TruServices

Punching Tools

Know-how for every application

Machine Tools/Power Tools
Laser Technology/Electronics

TRUMPF

Order easily – with the correct specifications for the right tool.

Have you thought of everything?

- ☑ **Machine type**
- ☑ **Machine number**
- ☑ **Tool type**
- ☑ **Dimensions or drawings in a conventional CAD format (e.g. DXF)**
- ☑ **Sheet thickness**
- ☑ **Material**
- ☑ **Quantity**
- ☑ **Desired delivery date**

! **Important ordering specifications**
Please observe the "Important ordering specifications" on each product page as well.

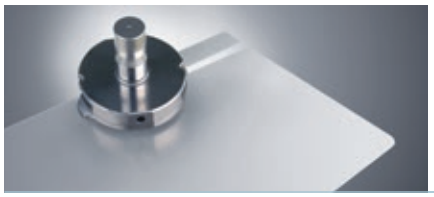
Order your punching tools securely and conveniently 24 hours a day, 7 days a week in our E-Shop at:

www.mytrumpf.com

Alternatively, practical inquiry and order forms are available to you in the chapter "Order forms".

TRUMPF Werkzeugmaschinen GmbH + Co. KG
International Sales Punching Tools
Hermann-Dreher-Strasse 20
70839 Gerlingen
Germany
Fax: +49 7156 303-31150
E-Mail: export.tooling@de.trumpf.com
Homepage: www.trumpf.com

Content



The TRUMPF system:

Efficient and versatile

Everything on one machine

Punching technology from TRUMPF allows you to flexibly conduct complete processing across a varied spectrum of parts. To this end, the machine, tools and software are all adapted to work together in perfect harmony, letting you produce your sheet metal parts extremely cost-effectively. Applications extend from simple workpieces through to complex examples with numerous formed sections. You can also produce large and small quantities from a wide range of materials fully automatically if desired: with optimal edge and surface quality. The 360° rotation of the punching head and tools produced in-house offer you the flexibility that you need.

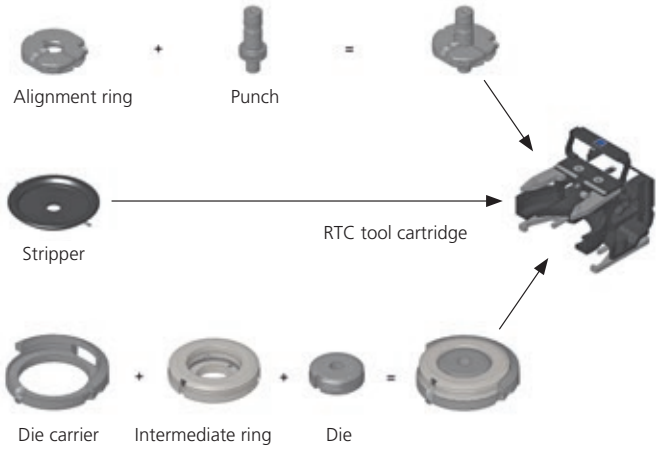
Experience the
360° tool rotation:
www.trumpf.info/0jwp6k

TRUMPF punching technology:

1. Resource-efficient processing
2. Punching, forming and deburring
3. Complete tool flexibility
4. Quality for all requirements
5. Customized automation

Strength as standard

Our Classic System tools can be used on TRUMP punching and punch laser machines of all generations and boast impressively long service lives. A variety of shapes are available in various tool sizes. From the smallest punching operation in tool size 0 right through to tool size 2 geometries, you only need to use the universal RTC tool cartridge on the machine.
You can optimize your standard tools for custom operations with different tool shears and coatings.



Forming – punching in the third dimension

Your punching machine can do more than just punch. Fitted with an intelligent punching head and the right tool, your machine will also demonstrate its talent for forming. This allows you to fully process a great diversity of sophisticated components on one machine – and even burr-free if required. What's more, it is efficient for small quantities too, as tool costs are low and setup times are short.

Special developments for your success

Custom applications require custom tools. Our experts will draw from their many years of experience to provide you with comprehensive specialist advice and identify the best solution. Our specialists will work together with you to develop tools for your specific application. By manufacturing the products ourselves and carrying out intensive tests on the tools using TRUMPF machines, we can guarantee the highest quality available.

Tools from the Smart Factory

Industry 4.0: Short delivery times thanks to networked production.

We know that your customers expect you to react more and more quickly. All the required resources must be available at short notice in order to process orders quickly. That also includes the right punching tools.
Our tools have high availability and fast delivery times, which in turn increases your competitive edge.

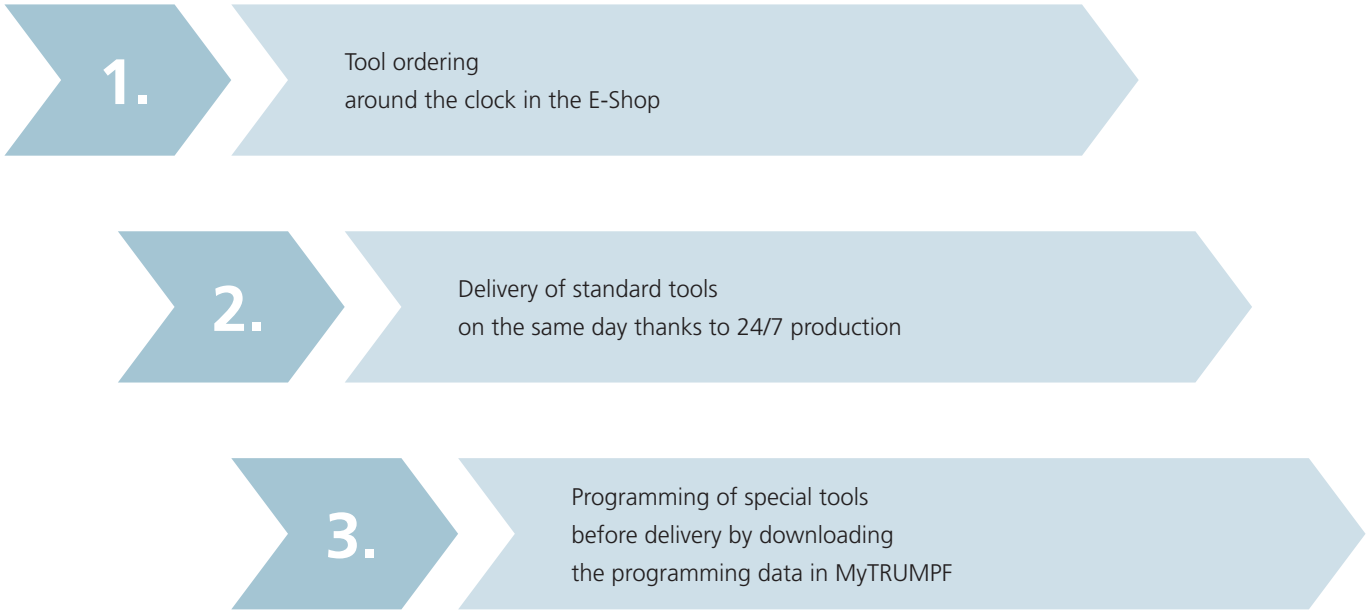
We continuously optimize processes in our punching tool production facility in Gerlingen so that you can count on us completely – both now and in the future. We put great stock in the smart networking of people, machinery and components throughout the entire process – starting with your order and continuing right through to the successful use of the tool in your production facility.

Talk to us.

We'll be happy to show you in detail just how and where your punching tools take shape. Or perhaps you'd like to learn more about how Industry 4.0 is implemented in TRUMPF's punching tool production? Simply get in touch with us. We look forward to your visit.

Experience **Industry 4.0** in our punching tool production: www.trumpf.info/mucgdf

The quickest route between placing an order and using your tool.



Order your tools around the clock in our E-Shop: By doing so, you will automatically start our 24/7 production. When the tool blank is issued, it is already at this early stage linked to your production order by a Dot Matrix Code. So we aren't the only ones with access to your current order status. You can also take a look at the current processing status of your tool at any time in the E-Shop.

Over 31 million standard tool variants ordered before 2 pm can be dispatched by us on the same day thanks to our automated punch and die production – customized features such as specific tool inscriptions are included.

The tool data required for programming in TruTops is available to you as a download in the MyTRUMPF customer portal even before the tool itself is dispatched. This means you can take care of any necessary programming tasks before you receive your tool, allowing you to start with production immediately after it arrives.

We've thought of everything

Support across the board

If you choose our punching tools, you will not only get the very best manufacturing results, but also a partner who supports you with everything related to your processes. Free additional services make your everyday punching tasks easier, a wide variety of trial offers help you satisfy new requirements, and financing models ensure that you have flexibility in your investment.

A convincing price-performance ratio

Included in every purchase order: a comprehensive range of free additional services that turn your investment into a profit.

1. Free punch shears
2. Free EasyUse scale on dies and shims
3. Free TiCN coating for cluster tools

Satisfy new customer requirements

Test new machine functions and tools in order to react flexibly to customer requirements and expand your portfolio.

1. Testing of new applications on your machine
2. Trial activation of the machine function including testing tool
3. Consultation from TRUMPF experts during the test phase

Invest flexibly

Attractive lease-purchase models for setup and grinding devices give you greater freedom in your investment. Secure the best conditions for yourself and a long operational capability for your tools.

1. Attractive lease-purchase models for setup and grinding devices
2. Financial planning security thanks to fixed payment installments
3. Transfer of setup and grinding devices to your ownership

The MyTRUMPF customer portal: information and services related to your tools

Order tools around the clock.

You can buy your tools conveniently and quickly around the clock through our E-Shop. You can maintain a constant overview of your order alongside information on prices and parts availability: A tracking number gives you direct access to the delivery tracking service, where you can view the status of your purchase order at any time. In addition, you can benefit from exclusive online offers.

Stay up to speed with everything.

Inform yourself about new tools, read exciting application reports or receive helpful tips and tricks related to punching technology from the specialist experts at TRUMPF. You have access to all tool-specific documents such as technical information bulletins at any time.

Speed up your processes.

After your special tool has been successfully tested, we provide you with the required programming data such as the DXF and tool data files in the form of a download. This means you can take care of the associated programming tasks even before you receive your tool, allowing you to start production straight away once it arrives. All tool data is saved for future reference in a clearly arranged database and can be retrieved again at any time if needed. This saves you the time and effort involved in archiving and searching for your files.

Do you want to enjoy all the benefits of MyTRUMPF?
If so, please register at
www.mytrumpf.com.

Punching:

Great punching made easy

Punching with TRUMPF tools.

TRUMPF represents high-quality punching tools for maximum service life. We offer tools made from the highest quality steels that have been produced using the latest production technology. The best conditions for your production.

The Classic System is the leading tool system for punching machines as well as for punching and laser cutting machines. A wide range of forms, shears, coatings, and available accessories makes the tools very flexible. The system is equipped with Easy-Use as a standard feature, guaranteeing simple setup.

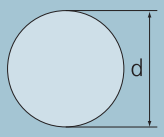
Our MultiTool makes your machine more productive by integrating up to ten different punches and dies into one tool. The strengths of the MultiTool are particularly notable in processing sheet metal parts with small punches of different sizes.

Our MultiUse tool is distinguished by its extremely reliable setup. Setup errors are effectively eliminated by clearly defining the angular position.

Punching

Round

Description and application
The reliable and cost-effective TRUMPF round tool for punching and nibbling



Your benefits at a glance
- With a wide range of options there is something to suit every requirement
- Maximum flexibility with the existing TRUMPF tool inventory
- Complete compatibility with TRUMPF accessories
- Simple setup with EasyUse

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

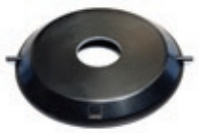
Order no.	EUR
699800	

Die

- Simple setup with EasyUse

Order no.	EUR
699810	

Stripper



- Optional: Special coating to avoid marks

Order no.	EUR
699820	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, dimensions, options.

Prices

	Punch			Die		Stripper	
Size	(d) mm	Punch chuck required	EUR	(d) mm	EUR	(d) mm	EUR
0	1.00 - 6.00	Yes (6 mm)		-32.00		-78.00	
0	1.00 - 6.00	Yes (10.5 mm)					
0	6.01 - 10.50	Yes (10.5 mm)					
1	2.00 - 30.00	No					
2	30.01 - 40.00	No		32.01 - 77.80			
2	40.01 - 60.00	No					
2	60.01 - 76.20	No					

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
0						
1						
2						

Die options

	Version	
Size	Slug retention die	Reinforced
1		
2		

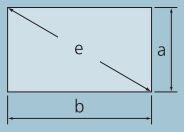
Stripper options

Special coating

Rectangle

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Description and application
The reliable and cost-effective TRUMPF rectangular tool for punching and nibbling



Your benefits at a glance
- With a wide range of options there is something to suit every requirement
- Maximum flexibility with the existing TRUMPF tool inventory
- Complete compatibility with TRUMPF accessories
- Simple setup with EasyUse

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699802	

Die

- Simple setup with EasyUse

Order no.	EUR
699812	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699822	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, dimensions, options.

Prices

	Punch			Die		Stripper	
Size	(e) mm	Punch chuck required	EUR	(e) mm	EUR	(e) mm	EUR
0	1.80 - 6.00	Yes (6 mm)		- 32.00		- 78.00	
	6.01 - 10.50	Yes (10.5 mm)					
1	2.00 - 30.45	No					
2	30.46 - 40.00			32.01 - 78.00			
	40.01 - 50.80						
	50.81 - 60.00						
	60.01 - 76.20						

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
0						
1						
2						

Die options

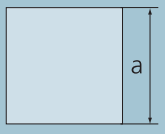
	Version	
Size	Slug retention die	Reinforced
1		
2		

Stripper options

Special coating

Square

Description and application
The reliable and cost-effective TRUMPF square tool for punching and nibbling



Your benefits at a glance
- With a wide range of options there is something to suit every requirement
- Maximum flexibility with the existing TRUMPF tool inventory
- Complete compatibility with TRUMPF accessories
- Simple setup with EasyUse

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699801	

Die

- Simple setup with EasyUse

Order no.	EUR
699811	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699821	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, dimensions, options.

Prices

	Punch			Die		Stripper	
Size	(a) mm	Punch chuck required	EUR	(a) mm	EUR	(a) mm	EUR
0	1.00 - 4.20	Yes (6 mm)		- 22.00		- 55.00	
	4.21 - 7.40	Yes (10.5 mm)					
1	1.00 - 20.00	No					
2	20.01 - 28.00			22.01 - 55.00			
	28.01 - 35.00						
	35.01 - 42.00						
	42.01 - 53.80						

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
0						
1						
2						

Die options

	Version	
Size	Slug retention die	Reinforced
1		
2		

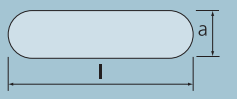
Stripper options

Special coating

Oblong

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Description and application
The reliable and cost-effective TRUMPF oblong tool for punching and nibbling



Your benefits at a glance
- With a wide range of options there is something to suit every requirement
- Maximum flexibility with the existing TRUMPF tool inventory
- Complete compatibility with TRUMPF accessories
- Simple setup with EasyUse

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699803	

Die

- Simple setup with EasyUse

Order no.	EUR
699813	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699823	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, dimensions, options.

Prices

	Punch			Die		Stripper	
Size	(l) mm	Punch chuck required	EUR	(l) mm	EUR	(l) mm	EUR
0	1.80 - 6.00	Yes (6 mm)		- 32.00		- 78.00	
	6.01 - 10.50	Yes (10.5 mm)					
1	2.00 - 30.00	No					
2	30.01 - 40.00			32.01 - 78.00			
	40.01 - 50.80						
	50.81 - 60.00						
	60.01 - 76.20						

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
0						
1						
2						

Die options

	Version	
Size	Slug retention die	Reinforced
1		
2		

Stripper options

Special coating

Shapes – category A

Description and application
Standardized shape tools for your own individual application

Your benefits at a glance
- Can be configured individually to suit your requirements
- Tool Data Import makes tool programming easy
- With a wide range of options there is something to suit every requirement
- Simple setup with EasyUse

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool Data Import	see p. 145
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699850	

Die

- Simple setup with EasyUse

Order no.	EUR
699860	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699870	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, form, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, form, dimensions, options.

Prices

	Punch			Die		Stripper	
Size	Outer circle in mm	Punch chuck required	EUR	Outer circle in mm	EUR	Outer circle in mm	EUR
0	1.00 - 10.50	Yes (10.5 mm)		- 32.00		- 78.00	
1	10.51 - 30.00						
2	30.01 - 40.00	No		32.01 - 78.00			
	40.01 - 50.80						
	50.81 - 60.00						
	60.01 - 76.20						

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
0						
1						
2						

Die options

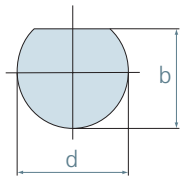
	Version
Size	Reinforced
1	
2	

Stripper options

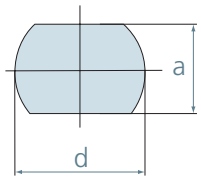
Special coating

Shapes – category A

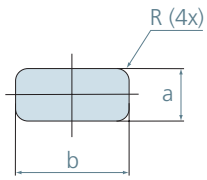
Shape 6



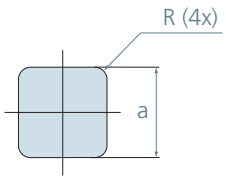
Shape 7



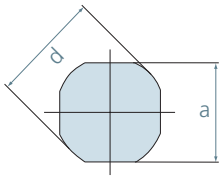
Shape 9



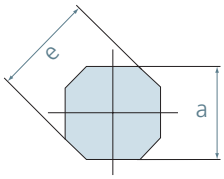
Shape 10



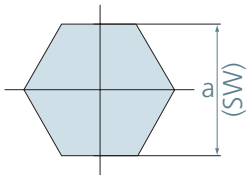
Shape 11



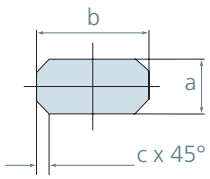
Shape 12



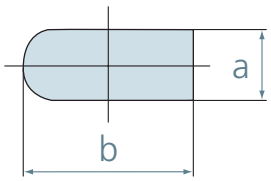
Shape 13



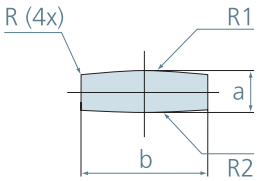
Shape 30



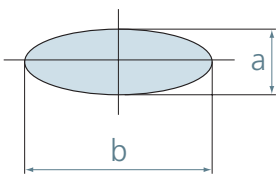
Shape 32



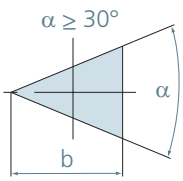
Shape 29



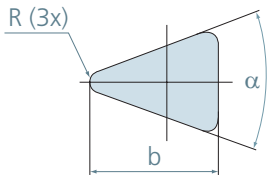
Shape 36



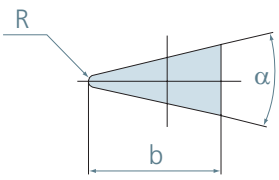
Shape 20



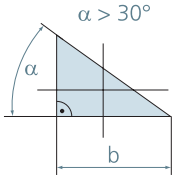
Shape 22



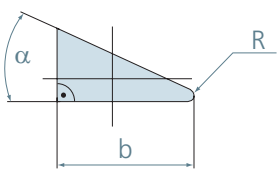
Shape 23



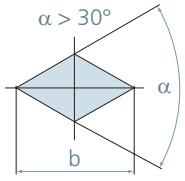
Shape 21



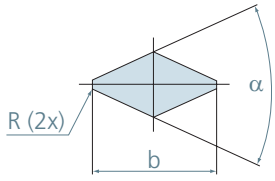
Shape 24



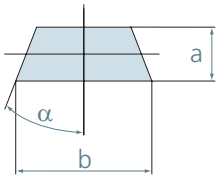
Shape 16



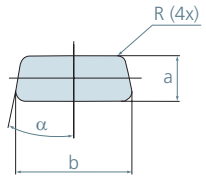
Shape 17



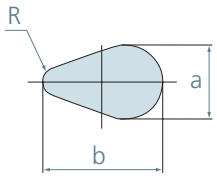
Shape 25



Shape 18



Shape 39



Important ordering information
The smallest possible radius is 0.2 mm. With forms 16, 20, 21, and 25, the b-size is reduced.

Shapes – category B

Description and application
Standardized shape tools for your own individual application

Your benefits at a glance
- Can be configured individually to suit your requirements
- Tool Data Import makes tool programming easy
- With a wide range of options there is something to suit every requirement
- Simple setup with EasyUse

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool Data Import	see p. 145
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699850	

Die

- Simple setup with EasyUse

Order no.	EUR
699860	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699870	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, form, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, form, dimensions, options.

Prices

	Punch			Die		Stripper	
Size	Outer circle in mm	Punch chuck required	EUR	Outer circle in mm	EUR	Outer circle in mm	EUR
0	1.00 - 10.50	Yes (10.5 mm)		- 32.00		- 78.00	
1	10.51 - 30.00						
2	30.01 - 40.00	No		32.01 - 78.00			
	40.01 - 50.80						
	50.81 - 60.00						
	60.01 - 76.20						

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
0						
1						
2						

Die options

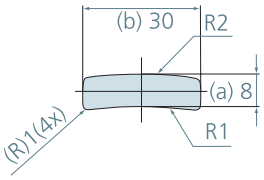
	Version
Size	Reinforced
1	
2	

Stripper options

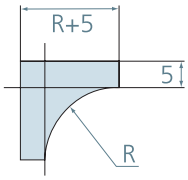
Special coating

Shapes – category B

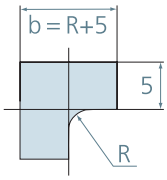
Shape 37



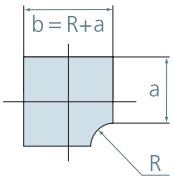
Shape 35



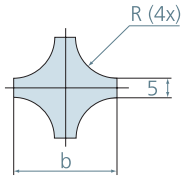
Shape 15



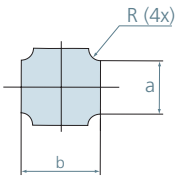
Shape 15



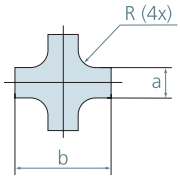
Shape 14



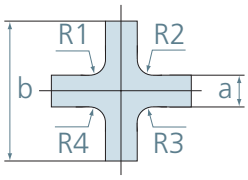
Shape 14



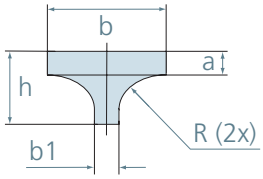
Shape 14



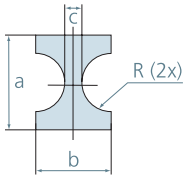
Shape 40



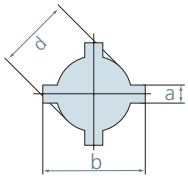
Shape 28



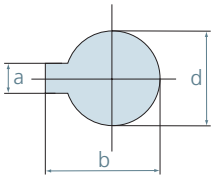
Shape 31



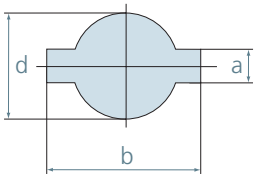
Shape 27



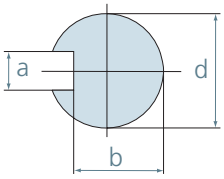
Shape 1



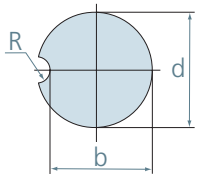
Shape 2



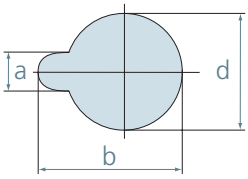
Shape 3



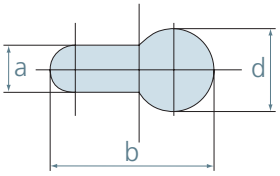
Shape 38



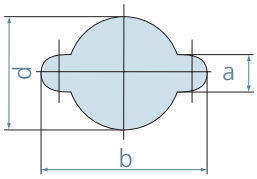
Shape 4



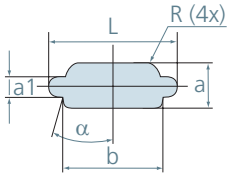
Shape 5



Shape 8



Shape 19

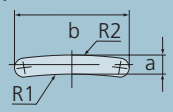


Banana tool

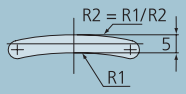
Description and application
The tool for punching curved shapes

Your benefits at a glance
- Can be customized to suit your requirements
- Can be used for large openings and circular punching
- Tool Data Import makes tool programming easy
- With a wide range of options there is something to suit every requirement
- Simple setup with EasyUse

Shape 33



Shape 34



Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132

Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool Data Import	see p. 145
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699850	

Die

- Simple setup with EasyUse

Order no.	EUR
699860	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699870	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, form, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, form, dimensions, options.

