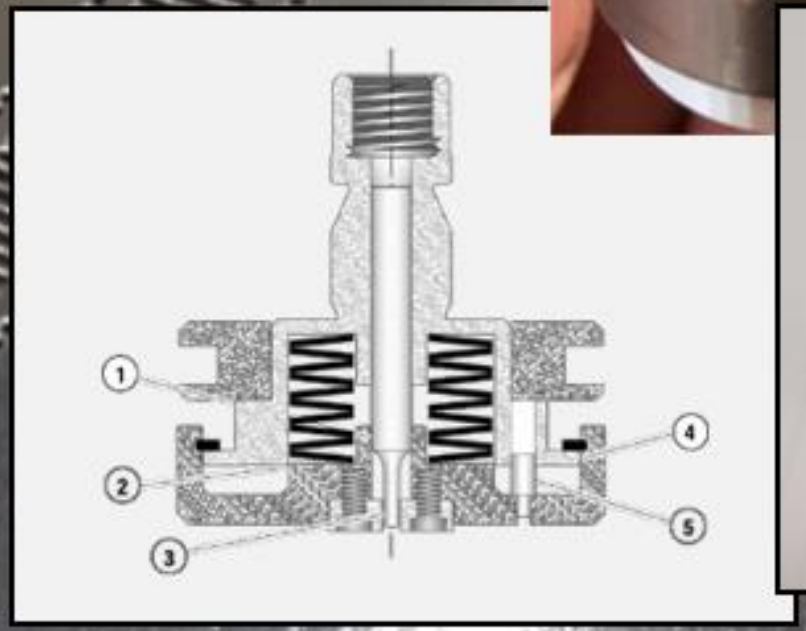
‘Fully Guided’ for smallest possible holes

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



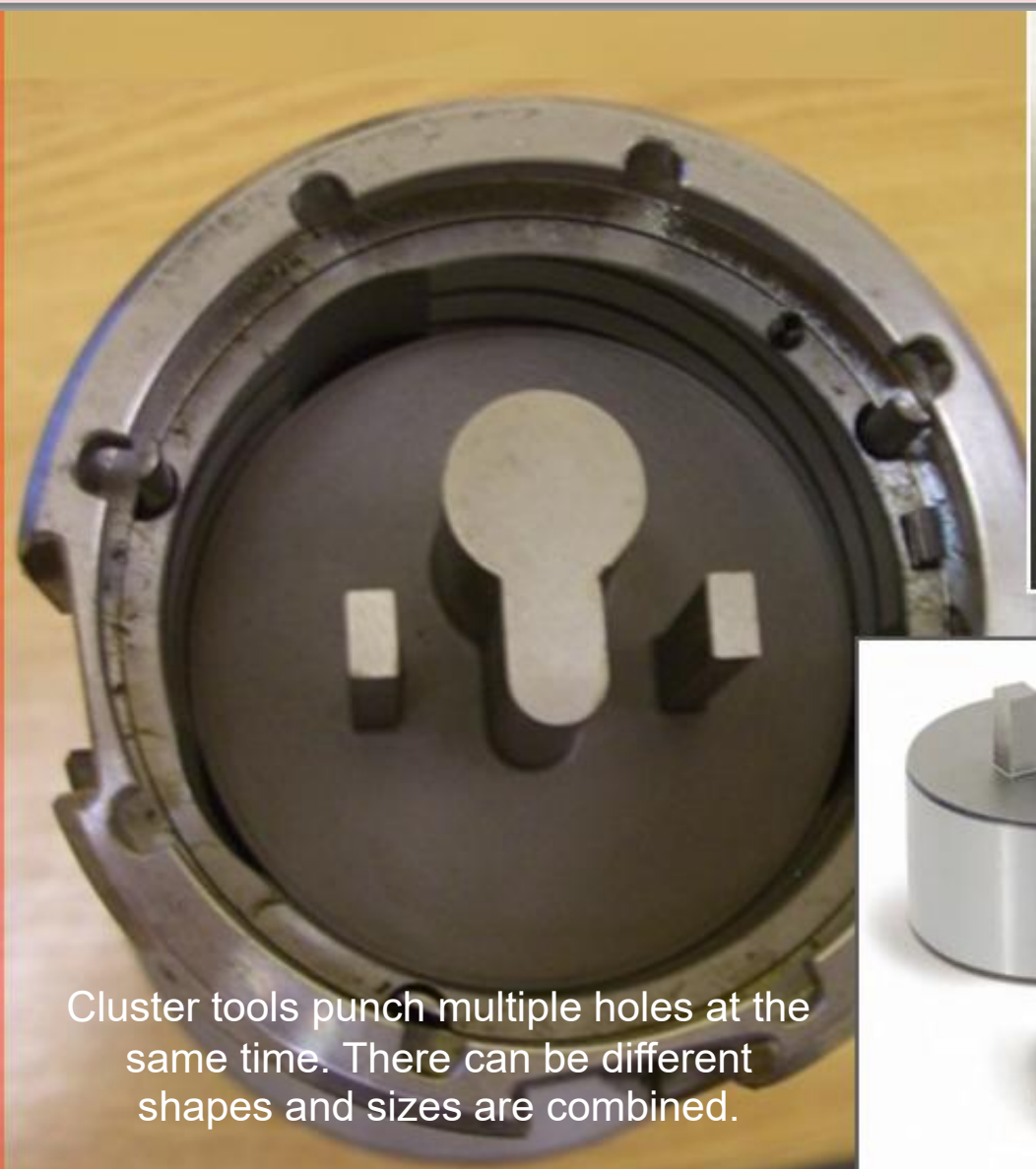
‘Fully Guided’ eliminates the risk of breaking punch tips

0.8mm round and 0.5x6mm obround in 0.6mm stainless



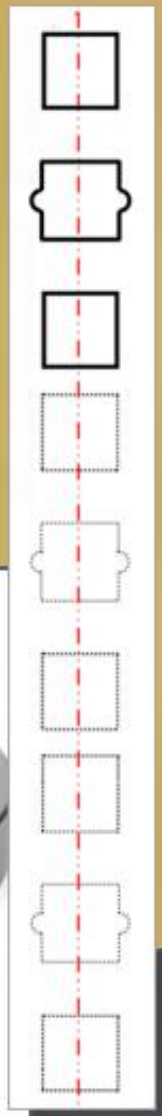
Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



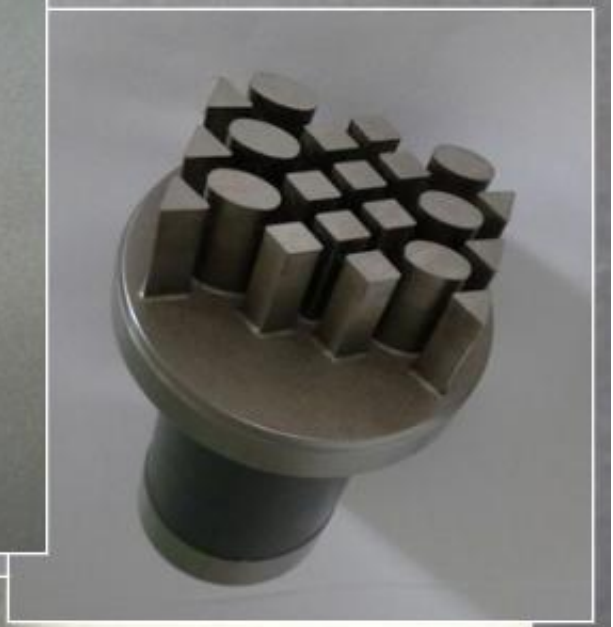
Cluster tools punch multiple holes at the same time. There can be different shapes and sizes are combined.

19” Racking Cluster Tool

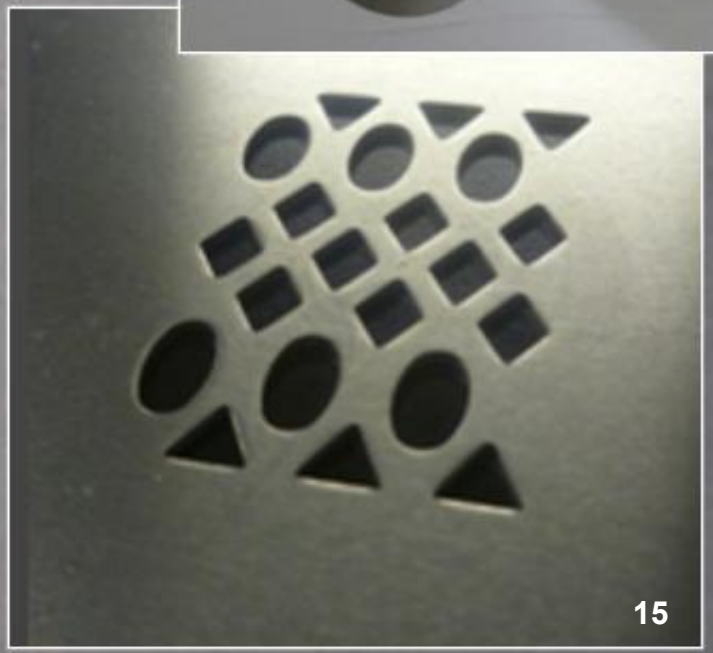


Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Solid Style Cluster Tools
(solid style allows closer punch points and maximum spread)



Cluster Applications

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Insert Style Cluster Tools:
higher initial cost,
but lower replacement cost

Cluster Applications

MATE PRECISION TECHNOLOGIES
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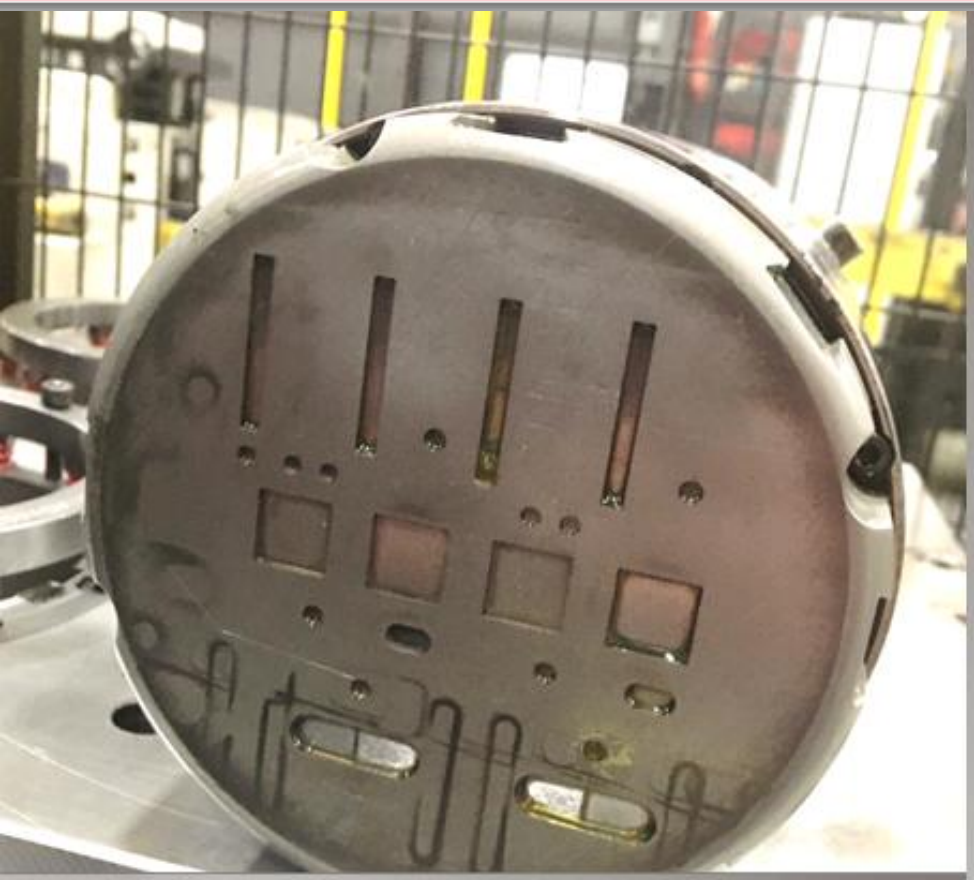
A cluster tool also guarantees exact center-to-center positions, at all times, also for future product runs and with a different machine in different tooling styles

Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



A cluster tool guarantees exact center-to-center positions, at all times, and also for future product runs

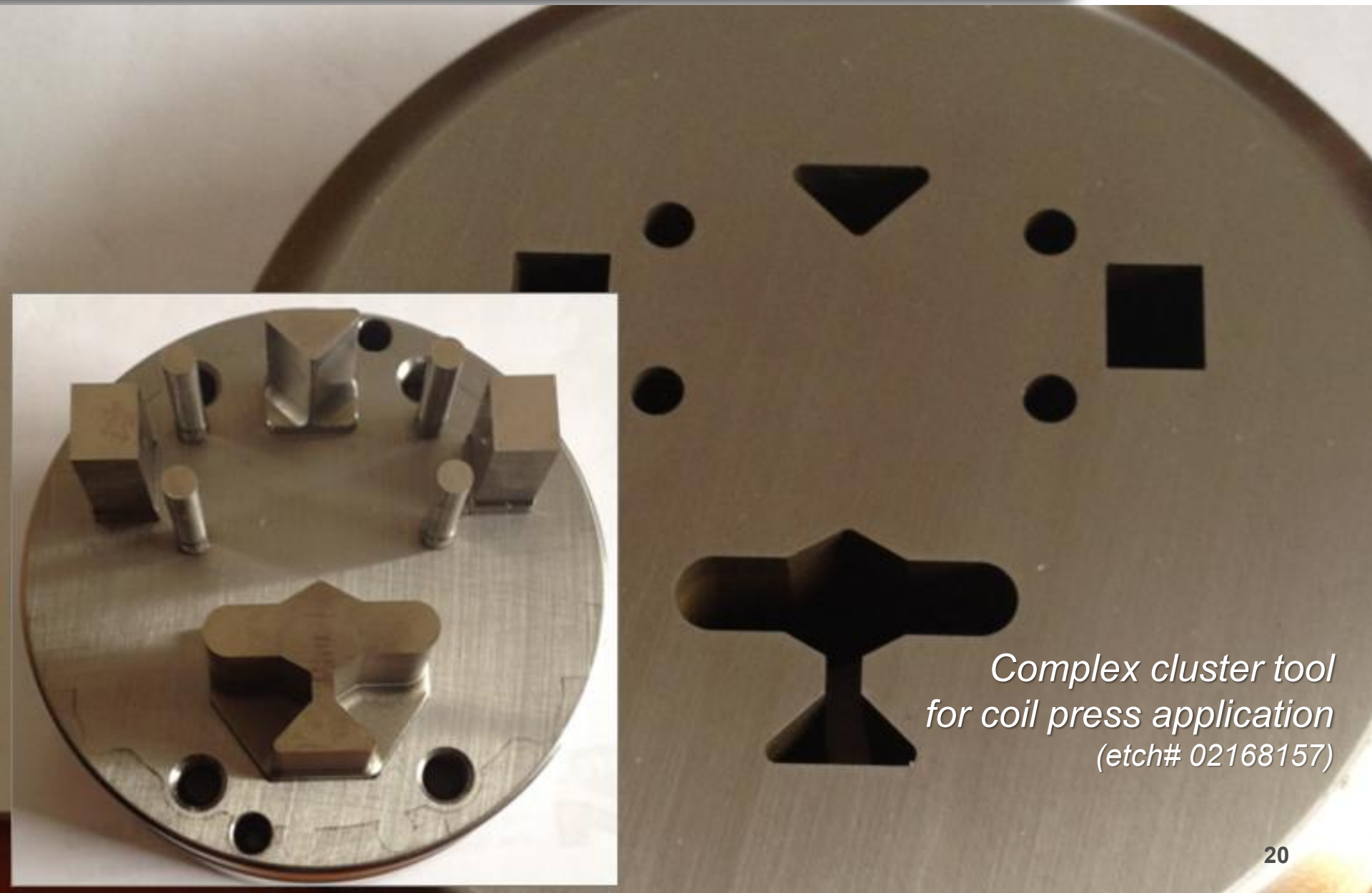
Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Multiple shape cluster tool

Cluster Applications

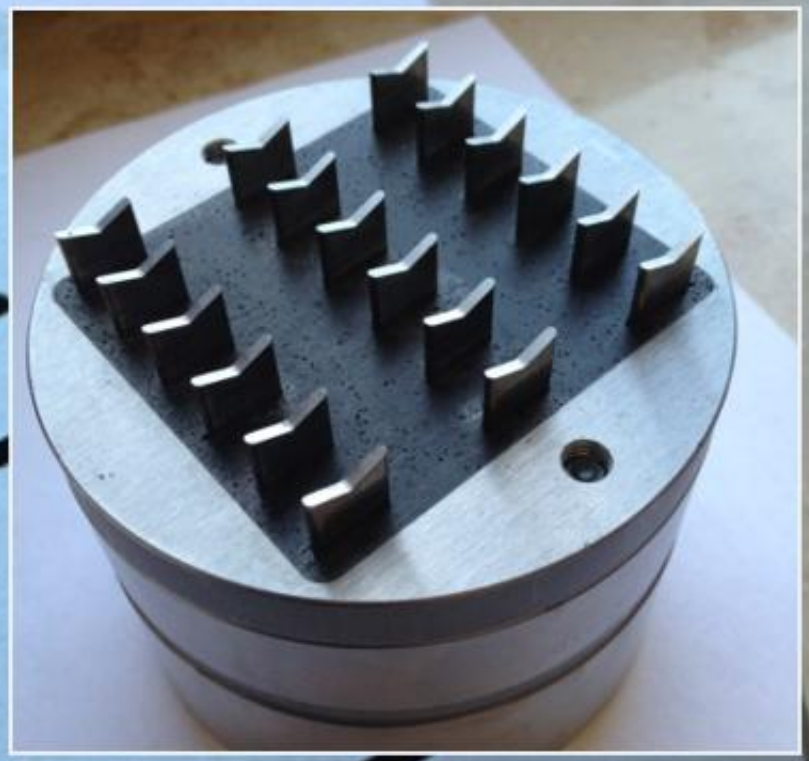
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Complex cluster tool
for coil press application
(etch# 02168157)

Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Perforating sheets with 18 hole shape cluster
(double spacing)

Cluster Applications

MATE PRECISION TECHNOLOGIES
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Perforating sheets with
20 and 120 hole cluster

Cluster Applications

MATE PRECISION TECHNOLOGIES
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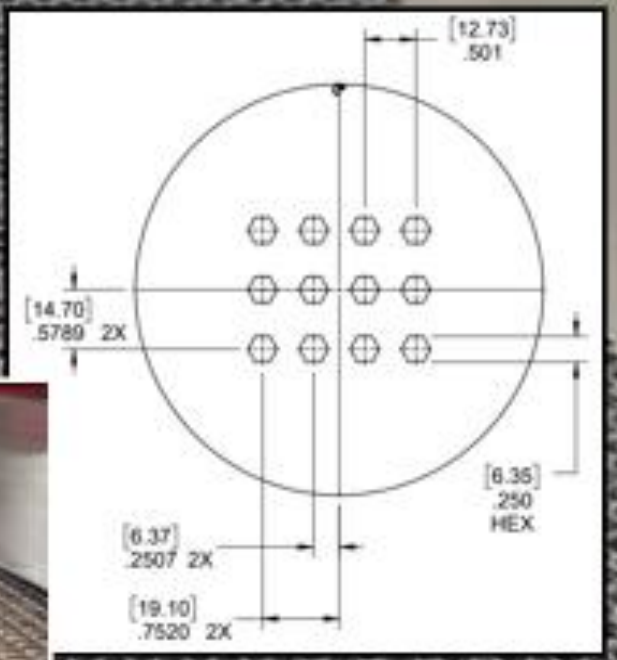
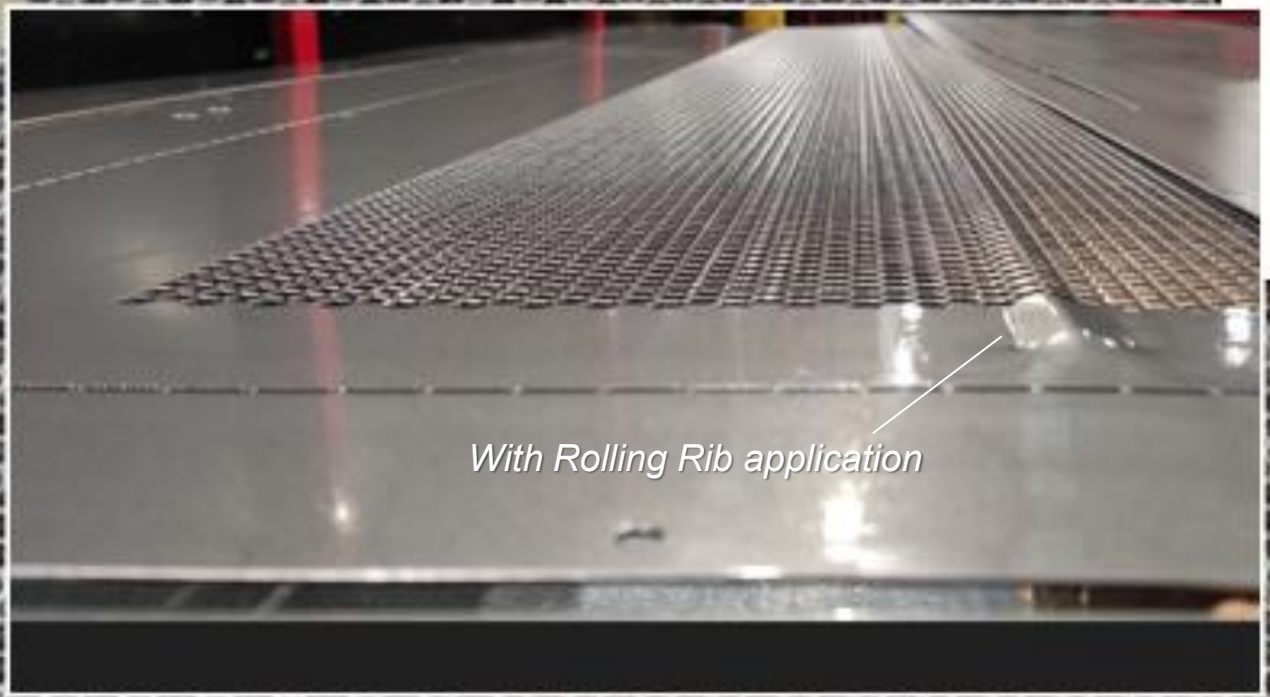
Flat perforated sheets with 'double-spaced' cluster
(Etch 11217122)





Cluster Applications

MATE PRECISION TECHNOLOGIES
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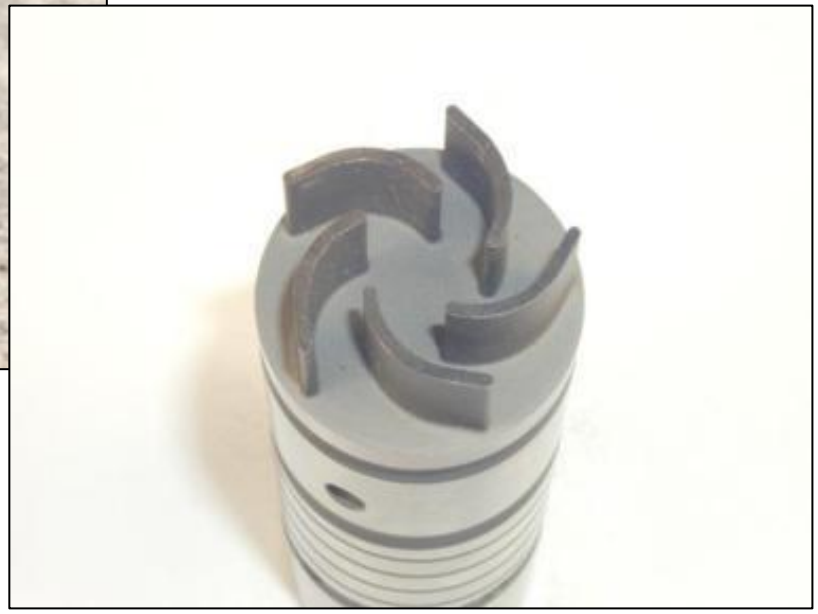
Insert Style and Solid Style Cluster Tools

Special Cluster Applications

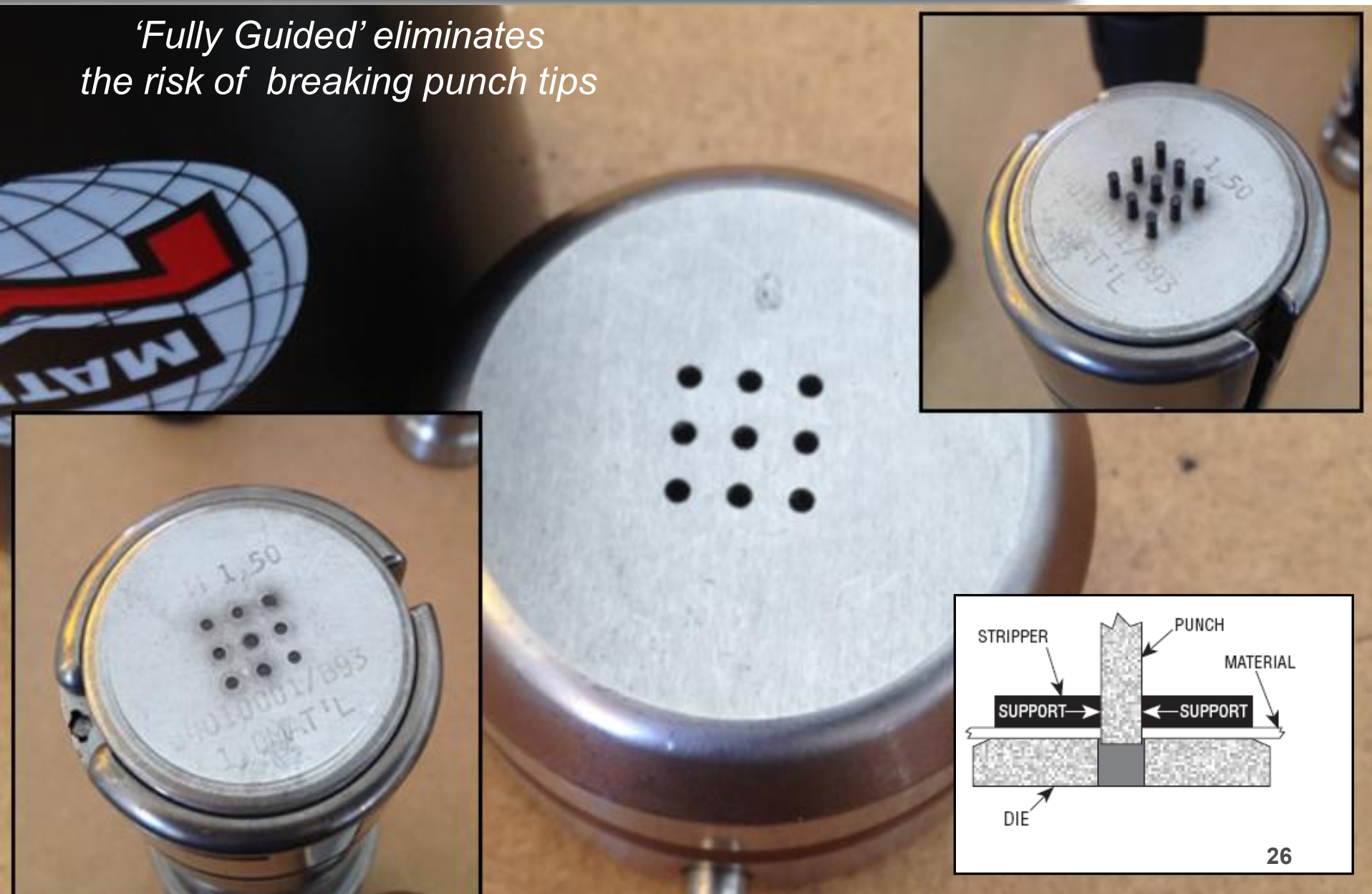
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



‘Fully Guided’ Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

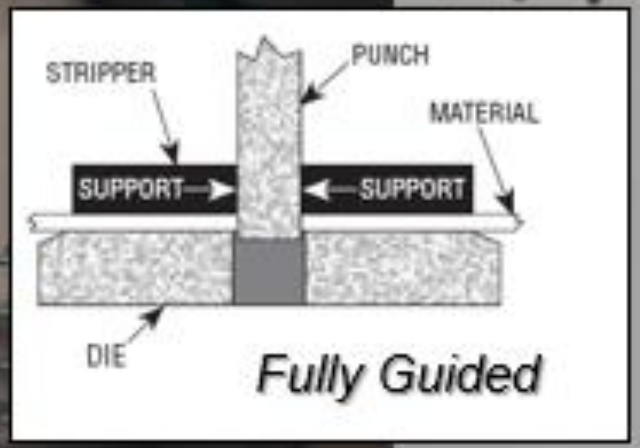
‘Fully Guided’ eliminates the risk of breaking punch tips



‘Fully Guided’ Cluster Tools

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

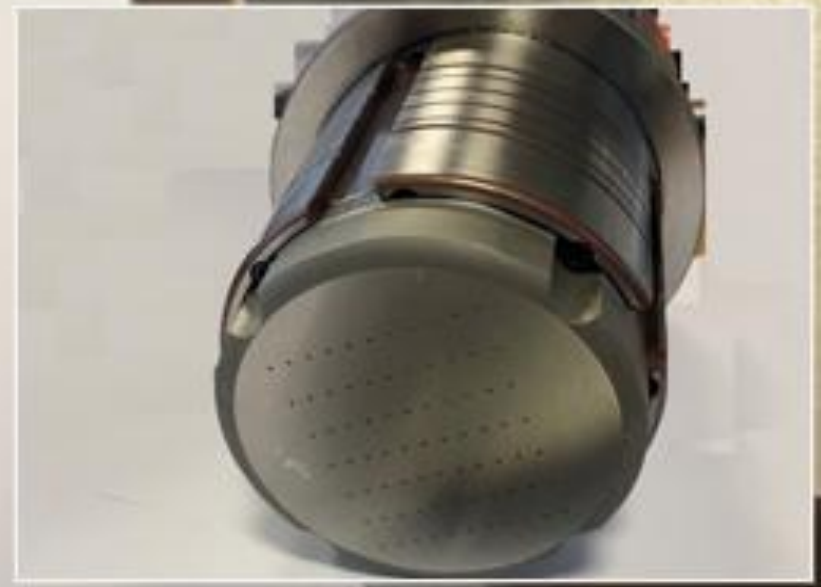
‘Fully Guided’ eliminates the risk of breaking punch tips



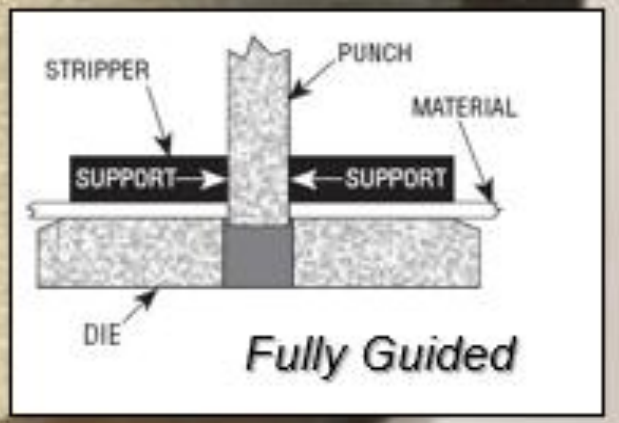
‘Fully Guided’ Cluster Tools

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

‘Fully Guided’ eliminates the risk of breaking punch tips

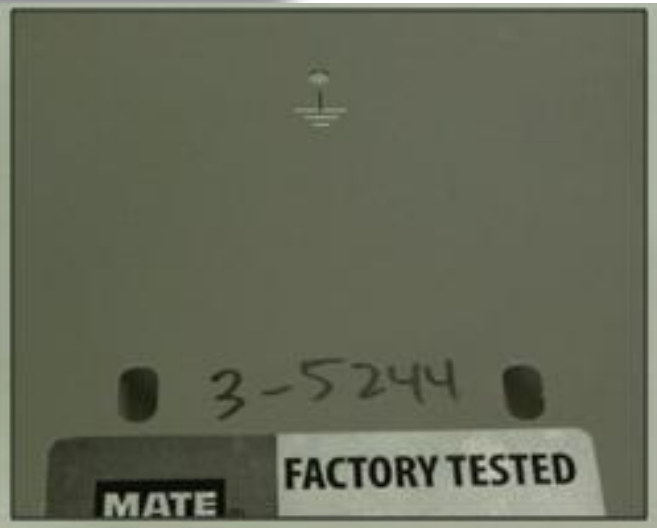


Tool Etch 02207060: 77 holes of 1,0mm dia. in one hit



Punching and Scribing in one Cluster Tool

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Combination of punching and V-line, in one (insert style) cluster tool
(etch# 01148246)

Special Shapes in ‘Fully Guided’ holder

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(Tool Etch 04227039)

Combination of Special Shapes in a Fully Guided tool design

Powder Steel Cluster Tools

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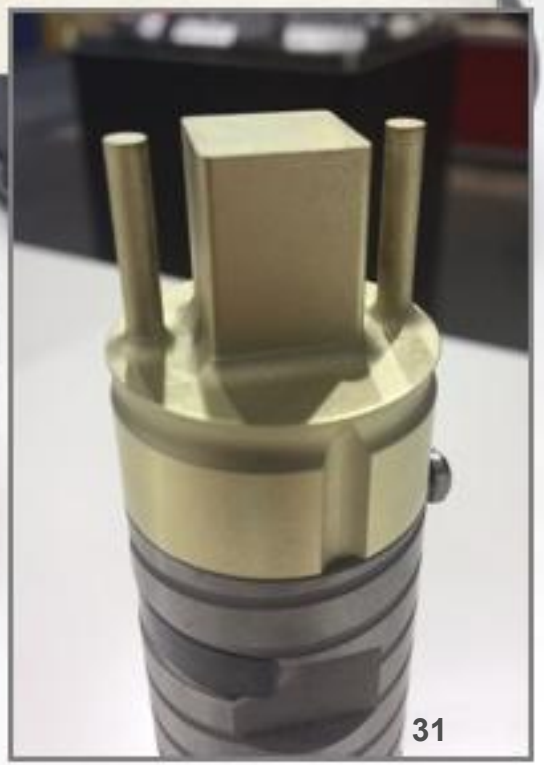
Powder Steel in cluster punches and dies reduces tool maintenance and increases machine uptime

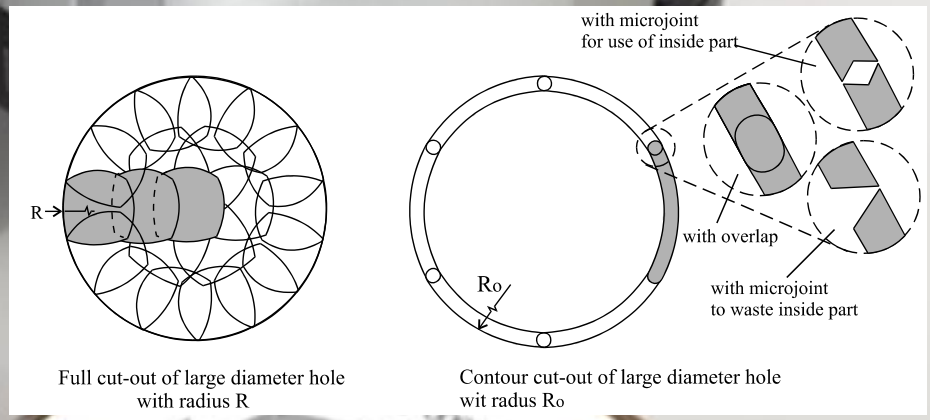


The VersaDie design helps keeping the sheet flatter

Mate ‘Trapter’

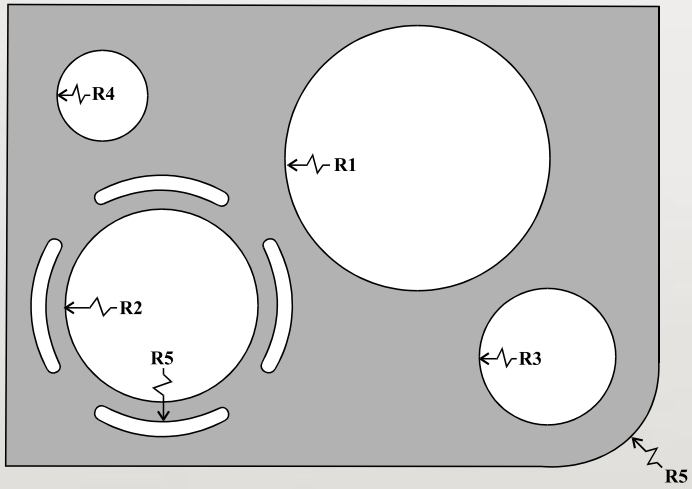
Re-use of expensive tooling
throughout different platforms
(D-station adapter for Trumpf style tooling)

Large round holes without nibbling

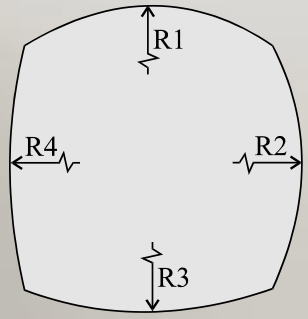


Full cut-out of large diameter hole with radius R

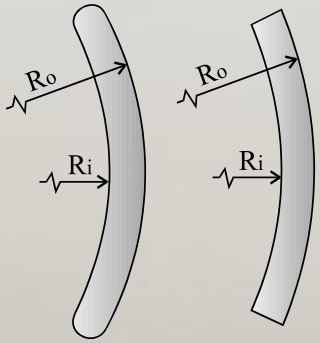
Contour cut-out of large diameter hole wit radus Ro



When indexing stations are available, large round holes can be punched out with quad radius or banana tools



Multi-Cut Tool
with 4 different radii



Banana Tools

Large round holes without indexing

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When no indexing stations are available, large round holes can still be punched out with 2 tools at 60° off from each other

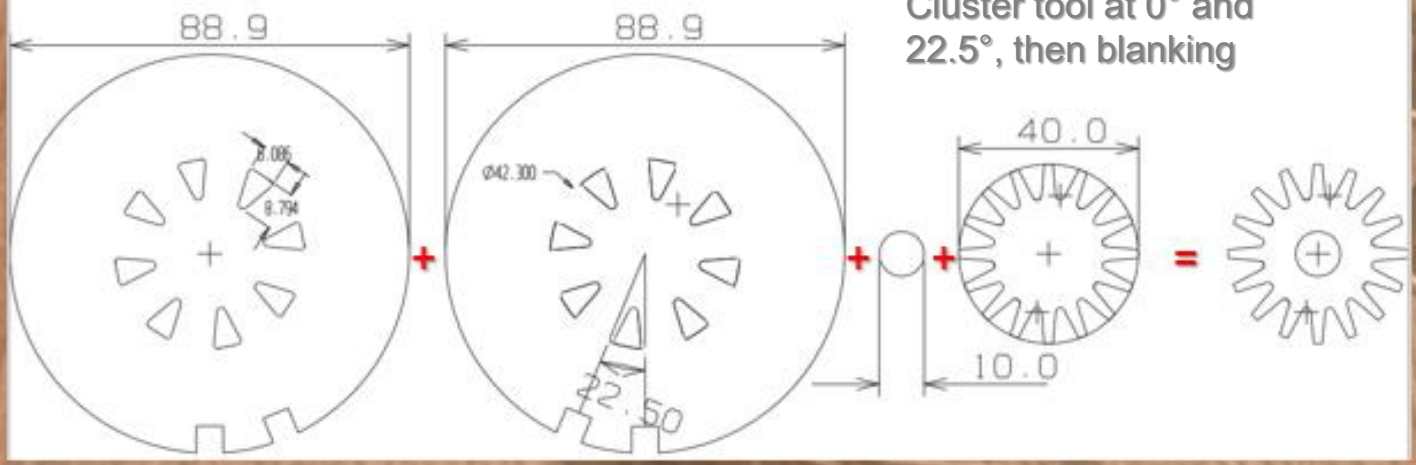
Special Shape Blanking

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

High-precision and complex contours can be blanked easily

Single hit blanking tool

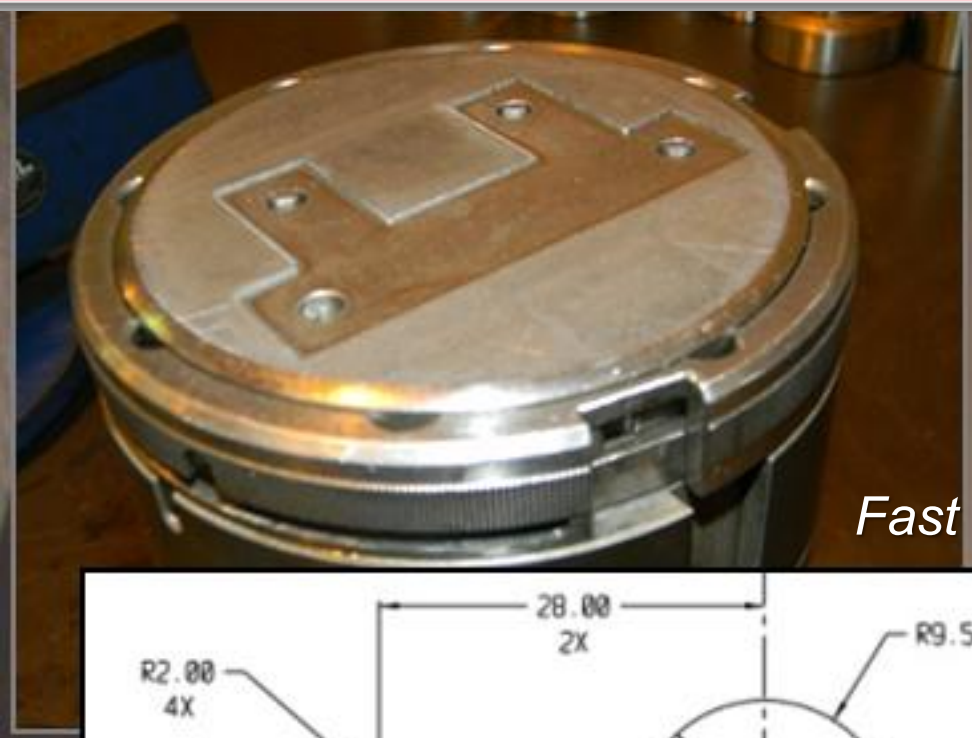
Alternative solution to eliminate cantilever risk in die

