

Trumpf® catalog



**MATRIX**  
Tooling for Punch Presses



**TRUMPF® CATALOG**  
MATRIX



# INDEX

## BASIC CONCEPTS:

- 5 • PUNCHES
- 5 • STRIPPERS
- 5 • DIES
- 5 • SPECIAL TOOLING
- 6 • MATERIAL HARDNESS
- 6 • MATERIAL THICKNESS IN RELATION TO HOLE DIAMETER
- 6 • ROUNDING OFF AND SMOOTHING
- 6 • THE MACHINE OPERATOR

7 CLEARANCE CALCULATION AND CONTROL - TONNAGE

8 PUNCHING STRAIN AND RELATED CALCULATIONS

8 WHISPER SHARPENING - USE AND BENEFITS

9 SURFACE COATINGS - USE AND BENEFITS

9 PROCESSING ON DEMAND

10 SHAPES CODING

- 14 SIZE 0 - SERIES R Up to mm 6
- 15 SIZE 0 - SERIES R Up to mm 10,5
- 16 SIZE I - SERIES 30
- 17 SIZE II - SERIES 40
- 18 SIZE II - SERIES 50
- 19 SIZE II - SERIES 60
- 20 SIZE II - SERIES 72
- 21 SIZE I & II - STANDARD STRIPPERS
- 22 SIZE I & II - POLYURETHANE STRIPPERS
- 23 SIZE 0, I & II - ADJUSTMENT RINGS
- 24 SIZE II - DIE ADAPTORS
- 25 ALIGNMENT FIXTURE
- 26 SIZE II - PARTING TOOLS Up to mm 56
- 27 SIZE II - PARTING TOOLS Up to mm 76,2
- 28 SIZE II - PARTING INSERTS
- 29 SHEAR GRINDING FIXTURE
- 30 MULTITOOLS - MODEL A
- 31 MULTITOOLS - MODEL B
- 32 MULTITOOLS - MODEL C
- 33 MULTITOOLS - MODEL D
- 34 THICK TURRET D STATION ADAPTOR
- 35 TOOL HOLDER CART



# INDEX

## FORMING AND CLUSTER TOOLS – ORDER FORMS

38	SIZE II	- DEFORMATION
39	SIZE II	- LOUVER TOOL
40	SIZE II	- CLUSTER TOOL
41	• DEFORMATION	- ENGRAVED COUNTERSINK
42	• DEFORMATION	- EXTRUDED HOLE
43	• DEFORMATION	- ROUND EMBOSS
44	• DEFORMATION	- ROUND COUNTERSINK
45	• DEFORMATION	- SHAPED COUNTERSINK
46	• DEFORMATION	- SPHERICAL EMBOSS
47	• DEFORMATION	- OBROUND EMBOSS
48	• DEFORMATION	- CONTINUOUS OBROUND EMBOSS
49	• DEFORMATION	- SHAPED EMBOSS
50	• RELIEF	
51	• ENGRAVING	
52	• SHEARING AND DEFORMATION	- SHELF CLIP
53	• SHEARING AND DEFORMATION	- SPRING CLIP
54	• SHEARING AND DEFORMATION	- SPRING TAB
55	• SHEARING AND DEFORMATION	- BRIDGE
56	• SHEARING AND DEFORMATION	- CURVED BRIDGE
57	• SHEARING AND DEFORMATION	- KNOCKOUT
58	• SHEARING AND DEFORMATION	- SHEAR BUTTON
59	• SHEARING AND DEFORMATION	- STRAIGHT BACK LOUVER
60	• SHEARING AND DEFORMATION	- RADIOUS BACK LOUVER
61	• SHEARING AND DEFORMATION	- CONTINUOUS RADIOUS BACK LOUVER

63 TOOLS CODING

64 COMPANY PROFILE

## BASIC CONCEPTS

For over 20 years **MATRIX** has been manufacturing tooling for working metal sheet, availing of highly qualified technicians who constantly update their knowledge about the different needs of the production cycle.

**MATRIX** also invests in best technologies: from sophisticate software for projecting to the computerization of productions data, from planning to the final tests of the products.

All this allows our company to reach a high qualitative standard, certified by the system **ISO 9001:2000** and to obtain fast delivery times even for special tooling supplies.

### PUNCHES

Punches are manufactured in accordance with the most modern processes, as well as using a single type of steel (M2), and with their high vacuum thermal treatment they guarantee the best performances on all types of material; this performance could be further improved by the most modern surface coatings of TiAlN micro layer.

Matrix ensures the maximum care in dimensional and axial concentric accuracy, as well as in the roughness of the cutting part to guarantee its longer life.

### STRIPPERS

These tools are manufactured with steels that are resistant to both wear and the greatest stresses, and are produced with the strictest tolerances to guarantee long life to the punches and punch press turrets.

### DIES

Full automatic production cycles guarantee the quality standard of our dies which are manufactured with certified steel (D2), as well as having high vacuum treatment.

All possible technologies are employed to discharge cyclical tensions, as well as to avoid scraps reclaiming through the use of proper manufacturing geometry. Dies, which are tested with computerized systems and with hourly frequency, guarantee a very high reliability level.

### SPECIAL TOOLING

Considering the continuous requests of special tooling, **MATRIX** takes particular care of such a sector.

Our technical department, in short time, is able to give solutions, quotations and delivery times which are getting more and more close to the standard tooling ones.

Each special tool is coded in order to allow us an easy and quick tracking down during all its working phases, from design to testing.

## BASIC CONCEPTS

### MATERIAL HARDNESS

Punching is usually carried out on mild or low alloy steel. On material with a higher resistance there are difficulties, and the processing requires special punches which however sustain a greater wear.

In any case, the maximum load necessary to execute punching must be definitely lower than the punch maximum resistance to compression (*see tonnage calculation formula on page 8*).

The maximum compression load that the punch can tolerate depends on the type of steel and its hardness. For instance, an hardened steel for tools resistant to collisions can tolerate a compression load of 2000 N/mm<sup>2</sup> before reaching the breaking point, and can be used with specific working pressure up to 1500 N/mm<sup>2</sup>, therefore providing good results to the life of the tool.

When you place an order for a punching tool, it is recommended to specify the type of material and thickness that must be punched.

### MATERIAL THICKNESS IN RELATION TO HOLE DIAMETER

Material thickness also plays its part both alone and in relation to the punching diameter. This is particularly valid when the diameter of punched holes is close to the metal sheet thickness value.

A traditional rule says that the diameter of the punch must never be lower than the metal sheet thickness. Nevertheless, with the advent of the hydraulic punching machine, it has become possible to adjust the impact speed between the punch and metal sheet more easily and so partially overcome that rule.

In various cases, although with very great stresses, holes are punched on materials with a thickness higher than the hole diameter.

However, in these conditions there are great stresses and consequently higher wear and the tool life is proportionally lower.

The same great stresses that occur in this case require precautionary measures as well as respect for accident prevention norms, for instance the use of blockages and protections.

On the following pages there are some simple mathematical formulas to calculate the strength.

### ROUNDING OFF AND SMOOTHING

The life of a stamp could be considerably influenced by the shape of the hole to be punched. The geometry that involves sharp corners is less favourable by nature. Wherever possible, it is necessary to smooth or round off these sharp corners. In the cases of square or rectangular holes, providing a 0,3-0,5 mm minimum round off greatly helps the life of the tool.

### THE MACHINE OPERATOR, THE MOST IMPORTANT FACTOR

Even with all of the constructive devices on the front of the tools and machines, the machine operator probably remains the most important factor in considering the life of the stamp. In fact, he directly controls various factors not noticeable in other ways.

The correct use of a punching machine is a task which requires experience: first of all, the machine operator must be familiar with the machine, and be informed on the previous points and related operations.

Punching operations are developed, as seen, with extremely high specific pressures and stresses, so that the safety of the machine and the operator must be appropriately considered in respect to regulations in force, but also without forgetting to use the measures that are requested by particular environmental conditions not foreseen by legislation.



## CLEARANCE CALCULATION AND CONTROL

The clearance value between punch and die affects not only the life of these two components, but also the surface evenness of the sheared piece. In practice, clearance is fixed in accordance with the material thickness as well as its nature.

A correct clearance produces (on a mild steel sheet) holes in which the upper third of the height is cylindrical and properly sheared, while the lower two thirds are lightly conical and show tear signs.

An inadequate clearance produces instead a secondary shearing effect which means additional wear on the punch.

As previously said, the lack of lubrication contributes to a progressive spontaneous increase of the punch diameter and therefore to a likewise progressive and spontaneous clearance reduction.

However, an excessive clearance produces holes with intermediate tear zone and, as a whole, a great loss of evenness on the surface.

Quoted below is a table for die clearance percentage calculations with regards the thickness and common types of material to be worked.

It is a table based on our own and our customers' experiences, in order to obtain the best quality on finished pieces and less wear on tools.

### DIE CLEARANCE RELATED TO MATERIAL THICKNESS

Material	Thickness Range	Minimum or Blanking*	Standard	Maximum
Aluminium Copper Brass 20÷25% Kg/mm <sup>2</sup>	Up to mm 2	8%	10%	12%
	From mm 2 to mm 4	10%	12%	15%
	Over mm 4	12%	15%	20%
Mild Steel 30÷40% Kg/mm <sup>2</sup>	Up to mm 2,5	15%	18%	20%
	From mm 2,5 to mm 5	18%	22%	25%
	Over mm 5	20%	25%	30%
Stainless Steel 60÷80% Kg/mm <sup>2</sup>	Up to mm 1,5	15%	20%	22%
	From mm 1,5 to mm 3	18%	22%	25%
	Over mm 3	20%	25%	28%

\* Blanking: when the scrap is the requested part.

# PUNCHING STRAIN AND RELATED CALCULATIONS

TONNAGE GENERAL FORMULA		Material	Material K
$\frac{P \times S \times K}{28,3}$	P	Punch Perimeter	Aluminium 0,6
	S	Material Thickness	Copper 0,6
	K	Material Coefficient	Brass 0,6
			Mild Steel 1
			Stainless Steel 1,5
EXAMPLE:	$\frac{40 \text{ (perimeter of a square with mm 10 side)} \times 2 \text{ (material thickness in mm)} \times 1,5 \text{ (Stainless Steel K)}}{28,3}$		= 4,24 (tonnage)

## WHISPER SHARPENING

### USE AND BENEFITS

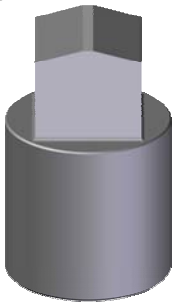
With whisper sharpening we mean the various geometry of the punch upper face that are made only upon request.

Sharpening benefits are:

- Tonnage reduction
- Scrap reclaiming reduction
- Ease of extraction
- Noise reduction
- Vibrations and counterblow reduction on all components of the machine.

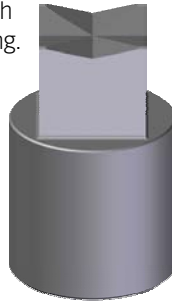
#### DWP

Double positive whisper:  
for high thickness and  
balanced load.



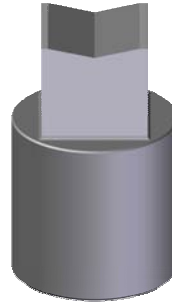
#### DWNT

Concave double negative  
whisper:  
for thin thickness  
and big punch  
shape nibbling.



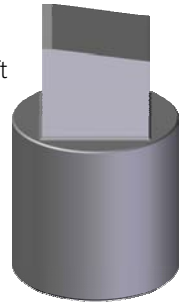
#### WNT

Concave negative whisper:  
for thin thickness and small  
punch shape  
nibbling.



#### WN

Negative whisper:  
high thickness and stiff and  
fast machines  
(the inclined  
sharpening  
tends to shift  
the sheet).



Quoted below is an illustrative table showing tonnage reduction where we consider standard depth DWP sharpening.

Material Thickness in mm	1	1,5	2	2,5	3	4	5	6
% Tonnage reduction	60	50	40	35	25	20	15	10

## SURFACE COATINGS

### USE AND BENEFITS

All tools (punches) could be coated on the surface to improve their working characteristics. The coating thickness, from 0,002 mm to 0,005 mm, adheres to punch surface by a PVD (Physical Vapour Deposition) processing and gives the surface a considerably greater hardness, and also a lubricating ability. It is a really effective barrier between tool and metal sheet. MATRIX uses TiAlN (Titanium-Aluminium nitride) as coating.

This coating has a brown-black colouring, and gives the punch a higher superficial hardness up to four times the initial one and it is resistant to high temperature, near 900°C.

The damping factor has a factor equal to 0,31.

With these characteristics it is recommended for high speed (500÷1000 stroke per minute) punching machine users and it is excellent on Stainless Steel processing.

Coatings are on customer demand only, and are priced separately.

## PROCESSING ON DEMAND

### Radius on corners of the punches

Radius on square and rectangular corners of the punches (specify radius) increases the life of the punch and drastically reduces dies breaking near corners.

### Whisper

Whisper punches: variable price increase (request quotation) depending on whisper type (see previous page) and punch dimensions.

### Large punch rake (SPM)

It is recommended on material thicknesses over mm 4, where it helps punch reclimbing or punch extraction from metal sheet.

### Coatings

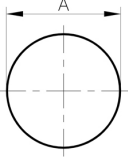
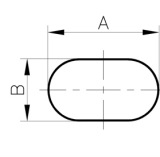
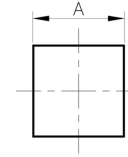
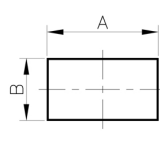
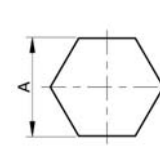
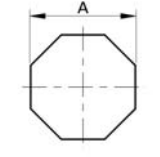
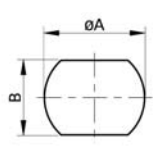
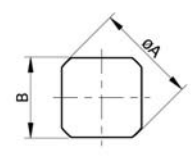
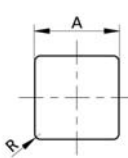
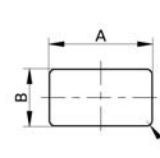
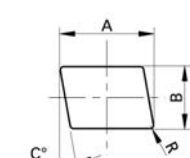
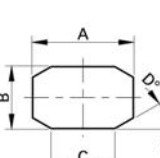
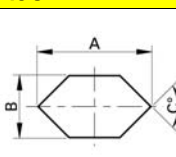
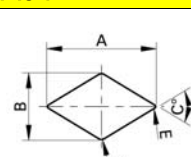
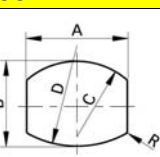
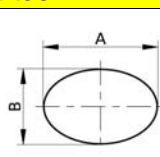
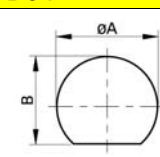
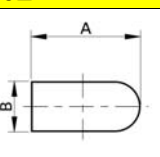
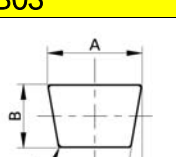
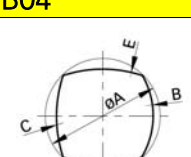
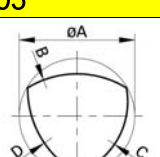
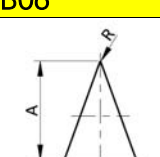
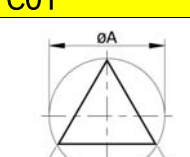
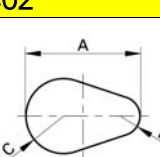
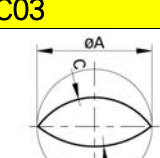
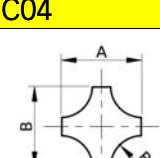
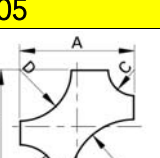
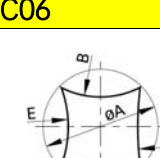
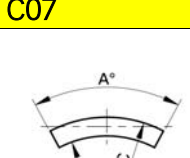
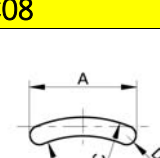
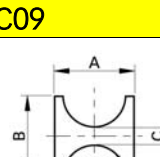
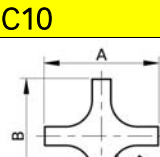
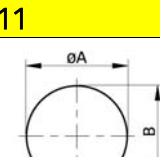
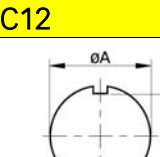
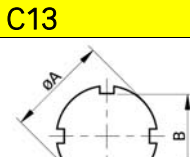
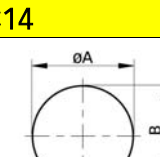
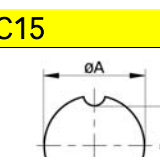
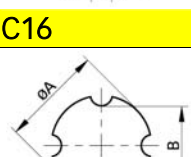
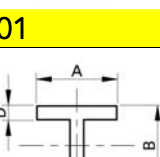
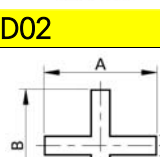
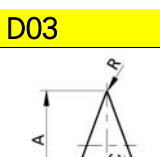
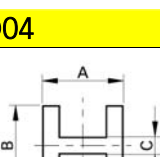
Anti-wear coating available. We recommend coatings on nibbling or punching processing on seizing materials like Stainless Steel or alloys, or on any material high thicknesses.

### Stiffened dies

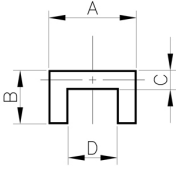
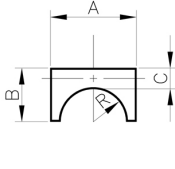
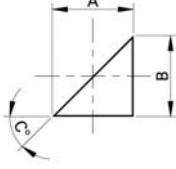
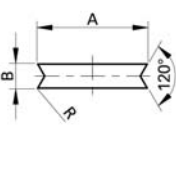
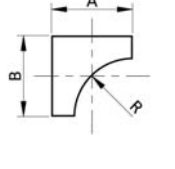
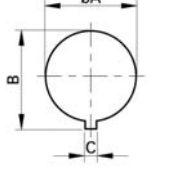
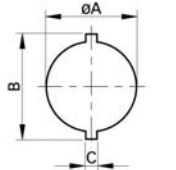
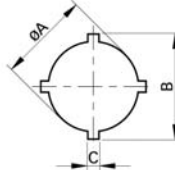
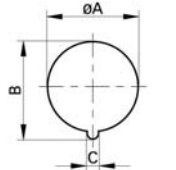
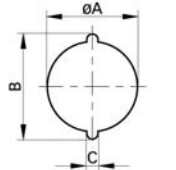
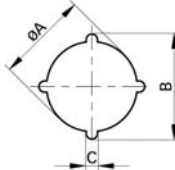
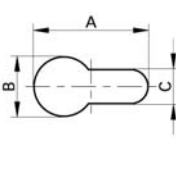
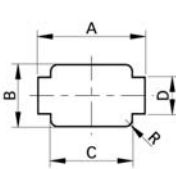
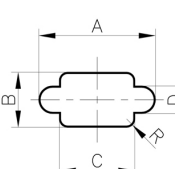
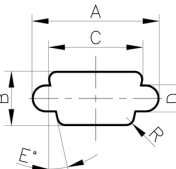
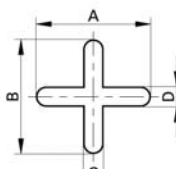
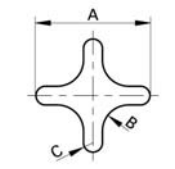
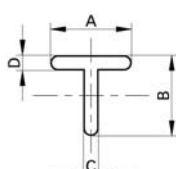
On high material thicknesses or critical shapes we suggest stiffened dies which are suited to stand high compression.

Our Technical Office is at your disposal for any possible explanations, advice on better usage, feasibility and cheapness of special processing and their applications.

# SHAPES CODING

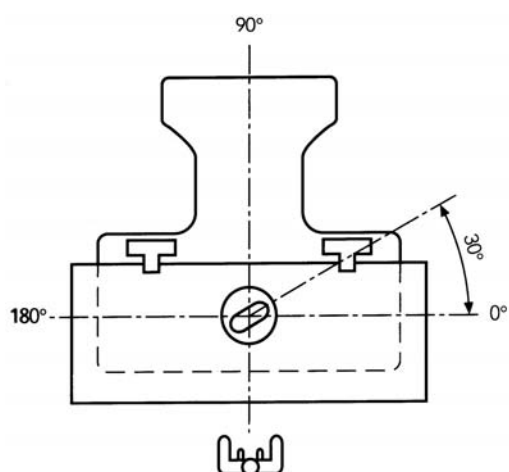
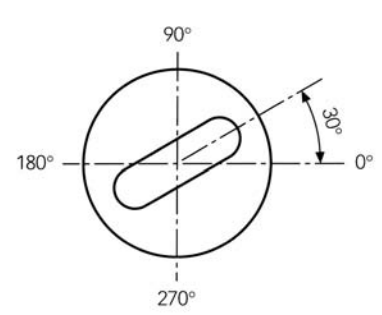
					
A0A	A0B	A0C	A0D	A01	A02
					
A03	A04	A05	A06	B01	B02
					
B03	B04	B05	B06	C01	C02
					
C03	C04	C05	C06	C07	C08
					
C09	C10	C11	C12	C13	C14
					
C15	C16	D01	D02	D03	D04
					
D05	D06	E01	E02	E03	E04

# SHAPES CODING

					
E05	E06	F01	F02	G01	H01
					
H02	H03	H04	H05	H06	H07
					
H08	H09	H10	H11	H12	H13

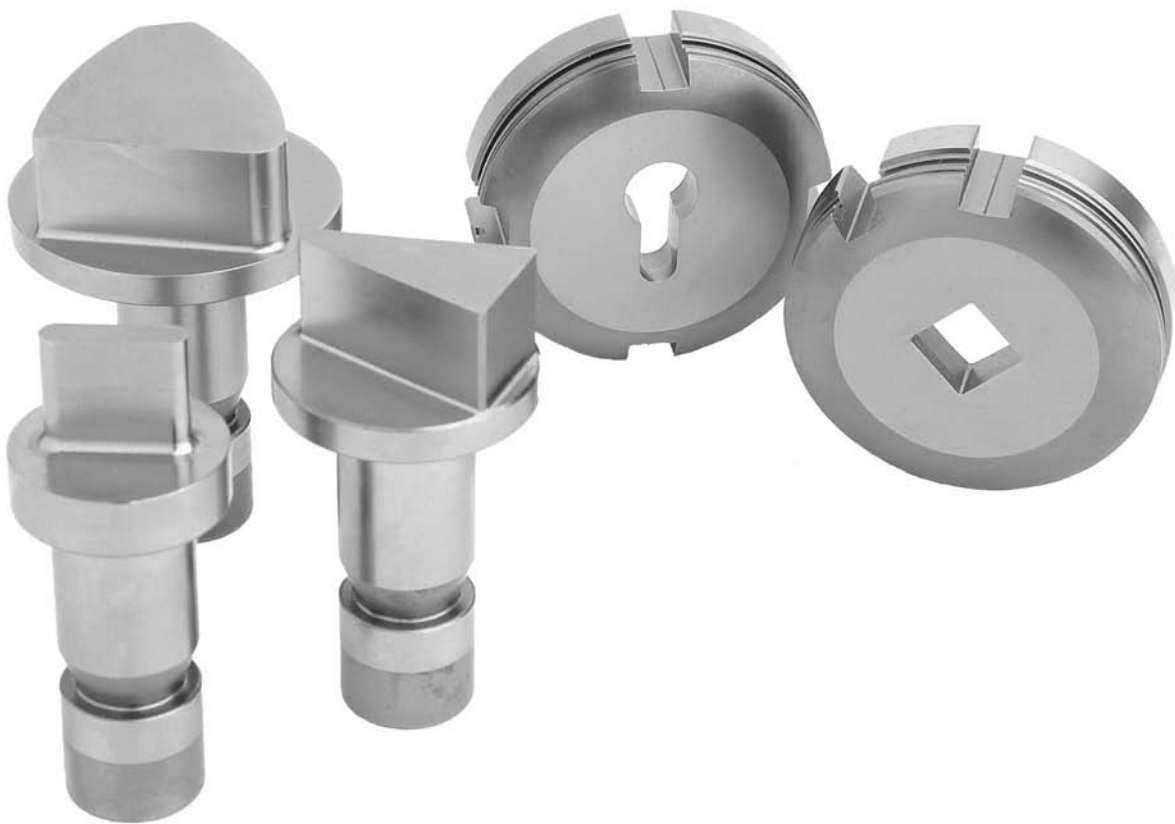
# ANGLE SETTINGS

The diagram that follows is illustrative of angle settings

 <p>Top view of punch press</p>	<p><b>Attention:</b> in case of order please specify the position of the references placed on the die housing of the machine (not only the shape orientation respect the die).</p>  <p>30° shape example</p>
--	--