Prices

	Punch		Die		Stripper	
Size	Outer circle in mm	EUR	Outer circle in mm	EUR	Outer circle in mm	EUR
1	10.51 - 30.00		- 32.00		- 78.00	
2	30.01 - 76.20		32.01 - 78.00			

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
1						
2						

Die options

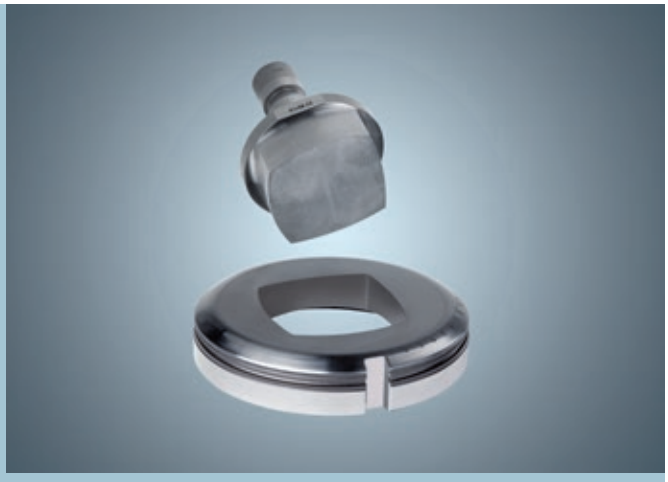
	Version
Size	Reinforced
1	
2	

Stripper options

Special coating

MultiCut radii tool

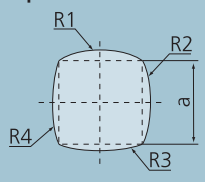
Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool Data Import	see p. 145
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175



Description and application
The adaptable tool with four different radii for producing round holes

Your benefits at a glance
- Short processing time for producing round holes
- Can be customized to suit your requirements
- Tool Data Import makes tool programming easy
- Simple setup with EasyUse

Shape 26



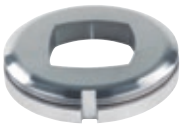
Item

Punch

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699850	

Die



- Simple setup with EasyUse

Order no.	EUR
699860	

Stripper

- Optional: Special coating to avoid marks

Order no.	EUR
699870	

Important ordering specifications
Punch, die: machine, sheet thickness, material, size, form, dimensions, options (reinforced punch requires special alignment ring).
Stripper: machine, sheet thickness, material, form, dimensions, options.

Prices

	Punch		Die		Stripper	
Size	Outer circle in mm	EUR	Outer circle in mm	EUR	Outer circle in mm	EUR
1	10.51 - 30.00		- 32.00		- 78.00	
2	30.01 - 76.20		32.01 - 78.00			

Punch options

	Coating			Shear		Version
Size	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof	Reinforced
1						
2						

Die options

	Version
Size	Reinforced
1	
2	

Stripper options

Special coating

Recommended dimensions
a=26.5 mm when R1=25, R2=40, R3=50, R4=65
a=42.0 mm when R1=50, R2=60, R3=80, R4=100

Shapes – customized

Description and application
Shape tools produced to suit your individual requirements

Your benefits at a glance
- Individual consultation with punching specialists to discuss feasibility and application
- Quick delivery times as a result of the latest production methods
- Tool Data Import makes tool programming easy
- Simple setup with EasyUse

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool Data Import	see p. 145
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete tool

Order no.	EUR
323300	

Punch

- Optional: Longer service life with coating

Order no.	EUR
323301	

Die

- Simple setup with EasyUse

Order no.	EUR
323311	

Stripper

- Optional: Special coating to avoid marks

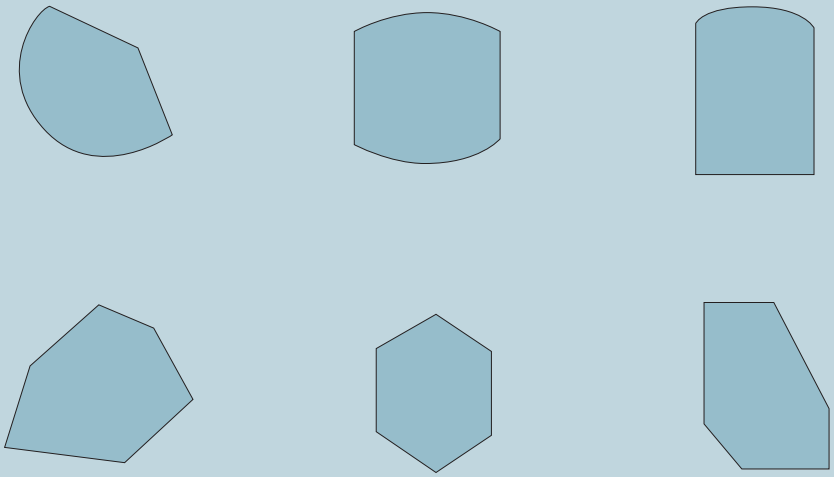
Order no.	EUR
323305	

Important ordering specifications
Initial order of complete tool: Drawing in common CAD format (e.g. DXF), machine, sheet thickness, material, options.
Reordering individual components: Entry of TRUMPF drawing number.

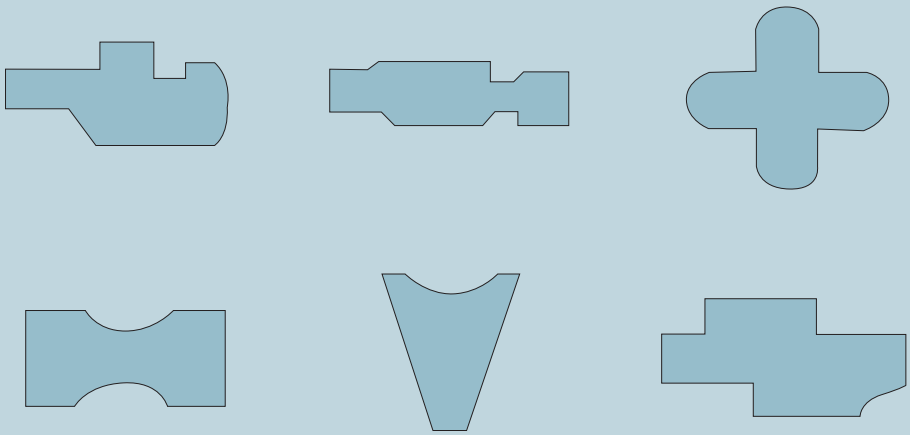
Shapes – customized

Shapes to suit your individual requirements

Examples of shapes in category A



Examples of shapes in category B



In addition to the large quantity of standard shapes, TRUMPF can create a shape to suit your individual requirements. Please send us a drawing in a conventional CAD format (e.g. DXF). If you order a customized shape, you will automatically receive all the data required for programming.

We will be happy to advise you.

Tools with guided cutting edge

Description and application
Tools for punching holes with dimensions that are less than the sheet thickness

Your benefits at a glance
- Reduced risk of breakage when punch load is increased
- Reliable punching of very small geometries
- Punch insert and guide bushing can be replaced individually

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	
Round	max. 4.0 mm
Rectangle, Square and Oblong	max. 2.5 mm
Useful information	
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Guided punch, round

- Optional: Longer service life with coating

Order no.	EUR
699900	

Guided punch, square

- Optional: Longer service life with coating

Order no.	EUR
699900	

Guided punch, rectangle

- Optional: Longer service life with coating

Order no.	EUR
699900	

Guided punch, oblong

- Optional: Longer service life with coating

Order no.	EUR
699900	

Important ordering specifications
Initial order of complete tool: Drawing in common CAD format (e.g. DXF), machine, sheet thickness, material, options.
Reordering individual components: Entry of TRUMPF drawing number.

Inserts

Precision piercing punch

	Dimensions mm	Order no.	EUR
Round	(d) = 1.00 - 6.00	699901	
Square	(a) = 1.00 - 7.40		
Rectangle	(e) = 1.30 - 10.50		
Oblong	(l) = 1.30 - 10.50		

Guide bushing/presser foot

	Type	Order no.	EUR
Round	Guide bushing	699902	
Square	Presser foot	699903	
Rectangle			
Oblong			

Punch options

Coating

MultiDur TiCN	MultiDur Performance	MultiDur Alu

Accessories and single parts

Item

Designation	Order no.	EUR
Hollow spring element (round)	093928	
Spring element (square, rectangle, oblong)	517153	

Cluster tools

Description and application
Tools for the highly efficient production of perforated sheets and perforations

Your benefits at a glance
- Numerous geometries ensure there is something to suit every requirement
- Individual consultation with punching specialists to discuss feasibility and application
- Quick delivery times as a result of the latest production methods
- Tool Data Import makes tool programming easy
- Attractive professional package with prefabricated punch plate and TiCN-coated punch inserts for longer service life

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	dependent on the geometry and punching force – see p. 132
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punch selection	see p. 134
Die selection	see p. 135
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool Data Import	see p. 145
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete tool

Order no.	EUR
326400	

Punch

- One-piece punch or with replaceable inserts
- Optional: Longer service life with coating

Order no.	EUR
326450	

Die

- Optional: Leveling effect to improve sheet evenness

Order no.	EUR
326411	

Stripper

- Optional: Special coating to avoid marks

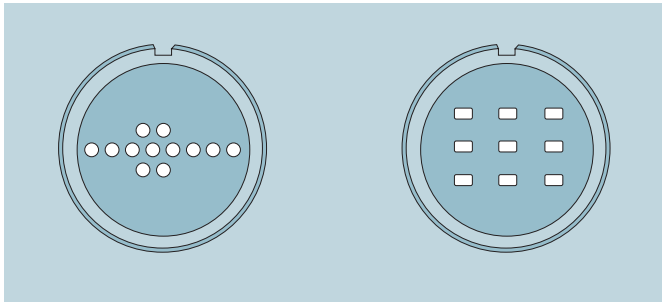
Order no.	EUR
326405	

Important ordering specifications
Initial order of complete tool: Drawing in common CAD format (e.g. DXF), machine, sheet thickness, material, options.
Reordering individual components: Entry of TRUMPF drawing number.

Cluster tools

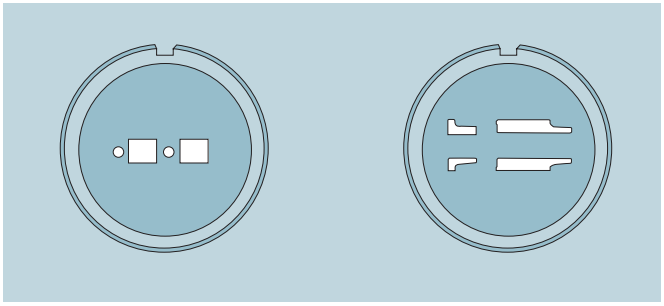
The technology

Cluster tools are able to simultaneously punch several holes in a single stroke. They are produced individually upon request with interchangeable punch inserts or from a single piece, depending on the application and requirements in question.



Punch with replaceable punch inserts

- Punch inserts can be individually replaced, e.g. in the event of wear
- Easy assembly
- Well suited for smaller dimensions and standard forms
- Particularly economical for large quantities



One-piece punch

- A solid punch, can be optionally supplied with integrated alignment ring
- Can be combined with a range of geometries
- Particularly suited to larger geometries, special shapes, or high-precision processing

The expertise

For the best results with all our tools' features, we draw on the wealth of TRUMPF specialist knowledge: There's so much we can offer, including different coatings, the leveling effect, slug retention function and much more. The only things limiting production using cluster tools are their maximum outer circle dimension of 72 mm and the machine’s punching force.

The machine and tool are subjected to particularly high demands during serial production of perforated sheets using cluster tools in continuous operation. That's why TRUMPF recommends only using cluster tools in continuous operation at up to two thirds of the maximum punching force and adapting the tool geometry as appropriate. These actions relieve the machine and considerably extend the service life of the tool. In short-term operation, cluster tools can be used without any restrictions.

MultiTool 5-station

Description and application
The original MultiTool from TRUMPF with a tool adapter for 5 inserts – ideal for lots of small punches with different sizes

Your benefits at a glance
- Number of tools on the machine is increased with 5 tool inserts in one tool adapter
- Shorter tool setup and change times
- Considerable increase in productivity for small punches
- Die inserts can be reground one at a time
- The gear rim with special coating runs exceptionally well

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	
Aluminum	0.5 - 4.5 mm
Steel	0.5 - 4.5 mm
Stainless steel	0.5 - 3.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punching force and shear strength	see p. 132
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete MultiTool

Order no.	EUR
699830	

Punch holder

Order no.	EUR
629134	

Die holder

Order no.	EUR
629150	

Stripper

Order no.	EUR
629161	

Important ordering specifications
Machine, MultiTool type (4-, 5-, 6-,10-station). The "MultiTool" machine option is a prerequisite.

Inserts

Punch insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 16.00	699804	
Square		(a) = 1.00 - 11.30		
Rectangle		(e) = 1.80 - 16.00		
Oblong		(l) = 2.00 - 16.00		
Shapes A/B	see p. 16-19	1.00 - 16.00		

Die insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 16.90	699814	
Square		(a) = 1.00 - 12.20		
Rectangle		(e) = 1.80 - 16.90		
Oblong		(l) = 2.00 - 16.90		
Shapes A/B	see p. 16-19	1.00 - 16.90		

Important ordering specifications
Machine, sheet thickness, material, MultiTool type (4-, 5-, 6-, 10-station), shape, dimensions, options.

Punch options

Coating

MultiDur TiCN	MultiDur Performance	MultiDur Alu

Die options

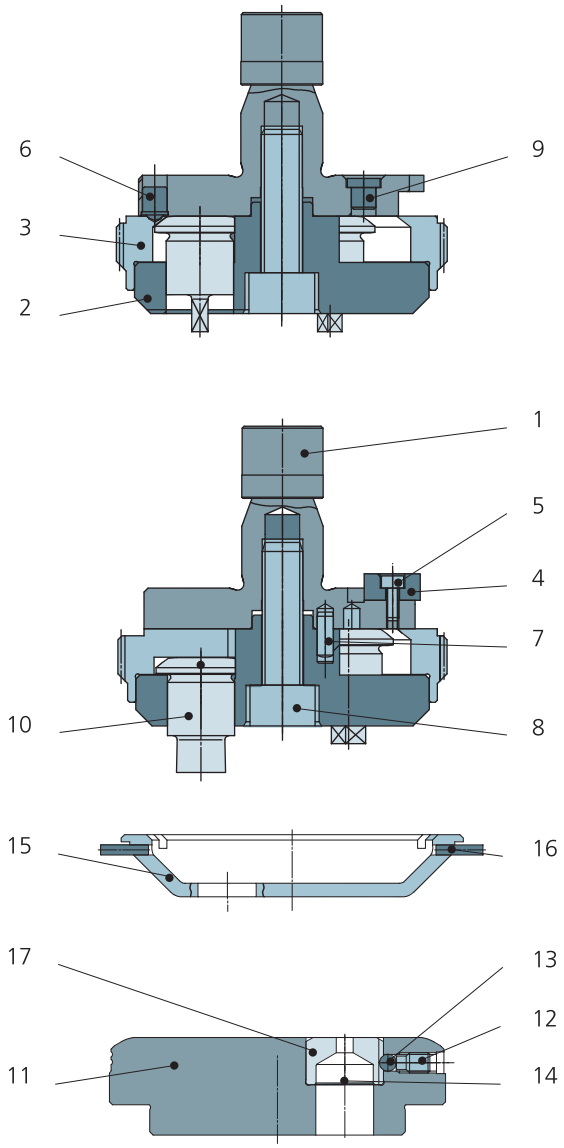
Die holder with brush inserts

Order no.	EUR
668915	

Stripper options

Stripper, close-fit

Order no.	EUR
699827	



Accessories and single parts

Item				
	Designation	Pieces	Order no.	EUR
1)	Punch shank	1	629117	
2)	Punch holder body	1	629120	
3)	Gear rim	1	629121	
4)	Adjustment key	1	063548	
5)	Cheese-head screw M3x8	1	014346	
6)	Thrust piece	1	355256	
7)	Cylindrical pin	2	023116	
8)	Cheese-head screw M10x35	1	015199	
9)	Grease nipple	1	029556	
10)	Punch insert	5	699804	
11)	Die holder body	1	629136	
12)	Set screw M6x10	5	074438	

Item				
	Designation	Pieces	Order no.	EUR
13)	Ball	5	030210	
	Shim 0.1 mm	10	1460499	
14)	Shim 0.3 mm	5	1460502	
	Shim 0.5 mm	5	1460503	
15)	Complete stripper	1	629161	
16)	Clamping pin 3x14, stripper	2	146927	
17)	Die insert	5	699814	
	Brush insert (not pictured)	5	540021	
18)	Plain washer 0.1 mm for brush insert (not pictured)	5	540026	
	Plain washer 0.3 mm for brush insert (not pictured)	5	540027	

Experience the **MultiTool** in action:
www.trumpf.info/hnkdqb

MultiTool 10-station

Description and application
The original MultiTool from TRUMPF with a tool adapter for 10 inserts – ideal for lots of small punches with different sizes

Your benefits at a glance
- Number of tools on the machine is increased with 10 tool inserts in one tool holder
- Shorter tool setup and change times
- Considerable increase in productivity for small punches
- Die inserts can be reground one at a time
- The gear rim with special coating runs exceptionally well

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	
Aluminum	0.5 - 4.5 mm
Steel	0.5 - 4.5 mm
Stainless steel	0.5 - 3.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punching force and shear strength	see p. 132
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete MultiTool

Order no.	EUR
699830	

Punch holder

Order no.	EUR
630593	

Die holder

- With brush insert for low-scratch processing

Order no.	EUR
358911	

Stripper

Order no.	EUR
641046	

Important ordering specifications
Machine, MultiTool type (4-, 5-, 6-,10-station). The "MultiTool" machine option is a prerequisite.

Inserts

Punch insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 10.50	699804	
Square		(a) = 1.00 - 7.40		
Rectangle		(e) = 1.80 - 10.50		
Oblong		(l) = 2.00 - 10.50		
Shapes A/B	see p. 16-19	1.00 - 10.50		

Die insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 11.00	699814	
Square		(a) = 1.00 - 7.70		
Rectangle		(e) = 1.80 - 11.00		
Oblong		(l) = 2.00 - 11.00		
Shapes A/B	see p. 16-19	1.00 - 11.00		

Important ordering specifications
Machine, sheet thickness, material, MultiTool type (4-, 5-, 6-, 10-station), shape, dimensions, options.

Punch options

Coating

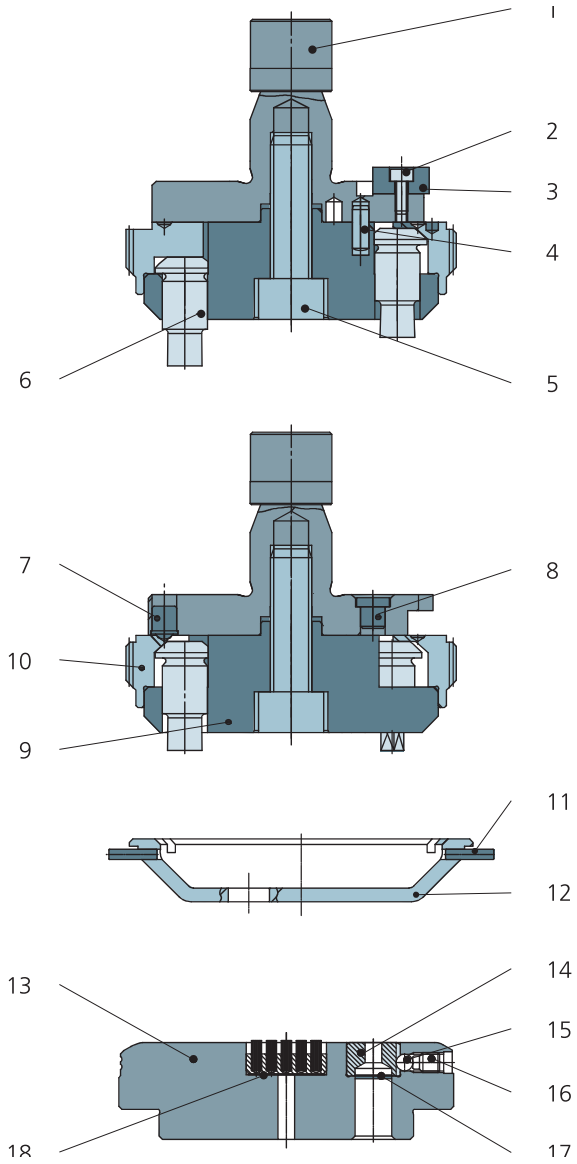
MultiDur TiCN	MultiDur Performance	MultiDur Alu

Stripper options

Stripper, close-fit

Order no.	EUR
699827	

MultiTool 10-station



Accessories and single parts

Item				
	Designation	Pieces	Order no.	EUR
1)	Punch shank	1	629117	
2)	Cheese-head screw M3x8	1	014346	
3)	Adjustment key	1	063548	
4)	Cylindrical pin 4m6x10	1	023116	
5)	Cheese-head screw M10x35	1	015199	
6)	Punch insert	10	699804	
7)	Thrust piece	1	355256	
8)	Grease nipple	1	029556	
9)	Punch holder body	1	630586	
10)	Gear rim	1	630587	

Item				
	Designation	Pieces	Order no.	EUR
11)	Clamping pin 3x14, stripper	2	146927	
12)	Complete stripper	1	641046	
13)	Die holder body	1	1282660	
14)	Die insert	10	699814	
15)	Ball	10	030210	
16)	Set screw M6x8	10	053720	
	Shim 0.1 mm	20	1460490	
17)	Shim 0.3 mm	10	1460493	
	Shim 0.5 mm	10	1460496	
18)	Brush insert	1	0540023	

Experience the **MultiTool** in action:
www.trumpf.info/hnkdqb

MultiTool, mark-free

Description and application
The original MultiTool from TRUMPF for optimal surface quality on the upper and underside of the sheet

Your benefits at a glance
- Number of tools on the machine is increased with 10 tool inserts in one tool holder
- Mark-free sheet top thanks to patented control element in punch holder
- Imprint-free sheet underside thanks to solid die with brush inserts
- Specially coated stripper for a flawless surface finish
- Simplified setup process and regrinding thanks to two-part die

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	
Aluminum and steel	2.0 mm with medium degree of punching 3.0 mm with low degree of punching
Stainless steel	2.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punching force and shear strength	see p. 132
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete MultiTool

Order no.	EUR
2253653 (5-station)	
2253654 (10-station)	

Punch holder

■ With patented control element

Order no.	EUR
2252586 (5-station)	
2252698 (10-station)	

Die, 2-part

■ With brush inserts

Order no.	EUR
2252376 (5-station)	
2252494 (10-station)	

Stripper, close-fit

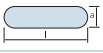
■ With special coating

Order no.	EUR
399999 (5-station)	
399999 (10-station)	

Important ordering specifications
Machine, MultiTool type (5-, 10-station). The "MultiTool" machine option is a prerequisite.
To ensure optimum results, use of the descending die or active die is recommended.