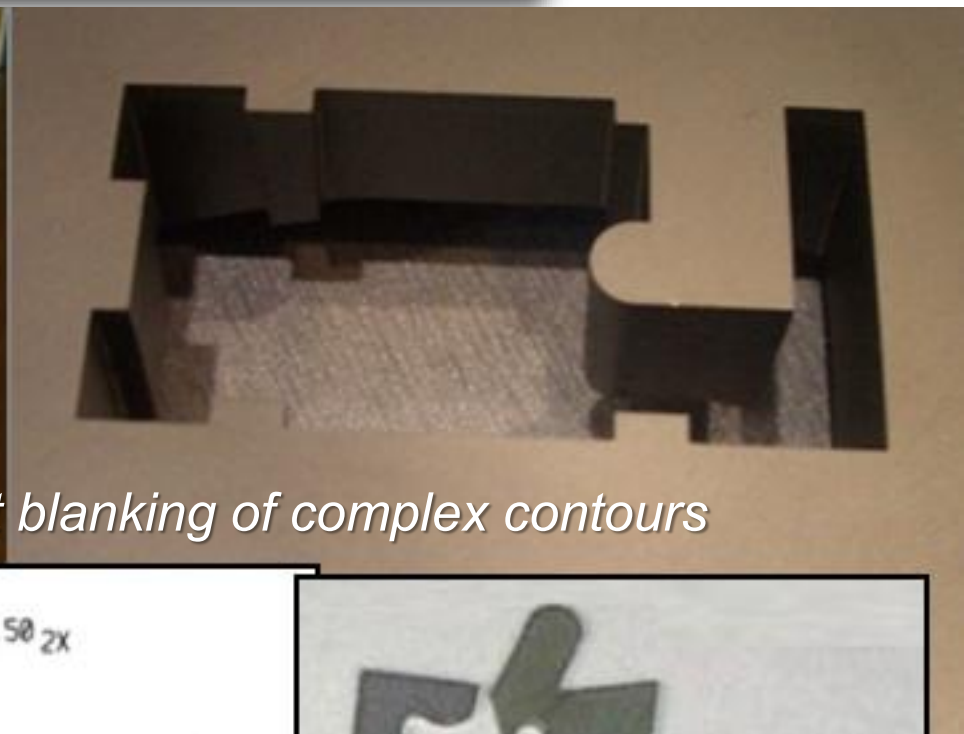


Cluster tool at 0° and 22.5°, then blanking

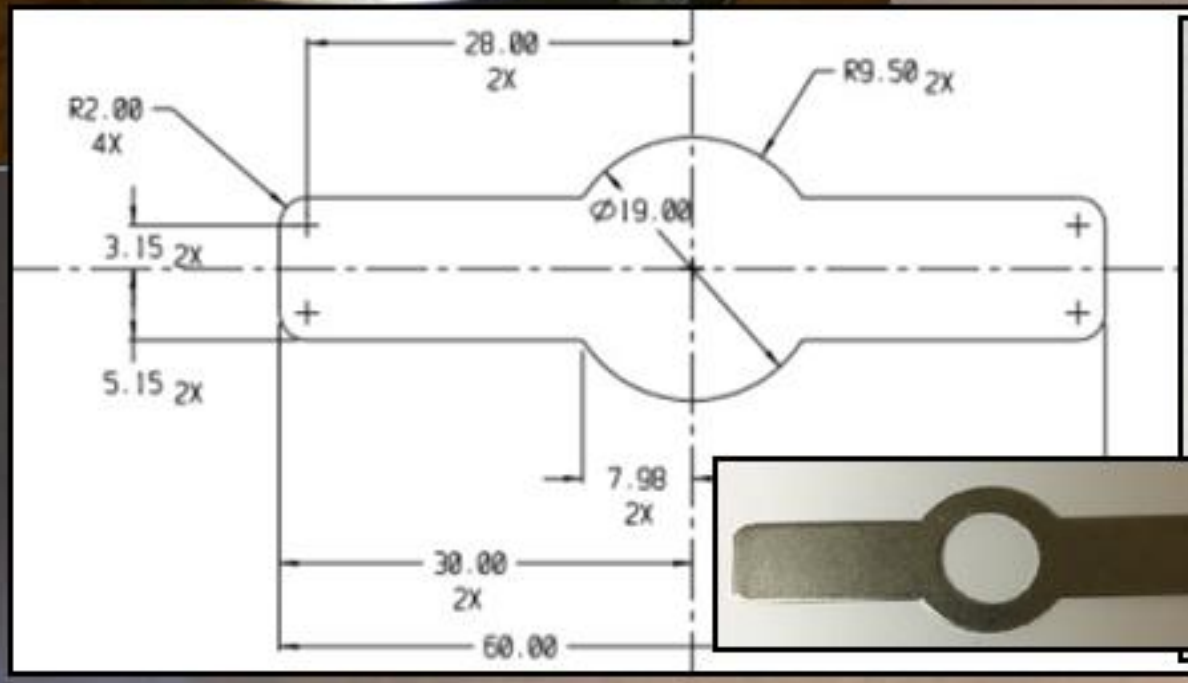
Special Shape Blanking

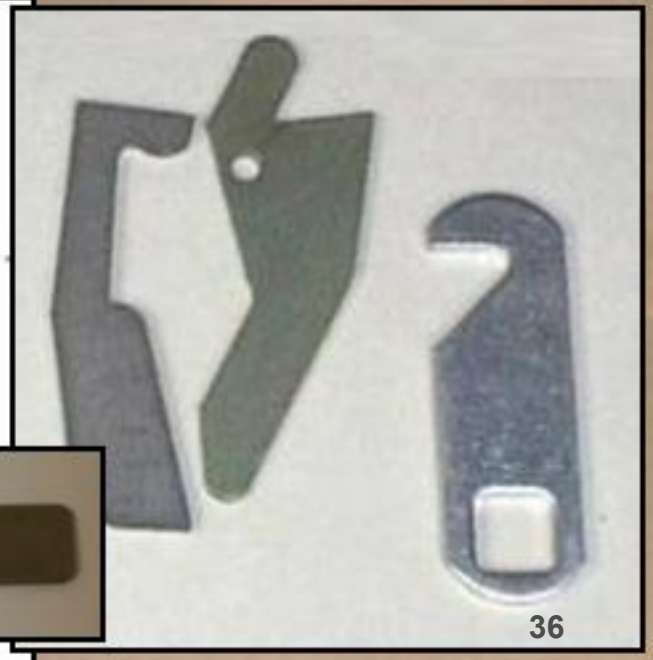
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE





Fast blanking of complex contours





Relieved Blanking Punch

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Relieved punch to blank out formed parts without flattening risk

‘Part Chute’ Tool

MATE PRECISION TECHNOLOGIES
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Part Chute Tool for dropping small parts into the slug bin.
Ideal for ‘unloading’ of small parts.

(Etch #03137122)

EasyView Dies

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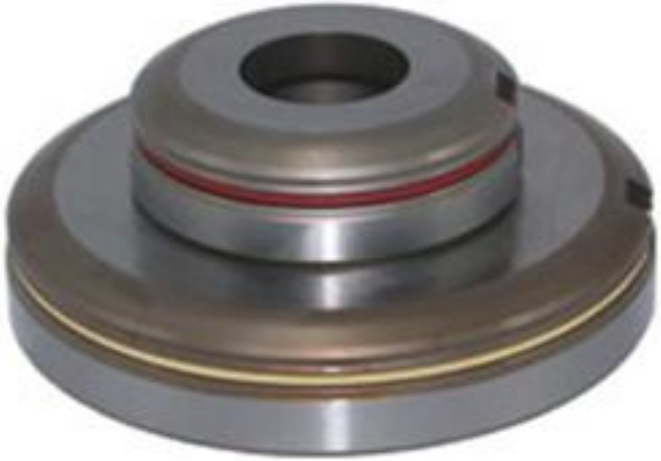
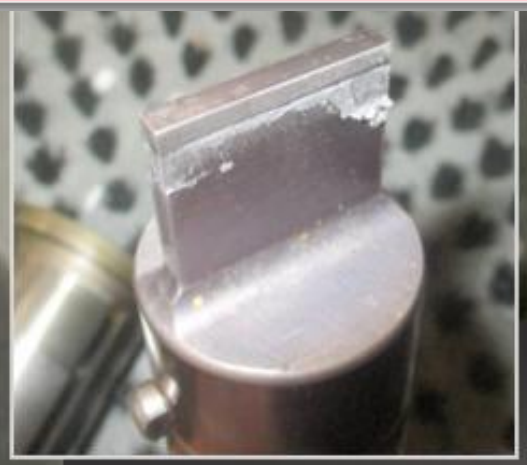
Visual Management O-Rings on dies facilitates quick identification of e.g. die clearance, …



BLACK	RED	GREEN	YELLOW	WHITE

Eliminator® Pads

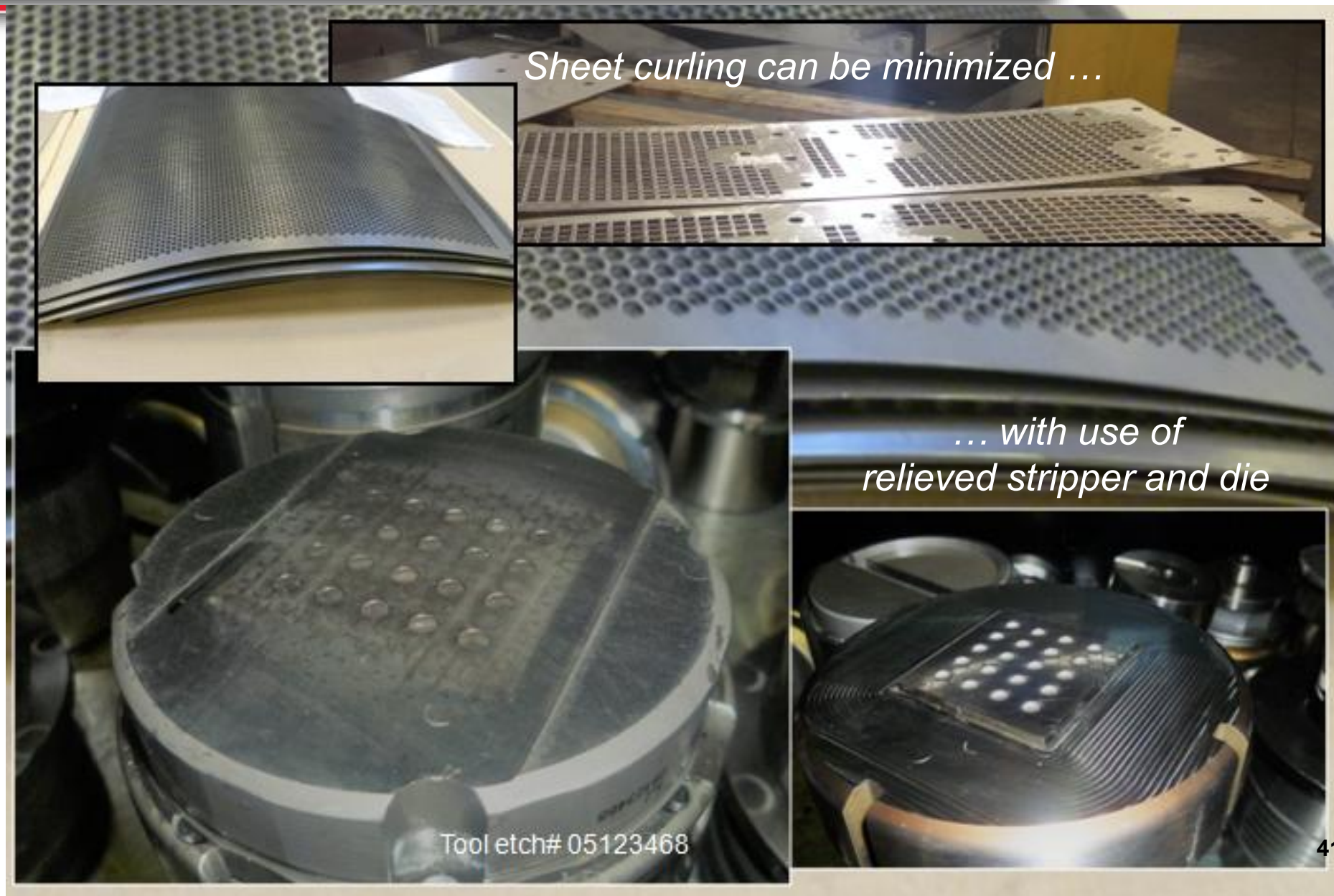
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



*Mate **Eliminator® Pads** eliminate galling and lubricate the punch tip **with every hit***

Minimizing Sheet Curling when Punching

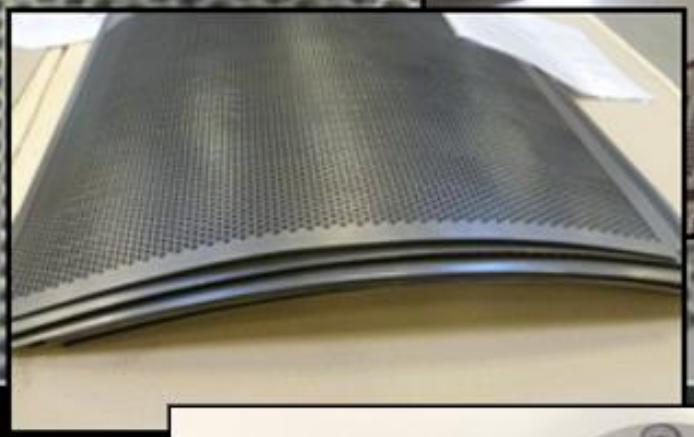
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Minimizing Sheet Curling when Punching

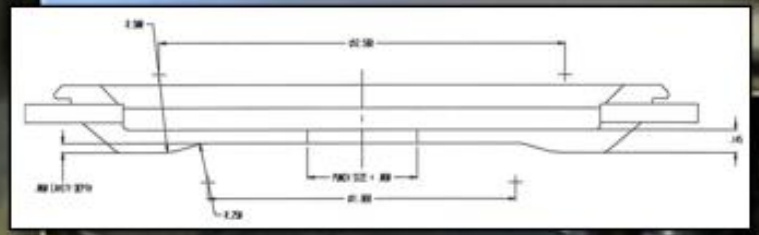
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Sheet curling can be minimized …

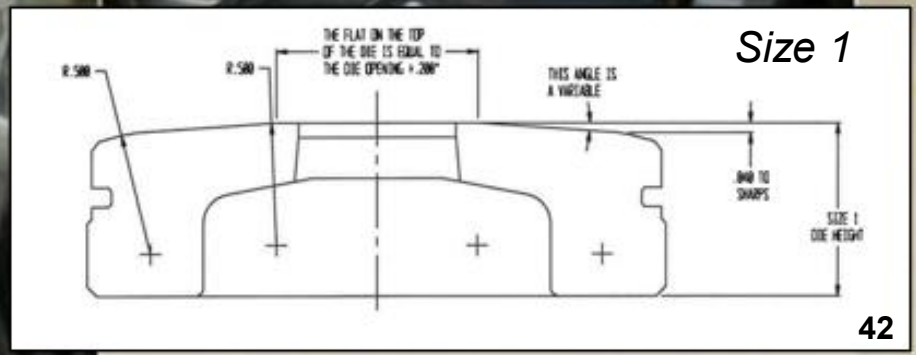


… with use of relieved stripper and die

Size 2



Size 1



Punching Thick Material

MATE PRECISION TECHNOLOGIES
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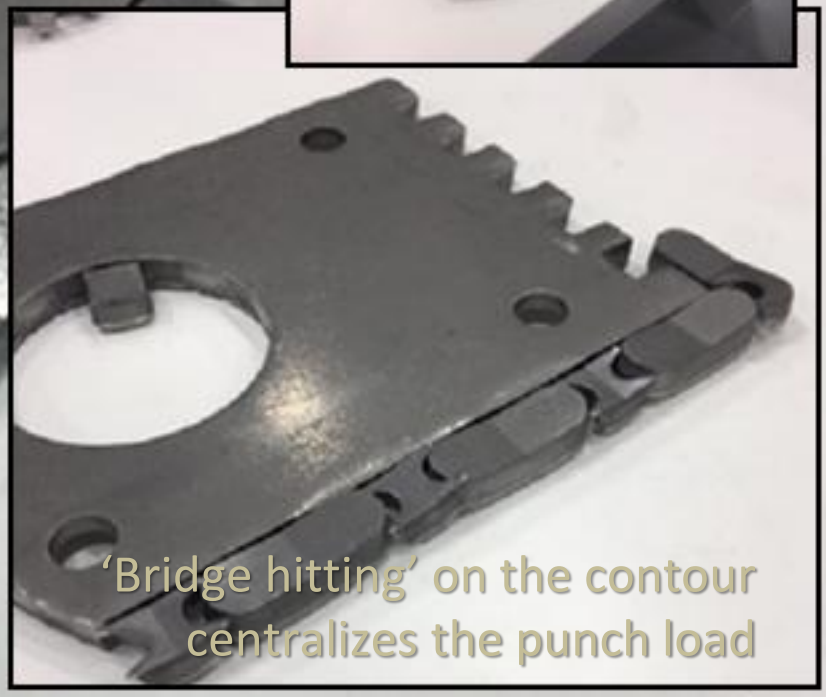
Pre-punching of smaller squares can reduce the required tonnage for bigger holes



'Bridge hitting' on the contour centralizes the punch load

Tools with ‘Heel’

MATE PRECISION TECHNOLOGIES
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‘Heel’ ensures precise location of the punch into the small clearance die (0,05mm TCL for 0,3mm mt’l thickness)

Quick Change Tooling ‘QCT’

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FMTE MultiTools: Fix and Indexable

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MultiTools increase the number of tools in the machine.
On top of that, they are also indexable when used in index stations.

Indexable Drop-In MultiTools

MATE PRECISION TECHNOLOGIES
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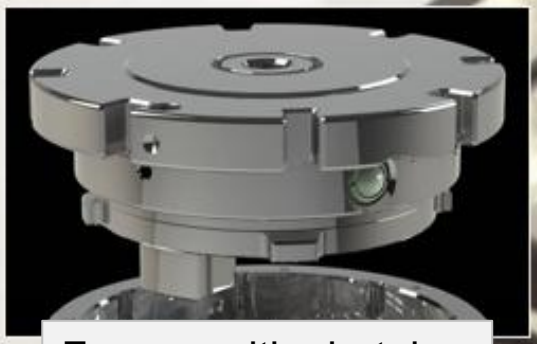
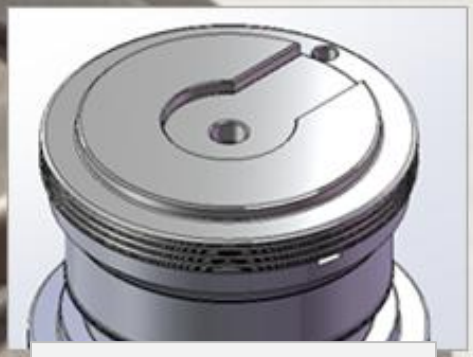


For use with shotpin



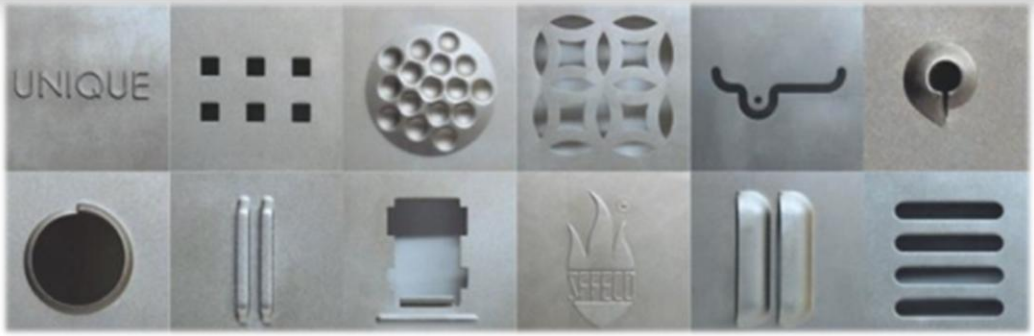
For use with iRam

Indexable Drop-In MultiTools add A/B-station tools and increase the indexing capabilities of the machine

MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

2. Contour Slitting and Micro-joints

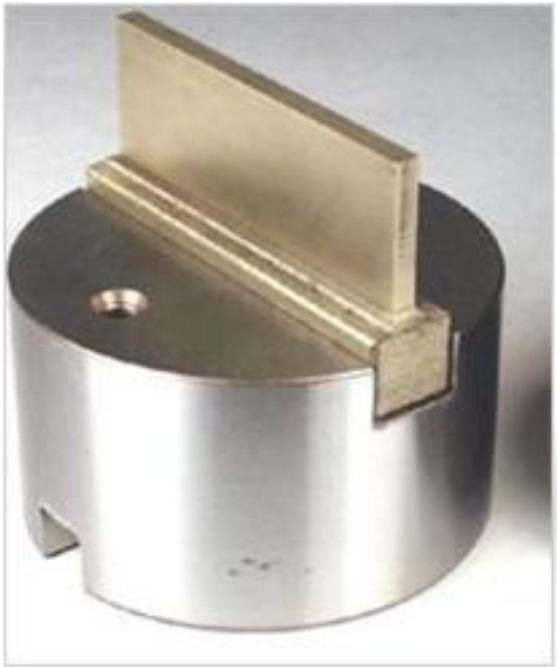


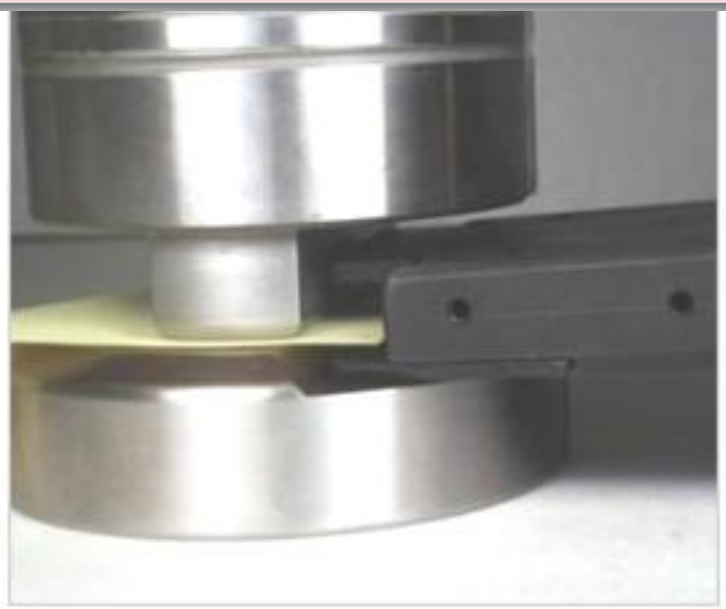
Special Assemblies Gallery

Long Lasting Slitting Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

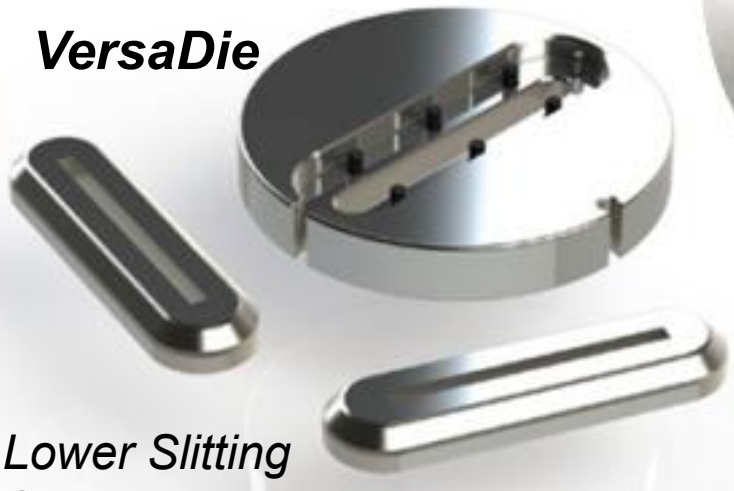
Upper Slitting System
with Punch Insert in M4PM tool steel





Fully Guided 'Clamp Clearing'
Slitting Solution for punching close to clamps and forms

VersaDie

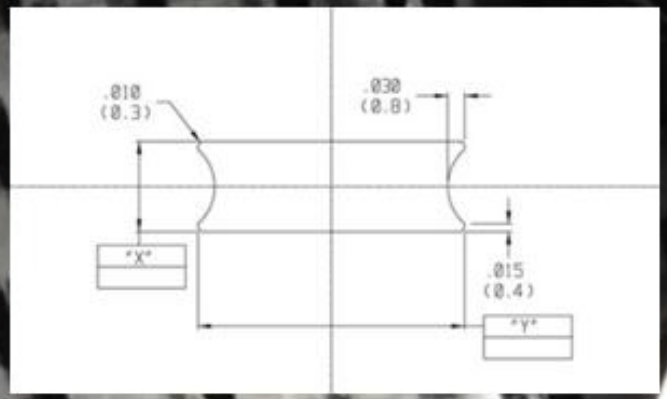


Lower Slitting System with Die Insert in MPM82 tool steel

Slitting Solutions with microjoints

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

'Shake-and-Break' design



Fully Guided
'Clamp Clearing'

Versadie

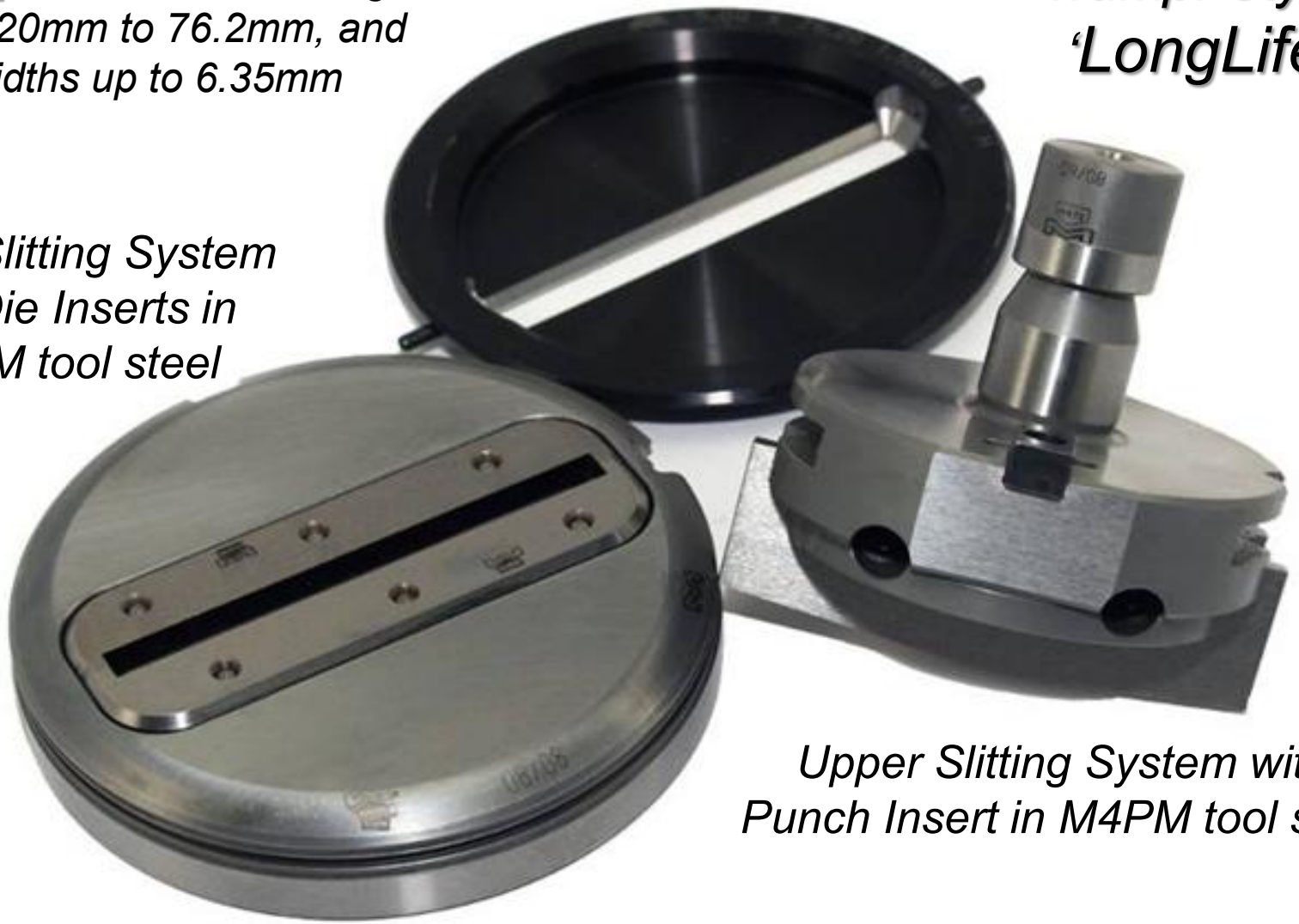
Long Lasting Slitting Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Unique: *Available in all lengths from 20mm to 76.2mm, and widths up to 6.35mm*

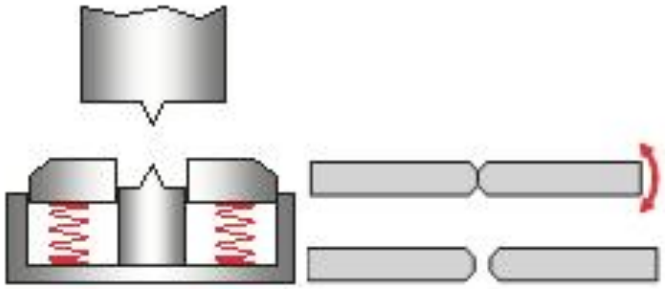
Trumpf Style 'LongLife'

Lower Slitting System with Die Inserts in M4PM tool steel



Upper Slitting System with Punch Insert in M4PM tool steel

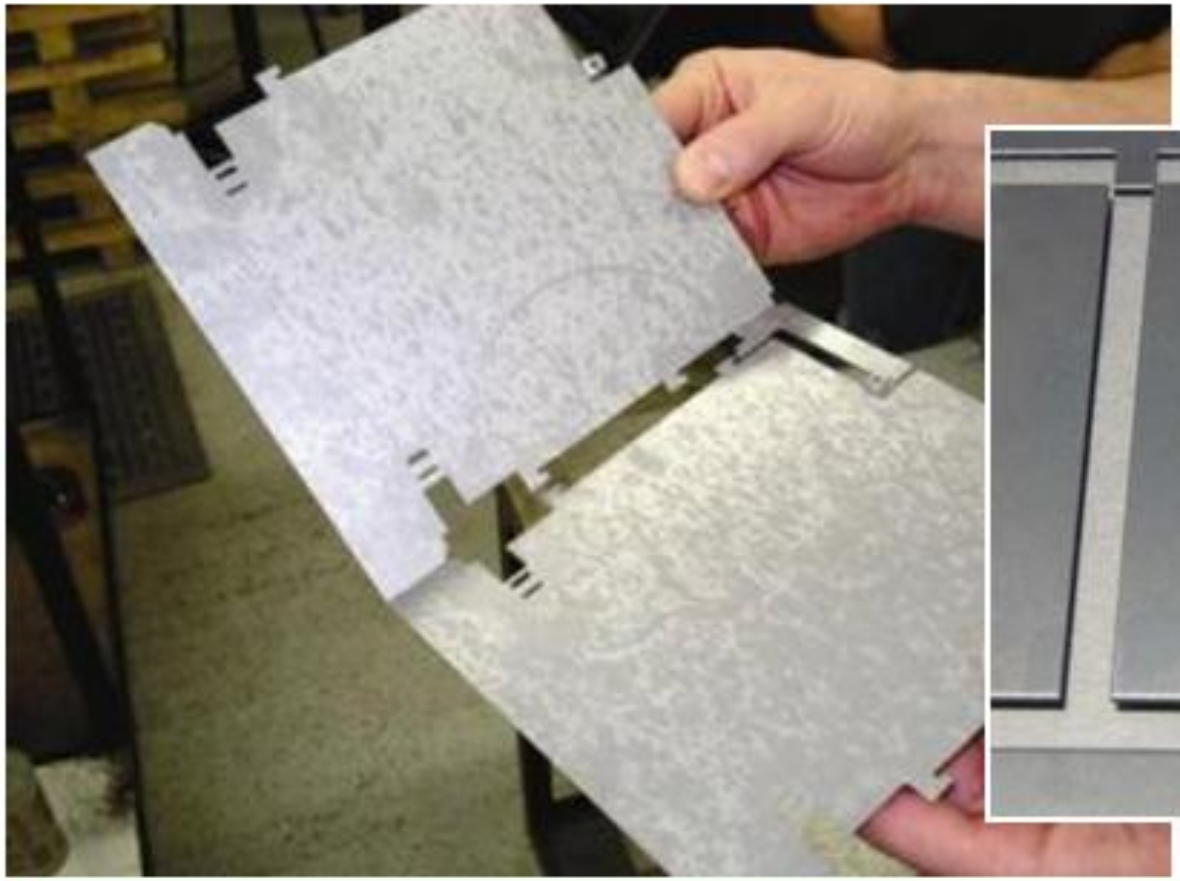
Micro-joint Solutions

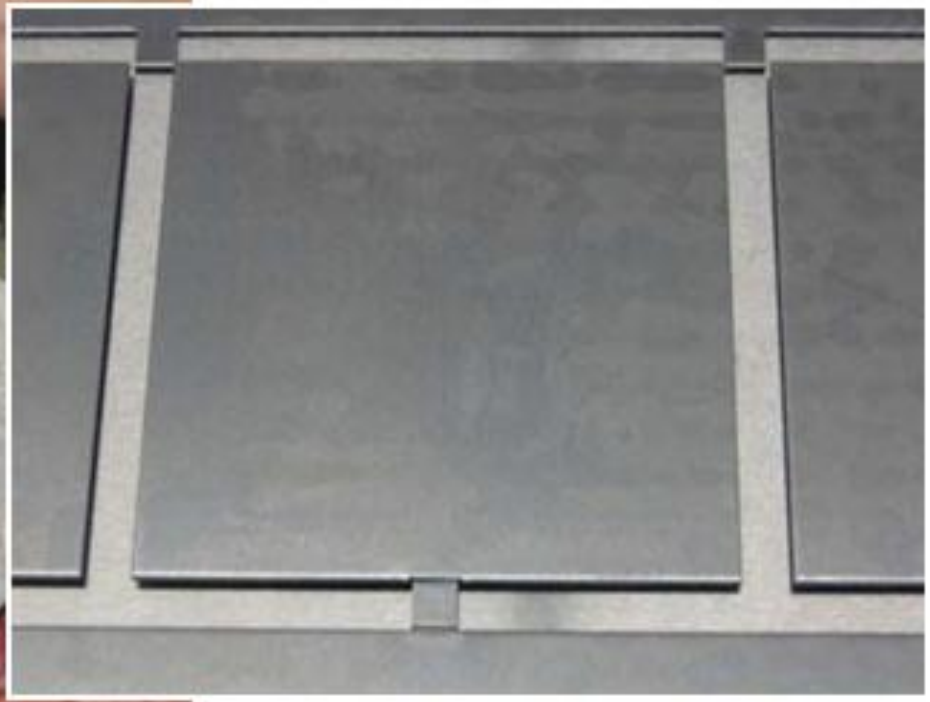


EasySnap and

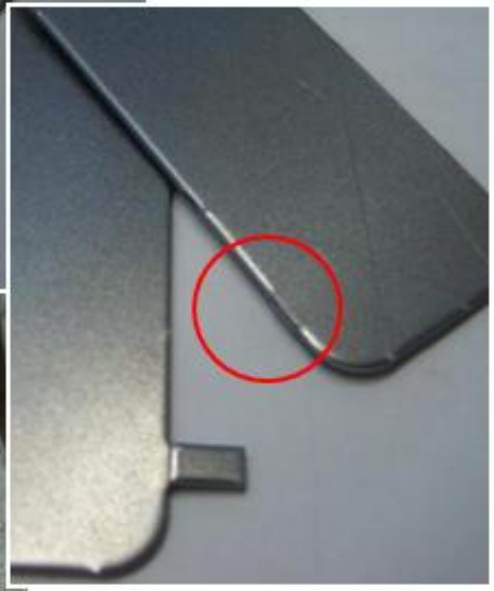
Square EasySnap

Part separation and Microjoints, leaving minimum burr or marks





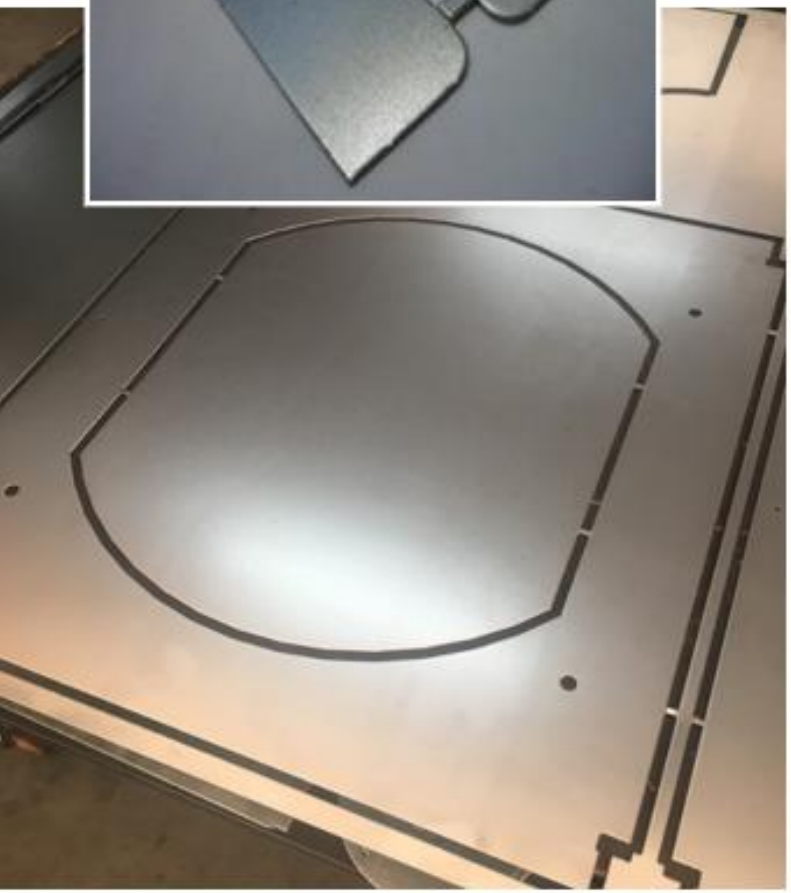
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