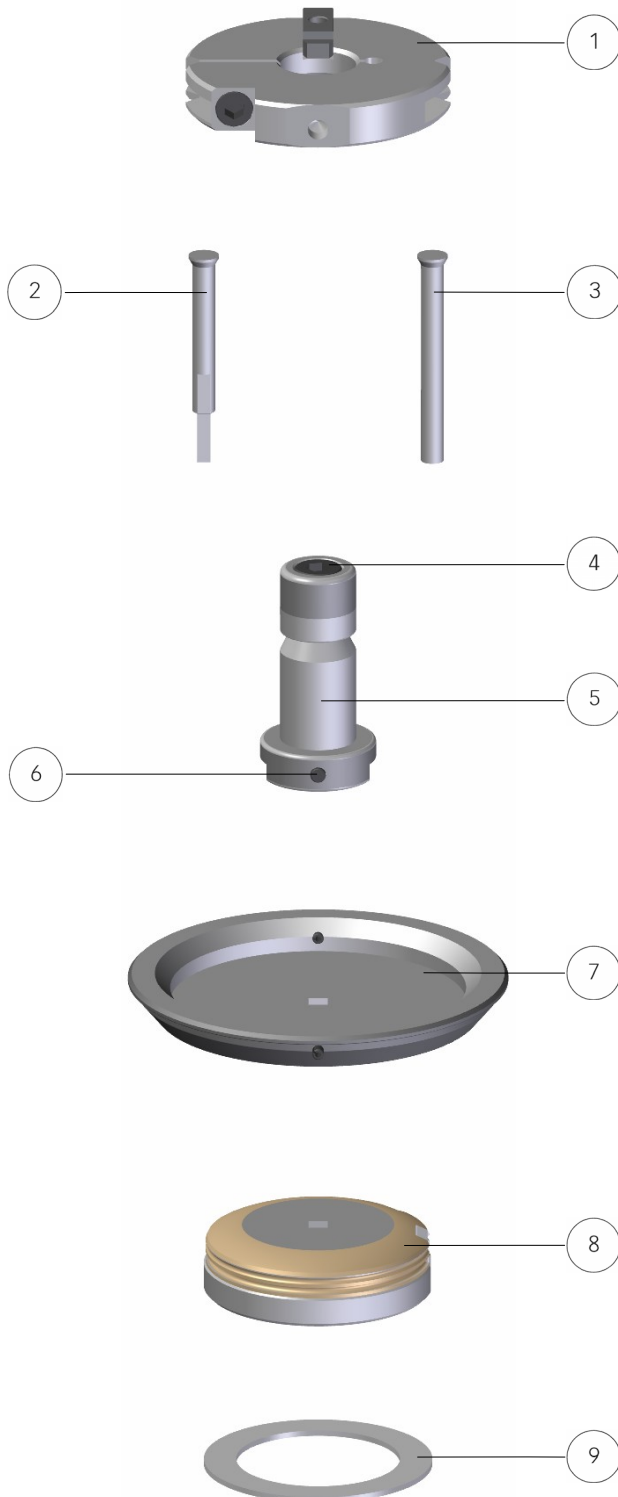
## PRODUCTS



# TRUMPF® - SERIES R

SIZE 0

MAX   = mm 6,0



POS.	CODE DESCRIPTION	PRICE
1a	F3367500 Adjustment Ring	
1b	F3087500 Eco. Adjustment Ring	
2a	F3090001.YYY Obround Punch	
2b	F3090002.YYY Square Punch	
2c	F3090003.YYY Rectangular Punch	
2d	FAE50001.YYY Obround Punch N	
2e	FAE50002.YYY Square Punch N	
2f	FAE50003.YYY Rectangular Punch N	
3a	F3090000.YYY Round Punch	
3b	FAE50000.YYY Round Punch N	
4	A0201000.253 M14x14 s1.5 Socket Set Screw	
5	F3116100 Punch Adaptor	
6	A0201000.032 M5x10 Socket set Screw	
7	F622SWXX.YYY Mechanical Stripper	
8a	F311UW00.YYY Round Die	
8b	F312UW02.YYY Square Die	
8c	F313UW01.YYY Obround Die	
8d	F313UW03.YYY Rectangular Die	
9	F3117400 9 x Die Shims Kit	

## OPTIONS




Punches' "B" Coating

For W, XX, YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- For new machine models which fit tools height mm 77, the use of punches as per Pos. 2d, 2e, 2f and 3b is compulsory.
- Punching maximum material thickness:
  - mm 4 Iron
  - mm 2 Stainless Steel
- Maximum Punching Strength: 50 kN.
- Maximum Punch Sharpening: mm 3.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

## DIES EXTERNAL REFERENCES

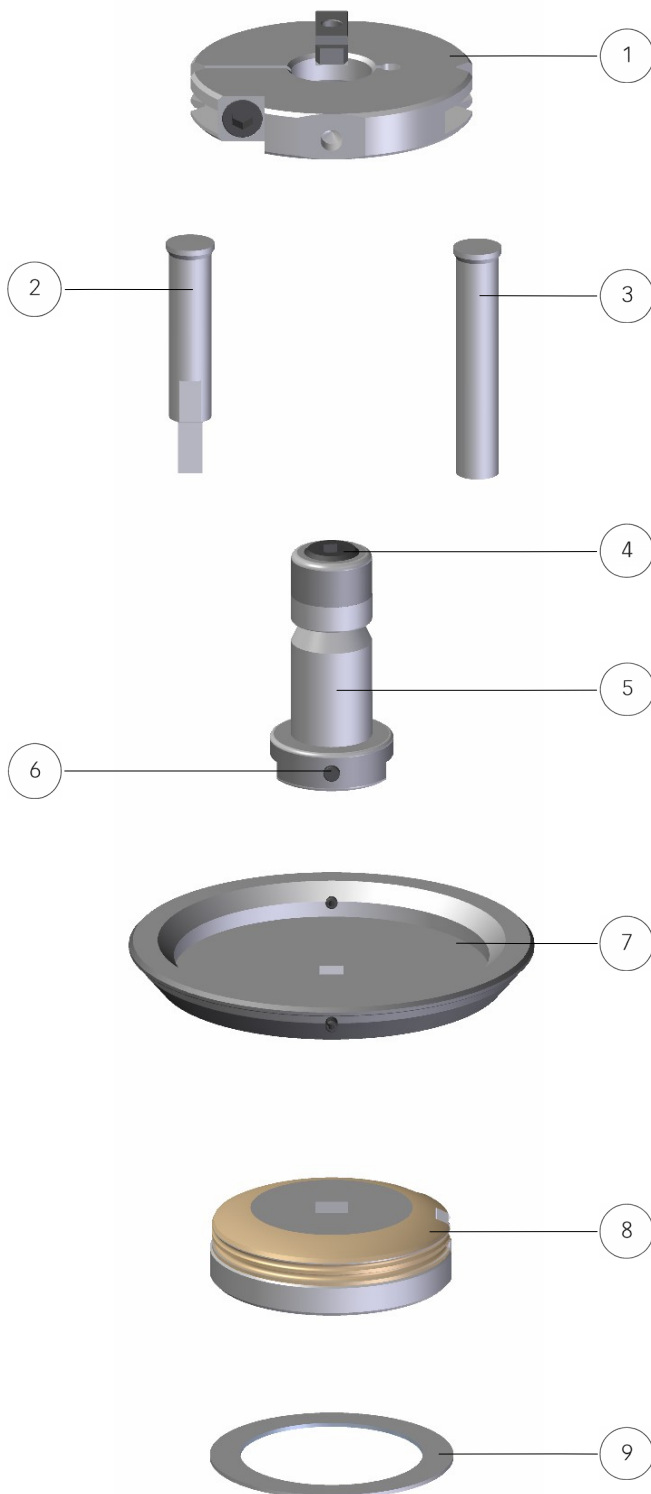
	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>• Reference: 0°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 9)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 45°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 9)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 90°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 9)</li> </ul>



# TRUMPF® - SERIES R

SIZE 0

MAX   = mm 10,5



POS.	CODE DESCRIPTION	PRICE
1a	F3367500 Adjustment Ring	
1b	F3087500 Eco. Adjustment Ring	
2a	F3100001.YYY Obround Punch	
2b	F3100002.YYY Square Punch	
2c	F3100003.YYY Rectangular Punch	
2d	FAE60001.YYY Obround Punch N	
2e	FAE60002.YYY Square Punch N	
2f	FAE60003.YYY Rectangular Punch N	
3a	F3100000.YYY Round Punch	
3b	FAE60000.YYY Round Punch N	
4	A0201000.253 M14x14 s1.5 Socket Set Screw	
5	F3116800 Punch Adaptor	
6	A0201000.032 M5x10 Socket Set Screw	
7	F622SWXX.YYY Mechanical Stripper	
8a	F311UW00.YYY Round Die	
8b	F312UW02.YYY Square Die	
8c	F313UW01.YYY Obround Die	
8d	F313UW03.YYY Rectangular Die	
9	F3117400 9 x Die Shims Kit	

### OPTIONS


Punches' "B" Coating

For W, XX, YYY variable meaning refer to page 63

### TECHNICAL SPECIFICATIONS

- For new machine models which fit tools height mm 77, the use of punches as per Pos. 2d, 2e, 2f and 3b is compulsory.
- Punching maximum material thickness:
  - mm 4 Iron
  - mm 2 Stainless Steel
- Maximum Punching Strength: 50 kN.
- Maximum Punch Sharpening: mm 3.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

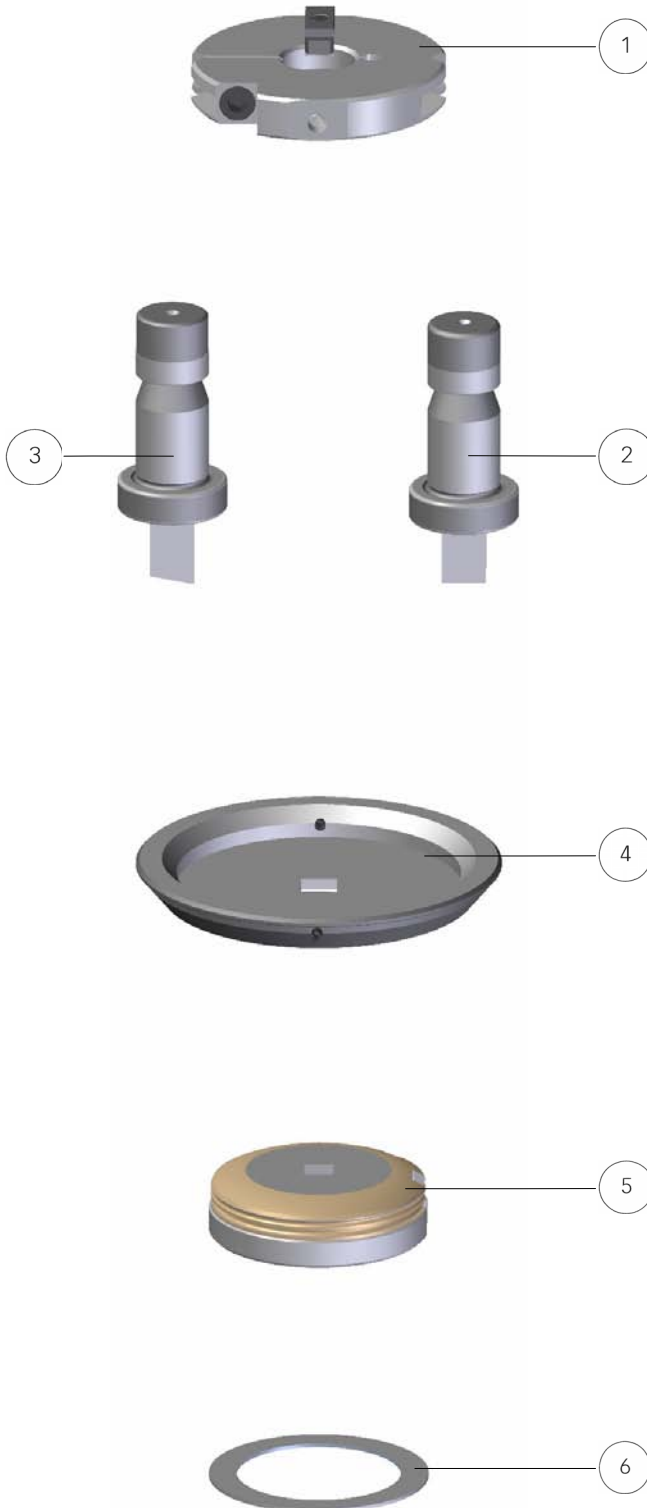
### DIES EXTERNAL REFERENCES

	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>• Reference: 0°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 9)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 45°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 9)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 90°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 9)</li> </ul>

# TRUMPF® - SERIES 30

SIZE I

MAX  $\varnothing$   $\square$  = mm 30,0



POS.	CODE DESCRIPTION	PRICE
1a	F3367500 Adjustment Ring	
1b	F3087500 Eco. Adjustment Ring	
2a	F3110W00.YYY Round Punch	
2b	F3110W02.YYY Square Punch	
2c	F3110W01.YYY Obround Punch	
2d	F3110W03.YYY Rectangular Punch	
3a	F314NW00.YYY Round Punch WN	
3b	F314NW02.YYY Square Punch WN	
3c	F314NW01.YYY Obround Punch WN	
3d	F314NW03.YYY Rectangular Punch WN	
4	F622SWXX.YYY Mechanical Stripper	
5a	F311UW00.YYY Round Die	
5b	F312UW02.YYY Square Die	
5c	F313UW01.YYY Obround Die	
5d	F313UW03.YYY Rectangular Die	
6	F3117400 9 x Die Shims Kit	

## OPTIONS



	DWP Whisper Sharpening on Pos. 3 Punches	
	Punches' "B" Coating	
	Punches with small dimensions (lower than mm 4,0)	

For W, XX, YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- On punches with a section lower than mm 4, the cutting part will be stiffened. These kinds of tools are considered special ones.
- Maximum Punching Strength: 200 kN.
- Maximum Punch Sharpening: mm 3.
- Whisper punches require a Punching Strength lower than the one of standard punches, even though they have the same dimensions, and they also reduce noise up to 50%.  
They are especially effective when they work on very strong and plastic materials.
- For new machine models which fit tools height mm 77, the use of punches as per Pos. 3 is compulsory.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

## DIES EXTERNAL REFERENCES

	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>Reference: 0°</li> <li>Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>References: 0° - 45°</li> <li>Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>References: 0° - 90°</li> <li>Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>

© 2007

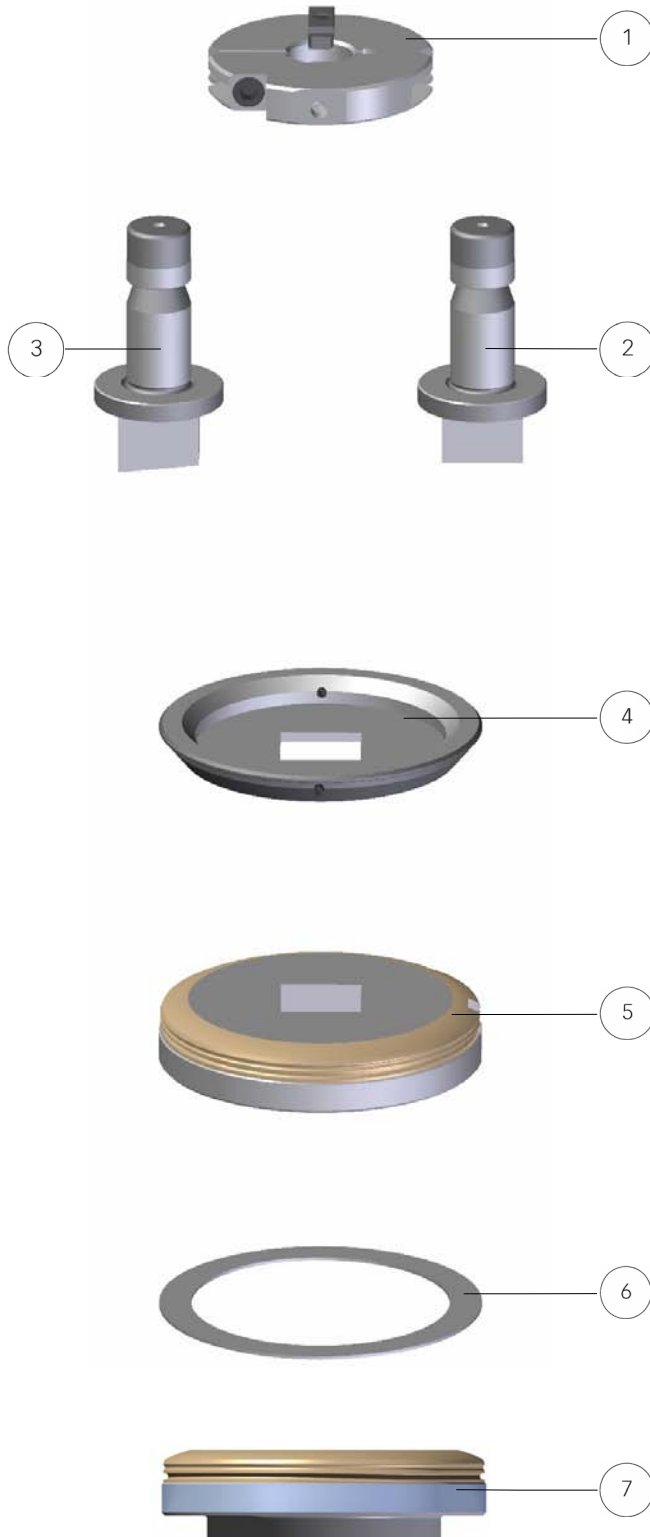


MATRIX S.r.l. Via Ponte d'Oro, 8 - 36015 SCHIO (VI) Italy  
Tel. +39 0445 671015 - Fax +39 0445 671035  
www.matrixtools.eu - info@matrixtools.eu

# TRUMPF® - SERIES 40

SIZE II

MAX   = mm 40,0



POS.	CODE DESCRIPTION	PRICE
1a	F336EA00 Adjustment Ring	
1b	F308EA00 Eco. Adjustment Ring	
2a	F315W00.YYY Round Punch	
2b	F315W02.YYY Square Punch	
2c	F315W01.YYY Obround Punch	
2d	F315W03.YYY Rectangular Punch	
3a	F318NW00.YYY Round Punch WN	
3b	F318NW02.YYY Square Punch WN	
3c	F318NW01.YYY Obround Punch WN	
3d	F318NW03.YYY Rectangular Punch WN	
4	F622SWXX.YYY Mechanical Stripper	
5a	F327UW00.YYY Round Die	
5b	F328UW02.YYY Square Die	
5c	F329UW01.YYY Obround Die	
5d	F329UW03.YYY Rectangular Die	
6	F3277400 9 x Die Shims Kit	
7a	F619UW00.YYY Strengthened Round Die	
7b	F620UW02.YYY Strengthened Square Die	
7c	F621UW01.YYY Strengthened Obround Die	
7d	F621UW03.YYY Strengthened Rectangular Die	

## OPTIONS

	DWP Whisper Sharpening on Pos. 3 Punches	
	Punches' "B" Coating	
	Punches with small dimensions (lower than mm 4,0)	

For W, XX, YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- On punches with a section lower than mm 4, the cutting part will be stiffened. These kinds of tools are considered special ones.
- Maximum Punching Strength: 300 kN.
- Maximum Punch Sharpening: mm 3.
- Whisper punches require a Punching Strength lower than the one of standard punches, even though they have the same dimensions, and they also reduce noise up to 50%.  
They are especially effective when they work on very strong and plastic materials.
- For new machine models which fit tools height mm 77, the use of punches as per Pos. 3 is compulsory.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

## DIES EXTERNAL REFERENCES

	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>• Reference: 0°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 45°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 90°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>


© 2007

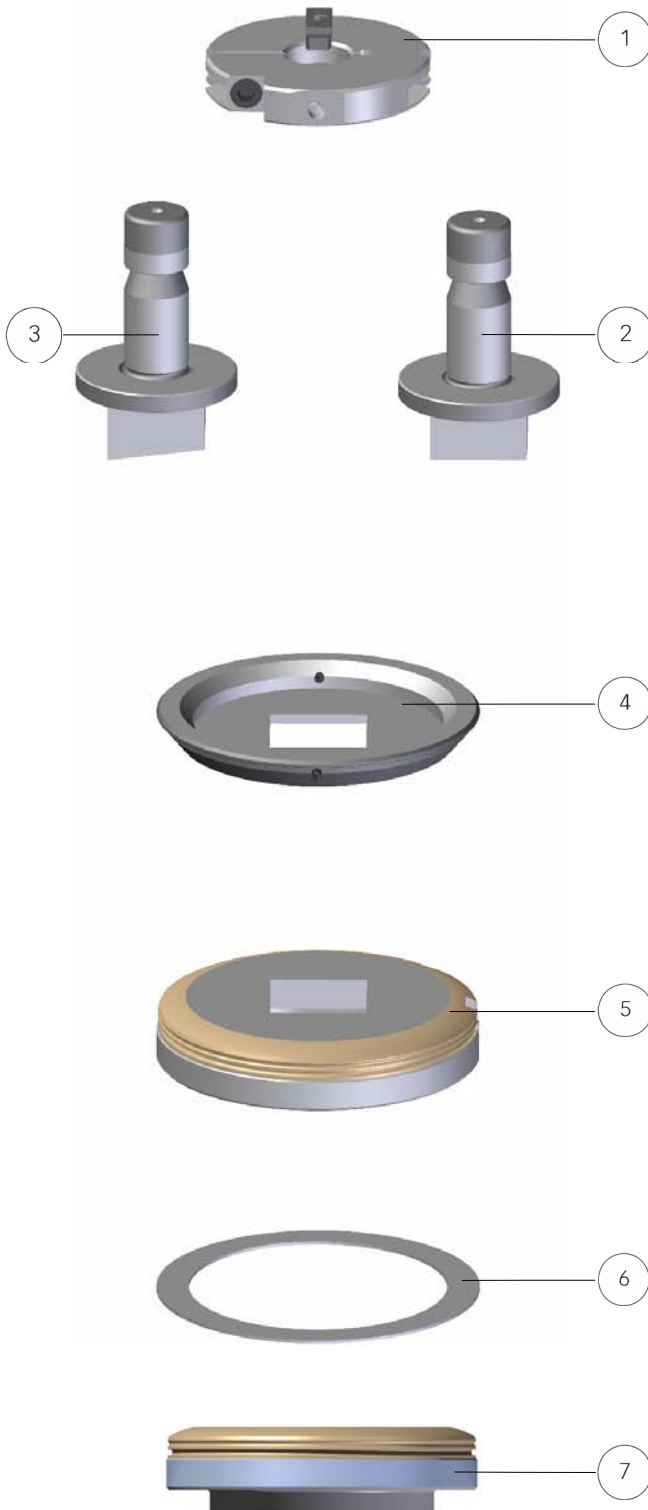


MATRIX S.r.l. Via Ponte d'Oro, 8 - 36015 SCHIO (VI) Italy  
Tel. +39 0445 671015 - Fax +39 0445 671035  
www.matrixtools.eu - info@matrixtools.eu