Inserts

Punch insert

		Dimensions mm 5-station	Dimensions mm 10-station	Order no.	EUR
Round		(d) = 1.00 - 16.60	(d) = 1.00 - 10.50	699804	
Square		(a) = 1.00 - 11.90	(a) = 1.00 - 7.40		
Rectangle		(e) = 1.80 - 16.60	(e) = 1.80 - 10.50		
Oblong		(l) = 2.00 - 16.60	(l) = 2.00 - 10.50		
Shapes A/B	see p. 16-19	1.00 - 16.60	1.00 - 11.00		

Important ordering specifications
Machine, sheet thickness, material, MultiTool (5-, 10-station), shape, dimensions, options.

Punch options

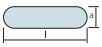
Coating

MultiDur TiCN	MultiDur Performance	MultiDur Alu

MultiTool, mark-free

Inserts

Blanking die

		Dimensions mm 5-station	Dimensions mm 10-station	Order no.	EUR 5-station	EUR 10-station
Round		(d) = 1.00 - 16.60	(d) = 1.00 - 11.00	399998		
Square		(a) = 1.00 - 11.90	(a) = 1.00 - 7.70			
Rectangle		(e) = 1.80 - 16.60	(e) = 1.80 - 11.00			
Oblong		(l) = 2.00 - 16.60	(l) = 2.00 - 11.00			
Shapes A/B	see p. 16-19	1.00 - 16.60	1.00 - 11.00			

Accessories and single parts

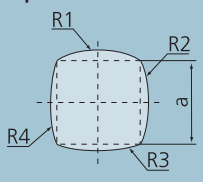
Item		5-station		10-station	
Designation	Pieces	Order no.	EUR	Order no.	EUR
1) Control element, complete	1	2244642		2250948	
2) Brush insert, oblong	4	2244646		2244646	
3) Brush insert, round	1	0540021		0540023	
4) Installation device, complete	1	2259076		2259201	
5) Mounting bolt for brushes, round	1	2258987		2258988	

MultiTool with MultiCut inserts

Description and application
The original MultiTool from TRUMPF for punching up to 40 different diameters using just one tool

Your benefits at a glance
- Maximum diameter flexibility
- Shorter setup and tool change times with the punching of up to 40 different diameters with no additional setup process
- Die inserts can be reground one at a time

Shape 26



Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	
MultiTool 5-station	1.0 / 2.0 mm
MultiTool 10-station	1.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punching force and shear strength	see p. 132
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch holder, 5-station

- Sheet thickness s: 1.0 / 2.0 mm

Order no.	EUR
1869584	

Die holder, 5-station

Order no.	EUR
1869670 (s = 1.0 mm)	
1869686 (s = 2.0 mm)	

Punch holder, 10-station

- Sheet sickness s: 1,0 mm

Order no.	EUR
1869247	

Die holder, 10-station

- With brush insert for low-scratch processing

Order no.	EUR
1869250	

Important ordering specifications
Machine, MultiTool type (5-, 10-station). The "MultiTool" machine option is a prerequisite.

Inserts

Punch insert, 5-station

Order no.	R1	R2	R3	R4	EUR
1869526	10.5	11.0	11.5	12.0	
1869528	12.5	13.0	13.5	14.0	
1869529	14.5	15.0	15.5	16.0	
1869530	17.0	17.5	18.0	19.0	
1869581	20.0	22.5	25.0	30.0	

Die insert, 5-station

Order no. s = 1 mm	Order no. s = 2 mm	EUR
1869655	1869665	
1869656	1869666	
1869657	1869667	
1869659	1869668	
1869660	1869669	

MultiTool with MultiCut inserts

Punch insert, 10-station

Order no.	R1	R2	R3	R4	EUR
1868907	5.5	6.0	6.5	7.0	
1868908	7.5	8.0	8.5	9.0	
1868910	9.5	10.0	10.5	11.0	
1868961	11.5	12.0	12.5	13.0	
1868962	13.5	14.0	14.5	15.0	
1868963	15.5	16.0	16.5	17.0	
1868964	17.5	18.0	18.5	19.0	
1868965	19.5	20.0	20.5	21.0	
1868966	21.5	22.0	22.5	23.0	
1868967	23.5	24.0	24.5	25.0	

Die insert, 10-station

Order no.	EUR
1869071	
1869073	
1869074	
1869075	
1869076	
1869077	
1869078	
1869079	
1869080	
1869081	

Important ordering specifications
Machine, sheet thickness, material, MultiTool (5-, 10-station), shape, dimensions, options.

MultiTool 4-station

Description and application
The original MultiTool from TRUMPF with a tool holder for 4 inserts – ideal for lots of small punches with different sizes

Your benefits at a glance
- Number of tools on the machine is increased with 4 tool inserts in one tool holder
- Shorter tool setup and change times
- Considerable increase in productivity for small punches
- Die inserts can be reground one at a time

Machine type	
TC	190 R, 200 R, 240 R, 260 R, 500 R, 600 L
Required machine option	MultiTool
Sheet thickness s	
Aluminum	0.5 - 3.0 mm
Steel	0.5 - 3.0 mm
Stainless steel	0.5 - 2.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punching force and shear strength	see p. 132
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete MultiTool

Order no.	EUR
699830	

Punch holder

- For TC 240/TC 260 (Order no. 203629)

Order no.	EUR
712118	

Die holder

Order no.	EUR
75560	

Important ordering specifications
Machine, MultiTool type (4-, 5-, 6-,10-station). The "MultiTool" machine option is a prerequisite.

Inserts

Punch insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 16.00	699804	
Square		(a) = 1.00 - 11.30		
Rectangle		(e) = 1.80 - 16.00		
Oblong		(l) = 2.00 - 16.00		
Shapes A/B	see p. 16-19	1.00 - 16.00		

Die insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 16.60	699814	
Square		(a) = 1.00 - 11.90		
Rectangle		(e) = 1.80 - 16.55		
Oblong		(l) = 2.00 - 16.60		
Shapes A/B	see p. 16-19	1.00 - 16.60		

Important ordering specifications
Machine, sheet thickness, material, MultiTool type (4-, 5-, 6-, 10-station), shape, dimensions, options.

Punch options

Coating

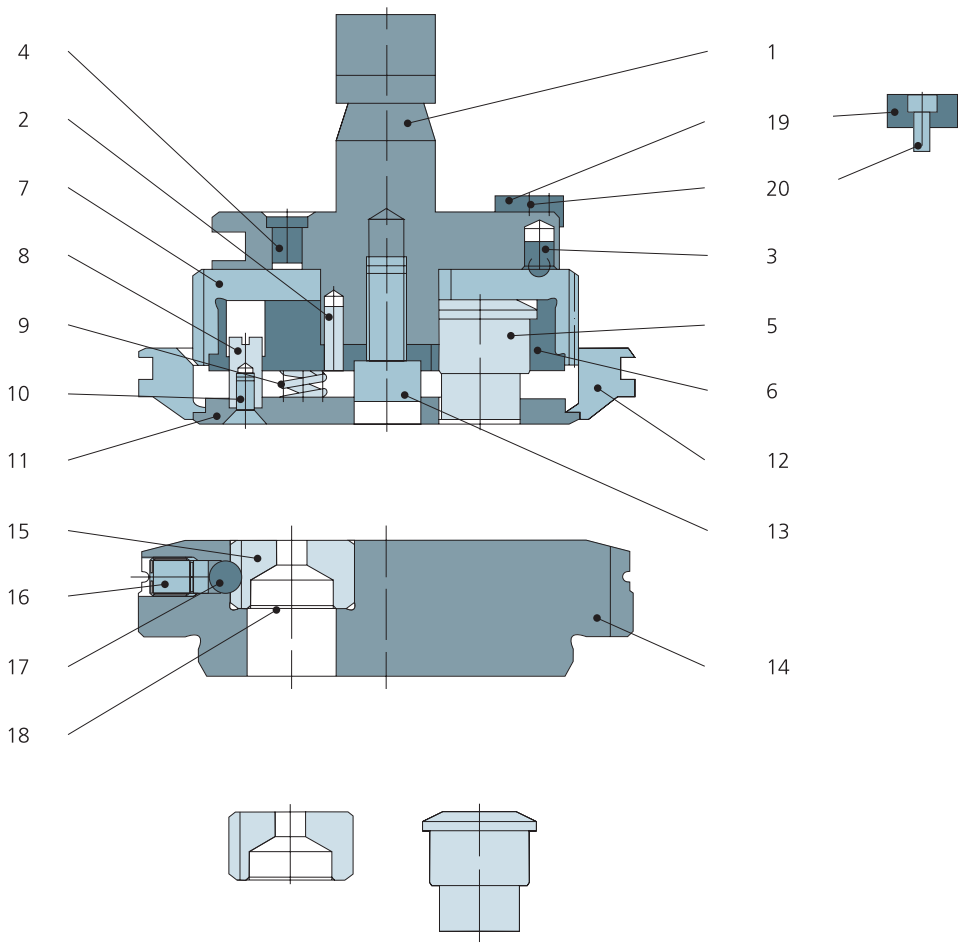
MultiDur TiCN	MultiDur Performance	MultiDur Alu

Die options

Die holder with brush inserts

Order no.	EUR
540019	

MultiTool 4-station



Accessories and single parts

Item				
	Designation	Pieces	Order no.	EUR
1)	Punch shank	1	540538	
2)	Cylindrical pin	1	023116	
3)	Thrust piece	1	355256	
4)	Grease nipple	1	029556	
5)	Punch insert	4	699804	
6)	Punch holder body	1	203625	
7)	Gear rim	1	203626	
8)	Bolt	4	062171	
9)	Compression spring	4	630128	
10)	Countersunk screw	4	017965	
11)	Presser foot	1	711957	
	Presser foot for TC 240/TC 260	1	203627	
12)	Complete stripper	1	712115	
	Complete stripper for TC 240/TC 260	1	203619	

Item				
	Designation	Pieces	Order no.	EUR
13)	Cheese-head screw	1	016349	
14)	Die holder body	1	066205	
15)	Die insert	4	699814	
16)	Set screw	4	073865	
17)	Ball	4	062005	
18)	Shim 0.1 mm	8	366744	
	Shim 0.3 mm	4	366745	
	Shim 0.5 mm	4	366746	
19)	Adjustment key	1	063548	
20)	Cheese-head screw	1	014346	

MultiTool 6-station

Description and application
The original MultiTool from TRUMPF with a tool adapter for 6 inserts – ideal for lots of small punches with different sizes

Your benefits at a glance
- Number of tools on the machine is increased with 6 tool inserts in one tool holder
- Shorter tool setup and change times
- Considerable increase in productivity for small punches
- Die inserts can be reground one at a time

Machine type	
TC	190 R, 200 R, 240 R, 260 R, 500 R, 600 L
Required machine option	MultiTool
Sheet thickness s	
Aluminum	0.5 - 3.0 mm
Steel	0.5 - 3.0 mm
Stainless steel	0.5 - 2.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Punching force and shear strength	see p. 132
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Complete MultiTool

Order no.	EUR
699830	

Punch holder

- For TC 240/TC 260 (Order no. 203635)

Order no.	EUR
712120	

Die holder

Order no.	EUR
75554	

Important ordering specifications
Machine, MultiTool type (4-, 5-, 6-,10-station). The "MultiTool" machine option is a prerequisite.

Inserts

Punch insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 10.50	699804	
Square		(a) = 1.00 - 7.40		
Rectangle		(e) = 1.80 - 10.50		
Oblong		(l) = 2.00 - 10.50		
Shapes A/B	see p. 16-19	1.00 - 10.50		

Die insert

		Dimensions mm	Order no.	EUR
Round		(d) = 1.00 - 11.10	699814	
Square		(a) = 1.00 - 8.00		
Rectangle		(e) = 1.80 - 11.00		
Oblong		(l) = 2.00 - 11.10		
Shapes A/B	see p. 16-19	1.00 - 11.10		

Important ordering specifications
Machine, sheet thickness, material, MultiTool type (4-, 5-, 6-, 10-station), shape, dimensions, options.

Punch options

Coating

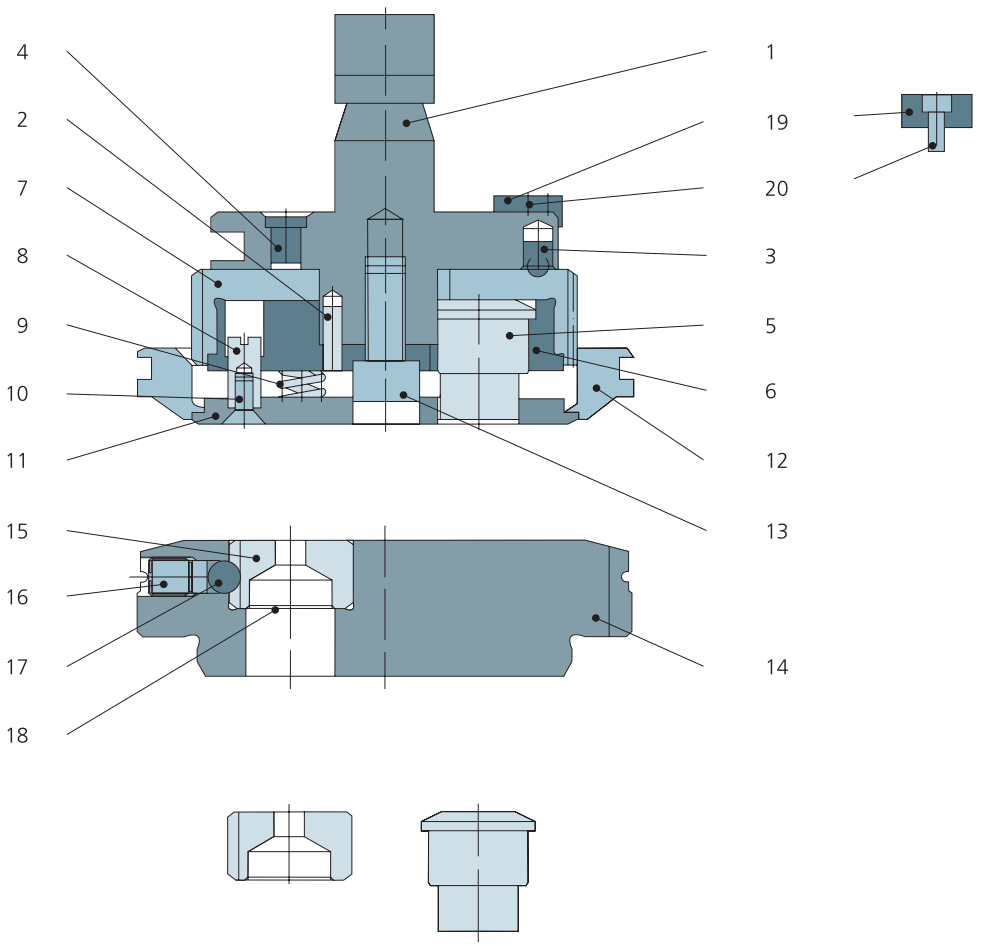
MultiDur TiCN	MultiDur Performance	MultiDur Alu

Die options

Die holder with brush inserts

Order no.	EUR
540041	

MultiTool 6-station



Accessories and single parts

Item				
	Designation	Pieces	Order no.	EUR
1)	Punch shank	1	073722	
2)	Cylindrical pin	1	756338	
3)	Thrust piece	1	355256	
4)	Grease nipple	1	029556	
5)	Punch insert	6	699804	
6)	Punch holder body	1	203631	
7)	Gear rim	1	203632	
8)	Bolt	3	062171	
9)	Compression spring	3	091714	
10)	Countersunk screw	3	017965	
11)	Presser foot	1	712129	
	Presser foot for TC 240/TC 260	1	203633	
12)	Complete stripper	1	712115	
	Complete stripper for TC 240/TC 260	1	203619	

Item				
	Designation	Pieces	Order no.	EUR
13)	Cheese-head screw	1	016349	
14)	Die holder body	1	075195	
15)	Die insert	6	699814	
16)	Set screw	6	013218	
17)	Ball	6	062005	
18)	Shim 0.1 mm	12	366747	
	Shim 0.3 mm	6	366748	
	Shim 0.5 mm	6	366749	
19)	Adjustment key	1	063548	
20)	Cheese-head screw	1	014346	

MultiUse

Description and application
Tool system with reliable setup and interchangeable punch and die inserts

Your benefits at a glance
- Quick and easy setup
- Tool setup errors are eliminated by the unmistakable mounting position
- Will not twist when under load from one side
- Economical for large lot sizes
- Maximum regrind length up to 9.5 mm

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s (Punch)	dependent on the geometry and punching force – see p. 132
Sheet thickness s (Die)	
Aluminum	0.5 - 1.5 mm
Steel and stainless steel	0.5 - 2.0 mm
Useful information	
Punching tool accessories	see p. 114
Dimensions and regrinding	see p. 130
Stripper selection	see p. 138
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Sheet flatness	see p. 151
Low-scratch/scratch-free processing	see p. 153
Increasing dimensional accuracy	see p. 155
Order forms	see p. 175

Item

Punch holder

Order no.	EUR
See table	

Punch insert

- Optional: Longer service life with coating
- Optional: Free Whisper/roof shear

Order no.	EUR
699345	

Die holder

Order no.	EUR
See table	

Blanking die

Order no.	EUR
699346	

Important ordering specifications
Punch insert: machine, sheet thickness, material, form, dimensions, options.
Blanking die: machine, sheet thickness, material, form, dimensions.

Punch holder

Outer circle (mm)	Keyway	Order no.	EUR
1.00 - 40.00	0° + 90°	363450	
40.01 - 76.20		363494	

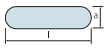
Punch insert

Round		Square		Rectangle		Oblong	
(d) mm	EUR	(a) mm	EUR	(e) mm	EUR	(l) mm	EUR
1.50 - 30.50		1.50 - 21.22		1.50 - 30.42		1.50 - 30.42	
30.51 - 40.00		21.23 - 28.29		30.43 - 40.00		30.43 - 40.00	
40.01 - 56.00		28.30 - 39.60		40.01 - 56.00		40.01 - 56.00	
56.01 - 66.00		39.61 - 46.68		56.01 - 66.00		56.01 - 66.00	
66.01 - 76.20		46.69 - 50.80		66.01 - 76.20		66.01 - 76.20	

Die holder

Outer circle (mm)	Order no.	EUR
1.00 - 40.00	358373	
40.01 - 56.00	358374	

Blanking die

Round		Square		Rectangle		Oblong	
							
(d) mm	EUR	(a) mm	EUR	(e) mm	EUR	(l) mm	EUR
1.50 - 40.00		1.60 - 28.29		1.60 - 40.00		1.60 - 40.00	
40.01 - 56.00		28.30 - 56.40		40.01 - 56.00		40.01 - 56.00	

Punch options

	Coating			Shear	
Outer circle (mm)	MultiDur TiCN	MultiDur Performance	MultiDur Alu	Whisper	Roof
1.50 - 30.50					
30.51 - 76.20					

Accessories and single parts

Item		
Designation	Order no.	EUR
Adjustment key for MultiUse punch	063548	
Spacer for punch 1.00 - 40.00 mm	1460891	
Spacer for punch 40.01 - 76.20 mm	1460892	
Plain washer for die 1.00 - 40.00 mm	1496972	
Plain washer for die 40.01 - 56.00 mm	1496991	

Cutting:

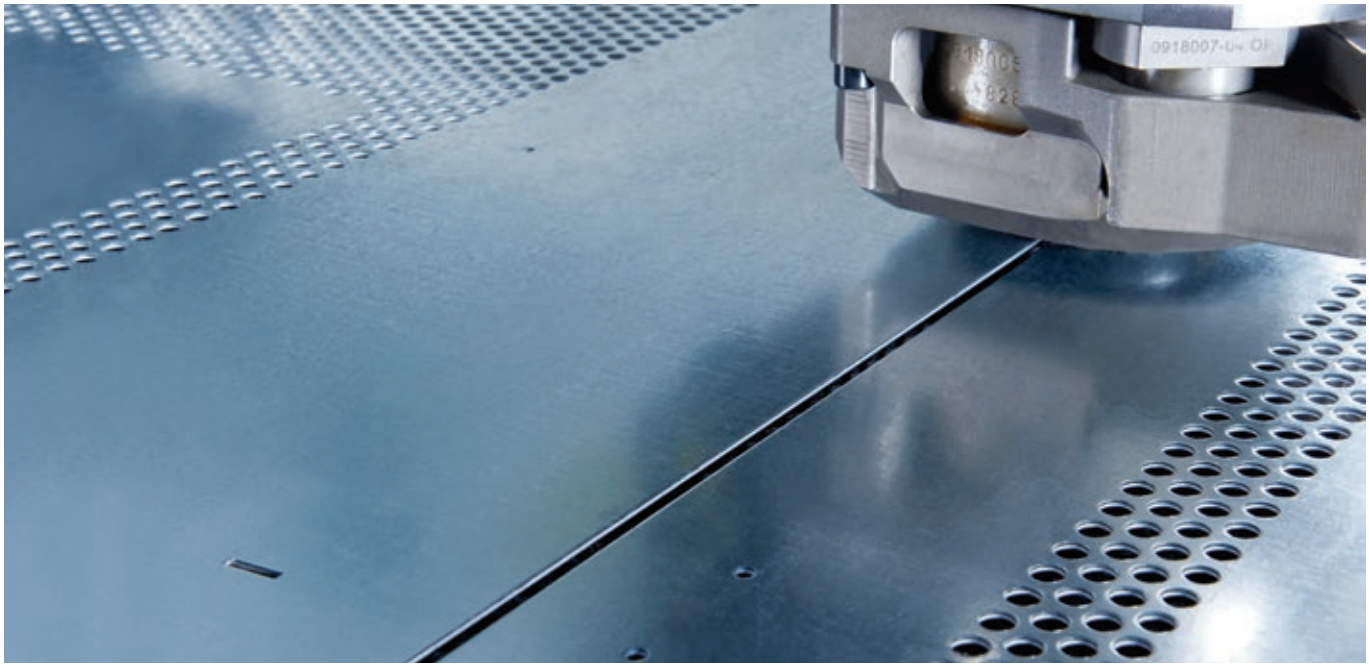
Perfect for every cut

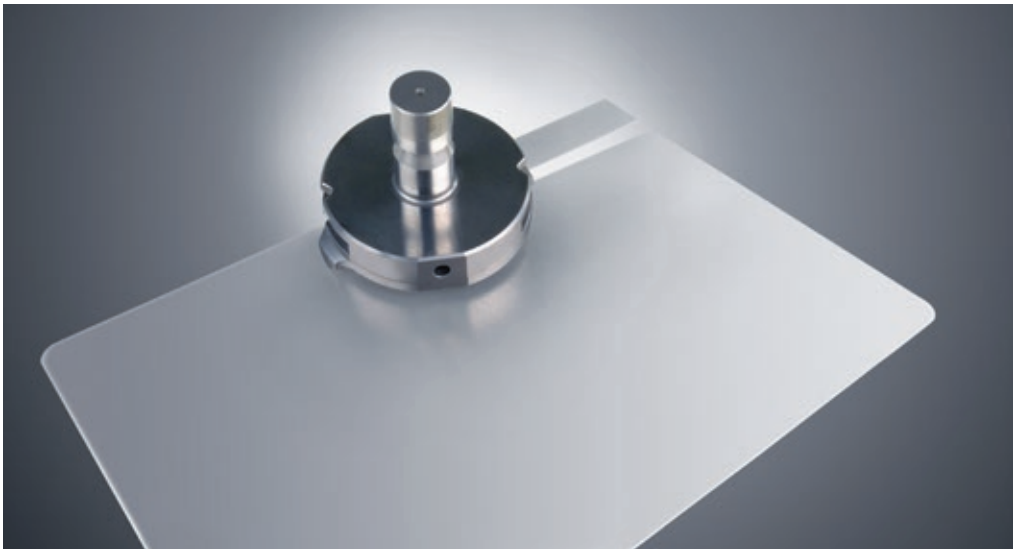
Cutting with TRUMPF tools.