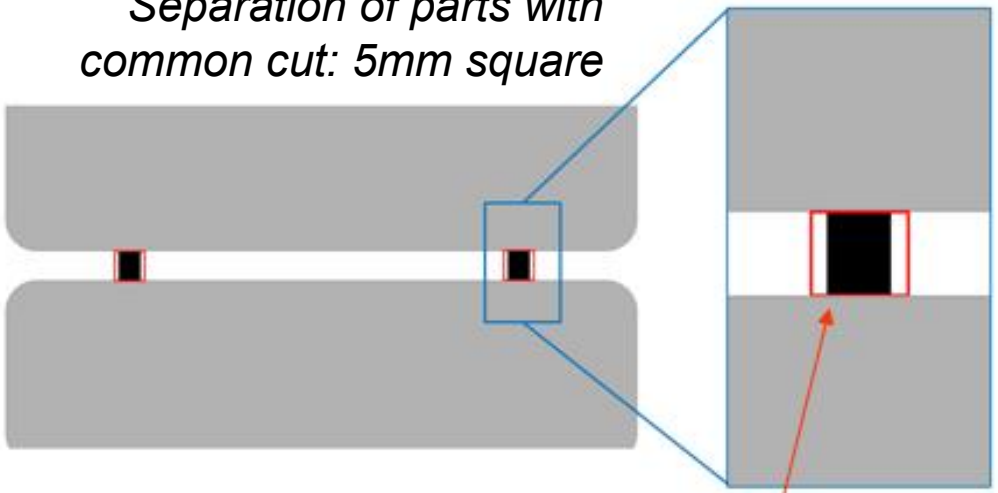
Square Shearbutton

Part separation and Microjoints, leaving minimum burr or marks

Micro-joint Solutions

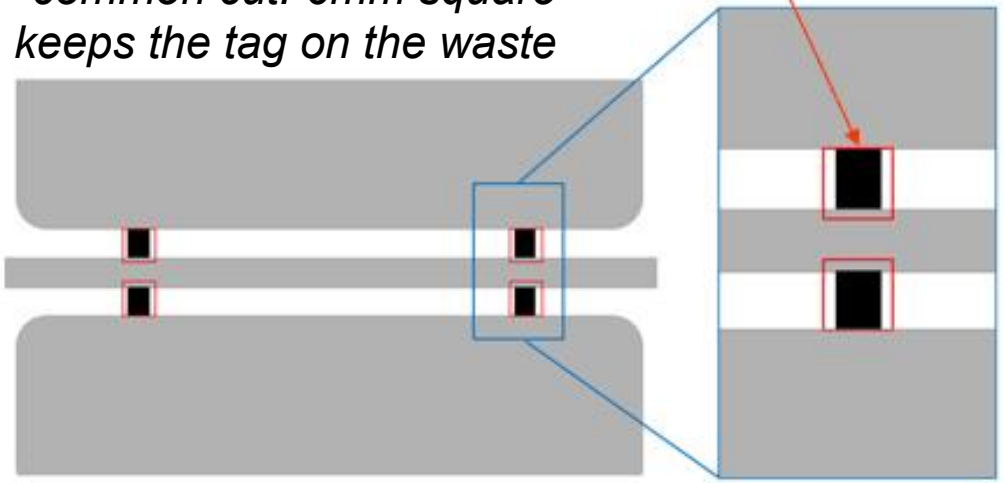


Separation of parts with common cut: 5mm square



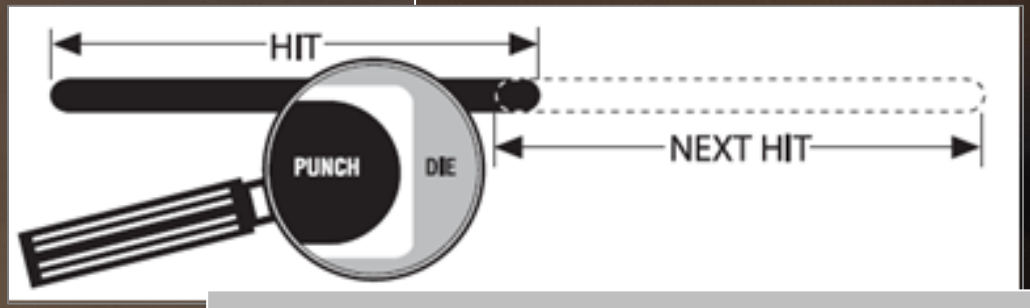
Square Easysnap or Square Shearbutton

Separation of parts without common cut: 6mm square keeps the tag on the waste



‘Smooth’ Slitting Solution

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

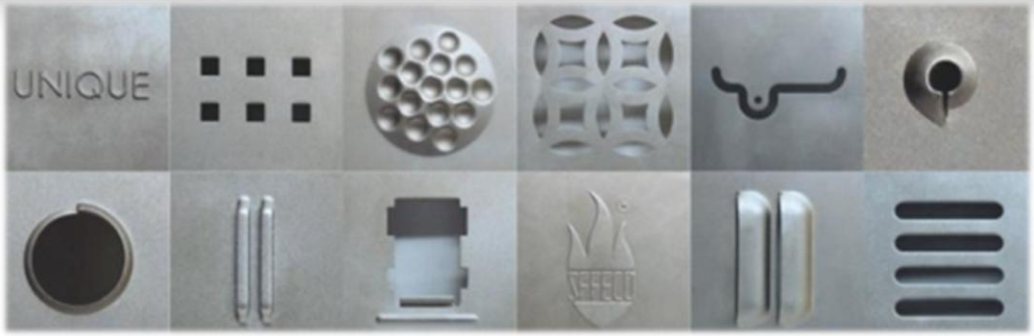


Minimize slitting overlap marks with a smooth or seamless slitting solution

MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

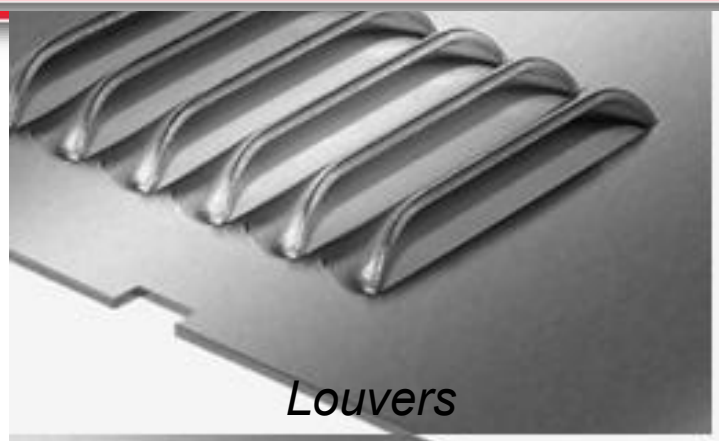
3. Simple Forming Applications



Special Assemblies Gallery

‘Common’ Forming Applications

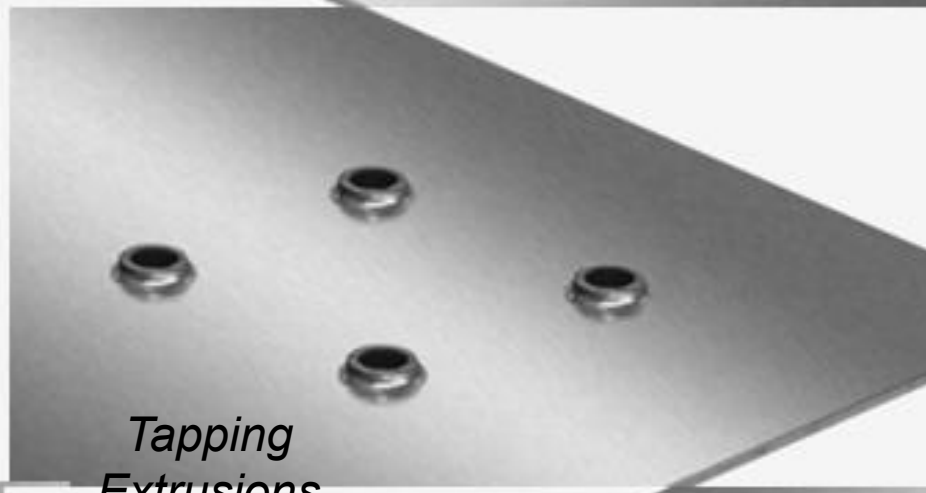
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



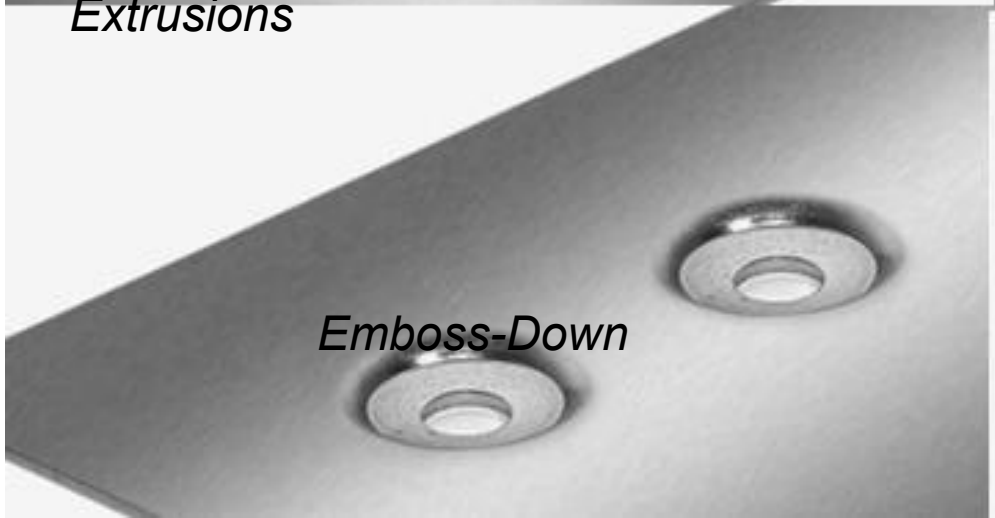
Louvers

Knock-Outs

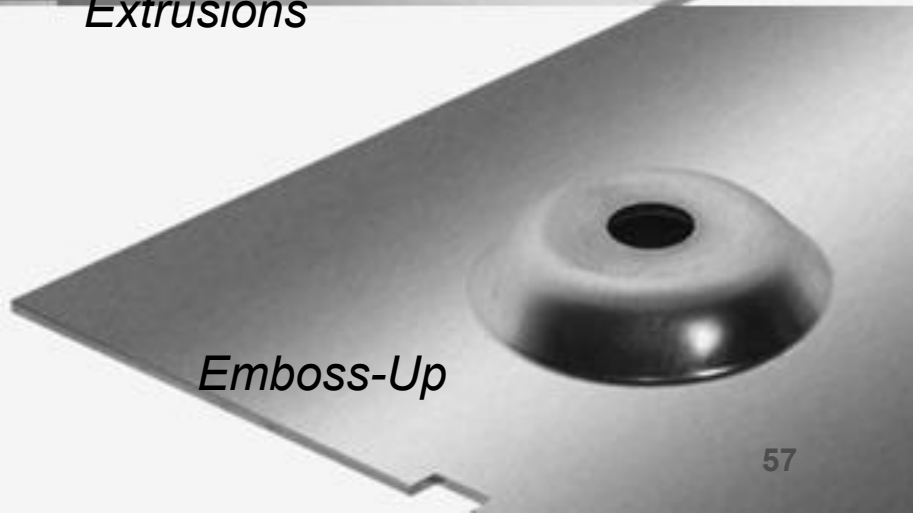
Tube-guiding Extrusions



Tapping Extrusions



Emboss-Down



Emboss-Up

Countersinking

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

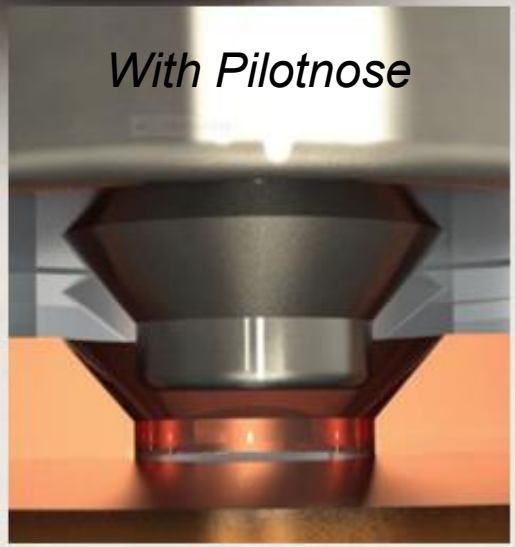
Standard Countersink

Insert Style

QCT Style

Embossed Countersink

With Pilotnose



Special Louver Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

'Cluster' of Louver applications

Louver Cluster Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Louver Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Small Louver applications

(etch # 02228080)
(etch # 11237004)

Continuous Louver Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

4mm hit centers, from left to right

Flexible length Louvers

3mm hit centers, from left to right

1.5mm hit centers, from middle to left, then middle to right

Louver Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

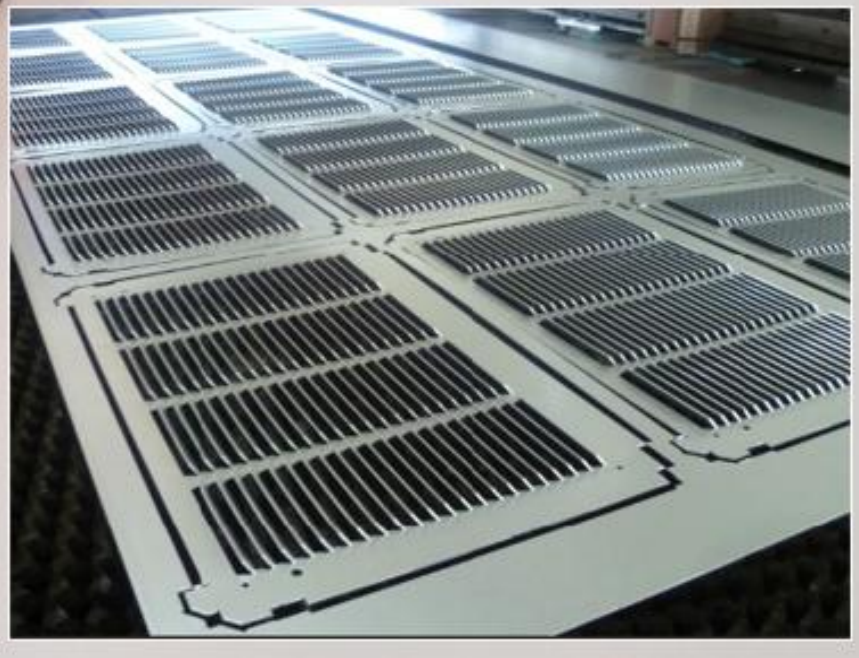
Special Louver Application
(in Up-Forming station or Active Die)

Example #04167111
1mm Mild Steel

Louver Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Open End Louver Application for maximum air flow

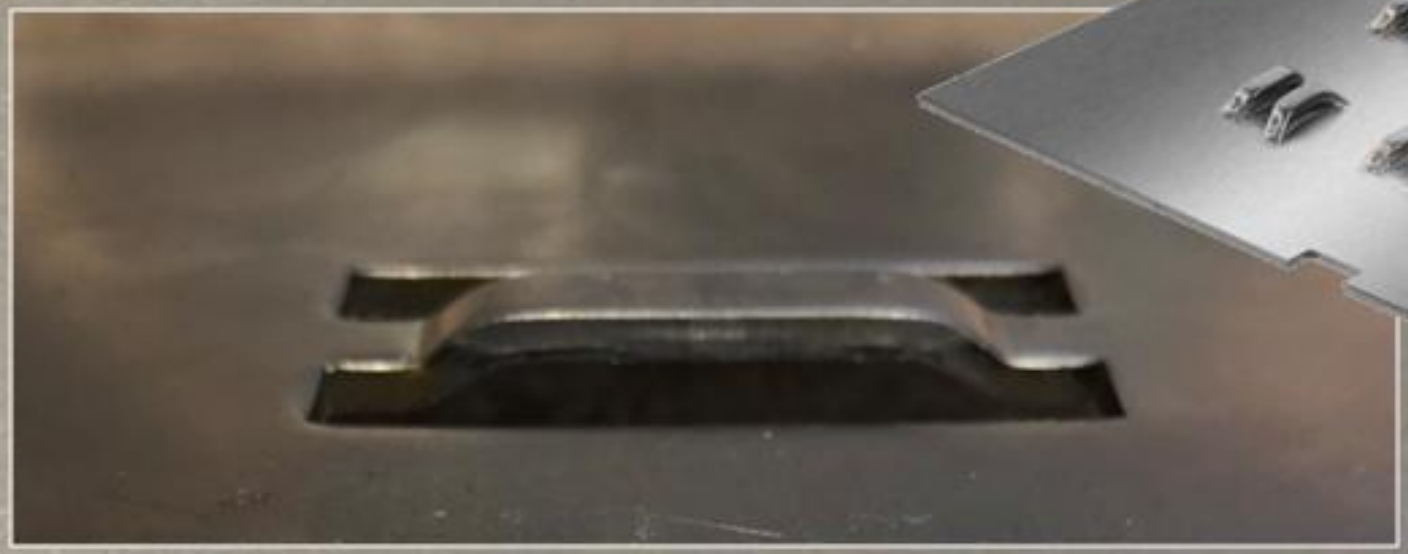


Small Round Louvers

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Bridges

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

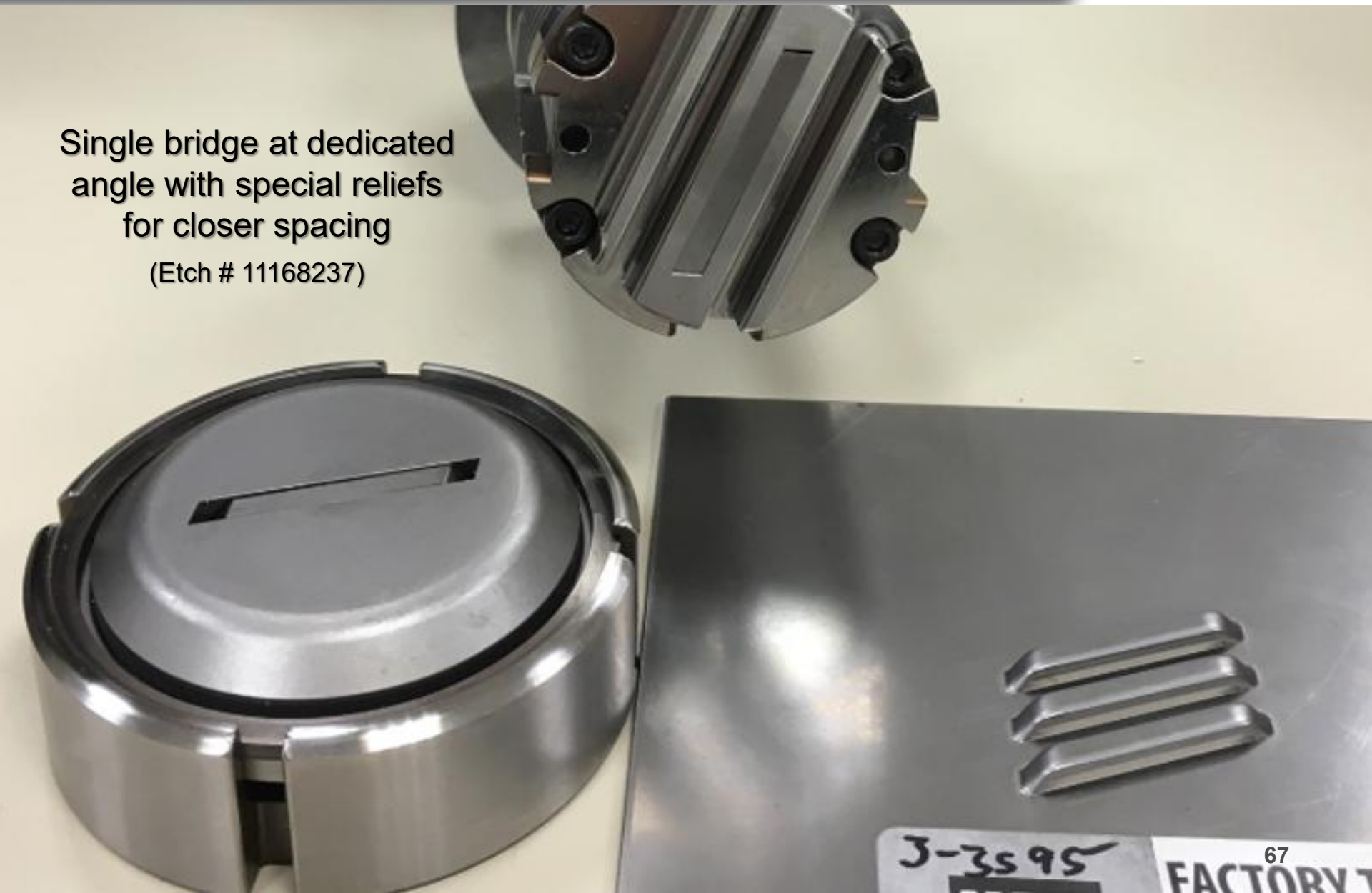


Special Bridges

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Single bridge at dedicated angle with special reliefs for closer spacing

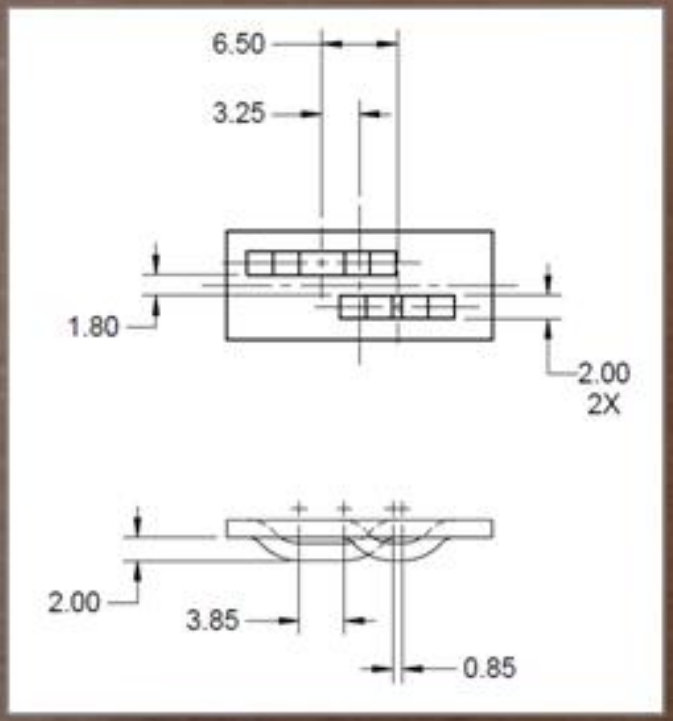
(Etch # 11168237)



Cluster of Bridges

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Two bridges (down) in one hit



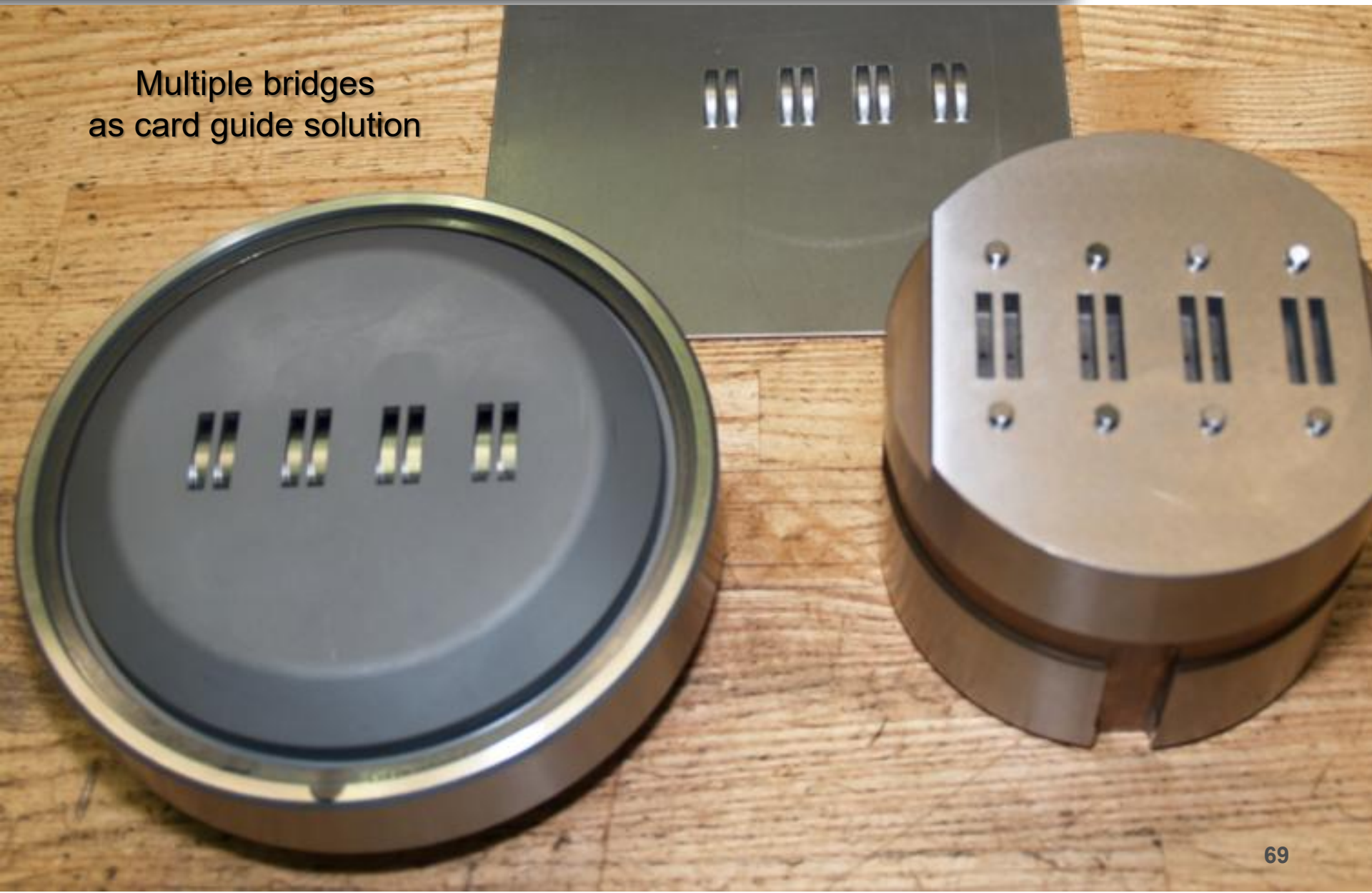
*# etch **04207017***

1.5mm Aluminum

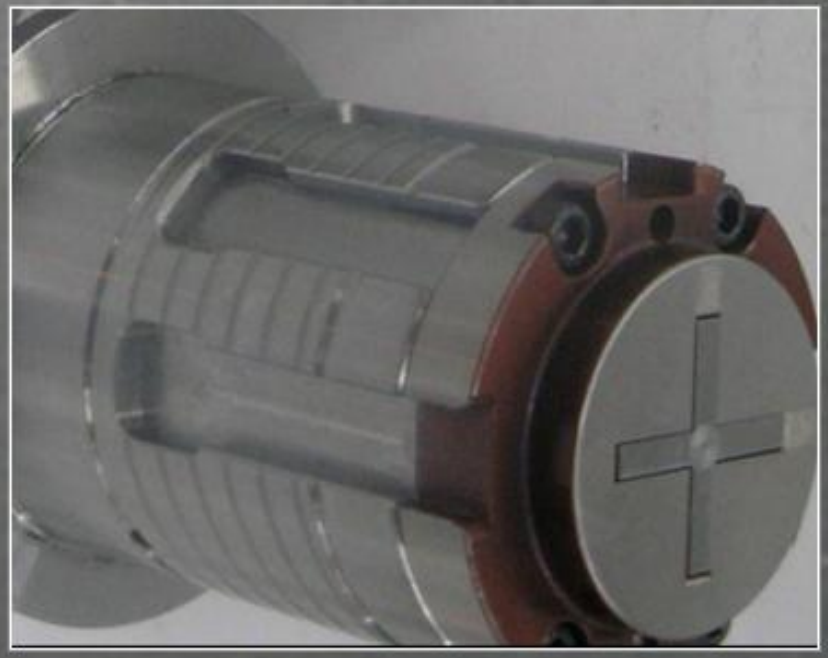
Cluster of Bridges

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

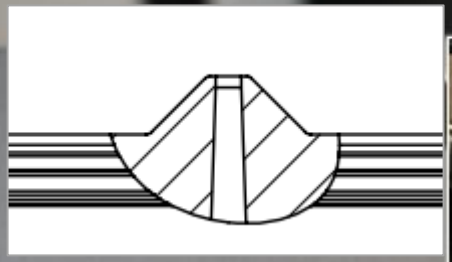
Multiple bridges
as card guide solution



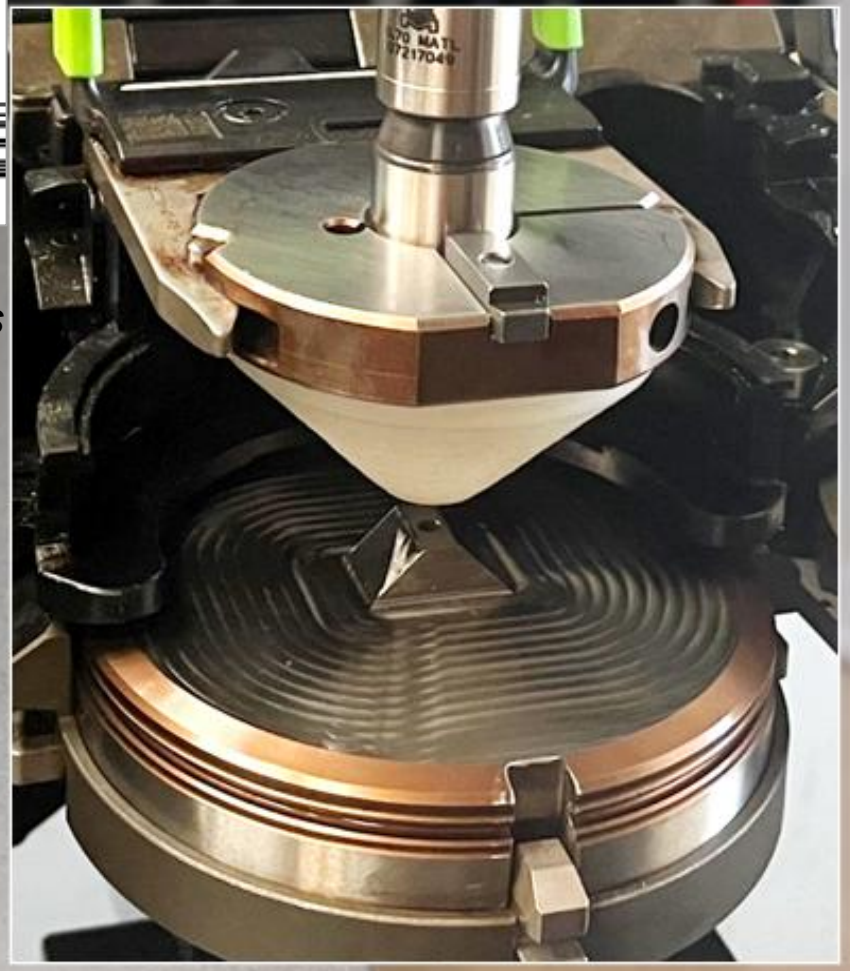
Cross Shaped Bridges



Pierce-after-Form



Dia 3.2mm
Pierce-after-Emboss
(Etch# 07217049)



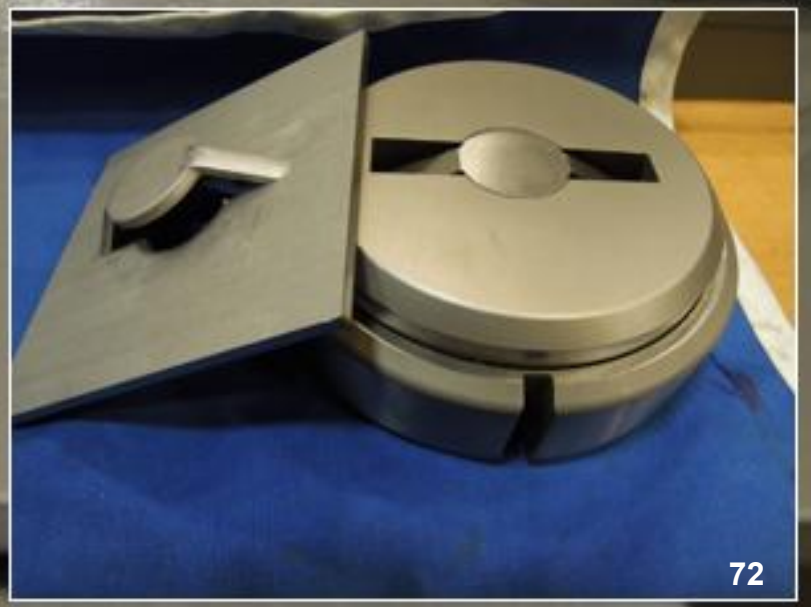
6.4mm high bridge in 0.7mm mild steel,
with pre-punched sides (obround)

(Etch# 07217048)

Special Shape Bridges

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special shape bridge with 7 to 9mm air gap in 3.5mm thick stainless steel

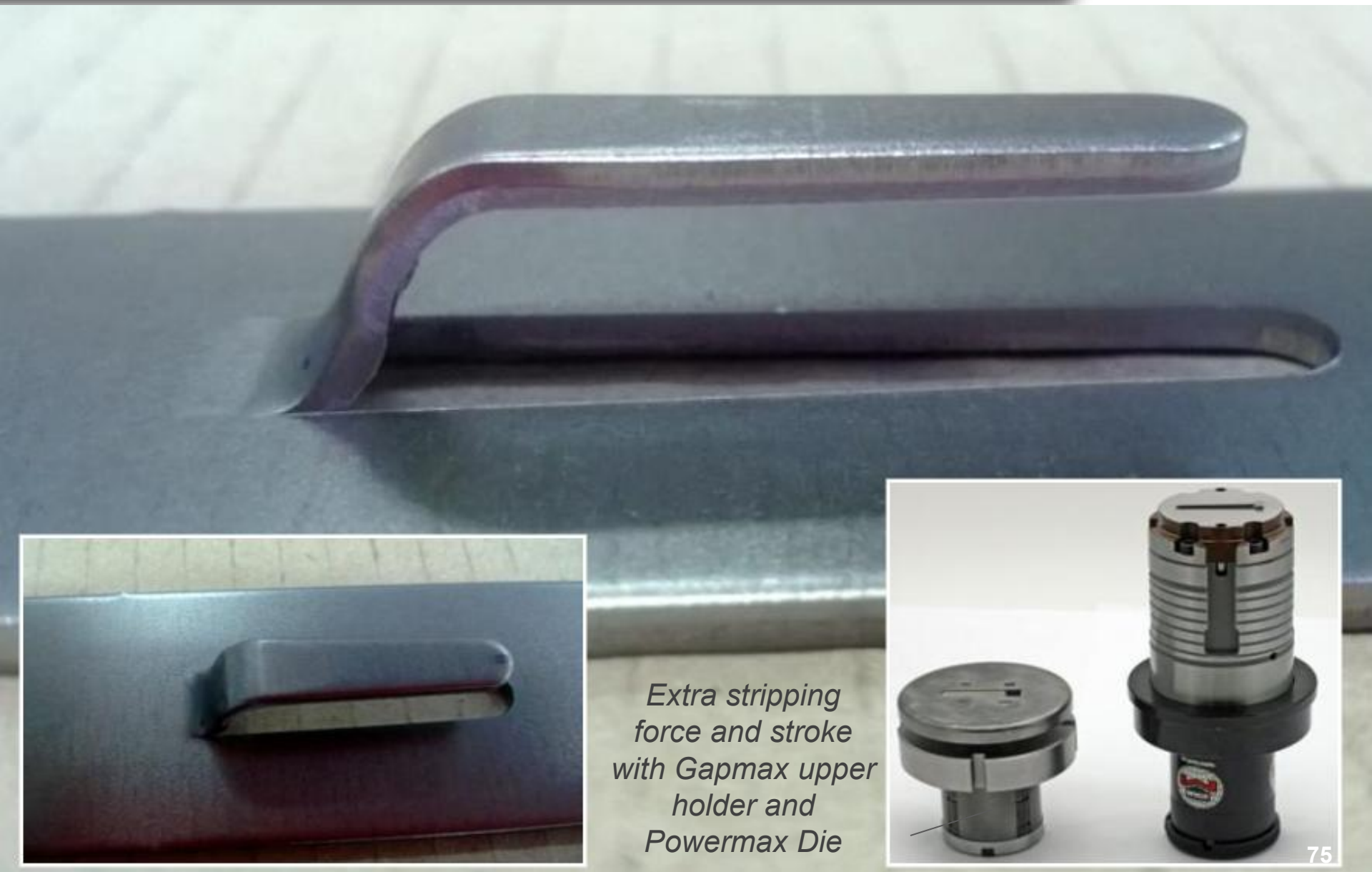


Double Lance-and-Form

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Lance-and-form

High lance-and-form



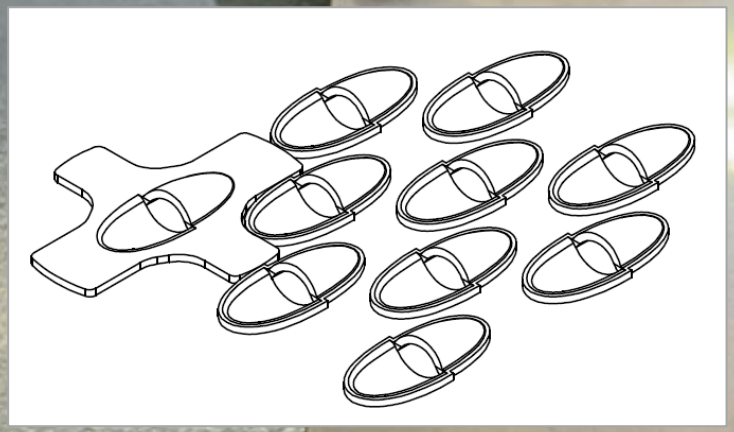
Extra stripping force and stroke with Gapmax upper holder and Powermax Die

Special Lance-and-Form

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Lance-and-Form

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Etch 12237025
1.5mm Stainless

Special Lance-and-Form

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Triple Lance-and-Form application
(tag holder for office furniture)

(etch 12204181)

Double Knock-Outs

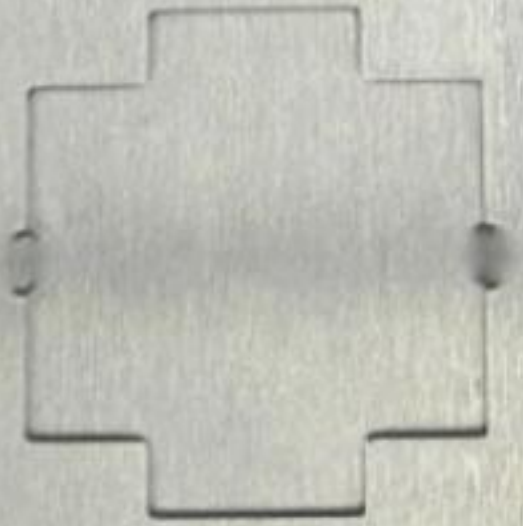
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