# TRUMPF® - SERIES 50

SIZE II

MAX   = mm 50,0



POS.	CODE DESCRIPTION	PRICE
1a	F336EA00 Adjustment Ring	
1b	F308EA00 Eco. Adjustment Ring	
2a	F3190W00.YYY Round Punch	
2b	F3190W02.YYY Square Punch	
2c	F3190W01.YYY Obround Punch	
2d	F3190W03.YYY Rectangular Punch	
3a	F322NW00.YYY Round Punch WN	
3b	F322NW02.YYY Square Punch WN	
3c	F322NW01.YYY Obround Punch WN	
3d	F322NW03.YYY Rectangular Punch WN	
4	F622SWXX.YYY Mechanical Stripper	
5a	F327UW00.YYY Round Die	
5b	F328UW02.YYY Square Die	
5c	F329UW01.YYY Obround Die	
5d	F329UW03.YYY Rectangular Die	
6	F3277400 9 x Die Shims Kit	
7a	F619UW00.YYY Strengthened Round Die	
7b	F620UW02.YYY Strengthened Square Die	
7c	F621UW01.YYY Strengthened Obround Die	
7d	F621UW03.YYY Strengthened Rectangular Die	

## OPTIONS



	DWP Whisper Sharpening on Pos. 3 Punches	
	Punches' "B" Coating	
	Punches with small dimensions (lower than mm 4,0)	

For W, XX, YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- On punches with a section lower than mm 4, the cutting part will be stiffened. These kinds of tools are considered special ones.
- Maximum Punching Strength: 300 kN.
- Maximum Punch Sharpening: mm 3.
- Whisper punches require a Punching Strength lower than the one of standard punches, even though they have the same dimensions, and they also reduce noise up to 50%.  
They are especially effective when they work on very strong and plastic materials.
- For new machine models which fit tools height mm 77, the use of punches as per Pos. 3 is compulsory.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

## DIES EXTERNAL REFERENCES

	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>• Reference: 0°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 45°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 90°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>

© 2007

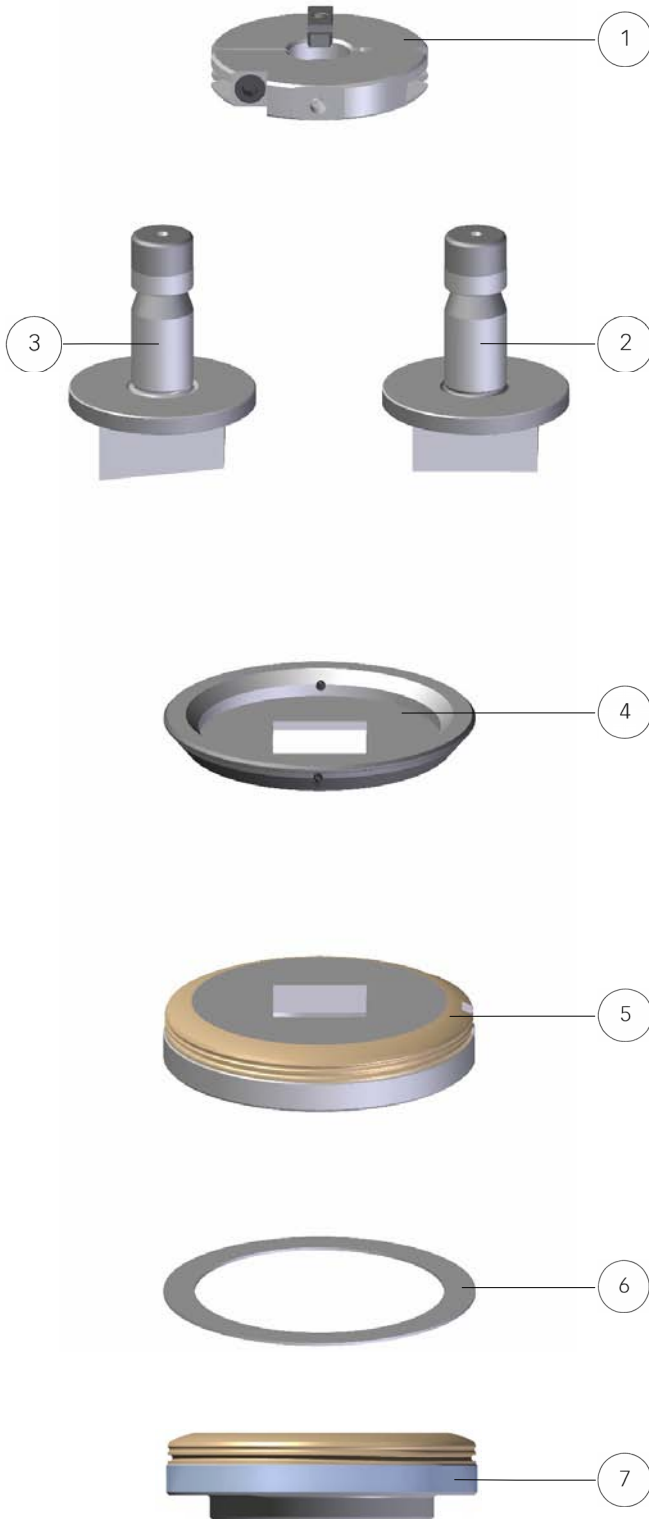


MATRIX S.r.l. Via Ponte d'Oro, 8 - 36015 SCHIO (VI) Italy  
Tel. +39 0445 671015 - Fax +39 0445 671035  
www.matrixtools.eu - info@matrixtools.eu

# TRUMPF® - SERIES 60

SIZE II

MAX   = mm 60,0



POS.	CODE DESCRIPTION	PRICE
1a	F336EA00 Adjustment Ring	
1b	F308EA00 Eco. Adjustment Ring	
2a	F3230W00.YYY Round Punch	
2b	F3230W02.YYY Square Punch	
2c	F3230W01.YYY Obround Punch	
2d	F3230W03.YYY Rectangular Punch	
3a	F326NW00.YYY Round Punch WN	
3b	F326NW02.YYY Square Punch WN	
3c	F326NW01.YYY Obround Punch WN	
3d	F326NW03.YYY Rectangular Punch WN	
4	F622SWXX.YYY Mechanical Stripper	
5a	F327UW00.YYY Round Die	
5b	F328UW02.YYY Square Die	
5c	F329UW01.YYY Obround Die	
5d	F329UW03.YYY Rectangular Die	
6	F3277400 9 x Die Shims Kit	
7a	F619UW00.YYY Strengthened Round Die	
7b	F620UW02.YYY Strengthened Square Die	
7c	F621UW01.YYY Strengthened Obround Die	
7d	F621UW03.YYY Strengthened Rectangular Die	

### OPTIONS

	DWP Whisper Sharpening on Pos. 3 Punches	
	Punches' "B" Coating	
	Punches with small dimensions (lower than mm 4,0)	

For W, XX, YYY variable meaning refer to page 63

### TECHNICAL SPECIFICATIONS

- On punches with a section lower than mm 4, the cutting part will be stiffened. These kinds of tools are considered special ones.
- Maximum Punching Strength: 300 kN.
- Maximum Punch Sharpening: mm 3.
- Whisper punches require a Punching Strength lower than the one of standard punches, even though they have the same dimensions, and they also reduce noise up to 50%.  
They are especially effective when they work on very strong and plastic materials.
- For new machine models which fit tools height mm 77, the use of punches as per Pos. 3 is compulsory.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

### DIES EXTERNAL REFERENCES

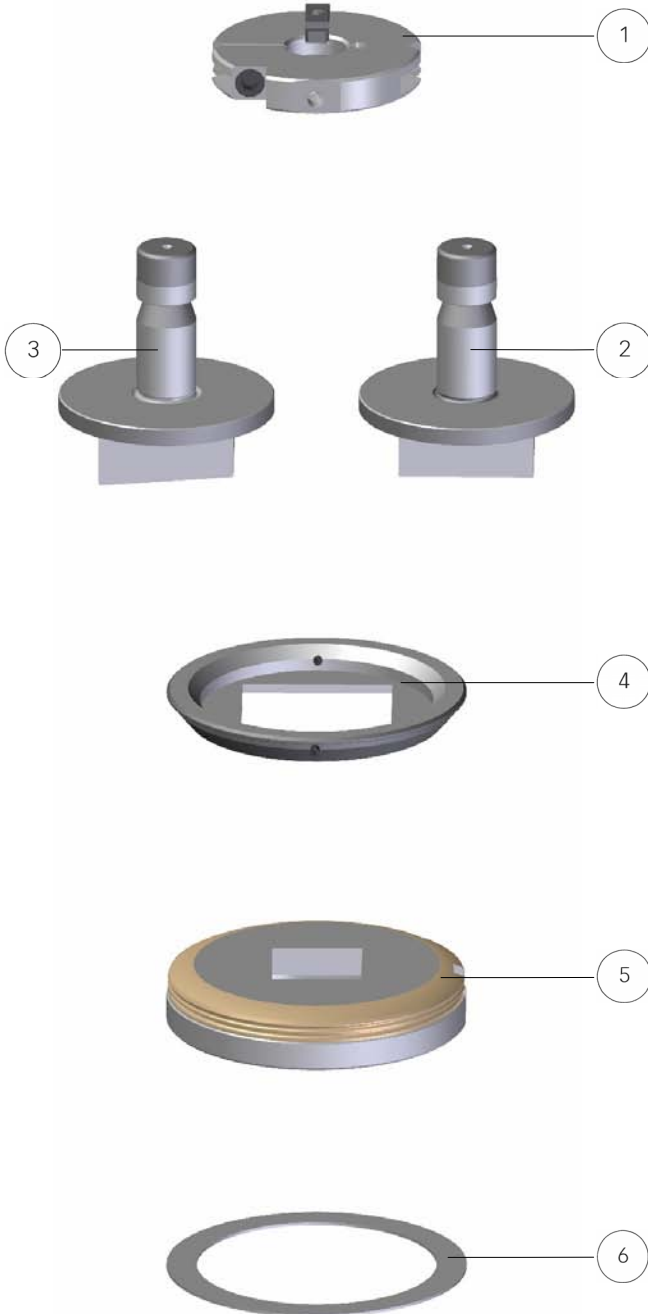
	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>• Reference: 0°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 45°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 90°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>



# TRUMPF® - SERIES 72

SIZE II

MAX   = mm 72,0



POS.	CODE DESCRIPTION	PRICE
1a	F336EA00 Adjustment Ring	
1b	F308EA00 Eco. Adjustment Ring	
2a	F327W00.YYY Round Punch	
2b	F327W02.YYY Square Punch	
2c	F327W01.YYY Obround Punch	
2d	F327W03.YYY Rectangular Punch	
3a	F330NW00.YYY Round Punch WN	
3b	F330NW02.YYY Square Punch WN	
3c	F330NW01.YYY Obround Punch WN	
3d	F330NW03.YYY Rectangular Punch WN	
4	F622SWXX.YYY Mechanical Stripper	
5a	F327UW00.YYY Round Die	
5b	F328UW02.YYY Square Die	
5c	F329UW01.YYY Obround Die	
5d	F329UW03.YYY Rectangular Die	
6	F3277400 9 x Die Shims Kit	
7a	F619UW00.YYY Strengthened Round Die	
7b	F620UW02.YYY Strengthened Square Die	
7c	F621UW01.YYY Strengthened Obround Die	
7d	F621UW03.YYY Strengthened Rectangular Die	

### OPTIONS

	DWP Whisper Sharpening on Pos. 3 Punches	
	Punches' "B" Coating	
	Punches with small dimensions (lower than mm 4,0)	

For W, XX, YYY variable meaning refer to page 63

### TECHNICAL SPECIFICATIONS

- On punches with a section lower than mm 4, the cutting part will be stiffened. These kinds of tools are considered special ones.
- Maximum Punching Strength: 300 kN.
- Maximum Punch Sharpening: mm 3.
- Whisper punches require a Punching Strength lower than the one of standard punches, even though they have the same dimensions, and they also reduce noise up to 50%.  
They are especially effective when they work on very strong and plastic materials.
- For new machine models which fit tools height mm 77, the use of punches as per Pos. 3 is compulsory.
- All dies are manufactured as standard typology; only on request they could be manufactured as slug retention typology as well, except where measures are lower or equal to mm 2 or clearances are lower or equal to mm 0,13.

### DIES EXTERNAL REFERENCES

	<p><b>Round Die</b></p> <ul style="list-style-type: none"> <li>• Reference: 0°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Square Die</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 45°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>
	<p><b>Rectangular and Obround Dies</b></p> <ul style="list-style-type: none"> <li>• References: 0° - 90°</li> <li>• Maximum sharpening mm 1, regenerable through shims (Pos. 6)</li> </ul>



# TRUMPF® - STANDARD STRIPPERS

SIZE I / II



POS.	CODE DESCRIPTION	PRICE
1	F622S500.YYY Round Mechanical Stripper	
2a	F622S601.YYY Obround Mechanical Stripper	
2b	F622S602.YYY Square Mechanical Stripper	
2c	F622S603.YYY Rectangular Mechanical Stripper	
3a	F9754000.YYY Minimatic Round Mechanical Stripper	
3b	F9754001.YYY Minimatic Obround Mechanical Stripper	
3c	F9754002.YYY Minimatic Square Mechanical Stripper	
3d	F9754003.YYY Minimatic Rectangular Mechanical Stripper	

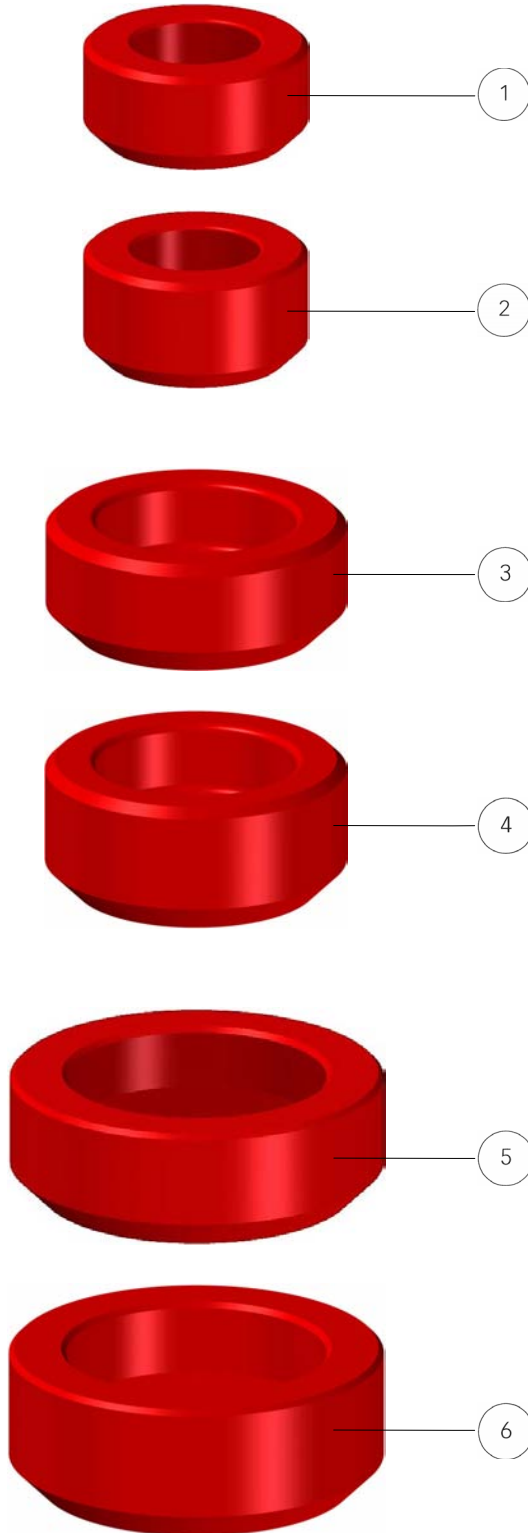
For YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- They perform the role of strippers (sheet is separated from the punch during the return stroke) when idle, that is positioned over the sheet with a space, otherwise they perform the role of push on strippers if active in the programming phase (sheet is pushed on the die to guarantee a better overall quality to processing).
- The hole dimension, except customer's specifications, is mm 0,5 larger than the punch.
- Pos. 3 Stripper must be used on Minimatic machines.
- **Warning**  
On the new machine's models must be used strippers of Pos. 1 and 2 only; to broke this rule should mean a collision.

# TRUMPF® - POLYURETHANE STRIPPERS

SIZE I / II



POS.	CODE DESCRIPTION	PRICE
1a	F3114000 Polyurethane Stripper up to mm 30 - Without Hole	
1b	F311U0XX Polyurethane Stripper up to mm 30 - With Hole	
2a	F3144000 Polyurethane Stripper up to mm 30 Whisper - Without Hole	
2b	F314U0XX Polyurethane Stripper up to mm 30 Whisper - With Hole	
3a	F3154000 Polyurethane Stripper up to mm 40 - Without Hole	
3b	F315U0XX Polyurethane Stripper up to mm 40 - With Hole	
4a	F3184000 Polyurethane Stripper up to mm 40 Whisper - Without Hole	
4b	F318U0XX Polyurethane Stripper up to mm 40 Whisper - With Hole	
5a	F3194000 Polyurethane Stripper up to mm 50 - Without Hole	
5b	F319U0XX Polyurethane Stripper up to mm 50 - With Hole	
6a	F3224000 Polyurethane Stripper up to mm 50 Whisper - Without Hole	
6b	F322U0XX Polyurethane Stripper up to mm 50 Whisper - Without Hole	

For XX variable meaning refer to page 63

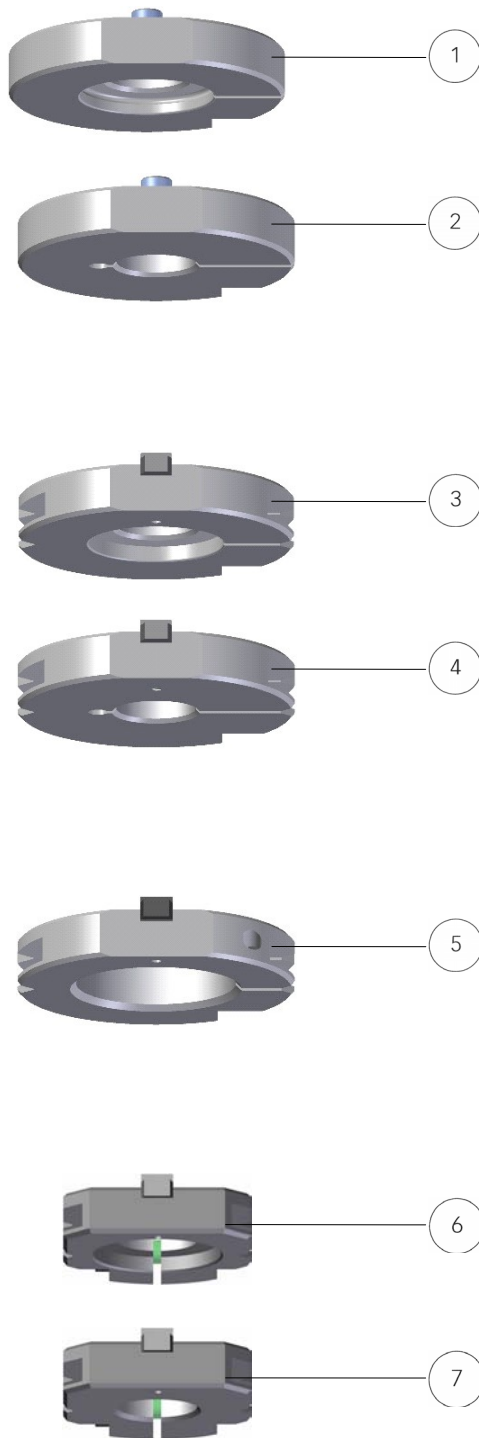
## TECHNICAL SPECIFICATIONS

- They are manufactured with plastic mould by polymeric material's injection and they have very good elastic feature that are comparable to a mechanical spring.
- They are mainly used in single tool punch presses with TRUMPF® housing, where the standard stripper use is complicated or not possible.
- They are effective when you want to protect the material to be worked from scratches and nothes that could be caused by mechanical elements.
- Even if they have a reduced extraction strength (recommended up to 20/10), they allow to reduce both sheet deformation and noise, being active in both shearing and extraction phases.
- They are supplied separately from punches, and on request they may be bored to fit tool's dimensions.



# TRUMPF® - ADJUSTMENT RING

SIZE 0 / I / II / II HD



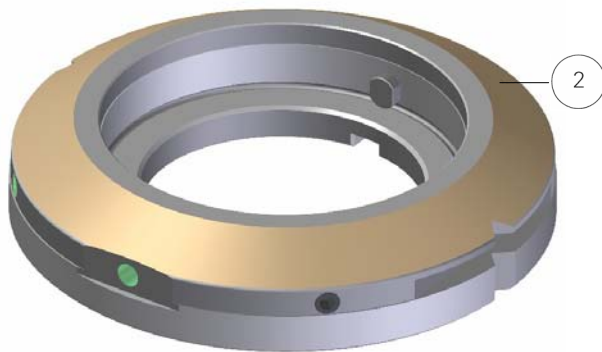
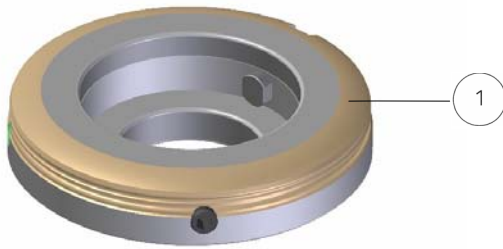
POS.	CODE DESCRIPTION	PRICE
1	F3087500 Eco. Adjustment Ring Size 0/I	
2	F308EA00 Eco. Adjustment Ring Size I/II	
3	F3367500 Adjustment Ring Size 0/I	
4	F336EA00 Adjustment Ring Size I/II	
5	F336PZ00 Adjustment Ring Size II HD	
6	F9757500 Minimatic Adjustment Ring Size 0/I	
7	F975EA00 Minimatic Adjustment Ring Size I/II	

## TECHNICAL SPECIFICATIONS

- Adjustment rings are divided in two categories:
  - For punch presses with manual tool's change (Pos. 1 and 2)
  - For punch presses with automatic tool's change (Pos. 3-4-5-6-7)
- Usually all TRUMPF® punch presses have automatic tool's change, while all punch presses which adopt the TRUMPF® system have manual tool's change.
- Both systems use rings for the following task:
  - To transfer strength from ram to tool.
  - To line up shaped punches with their dies.
  - To unify different sizes to allow them to be accepted into ram housing.
- Pos. 6 and 7 adjustment ring must be used on Minimatic punch presses.
- Automatic tool's change adjustment ring (Pos. 3 and 4) have also features that allow to fix the punch to the toolbox.
- Tools in Size 0 and I use ring Pos. 1 and 3
- Tools in Size II use rings Pos. 2 and 4
- Heavy Duty tools and Parting tools use ring Pos. 5
- **Warning**  
Deformation and Cluster tools do not need any ring because it is integral part of the tool's body.