One of the most important applications of a punching machine is to cut sheet metal. TRUMPF has the perfect tools for every requirement, regardless of whether it is the traditional slitting of contours, separating cuts on formed sections, or visible edges without nibbling marks. Cost-effective and versatile.

The slitting tool size 5 is ideal for the reliable removal of small parts. The part is tipped by the beveled die and is safely discharged through the part removal flap or part chute – simply and reliably.

Our film slitting tool with ball tip (patent pending) cuts films perfectly. It cuts film flawlessly, leaving behind no scratches or marks on the sheet, and for every conceivable contour.





Cutting

Slitting tool with interchangeable cutting blades

Description and application
The cost-effective universal tool for cutting sheet metal

Your benefits at a glance
- Economical cutting due to interchangeable cutting blades
- Different cutting measurements and geometries create a range of options
- Top level of productivity enabled by cutting speeds of up to 26 m/min
- Maximum setup reliability with the integrated alignment ring

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Skeleton-free processing required for bi-level stripper
Sheet thickness s	1.0 - 3.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Item

Slitting punch with cutting blade

- Optional: Longer service life with coating

Order no.	EUR
699895	

Separating die with cutting blades

- Optional: With brush inserts for low-scratch processing
- Includes 1 shim set

Order no.	EUR
699891	

Stripper

Order no.	EUR
See table	

Bi-level stripper

- For clamping and rotating large parts
- "Skeleton-free processing" machine option required

Order no.	EUR
See table	

Important ordering specifications
Machine, sheet thickness, material, slitting geometry, dimensions, options if required.

Slitting tool with interchangeable cutting blades

Prices

Slitting punch with cutting blade (rectangle with corner radii)

Size in mm	Order no.	EUR
5 x 30	699895	
5 x 56		
5 x 76.20		

Slitting die with cutting blades (rectangle with corner radii)

Size in mm	Order no.	EUR
5 x 30	699891	
5 x 56		
5 x 76.20		

Stripper

Size in mm	Order no.	EUR
6 x 31	157059	
6 x 57	157060	
6 x 77.20	157058	

Trapezoid stripper

Size in mm	Order no.	EUR
6 x 31	157266	
6 x 57	157267	
6 x 77.20	157268	

Dovetail stripper

Size in mm	Order no.	EUR
6 x 31	157272	
6 x 57	157273	
6 x 77.20	157274	

Bi-level stripper

Size in mm	Order no.	EUR
6 x 31	1648707	
6 x 57	1648706	
6 x 77.20	1648705	

Push-out stripper (spring-loaded)

Size in mm	Order no.	EUR
6 x 31	606514	
6 x 57	606527	
6 x 77.20	606539	

Important ordering information
Order no. for TC 240/TC 260 on request.

Cutting blades

	Punch	Die
		

Slitting geometry, rectangle with corner radii

	Punch		Die	
Size in mm	Order no.	EUR	Order no.	EUR
5 x 30	699894		699890	
5 x 56				
5 x 76.20				

Dovetail microjoint

	Punch		Die	
Size in mm	Order no.		Order no.	
5 x 30	699894		699890	
5 x 56				
5 x 76.20				

Trapezoid microjoint

	Punch		Die	
Size in mm	Order no.		Order no.	
5 x 30	699894		699890	
5 x 56				
5 x 76.20				

Punch options

Coating

MultiDur TiCN	MultiDur Performance	MultiDur Alu

Die options

Size in mm	Version with brush insert
5 x 30	
5 x 56	
5 x 76.20	

Accessories and single parts

Item

Designation	Order no.	EUR
Tapered set screw for punch	187769	
Cylindrical pin for punch	010782	
Cheese-head screw for die	207494	
Shim plate 0.2/5 x 30; 5 x 56	207489	
Shim plate 0.3/5 x 30; 5 x 56	207490	
Shim plate 0.5/5 x 30; 5 x 56	207491	
Shim plate 0.2/5 x 76.20	106143	
Shim plate 0.3/5 x 76.20	106144	
Shim plate 0.5/5 x 76.20	106145	

Slitting tool for cutting close to formed sections

Description and application
Self-stripping tool for cutting close to formed sections

Your benefits at a glance
- Outstanding separating cuts close to formed sections with the self-stripping punch
- Tool available with urethane stripper or integrated steel presser foot as an option
- Punch version with roof shear to reduce punching force and noise
- Die with interchangeable cutting blades for flexible use

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.5 - 2.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Item

Solid slitting punch, complete

- With urethane stripper
- Also available in trapezoid or dovetail form

Order no.	EUR
699897	

Solid slitting punch, single

- Also available in trapezoid or dovetail form

Order no.	EUR
699896	

Slitting punch with interchangeable cutting blades

- With steel presser foot and interchangeable springs
- Also available in trapezoid or dovetail form

Order no.	EUR
699895	

Separating die with interchangeable cutting blades

- Optional: With brush inserts / segments for low-scratch processing
- Includes 1 shim plate block

Order no.	EUR
699891	

Important ordering specifications
Machine, sheet thickness, material, slitting geometry, dimensions, options if required.

Punch prices

Dimensions	Order no.	EUR
5 x 56	699897	
	699896	
	699895	
5 x 76.2	699897	
	699896	

Die prices

Dimensions	Order no.	EUR
5 x 56	699891	
5 x 76.2	699891	

Punch options

Coating		
MultiDur TiCN	MultiDur Performance	MultiDur Alu

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Spring element 5 x 56	103090	
Spring element 5 x 76.2	103123	
Stop screw	538560	
Compression spring 20 x 10 x 25, red	362900	
Compression spring 20 x 10 x 25, blue	362901	
Compression spring 10 x 5 x 25, red	362902	

Slitting tool 8 x 40 (thicker sheet metal)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	4.0 - 6.0 mm (depending on punching force of machine)

Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Punching thicker sheets	see p. 169
Order forms	see p. 175

Description and application
Reinforced version of the tool for cutting thick sheets

Your benefits at a glance
- Ideal for sheet thicknesses over 3 mm due to the specially reinforced punch and die
- Punch version with roof shear to reduce punching force and noise
- Optional: Special coating increases service life

Item

Slitting punch

- Reinforced version with roof shear and MultiDur TiCN

Order no.	EUR
680648	

Separating die

- Reinforced version

Order no.	EUR
See table	

Stripper

- Standard version
- Dimensions: 9 x 41 mm

Order no.	EUR
699822	

Important ordering specifications
Machine, sheet thickness, material, punch version.

Die prices

Sheet thickness s in mm	Order no.	EUR
4.0	728956	
5.0	728967	
6.0	728981	

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Alignment ring for reinforced punch	201519	

MultiShear

Description and application
The innovative TRUMPF slitting tool for flawless edge quality

Your benefits at a glance
- Outstanding edge quality without nibble marks due to patented cutting technology
- Special coating on cutting blades results in long service life
- Low-scratch production thanks to dies with brush inserts
- Stepped stripper for cutting close to formed sections, available as an option

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiShear
Sheet thickness s	0.5 - 3.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Item

Complete tool

Order no.	EUR
699362	

Punch

- Dimensions: 5 x 76.2 mm
- Optional: Longer service life with coating

Order no.	EUR
699363	

Die

- With brush inserts for low-scratch processing

Order no.	EUR
699364	

Stripper

Order no.	EUR
699366	

Important ordering specifications
Machine, sheet thickness, material, dimensions, options if required. The "MultiShear" machine option is a prerequisite.

Cutting blade for die

One-part

	Sheet thickness s (in mm)	Order no.	EUR
	0.5 / 1.0 / 1.5	699365	

Two-part

	Sheet thickness s (in mm)	Order no.	
	2.0 / 2.5 / 3.0	699365	

Punch options

Coating

MultiDur TiCN

Stripper options

Stepped stripper

Order no.	EUR
1475487	

Accessories and single parts

Item

Designation	Order no.	EUR
Adjustment key with countersunk screw	1585069	
Cheese-head screw M4x22	014451	
Cheese-head screw M4x25	014460	
Cheese-head screw M3x8	014346	
Adjustment key	1062170	
Brush insert	519626	
Shim 0.3 mm	519637	
Shim 0.5 mm	519640	

MultiShear for trimming

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiShear
Sheet thickness s	0.5 - 3.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Description and application
The innovative slitting tool for flawless edge quality when trimming sheet metal blanks

Your benefits at a glance
- Outstanding trimming edges without nibble marks due to patented cutting technology
- Special coating on cutting blades results in long service life
- Low-scratch production thanks to dies with brush inserts

Item

Complete tool

Order no.	EUR
699384	

Punch

- Coated with MultiDur Performance
- Dimensions: 18 x 73 mm

Order no.	EUR
1641520	

Die

- With brush inserts for low-scratch processing

Order no.	EUR
699386	

Stripper

Order no.	EUR
1641497	

Important ordering specifications
Machine, sheet thickness, material. The "MultiShear" machine option is a prerequisite.

Cutting blade for die

One-part

	Sheet thickness s (in mm)	Order no.	EUR
	0.5 / 1.0 / 1.5	699387	

Two-part

	Sheet thickness s (in mm)	Order no.
	2.0 / 2.5 / 3.0	699387

Accessories and single parts

Item

Designation	Order no.	EUR
Adjustment key with countersunk screw	1585069	
Cheese-head screw M4x22	014451	
Cheese-head screw M4x25	014460	
Cheese-head screw M3x8	014346	
Adjustment key	1062170	
Brush field	1641462	
Shim 0.3 mm	1630968	
Shim 0.5 mm	1630969	

Ejector tool

Machine type	
TruMatic	1000, 3000, 6000, 7000
TC	240 L, 260 L, 600 L
Sheet thickness s	0.5 - 4.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Description and application
Fast, reliable removal of laser-cut small parts

Your benefits at a glance
- Fast, reliable removal of laser-cut small parts through the die using microjoint technology and a single stroke
- Removal of rectangular geometries up to 50.1 mm
- Removal of circular geometries up to 70.1 mm

Item

Complete ejector punch

Order no.	EUR
186419	

Ejector die, round

Order no.	EUR
537936	

Ejector die, square

Order no.	EUR
186469	

Accessories and single parts

Item

Designation	Order no.	EUR
1) Punch shank	186424	
2) Piercing punch, 3 mm	186426	
3) Piercing punch, 5 mm	186428	
4) Set screw M5x8	013846	

Ejector tool for sorting

Machine type	
TruMatic	1000
Required machine option	Small part ejection
Sheet thickness s	1.0 - 6.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Description and application
Reliable removal and sorting of small laser-cut parts

Your benefits at a glance
- Fast, reliable removal of small laser-cut parts using microjoint technology
- Good parts are sorted from scrap and removed through the part chute
- Removal of circular geometries up to 62 mm and rectangular geometries up to 45 mm
- Larger geometries can be removed through the part chute

Item

Complete tool

Order no.	EUR
See table	

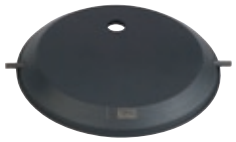
Complete punch

Order no.	EUR
See table	

Complete die

Order no.	EUR
2242957	

Stripper



Order no.	EUR
See table	

Prices

Complete tool

		Dimensions mm	Order no.	EUR
Round		(d) = 3.00	2242744	
		(d) = 8.00	2242743	
Square		(a) = 3.00	2242745	
		(a) = 8.00	2242746	
Rectangle		(a) x (b) = 2.00 x 8.00	2242747	

Complete punch

		Dimensions mm	Order no.	EUR
Round		(d) = 3.00	2242749	
		(d) = 8.00	2242748	
Square		(a) = 3.00	2242771	
		(a) = 8.00	2242750	
Rectangle		(a) x (b) = 2.00 x 8.00	2242772	

Stripper

		Dimensions mm	Order no.	EUR
Round		(d) = 4.00	2242802	
		(d) = 9.00	2242804	
Square		(a) = 4.00	2242759	
		(a) = 9.00	2242760	
Rectangle		(a) x (b) = 3.00 x 9.00	2242801	

Experience the **Ejector tool for sorting** in action:
www.trumpf.info/b6uo7f

Ejector MultiTool

Description and application
Reliable removal of small laser-cut parts with short tool change times

Your benefits at a glance
- Fast, reliable removal of small laser-cut parts using microjoint technology
- Circular and rectangular punch inserts enable the processing of different contours using just one tool
- Removal of circular geometries of up to 54 mm
- Removal of square contours of up to 46 mm
- Removal of rectangular contours of up to 62 x 25 mm

Machine type	
TruMatic	1000, 3000, 6000, 7000
TC	3000 L, 6000 L
Required machine option	MultiTool
Sheet thickness s	1.0 - 4.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Item

Complete punch

Order no.	EUR
1522306	

Die

Order no.	EUR
1494454	

Stripper

Order no.	EUR
1522720	

Important ordering specifications
Machine, sheet thickness, material. The "MultiTool" machine option is a prerequisite.

Inserts

Punch insert

		Dimensions mm	Order no.	EUR
Round		(d) = 3.00	1494450	
		(d) = 8.00	1494419	
Square		(a) = 3.00	1494452	
		(a) = 8.00	1494451	
Rectangle		(e) = 2.00 x 8.00	1494453	

Experience the **Ejector MultiTool** in action:
www.trumpf.info/gdk7si

Slitting tool size 5 for removing small parts

Machine type	
TruPunch	3000 (S11), 5000 (S10)
TruMatic	6000 (K05), 7000 (K02)
Required machine option	Active die or descending die
Sheet thickness s	0.5 - 3.0 mm
Useful information	
Dimensions and regrinding	see p. 130
Cutting clearance	see p. 142
Tool life	see p. 146
Tool maintenance and setup	see p. 148
Low-scratch/scratch-free processing	see p. 153
Edge quality	see p. 157
Cutting close to formed sections	see p. 161
Reliable removal	see p. 162
Order forms	see p. 175

Description and application
The slitting tool from TRUMPF for reliable removal of small parts

Your benefits at a glance
- The tool can be used for conventional separating cuts and for removing small parts
- No need to sort good parts from scrap because parts are removed through the part chute
- Reduced processing times since push-out process is not required
- Maximum process reliability through monitoring of the part removal process

Item

Complete tool

Order no.	EUR
On request	

Punch

Order no.	EUR
On request	

Die

Order no.	EUR
On request	

Stripper

Order no.	EUR
On request	

Important ordering specifications
Machine, sheet thickness, material. The "Active die" or "Descending die" machine option is a prerequisite.

Accessories and single parts

Item

Designation	Order no.	EUR
Tool cartridge size 5	1500495	
Adapter (for stripper)	1633067	

Experience the **slitting tool size 5 for removing small parts** in action:
www.trumpf.info/5wmjgs

Film slitting tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Engraving
Sheet thickness s	0.5 - 8.0 mm
Max. film thickness	0.15 mm
Useful information	
Tool maintenance and setup	see p. 148

Description and application
The tool (patent pending) cuts protective films on sheet metal on the machine

Your benefits at a glance
- Flawless cutting without damaging the sheet metal, due to the spring-loaded punch
- Long service life due to wear-resistant ball tip
- Large spring range in the tool provides flexibility in the cutting of different film thicknesses
- Easy film detachment with programming support in TruTops: Automatic integration of the peeling contour based on a sequence of pointed tips on the film slitting contour

Item

Complete tool	Punch	Die	Stripper
			
			■ Round 20.0 mm
Order no. / EUR	Order no. / EUR	Order no. / EUR	Order no. / EUR
1360352	1360350	1482571	159496

Important ordering specifications
Machine, order no., the "engraving" machine option is a prerequisite.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Ball tip	1668396	
Modification kit	1668776	

Forming:

Punching in three dimensions

Forming with TRUMPF tools.

Our tools enable you to not only punch holes, but to form sheet metal plastically, that is, permanently. TRUMPF tools, therefore, allow you to reliably perform the entire spectrum of processing operations on one machine.

In addition to standard forming, there are many other possibilities. The application examples at the end of this chapter are only a small sample of what is possible. There are no limits to your ideas.

The size 5 tools allow for longer and higher sections to be formed in one single stroke. Extra-large forms are also possible without the "active die" option.

From A-Z: From alignment tools to Z-bending tools, we have everything you need for your components. For example, our deburring tools ensure that burr-free parts come out of punching and punch laser machines. The resulting outstanding part quality eliminates the need for manual finishing in a separate work cycle.

Forming

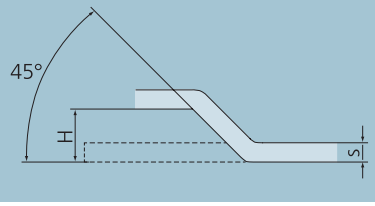
Stepping tool

Description and application
Tool for producing any form length in nibbling mode

Your benefits at a glance
- Can be used to create both straight and curved forms of any length
- Cost-effective tool due to its simple construction
- Reduced cost because the entire process is completed on one machine

Application examples
For the stiffening of sheet metal, sheet metal facades, e.g. in housing construction. Also well suited for circular raised sections that cannot be produced with a bending machine.

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 3.0 mm
Folding height H	1.0 - 5.0 mm
Angle α	45°
Useful information	
Tool maintenance and setup	see p. 148
Cutting close to formed sections	see p. 161
Particularly high/large formed sections	see p. 165
Request form – Stepping tool	see p. 178



Item

Complete tool

Order no.	EUR
699200	

Punch

Order no.	EUR
699201	

Die

Order no.	EUR
699202	

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Step height and permissible sheet thickness

Step height H (in mm)	Permissible sheet thickness s (in mm)
1.0	1.0
1.5	1.0 - 1.5
2.0	1.0 - 2.0
2.5	1.0 - 2.5
3.0	1.0 - 3.0
4.0	1.0 - 3.0
5.0	1.0 - 3.0

Important ordering information
Stepping tools are always designed for a specific sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

Roller offsetting tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Roller technology
Sheet thickness s	
Aluminum	0.8 - 1.5 mm
Steel	0.8 - 2.0 mm
Stainless steel	0.8 - 1.5 mm
Travel speed	up to max. positioning speed
Minimum travel radius	25 mm
Folding height H	1.5 / 3.0 mm
Angle α	45°
Useful information	
Tool maintenance and setup	see p. 148
Request form – Stepping tool	see p. 178

Description and application
Tool for producing continuous forms using roller forming

Your benefits at a glance
- Roller technology allows for the highest processing speed
- Can be used to create both straight and curved forms of any length
- Outstanding part quality with no visible forming marks

Application examples
For the stiffening of sheet metal, sheet metal facades, e.g. in housing construction. Also well suited for circular raised sections that cannot be produced with a bending machine.

Item

Complete tool	Complete punch	Complete die
		
Order no. 699368	Order no. 699369	Order no. 699370
EUR	EUR	EUR

Important ordering specifications
Machine, sheet thickness, material, dimensions. The "roller technology" machine option is a prerequisite.

Spare rollers

Version	Designation/Sheet thickness s	Order no.	EUR
top	Cylindrical steel roller	699330	
	Back-tapered steel roller		
	Plastic roller		
bottom	s = 0.8 - 1.4 mm	699331	
	s = 1.5 - 2.5 mm		
	s = 2.6 - 4.0 mm		

Important ordering information
Roller offset tools are always designed for a specific sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

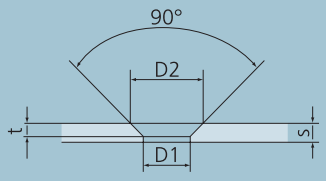
Countersink tool (upper side of the sheet)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 R, 240 L, 260 R, 260 L, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 4.0 mm
Useful information	
Tool maintenance and setup	see p. 148
Cutting close to formed sections	see p. 161
Countersinks for every requirement	see p. 167
Order forms	see p. 175

Description and application
Tool for non-cutting production of countersinks for screw and rivet heads

Your benefits at a glance
- Cost-effective solution for producing countersinks
- Many special geometries available on request

Application examples
Fastening technology, countersinks for screws and rivets.



Item

Complete tool

Order no.	EUR
699335	

Punch size 2

Order no.	EUR
699340	

Die size 1

Order no.	EUR
699337	

Important ordering specifications
Machine, sheet thickness, material, version, and dimensions of the countersink.

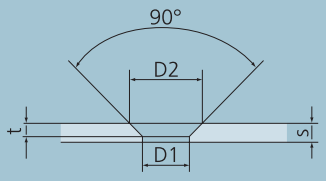
Countersink

Countersink shape A: Countersunk screws DIN EN ISO 2009 (“slotted”) and DIN EN ISO 7046-1 (“cross recess”)			Countersink shape F: Hexagon socket countersunk head screws DIN EN ISO 10642		
A	**D2**	**Permissible sheet thickness s (in mm)**	**F**	**D2**	**Permissible sheet thickness s (in mm)**
2.5	5.9	1.0 - 3.0	-	-	-
3	6.7	1.0 - 3.0	3	7.1	1.0 - 3.0
4	8.8	1.5 - 3.0	4	9.4	1.5 - 3.0
5	10.6	1.5 - 4.0	5	11.7	1.5 - 4.0
6	12.7	2.0 - 4.0	6	14	2.0 - 4.0
8	16.7	2.0 - 4.0	8	18.5	2.0 - 4.0

Important ordering information
Countersink tools are always designed for a specific sheet thickness. The countersink depth t is no more than 75% of the sheet thickness. It may be necessary to replace the punch and the die when changing the countersink. Other dimensions on request. Please use our order forms in the appendix.