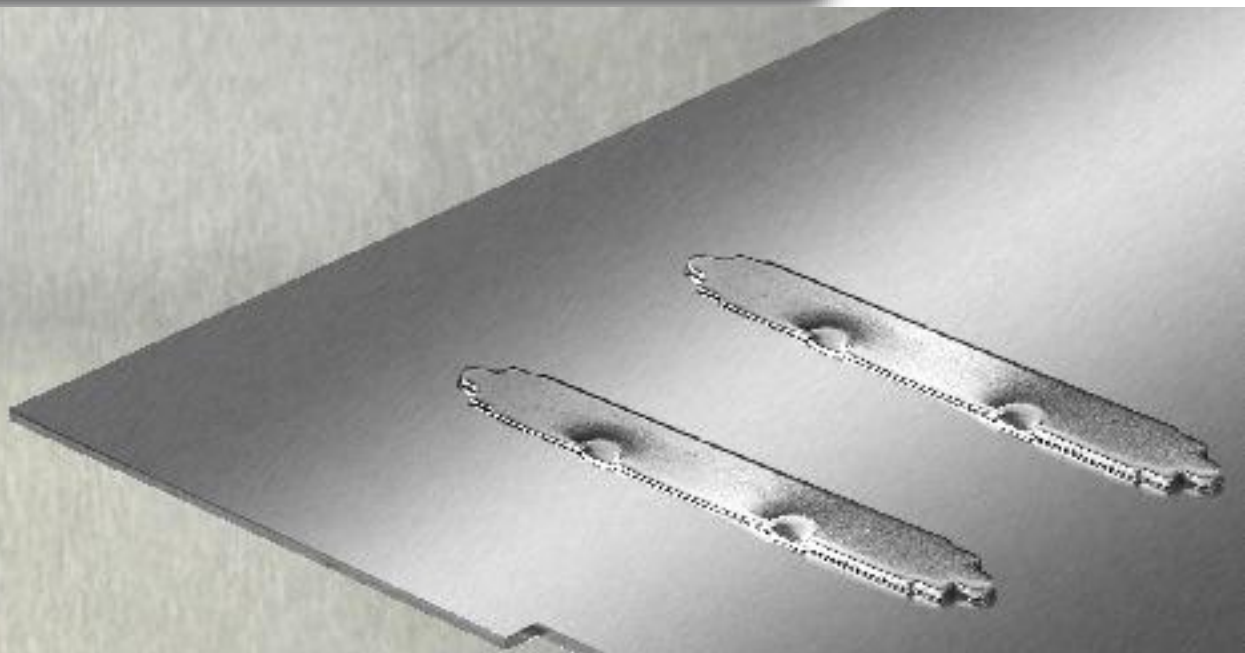
Large Knock-Outs

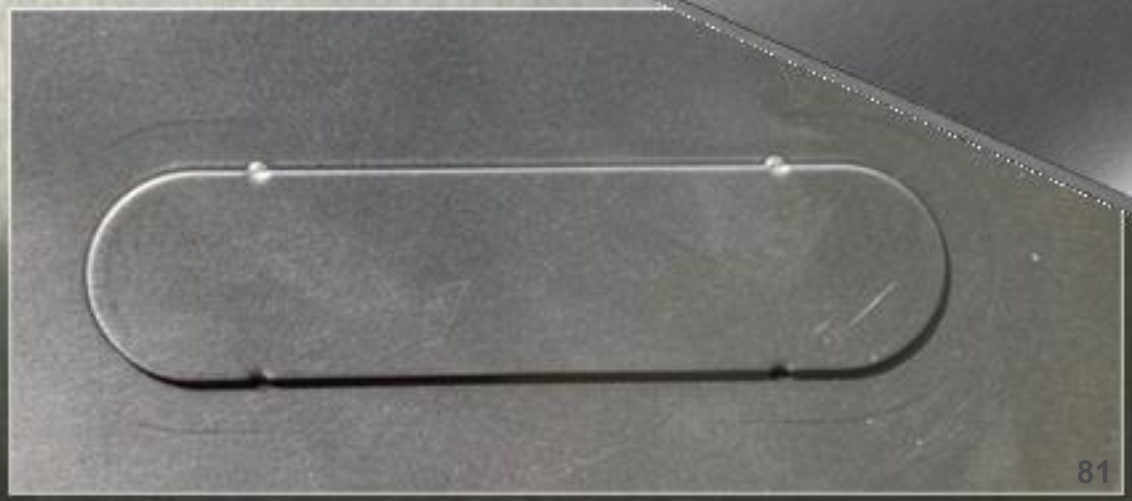
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Shape Knock-Outs

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



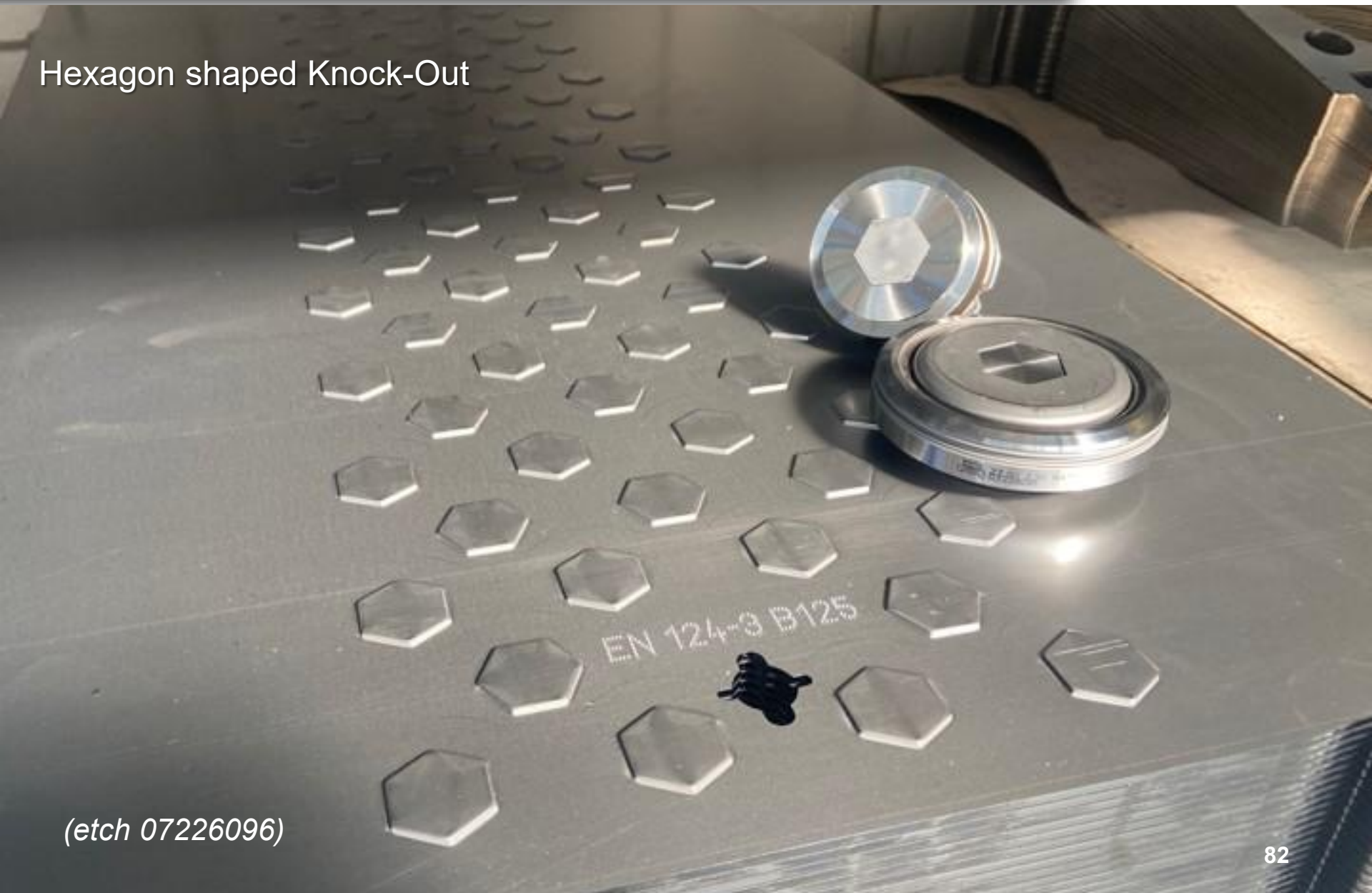




Special Shape Knock-Outs

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Hexagon shaped Knock-Out



(etch 07226096)

Large Knock-Outs

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

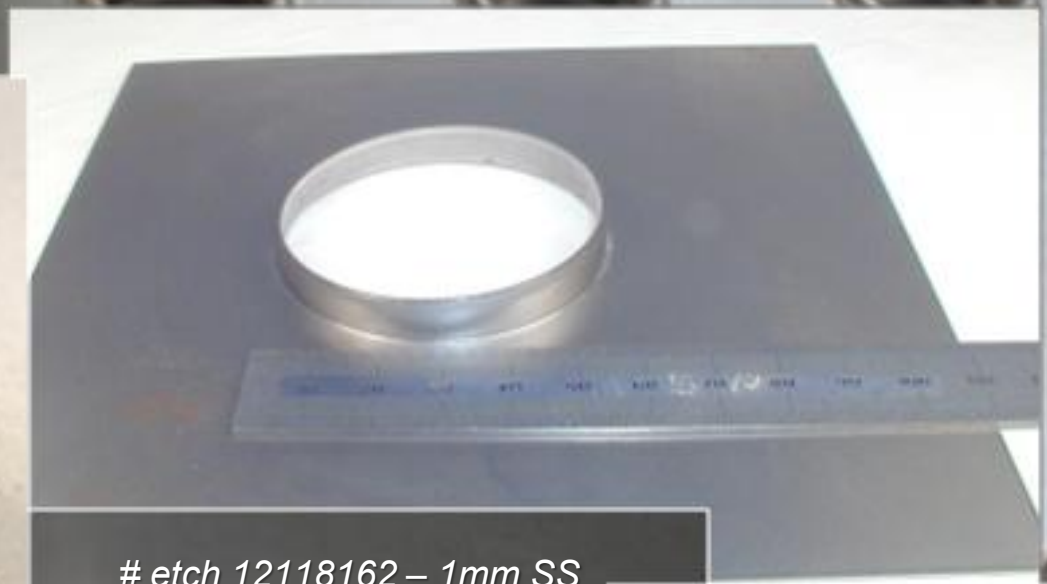
Large knock-out formed in multiple hits (with 180° rotation for final hit)

 # etch 02107153

Extrusions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

etch 04197074 – 3mm MS



etch 12118162 – 1mm SS

Extrusion down

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Extrusion down in UltraTEC
with spring loaded UltraForm lower

Special Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

(Etch 09157100)

Special Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Embosses

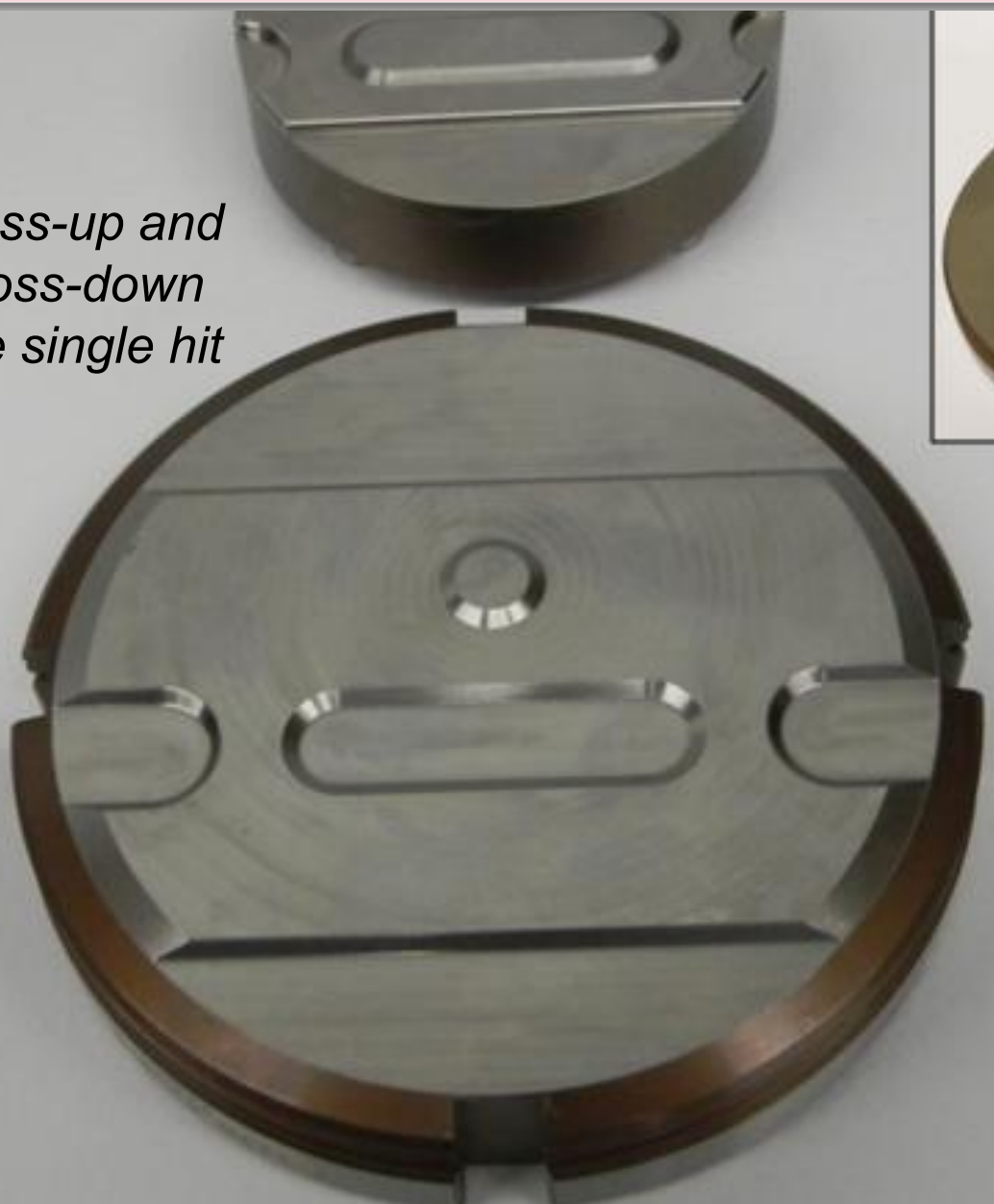
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

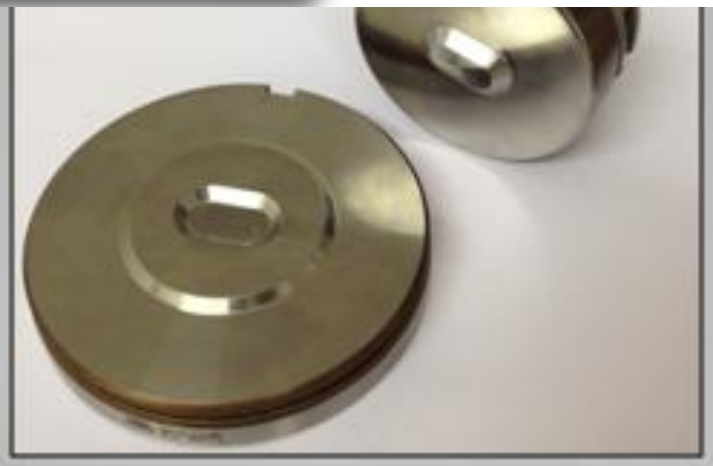
Embosses help increase structural strength in many sheet metal applications

Embosses

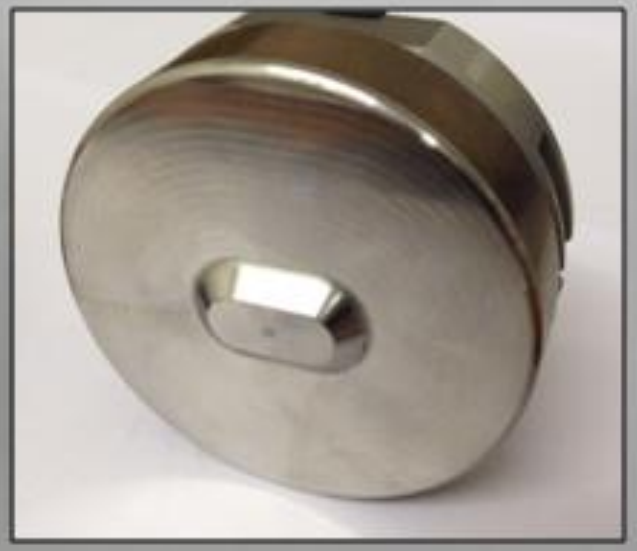
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Emboss-up and emboss-down in one single hit



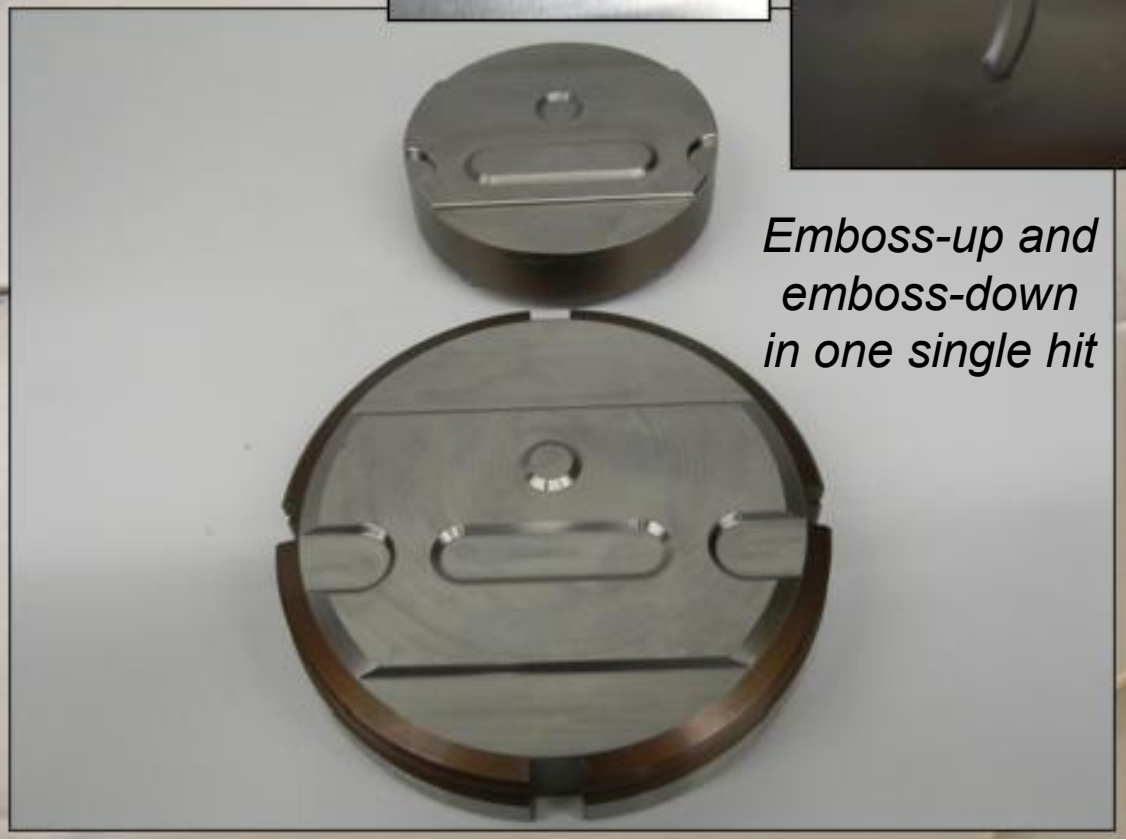


Single emboss-down



Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Emboss-up and emboss-down in one single hit

Etch 01267036
2mm Aluminum

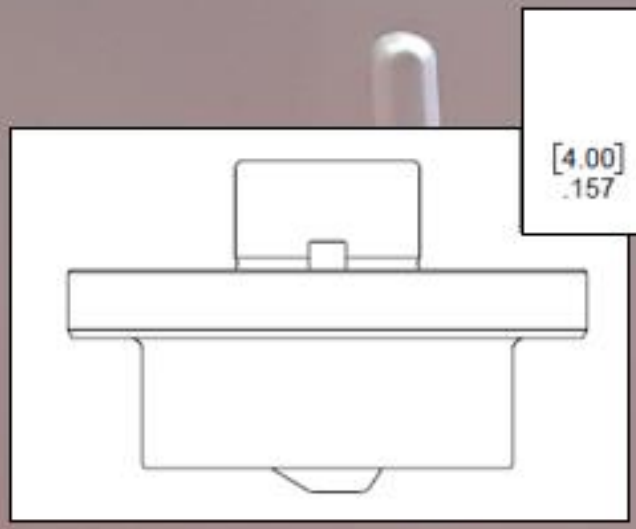
Special Embosses

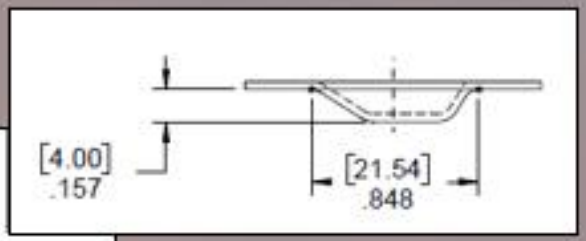
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Large Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Long excentric embosses
in 1mm stainless steel

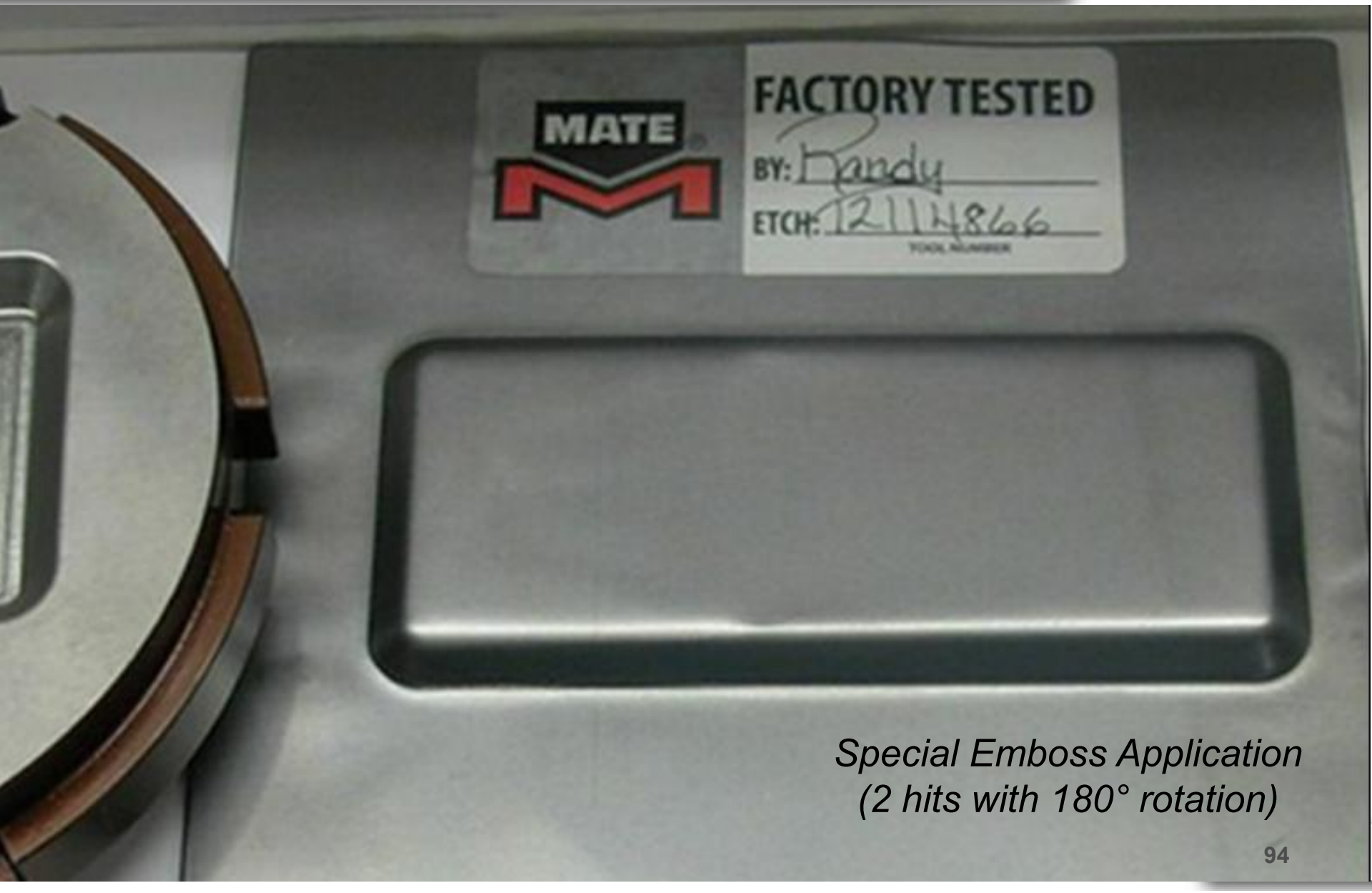




Etch# 10207030

Large Embosses

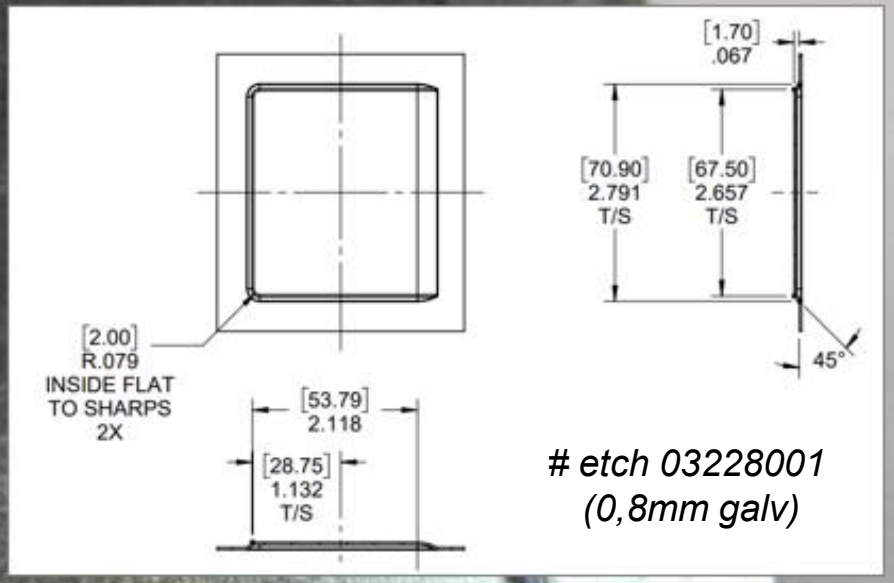
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Special Emboss Application
(2 hits with 180° rotation)

Large Embosses

Large emboss formed in 2 hits
(180° rotation in index station)



 # etch 03228001
(0,8mm galv)

Special Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

(Etch # 01187031)

(Etch# 01118209)

Special Embosses

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Special Embosses

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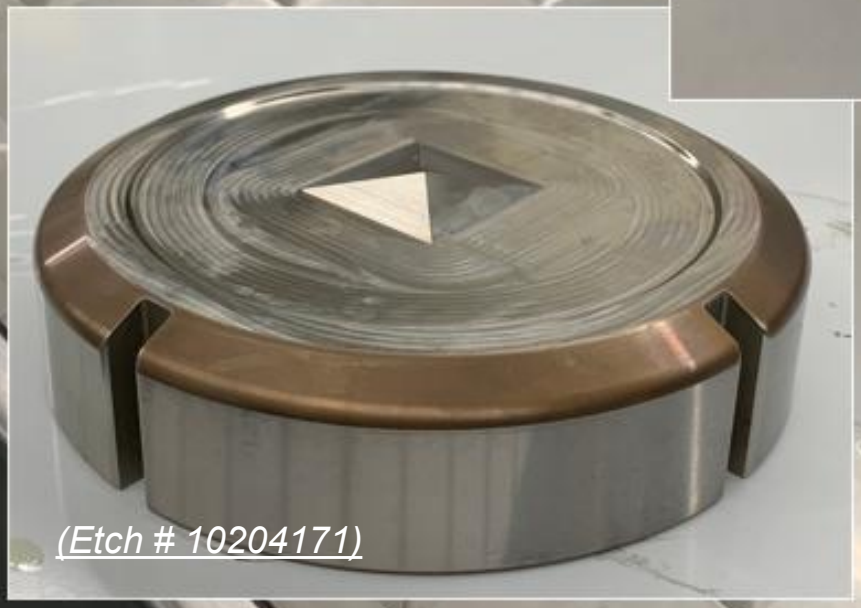
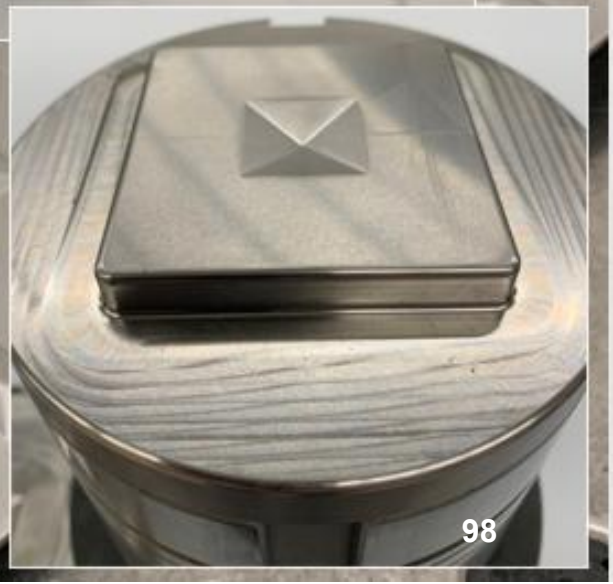
Diamond shaped Emboss-Up with relieved lower for maximum sheet flatness (3mm stainless steel)



(Etch # 10204171)



Special Embossing Solution

MATE PRECISION TECHNOLOGIES
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Emboss tool with relieved stripper for maximum sheet flatness

Tool etch# 10130357 (3mm mild steel)

Special Cluster Embossing Solution

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Cluster Emboss tool with relieved (non spring-loaded) lower for maximum sheet flatness

Special Embosses

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“Golf ball dimples”
(Etch# 02117062)

Special Embosses

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Multiple dimple tool

Special Embosses

Braille script

Special Embosses

MATE PRECISION TECHNOLOGIES
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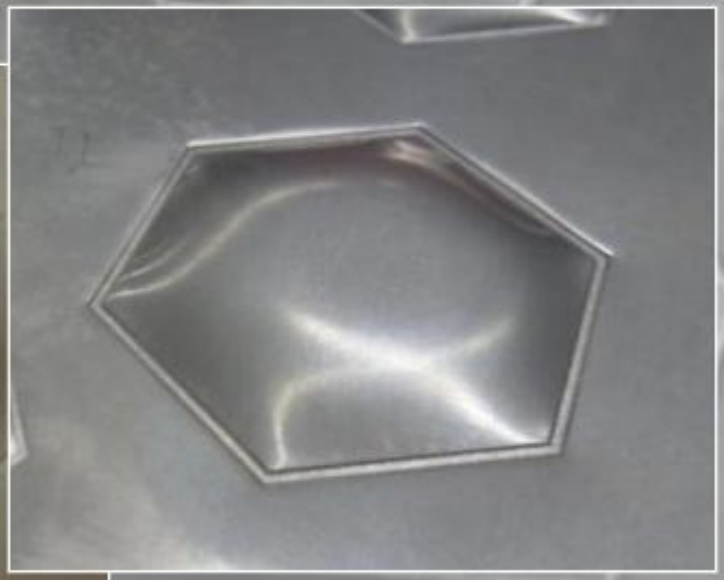
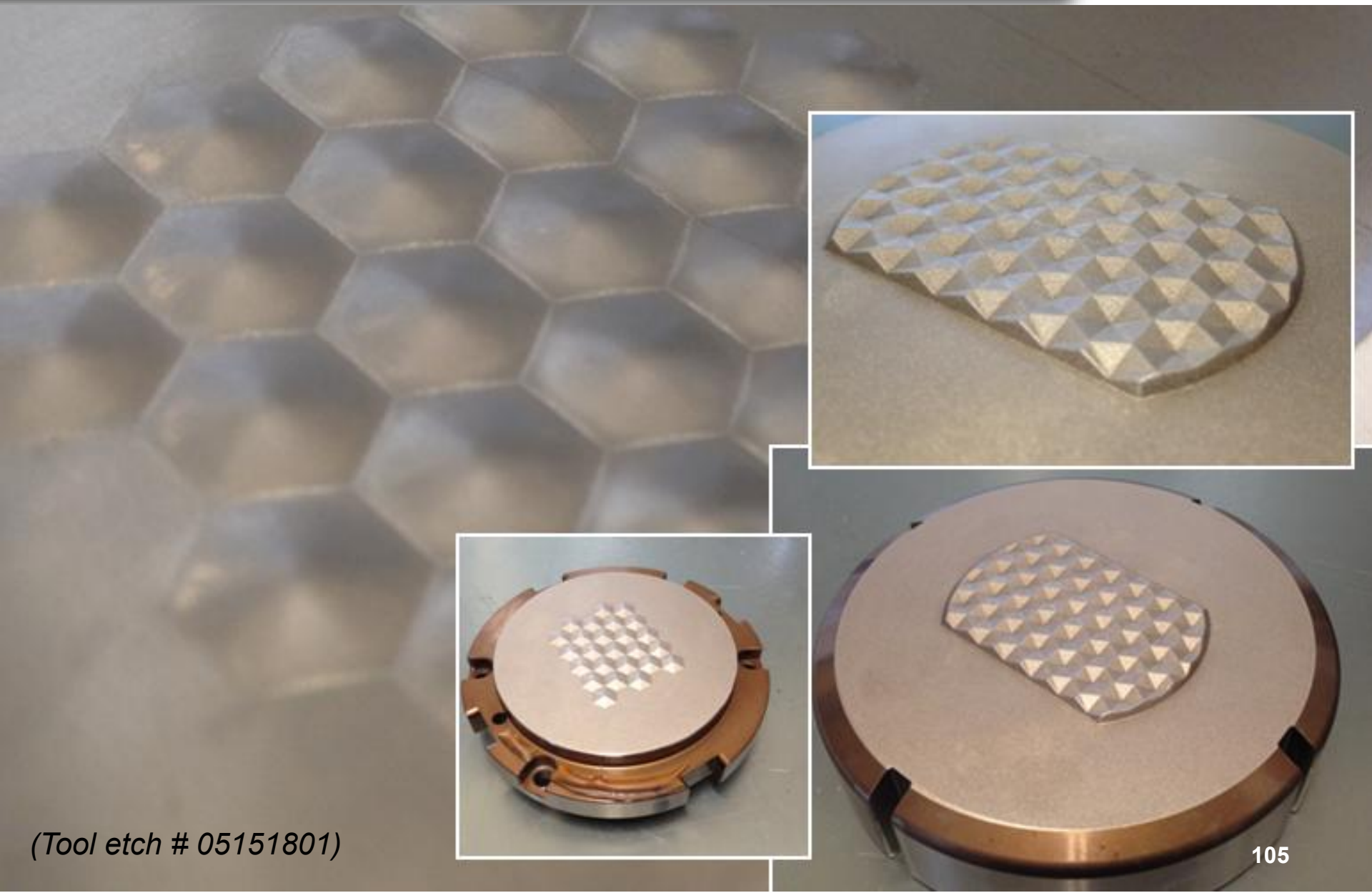


30mm diagonal hex shape
in 1.5mm stainless steel
(Tool etch# 04147062)

Special Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



(Tool etch # 05151801)

Special Embosses

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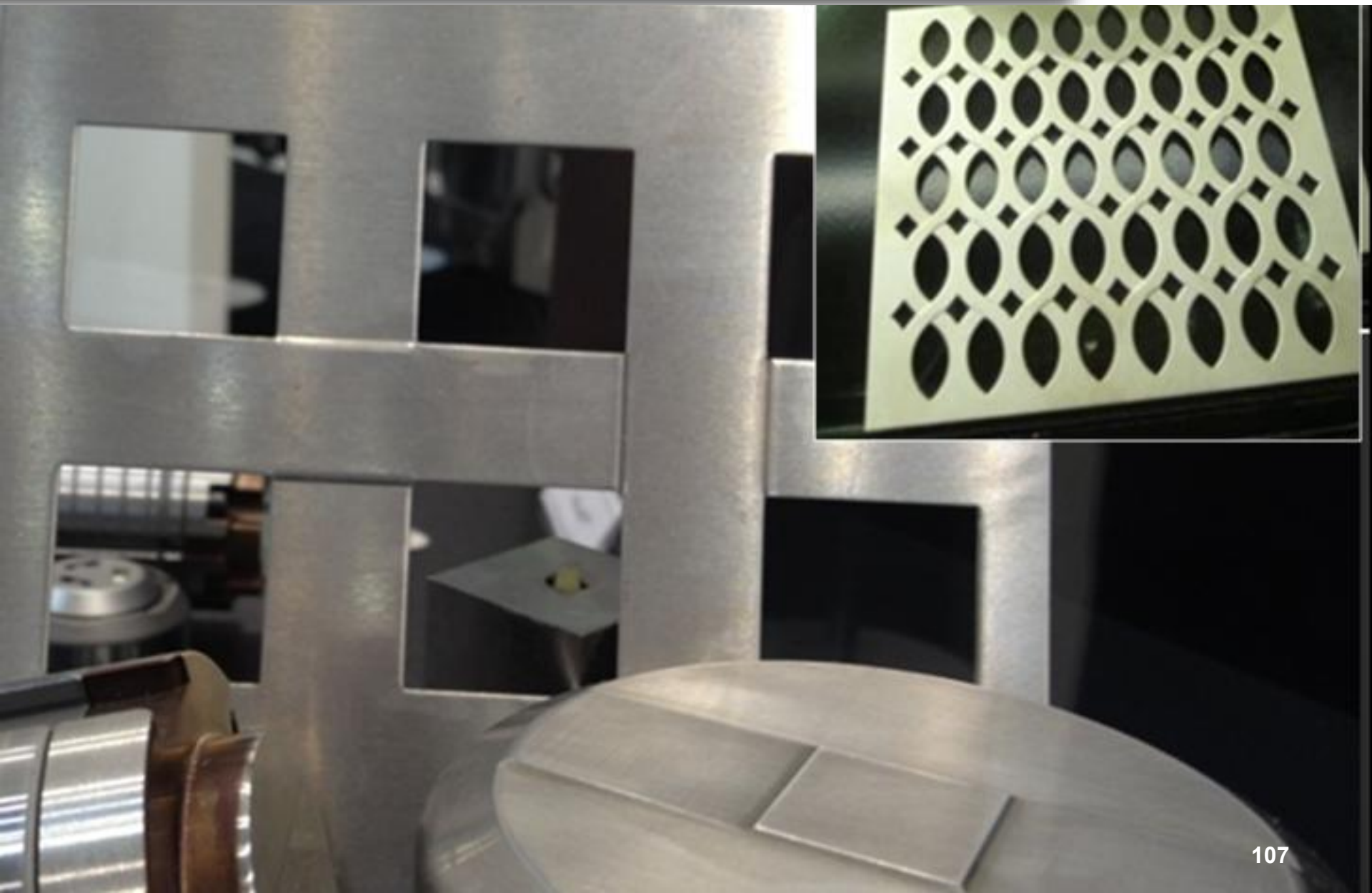
Special Forming

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Gripper Line minimizes sheet curling when forming

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V-Line emboss ('Gripper Line') in the stripper isolates the forming area and allows higher forms with minimum sheet distortion.