# TRUMPF® - DIE ADAPTORS

SIZE II / III

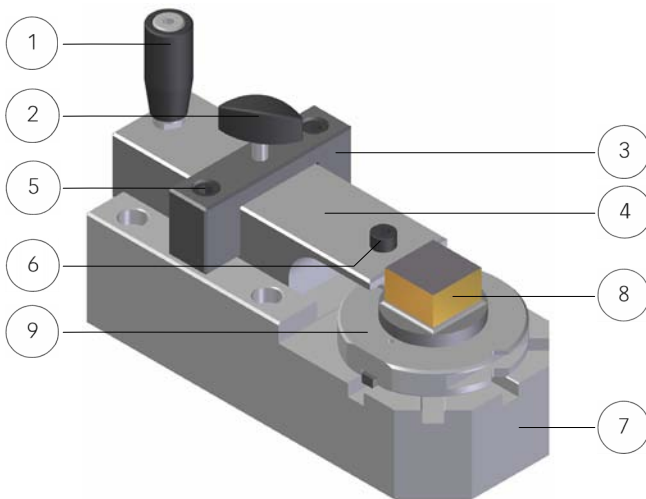


POS.	CODE DESCRIPTION	PRICE
1	F3296300 Die Adaptor Size I/II	
2	F3336500 Die Adaptor Size II/III	

## TECHNICAL SPECIFICATIONS

- They are manufactured with the maximum accuracy and with anti-wear steel to give dies the maximum accuracy and reliability.
- Adaptor Pos. 1 turns Size I into Size II.
- Adaptor Pos. 2 turns Size II into Size III.

## ALIGNMENT FIXTURE



POS.	CODE DESCRIPTION	PRICE
A	F336EB00 Alignment Fixture	
1	A3206234.114 Type A Handle	
2	A3506134.114 Type A Hand-Wheel	
3	F336NL00 Centre Square Bearing	
4	F336NM00 Centre Square	
5	A0100100.057 2 x Screw M6x35	
6	A0100100.046 Screw M6x6	
7	F336NK00 Body	
8	Varying Code Punch	
9	Varying Code Adjustment Ring	

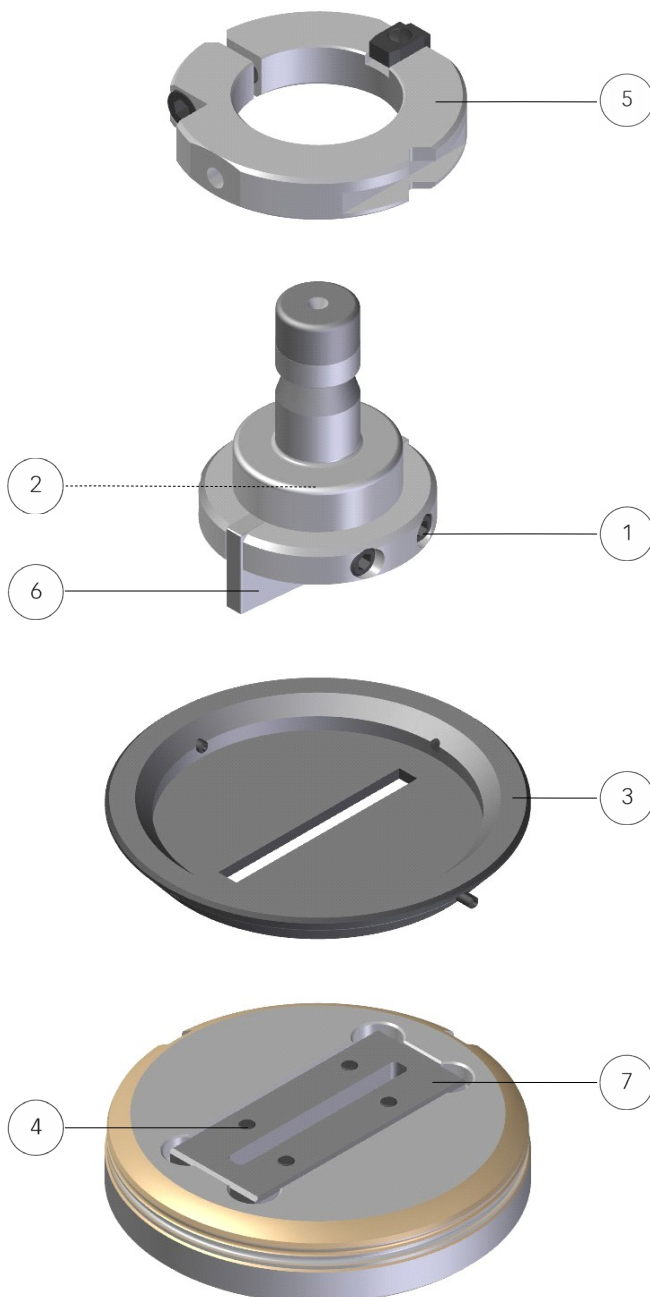
## TECHNICAL SPECIFICATIONS

- It is designed for an easy and cheaper alignment between punch and its adjustment ring; if offers, in a fast way and on the machine side, the possibility to prepare the tool to work with.
- When punch and ring are inserted into the housing hole (Pos. 8 and 9), it is enough to bring the centre square (Pos. 4) near to one side of the punch and block the ring.

# TRUMPF® - PARTING TOOLS

SIZE II

MAX  = mm 56,0



POS.	CODE DESCRIPTION	PRICE
A	F938BZ00 Upper Insert Holder	
1	A0201100.061 2 x Lock Socket Set Screw	
2	A0802705.159 Pin	
3	F622SWXX.YYY Mechanical Stripper	
B	F938BY00 Lower Insert Holder	
4	A0100100.021 4 x Lock Screw	

## TOOLS AND FITTINGS

5	F336PZ00 Adjustment Ring Size II HD	
6	Varying Code Upper Shearing Insert	
7	Varying Code 2 x Lower Shearing Insert	

For W, XX and YYY variable meaning refer to page 63

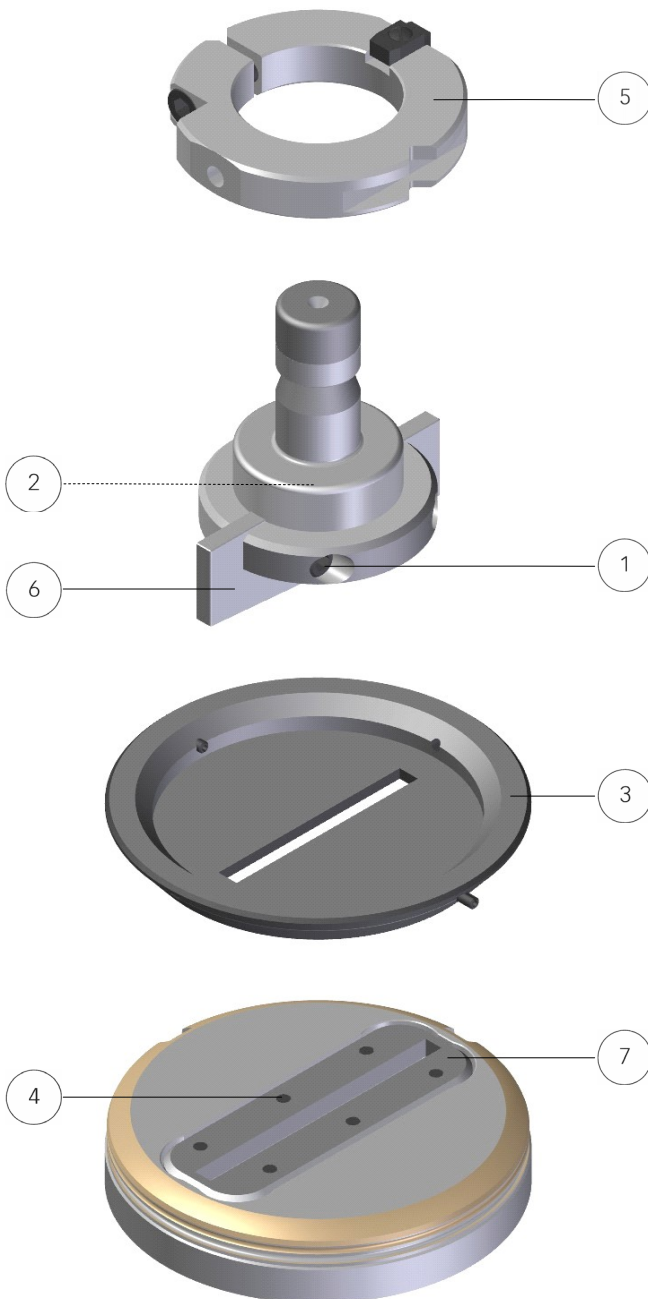
## TECHNICAL SPECIFICATIONS

- They are designed to make economically favourable the most used punching tool, and they give the possibility to replace shearing inserts only, keeping support elements.
- Available in two length (mm 30 and 56), they can be supplied also with trapezoidal and dovetail shape to leave microjoints that allows to small details to be punched, sheared, and manually separated at the end of all processing (see page 32).
- Maximum Punching Thickness: mm 3
- Upper Insert maximum sharpening: mm 3
- Lower Insert maximum sharpening: mm 1

# TRUMPF® - PARTING TOOLS

SIZE II

MAX  = mm 76,2



POS.	CODE DESCRIPTION	PRICE
A	F938BZ00 Upper Insert Holder	
1	A0201100.061 2 x Lock Socket Set Screw	
2	A0802705.159 Pin	
3	F622SWXX.YYY Mechanical Stripper	

B	F939BY00 Lower Insert Holder	
4	A0100100.021 4 x Lock Screw	

## TOOLS AND FITTINGS

5	F336PZ00 Adjustment Ring Size II HD	
6	Varying Code Upper Shearing Insert	
7	Varying Code 2 x Lower Shearing Insert	

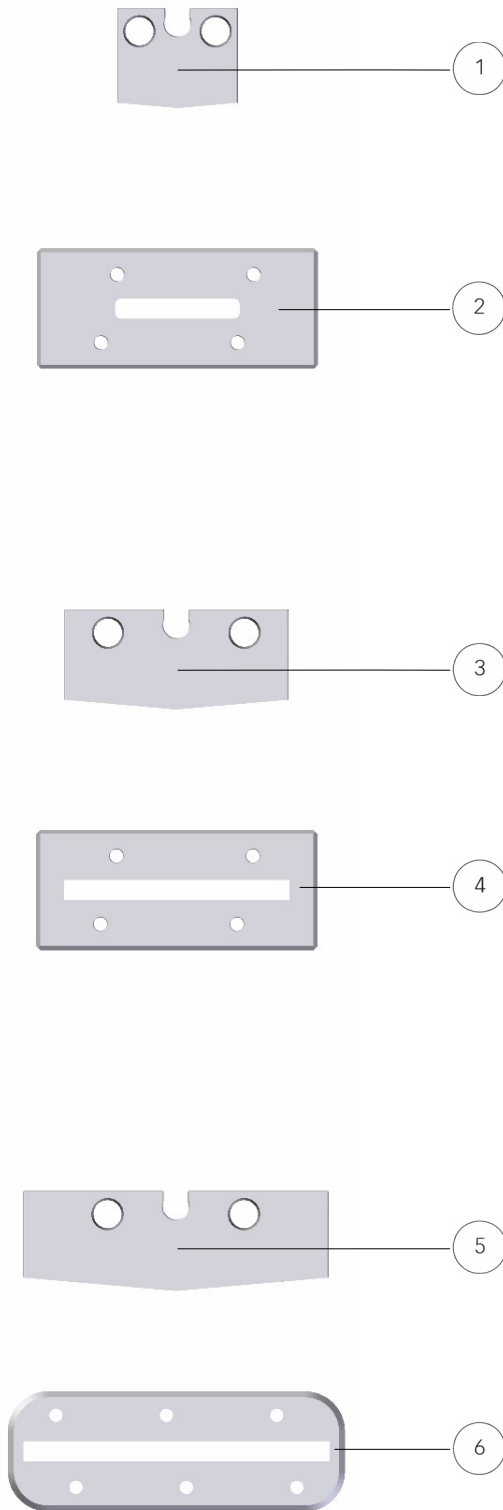
For W, XX and YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- They are designed to make economically favourable the most used punching tool, and they give the possibility to replace shearing inserts only, keeping support elements.
- They can be supplied also with trapezoidal and dovetail shape to leave microjoints that allows to small details to be punched, sheared, and manually separated at the end of all processing (see page 32).
- Maximum Punching Thickness: mm 3
- Upper Insert maximum sharpening: mm 3
- Lower Insert maximum sharpening: mm 1

# TRUMPF® - PARTING INSERTS

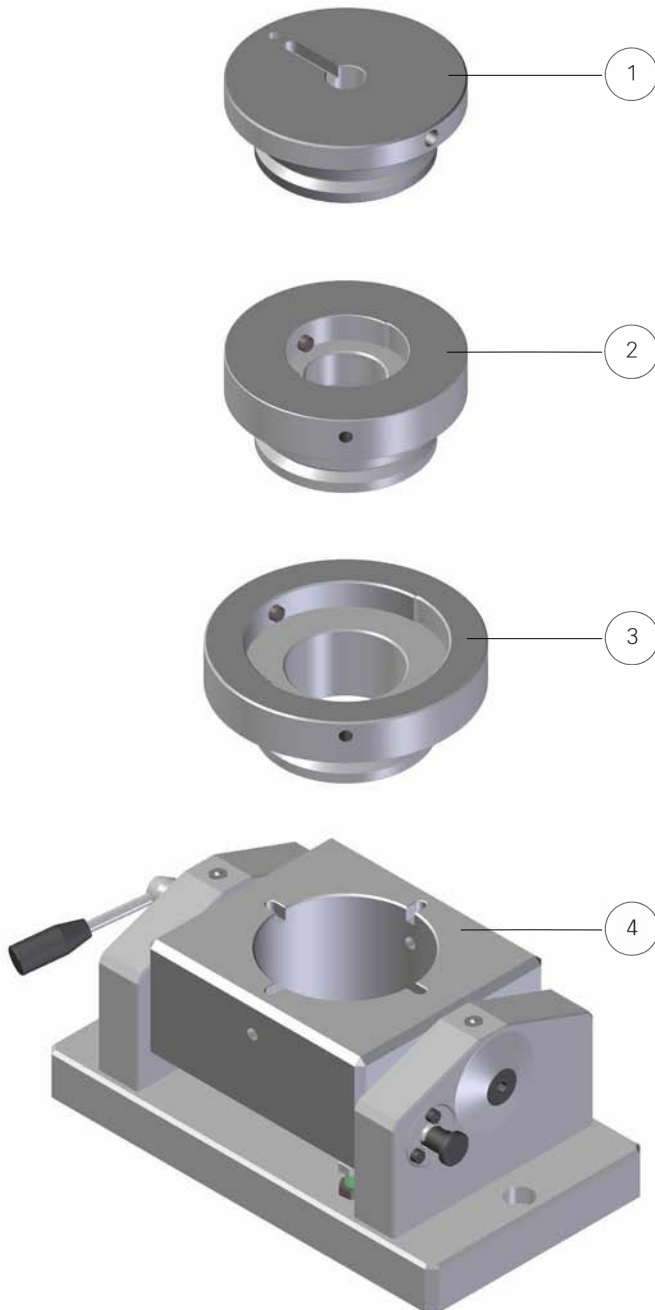
## SIZE II



POS.	CODE DESCRIPTION	PRICE
1	F938NB03.083 Upper Shearing Insert Rectangular 5x30 DWP	
2	F938RA03.083 2 x Lower Shearing Insert Rectangular 5x30	
3	F938NB03.393 Upper Shearing Insert Rectangular 5x56 DWP	
4	F938RA03.393 2 x Lower Shearing Insert Rectangular 5x56	
5	F939NB03.394 Upper Shearing Insert Rectangular 5x76,2 DWP	
6	F939RA03.394 2 x Lower Shearing Insert Rectangular 5x76,2	
<b>OPTIONS</b>		
	"B" Coating for Upper Shearing Insert	
<b>TECHNICAL SPECIFICATIONS</b>		
<ul style="list-style-type: none"> <li>High quality shearing insert for high performances on Stainless Steel as well as on all commonly used materials. <i>(Improved performances could be achieved with titanium and titanium+alloy surface coatings)</i></li> <li>Rectangular section is considered standard with the following measures: 5x30 - 5x56 - 5x76,2</li> <li>On demand, with the same dimensions are available the section showed at the bottom of page.</li> </ul>		
SHAPE	CODE MEASURES	PRICE
<b>Obround</b>		
	F938NB01.083 Upper Shearing Insert 5x30 DWP	
	F938RA01.083 2 x Lower Sh. Insert 5x30	
	F938NB01.393 Upper Shearing Insert 5x56 DWP	
	F938RA01.393 2 x Lower Sh. Insert 5x56	
	F939NB01.394 Upper Shearing Insert 5x76,2 DWP	
	F939RA01.394 2 x Lower Sh. Insert 5x76,2	
<b>Microjoint - Trapezoidal</b>		
	F938NBC3.083 Upper Shearing Insert 5x30 DWP	
	F938RAC3.083 2 x Lower Sh. Insert 5x30	
	F938NBC3.393 Upper Shearing Insert 5x56 DWP	
	F938RAC3.393 2 x Lower Sh. Insert 5x56	
	F939NBC3.394 Upper Shearing Insert 5x76,2 DWP	
	F939RAC3.394 2 x Lower Sh. Insert 5x76,2	
<b>Microjoint - Dovetail</b>		
	F938NBF2.083 Upper Shearing Insert 5x30 DWP	
	F938RAF2.083 2 x Lower Sh. Insert 5x30	
	F938NBF2.393 Upper Shearing Insert 5x56 DWP	
	F938RAF2.393 2 x Lower Sh. Insert 5x56	
	F939NBF2.394 Upper Shearing Insert 5x76,2 DWP	
	F939RAF2.394 2 x Lower Sh. Insert 5x76,2	

# SHEAR GRINDING FIXTURE

SIZE I / II



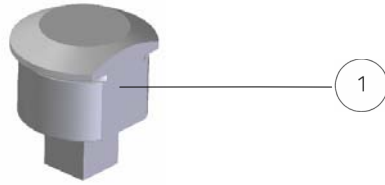
POS.	CODE DESCRIPTION	PRICE
1	FA226100 Punch Adaptor	
2	FA226300 Size I Die Adaptor	
3	FA226400 Size II Die Adaptor	
4	FA22QE00 Shear Grinding Fixture	

## TECHNICAL SPECIFICATIONS

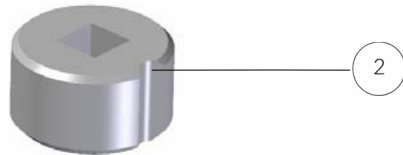
- The sharpening of tools often is a problem, especially when the tools have a single inclined cutting part or even a double inclined cutting part (see whisper sharpening).
- The Pos. 4 Clamping element solves the problem by allowing to execute all kind of sharpening in an easy and fast way: when it is clamped on grinding machine, the Pos. 4 element accepts adaptor 1 (for all punch series), adaptor 2 (for Size I dies) and adaptor 3 (for Size II dies).
- This element is used on 0° position for plan punches and dies, or with a maximum 20° inclination for whisper punches.

# TRUMPF® - MULTITOOL

MODEL A

 MAX  $\varnothing$   $\square$  = mm 16,0


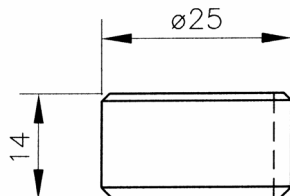
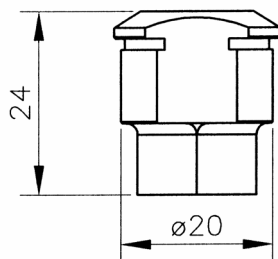
1



2



3



POS.	CODE DESCRIPTION	PRICE
1a	FA240000.YYY Round Punch	
1b	FA240001.YYY Obround Punch	
1c	FA240002.YYY Square Punch	
1d	FA240003.YYY Rectangular Punch	
2a	FA242000.YYY Round Die	
2b	FA242001.YYY Obround Die	
2c	FA242002.YYY Square Die	
2d	FA242003.YYY Rectangular Die	
3	FA247400 9 x Die Shims Kit	

## OPTIONS

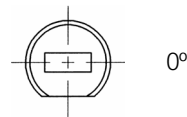
Punches' "B" Coating

For YYY variable meaning refer to page 63

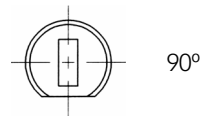
## TECHNICAL SPECIFICATIONS

- High quality punch for high performances on Stainless Steel as well as on all commonly used materials.  
*(improved performances could be achieved with titanium and titanium+alloy surface coatings)*
- There are several kind of Multitool, from 2 to 12 tools, each one with different features, and so when you place an order we recommend to quote always the following information:
  - Machine tool's model
  - Kind of Multitool
  - Tool needed
  - Housing position
  - Shaped tool's phasing
- Punching maximum material thickness:
  - mm 3 Iron
  - mm 2 Stainless Steel
- Maximum Punching Strength: 55 kN
- Maximum die sharpening mm 1, regenerable through shims (Pos. 3)
- To determine maximum punch sharpening refer to machine tool handbook.

## PHASING



0°



90°



45°



135°

© 2007



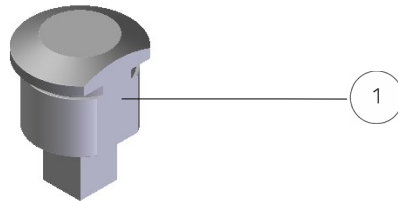
MATRIX S.r.l. Via Ponte d'Oro, 8 - 36015 SCHIO (VI) Italy  
 Tel. +39 0445 671015 - Fax +39 0445 671035  
 www.matrixtools.eu - info@matrixtools.eu



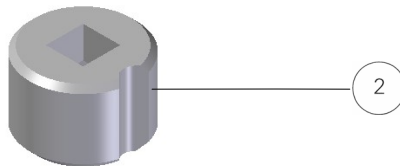
# TRUMPF® - MULTITOOL

MODEL B

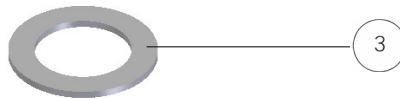
MAX   = mm 10,5



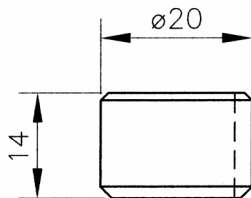
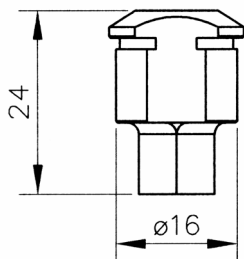
1



2



3



POS.	CODE DESCRIPTION	PRICE
1a	FA25000.YYY Round Punch	
1b	FA25001.YYY Obround Punch	
1c	FA25002.YYY Square Punch	
1d	FA25003.YYY Rectangular Punch	
2a	FA25200.YYY Round Die	
2b	FA25201.YYY Obround Die	
2c	FA25202.YYY Square Die	
2d	FA25203.YYY Rectangular Die	
3	FA257400 9 x Die Shims Kit	

## OPTIONS

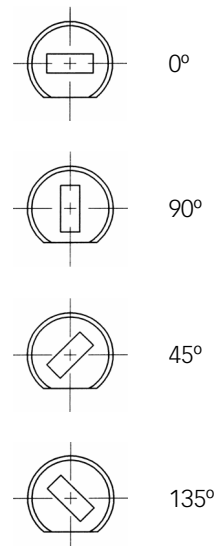
Punches' "B" Coating

For YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

- High quality punch for high performances on Stainless Steel as well as on all commonly used materials.  
*(Improved performances could be achieved with titanium and titanium+alloy surface coatings)*
- There are several kind of Multitool, from 2 to 12 tools, each one with different features, and so when you place an order we recommend to quote always the following information:
  - Machine tool's model
  - Kind of Multitool
  - Tool needed
  - Housing position
  - Shaped tool's phasing
- Punching maximum material thickness:
  - mm 3 Iron
  - mm 2 Stainless Steel
- Maximum Punching Strength: 55 kN
- Maximum die sharpening mm 1, regenerable through shims (Pos. 3)
- To determine maximum punch sharpening refer to machine tool handbook.