Countersink tool with integrated presser foot (upper side of the sheet)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 4.0 mm
Useful information	
Tool maintenance and setup	see p. 148
Cutting close to formed sections	see p. 161
Countersinks for every requirement	see p. 167
Request form – Countersink tool with integrated presser foot	see p. 180



Description and application
Tool for non-cutting production of countersinks for screw and rivet heads

Your benefits at a glance
- Outstanding process quality with the integrated presser foot
- Interchangeable components make the tool extremely versatile
- Many special geometries available on request

Application examples
Fastening technology, countersinks for screws and rivets.

Item

Complete tool	Punch	Die	Punch insert
			
Order no. / EUR	Order no. / EUR	Order no. / EUR	Order no. / EUR
699335	699336	699337	699338

Important ordering specifications
Machine, sheet thickness, material, version, and dimensions of the countersink.

Countersink

Countersink shape A: Countersunk screws DIN EN ISO 2009 (“slotted”) and DIN EN ISO 7046-1 (“cross recess”)			Countersink shape F: Hexagon socket countersunk head screws DIN EN ISO 10642		
A	**D2**	**Permissible sheet thickness s (in mm)**	**F**	**D2**	**Permissible sheet thickness s (in mm)**
2.5	5.9	1.0 - 3.0	-	-	-
3	6.7	1.0 - 3.0	3	7.1	1.0 - 3.0
4	8.8	1.5 - 3.0	4	9.4	1.5 - 3.0
5	10.6	1.5 - 4.0	5	11.7	1.5 - 4.0
6	12.7	2.0 - 4.0	6	14	2.0 - 4.0
8	16.7	2.0 - 4.0	8	18.5	2.0 - 4.0

Important ordering information
Countersink tools are always designed for a specific sheet thickness. The countersink depth t is no more than 75% of the sheet thickness. When the countersink is changed, the punch insert, presser foot, and die must also be replaced. Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Presser foot	699339	
Spring element	152545	

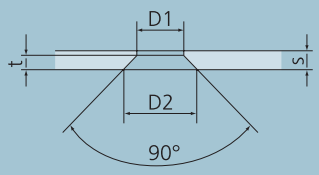
Countersink tool with integrated presser foot (underside of the sheet)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 4.0 mm
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Countersinks for every requirement	see p. 167
Request form – Countersink tool with integrated presser foot	see p. 180

Description and application
Tool for non-cutting production of countersinks for screw and rivet heads

Your benefits at a glance
- Outstanding process quality with the integrated presser foot
- Interchangeable components make the tool extremely versatile
- Many special geometries available on request

Application examples
Fastening technology, countersinks for screws and rivets.



Item

Complete tool	Punch	Die	Die insert
			
Order no. 699916 EUR	Order no. 699917 EUR	Order no. 699918 EUR	Order no. 699919 EUR

Important ordering specifications
Machine, sheet thickness, material, version, and dimensions of the countersink.

Countersink

Countersink shape A: Countersunk screws DIN EN ISO 2009 (“slotted”) and DIN EN ISO 7046-1 (“cross recess”)			Countersink shape F: Hexagon socket countersunk head screws DIN EN ISO 10642		
A	**D2**	**Permissible sheet thickness s (in mm)**	**F**	**D2**	**Permissible sheet thickness s (in mm)**
2.5	5.9	1.0 - 3.0	-	-	-
3	6.7	1.0 - 3.0	3	7.1	1.0 - 3.0
4	8.8	1.5 - 3.0	4	9.4	1.5 - 3.0
5	10.6	1.5 - 4.0	5	11.7	1.5 - 4.0
6	12.7	2.0 - 4.0	6	14	2.0 - 4.0
8	16.7	2.0 - 4.0	8	18.5	2.0 - 4.0

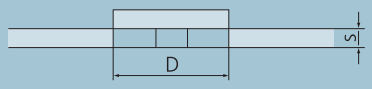
Important ordering information
Countersink tools are always designed for a specific sheet thickness. The countersink depth t is no more than 75% of the sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Die ejector	699920	
Spring element	152745	

Knock-out tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 2.0 mm
Diameter D	15 - 45 mm
Number of tabs	2
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Cutting close to formed sections	see p. 161
Request form – Knock-out tool	see p. 181



Description and application
Connects punching slugs to the sheet by two tabs, which can be snapped off if required

Your benefits at a glance
- Tool for round or other geometries
- Available in versions to knock out upward or downward
- Available as a tool for multiple knock-outs

Application examples
Switch cabinet construction, housing construction, cable bushings.

Item

Complete tool

Order no.	EUR
699293	

Punch

Order no.	EUR
699294	

Die

Order no.	EUR
699295	

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
Knock-out tools are always designed for a specific sheet thickness. Please use our order forms in the appendix for your request.

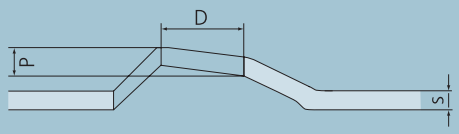
Thread punch tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.8 - 1.5 mm
Useful information	
Tool maintenance and setup	see p. 148
Cutting close to formed sections	see p. 161
Request form – Thread punch tool	see p. 182

Description and application
Tool for the production of formed threads

Your benefits at a glance
- Cost-effective joining technology for thin sheet metal
- Formed sections are produced in just two work cycles: Pre-punching and forming
- Available for sheet metal screws in accordance with DIN or for special dimensions

Application examples
Joining of metal sheets using a sheet metal screw.



Item

Complete tool		Punch		Die		Die insert	
							
Order no.	EUR	Order no.	EUR	Order no.	EUR	Order no.	EUR
699933		699934		699936		699937	

Important ordering specifications
Machine, sheet thickness, material, dimensions, and tool version (punching upward or downward).

Thread and pitch

Thread D	Pitch P	Sheet thickness s (in mm)
3.3 / 3.5	1.3	0.8 - 1.2
3.9	1.4	0.9 - 1.3
4.2	1.4	0.9 - 1.3
4.8	1.6	1.0 - 1.5

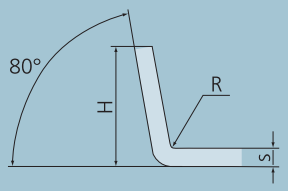
Important ordering information
Thread punch tools are always designed for a specific sheet thickness. Screws with metric threads cannot be used for screw fittings. Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Punch (without alignment ring)	699935	
Spring element for punching upward	609712	
Spring element for punching downward	609720	
Spring element for die	105732	

Flanging tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 2.5 mm
Flange height H	max. 7.0 mm
Useful information	
Tool maintenance and setup	see p. 148
Cutting close to formed sections	see p. 161
Particularly high/large formed sections	see p. 165
Request form – Flanging tool	see p. 183



Description and application
Tool for producing any flange length in nibbling mode

Your benefits at a glance
- Can be used to create both straight and curved flanges of any length
- Cost-effective tool due to its simple construction
- Reduced cost because the entire process is completed on one machine
- High level of geometry flexibility thanks to continuous processing

Application examples
Large extrusions, countersinks, weld flanges, and for the reinforcement of sheet edges in nibbling mode.

Item

Complete tool	Punch	Die
		
Order no. 699203	Order no. 699204	Order no. 699205
EUR	EUR	EUR

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
Flanging tools are always designed for a specific sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

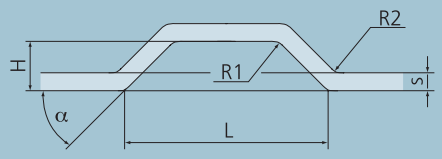
Bridge tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.8 - 2.5 mm
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165
Request form – Bridge tool	see p. 184

Description and application
Tool for cutting and forming bridges

Your benefits at a glance
- Increased processing speed since punching and forming operations are performed in a single stroke
- Broad product range e.g. double bridges
- Tool is self-stripping and has interchangeable wear parts

Application examples
Plug-in units, ventilation slots, spacers, card holders, and cable guides. Can also be used to join sheets together on the front side using sheet metal screws.



Item

Complete tool	Punch	Die
		
Order no. / EUR	Order no. / EUR	Order no. / EUR
On request	On request	On request

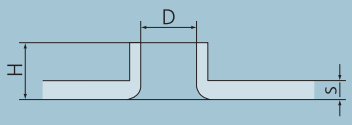
Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
Bridge tools are always designed for a specific sheet thickness. Please use our order forms in the appendix for your request.

Extrusion tool (upward)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 3.0 mm
Forming height H	2 x sheet thickness s, max. 5.0 mm
Thread sizes for tapping	M2.5 - M10

Useful information	
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165
Request form – Extrusion tool	see p. 185



Description and application
Tool for producing extrusions

Your benefits at a glance
- Tool for preparing tapping in thin sheets
- Available in a range of standard sizes
- Coated die insert has long service life and high process reliability
- Adapted to the original tapping tool from TRUMPF

Application examples
Extruded holes as an alternative to press-in elements, cable guides, nonslip structure, or fasteners. Guides for small tubes, e.g. heat exchangers.

Item

Complete tool	Punch	Die	Die insert
			
Order no. 699921 EUR	Order no. 699922 EUR	Order no. 699923 EUR	Order no. 699925 EUR

Important ordering specifications
Machine, sheet thickness, material, diameter D, application (thread forming or thread cutting in accordance with DIN 7952).

Extrusion and thread size

Size	Possible sheet thicknesses s (in mm) for thread forming	Extrusion diameter D for thread forming	Possible sheet thicknesses s (in mm) for thread cutting	Extrusion diameter D for thread cutting
M2.5	1.0 / 1.5	2.30	1.0 - 1.5	2.10
M3	1.0 / 1.5 / 2.0	2.80	1.0 - 1.5	2.55
M4	1.0 / 1.5 / 2.0 /2.5	3.70	1.0 - 2.0	3.35
M5	1.0 / 1.5 / 2.0 / 2.5 / 3.0	4.65	1.0 - 2.0	4.25
M6	1.0 / 1.5 / 2.0 / 2.5 / 3.0	5.55	1.5 - 2.5	5.10
M8	1.5 / 2.0 / 2.5 /3.0	7.40	2.0 - 2.5	6.80
M10	1.5 / 2.0 / 2.5 /3.0	9.30	2.0 - 2.5	8.50

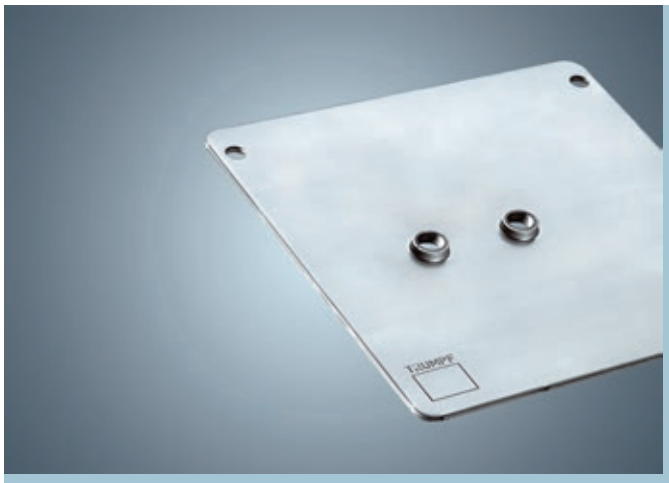
Important ordering information
Extrusion tools are always designed for a specific sheet thickness. A special die is required for thread size M10. Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Single extrusion punch	699924	
Spring element for punch M2.5 - M8	157289	
Spring element for punch M10	157295	
Spring element for die	729576	

Item		
Designation	**Order no.**	**EUR**
Die ejector	699926	
Die ejector, close-contacting		
Ejector with Ampco alloy for die		
Ejector with Ampco alloy for die, close-fit		

Extrusion tool (downward)



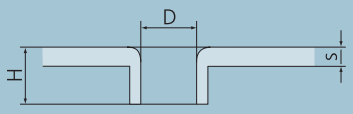
Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.8 - 2.0 mm
Forming height H	max. 2 x sheet thickness s
Thread sizes for tapping	M2.5 - M6

Useful information	
Tool maintenance and setup	see p. 148
Request form – Extrusion tool	see p. 185

Description and application
Tool for producing extrusions

Your benefits at a glance
- Tool for preparing tapping in thin sheets
- Available in a range of standard sizes
- Coated punch insert has long service life and high process reliability
- Adapted to the original tapping tool from TRUMPF

Application examples
Extruded holes as an alternative to press-in elements, cable guides, nonslip structure, or fasteners. Guides for small tubes, e.g. heat exchangers.



Item

Complete tool		Punch		Die		Single extrusion punch	
							
Order no.	EUR	Order no.	EUR	Order no.	EUR	Order no.	EUR
699206		699207		699208		699209	

Important ordering specifications
Machine, sheet thickness, material, diameter D, application (thread forming or thread cutting in accordance with DIN 7952).

Extrusion and thread size

Size	Possible sheet thicknesses s (in mm) for thread forming	Extrusion diameter D for thread forming	Possible sheet thicknesses s (in mm) for thread cutting	Extrusion diameter D for thread cutting
M2.5	1.0 / 1.5	2.30	0.8 - 1.5	2.10
M3	1.0 / 1.5 / 2.0	2.80	0.8 - 1.5	2.55
M4	1.0 / 1.5 / 2.0	3.70	1.0 - 2.0	3.35
M5	1.0 / 1.5 / 2.0	4.65	1.0 - 2.0	4.25
M6	1.0 / 1.5 / 2.0	5.55	1.0 - 2.0	5.10

Important ordering information
Extrusion tools are always designed for a specific sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Guide bushing	699210	
Drawing die, single	699211	
Ejector	699212	
Spring element for punch (hollow spring element)	093928	
Spring element for die	094107	

Deburring MultiTool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	0.8 - 2.5 mm
Deburring geometries	
Smallest corner radius	0.2 mm
Smallest diameter	5.0 mm
Cut on both sides	5.0 mm
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Order forms	see p. 175

Description and application
Patent pending tool technology for deburring small inner contours

Your benefits at a glance
- Shorter production times because the entire process is completed on one machine
- Die inserts are adjusted to the sheet thickness, to ensure burrs are neatly flattened
- Wide range of deburring geometries increases flexibility

Application examples
Safe edges for subsequent assembly.

Item

Complete tool

Order no. 699348 — EUR

Punch

Order no. 699349 — EUR

Die

- Includes die inserts

Order no. 699350 — EUR

Thrust piece

- Steel: All materials between 0.8 - 2.5 mm, particularly film-coated sheet metal
- Plastic: Sheets between 1.0 - 2.5 mm processed without imprints

Order no. 699351 — EUR

Important ordering specifications
Machine, sheet thickness, material, type of thrust piece. The "MultiTool" machine option is a prerequisite.

Die insert

- Triangle for inner contours with angle ≥ 45°< 90°
- Square designed for cutting with MultiShear or slitting tool
- Round for bore holes ≥ 5 mm and oblong

	Shape	Sheet thickness s (mm)	Order no.	EUR
	Triangular	0.8 - 1.4	699352	
		1.5 - 2.5		
	Square	0.8 - 1.4		
		1.5 - 2.5		
	Round	0.8 - 1.4		
		1.5 - 2.5		

Roller deburring tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Roller technology
Sheet thickness s	0.8 - 4.0 mm
Deburring geometries	
Smallest diameter	40.0 mm
Cut on both sides	5.0 mm
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Order forms	see p. 175

Description and application
Patented tool technology for deburring punched contours

Your benefits at a glance
- Shorter production times because the entire process is completed on one machine
- Roller geometry is adjusted to the sheet thickness, to ensure burrs are neatly flattened
- Interchangeable rollers for every requirement

Application examples
Safe edges for subsequent assembly.

Item

Complete tool

Order no.	EUR
699327	

Complete punch

Order no.	EUR
699328	

Complete die

Order no.	EUR
699329	

Important ordering specifications
Machine, sheet thickness, material, roller variant. The "roller technology" machine option is a prerequisite.

Spare rollers

Version	Designation/Sheet thickness s	Order no.	EUR
top	Cylindrical steel roller	699330	
	Back-tapered steel roller		
	Plastic roller		
bottom	s = 0.8 - 1.4 mm	699331	
	s = 1.5 - 2.5 mm		
	s = 2.6 - 4.0 mm		

Experience the **roller deburring tool** in action:
www.trumpf.info/23clmq

Ball deburring tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Engraving
Sheet thickness s	1.0 - 6.0 mm
Deburring geometries	
Smallest corner radius	0.5 mm
Smallest diameter	3.0 mm
Cut on both sides	≥ Sheet thickness 3.0 mm
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Order forms	see p. 175

Description and application
Deburring different sized punch geometries directly on the machine

Your benefits at a glance
- Shorter production times because the entire process is completed on one machine
- High degree of flexibility based on deburring different sized and complex contours using just one tool
- The tapered punch head permits deburring close to formed sections

Application examples
Safe edges for subsequent assembly.

Item

Complete tool

Order no.	EUR
1844745	

Complete punch

Order no.	EUR
1844746	

Complete die

Order no.	EUR
1844747	

Important ordering specifications
Machine, sheet thickness, material. The "engraving" machine option is a prerequisite.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Ball roller	1840068	
Set screw	74438	

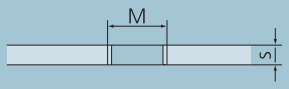
Tapping tool

Description and application
The reliable TRUMPF tool for non-cutting thread production on a punching machine

Your benefits at a glance
- Reduced cost because the entire process is completed on one machine
- High strength due to strain hardening of the material
- Can be used for a variety of thread dimensions
- Many thread options are available for a diverse range of requirements

Application examples
The fastening of sheet metal components using metric screws.

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 R, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Tapping
Sheet thickness s (tapping in a level sheet)	
M2.5 - M5	1.5 - 5.0 mm
M6 - M10	3.0 - 8.0 mm
Metric threads	
Type I	M2; M2.5; M3; M3.5; M4; M5
Type II	M6; M8; M10
Useful information	
Tool maintenance and setup	see p. 148
Order forms	see p. 175



Item

Complete tool

- Includes die for upward extrusions
- A special die is required for thread size M10

Order no.	EUR
699214	

Tapping module

Order no.	EUR
699216	

Forming tap 6HX

- Standard tolerance 6HX
- Price for thread size M2 and M10 on request

Order no.	EUR
699217	

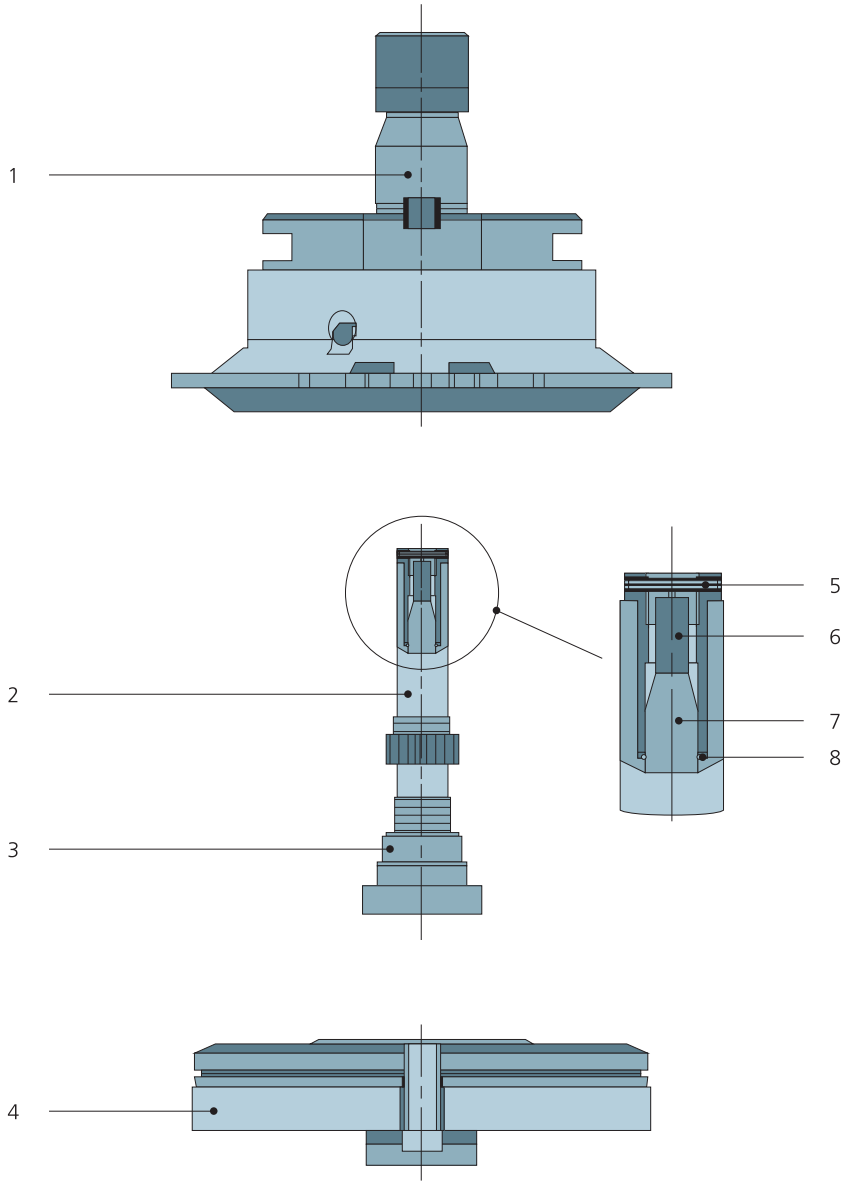
Important ordering specifications
Machine, sheet thickness, material, thread size. The "tapping" machine option is a prerequisite.

Important ordering information
The standard version for tapping has it to a tolerance of 6HX. This is also available to tolerances of 6G, 6E, 7G, and in inches on request. A special die is required for thread size M10.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Tapping die for upward extrusions	699220	
Tapping die for upward and downward extrusions (only up to thread size M8)	699220	
Tapping die for M10	171311	
Special cartridge for TC 240 R, TC 260 R	201781	

Tapping tool



Accessories and single parts

	Item			
	Designation	Pieces	Order no.	EUR
1)	Punch	1	699215	
2)	Lead screw (metric thread)	1	699218	
3)	Spindle nut	1	699219	
4)	Die	1	699220	
5)	Clamping pin	1	111352	
6)	Spring element	1	169337	
7)	Forming tap	1	699217	
8)	Spring ring	1	111353	

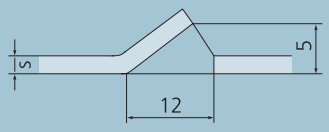
Louver tool (single louvers)

Description and application
Tool for producing ventilation louvers in a single stroke

Your benefits at a glance
- Outstanding form quality because cutting and forming are performed in a single stroke
- Can be used for a variety of sheet thicknesses with the revolving punch cutting blades
- Interchangeable die inserts make the tool economical

Application examples
Interchangeable die inserts make the tool economical

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.8 - 2.5 mm
Dimensions (L x W x H)	60 x 12 x 5 mm
Useful information	
Punching tool accessories	see p. 114
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165
Request form – Louver tool (single louvers)	see p. 186



Item

Complete tool	Punch	Die	Louver insert for die
			
Order no. 699222	Order no. 699223	Order no. 699224	Order no. 93951
EUR	EUR	EUR	EUR

Important ordering specifications
Machine, sheet thickness, material.