Used in combination with PowerMax Die

Gripper Line Solutions

MATE PRECISION TECHNOLOGIES
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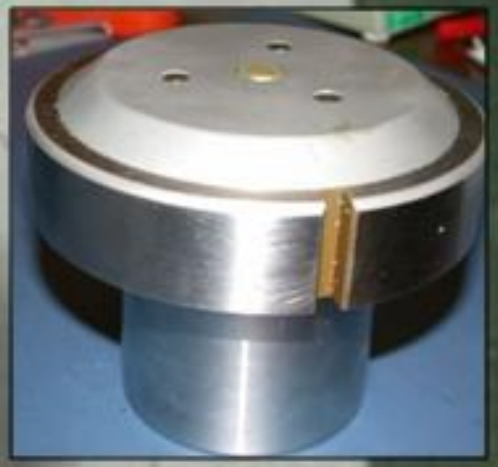
PowerMax Die



Example of Emboss upper insert with Gripper Line

Sheet border and near holes remain unaffected

Gripper Line Solutions

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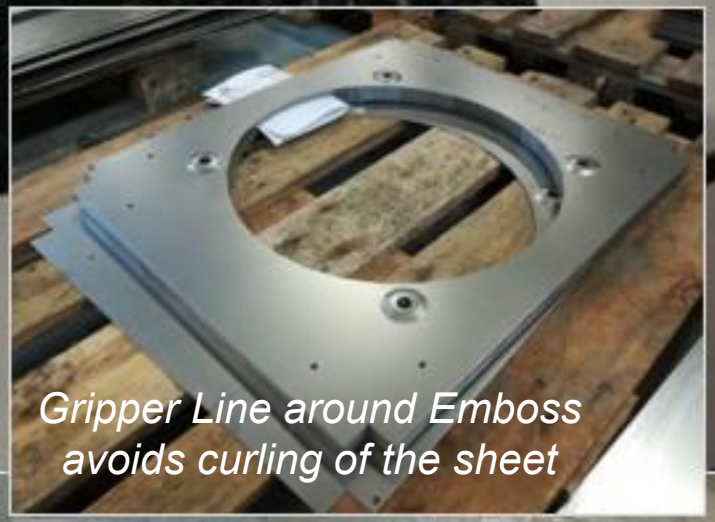
Without Gripper Line

With Gripper Line

Gripper Line minimizes sheet curling when forming

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

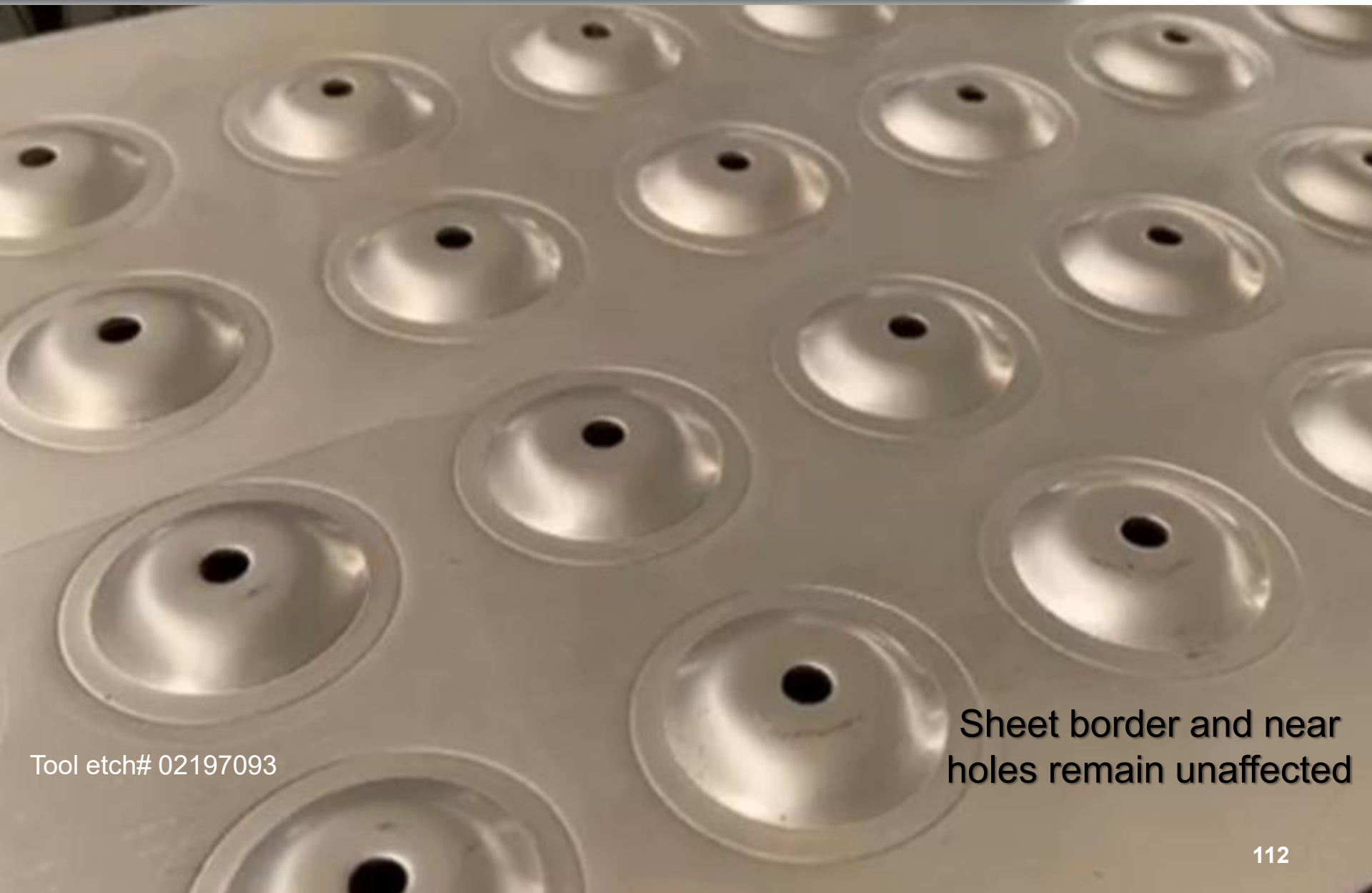


Gripper Line around Emboss avoids curling of the sheet

Heavy sheet curling without Gripper Line …

Gripper Line Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Tool etch# 02197093

Sheet border and near holes remain unaffected

Forming Applications on a Pressbrake

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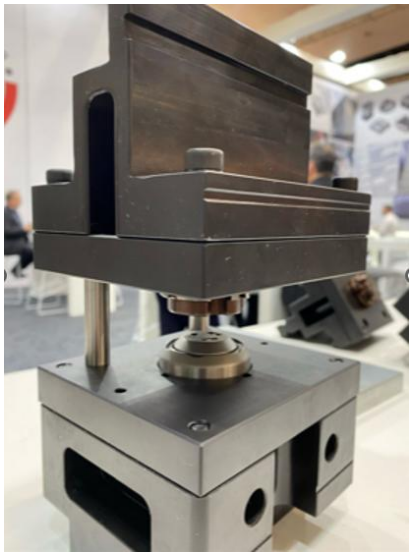
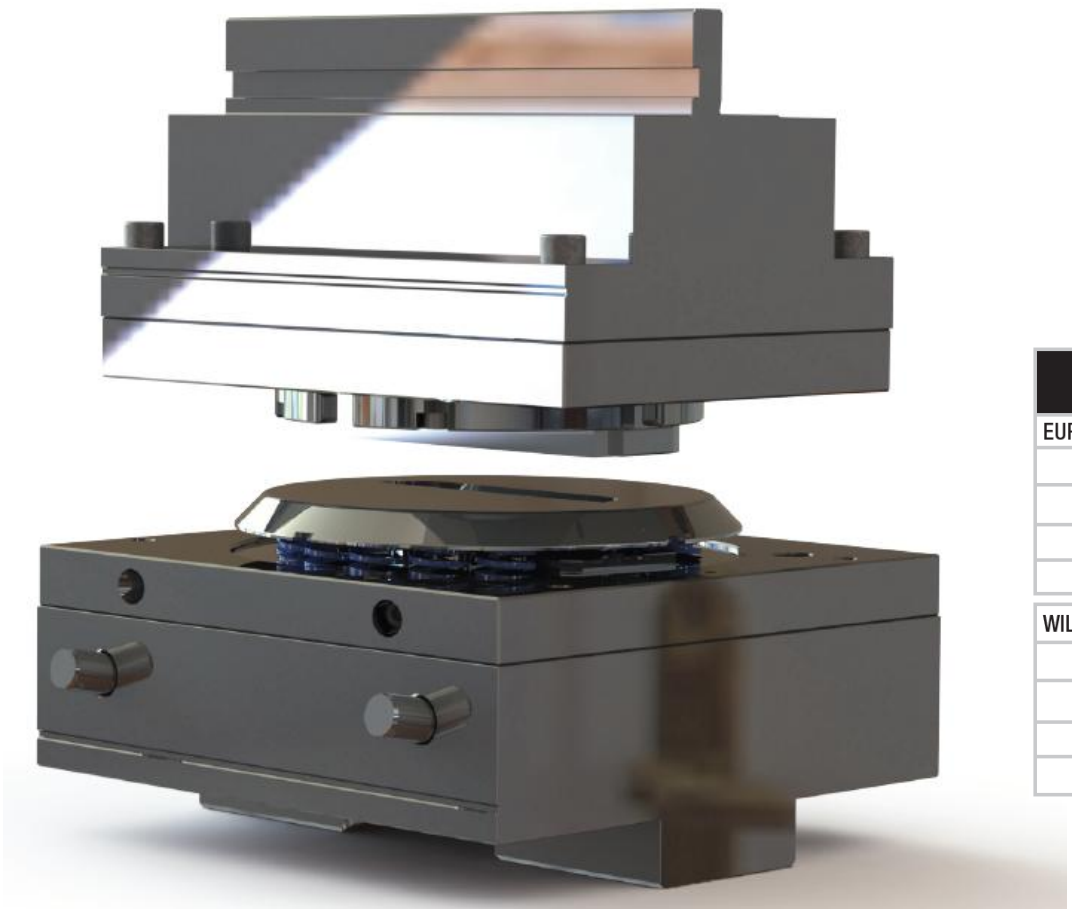
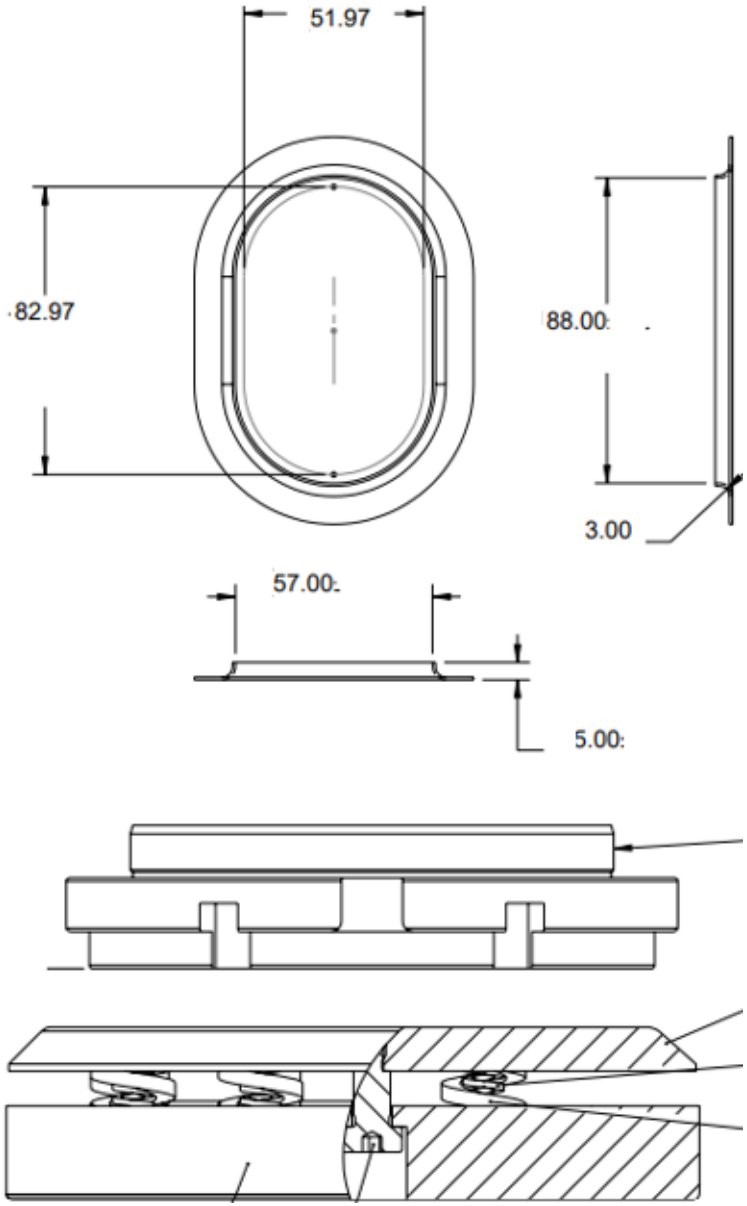
The UltraForm PBT adapts Ultraform upper and lower inserts for use on a pressbrake. Typical applications are louvers, logos, knock-outs, …



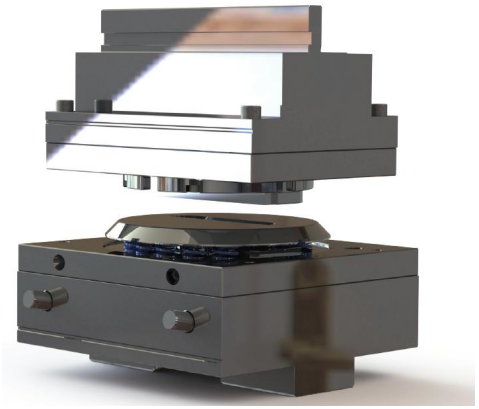


STATION	DESCRIPTION	PART NUMBER
EUROPEAN PRECISION STYLE		
B STATION	SET ASSEMBLY	MATE02654
C STATION	SET ASSEMBLY	MATE02655
D STATION	SET ASSEMBLY	MATE02665
E STATION	SET ASSEMBLY	MATE02666
WILA TRUMPF STYLE		
B STATION	SET ASSEMBLY	MATE02840
C STATION	SET ASSEMBLY	MATE02841
D STATION	SET ASSEMBLY	MATE02842
E STATION	SET ASSEMBLY	MATE02843

Forming Applications on a Pressbrake

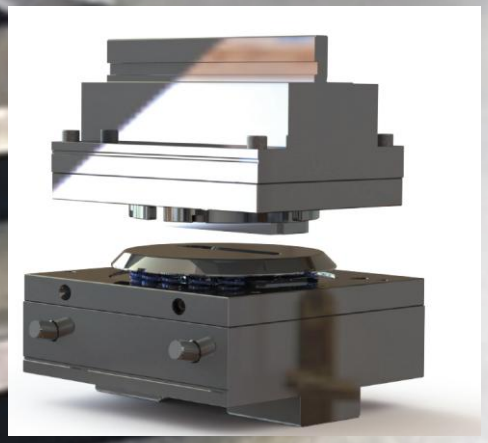


Large E-station extrusion on a Pressbrake (hole pre-cut with laser)



Louver Application after laser pre-cut lines

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Pre-cutting the lines with laser before the louver is formed allows the use of the tool in different thicknesses.
The use of a Continuous Louver Tool also enables flexible lengths of the louvers.
Another advantage is that the louver tool does not get a dull cutting edge.

Forming Applications in QCT

MATE PRECISION TECHNOLOGIES
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Forming Down applications are also possible in QCT style

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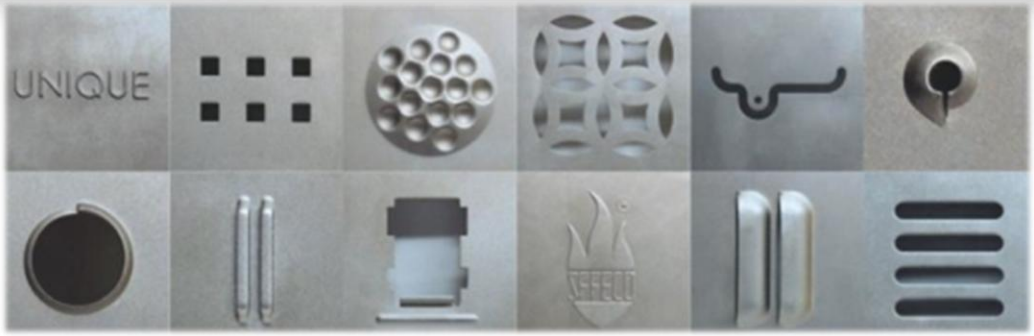
4. Logos and Sheet Marking



Special Assemblies Gallery

Flexible Marking and Scribing Solutions

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Note: Machine must be able to work in Ram Down mode.

MATE SheetMarker® for flexible marking

MATE EasyMark

Erasable marking of parts

Permanent scribing

Flexible Marking and Scribing Solutions

MATE PRECISION TECHNOLOGIES
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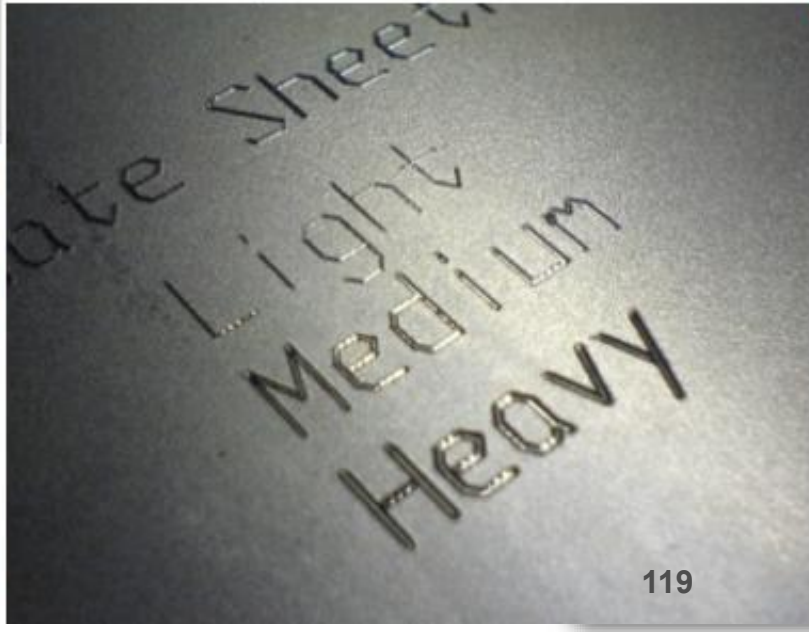
MATE SheetMarker®
for flexible marking



Flexible Marking and Scribing Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

MATE SheetMarker®
for flexible marking

Flexible Marking and Scribing Solutions

MATE PRECISION TECHNOLOGIES
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MATE SheetMarker® -UP

for flexible marking on the lower side of the sheet

(Etch 07171900)

Note: only for use with Upforming station (C or D)

Alpha-Numeric Stamping

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Flexibility through replaceable character inserts

Sequential Numbering

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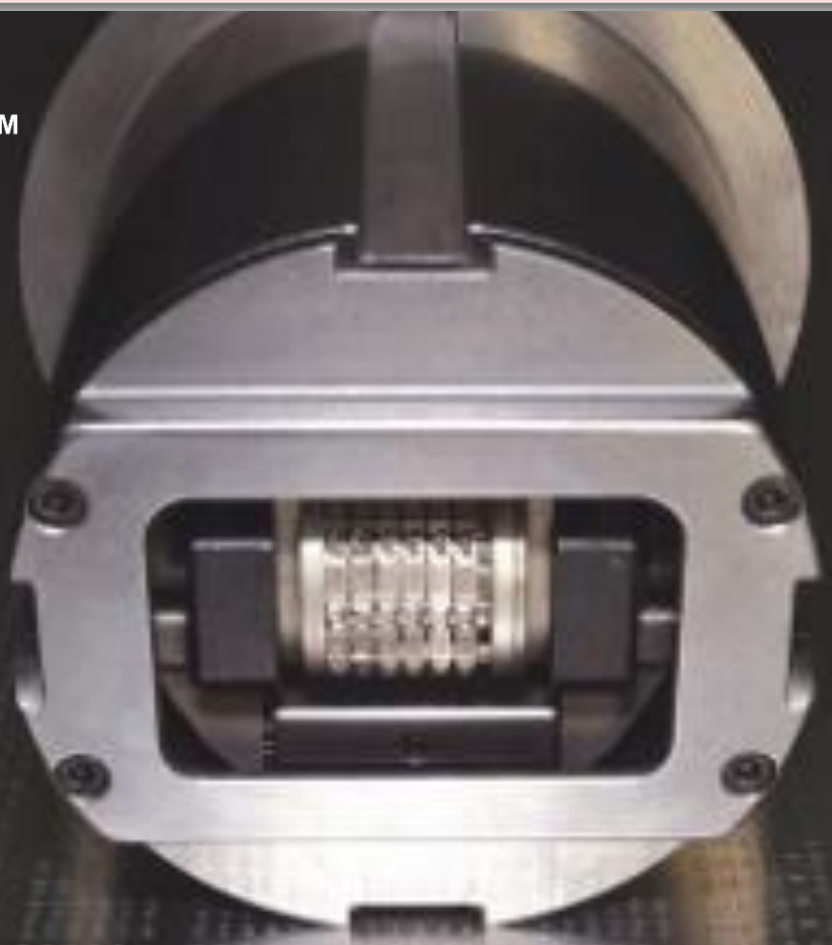
MATE Enumerator™



Sequential part identification numbering

For better traceability of aluminum or stainless steel parts, the Enumerator™ can stamp serial numbers as well as a fix number in one hit. A simple internal lever is used to switch between sequential and fixed mode.

40 Station Character Stamping Multitool

MATE PRECISION TECHNOLOGIES
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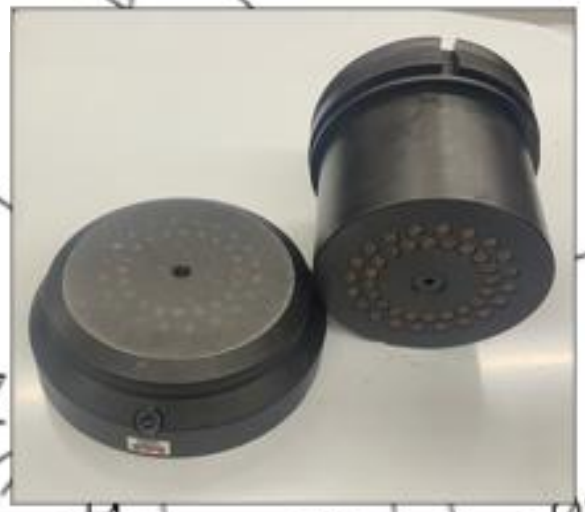
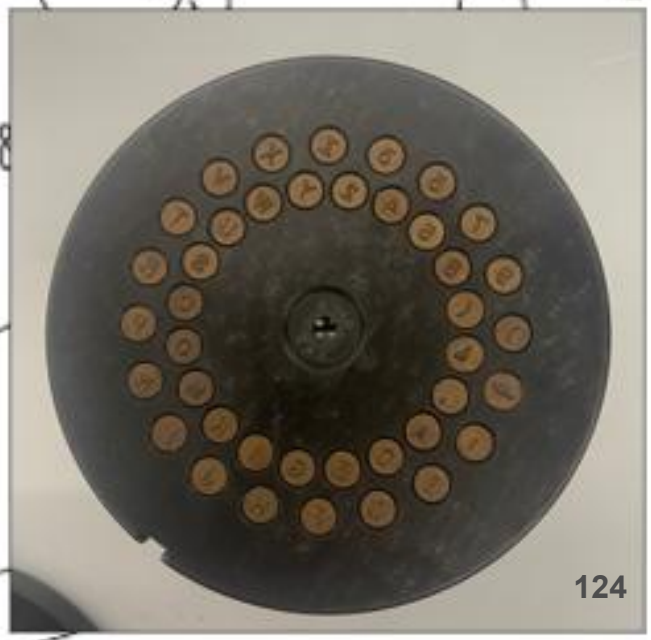
"Like having a typewriter in your punch press" (*)

<u>*Character Heights*</u>
3.2mm (1/8")
4.0mm (5/32")
4.8mm (3/16")

Uses blank (anvil) die.





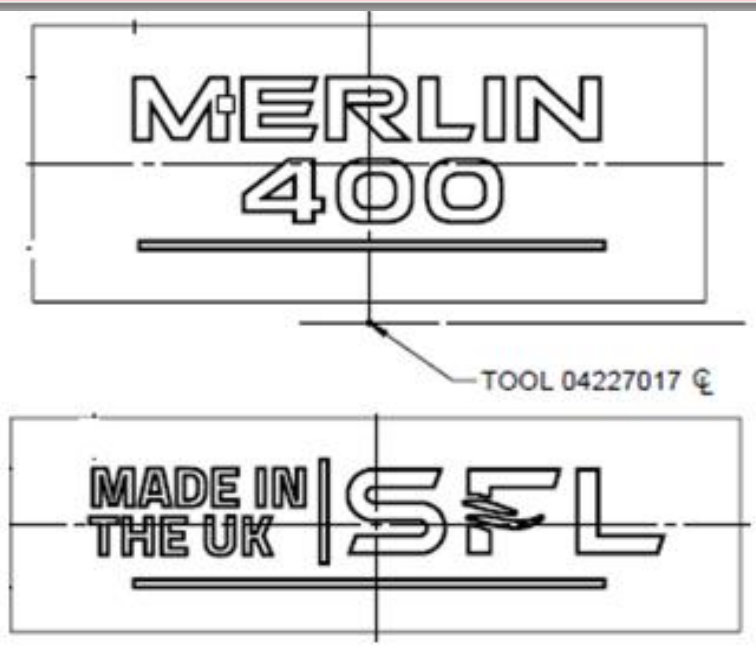
(*) Only for
PrimaPower punch presses.

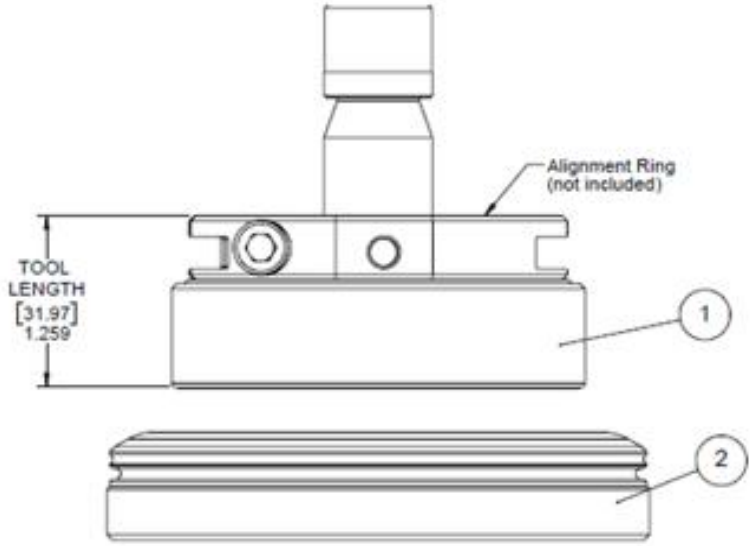
Logo: V-line

1. "Standard' inscriptions with V-line incision tool(s)

2. Custom inscriptions with V-line incision tool(s)

Logo: V-line





Combination of 2 V-line incision tools in 0.5mm stainless steel

(ecth # 04227016 and 04227017)

Logo: V-line

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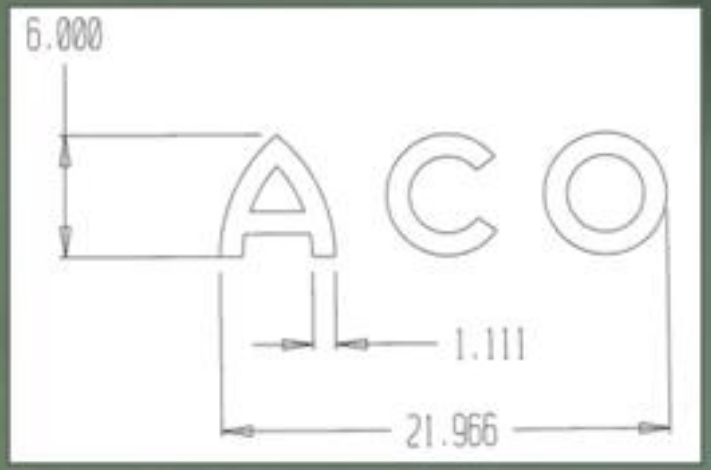
'Digital Mark' tool
(e.g. 05197051)

Logo: V-line & insert combination

Alpha-numeric inserts

Logo: Stamped



Stamped down incision

Logo: Cold Forged Emboss

Cold forged raised emboss guarantees readability after painting

Logo: Cold Forged Emboss

MATE PRECISION TECHNOLOGIES
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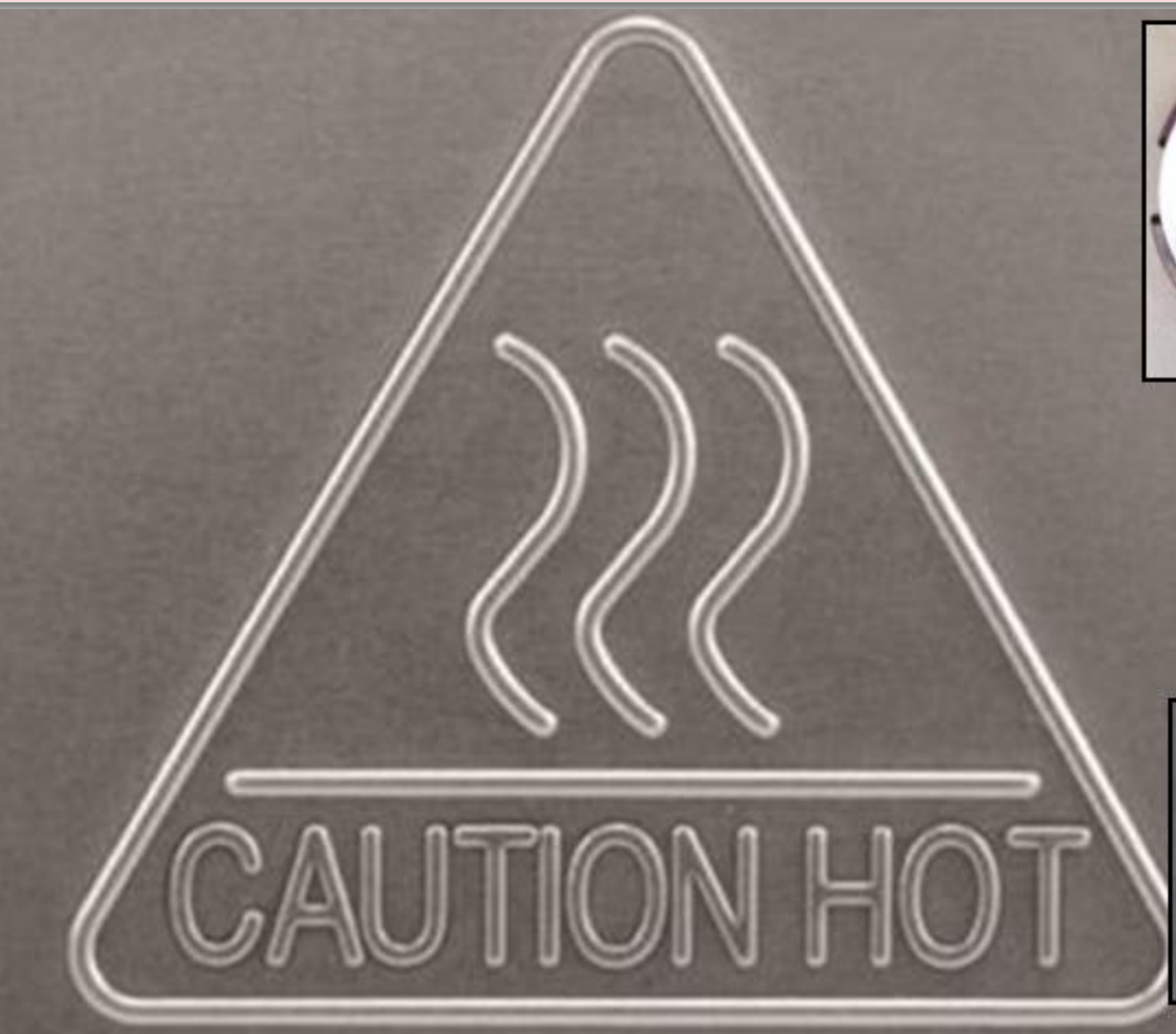

Logo: Cold Forged Emboss

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"You're proud of your product. Put your name on it!"

Logo: Cold Forged Emboss

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Logo: Cold Forged Emboss

MATE PRECISION TECHNOLOGIES
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AIR FLOW

MATE PRECISION TECHNOLOGIES

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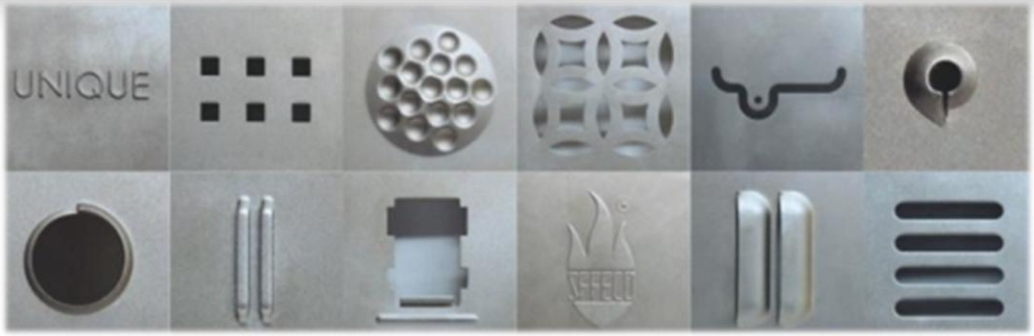
5. Easier Product Assembly



Special Assemblies Gallery

Assembly Solutions

MATE PRECISION TECHNOLOGIES
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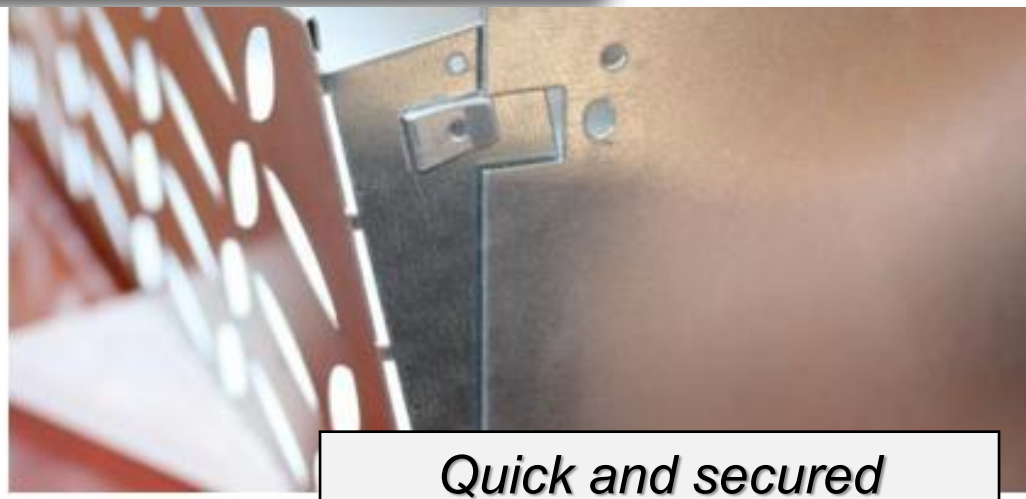

Quick and secured assembly, eliminating secondary operations

Assembly Solutions

MATE PRECISION TECHNOLOGIES
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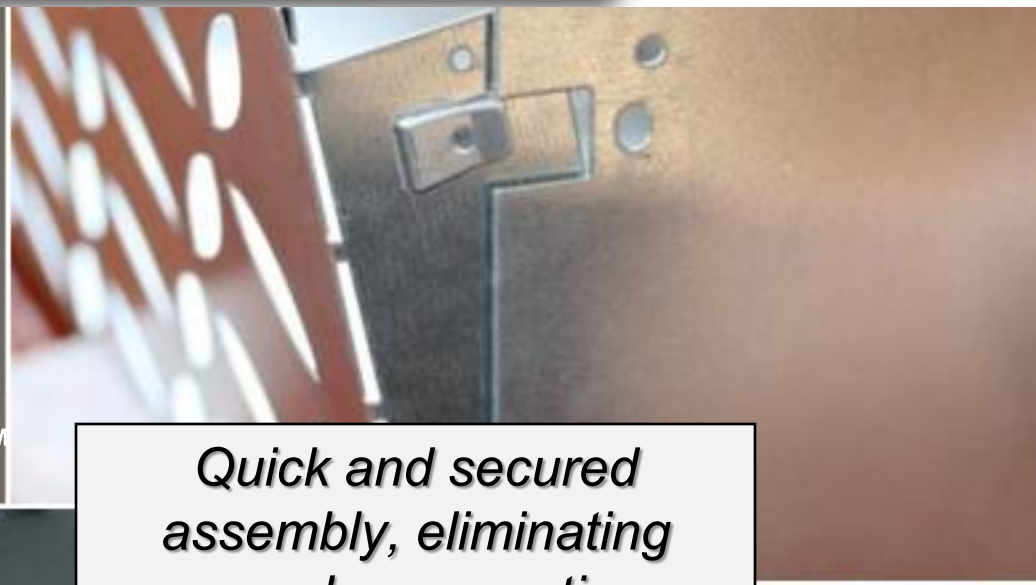
MATE SnapLock™



Quick and secured assembly, eliminating secondary operations


Reinforced
SnapLock

SnapLock Solution

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Special SnapLock Assembly Solutions

MATE PRECISION TECHNOLOGIES
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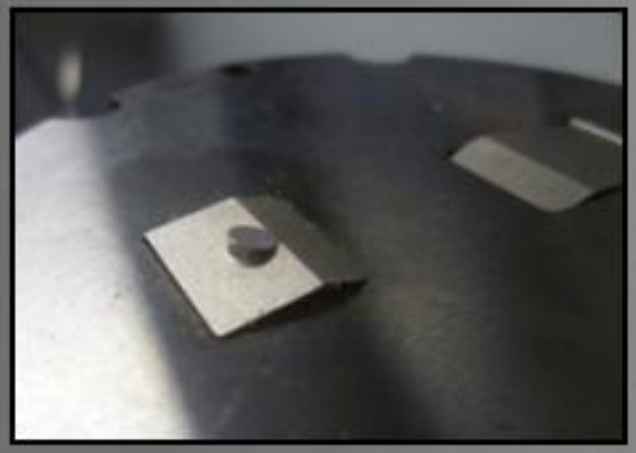
SnapLock and Lance-and-Form in one tool



(Etch 01121845)

HexLock Assembly Solution

MATE PRECISION TECHNOLOGIES
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Quick and secured assembly, eliminating secondary operations

MATE HexLock™

Assembly Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special application tool to assemble parts (HVAC)

Etch # 01224154
Etch # 01224155

Threadform Application

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Threadform application
for special screws,
with prepierce

‘Hybrid’ Threadform Application

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‘Hybrid’ Threadform for standard metric bolts

‘Hybrid’ Threadform Application

MATE PRECISION TECHNOLOGIES
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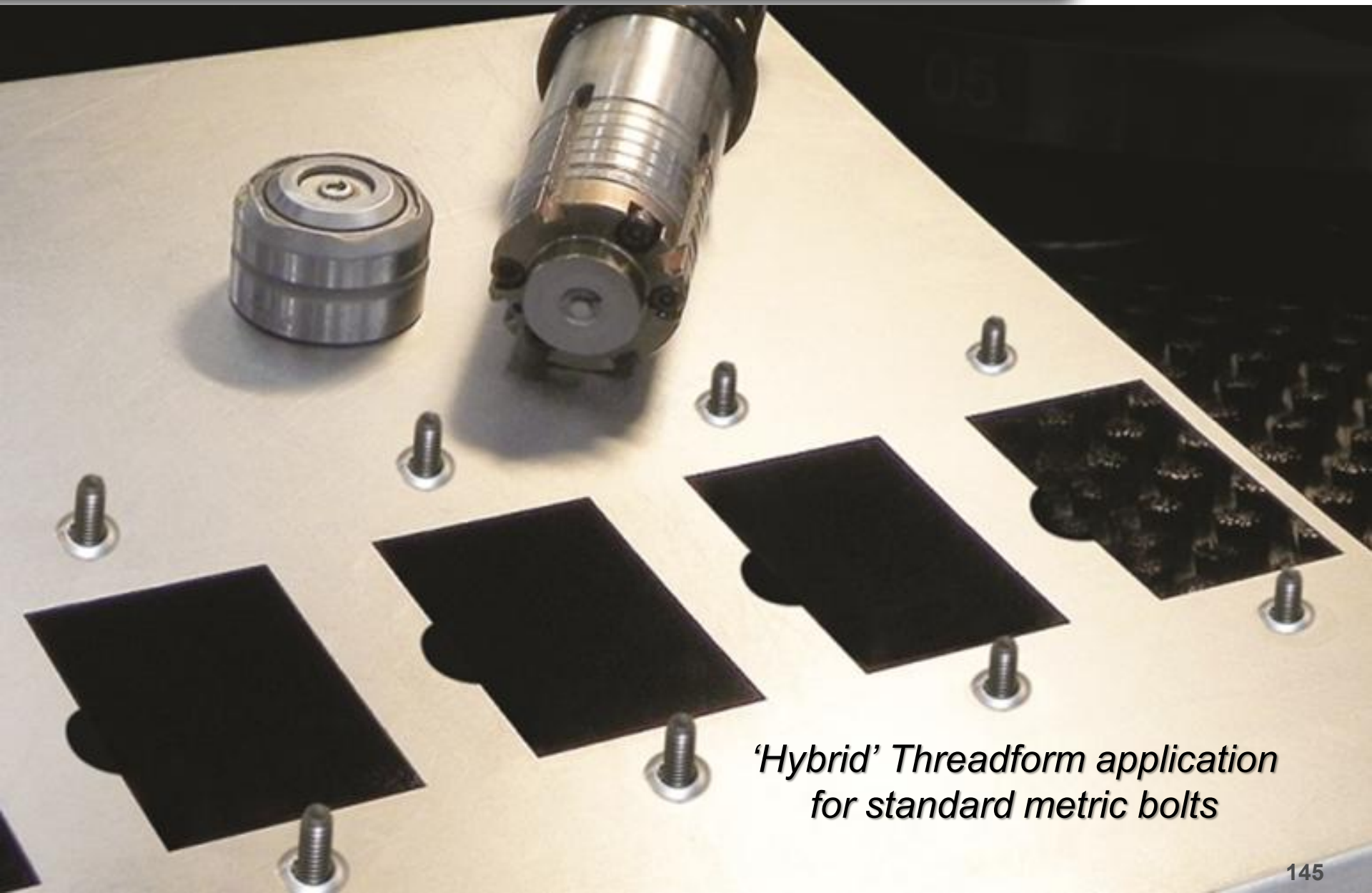
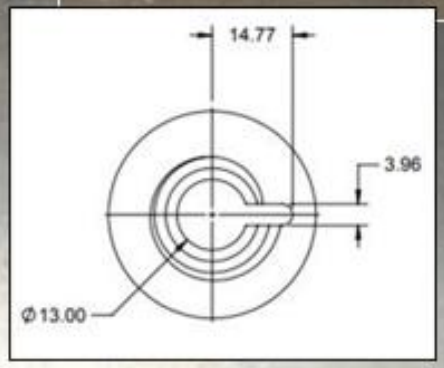


‘Hybrid’ Threadform application for standard metric bolts

‘Hybrid’ Threadform Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Large ‘Hybrid’ Threadform Applications for easier downstream assembly