## PHASING



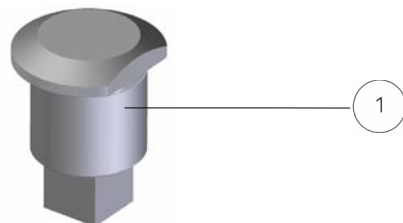
© 2007



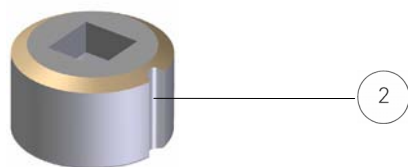
MATRIX S.r.l. Via Ponte d'Oro, 8 - 36015 SCHIO (VI) Italy  
Tel. +39 0445 671015 - Fax +39 0445 671035  
www.matrixtools.eu - info@matrixtools.eu

# TRUMPF® - MULTITOOL

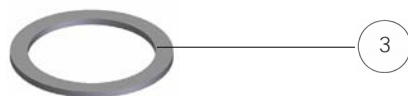
MODEL C

 MAX   = mm 16,0


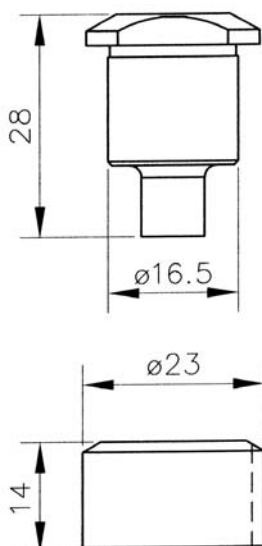
1



2



3



POS.	CODE DESCRIPTION	PRICE
1a	FA50000.YYY Round Punch	
1b	FA50001.YYY Obround Punch	
1c	FA50002.YYY Square Punch	
1d	FA50003.YYY Rectangular Punch	
2a	FA50200.YYY Round Die	
2b	FA50201.YYY Obround Die	
2c	FA50202.YYY Square Die	
2d	FA50203.YYY Rectangular Die	
3	FA507400 9 x Die Shims Kit	

## OPTIONS

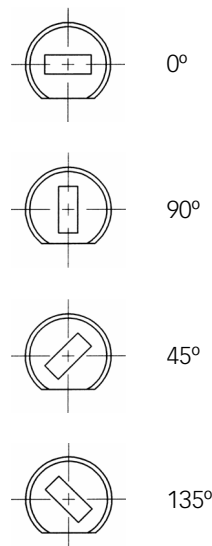
Punches' "B" Coating

For YYY variable meaning refer to page 63

## TECHNICAL SPECIFICATIONS

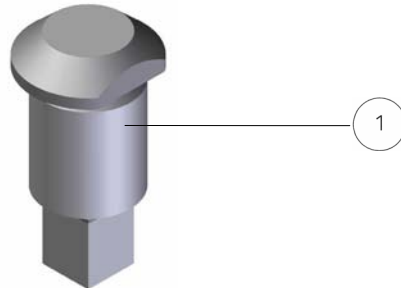
- High quality punch for high performances on Stainless Steel as well as on all commonly used materials.  
(*improved performances could be achieved with titanium and titanium+alloy surface coatings*)
- There are several kind of Multitool, from 2 to 12 tools, each one with different features, and so when you place an order we recommend to quote always the following information:
  - Machine tool's model
  - Kind of Multitool
  - Tool needed
  - Housing position
  - Shaped tool's phasing
- Punching maximum material thickness:
  - mm 3 Iron
  - mm 2 Stainless Steel
- Maximum Punching Strength: 55 kN
- Maximum die sharpening mm 1, regenerable through shims (Pos. 3)
- To determine maximum punch sharpening refer to machine tool handbook.

## PHASING

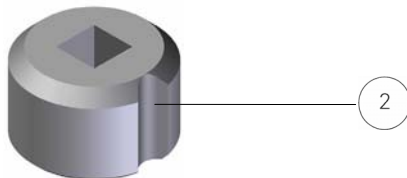


# TRUMPF® - MULTITOOL

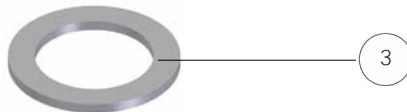
MODEL D

 MAX   = mm 10,5


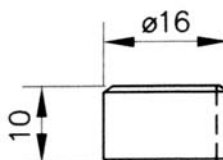
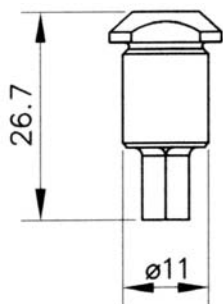
1



2



3



POS.	CODE DESCRIPTION	PRICE
1a	FAC3000.YYY Round Punch	
1b	FAC3001.YYY Obround Punch	
1c	FAC3002.YYY Square Punch	
1d	FAC3003.YYY Rectangular Punch	
2a	FAC3200.YYY Round Die	
2b	FAC3201.YYY Obround Die	
2c	FAC3202.YYY Square Die	
2d	FAC3203.YYY Rectangular Die	
3	FAC37400 9 x Die Shims Kit	

## OPTIONS

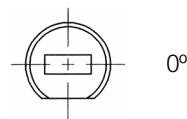
Punches' "B" Coating

For YYY variable meaning refer to page 63

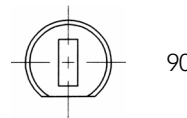
## TECHNICAL SPECIFICATIONS

- High quality punch for high performances on Stainless Steel as well as on all commonly used materials.  
*(Improved performances could be achieved with titanium and titanium+alloy surface coatings)*
- There are several kind of Multitool, from 2 to 12 tools, each one with different features, and so when you place an order we recommend to quote always the following information:
  - Machine tool's model
  - Kind of Multitool
  - Tool needed
  - Housing position
  - Shaped tool's phasing
- Punching maximum material thickness:
  - mm 3 Iron
  - mm 2 Stainless Steel
- Maximum Punching Strength: 55 kN
- Maximum die sharpening mm 1, regenerable through shims (Pos. 3)
- To determine maximum punch sharpening refer to machine tool handbook.

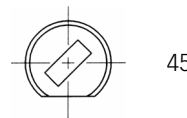
## PHASING



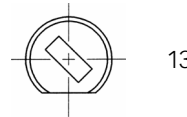
0°



90°



45°



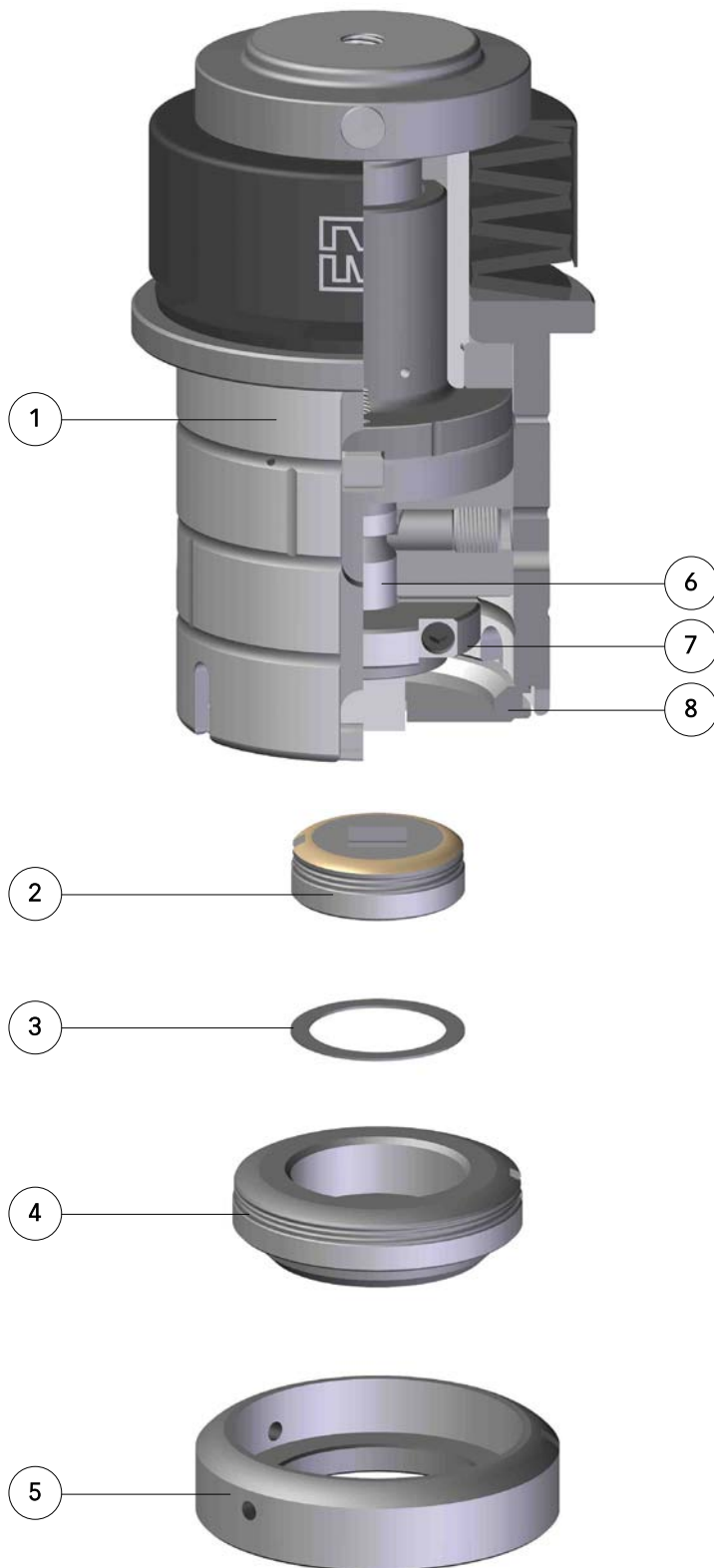
135°

© 2006



MATRIX S.r.l. Via Ponte d'Oro, 8 - 36015 SCHIO (VI) Italy  
 Tel. +39 0445 671015 - Fax +39 0445 671035  
 www.matrix-it.com - matrix@keycomm.it

# ADATTATORE TORRETTA ALTA



POS.	CODE DESCRIPTION	PRICE
1+5	FAAPDY00 Basic Set	
<b>1</b>	<b>FAAP7200</b> <b>Adjustable Guide Assembly</b>	
2	Varying Code Size I Die	
3	F3117400 Size I Die Shims Kit	
4	F3296300 Size I to Size II Die Adaptor	
5	F2346500 Station D to Size II Die Adaptor	
6	Varying Code Punch	
7	Varying Code Adjustment Ring	
8	Varying Code Stripper	

## TECHNICAL SPECIFICATIONS

- This punch holder allows standard Trumpf® tools to be used on a D Station Thick Turret.
- It houses normal and whisper tools, both new and old style standard strippers.
- After sharpening, the tool height is regenerated through a step (mm 0,25) adjustment, so that the tool has a longer life than with standard sharpening and without modifying the punch press stroke.
- The spring assembly gives the system a great extraction strength.
- Changeover of the tools is quick and takes place outside the punch holder; the tool can be oriented from 0° to 360° in 45° steps.
- All this gives outstanding performances to this tool.

Trumpf® is a trademark of Trumpf GmbH + Co.

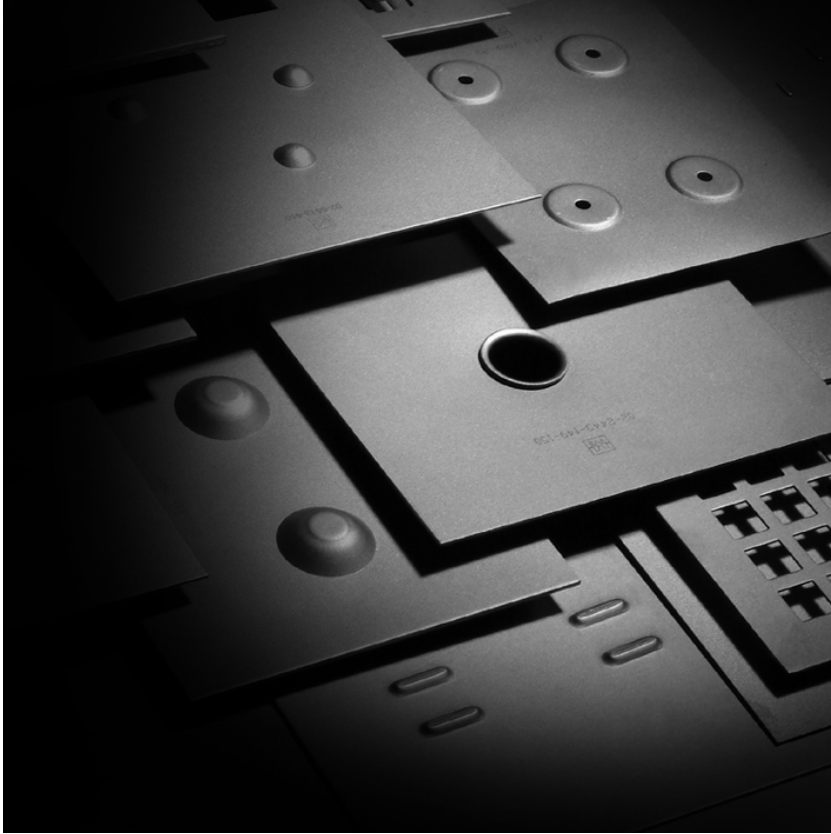
# TOOL HOLDER CART



POS.	CODE DESCRIPTION	PRICE
1	F680WQ00 Tool Holder Cart	
TECHNICAL SPECIFICATIONS		
<p>Tool holder cart on four wheels, with dimensions mm 745 x 475, height mm 1098, composed of:</p> <ul style="list-style-type: none"> <li>• 9 compartments of which: <ul style="list-style-type: none"> <li>– 7 with internal height mm 50</li> <li>– 1 of mm 90</li> <li>– 1 of mm 120</li> </ul> </li> <li>• Support plan with anti-slip rubber</li> </ul>		



## FORMING AND CLUSTER TOOLS

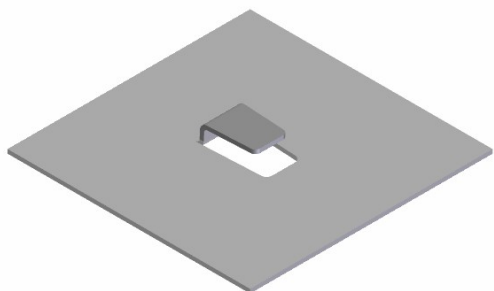
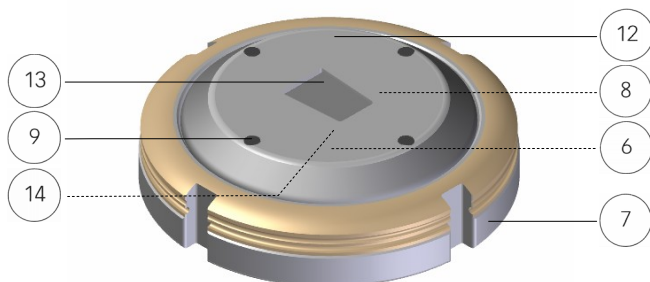
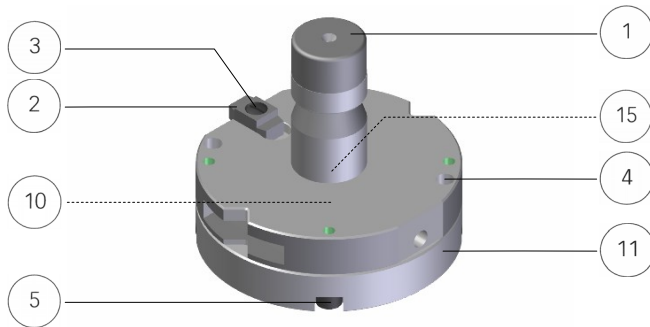


Due to possible deformation and cluster tools vastness (the most common are illustrated in the following pages), we advise to send most data and information on requested deformation and cluster tool to our technical office, to allow us to find the best solution to your problems.

Each forming tool is uniquely identified with its own code and it is supplied with deformation samples.

# TRUMPF® - DEFORMATION

## SIZE II



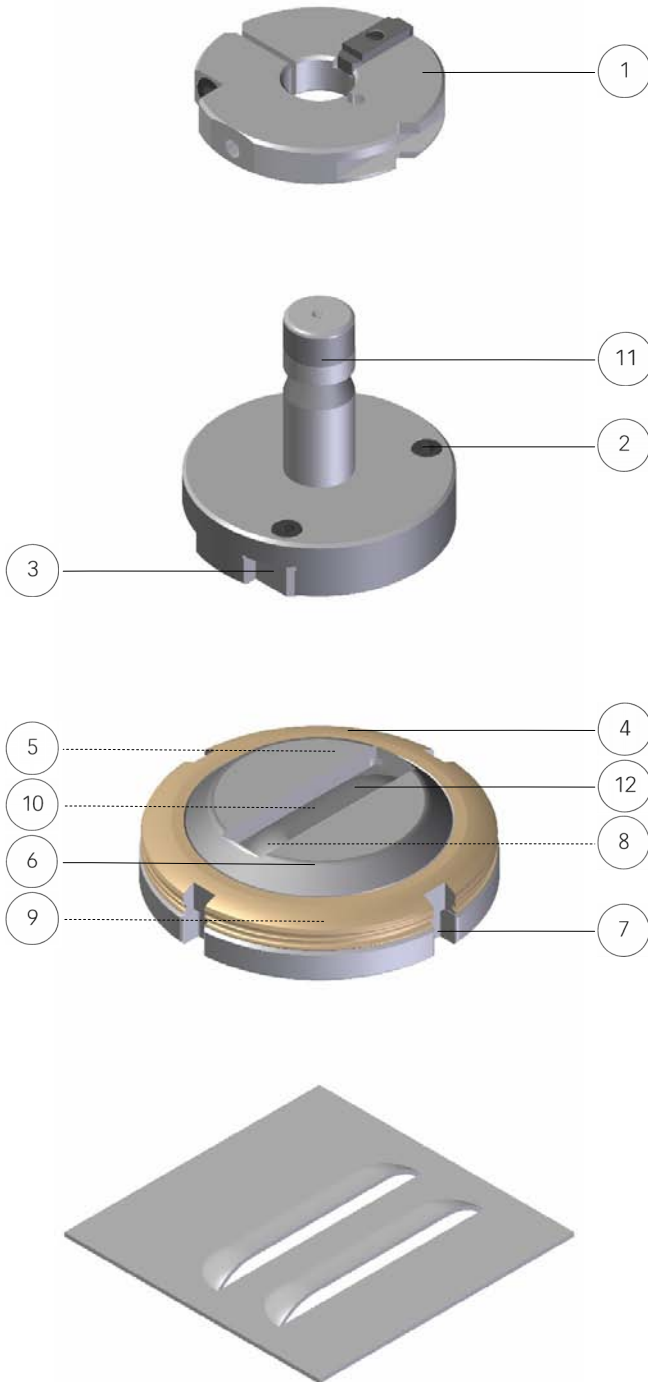
POS.	CODE DESCRIPTION
A	F927BA00 Upper Insert Holder
1	F927QB00 Shank
2	FA20EN00 Alignment Key
3	A0105904.006 Alignment Key Lock Screw
4	A0802705.149 2 x Reference Pin
5	A0100100.021 4 x Lock Screw
B	F927BB00 Lower Insert Holder
6	A0903326.217 4 x Spring
7	F927DH00 Die base
8	A0100100.021 4 x Lower Insert Lock Screw
9	A0100805.032 4 x Lower Stripper Lock Screw
INSERTS AND FITTINGS	
10	Varying Code Upper Stripper
11	Varying Code Upper Insert
12	Varying Code Lower Stripper
13	Varying Code Lower Insert
14	A0802705.134 Lower Insert Reference Pin
15	A0903326.217 Spring
TECHNICAL SPECIFICATIONS	

- Deformation is the processing which allows to modify metal sheet flatness in a plastic way. The possible deformations are various, and they could be combined to shearing, extrusion or coining. The example proposed at side shows a set which in a single stroke shears and deforms a shelf clip, that uses standard insert holders with dedicated and interchangeable inserts to give flexibility to the system.
- About the whole of the deformations is executed up-forming to facilitate metal sheet sliding on the machine surface.
- On the following pages there are data sheets of some common deformation that are initially fill in by the customer and then revised by our technical office to begin construction.
- All special tools are designed to be manufactured, verified (with the tool is delivered a sample of the final result) and at last all data are archived, so to be able to offer in any moment a spare part perfectly working.
- For this kind of tool a lower insert holder's economical version is available; it allows to execute round deformation only.



# TRUMPF® - LOUVER TOOL

## SIZE II



POS.	CODE DESCRIPTION
A	Varying Code Upper Insert Holder
1	F336EA00 Adjustment Ring
2	A0100100.032 2 x Shearing Insert Lock Screw
3	F639CP00 Upper Shearing Insert
B	F639BY00 Lower Insert Holder
4	F639DG00 Stripper Lock Ring
5	A0903326.221 4 x Spring
6	Varying Code Lower Stripper
7	F639DJ00 Die Base
8	A0100100.050 2 x M6x14 Screw
9	A0100100.021 4 x Max14 Screw
10	A0802705.174 Reference Pin

### INSERTS AND FITTINGS

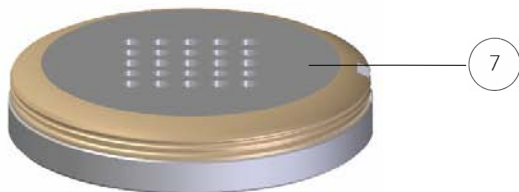
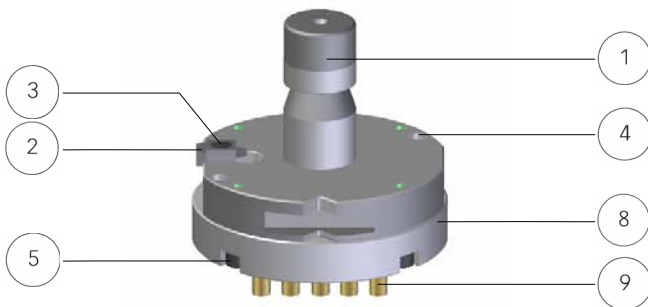
11	Varying Code Shank
12	Varying Code Lower Shearing Insert

### TECHNICAL SPECIFICATIONS

- The Louver tool executes in a single stroke both shear and deformation, that can be repeated in a succession with a mm 5 minimum step.
- The lower shearing insert (Pos. 12) is interchangeable while the upper shearing insert (Pos. 3) has two cutting sides and is also interchangeable.
- The standard louver tool measures are 60x15, and different measures and shapes can be requested keeping the standard ones as the maximum.