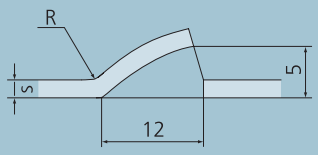
Important ordering information
Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Cutting blade for punch	093948	
Spring element for punch	093950	
Spring element for die (4 required)	093952	

Louver tool (continuous louvers)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.8 - 3.0 mm
Dimensions (W x H)	12 x 5 mm
Useful information	
Punching tool accessories	see p. 114
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Request form – Louver tool (continuous louvers)	see p. 187



Description and application
Tool for producing ventilation louvers, with variable lengths, using nibbling mode

Your benefits at a glance
- Louvers of any length can be produced using continuous operation
- Cost-effective tool due to its simple construction
- Interchangeable die inserts make the tool economical

Application examples
Ventilation technology, switch cabinet construction, chiller construction, covers for electrical devices.

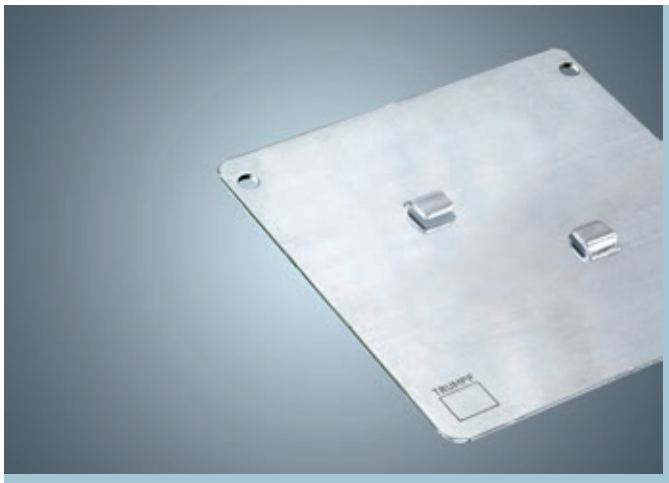
Item

Complete tool	Punch	Die	Louver cutting insert for die
			
Order no. 699229 EUR	Order no. 699230 EUR	Order no. 699231 EUR	Order no. 69539 EUR

Important ordering specifications
Machine, sheet thickness, material.

Important ordering information
Continuous louver cutting tools are always designed for a specific sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

Bracket tool

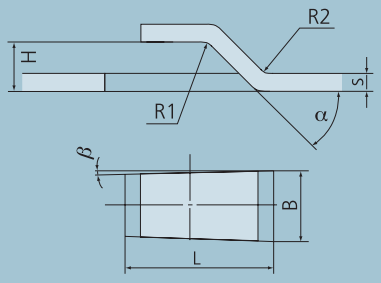


Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.5 - 2.5 mm
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Request form – Bracket tool	see p. 188

Description and application
Tool for cutting and forming brackets

Your benefits at a glance
- Brackets are created in a single stroke
- Interchangeable forming inserts make the tool economical
- Broad product range for every requirement

Application examples
Stops, card holders, cable clamps, connection technology, mounting built-in parts, fastening, and tool clamping.



Item

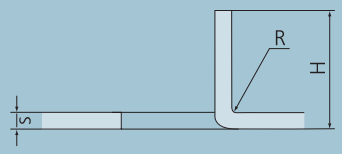
Complete tool	Punch	Die
		
Order no. / EUR	Order no. / EUR	Order no. / EUR
On request	On request	On request

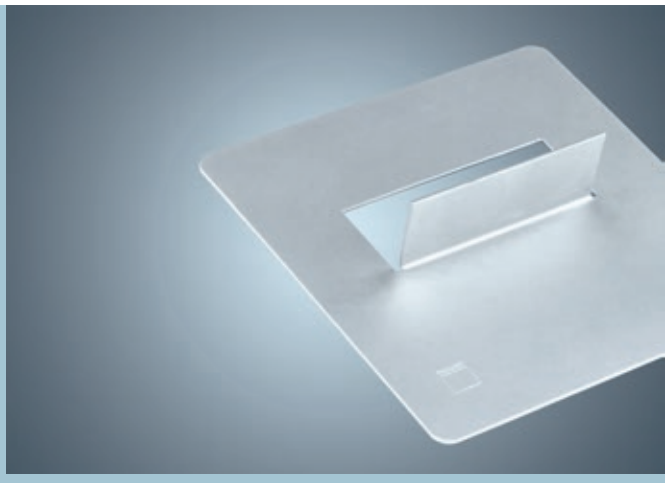
Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
Bracket tools are always designed for a specific sheet thickness. Please use our order forms in the appendix for your request.

MultiBend

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiBend
Sheet thickness s	1.0 - 2.0 mm
Bend lengths	One bend length: 55 mm
Bend height H	One bend height: 10 - 25 mm
Bending angle	up to 90° ± 1°
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Order forms	see p. 175





Description and application
Tool for producing 90° bends using a punching machine

Your benefits at a glance
- 90° bends in a variety of lengths up to 55 mm
- Reduced cost per part because entire process is completed on one machine
- Bends are produced without marks because a bending roller is used
- Also available with a reinforcing bead

Application examples
Complete processing of door locks and lock cases, production of small bends in large blanks or parts, complete processing of brackets.

Item

Complete tool

Order no.	EUR
699235	

Punch

- With bending bar

Order no.	EUR
699236	

Die

Order no.	EUR
699237	

Important ordering specifications
Machine, sheet thickness, material, dimensions. The "MultiBend" machine option is a prerequisite.

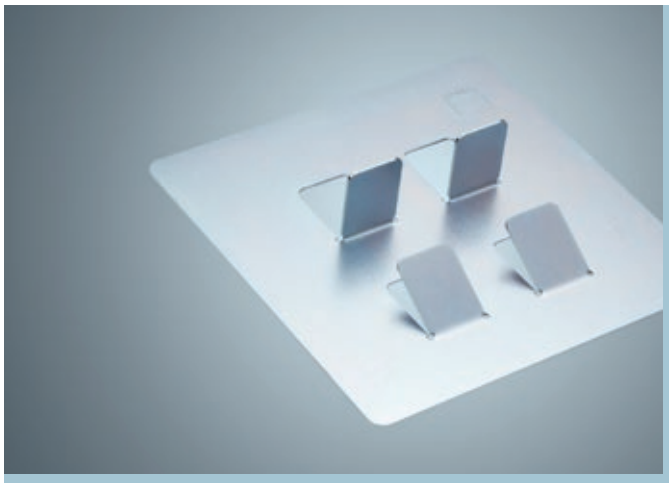
Important ordering information
There are two versions of bending rollers, one for sheets between 1.0 and 1.5 mm thick and one for sheets that are 2.0 mm thick. The size of the bending roller must be set to the corresponding size before the bending process begins. Price for MultiBend tool with a different bending length on request.

Accessories and single parts

Item

Designation	Order no.	EUR
Bending roller for die	699238	
Bending bar, single	699239	
Die ejector	688788	

MultiBend Extended



Description and application
Producing different bend lengths and heights in a single stroke

Your benefits at a glance
- Reduced cost per part because entire process is completed on one machine
- High degree of flexibility thanks to modular construction
- Reduced degree of material removal in the area of the brackets when processing on TruMatic machines

Application examples
Complete processing of door locks and lock cases, production of small bends in large blanks or parts, complete processing of brackets.

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiBend
Sheet thickness s	1.0 - 2.0 mm
Bend lengths	Multiple bend lengths: 10 - 90 mm
Bend height H	Multiple bend heights: 10 - 25 mm
Bending angle	up to 90°
Useful information	
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Order forms	see p. 175

Item

Complete tool

Order no.	EUR
See table	

Complete punch

Order no.	EUR
See table	

Complete die

Order no.	EUR
2035962	

Important ordering specifications
Machine, sheet thickness, material, dimensions. The "MultiBend" machine option is a prerequisite.

Important ordering information
Tool cartridge size 5 is required for use of the MultiBend Extended.

Prices

Complete tool

Sheet thickness s in mm	Order no.	EUR
1.0	2035983	
1.5	2036964	
2.0	2036965	

Complete punch

Sheet thickness s in mm	Order no.	EUR
1.0	2035942	
1.5	2036967	
2.0	2036969	

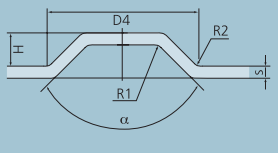
Accessories and single parts

Item

Designation	Order no.	EUR
Bending bar s = 1.0 mm	2035946	
Bending bar s = 1.5 mm	2036113	
Bending bar s = 2.0 mm	2036119	
Bending roller for die	2035982	
Compression spring D 8.0 L 25.0	341492	
Compression spring D 7.3 L 26.0	146087	
Clamping element (elastic)	2035945	
Adjustment key	63548	
Screw M3x8	14346	
Extension set, adjustment key and screw	1585069	
Locking screw	2035970	

Cup tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 3.0 mm
Height H	0.5 - 5.0 mm
Diameter D2	5.0 - 40.0 mm
Angle α	90° - 179°
Useful information	
Punching tool accessories	see p. 114
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165
Request form – Cup tool	see p. 189



Description and application
Tool for producing a cup form

Your benefits at a glance
- A wide range of forms and dimensions are available
- Produced specifically to your requirements
- Cost-effective tool due to its simple construction

Application examples
Spacers, checker plates, housing feet, reinforcements, screw countersinks, fluid outlets, asthetic design.

Item

Complete tool

Order no.	EUR
699991	

Punch

Order no.	EUR
699992	

Die

Order no.	EUR
699993	

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Prices

Article	Size	Diameter D4 (in mm)	Order no.	EUR
Complete tool			699991	
Punch	1	1.00 - 15.00	699992	
Die			699993	

Article	Size	Outer Circle (mm)	Order no.	EUR
Complete tool			699991	
Punch	2	15.01 - 48.00	699992	
Die			699993	

Important ordering information
Cup tools are always designed for a specific sheet thickness. Other dimensions on request. Please use our order forms in the appendix.

Roller pinching tool

Description and application
Tool for chamfering cut edges on TruMatic machines with a laser cut

Your benefits at a glance
- Laser-cut contours can be deburred directly on the machine
- Indentations can also be created as a predetermined bending point or for manual bending
- Extremely flexible due to the large number of available rollers

Application examples
Chamfering laser-cut edges, one-sided pinching to prepare for sharp-edged bending, part break line, preparation for bending by hand.

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Roller technology
Sheet thickness s	
Aluminum	0.8 - 2.5 mm
Steel	0.8 - 2.0 mm
Stainless steel	0.8 - 1.5 mm
Travel speed	up to max. positioning speed
Minimum travel radius	500 mm (chamfered laser edge: 15 mm)
Angle α	
Cutting	60°
Bending by hand	95°
Chamfered laser edge	120°
Useful information	
Tool maintenance and setup	see p. 148
Order forms	see p. 175

Item

Complete tool

Order no.	EUR
699376	

Complete punch

Order no.	EUR
699377	

Complete die

Order no.	EUR
699378	

Important ordering specifications
Machine, sheet thickness, material, angle α. The "roller technology" machine option is a prerequisite.

Spare rollers

Version	Designation/Sheet thickness s	Order no.	EUR
top	Cylindrical steel roller	699330	
	Back-tapered steel roller		
	Plastic roller		
bottom	s = 0.8 - 1.4 mm	699331	
	s = 1.5 - 2.5 mm		
	s = 2.6 - 4.0 mm		

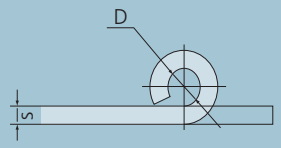
Application

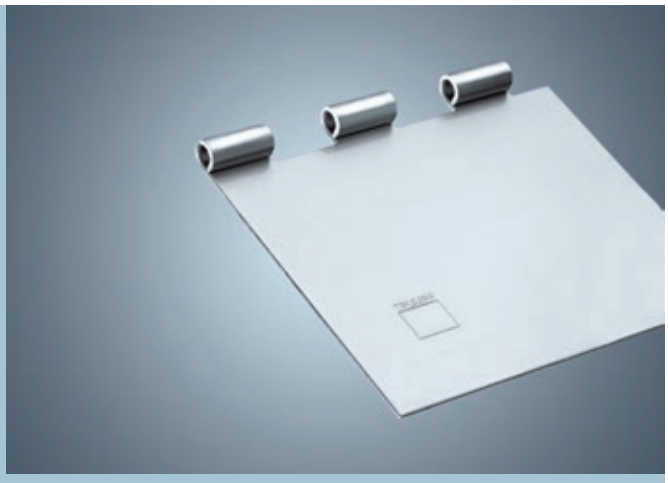
Application	Material	Sheet thickness s (in mm)	Note
Cutting	Steel, stainless steel	0.8 - 2.0	
	Aluminum	0.8 - 2.5	
Bending by hand	Steel, stainless steel	0.8 - 2.0	
	Aluminum	0.8 - 2.5	
Chamfered laser edge	Steel, stainless steel, aluminum	0.8 - 8.0	TruMatic 6000, 7000
	Steel, stainless steel, aluminum	0.8 - 4.4	TruMatic 1000, 3000

Experience the **roller pinching tool** in action:
www.trumpf.info/j6udxg

Hinge tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s and diameter D	
1.0 mm	4.0 / 5.0 / 6.0 mm
1.5 mm	5.0 / 6.0 mm
Useful information	
Tool maintenance and setup	see p. 148
Request form – Hinge tool	see p. 192





Description and application
Tool set for producing a hinge

Your benefits at a glance
- Workpieces, including the hinge, are produced using the punching machine
- Cost advantages because there is no need to purchase hinges, fixtures, or assembly services
- The tool can be used in a variety of ways on the component

Item

Complete tool

Order no.	EUR
699242	

Lever for tool 1

Order no.	EUR
699244	

Die insert for tool 1

Order no.	EUR
508747	

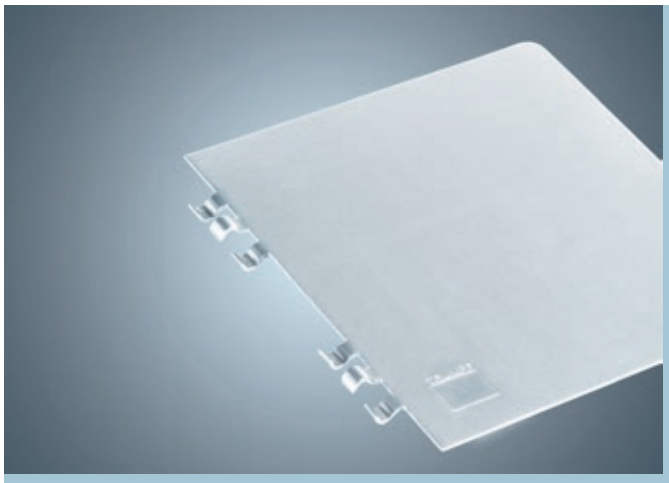
Spring element for tool 2

Order no.	EUR
508755	

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
A hinge is produced using two tools and four work steps. Hinge tools are always designed for a specific sheet thickness and a specific diameter. Other dimensions on request. Please use our order forms in the appendix.

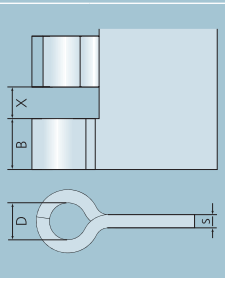
Hinge tool for multiple hinges



Description and application
Produces the upper and lower shell for hinges in a single stroke

Your benefits at a glance
- Considerable reduction in processing time because several formed sections are produced in a single stroke
- Saves a tool station on the machine
- Simple programming in TruTops

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 2.0 mm
Useful information	
Punching tool accessories	see p. 114
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165
Request form – Hinge tool for multiple hinges	see p. 193



Item

Complete tool

Order no.	EUR
On request	

Punch

Order no.	EUR
On request	

Die

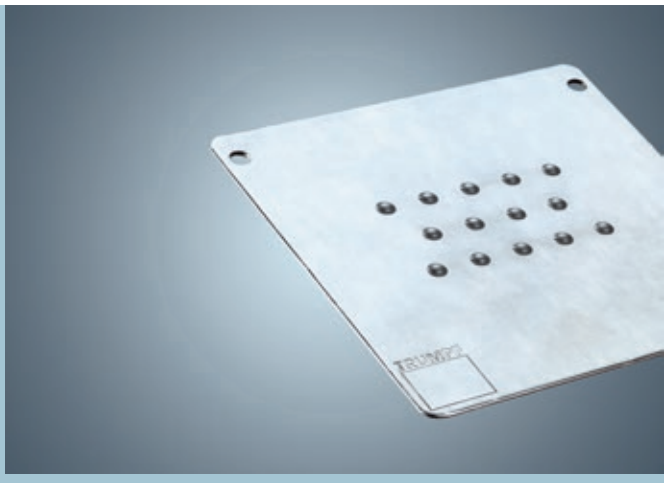
Order no.	EUR
On request	

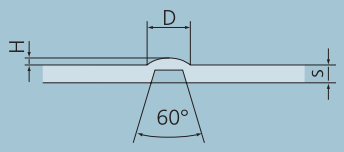
Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
Hinge tools for multiple hinges are always designed for a specific sheet thickness and a specific diameter. Please use our order forms in the appendix for your request.

Weld boss tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.63 - 3.2 mm
Useful information	
Tool maintenance and setup	see p. 148
Request form – Weld boss tool	see p. 195





Description and application
Tool for forming weld bosses

Your benefits at a glance
- Cost-effective weld preparation
- Forming complies with DIN 8519
- Interchangeable components make the tool extremely versatile

Application examples
For fastening spacers and as preparation for projection welding (in accordance with DIN 8519), design, nonslip structure.

Item

Complete tool	Punch	Die	Die insert
			
Order no. 699912 EUR	Order no. 699914 EUR	Order no. 699913 EUR	Order no. 699915 EUR

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Diameter and forming height

Diameter D (in mm)	Sheet thickness s (in mm)	Forming height H
2.5	0.63 - 1.00	0.63
3.2	0.63 - 1.60	0.80
4.0	1.00 - 2.50	1.00
5.0	1.60 - 2.50	1.25
6.3	2.50 - 3.20	1.60

Important ordering information
Weld boss tools are always designed for a specific sheet thickness range. Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Spring element for die	103469	

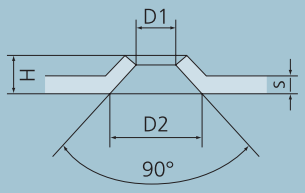
Countersink forming tool (upward)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.5 - 3.0 mm
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Request form – Countersink forming tool	see p. 194

Description and application
Tool for producing countersinks in accordance with DIN 74 and EN ISO 15065

Your benefits at a glance
- Available for different screw dimensions
- Large support area for the screw head even in thin sheet metal when the head is completely flush
- Interchangeable components make the tool extremely versatile

Application examples
Countersink for countersunk screws, nonslip structure, water outlets, non-skid protection, loading ramps.



Item

Complete tool	Punch	Die	Die insert
			
Order no. 699947 EUR	Order no. 699948 EUR	Order no. 699949 EUR	Order no. 699950 EUR

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Thread size and diameter

Thread size	Diameter D2 (in mm)
M2.5	5.9
M3	7.1
M4	9.4
M5	11.7
M6	14.0
M8	18.5
M10	23.0

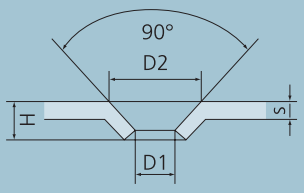
Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Spring element for die M2.5 - M6	105732	
Spring element for die M8 - M10	105733	

Important ordering information
Countersink forming tools are always designed for a specific sheet thickness and a specific countersink diameter. Other dimensions on request. Please use our order forms in the appendix.

Countersink forming tool (downward)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	0.5 - 2.5 mm
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Request form – Countersink forming tool	see p. 194



Description and application
Tool for producing countersinks in accordance with DIN 74 and EN ISO 15065

Your benefits at a glance
- Available for different screw dimensions
- Large support area for the screw head even in thin sheet metal when the head is completely flush
- Cutting and forming in a single stroke

Application examples
Countersink for countersunk screws, nonslip structure, water outlets, non-skid protection, loading ramps.

Item

Complete tool	Punch	Die	Spring element for punching
			
Order no. / EUR	Order no. / EUR	Order no. / EUR	Order no. / EUR
699251	699252	699253	157291

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Thread size and diameter

Thread size	Diameter D2 (in mm)
M2.5	5.9
M3	7.1
M4	9.4
M5	11.7
M6	14.0

Important ordering information
Countersink forming tools are always designed for a specific sheet thickness and a specific countersink diameter. Other dimensions on request. Please use our order forms in the appendix.

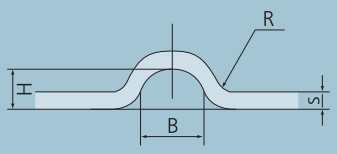
Beading tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 3.0 mm
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Request form – Beading tool	see p. 196

Description and application
Tool for producing continuous beads in nibbling mode

Your benefits at a glance
- Cost-effective tool due to its simple construction
- Reduced cost per part because the entire process is completed on one machine
- High level of geometry flexibility due to continuous operation mode
- Reduced material costs because thinner sheet metal can be used

Application examples
For the reinforcing of sheet metal, fluid or cable guides.



Item

Complete tool

Order no.	EUR
699256	

Punch

Order no.	EUR
699257	

Die

Order no.	EUR
699258	

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Prices

Complete tool

Size	Available dimensions H x W (in mm)	Order no.	EUR
1	2.0 x 4.0	699256	
	3.0 x 6.0		
2	3.0 x 6.0		
	4.0 x 8.0		
	5.0 x 10.0		

Punch

Size	Available dimensions H x W (in mm)	Order no.	EUR
1	2.0 x 4.0	699257	
	3.0 x 6.0		
2	3.0 x 6.0		
	4.0 x 8.0		
	5.0 x 10.0		

Die

Size	Available dimensions H x W (in mm)	Order no.	EUR
1	2.0 x 4.0	699258	
	3.0 x 6.0		
2	3.0 x 6.0		
	4.0 x 8.0		
	5.0 x 10.0		

Important ordering information
Beading tools are always designed for a specific sheet thickness and specific beading dimensions. Other dimensions on request. Please use our order forms in the appendix.

Roller beading tool

Machine type	
TruPunch	1000, 2020, 3000, 5000
TruMatic	3000, 6000, 7000
TC	1000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Roller technology
Sheet thickness s	
Aluminum	0.8 - 2.5 mm
Steel	0.8 - 2.0 mm
Stainless steel	0.8 - 1.5 mm
Travel speed	up to max. positioning speed
Minimum travel radius	20 mm
Dimensions (W x H)	
	5 x 2.5 mm
	6 x 3 mm
Useful information	
Tool maintenance and setup	see p. 148
Request form – Beading tool	see p. 196

Description and application
Tool for producing beads by roller forming

Your benefits at a glance
- Fast processing speed due to roller technology
- Roller processing results in outstanding part quality with no nibble marks
- Reduced material costs because thinner sheet metal can be used
- "Gradual plunging" option reduces approach marks

Application examples
For the reinforcing of sheet metal, fluid or cable guides.

Item

Complete tool

Order no.	EUR
699354	

Complete punch

Order no.	EUR
699355	

Complete die

Order no.	EUR
699356	

Important ordering specifications
Machine, sheet thickness, material, dimensions. The "roller technology" machine option is a prerequisite.