Threadform Application

MATE PRECISION TECHNOLOGIES
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Threadform application
on the side of part

Mate EasyTap

Drop-in tapping tool
(up to M8)

Centerpoint Application

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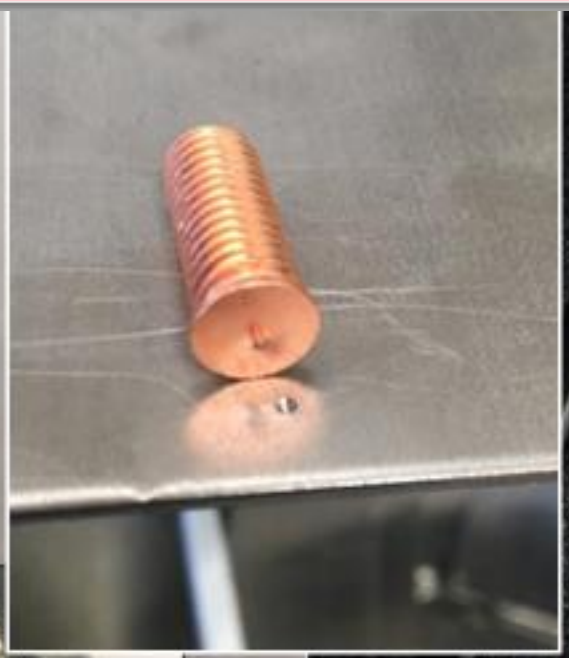
Centerpoints can be made on the top as well as at the bottom of the sheet



Ultraform® Centerpoint-Up

Easymark®

The Sheetmarker® and Easymark® kits include a Centerpoint-Down

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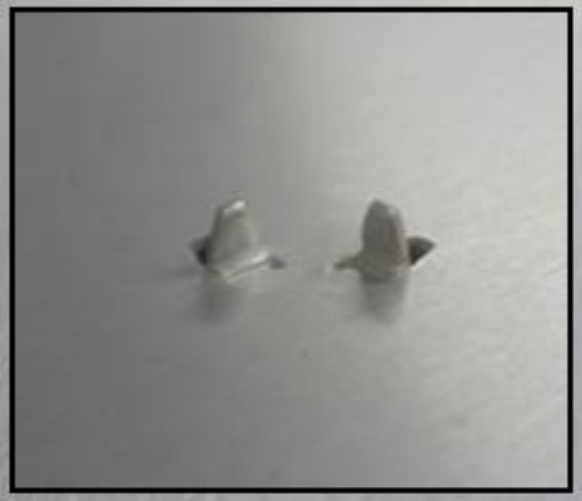
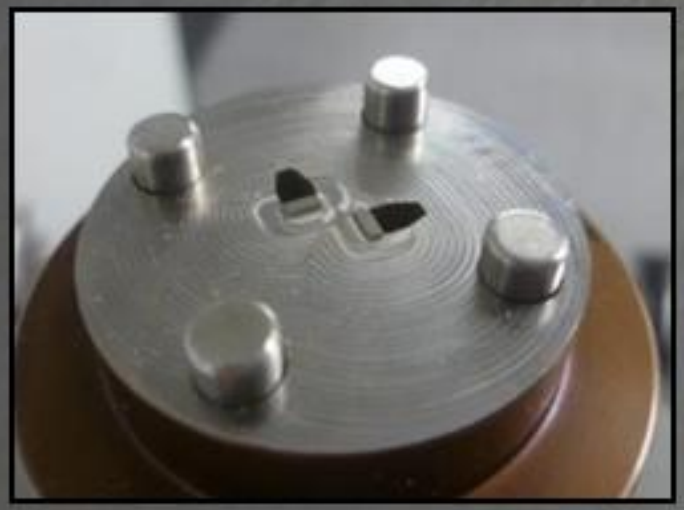
Positioning tabs can make assembly quicker and easier





Assembly Solutions

MATE PRECISION TECHNOLOGIES
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(etch 04198065

Welding solution to keep bottom side of sheet flat

Top of sheet

Assembly Solution ‘Positioning Tab’

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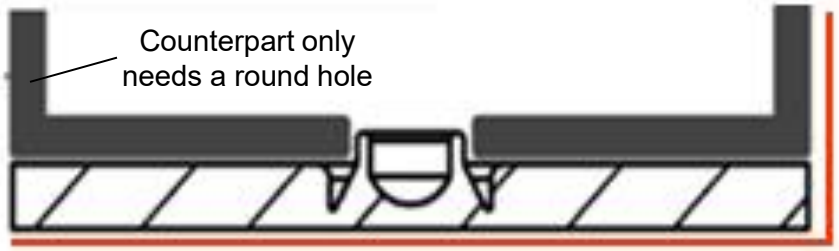
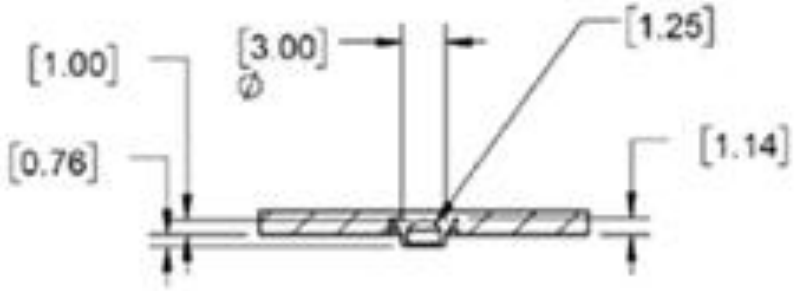
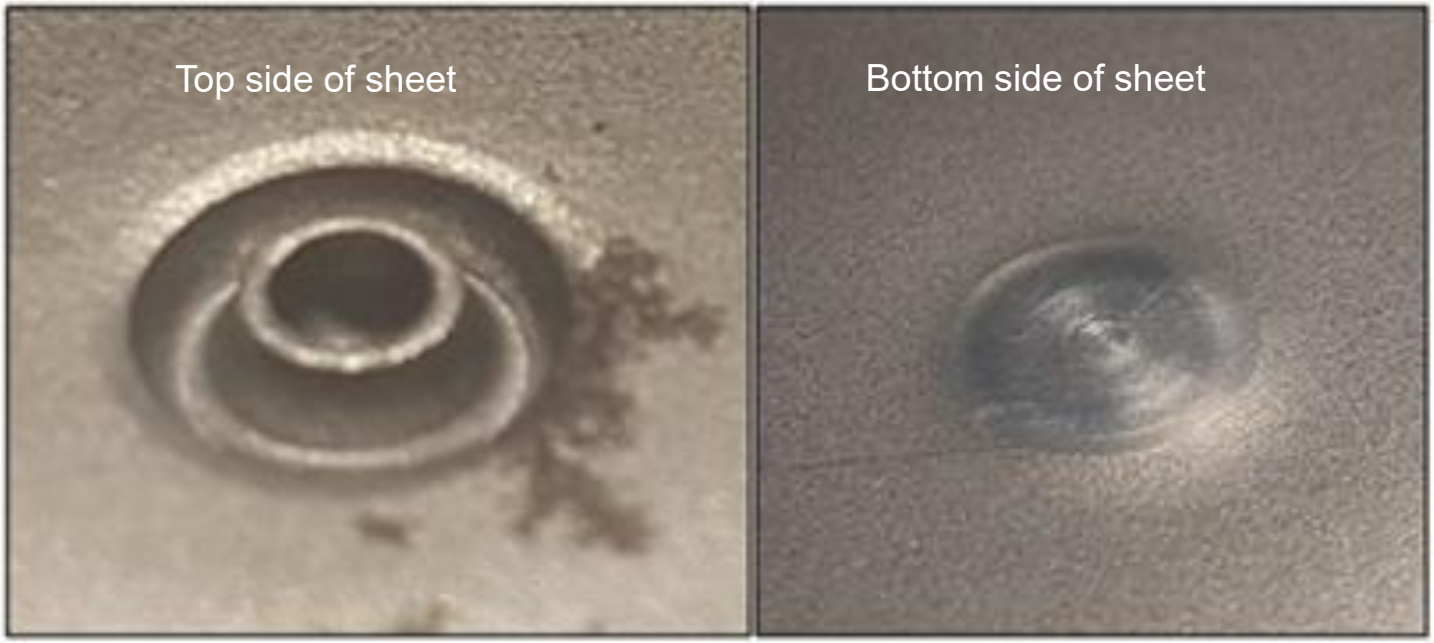
Positioning tab leaves bottom side of sheet flat, and without any mark after painting
(Recommended for sheet thickness 0,8 – 1,6mm)

Etch 04184140 (mt’l 1.0-1.2mm)
Etch 04184143 (mt’l 1.5-1.6mm)

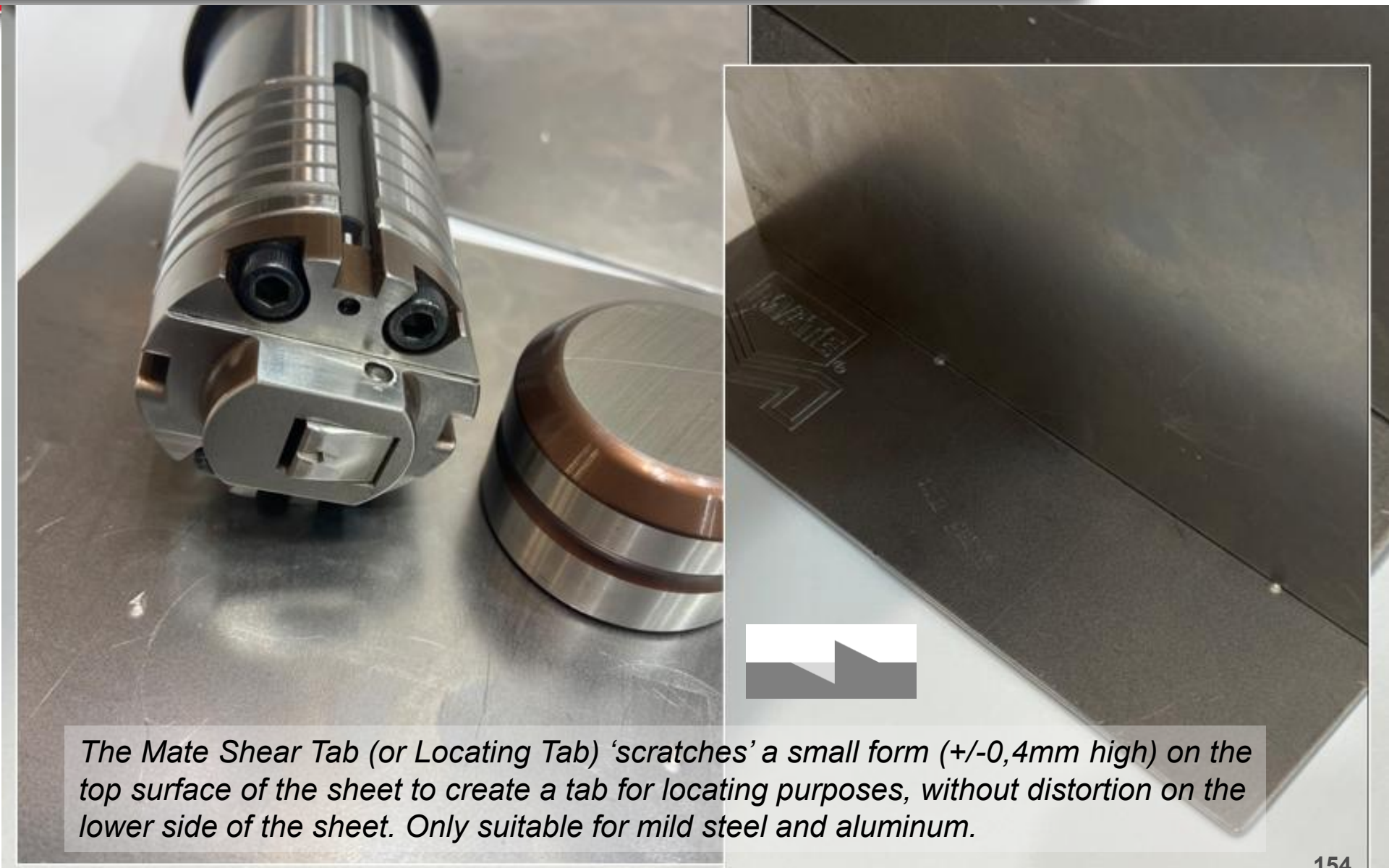






Assembly Solution ‘Mate Shear Tab’

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



The Mate Shear Tab (or Locating Tab) ‘scratches’ a small form (+/-0,4mm high) on the top surface of the sheet to create a tab for locating purposes, without distortion on the lower side of the sheet. Only suitable for mild steel and aluminum.

Special Shearbutton Tab

MATE PRECISION TECHNOLOGIES
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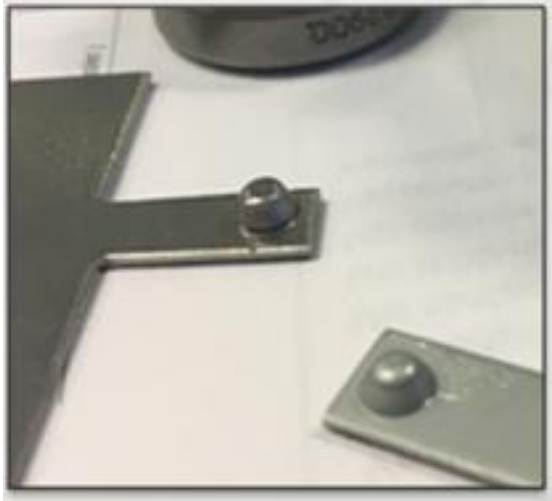
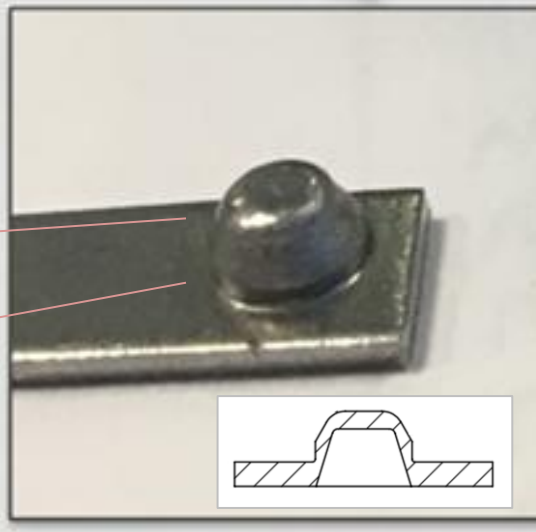
Special precision tabs per customer design to pre-position and align parts during assembly



Round top for easier positioning

Straight part for better accuracy during assembly



(Etch# 05188167)
(Etch# 09182900)
(Etch# 03174106)

Hinge Solutions

MATE PRECISION TECHNOLOGIES
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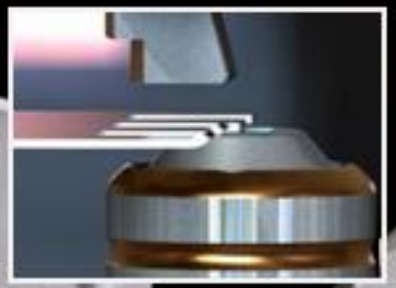
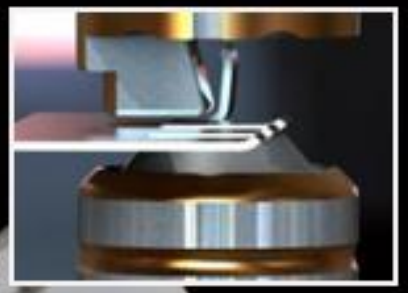
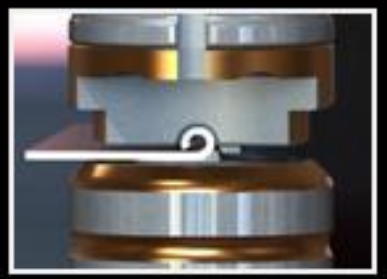
1st hit – Tool 1



2nd hit – Tool 1



3rd hit – Tool 2

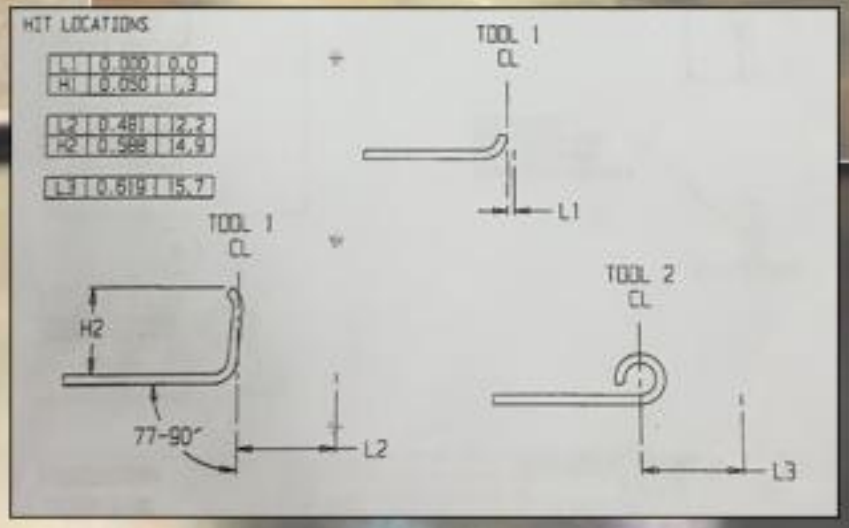


Make your hinges integral with the part

Hinge Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Make your hinges integral with the part



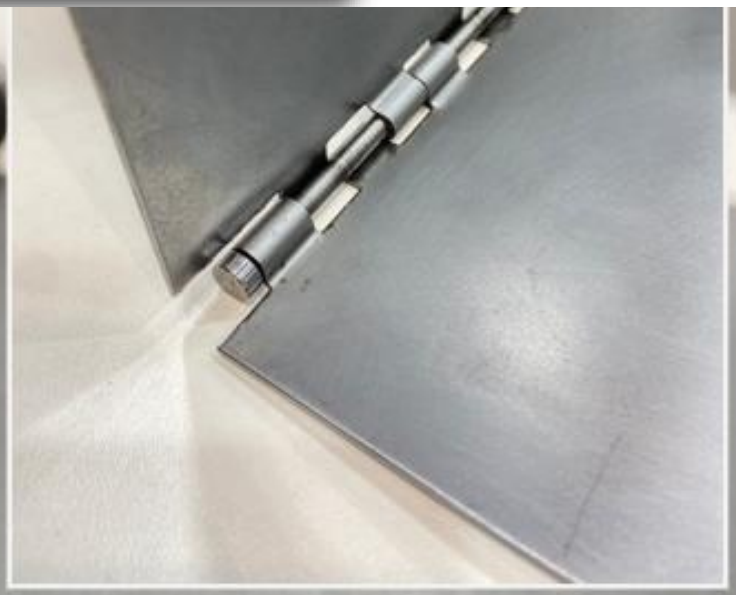
1.5mm Aluminum

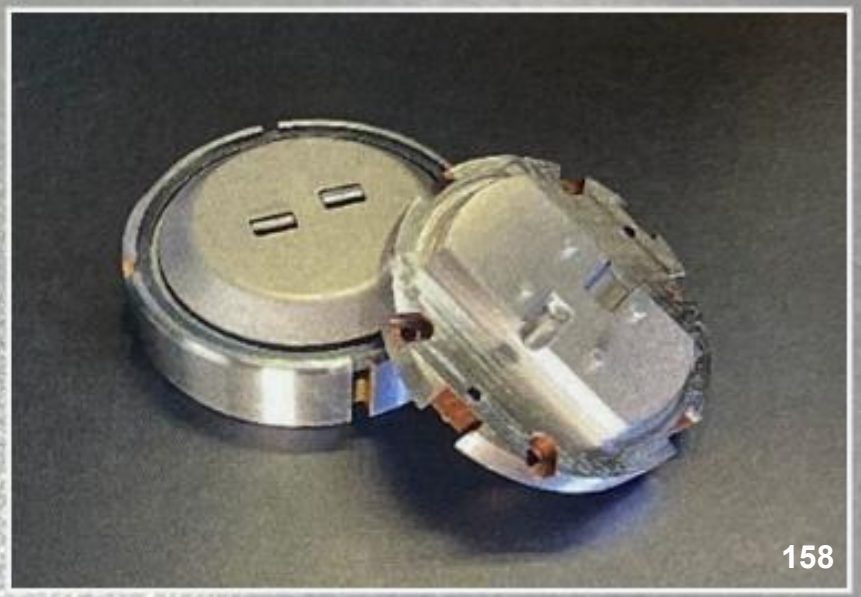
(Tool Etch # 10217007 and 10217008)

One-Hit-Hinge Solution

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

One single hit forms two sections of a curl on two separate knuckles, creating a closed circle to hold the pin securely in place





MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

*Clear **a**reas for secondary operations wi**th***
MATE SheetMarker ®

<u>Note:</u> Machine may need special software function.

Scoring Solutions / Foil Cutting

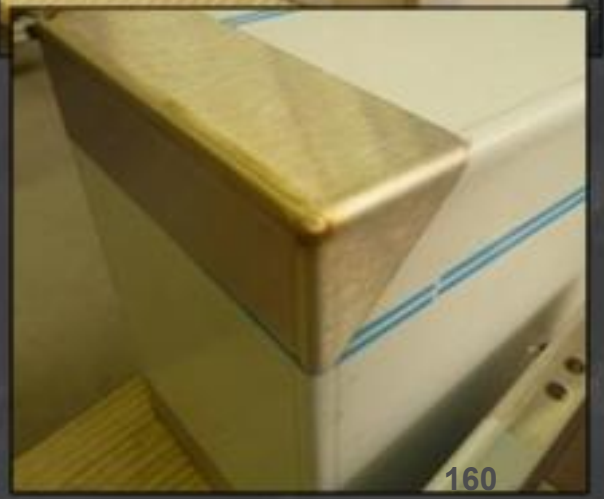
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Clear areas for secondary operations

MATE SheetMarker ®

<u>Note:</u> Machine must be able to work in Ram Down mode.

MATE EasyMark ®

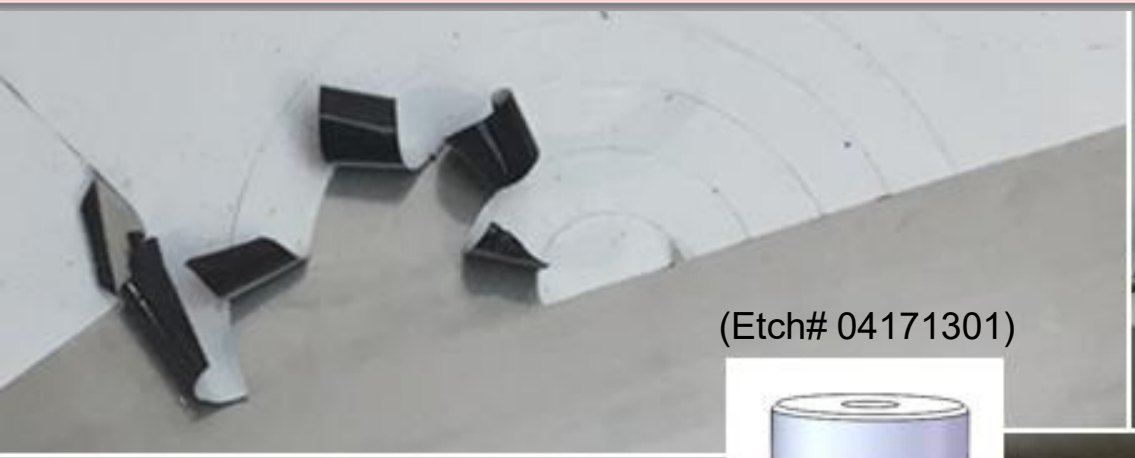


Scoring Solutions / Foil Cutting

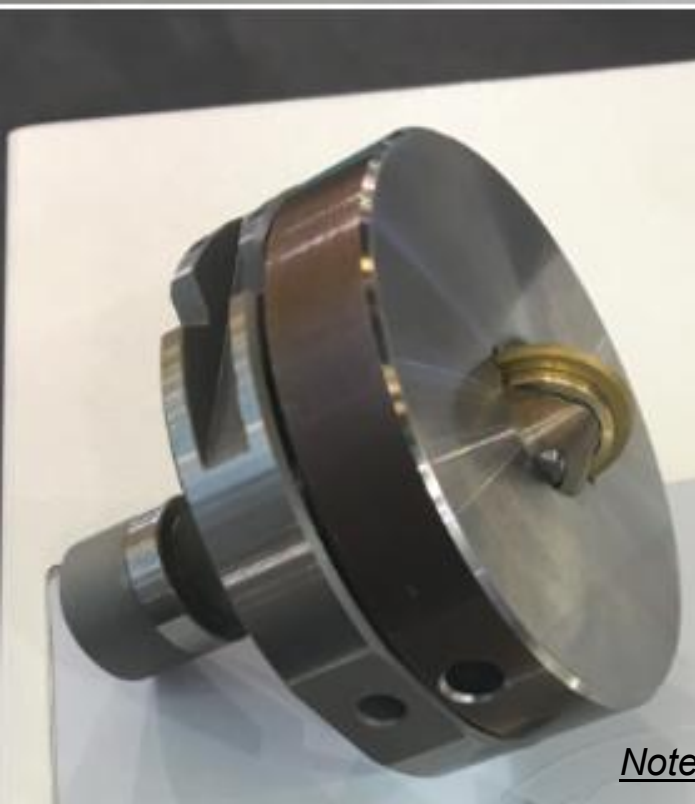
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Precut areas
to facilitate assembly

Advanced Film Cutter



(Etch# 04171301)

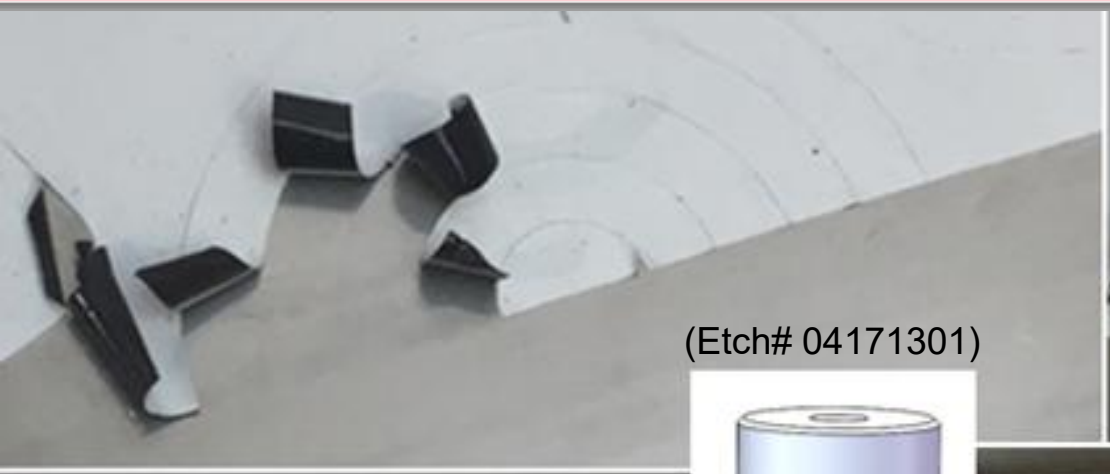


Cutting plastic film
without leaving marks
(best use with Brush Die)

Note: Machine may need special software function.

Advanced Film Cutter

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



(Etch# 04171301)

Cutting plastic film
without leaving marks
(best use with Brush Die)

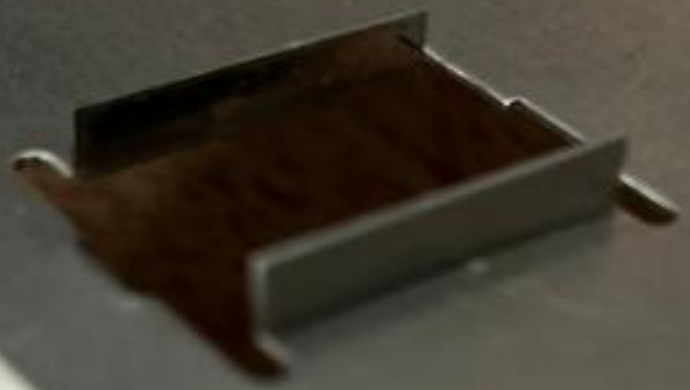
Note: Machine may need special software function.

Vertical Tabs with Emboss Tool

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

‘Emboss Shape Up’ after pre-piercing creates 2 vertical tabs to secure electrical connections

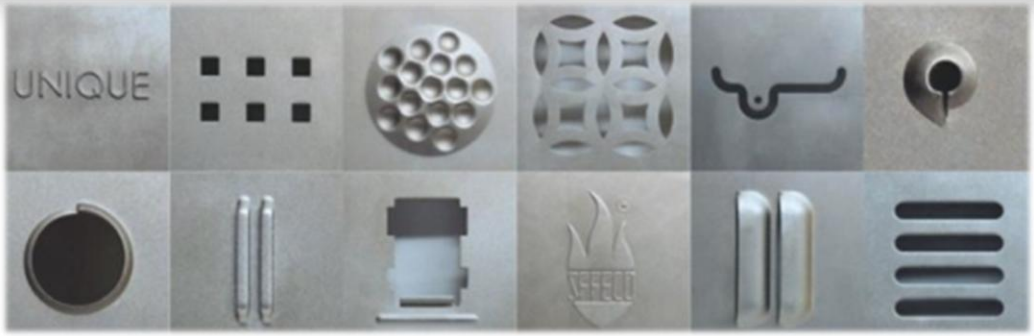
(Etch # 06237060)



MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

6. Punching and Forming Combined



Special Assemblies Gallery

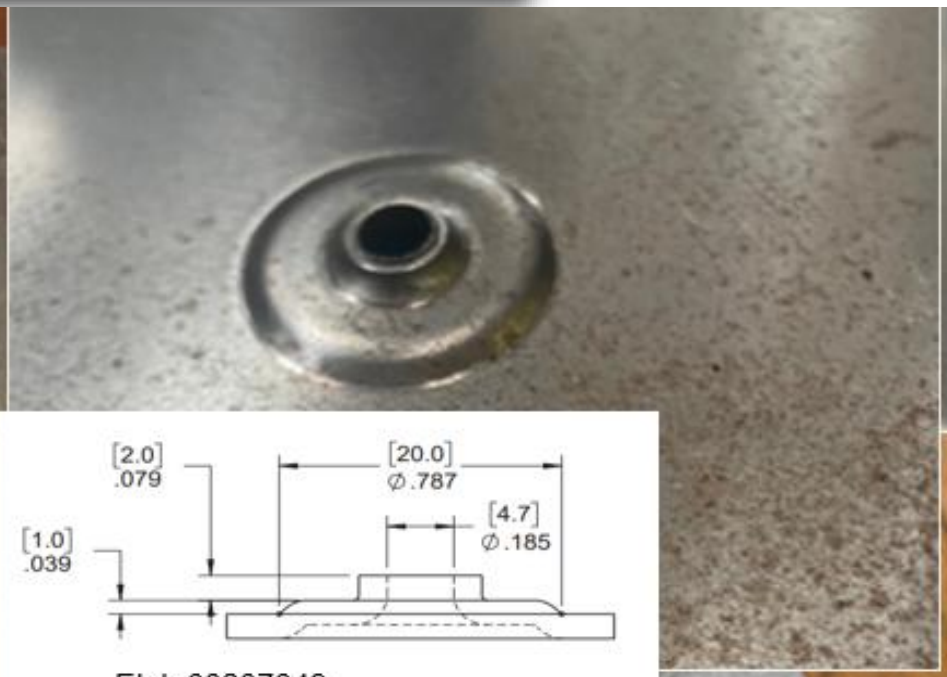
Pierce-and-Form

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

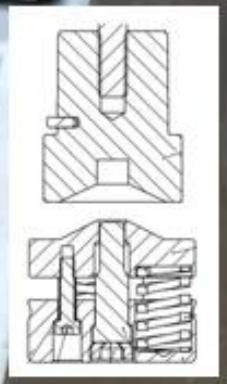
Pierce and Form in one single hit

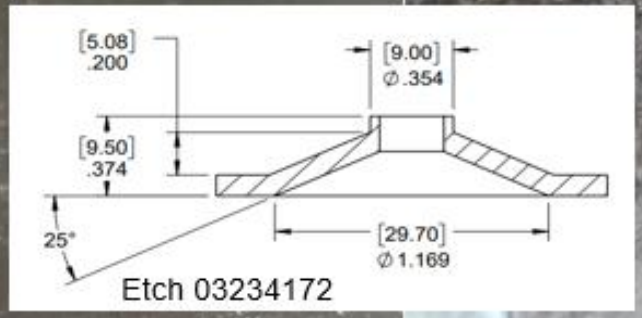
Extrude-and-Emboss UP

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Etch 03237049





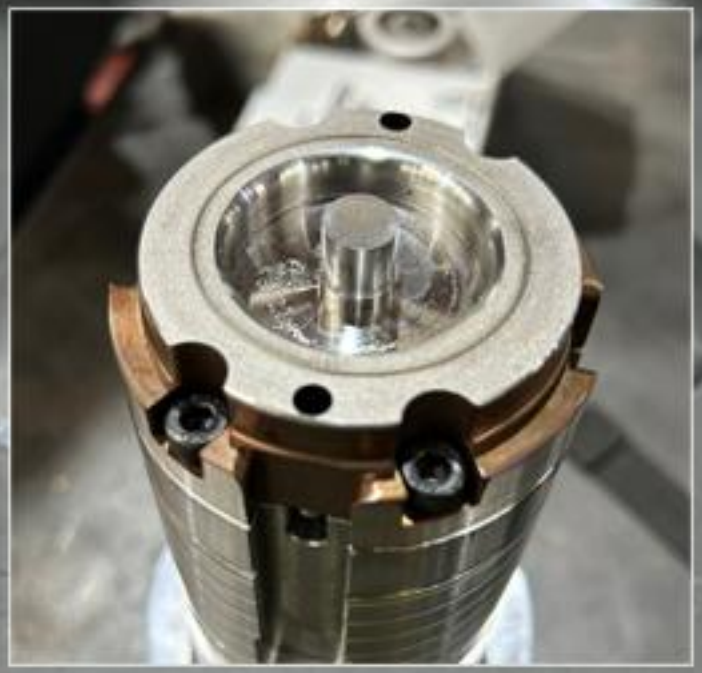
Etch 03234172

Pierce-and-Emboss Up

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Pierce-and-Emboss Up

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Inserts Etch #1227049

Pre-pierce and Emboss in one single hit

Special knurled head for Amada ATC

Pierce-and-Emboss Up

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Pierce and emboss in one single hit

Hole can be punched after embossing for higher accuracy

Pierce-and-Emboss Down

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

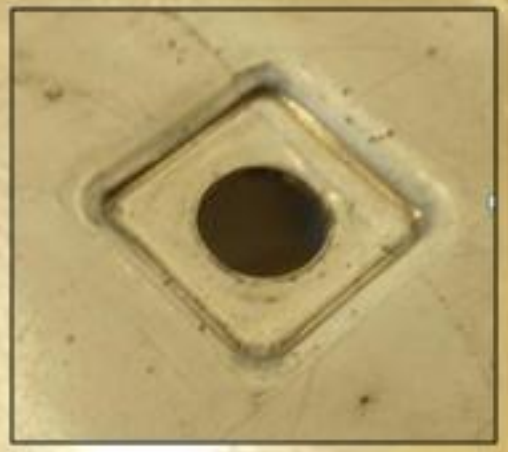
Pierce-and-Emboss down in UltraTEC Fully Guided design with with relieved die

 # Etch 10218085 – 1.5 & 2mm Stainless

Pierce-and-Emboss Down

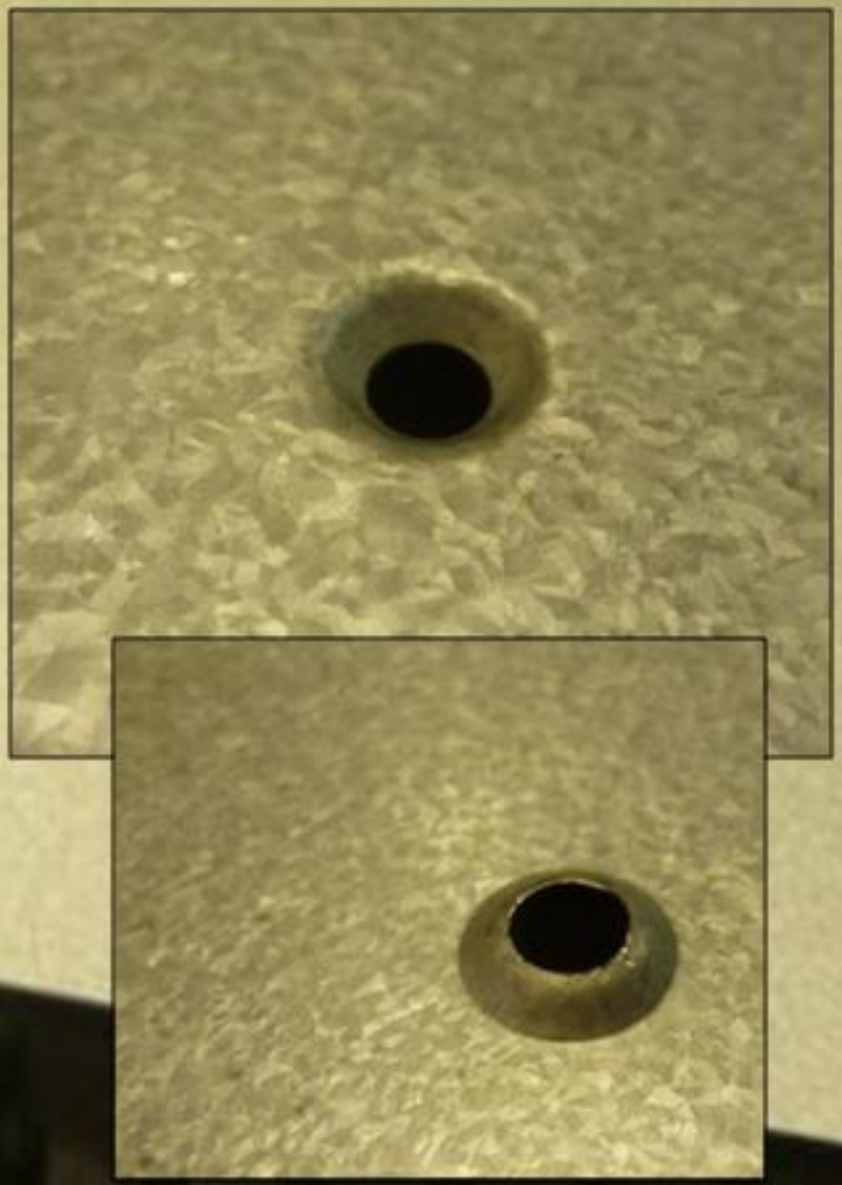
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Pierce-and-Emboss Down
in one single hit



Pierce-and-Emboss Down

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Pierce-and-Emboss Down in one single hit

Triple Pierce-and-Extrude (down)

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Triple pre-pierce and extrusion down, in one single hit

(Etch #12228077)

Cluster Pierce-and-Extrude (up)

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Cluster 3 x 3 pierce-and-extrude-up in 0.5mm aluminum as a reflector in a lighting device

Pierce-and-emboss

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Single hit makes obround slots and downformed contour

Etch 02237010
0,9mm mt'l

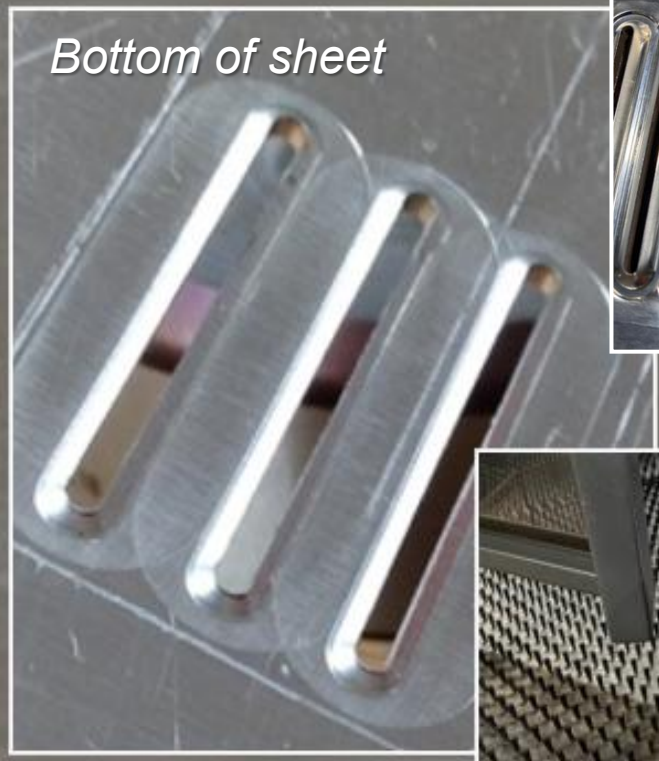
Obround Pierce-and-Embossed Countersink down