# TRUMPF® - CLUSTER TOOL

## SIZE II



POS.	CODE DESCRIPTION
1	FA55QB00 Shank
2	FA20EN00 Alignment Key
3	A0105904.006 Alignment Key Lock Screw
4	A0802705.149 2 x Reference Pin
5	A0100100.021 4 x Lock Screw
6	Varying Code Mechanical Stripper
7	Varying Code Die

### INSERTS AND FITTINGS

8	Varying Code Insert Holder
9	Varying Code Insert

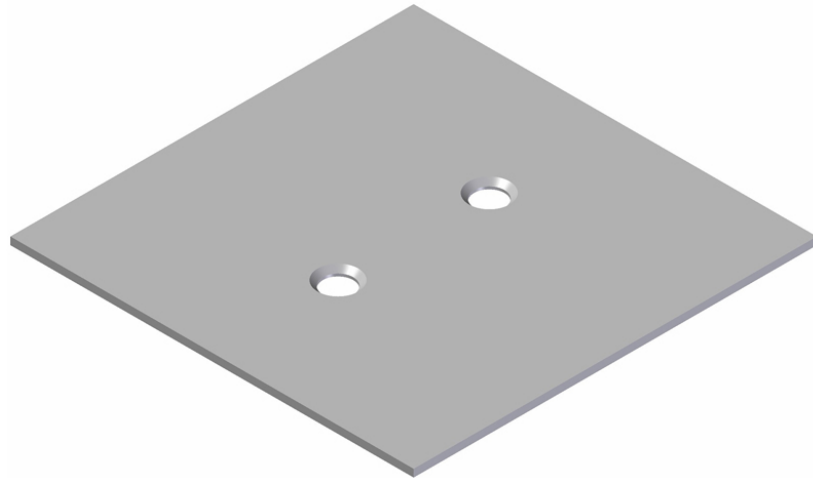
### TECHNICAL SPECIFICATIONS

- It is ideal for multiple processing with round or shaped holes.
- The Shank, that has an integrated adjustment ring, guarantees the maximum alignment precision and easy insert interchangeability.

# TRUMPF® TOOLS

ORDER FORM

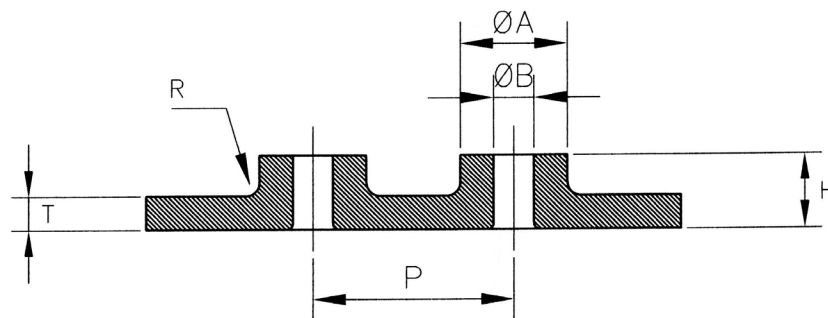
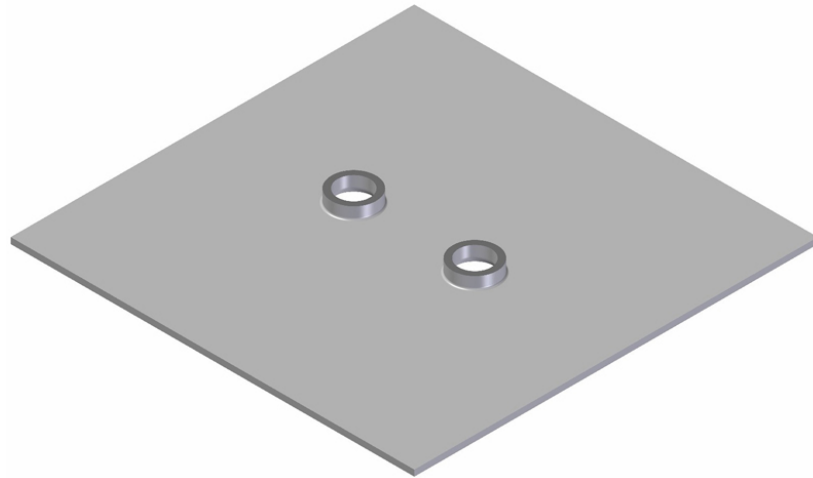
DEFORMATION - ENGRAVED COUNTERSINK



A - UP FORMING ENGRAVED COUNTERSINK	B - DOWN FORMING ENGRAVED COUNTERSINK	
Material thickness (T) mm _____	A: Ø mm _____	
Material _____	B: Ø mm _____	
Machine type _____	C: _____ °	
Pre-hole Ø mm _____	H: mm _____	
	P: mm _____	
Forming direction <b>A</b> <input type="checkbox"/> Up forming <b>B</b> <input type="checkbox"/> Down forming	Compiled by _____	
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.	Approved by _____	
<b>Note</b>		

# TRUMPF® TOOLS

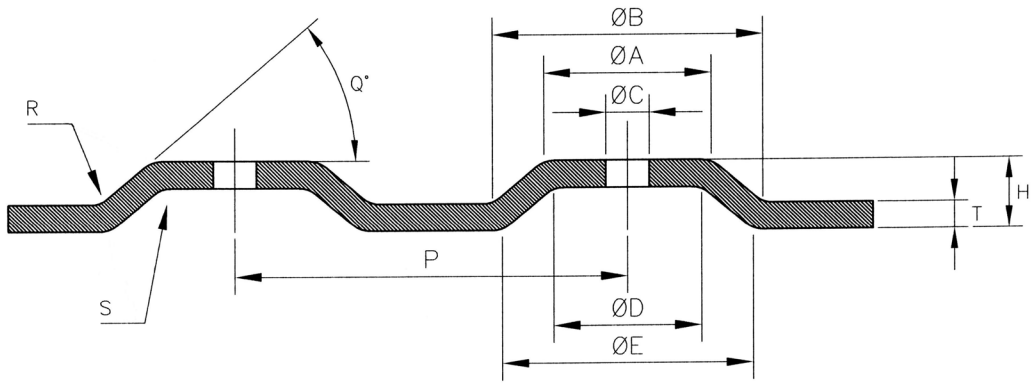
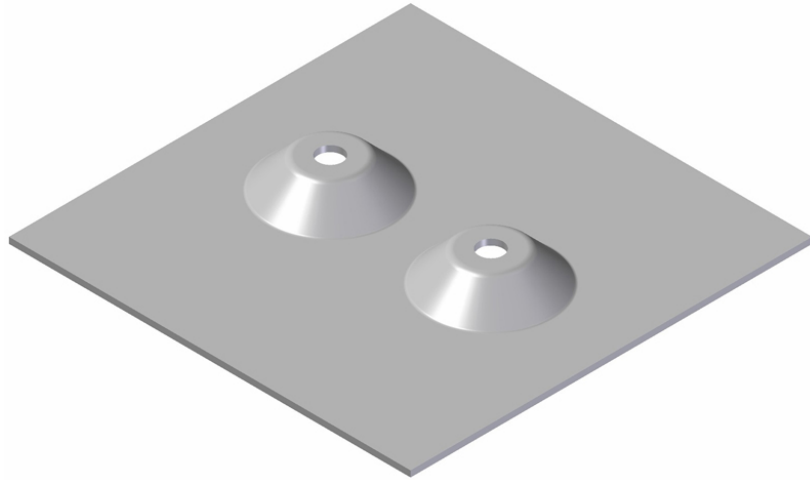
## ORDER FORM DEFORMATION - EXTRUDED HOLE



Material thickness (T) mm _____	A: Ø mm _____	
	B: Ø mm _____	
Material _____	H: mm _____	
	P: mm _____	
Machine type _____	R: mm _____	
Pre-hole required <sup>1</sup> <input type="checkbox"/> YES <input type="checkbox"/> NO		
Pre-hole Ø mm _____	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		
<b>Attention</b>	MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.	
<b>Note</b>	1) This field must be filled in by MATRIX srl	

# TRUMPF® TOOLS

## ORDER FORM DEFORMATION - ROUND EMBOSS

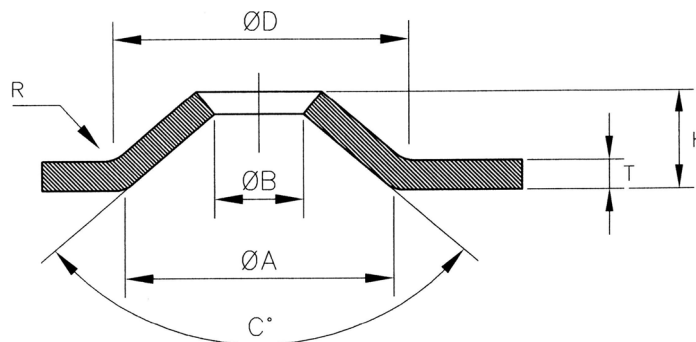
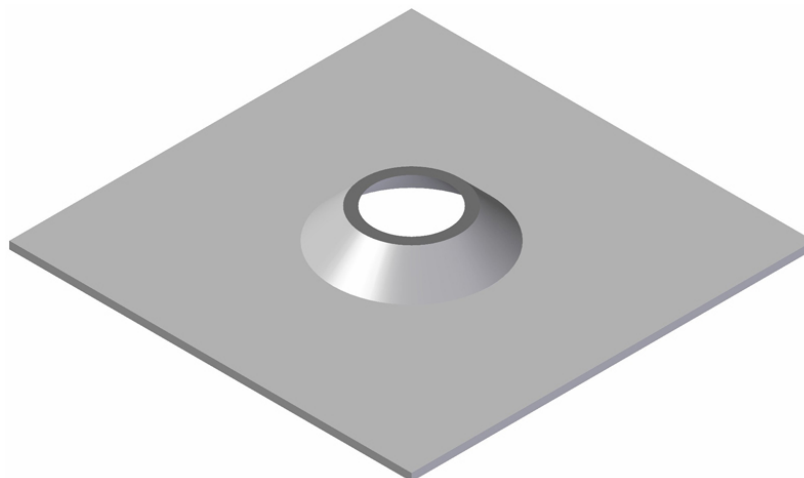


Material thickness (T) mm _____	A: Ø mm _____	Q: _____°
Material _____	B: Ø mm _____	R: mm _____
Machine type _____	C: Ø mm _____	S: mm _____
Pre-hole required <sup>1</sup> <input type="checkbox"/> YES <input type="checkbox"/> NO	D: Ø mm _____	
Pre-hole Ø mm _____	E: Ø mm _____	
	H: mm _____	
	P: mm _____	
	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.		
<b>Note</b> 1) This field must be filled in by MATRIX srl		



# TRUMPF® TOOLS

## ORDER FORM DEFORMATION - ROUND COUNTERSINK



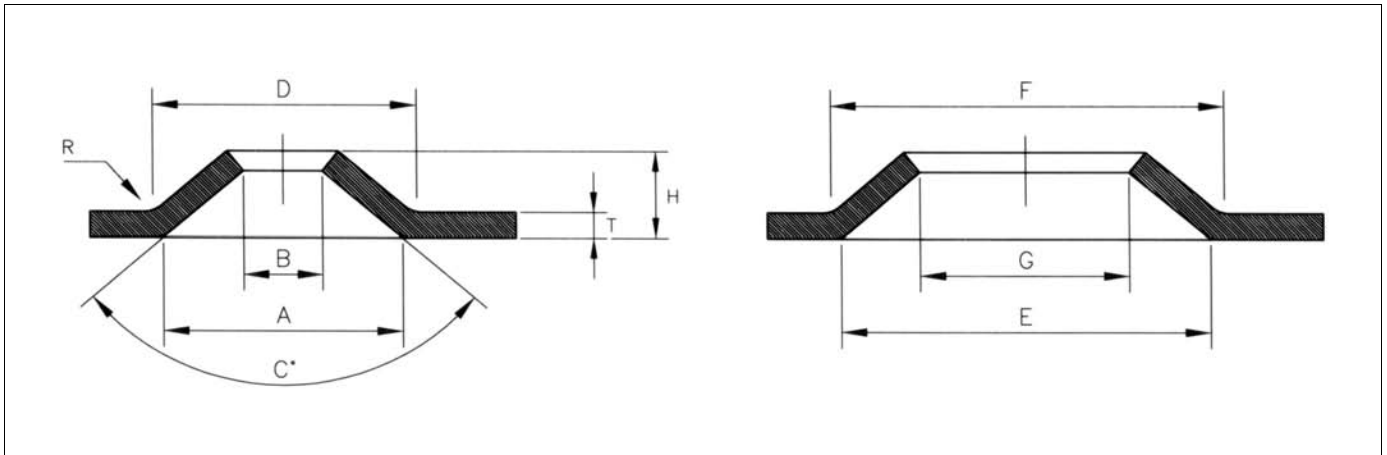
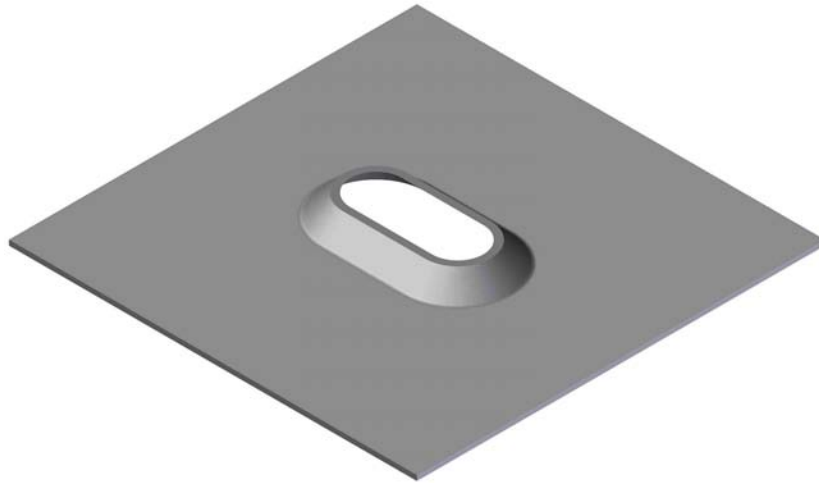
Material thickness (T) mm _____	A: Ø mm _____	
	B: Ø mm _____	
Material _____	C: _____ °	
	D: Ø mm _____	
Machine type _____	H: mm _____	
	R: mm _____	
Pre-hole required <sup>1</sup> <input type="checkbox"/> YES <input type="checkbox"/> NO		
Pre-hole Ø mm _____	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		
<b>Attention</b>	MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.	
<b>Note</b>	1) This field must be filled in by MATRIX srl	



# TRUMPF® TOOLS

ORDER FORM

DEFORMATION - SHAPED COUNTERSINK

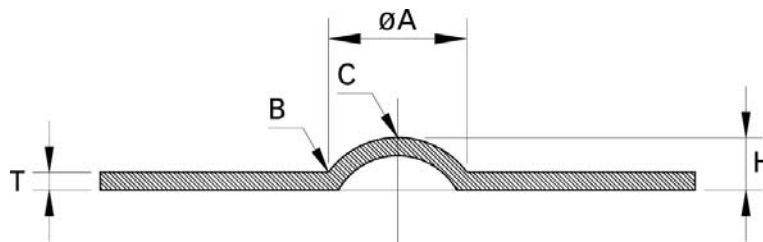
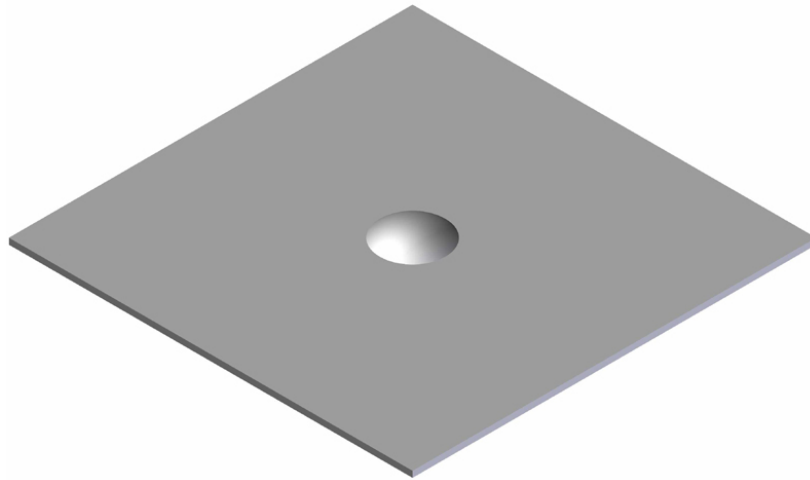


Material Thickness (T) mm _____	A: mm _____	H: mm _____
	B: mm _____	R: mm _____
Material _____	C: _____°	
	D: mm _____	
Machine Type _____	E: mm _____	
	F: mm _____	
Pre-Hole Required <sup>1</sup> <input type="checkbox"/> YES <input type="checkbox"/> NO	G: mm _____	
Pre-Hole Ø mm _____	Compiled by _____	
	Approved by _____	
Forming Direction <input type="checkbox"/> Up Forming <input type="checkbox"/> Down Forming		
<b>Attention</b>	MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicate, MATRIX srl reserve the right to ignore it.	
<b>Note</b>	1) This field must be filled in by MATRIX srl.	



# TRUMPF® TOOLS

## ORDER FORM DEFORMATION - SPHERICAL EMBOSS



Material thickness (T) mm _____	A: Ø mm _____	
	B: mm _____	
Material _____	C: mm _____	
	H: mm _____	
Machine type _____		
	Compiled by _____	
	Approved by _____	
Forming Direction <b>A</b> <input type="checkbox"/> Up forming <b>B</b> <input type="checkbox"/> Down forming		
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.		
<b>Note</b>		

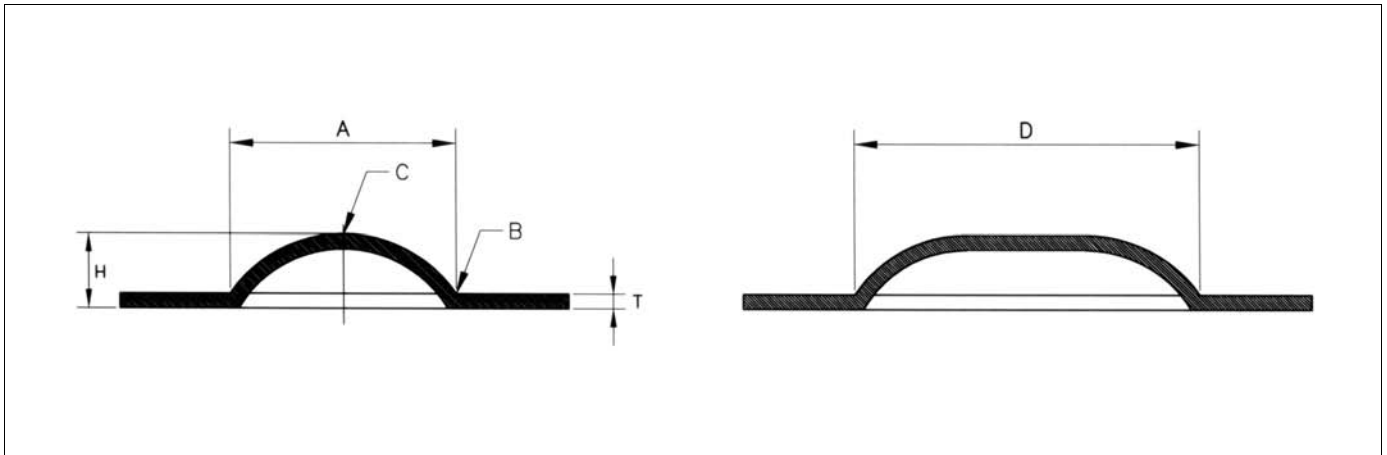
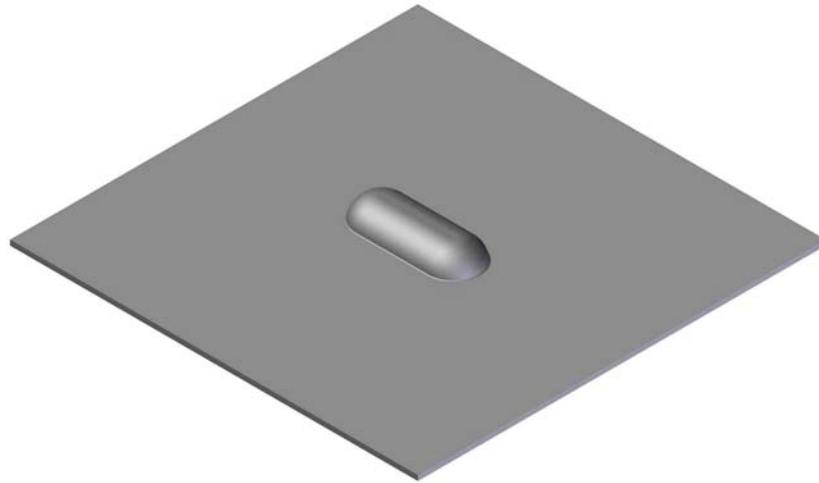




# TRUMPF® TOOLS

ORDER FORM

DEFORMATION - OBROUND EMBOSS



Material Thickness (T) mm _____	A: mm _____	H: mm _____
	B: mm _____	R: mm _____
Material _____	C: _____°	
	D: mm _____	
Machine Type _____	E: mm _____	
	F: mm _____	
	G: mm _____	
	Compiled by _____	
	Approved by _____	
Forming Direction	<input type="checkbox"/> Up Forming <input type="checkbox"/> Down Forming	

**Attention** MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicate, MATRIX srl reserve the right to ignore it.

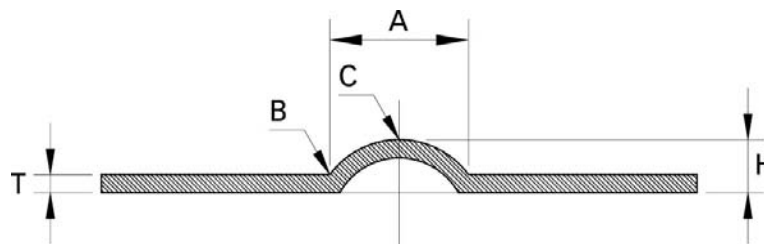
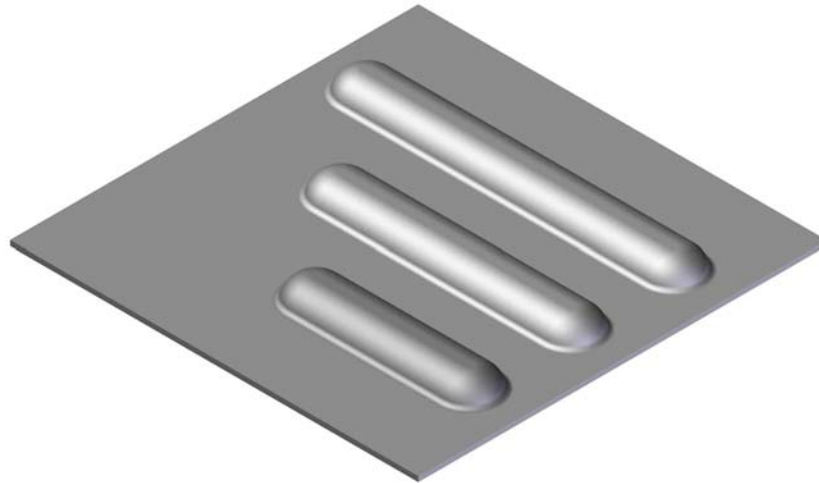
**Note** 1) This field must be filled in by MATRIX srl.