Spare rollers

Version	Designation/Sheet thickness s	Order no.	EUR
top	Cylindrical steel roller	699330	
	Back-tapered steel roller		
	Plastic roller		
bottom	s = 0.8 - 1.4 mm	699331	
	s = 1.5 - 2.5 mm		
	s = 2.6 - 4.0 mm		

Important ordering information
Roller beading tools are always designed for a specific sheet thickness and specific beading dimensions. Other dimensions on request. Please use our order forms in the appendix.

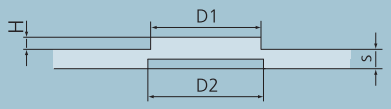
Center boss tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 3.0 mm
Forming height H	up to 0.5 x sheet thickness s
Useful information	
Punching tool accessories	see p. 114
Tool Data Import	see p. 145
Tool maintenance and setup	see p. 148
Request form – Center boss tool	see p. 197

Description and application
Tool for cutting and forming center bosses

Your benefits at a glance
- Cost-effective production of fastening points and stops
- Many special shapes available, in addition to round
- Highly flexible due to height-adjustable forming insert (up to max. 0.5 x sheet thickness s)

Application examples
For centering or producing spacers on components, nonslip structure, positioning aid for spot welding (fixture may be omitted).



Item

Complete tool	Punch	Die	Piercing punch for die
			
Order no. 699905 EUR	Order no. 699906 EUR	Order no. 699907 EUR	Order no. 699910 EUR

Important ordering specifications
Machine, sheet thickness, material, dimensions.

Important ordering information
Other dimensions on request. Please use our order forms in the appendix.

Inside diameter and outside diameter

Inside diameter D2 (in mm)	Outside diameter D1 (in mm)
2.0	1.9
3.0	2.9
4.0	3.9
5.0	4.9
6.0	5.9

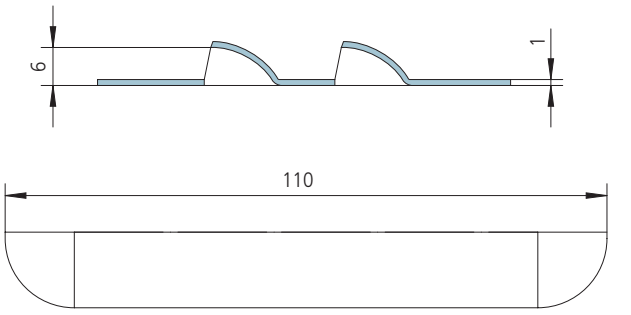
Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Single punch without spring element and alignment ring	699908	
Spring element for punch	157288	
Spring element for die	103469	

Size 5 tools

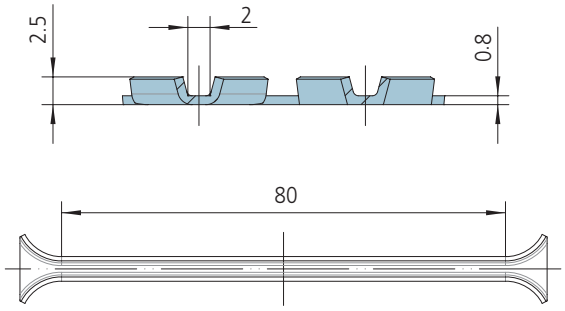
Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Useful information	
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165

Louver tool size 5



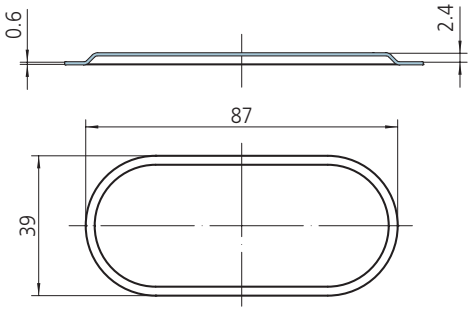
Order no.	EUR
On request	

Card guide tool size 5



Order no.	EUR
On request	

Cup tool oblong size 5



Order no.	EUR
On request	

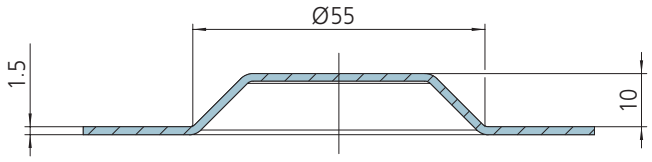
Important ordering specifications
Drawing in common CAD format (e.g. DXF), machine, sheet thickness, material

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Tool cartridge size 5	1500495	

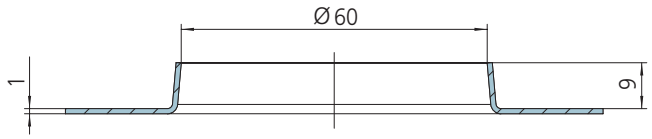
Tools for the active die

Machine type	
TruPunch	5000 (S10)
TruMatic	7000 (K02)
Required machine option	Active die
Useful information	
Tool maintenance and setup	see p. 148
Particularly high/large formed sections	see p. 165



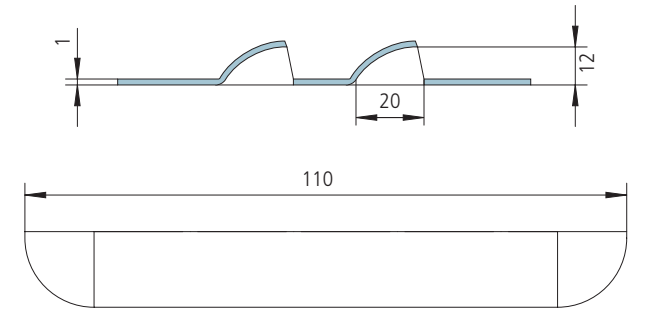
Order no.	EUR
On request	

Cup tool size 5 (active die)



Order no.	EUR
On request	

Extrusion tool size 5 (active die)



Order no.	EUR
On request	

Louver tool size 5 (active die)

Important ordering specifications
Drawing in popular CAD format (e.g. DXF), machine, sheet thickness, material. The "Active die" machine option is a prerequisite.

Accessories and single parts

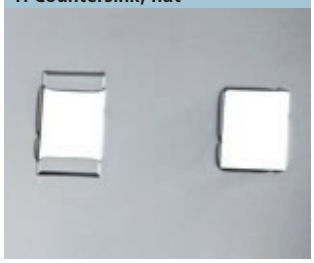
Item		
Designation	**Order no.**	**EUR**
Tool cartridge size 5	1500495	

Experience **tools for the active die** in action:
www.trumpf.info/8ycp4x

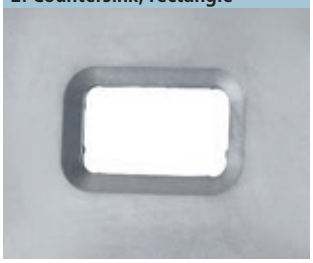
Application examples of forming

Countersinks

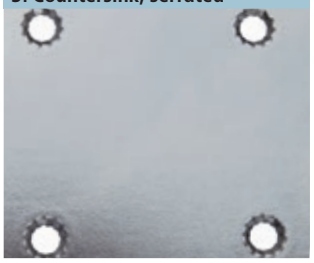
1. Countersink, flat



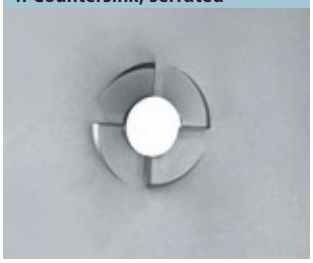
2. Countersink, rectangle



3. Countersink, serrated



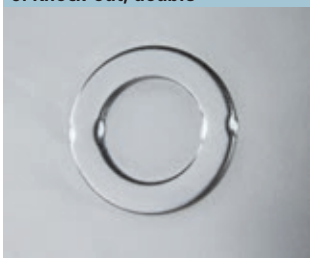
4. Countersink, serrated



Knock-outs

5. Knock-out, oblong

6. Knock-out, double

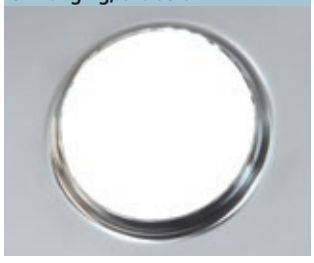


7. Knock-out, form

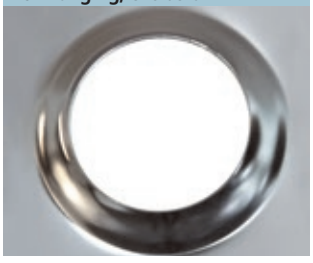
8. Knock-out, form

Flangings

9. Flanging, extrusion



10. Flanging, extrusion

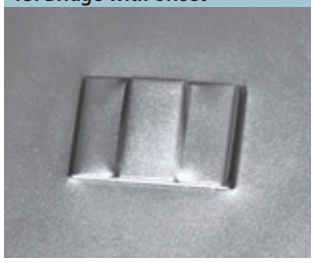


11. Flanging, edge

12. Flanging, form

Bridges

13. Bridge with offset

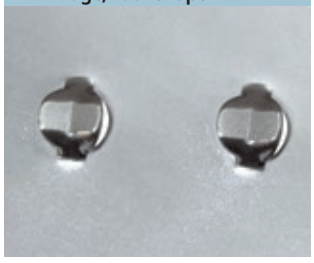


14. Bridge (thread)

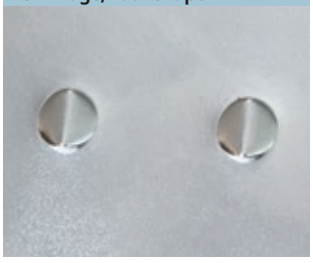
15. Bridge (hinge)

16. Bridge (bayonet lock)

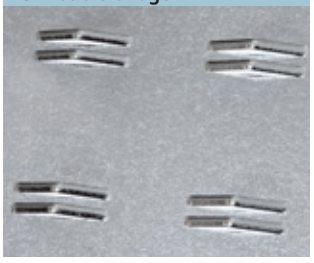
17. Bridge, roof shape



18. Bridge, roof shape



19. Double bridge



20. Bridge, roof shape

Application examples of forming

Card guides

21. Card guide

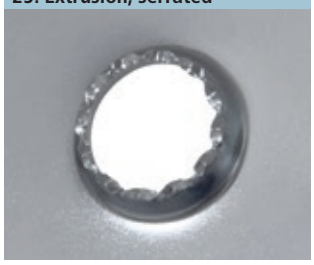
22. Card guide

Extrusions

23. Extrusion, form

24. Extrusion, keyhole

25. Extrusion, serrated



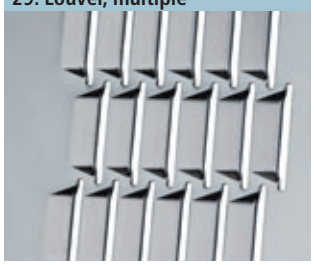
26. Extrusion (grip protection)

27. Extrusion, form

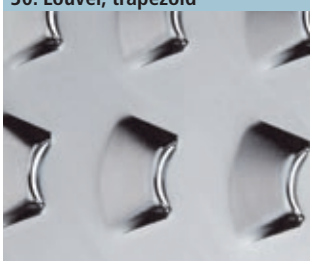
28. Extrusion, oblong

Louvers

29. Louver, multiple



30. Louver, trapezoid



31. Louver, rectangle

32. Louver, trapezoid

33. Louver, rectangle

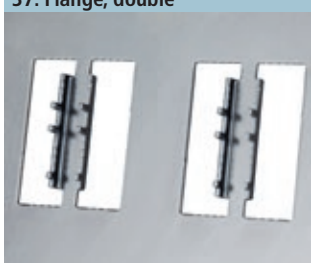
34. Louver, round

35. Louver, rectangle

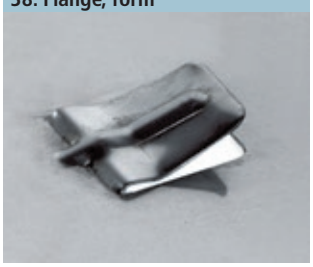
36. Louver, form

Flanges

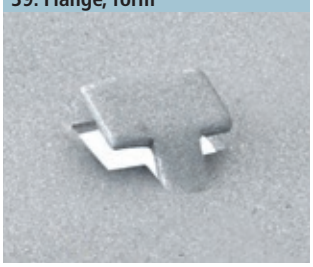
37. Flange, double



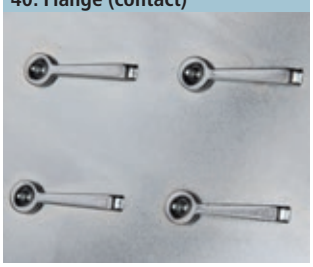
38. Flange, form



39. Flange, form



40. Flange (contact)



Application examples of forming

Flanges

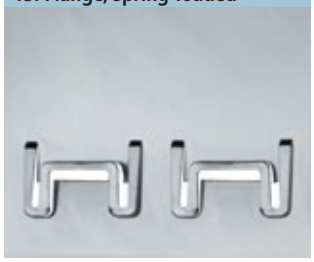
41. Flange, offset

42. Flange, wave form

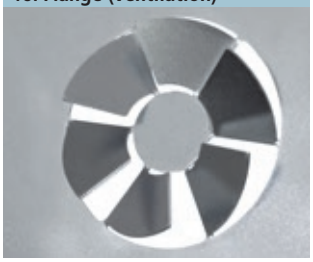
43. Flange, wave form

44. Flange, form

45. Flange, spring-loaded



46. Flange (ventilation)



47. Flange, oblong

48. Flange, wave form

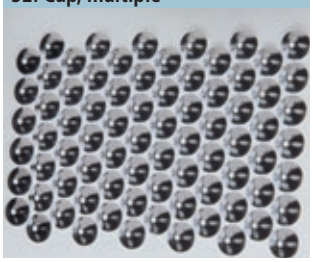
Cups

49. Cup, square

50. Cup with thread punch

51. Cup, funnel form

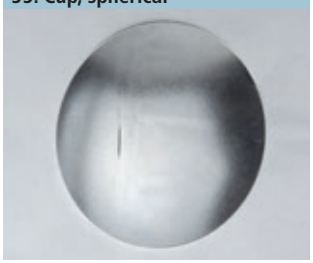
52. Cup, multiple



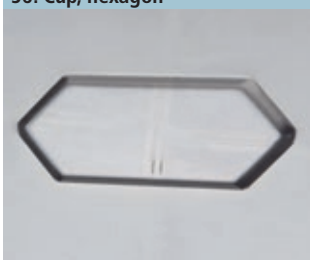
53. Cup, hexagon

54. Cup with holes

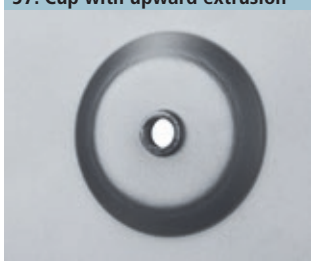
55. Cup, spherical



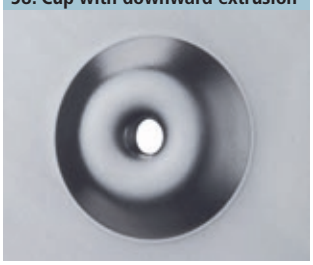
56. Cup, hexagon



57. Cup with upward extrusion

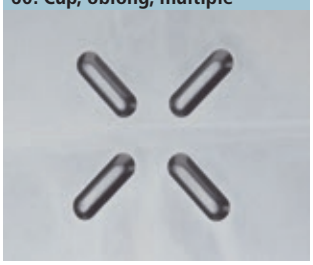


58. Cup with downward extrusion



59. Cup, hole

60. Cup, oblong, multiple

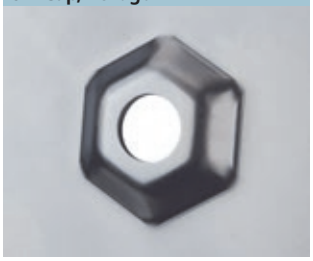


Application examples of forming

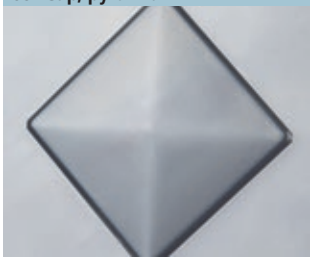
Cups

61. Cup, roof shape

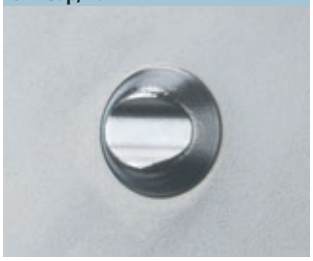
62. Cup, hexagon



63. Cup, pyramid

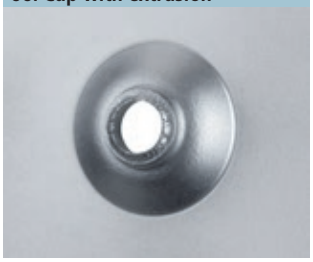


64. Cup, form



65. Cup, rectangle

66. Cup with extrusion

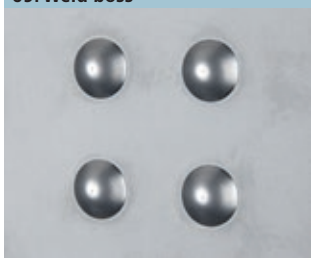


67. Cup, form

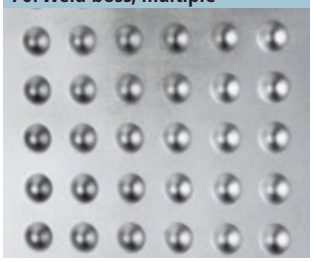
68. Cup, oblong

Weld bosses

69. Weld boss



70. Weld boss, multiple

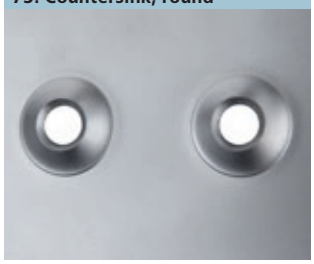


Countersinks

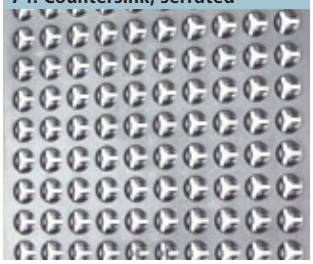
71. Countersink, teardrop

72. Countersink, nonslip structure

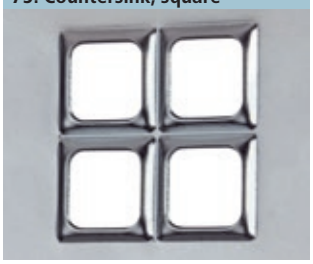
73. Countersink, round



74. Countersink, serrated



75. Countersink, square



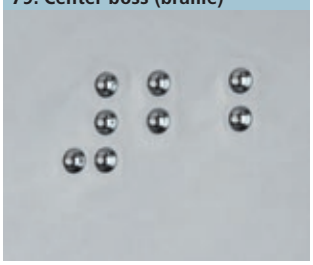
76. Countersink, square hole

Center bosses

77. Center boss, rectangle

78. Center boss, up-/downward

79. Center boss (braille)



80. Center boss with hole

Marking:

Always recognizable

Marking with TRUMPF tools.

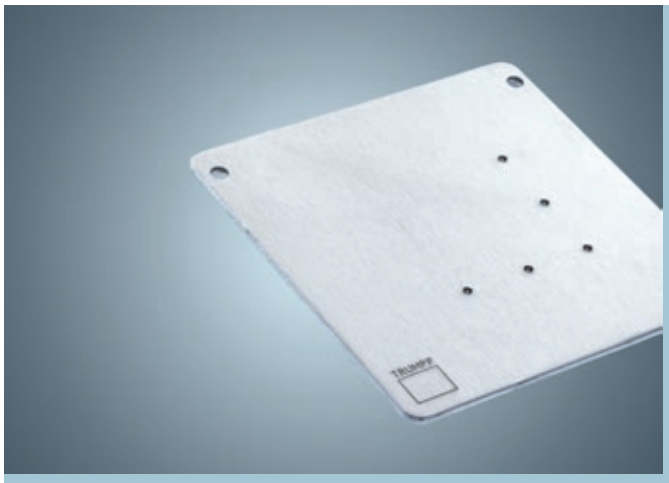
Whether it is intricate images or company logos, serial numbers, the year of manufacture, or a batch number: with tools from TRUMPF you can easily mark your components in a way tailored to your needs.

It is becoming increasingly important to identify sheet metal parts for production, legal, or quality assurance purposes. As different as the identification markings can be, they all have one thing in common: they create transparency and document the responsibility of the part manufacturer.

And regardless of how diverse your requirements or applications are, TRUMPF has the perfect solution for marking your components.

Marking

Center punch tool (upper side of the sheet)



Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 8.0 mm
Center punch angle	60° / 90° / 120 °
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Request form – Center punch tool	see p. 179

Description and application
Tool for creating center marks

Your benefits at a glance
- Cost-effective tool due to its simple construction
- Economical thanks to interchangeable center punch pins
- Used for positioning and centering for subsequent manual processing and mounting

Item

Punch

Order no.	EUR
699261	

Die size 1

- Without bore hole

Order no.	EUR
213906	

Spare center punch pin

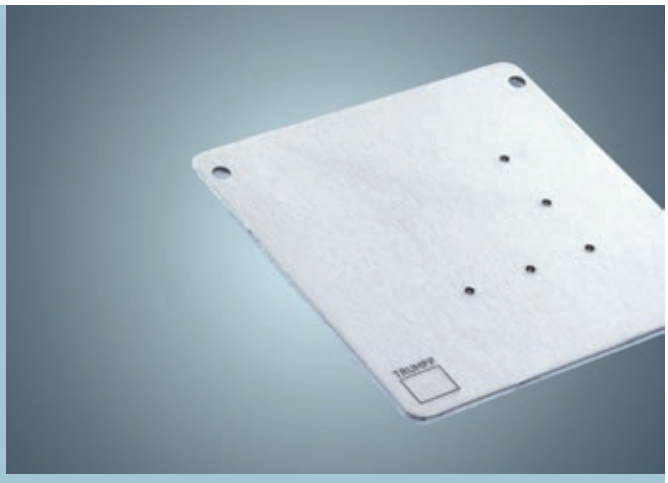
Order no.	EUR
699262	

Important ordering specifications
Machine, sheet thickness, material, center punch angle.

Important ordering information
The theoretical center punch depth is 0.3 - 0.8 mm, depending on the machine type and sheet thickness tolerance. The center punch depth can be improved using ram adjustment.
Other dimensions on request. Please use our order forms in the appendix.

Center punch tool (underside of the sheet)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 8.0 mm
Center punch angle	60° / 90° / 120 °
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Request form – Center punch tool	see p. 179



Description and application
Tool for creating center marks

Your benefits at a glance
- Cost-effective tool due to its simple construction
- Economical thanks to interchangeable center punch pins
- Used for positioning and centering for subsequent manual processing and mounting

Item

Complete tool

Order no.	EUR
699927	

Punch

Order no.	EUR
699928	

Die

Order no.	EUR
699929	

Spare center punch pin

Order no.	EUR
699930	

Important ordering specifications
Machine, sheet thickness, material, center punch angle.