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

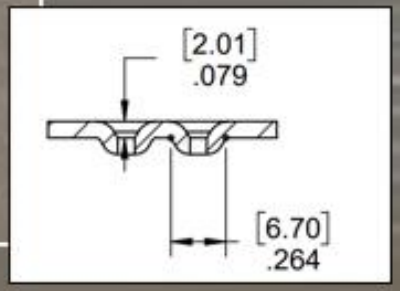
Single hit makes obround pre-pierce and embossed countersink down

Top of sheet

Bottom of sheet



Etch 08227033



Obround Pierce-and-Embossed Countersink down

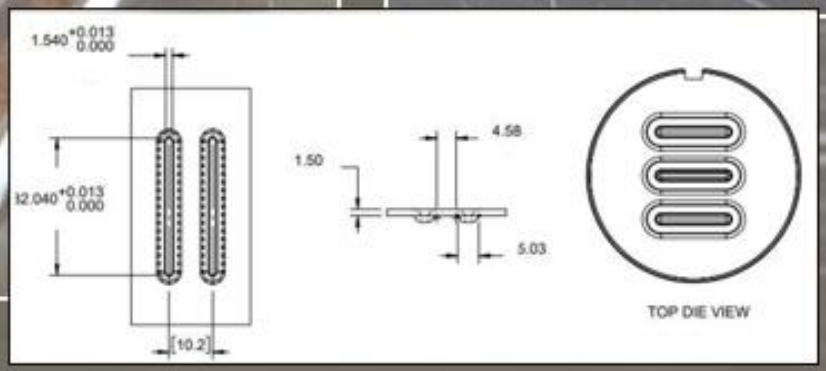
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Single hit makes obround pre-pierce and embossed countersink down

Top of sheet

Bottom of sheet

Etch 07237026



Burst-and-Emboss

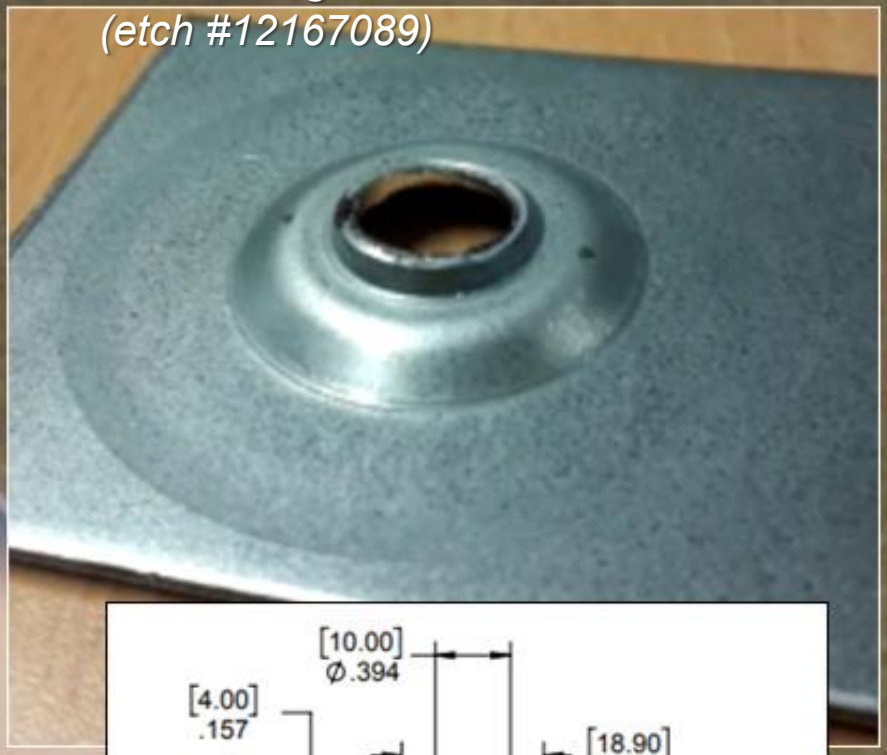
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

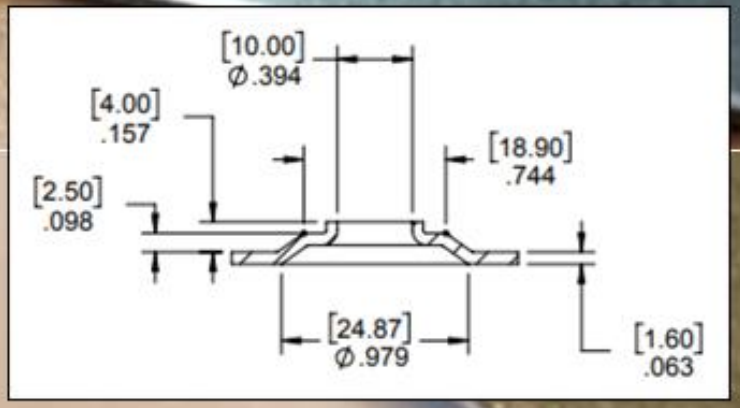
Emboss with bursted hole in one single hit

Pre-pierce – Extrusion – Emboss

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Emboss and extrusion in one single hit (etch #12167089)



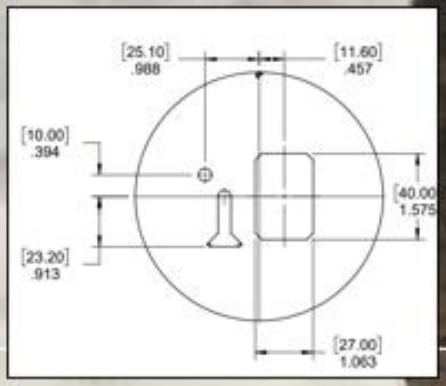


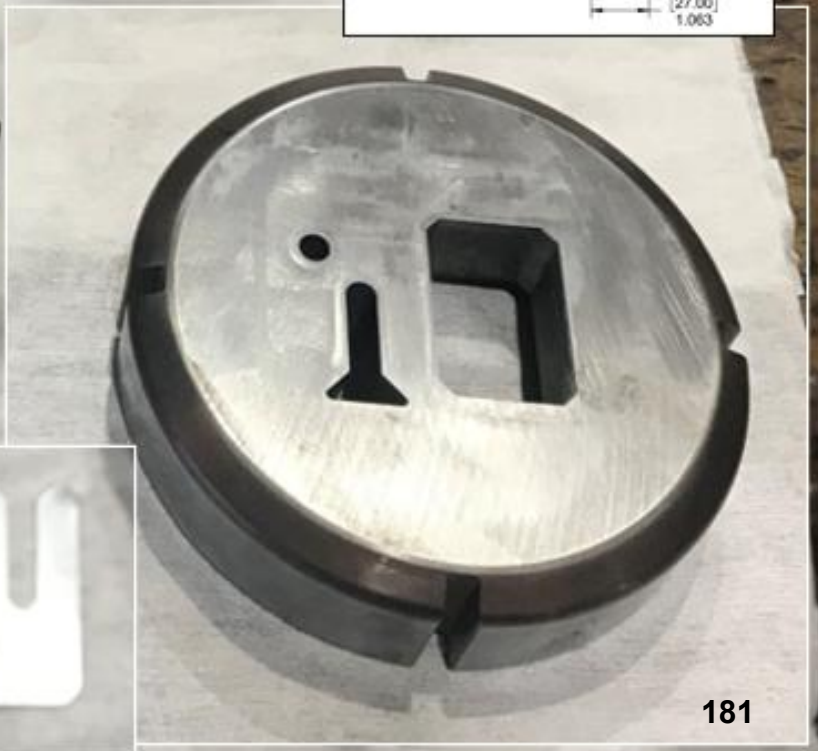
Pre-pierce, extrusion and emboss in one single hit

Progressive Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Solid style cluster tool for a progressive application in 1.6mm mild steel





Tool etch# 10217049

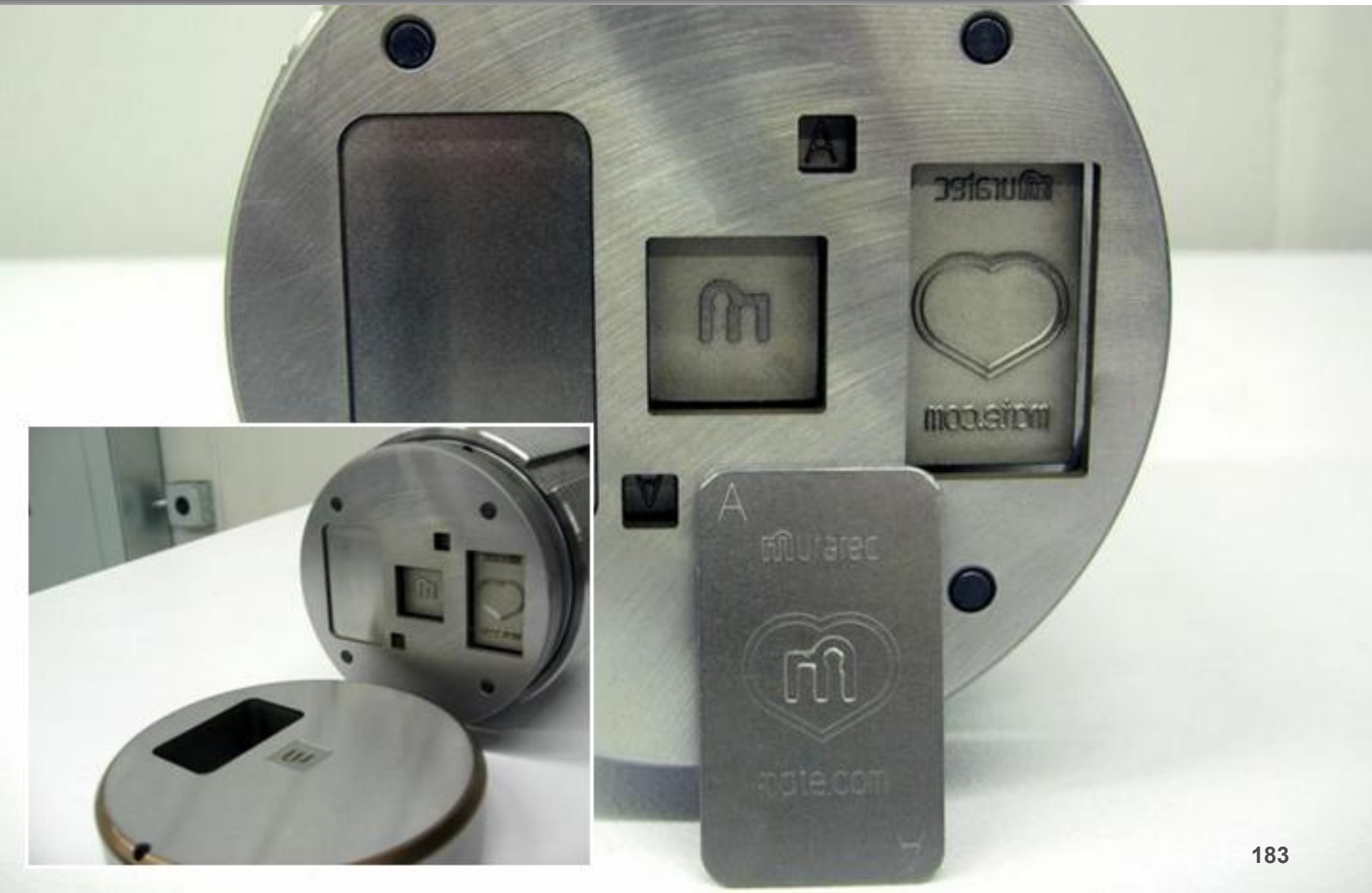
Progressive Punching and Forming

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Two or three progressive hits required per part, but every hit finishes a part.

Progressive Punching and Forming

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Progressive Punching and Forming

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Two or three progressive hits required per part, but every hit finishes a part.

Progressive Punching and Forming

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Progressive application with 2 tools

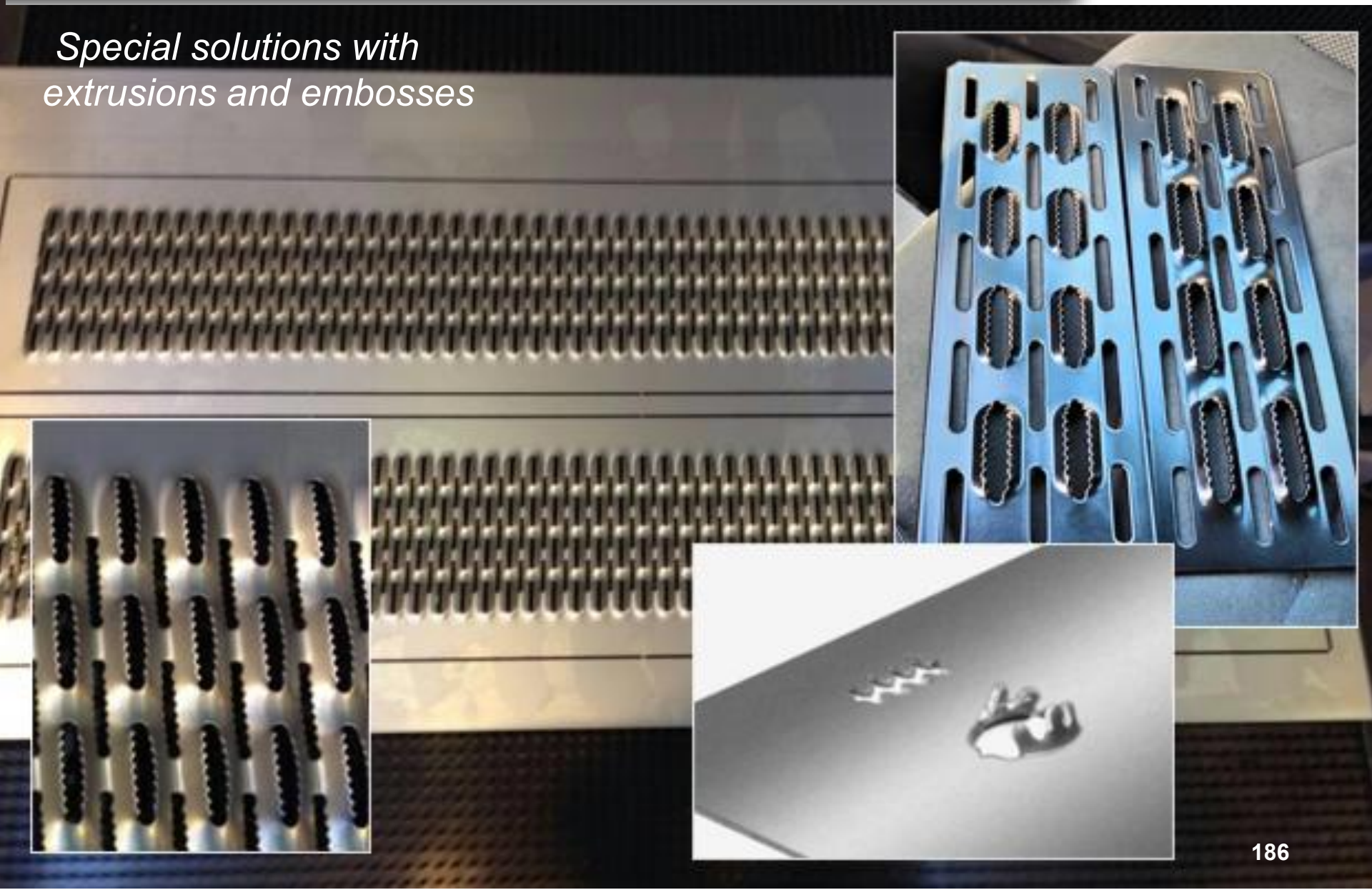
Tool etch# 11194107

Tool etch# 11194108

Special Extrusions and Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special solutions with extrusions and embosses



Special ‘Z’-Bend Tool

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

(etch 06164146)

Special forming with two 90° bends
(left and right side of the part in separate forming operations)

Special Forming Application

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Special Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

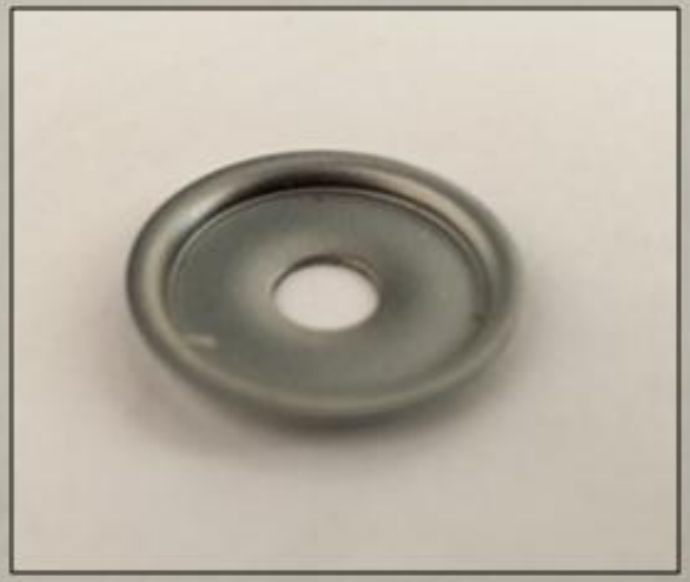
Cross shaped hole with emboss up creates anti-slip and water drainage in one, for e.g. metal staircases

Special Embosses

Small embossed parts

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

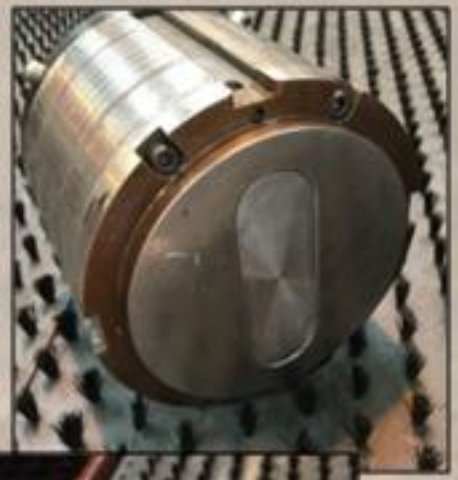
Small part application
with 3 different tools
(pierce, emboss, blanking)

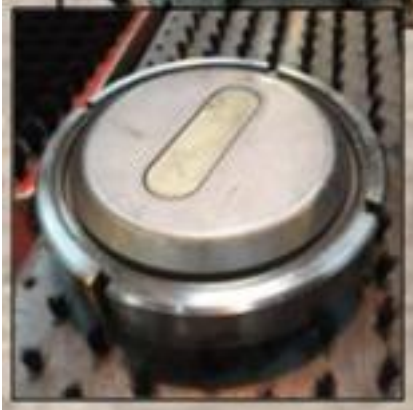


Curled Embosses

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

1st tool: normal emboss
(after pre-piercing)



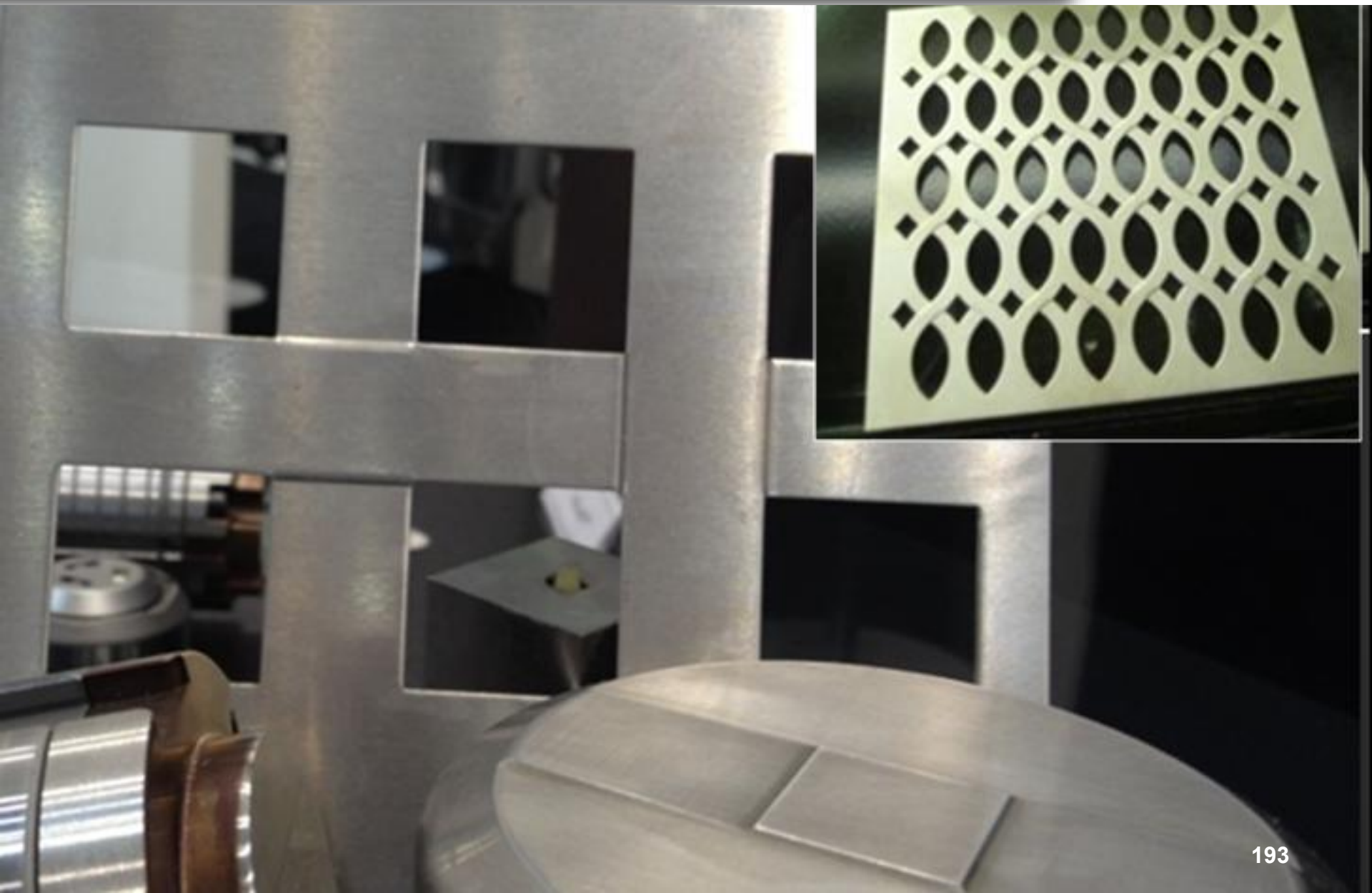


2nd tool: curling tool
(pilot-nose)

(Etch# 09108132/33)

Special Forming

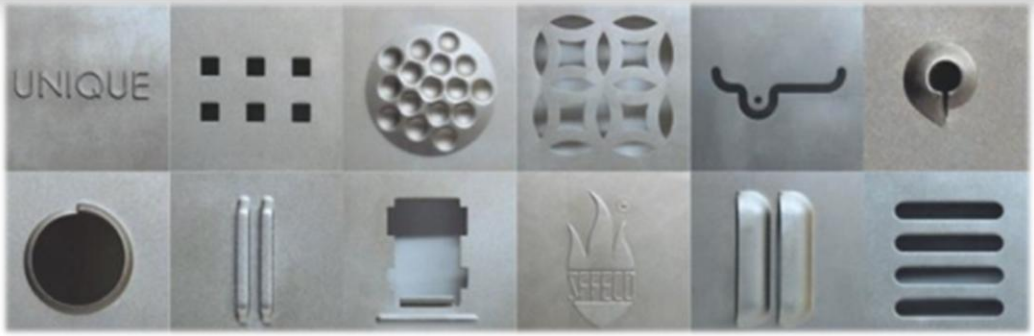
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

7. Bending Applications



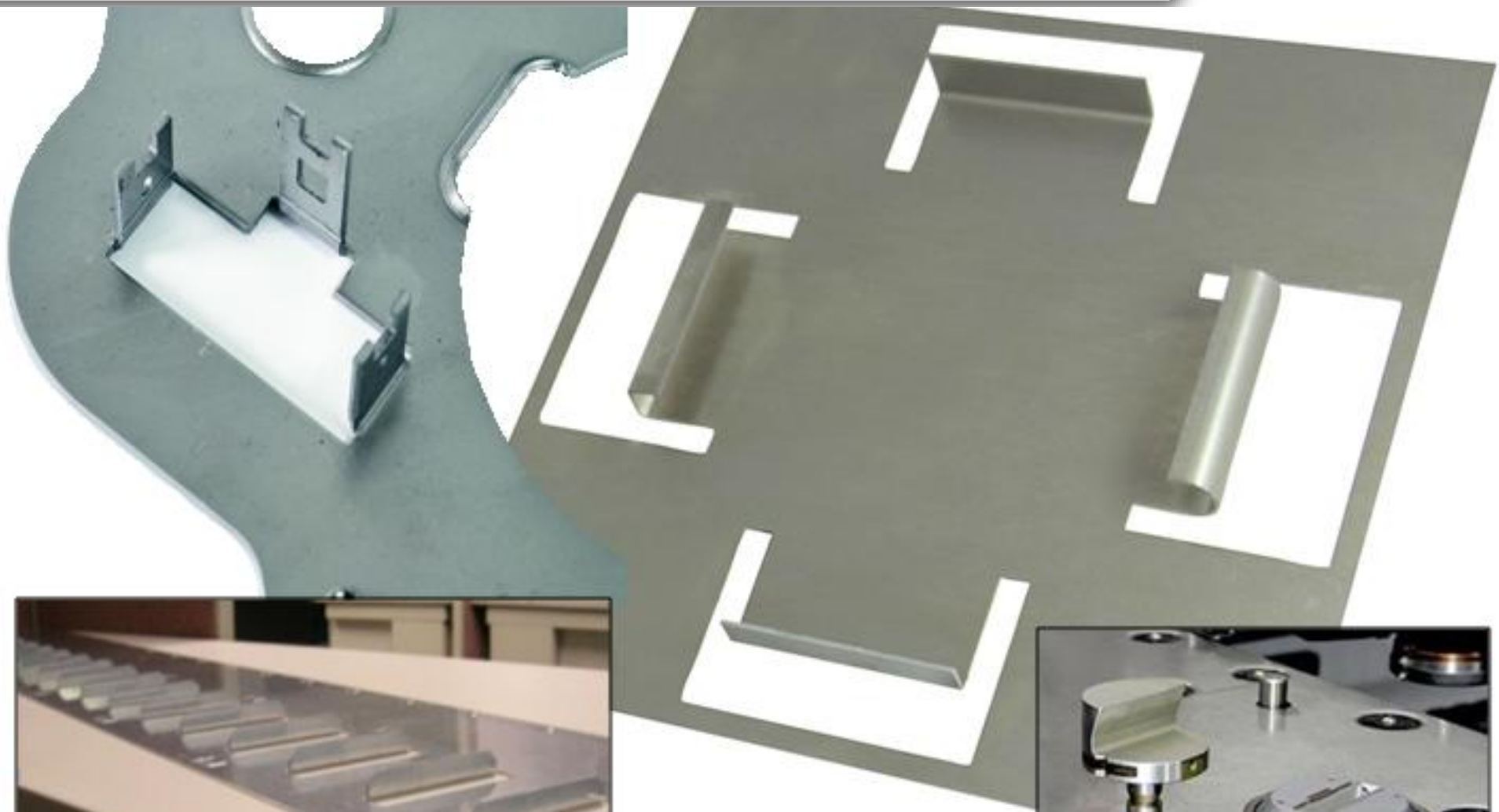
Special Assemblies Gallery

Bending Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Bending Applications

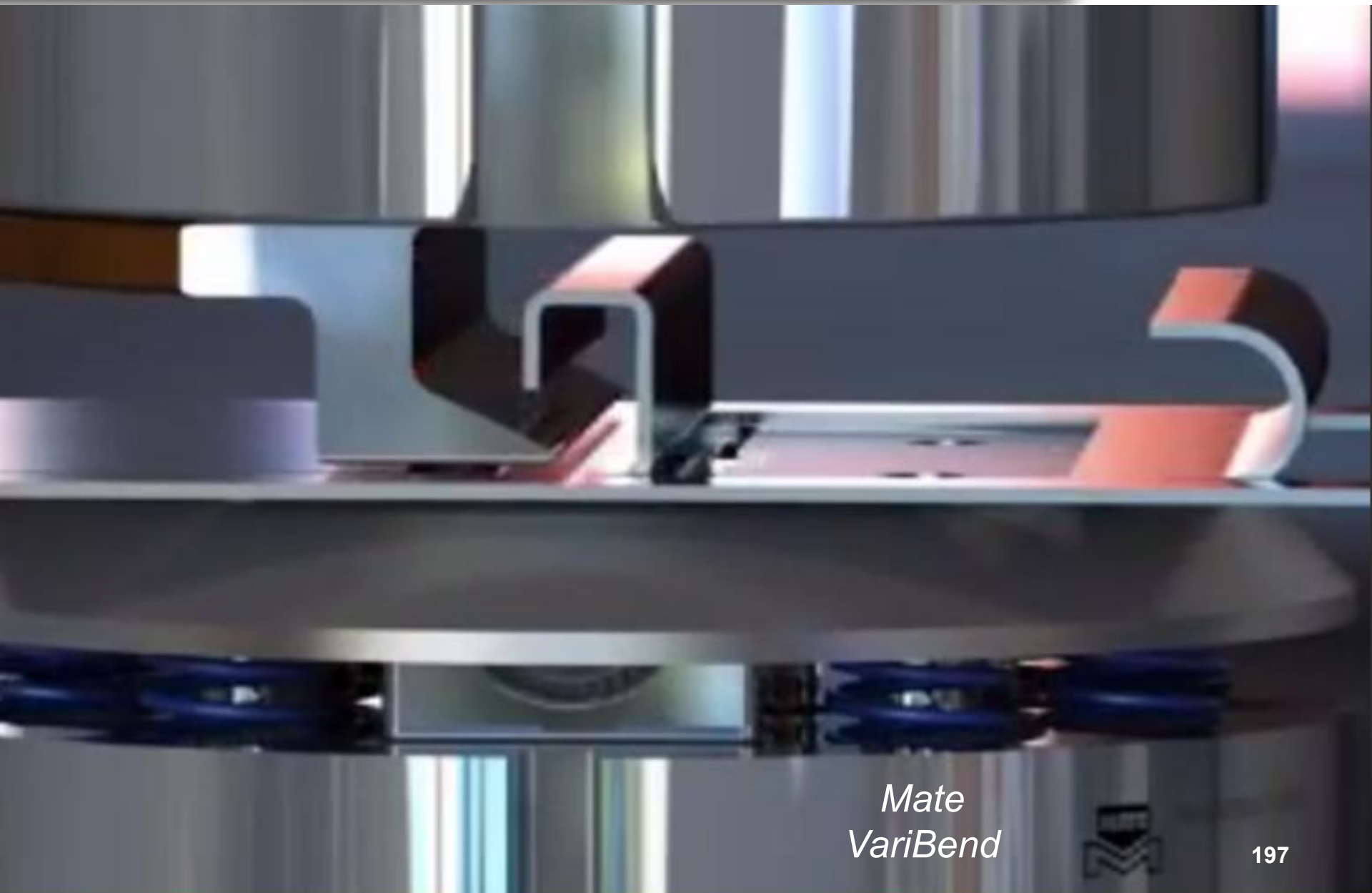
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Mate VariBend

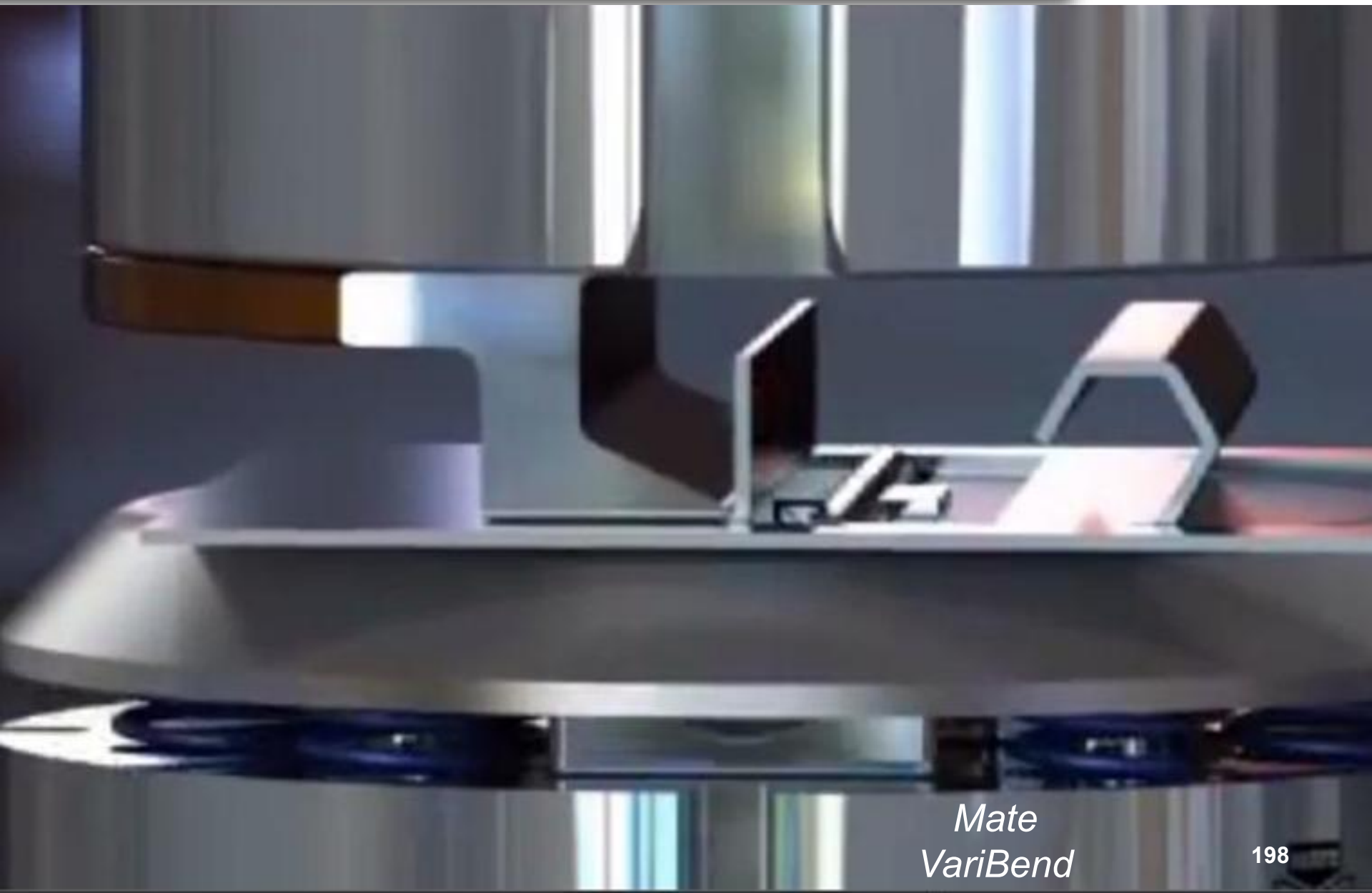
Bending Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Mate VariBend

Bending Applications



Mate
VariBend

Flange Forming Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Forming of large external or internal flanges

Bending Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Hemming Application

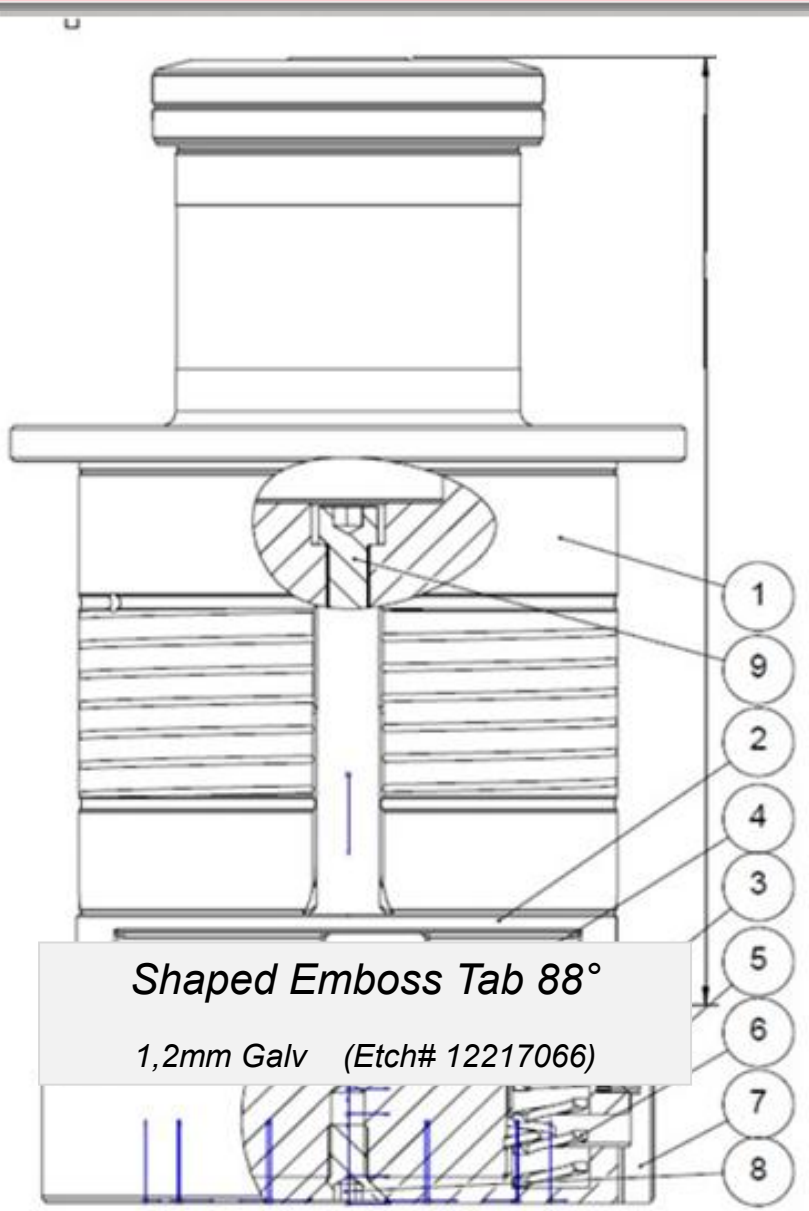
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

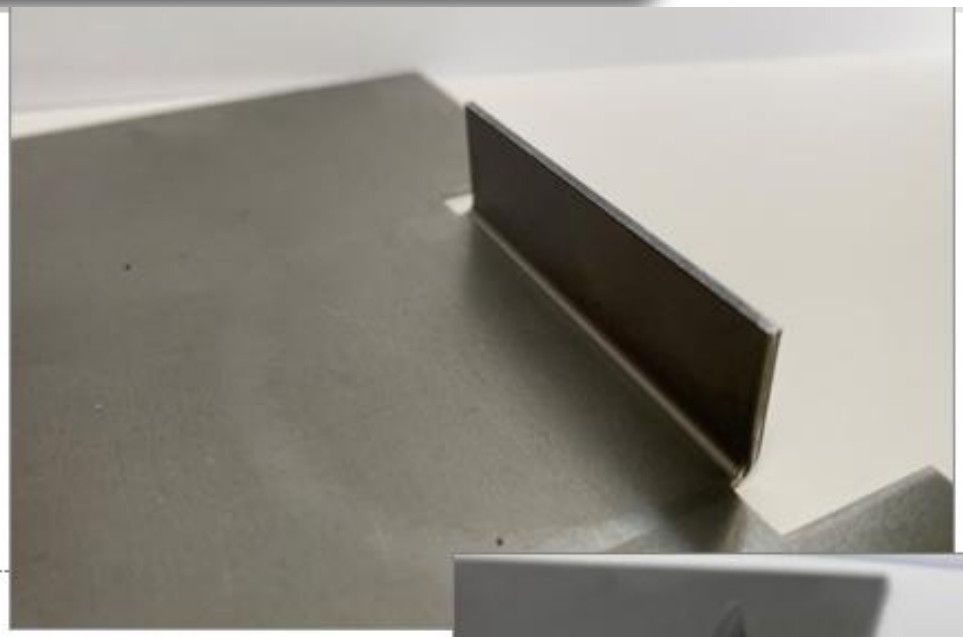
Hemming operation with E-station bending and D-station flattening (hemming)