# TRUMPF® TOOLS

ORDER FORM

DEFORMATION - CONTINUOUS OBROUND EMBOSS



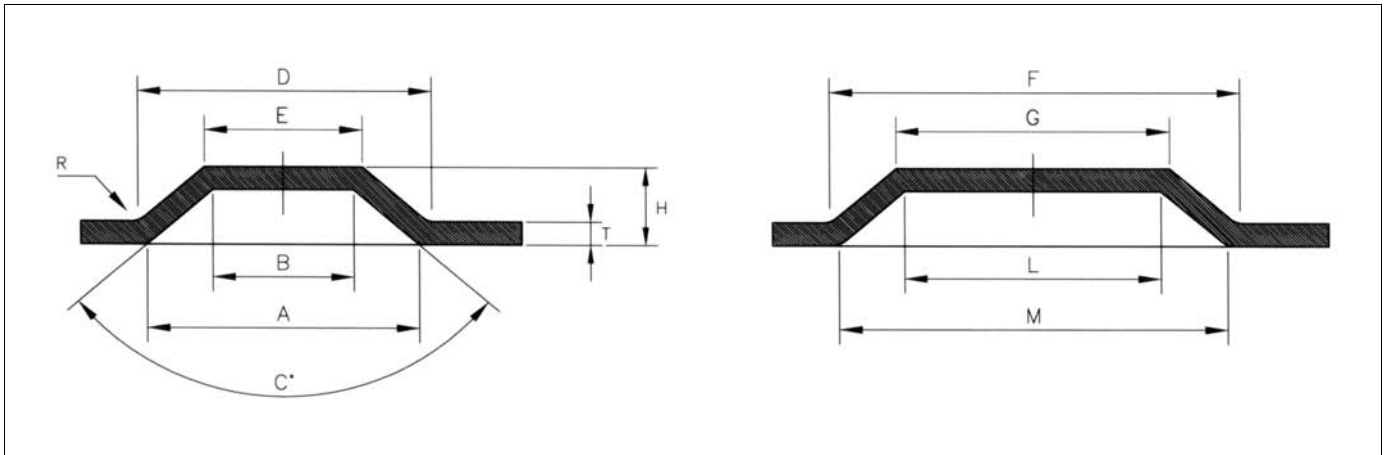
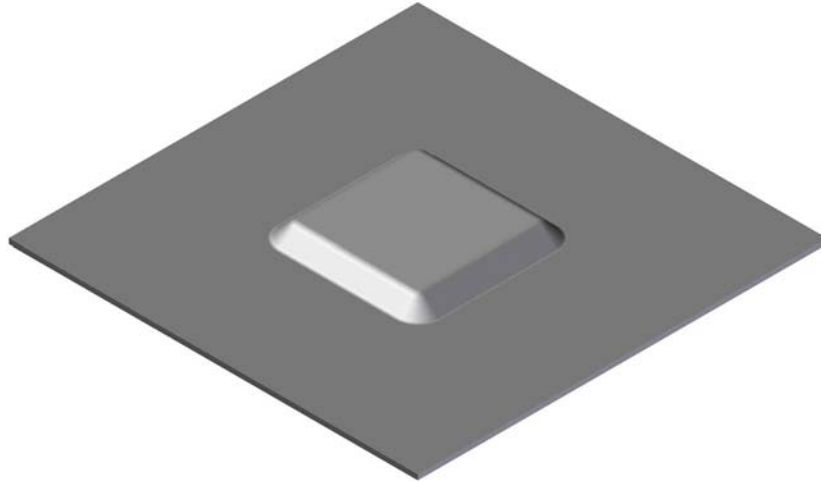
Material Thickness (T) mm _____	A: mm _____	
	B: mm _____	
Material _____	C: mm _____	
	H: mm _____	
Machine Type _____		
	Compiled by _____	
	Approved by _____	
Forming Direction	<input type="checkbox"/> Up Forming	<input type="checkbox"/> Down Forming
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicate, MATRIX srl reserve the right to ignore it.		
<b>Note</b> 1) This field must be filled in by MATRIX srl.		



# TRUMPF® TOOLS

ORDER FORM

DEFORMATION - SHAPED EMBOSS



Material Thickness (T) mm _____	A: mm _____	H: mm _____
	B: mm _____	L: mm _____
Material _____	C: _____°	M: mm _____
	D: mm _____	R: mm _____
Machine Type _____	E: mm _____	
	F: mm _____	
	G: mm _____	
	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		

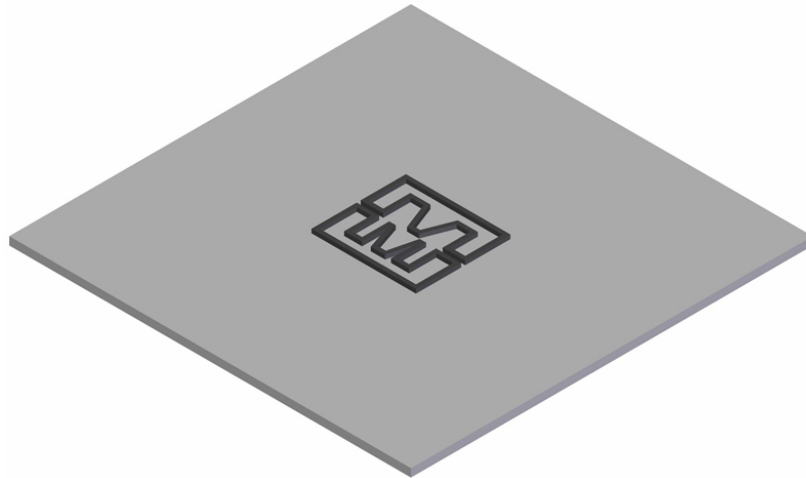
**Attention** MATRIX srl won't be responsible for eventual distortions of the sheet during the processing.  
You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicate, MATRIX srl reserve the right to ignore it.

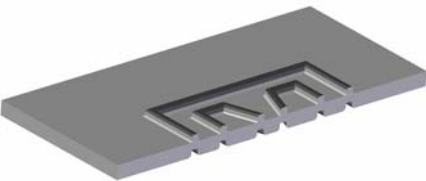
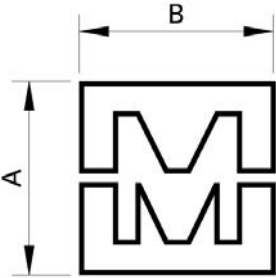
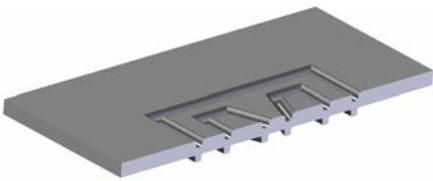
**Note** 1) This field must be filled in by MATRIX srl.



# TRUMPF® TOOLS

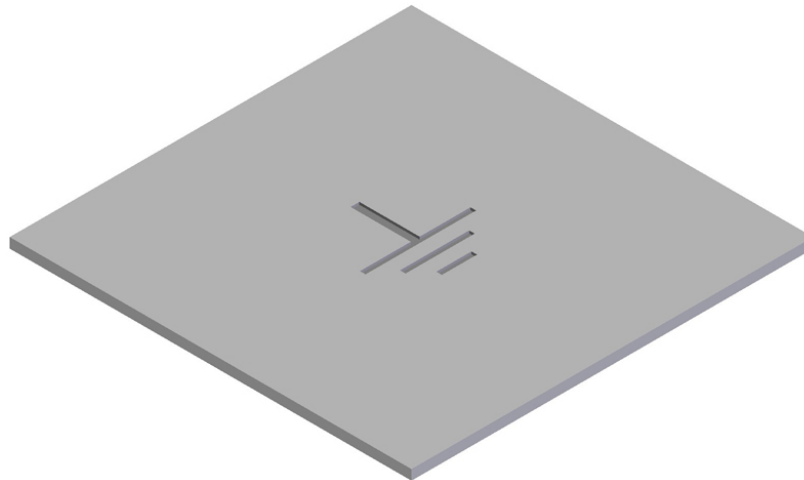
ORDER FORM  
DEFORMATION - RELIEF



A - UP FORMING RELIEF		B - DOWN FORMING RELIEF
		
Material thickness (T) mm _____	A: mm _____	
Material _____	B: mm _____	
Machine type _____		
	Compiled by _____	
	Approved by _____	
Forming direction <b>A</b> <input type="checkbox"/> Up forming <b>B</b> <input type="checkbox"/> Down forming		
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.		
<b>Note</b>		

# TRUMPF® TOOLS

ORDER FORM  
ENGRAVING



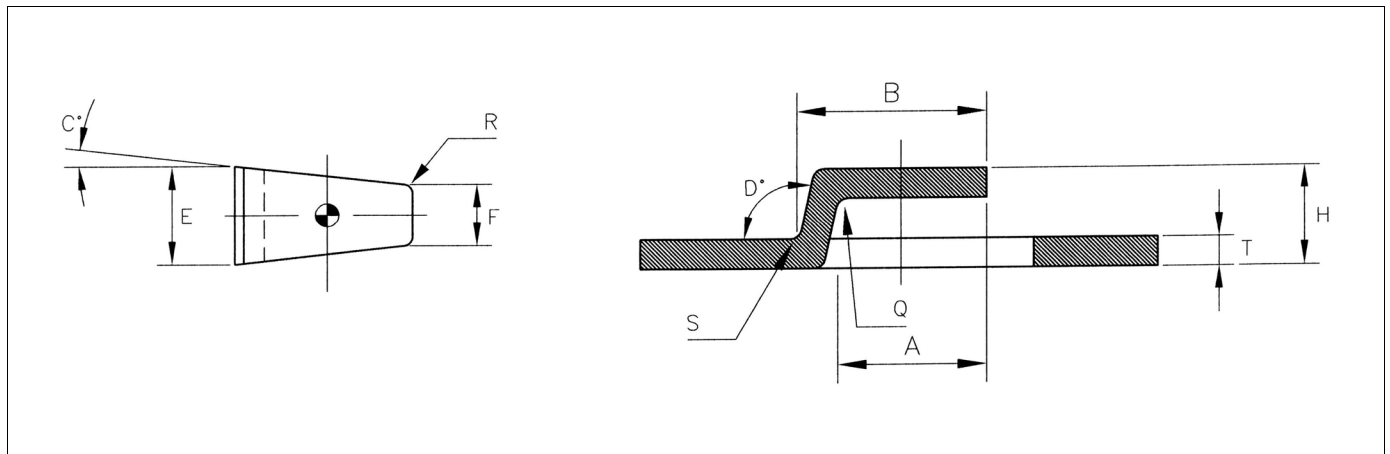
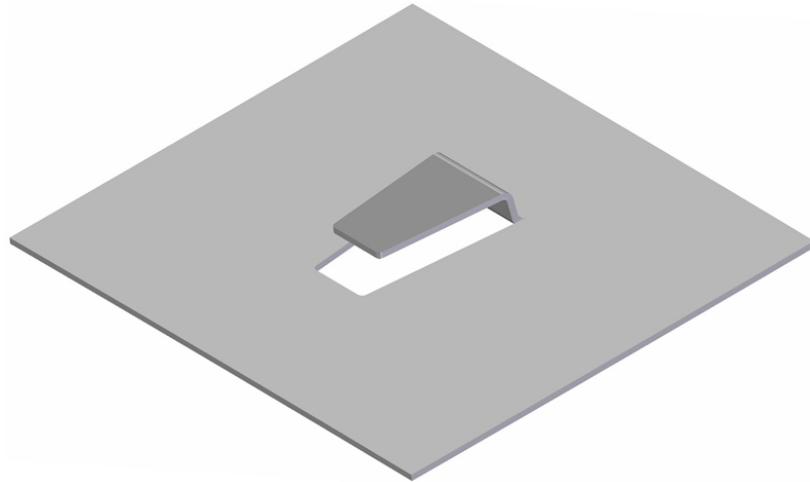
A - UP FORMING ENGRAVING		B - DOWN FORMING ENGRAVING	
Material thickness (T) mm _____		A: mm _____	
Material _____		B: mm _____	
Machine type _____			
		Compiled by _____	
		Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming			
<p><b>Attention</b>    MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.</p>			
<p><b>Note</b></p>			



# TRUMPF® TOOLS

ORDER FORM

SHEARING AND DEFORMATION - SHELF CLIP



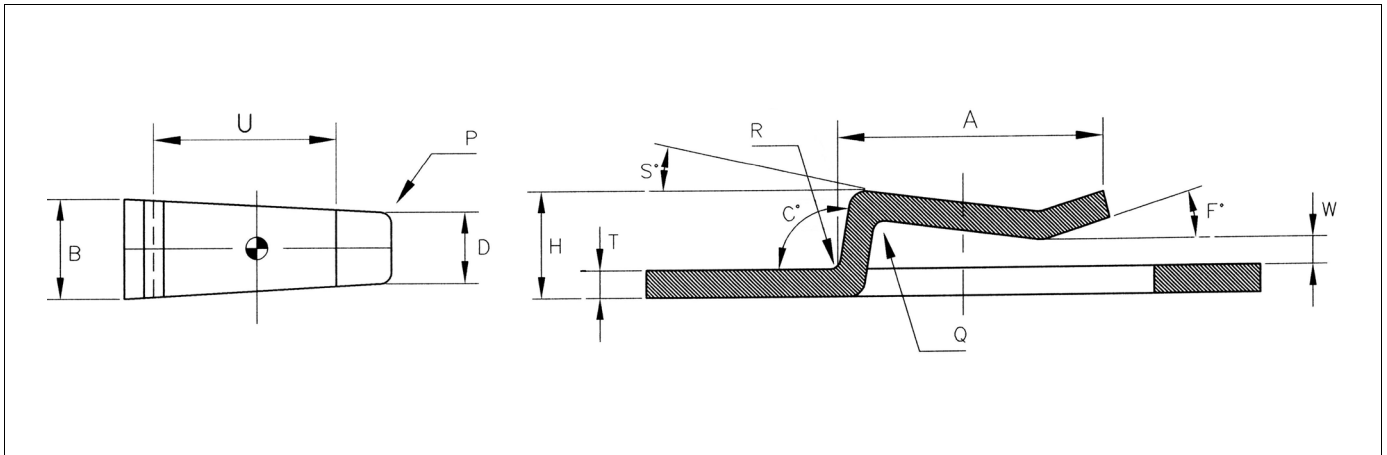
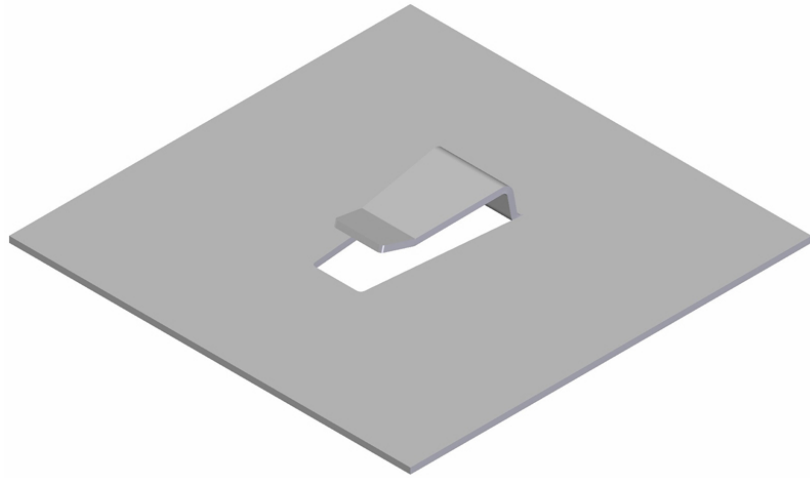
Material thickness (T) mm _____	A: mm _____	Q: mm _____
	B: mm _____	R: mm _____
Material _____	C: _____ °	S: mm _____
	D: _____ °	
Machine type _____	E: mm _____	
	F: mm _____	
	H: mm _____	
	Compiled by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming	Approved by _____	

**Attention** MATRIX srl won't be responsible for eventual distortions of the sheet during the processing.  
You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.

**Note**

# TRUMPF® TOOLS

## ORDER FORM SHEARING AND DEFORMATION - SPRING CLIP



Material thickness (T) mm _____	A: mm _____	P: mm _____
	B: mm _____	Q: mm _____
Material _____	C: _____°	R: mm _____
	D: mm _____	S: _____°
Machine type _____	F: _____°	W: mm _____
	H: mm _____	
	U: mm _____	
	Compiled by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming	Approved by _____	

**Attention**    MATRIX srl won't be responsible for eventual distortions of the sheet during the processing.  
You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.

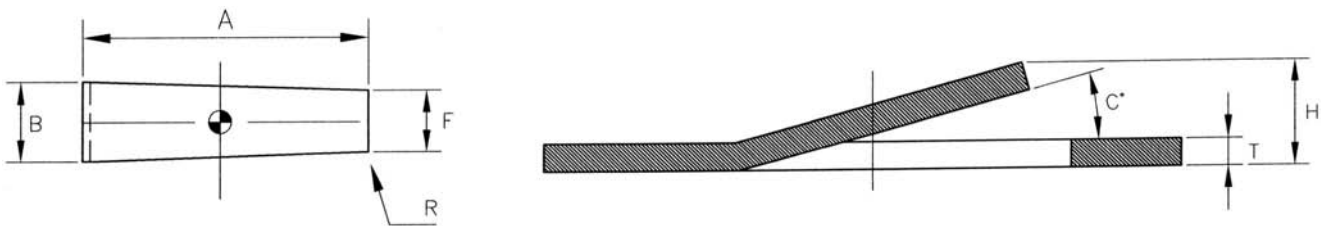
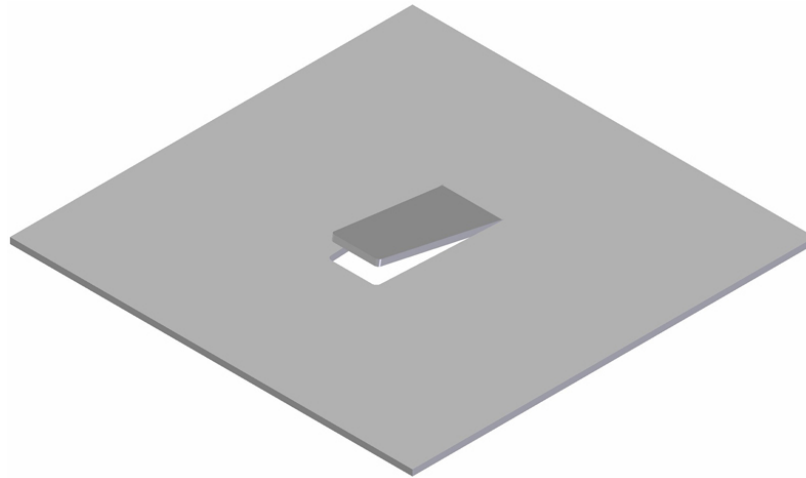
**Note**



# TRUMPF® TOOLS

ORDER FORM

SHEARING AND DEFORMATION - SPRING TAB

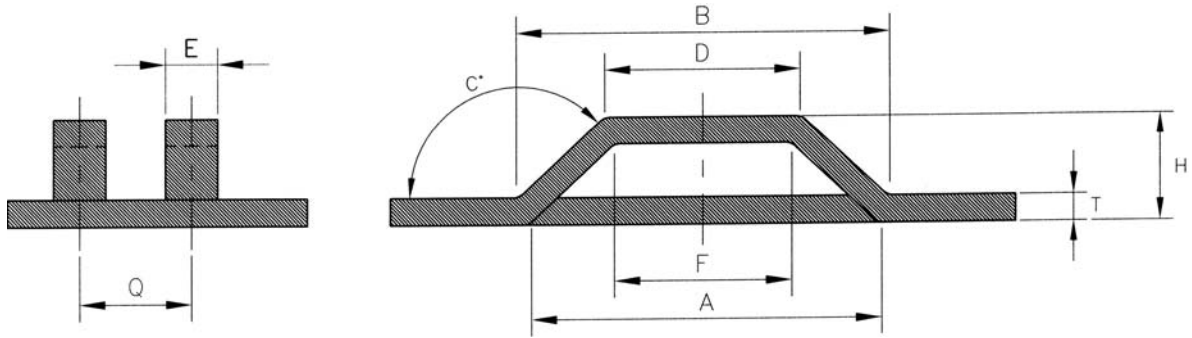
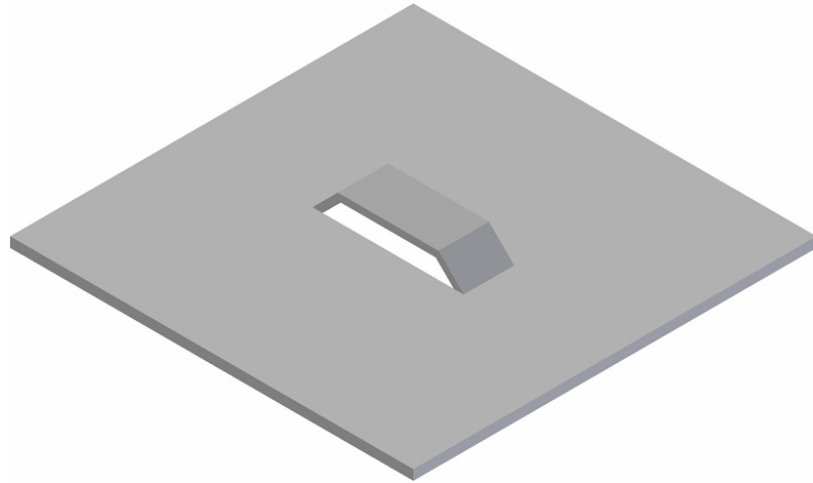


Material thickness (T) mm _____	A: mm _____	
	B: mm _____	
Material _____	C: _____ °	
	F: mm _____	
Machine type _____	H: mm _____	
	R: mm _____	
	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.		
<b>Note</b>		