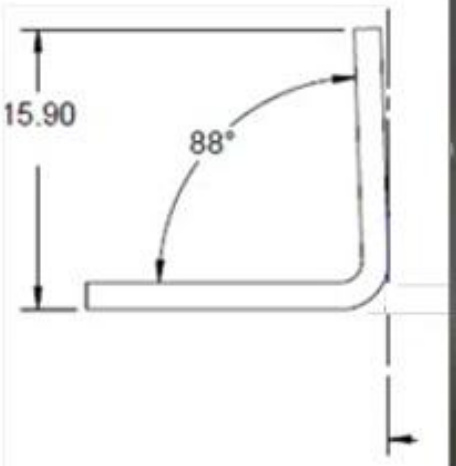
(Etch# 05207018 – 05207019 – 05207020)

Bending Application over 90°

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE







Shaped Emboss Tab 88°

1,2mm Galv (Etch# 12217066)

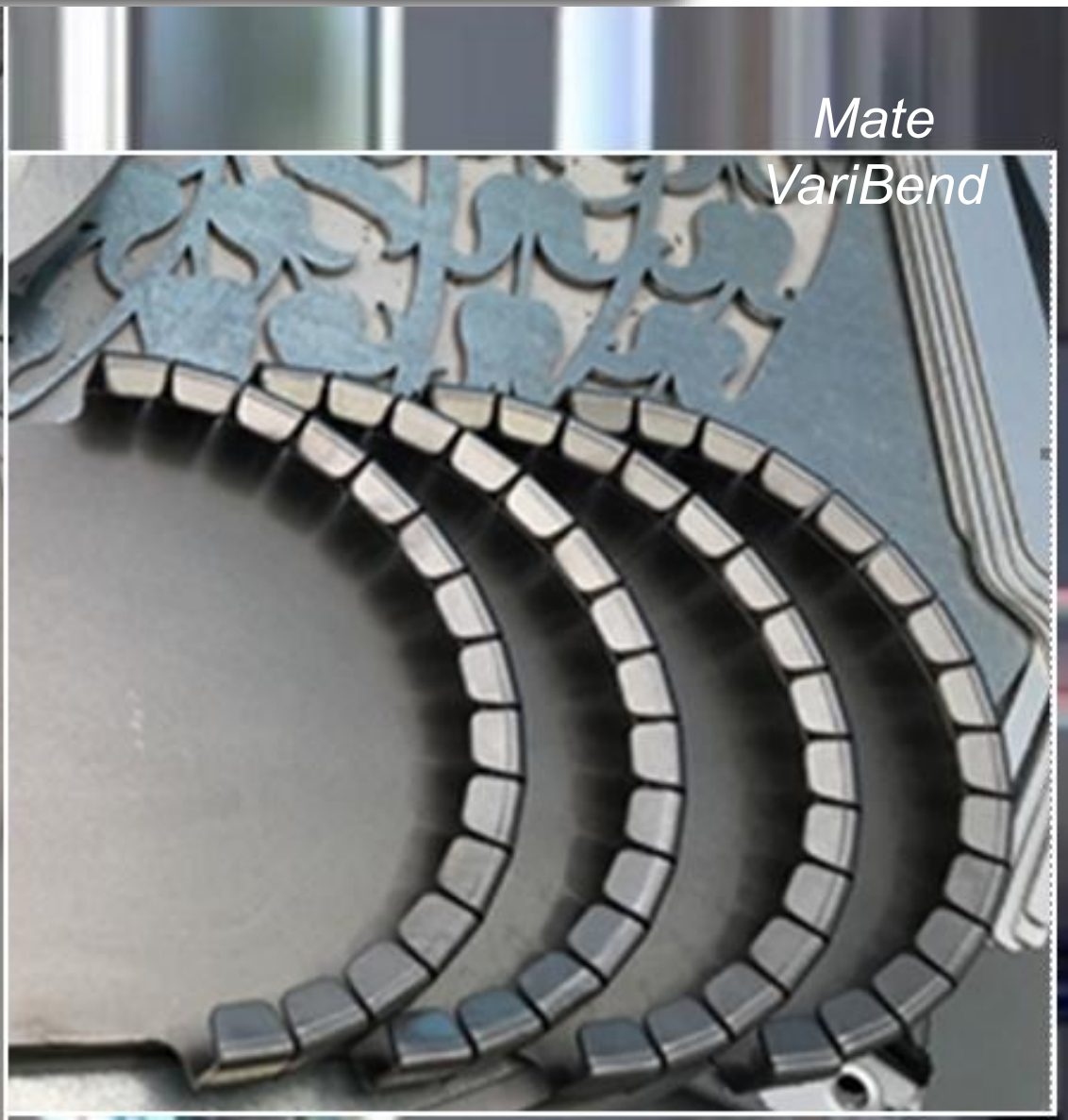
Bending Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

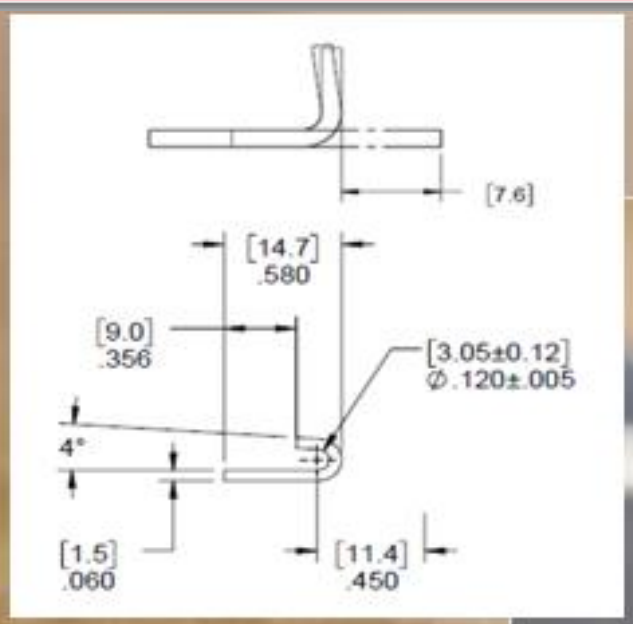
Mate VariBend

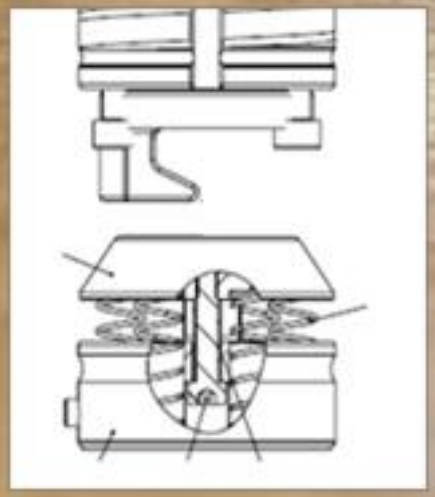
Bending Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



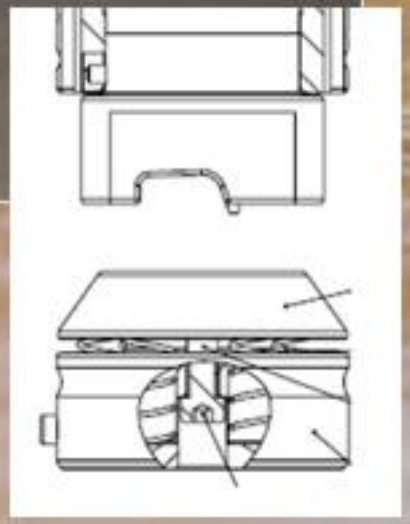
Bending Applications





Etch# 02247028

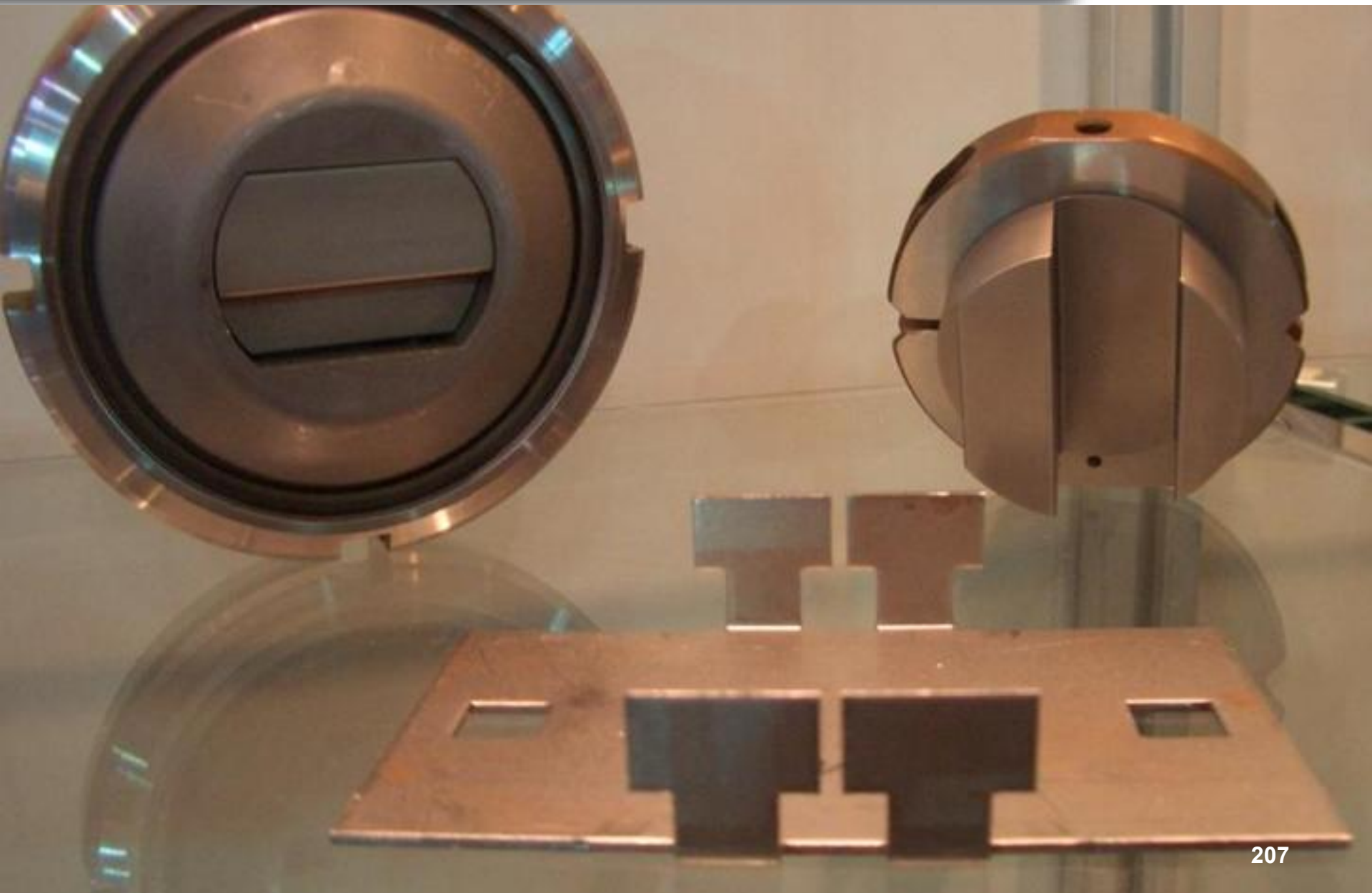
Bending over 90° with 2 tools



Etch# 02247029

Bending Applications

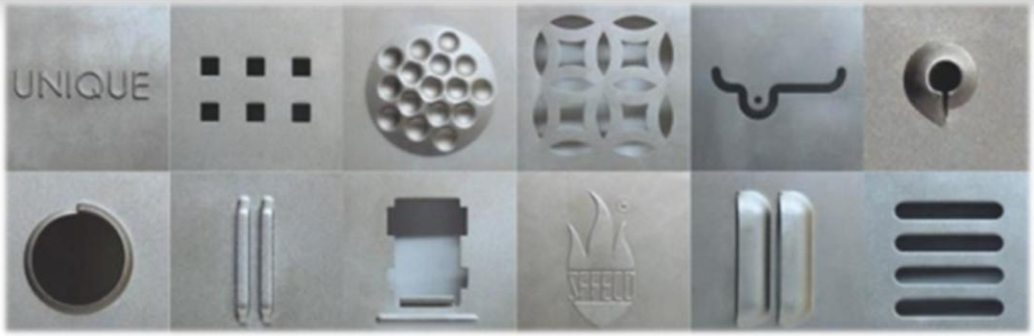
Bending Applications



MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

8. EasyBend and EasySnap

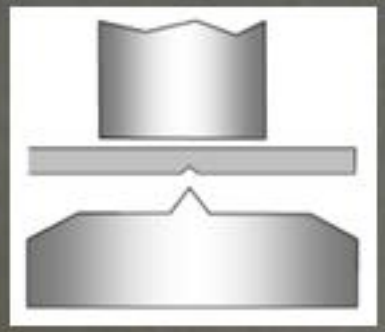


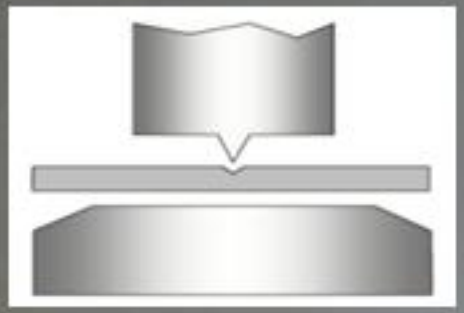
Special Assemblies Gallery

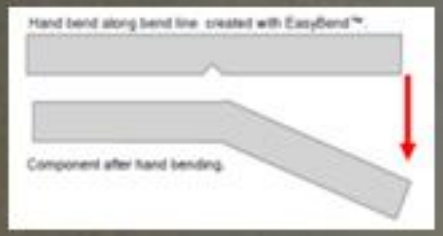
EasyBend Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

V-line incision on top or bottom of sheet. EasyBend for manual bending eliminates press brake operation and allows shipping in flat condition





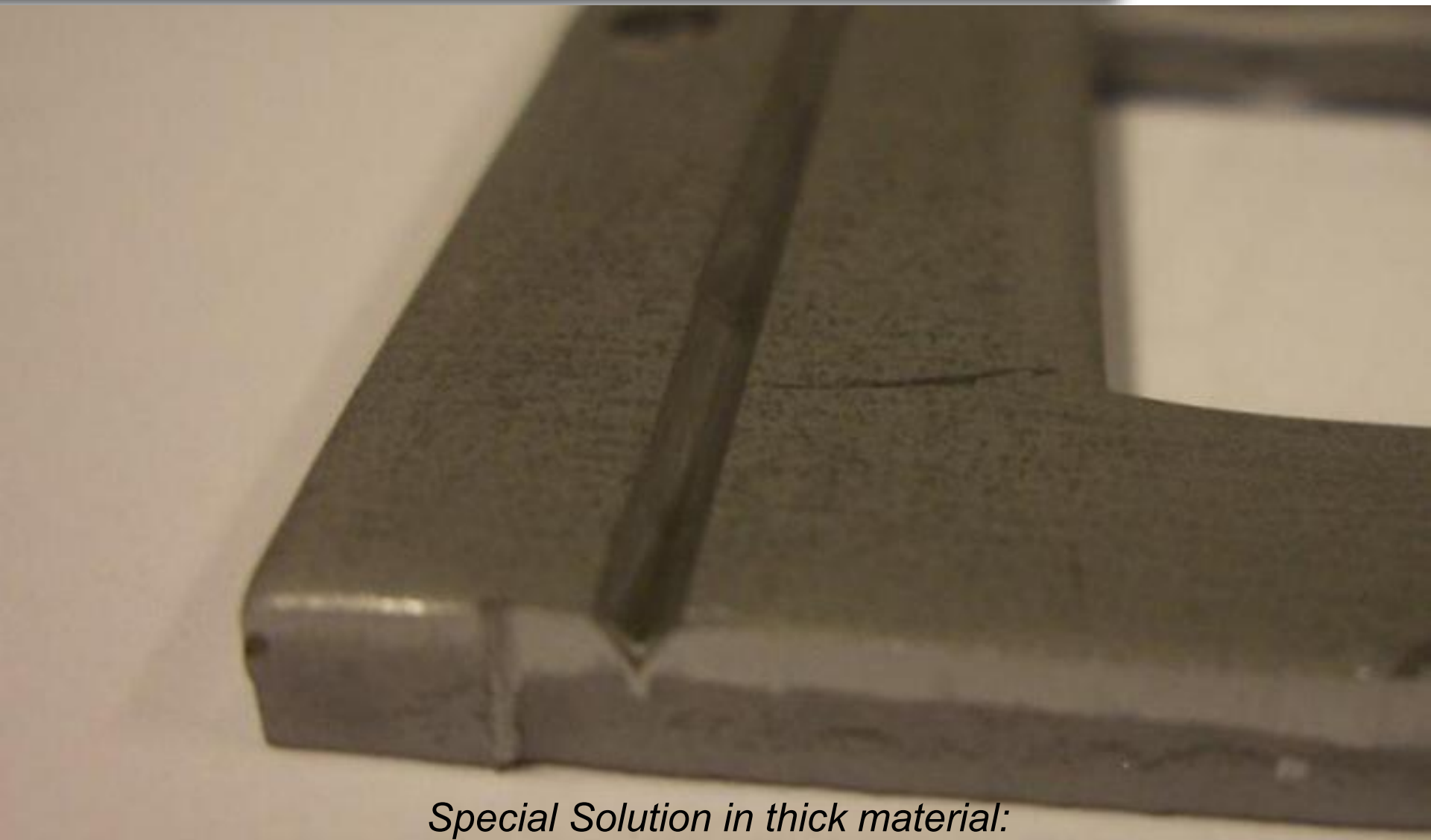


EasyBend Up

EasyBend Down

EasyBend Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Special Solution in thick material:
EasyBend can help making sharp and straight bends on the press brake

EasySnap Applications

MATE PRECISION TECHNOLOGIES
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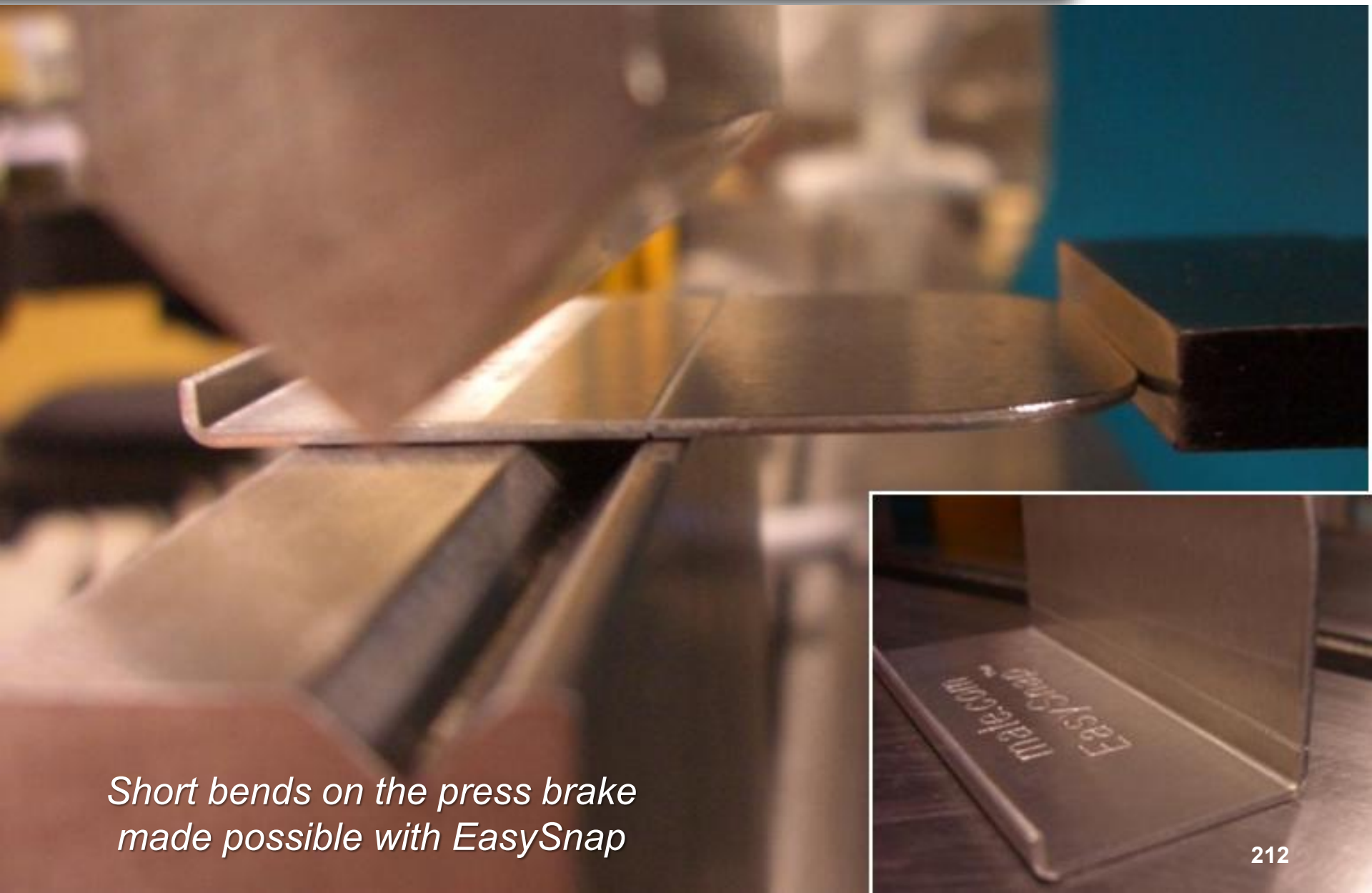
- *V-line incision on top and bottom of sheet*
- *Ideal for separation of parts*
- *Microjoint Solution for smoother edges*

EasySnap Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

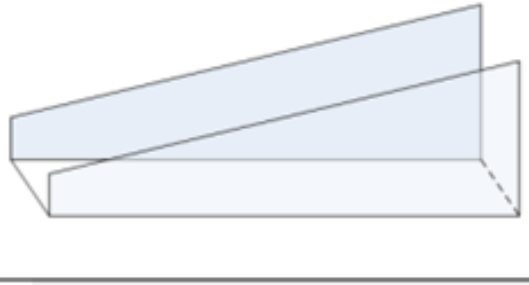


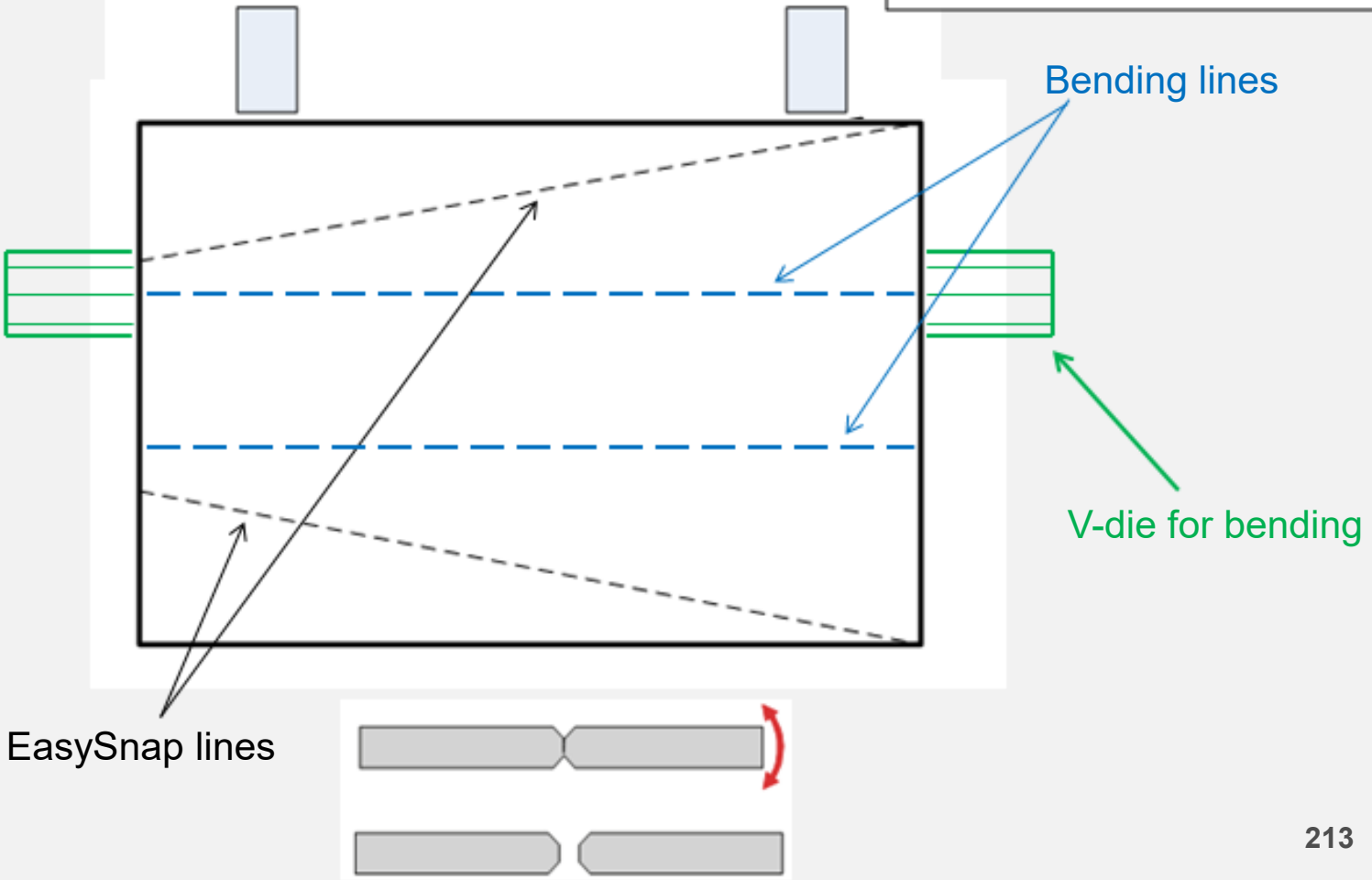
Short bends on the press brake made possible with EasySnap

EasySnap Applications

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

EasySnap lines can solve bending problems
… and leave no burr :





EasySnap Applications

MATE PRECISION TECHNOLOGIES
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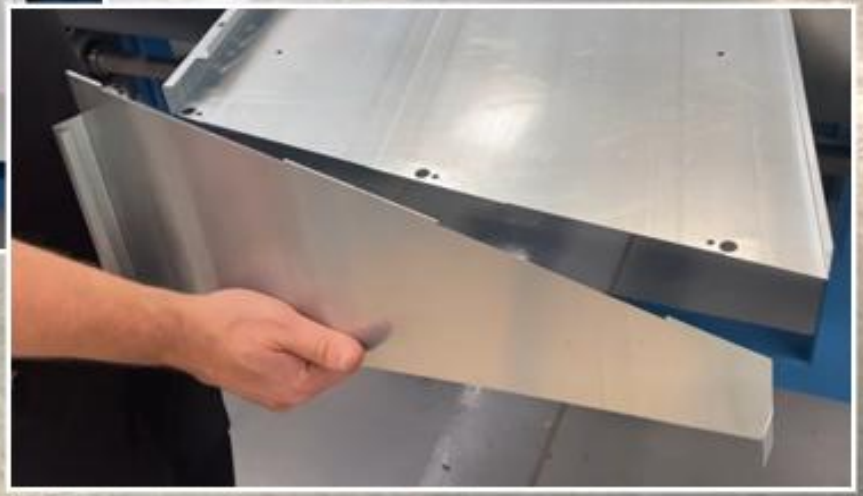
Use of **EasySnap** lines to separate triangular shaped parts at the end of a punch-bend line



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MATE PRECISION TECHNOLOGIES

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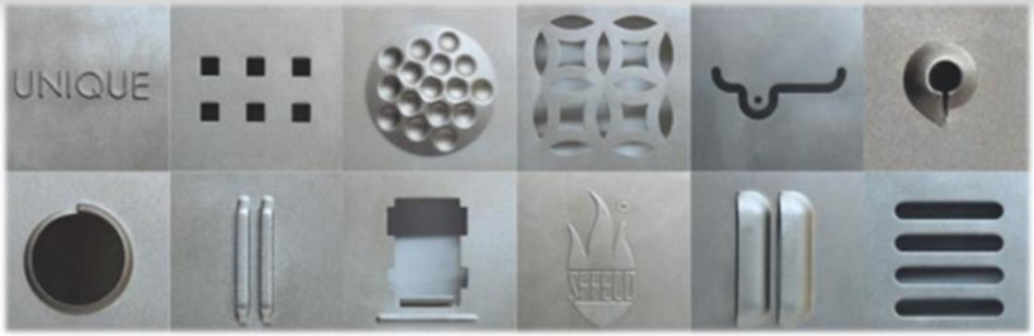
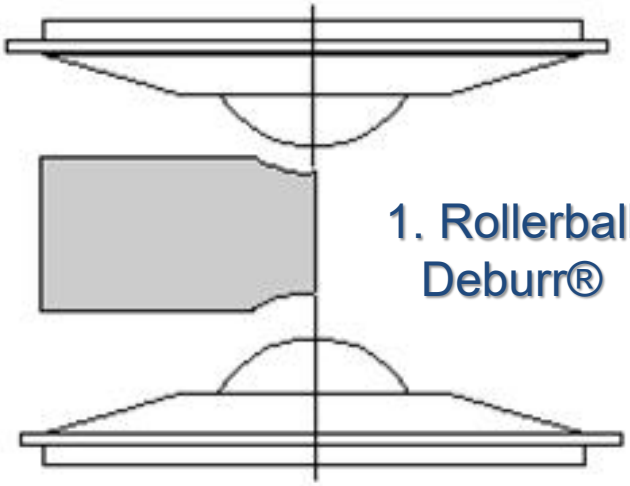
9. Deburring Solutions



Special Assemblies Gallery

Deburring Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



1. Rollerball Deburr®

2. Straight Line Deburr

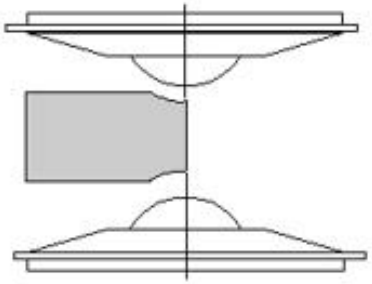
Note: Machine must be able to work in Ram Down mode.

Eliminate secondary deburring operations

Deburring Solutions

MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE

Note: *Machine must be able to work in Ram Down mode.*



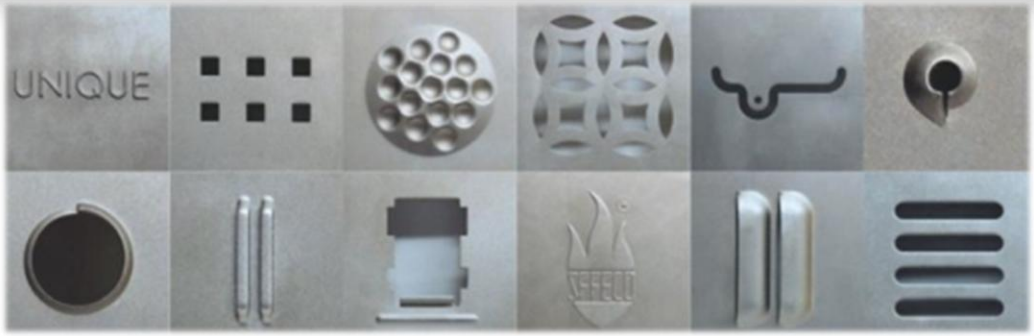
Rollerball Deburr®

Eliminate secondary deburring operations

MATE PRECISION TECHNOLOGIES

RESPECT • SUPPORT • INSPIRE

10. Ribs and Offsets



Special Assemblies Gallery

Roller Applications

MATE PRECISION TECHNOLOGIES
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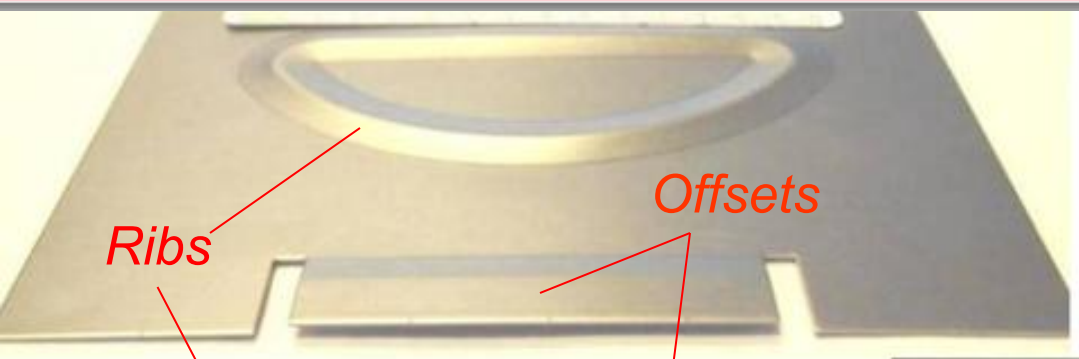
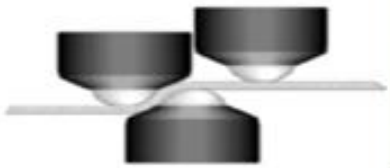


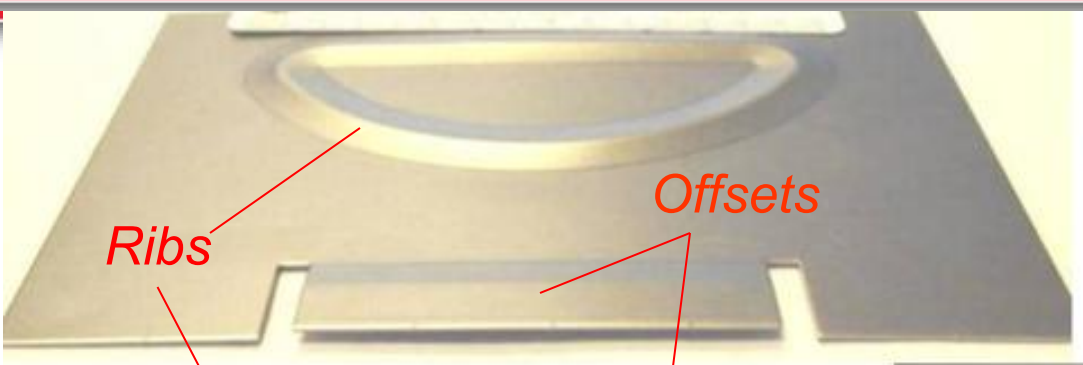


Mate RollerBall ®

Note: Machine must be able to work in Ram Down mode.

Roller Applications

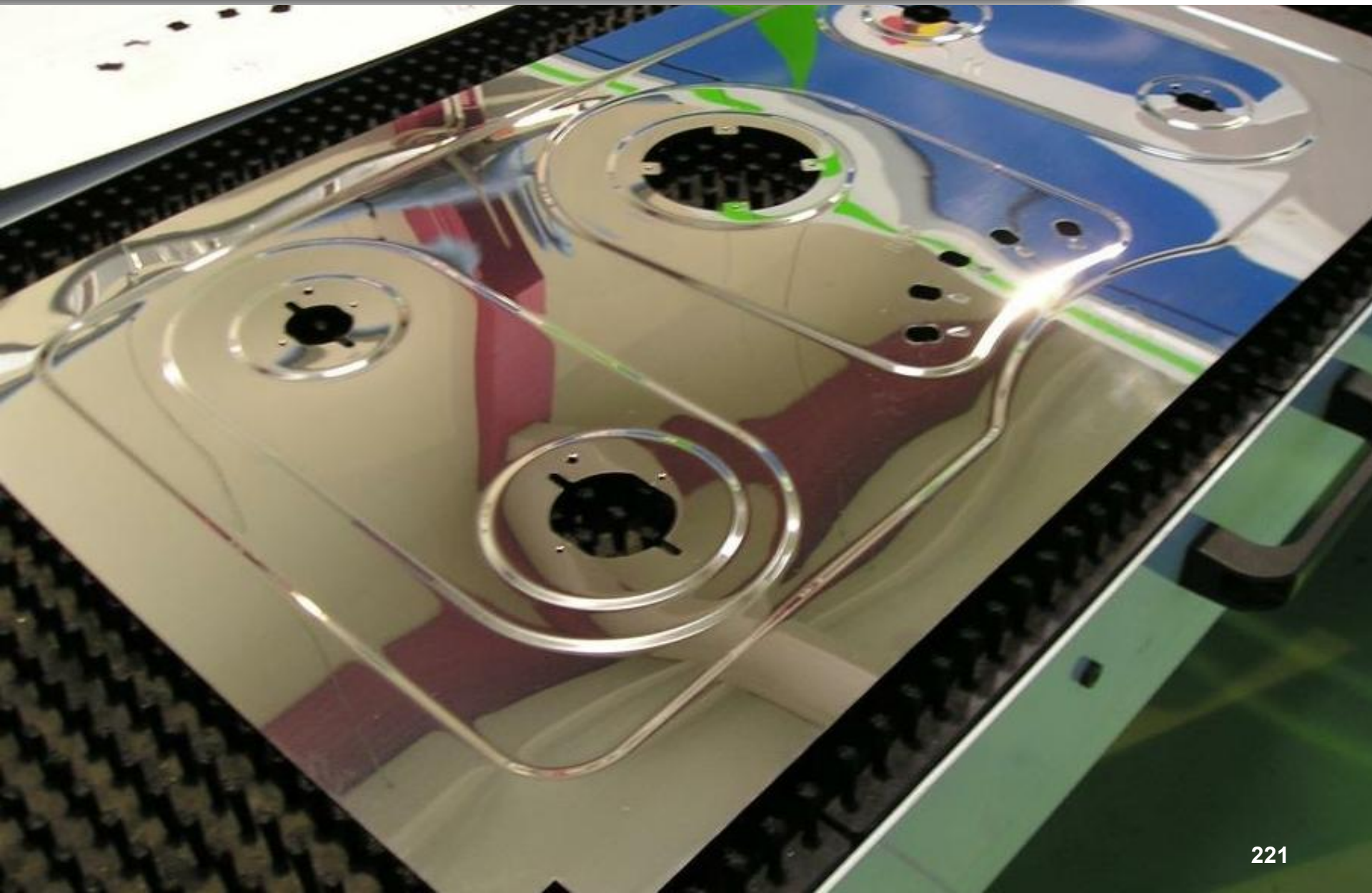
MATE PRECISION TECHNOLOGIES
RESPECT • SUPPORT • INSPIRE



Mate RollerBall ®

Note: Machine must be able to work in Ram Down mode.

Roller Applications



Roller Tools

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Rib/Bead Solutions

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Beading

Continuous Beading

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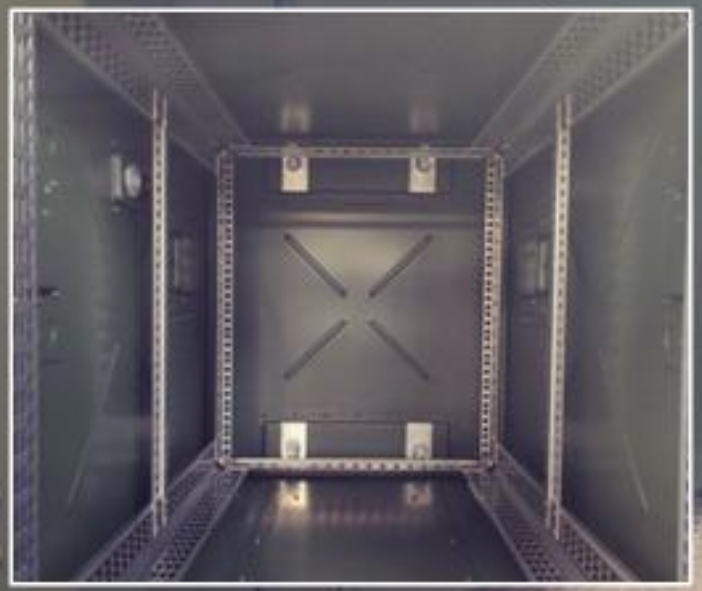
Continuous beading tool for strengthening of parts and saving on material cost



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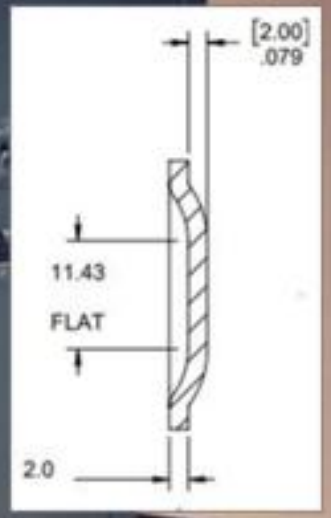

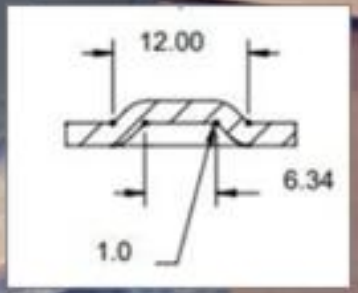

Beading Applications

Web Tool

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Strengthen parts and save on material cost with the

Web Tool

Punching Adds Value!

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