# TRUMPF® TOOLS

## ORDER FORM SHEARING AND DEFORMATION - BRIDGE



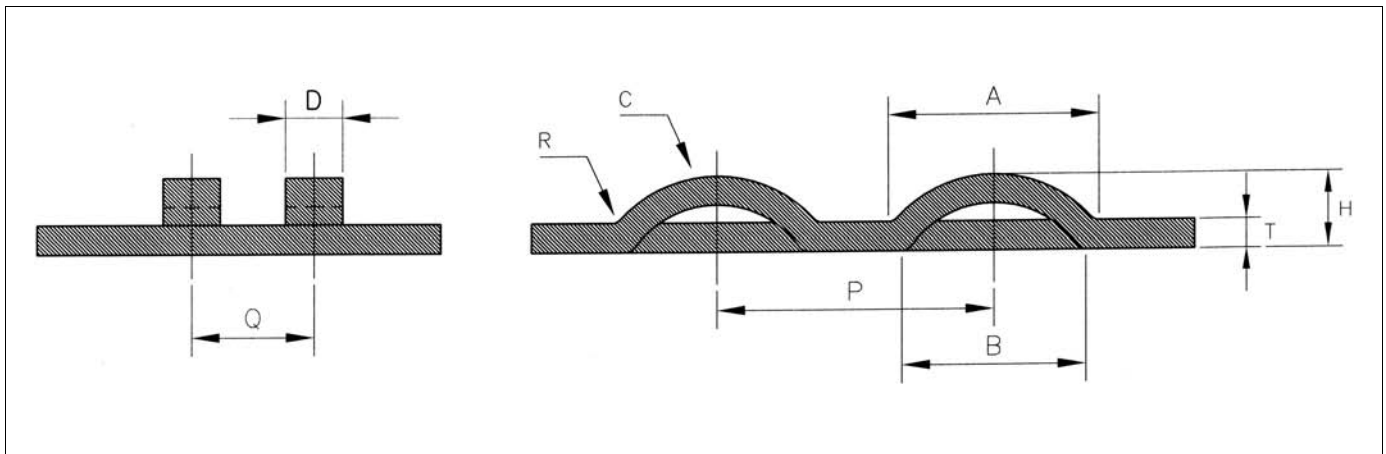
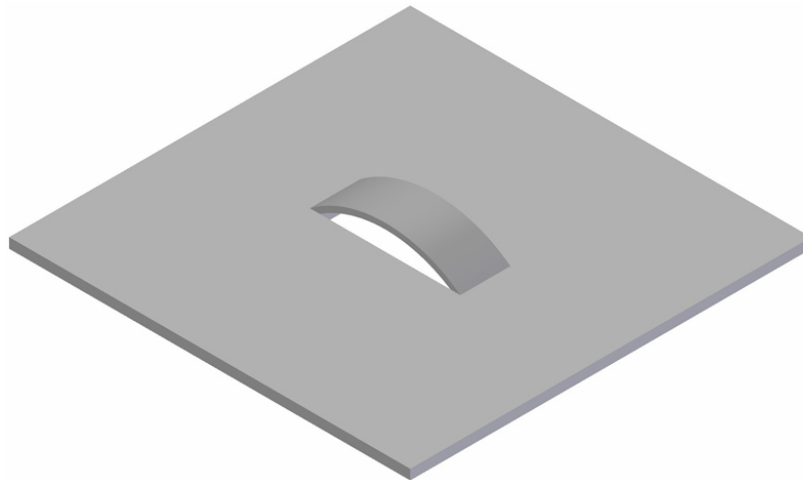
Material thickness (T) mm _____	A: mm _____	Q: mm _____
	B: mm _____	
Material _____	C: _____ °	
	D: mm _____	
Machine type _____	E: mm _____	
	F: mm _____	
	H: mm _____	
	Compiled by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming	Approved by _____	
	<p><b>Attention</b>    MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.</p>	
<p><b>Note</b></p>		



# TRUMPF® TOOLS

ORDER FORM

SHEARING AND DEFORMATION - CURVED BRIDGE



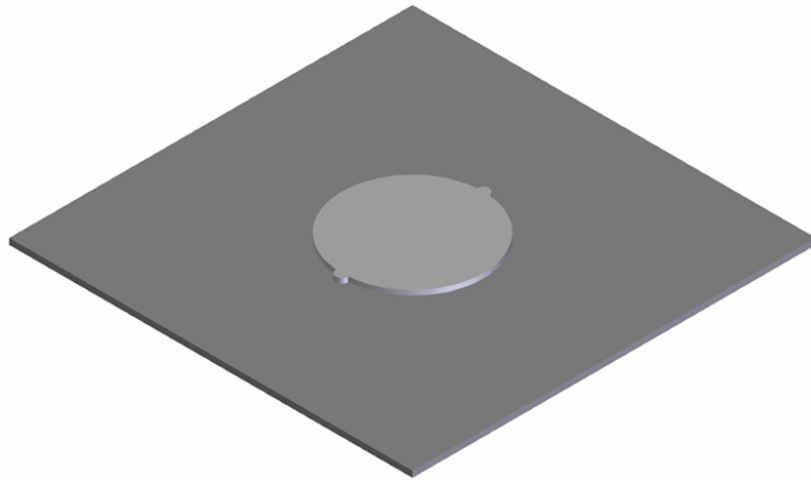
Material thickness (T) mm _____	A: mm _____	R: mm _____
Material _____	B: mm _____	
Machine type _____	C: mm _____	
	D: mm _____	
	H: mm _____	
	P: mm _____	
	Q: mm _____	
	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		

**Attention** MATRIX srl won't be responsible for eventual distortions of the sheet during the processing.  
You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.

**Note**

# TRUMPF® TOOLS

## ORDER FORM SHEARING AND DEFORMATION - KNOCKOUT

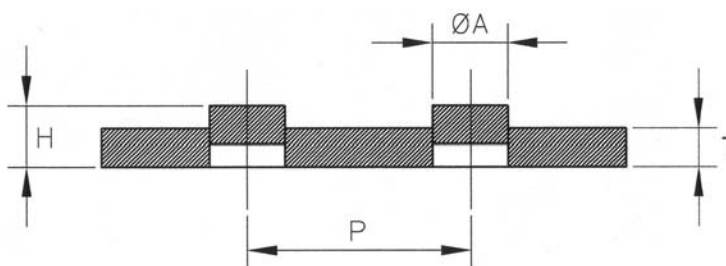
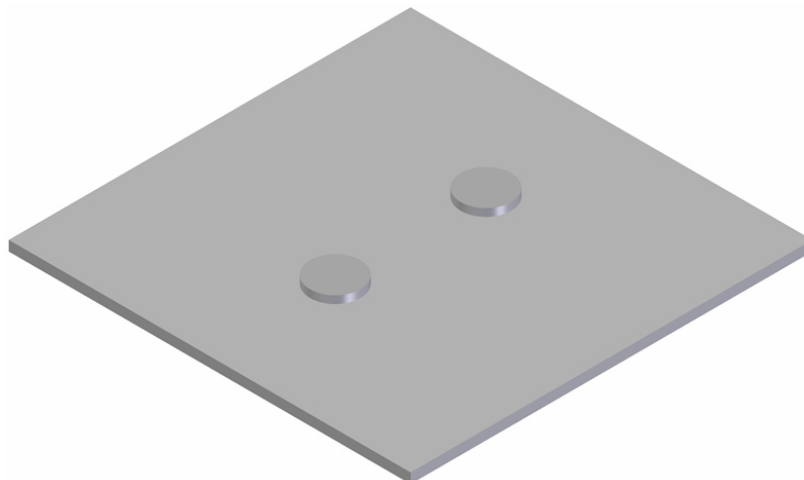


	<p>TYPE 1</p>	<p>TYPE 2</p>	<p>TYPE 3</p>
	<p>TYPE 4</p>		
Material thickness (T) mm _____	A: Ø mm _____		
Material _____	B: mm _____		
Machine type _____	C: mm _____		
	Compiled by _____		
Type <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4	Approved by _____		
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down			
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.			
<b>Note</b>			



# TRUMPF® TOOLS

## ORDER FORM SHEARING AND DEFORMATION - SHEAR BUTTON



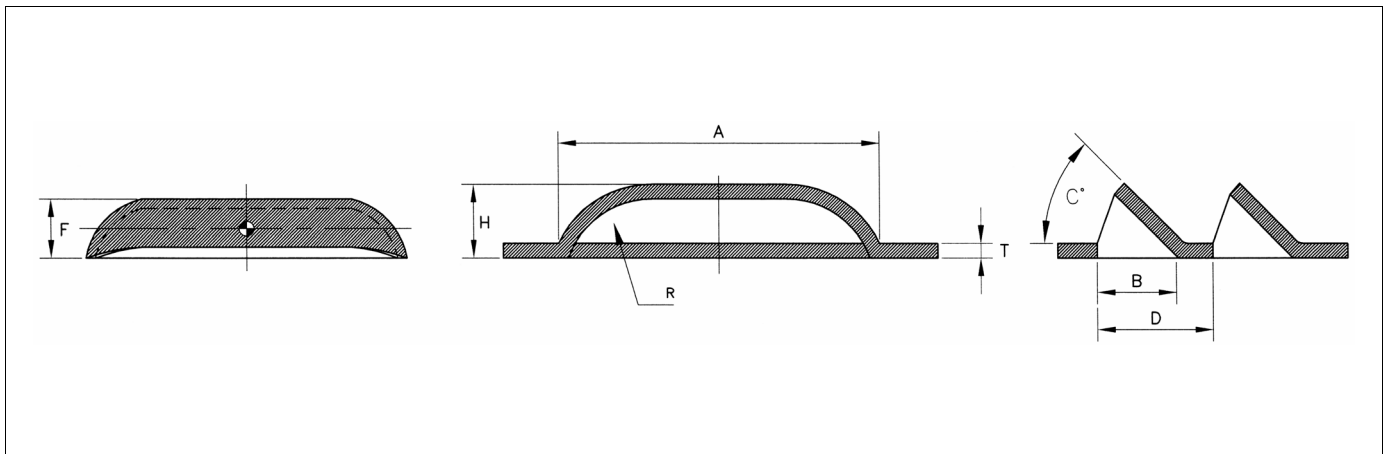
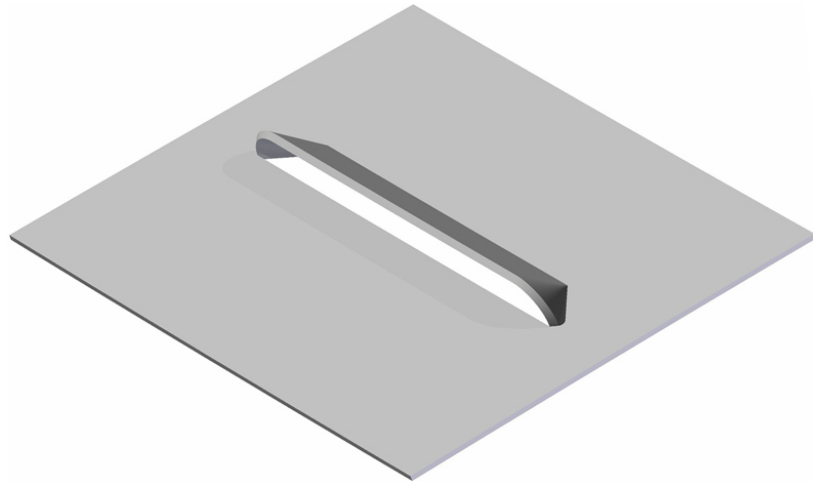
Material thickness (T) mm _____	A: Ø mm _____	
	H: mm _____	
Material _____	P: mm _____	
Machine type _____		
	Compiled by _____	
	Approved by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming		
<b>Attention</b> MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.		
<b>Note</b>		



# TRUMPF® TOOLS

## ORDER FORM

### SHEARING AND DEFORMATION - STRAIGHT BACK LOUVER



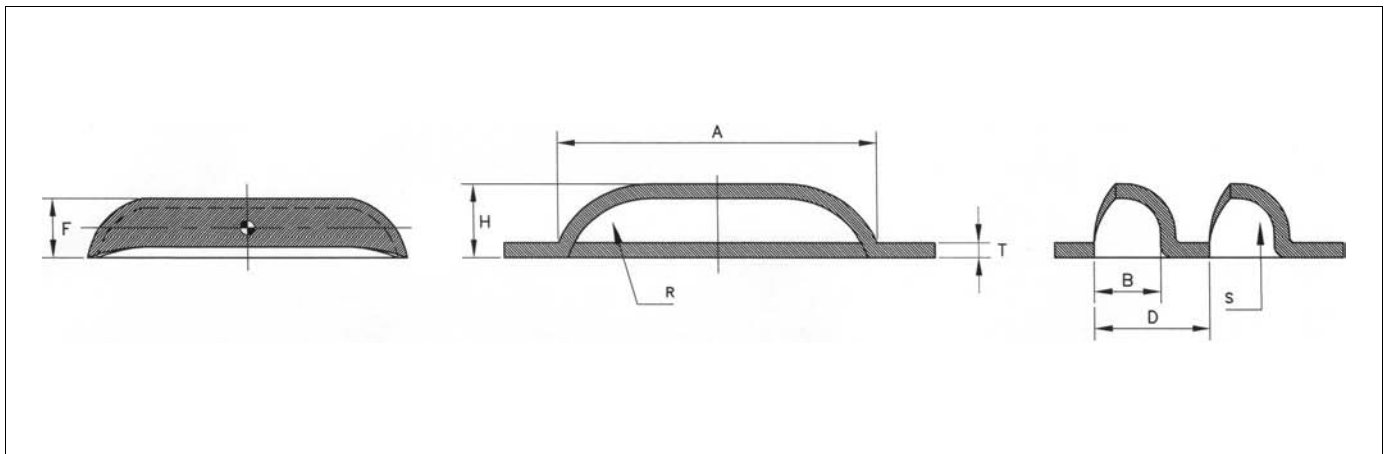
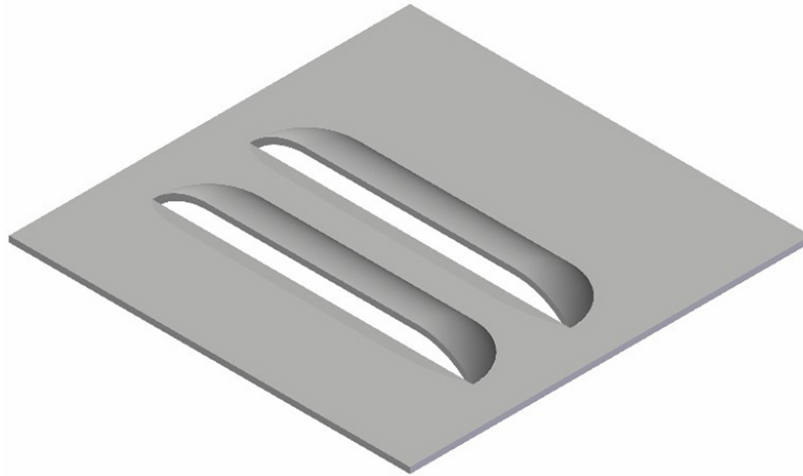
Material thickness (T) mm _____	A: mm _____	
	B: mm _____	
Material _____	C: _____ °	
	D: mm _____	
Machine type _____	F: mm _____	
	H: mm _____	
	R: mm _____	
	Compiled by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming	Approved by _____	
<b>Attention</b>	MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.	
<b>Note</b>	Louver tools require a special die and do not use the standard lower insert holder.	



# TRUMPF® TOOLS

ORDER FORM

SHEARING AND DEFORMATION - RADIUS BACK LOUVER

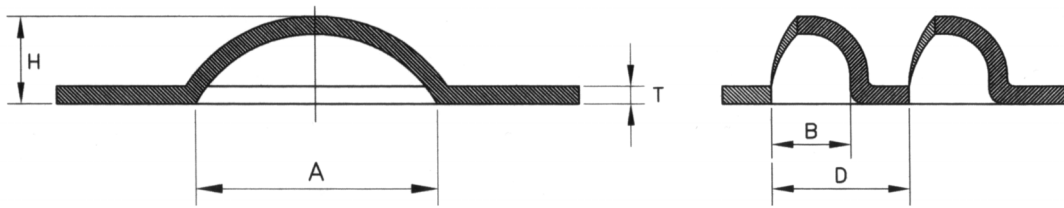
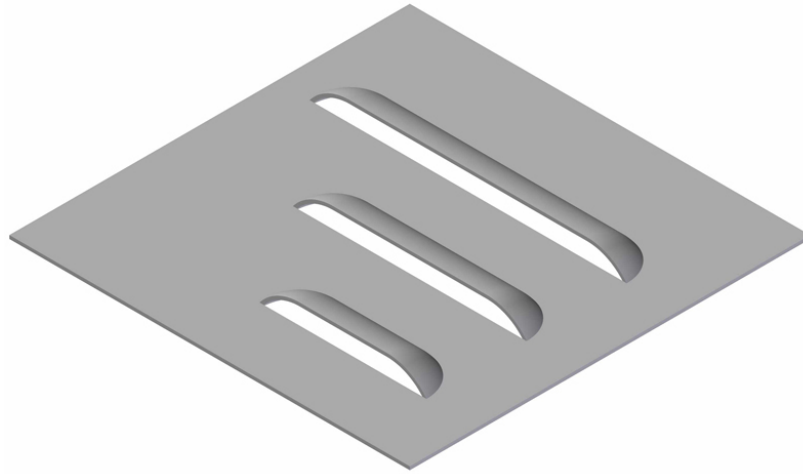


Material thickness (T) mm _____	A: mm _____	
	B: mm _____	
Material _____	D: mm _____	
	F: mm _____	
Machine type _____	H: mm _____	
	R: mm _____	
	S: mm _____	
	Compiled by _____	
Forming direction <input type="checkbox"/> Up forming <input type="checkbox"/> Down forming	Approved by _____	
<b>Attention</b>	MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.	
<b>Note</b>	Louver tools require a special die and do not use the standard lower insert holder.	

# TRUMPF® TOOLS

ORDER FORM

SHEARING AND DEFORMATION - CONTINUOUS RADIUS BACK LOUVER



Material thickness (T) mm _____	A: mm 30 standard	
	A: mm _____	
Material _____	B: mm _____	
	D: mm _____	
Machine type _____	H: mm _____	
	Compiled by _____	
	Approved by _____	
Forming direction	<input type="checkbox"/> Up forming	<input type="checkbox"/> Down forming
<b>Attention</b>	MATRIX srl won't be responsible for eventual distortions of the sheet during the processing. You must always indicate the X and Y steps for possible multiple deformations. If it isn't indicated, MATRIX Srl reserves the right to ignore it.	
<b>Note</b>	Louver tools require a special die and do not use the standard lower insert holder.	







# TOOLS CODING

In order to give to customers a quick and efficient service each tool feature has been coded, to allow the final user a fast identification means for the correct tool.

Here as following some examples of the most commonly used codes.

## Tool Shape (XX)

00 - Round  
 01 - Obround  
 02 - Square  
 03 - Rectangular  
 A1 - Special Shape A01  
 A2 - Special Shape A02  
 A3 - Special Shape A03  
 A4 - Special Shape A04  
 A5 - Special Shape A05  
 A6 - Special Shape A06  
 B1 - Special Shape B01  
 B2 - Special Shape B02  
 B3 - Special Shape B03  
 B4 - Special Shape B04  
 B5 - Special Shape B05  
 B6 - Special Shape B06  
 C1 - Special Shape C01  
 C2 - Special Shape C02  
 C3 - Special Shape C03  
 C4 - Special Shape C04  
 C5 - Special Shape C05  
 C6 - Special Shape C06  
 C7 - Special Shape C07  
 C8 - Special Shape C08  
 C9 - Special Shape C09  
 CA - Special Shape C10  
 CB - Special Shape C11  
 CC - Special Shape C12  
 CD - Special Shape C13  
 CE - Special Shape C14  
 CF - Special Shape C15  
 CG - Special Shape C16  
 D1 - Special Shape D01  
 D2 - Special Shape D02  
 D3 - Special Shape D03  
 D4 - Special Shape D04  
 D5 - Special Shape D05  
 D6 - Special Shape D06  
 E1 - Special Shape E01  
 E2 - Special Shape E02  
 E3 - Special Shape E03  
 E4 - Special Shape E04  
 F1 - Special Shape F01  
 F2 - Special Shape F02  
 G1 - Special Shape G01  
 H1 - Special Shape H01  
 H2 - Special Shape H02  
 H3 - Special Shape H03  
 H4 - Special Shape H04  
 H5 - Special Shape H05  
 H6 - Special Shape H06  
 H7 - Special Shape H07  
 H8 - Special Shape H08  
 H9 - Special Shape H09  
 HA - Special Shape H10  
 HB - Special Shape H11  
 HC - Special Shape H12  
 HD - Special Shape H13

## Tool Dimensions (YYY)

This three digit code univocally identifies tool dimensions, if it is a punch, a die or a stripper.

Example:

000 - 3  
 001 - 3,5  
 002 - 4  
 003 - 4,5  
 004 - 5  
 ...

## Tool Groups (W)

In some cases inside a tool typology it is possible to find various groups, meaning measures sets, which are identified through this variable.

Example:

B0 - Punch, 1<sup>st</sup> Group, "A" Coating  
 B1 - Punch, 2<sup>nd</sup> Group, "A" Coating  
 B2 - Punch, 3<sup>rd</sup> Group, "A" Coating  
 B3 - Punch, 4<sup>th</sup> Group, "A" Coating  
 B4 - Punch, 5<sup>th</sup> Group, "A" Coating

## Tool Features (ZZ)

00 - Punch  
 20 - Die  
 40 - Stripper  
 60 - Punch Guide  
 63 - Die Adaptor  
 68 - Punch Adaptor  
 72 - Adjustable Guide Assembly  
 AF - Punch Guide  
 AR - Die Holder  
 B0 - Punch, "A"  
 C0 - Punch, "B"  
 D0 - Punch, "A" Coating, DWP  
 E0 - Punch, "B" Coating, DWP  
 F0 - Punch, "A" Coating, DWNT  
 G0 - Punch, "B" Coating, DWNT  
 H0 - Punch, "A" Coating, WN  
 I0 - Punch, "B" Coating, WN  
 J0 - Punch, "A" Coating, WNT  
 K0 - Punch, "B" Coating, WNT  
 L0 - Punch DWP  
 M0 - Punch DWNT  
 N0 - Punch WN  
 P0 - Punch WNT  
 Q0 - Punch Extended  
 R0 - Punch, Measures under mm 4  
 BA - Complete Upper Insert Holder  
 BB - Complete Lower Insert Holder  
 DY - Basic Set  
 GS - Starting Set  
 LX - Punch Holder Set

## COMPANY PROFILE

We produce tooling for

### Punch Presses cnc

AMADA  
FINN-POWER  
LVD  
RAINER  
TRUMPF  
WIEDEMANN  
EUROMAC  
SCHIAVI  
IMAC  
DURMA  
HACO

### Iron Workers

FICEP  
GEKA  
IMS  
OMERA  
MUBEA  
PEDDINGHAUS  
KINGSLAND

And more.

#### A DYNAMIC TEAM

Each Matrix product is the result of the cooperation of young and highly qualified technicians who constantly keep themselves abreast and deal with problems and requirements of the production cycle.

#### THE CUSTOMER, A UNIQUE AND UNREPEATABLE PARTNER

We are convinced that every customer deserves special care. For this reason Matrix does not offer just a product, but also technical support and an advice service which aim is to obtain mutual satisfaction.

#### QUALITY TOOLS FOR EVERY REQUIREMENT

Our design and production are oriented to develop innovative solutions to fulfil different customers' problems, as well as guarantee the highest quality standard in each production processing phase.

#### ENERGIES ORIENTED TO MAXIMUM ACCURACY

To the production unit devoted to traditional mechanical processing has been added a new plant optimized to accomplish high technology content processing. The recent building, innovative in our field, is entirely wired and built with specific features to guarantee the product high quality and accuracy.

#### DIES AND PUNCHES BORN TO LAST

The high reliability and long life which distinguish Matrix' products are the result of experience, devotion, constant research and use of superior quality raw materials.

#### INNOVATIVE TECHNOLOGIES FOR HIGH PERFORMANCES

Matrix invests in the best technologies: from sophisticated software for designing, to computerization of production data. From the scheduling to product tuning and final test.

The trademarks presented in this catalogue - if they are registered - are property of their respective companies.







# MATRIX

Tooling for Punch Presses

**MATRIX S.r.l.**

Via Ponte d'Oro, 8

36015 Schio · Vicenza · Italy

Tel. +39 0445 671015

Fax +39 0445 671035

[www.matrixtools.eu](http://www.matrixtools.eu)

[info@matrixtools.eu](mailto:info@matrixtools.eu)

COMPANY WITH QUALITY MANAGEMENT  
SYSTEM CERTIFIED BY DNV  
= ISO 9001:2000 =