Important ordering information
The theoretical center punch depth is 0.3 - 0.8 mm, depending on the machine type and sheet thickness tolerance. The center punch depth can be improved using ram adjustment.
Other dimensions on request. Please use our order forms in the appendix.

Accessories and single parts

Item

Designation	Order no.	EUR
Spring element for die	103469	

Engraving tool

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Engraving
Sheet thickness s	1.0 - 8.0 mm
Depth and width of engraving	0.2 mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175

Description and application
Tool for versatile marking of sheet metal parts in path mode

Your benefits at a glance
- Non-cutting marking results in outstanding inscription quality
- Marking pin made from wear-resistant material guarantees long service life
- Maximum contour versatility due to a narrow line width, e.g. for fine engravings

Item

Complete tool

Order no.	EUR
1482545	

Punch

Order no.	EUR
1482544	

Die

Order no.	EUR
1482571	

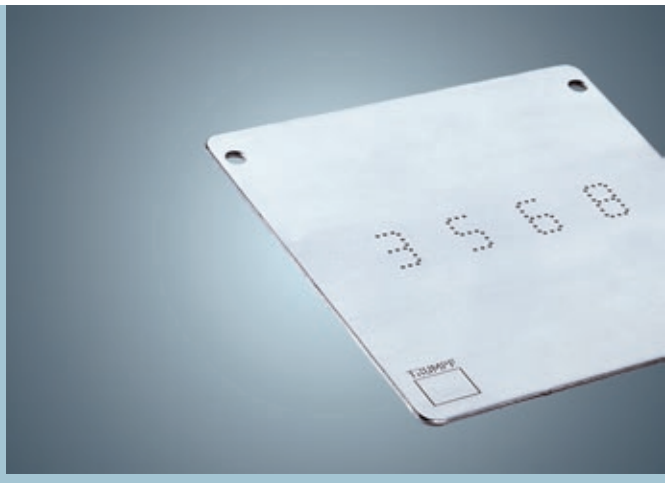
Marking pin

Order no.	EUR
1482543	

Important ordering specifications
Machine, sheet thickness, material. The "engraving" machine option is a prerequisite.

Marking tool (upper side of the sheet)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Engraving/quick beading
Sheet thickness s	0.5 - 8.0 mm
Marking depth	0.2 $^{\pm 0.05}$ mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175



Description and application
Tool for versatile marking of sheet metal parts

Your benefits at a glance
- Fast processing speed due to operation in marking mode
- Can be used with all sheet thicknesses
- Cost-effective tool due to its simple construction

Item

Complete tool

Order no.	EUR
720252	

Punch

Order no.	EUR
721501	

Die size 1

- Without hole

Order no.	EUR
213906	

Round stripper

- D = 20 mm

Order no.	EUR
159496	

Important ordering specifications
Machine, sheet thickness, material. The "engraving/quick beading" machine option is a prerequisite.

Accessories and single parts

Item

Designation	Order no.	EUR
Marking pin	209003	

Marking tool (underside of the sheet)

Machine type	
TruPunch	5000
TruMatic	7000
Required machine option	Marking from below/Active die
Sheet thickness s	1.0 - 8.0 mm
Marking depth	0.2 $^{\pm 0.05}$ mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175

Description and application
Tool for marking sheet metal parts from below

Your benefits at a glance
- Time-saving thanks to direct marking from below on the machine without turning the sheet over
- Avoids marks and scratches thanks to gentle counter-force of the sheet by the punch's plastic ball roller
- Reduced noise and vibration in the sheet in combination with the active die
- Use in combination with the calibration tool produces perfect results when there are sheet thickness fluctuations

Item

Complete tool

Order no.	EUR
1733342	

Complete punch

Order no.	EUR
1733320	

Complete die

Order no.	EUR
1733341	

Important ordering specifications
Machine, sheet thickness, material. The "Marking from below/Active die" machine option is a prerequisite.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Ball roller	1735020	
Tolerance ring	343471	
Marking pin	1761095	
Thread pin M14 x 1.5	61706	

Experience the **marking tool (underside of the sheet)** in action:
www.trumpf.info/5ygtl6

Embossing tool – line

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 8.0 mm
Size of the symbol	3.0 / 4.0 / 5.0 / 6.0 / 8.0 mm
Embossing depth	$0.5^{+0.1}$ mm
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175
Request form – Embossing tool	see p. 190
Request form – Embossing forming tool	see p. 191

Description and application
Tool for embossing numbers and letters in a digital-style font, and for embossing lines and corners for positioning assembly parts

Your benefits at a glance
- Parts can be marked with flexibility using a wide range of letters and numbers
- Ideal for marking consecutive serial numbers
- Tool can be used for imprinting on the upper or underside of the sheet

Item

Complete tool

Order no.	EUR
699265	

Punch

Order no.	EUR
699266	

Die size 1

- Without bore hole

Order no.	EUR
213906	

Stripper

- D = 32 mm

Order no.	EUR
161335	

Important ordering specifications
Machine, sheet thickness, material, line length.

Embossing tool – symbol (upper side of the sheet)

Description and application
Tool for embossing individual symbols or logos

Your benefits at a glance
- Many standard symbols (e.g. ground symbols, protection symbols) available in different dimensions
- Tool can be used for upper and underside of the sheet
- Customized symbols and logos can be produced on request

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 3.0 mm
Size of the symbol	4.0 / 5.0 / 6.0 / 8.0 / 10.0 / 12.0 mm
Embossing depth	
	0.3 $^{+0.1}$ mm (A5 - A6)
	0.5 $^{+0.1}$ mm (A8 - A12)
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Request form – Embossing tool	see p. 190
Request form – Embossing forming tool	see p. 191

Grounding symbol

Protective ground symbol

Noiseless ground

Chassis ground

Item

Complete tool

Order no.	EUR
699269	

Punch

Order no.	EUR
699270	

Die size 1

■ Without hole

Order no.	EUR
213906	

Stripper

■ D = 32 mm

Order no.	EUR
161335	

Important ordering specifications
Machine, sheet thickness, material, symbol, symbol size, embossing depth if necessary.

Important ordering information
The nominal size does not correspond to the actual size of the embossing symbol. The actual size is derived from the "primary standard" according to DIN 40011. Other dimensions on request.
Please use our order forms in the appendix.

Embossing tool – symbol (underside of the sheet)

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 240 R, 260 L, 260 R, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	1.0 - 6.0 mm
Size of the symbol	4.0 / 5.0 / 6.0 / 8.0 / 10.0 / 12.0 mm
Embossing depth	
	0.3 $^{+0.1}$ mm (A5 - A6)
	0.5 $^{+0.1}$ mm (A8 - A12)
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Request form – Embossing tool	see p. 190
Request form – Embossing forming tool	see p. 191

Grounding symbol

Protective ground symbol

Noiseless ground

Chassis ground

Description and application
Tool for embossing individual symbols or logos

Your benefits at a glance
- Many standard symbols (e.g. ground symbols, protection symbols) available in different dimensions
- Tool can be used for upper and underside of the sheet
- Customized symbols and logos can be produced on request

Item

Complete tool	Punch Sheet thickness 1.0 - 3.9 mm	Punch Sheet thickness 4.0 - 6.0 mm	Die
			
Order no. 699953	Order no. 653652	Order no. 699954	Order no. 699955
EUR	EUR	EUR	EUR

Important ordering specifications
Machine, sheet thickness, material, symbol, symbol size, embossing depth if necessary.

Important ordering information
The nominal size does not correspond to the actual size of the embossing symbol. The actual size is derived from the "primary standard" according to DIN 40011. Other dimensions on request.
Please use our order forms in the appendix.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Die insert, single	699956	

Embossing tool – numbers and letters (upper side of the sheet)

Description and application
Tool for marking components with a fixed character string

Your benefits at a glance
- Interchangeable embossing inserts ensure maximum versatility
- Many standard font sizes in stock
- Tool can be used for imprinting on the upper or underside of the sheet

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	190 R, 200 R, 240 L, 260 L, 500 R, 600 L, 1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Sheet thickness s	
	1.0 - 6.0 mm
	1.0 - 8.0 mm (TruPunch 5000/TC5000R, TruMatic 6000/TC6000L, TruMatic 7000)
Font size (according to DIN 1451-B)	A3 / A4 / A5
Embossing depth	0.3 - 0.5 $^{+0.1}$ mm
Useful information	
Punching tool accessories	see p. 114
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175
Request form – Embossing tool	see p. 190
Request form – Embossing forming tool	see p. 191

Item

Complete tool

■ Complete (incl. blank types)

Order no.	EUR
699273	

Punch

■ Complete (incl. blank types)

Order no.	EUR
699274	

Die size 2

■ Without hole

Order no.	EUR
60766	

Important ordering specifications
Machine, sheet thickness, material, font size.

Important ordering information
Also available for TC 240 R and TC 260 R on request. This requires a height-adjustable die (order no. 075571) and a setup cartridge (order no. 201781). The quantity of numbers that can be placed in the holder is determined by the font size. With font size A3 / A4 a maximum of 12 inserts can be integrated into the holder. With font size A5 the maximum number of inserts is 10.

Embossing inserts

Item

Designation	Order no.	EUR
Numbers 0-9 (single)	699275	
Letters A-Z/Ä,Ö,Ü (single)	699275	
Special characters / - . (single)	699275	
Blank types/spaces (single)	699275	
Set of numbers 0-9, A3	540668	
Set of numbers 0-9, A4	540672	
Set of numbers 0-9, A5	540677	

Embossing MultiTool Easy Type

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	0.5 - 8.0 mm
Font size	4.0 / 5.0 / 6.0 / 8.0 / 10.0 mm
Embossing depth	max. 0.4 mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175

Description and application
The TRUMPF innovation for embossing the alphabet and all numbers with a single tool

Your benefits at a glance
- Just one tool with five inserts is required for embossing the alphabet and numbers
- TruTops support makes programming as simple as possible
- Different letter sizes are available

Item

Complete tool

- Including embossing inserts and stripper

Order no.	EUR
699283	

Punch

- Including embossing inserts

Order no.	EUR
699284	

Single embossing insert

Order no.	EUR
699285	

Die size 2

- Without hole

Order no.	EUR
60766	

Important ordering specifications
Machine, sheet thickness, material, font size. The "MultiTool" machine option is a prerequisite.
Single embossing insert: machine, sheet thickness, material, letter height, slot number in MultiTool.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Stripper	629161	

Experience the **Embossing MultiTool Easy Type** in action:
www.trumpf.info/q5scpa

Embossing MultiTool 10-station (upper side of the sheet)

Description and application
Tool for versatile embossing in MultiTool mode

Your benefits at a glance
- The tool has 10 embossing inserts that can be actuated individually for flexible and fast embossing
- Easy programming in TruTops
- Many standard and special characters are available

Machine type	
TruPunch	1000, 2000, 2020, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 2000 R, 2020 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	MultiTool
Sheet thickness s	
	0.5 - 6.0 mm
	1.0 - 8.0 mm (TruPunch 5000/TC5000R, TruMatic 6000/TC6000L, TruMatic 7000)
Font size	4.0 mm
Embossing depth	0.5 $^{+0.1}$ mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175

Item

Punch holder

- Without embossing inserts

Order no.	EUR
630593	

Die size 2

- Without hole

Order no.	EUR
60766	

Stripper

Order no.	EUR
641046	

Important ordering specifications
Machine, sheet thickness, material, selection of embossing inserts (see below). The "MultiTool" machine option is a prerequisite.

Embossing inserts

Item		
Designation	**Order no.**	**EUR**
Numbers 0-9 (single)	699279	
Letters A-Z (single)	699279	
Special characters / - . (single)	699279	

Embossing MultiTool 12-station (upper side of the sheet)

Machine type	
TC	190 R, 200 R, 500 R, 600 L
Required machine option	MultiTool
Sheet thickness s	1.0 - 4.0 mm
Font size	4.0 mm
Embossing depth	0.5 $^{+0.1}$ mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175

Description and application
Tool for versatile embossing in MultiTool mode

Your benefits at a glance
- The tool has 12 embossing inserts that can be actuated individually for flexible and fast embossing
- Easy programming in TruTops
- Many standard and special characters are available

Item

Punch holder

- Without embossing inserts

Order no.	EUR
75559	

Die size 2

- Without hole

Order no.	EUR
60766	

Round stripper

- D = 80 mm

Order no.	EUR
66235	

Important ordering specifications
Machine, sheet thickness, material, selection of embossing inserts (see below). The "MultiTool" machine option is a prerequisite.

Embossing inserts

Item

Designation	Order no.	EUR
Numbers 0-9 (single)	699279	
Letters A-Z (single)	699279	
Special characters /-, (single)	699279	

Important ordering information
Also available for TC 240 R and TC 260 R on request. This requires a height-adjustable die (order no. 075571) and a setup cartridge (order no. 201781).

Calibration tool

Machine type	
TruPunch	1000, 2000, 3000, 5000
TruMatic	1000, 3000, 6000, 7000
TC	1000 R, 3000 R, 3000 L, 5000 R, 6000 L
Required machine option	Adaptive stroke calibration
Sheet thickness s	0.5 - 8.0 mm
Accuracy	± 0.03 mm
Useful information	
Tool maintenance and setup	see p. 148
Embossing quality	see p. 160
Order forms	see p. 175

Description and application
Tool for measuring the exact sheet thickness – patented process that compensates for any variations in the sheet thickness

Your benefits at a glance
- Tool setup with integrated alignment ring and die carrier provide outstanding dimensional accuracy and repeatability
- Rejects and manual intervention are eliminated because the tool automatically compensates for variations in the sheet thickness

Item

Complete tool

Order no.	EUR
1312897	

Punch

Order no.	EUR
1312892	

Die

Order no.	EUR
1312844	

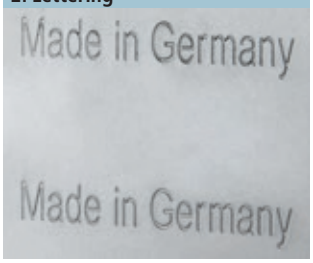
Important ordering specifications
Machine, sheet thickness, material. The "adaptive stroke calibration" machine option is a prerequisite.

Application examples of marking

Embossing

1. Lettering

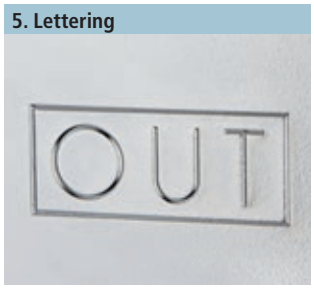
2. Lettering



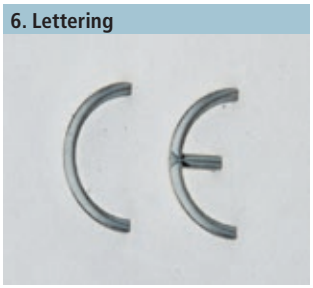
3. Lettering

4. Warning

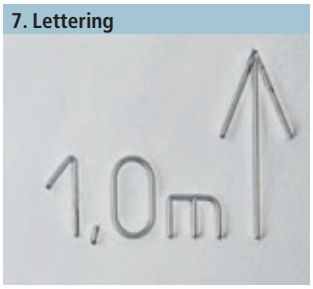
5. Lettering



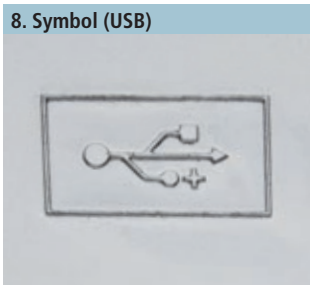
6. Lettering



7. Lettering

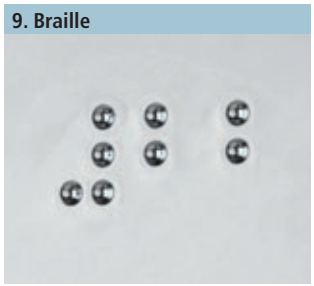


8. Symbol (USB)

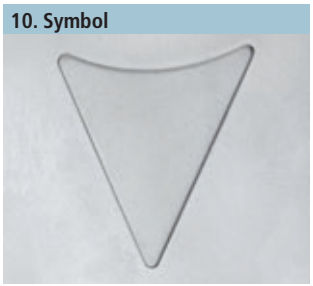


Embossed forms

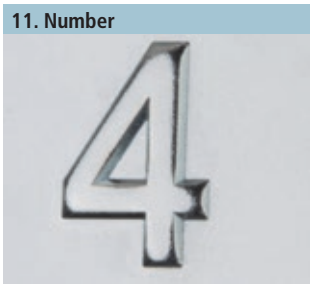
9. Braille



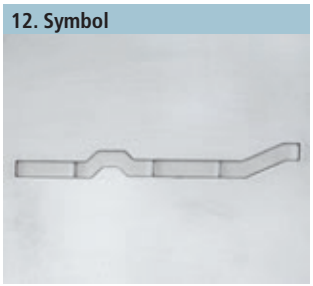
10. Symbol



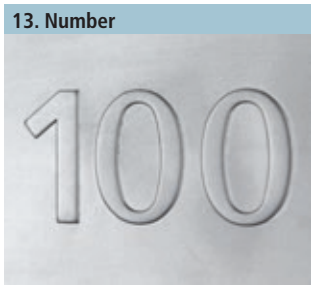
11. Number



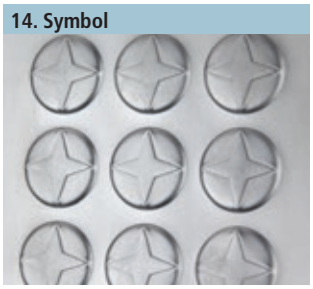
12. Symbol



13. Number



14. Symbol

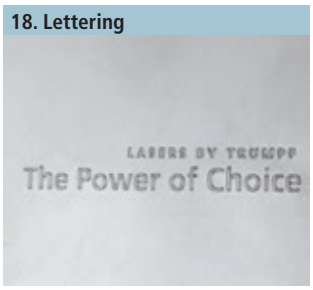


15. Lattice work

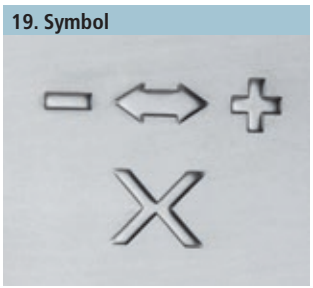
16. Lattice work

17. Protective ground symbol

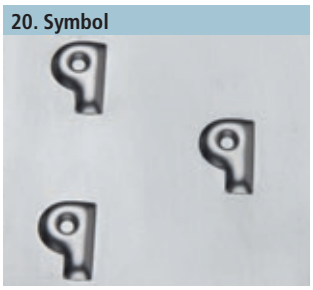
18. Lettering



19. Symbol



20. Symbol



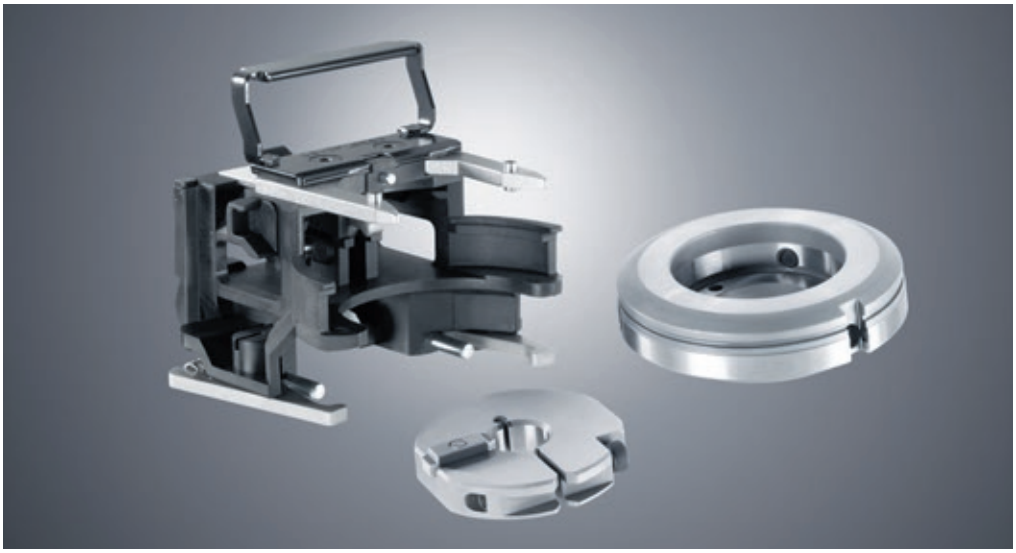
Accessories:

Fully equipped for punching

Accessories for TRUMPF tools.

To produce a flawless punching finish, it is crucial that the settings are exact and the tools are regularly reground. We provide you with the appropriate accessories to make setting up and maintaining your punching tools as convenient, time-saving, and effective as possible.

Our product range includes accessories for easy setup, such as our EasyUse shim, intelligent products for low-scratch processing, and additional equipment for all aspects of the punching process. The QuickSharp from TRUMPF ensures your tools are perfectly ground and the QuickSet ensures your punching tools have the correct settings. With the RTC tool cartridges, you and your machines can change tools in no time at all.



Accessories

Punching tool accessories

Alignment rings

Alignment ring size 0 and 1

Order no.	EUR
72061	

Alignment ring size 2

Order no.	EUR
72062	

Alignment ring for reinforced punch

Order no.	EUR
201519	

Punch chucks

Punch chuck

■ Size 0 (D = 6.0 mm)

Order no.	EUR
150159	

Punch chuck

■ Size 0 (D = 10.5 mm)

Order no.	EUR
150162	

Intermediate rings

Intermediate ring

Order no.	EUR
60216	

Intermediate ring with brush insert

■ To prevent scratches

Order no.	EUR
746088	

Intermediate ring with Ampco insert

■ To prevent scratches

Order no.	EUR
1350349	

Punching tool accessories

Adhesive pads

Adhesive pad for stripper

Order no.	EUR
260186	

Adhesive pad for intermediate ring

Order no.	EUR
260188	

Adhesive pad for die size 2

Order no.	EUR
260187	

Adhesive pad for separating die

Order no.	EUR
725432	

Adhesive pad for square die

Order no.	EUR
725512	

Other small parts

Lock spring for die keyway

■ 10 pieces

Order no.	EUR
55154	

Clamping pins for stripper

■ 10 pieces

Order no.	EUR
31429	

Punching tool accessories

EasyUse shims

The patented EasyUse shims come complete with a hole-based identification system (a hole corresponds to a thickness of 0.1 mm). This means that you can quickly and easily find the right shim to place underneath the reground die. Additional information on setup and tool maintenance can be found in the "Useful information" chapter under "Tool maintenance and setup".

Shim set size 1

Order no.	EUR
60067	

Shim 0.1 mm size 1

Order no.	EUR
59888	

Shim 0.3 mm size 1

Order no.	EUR
59890	

Shim 0.5 mm size 1

Order no.	EUR
59891	

Shim set size 2

Order no.	EUR
60068	

Shim 0.1 mm size 2

Order no.	EUR
59384	

Shim 0.3 mm size 2

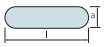
Order no.	EUR
59385	

Shim 0.5 mm size 2

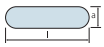
Order no.	EUR
59386	

Spring elements for punch size 1

Spring element for punch size 1 (short version)

		Order no.	EUR
Round		699840	
Square			
Rectangle			
Oblong			

Spring element for punch size 1 (long version)

		Order no.	EUR
Round		699840	
Square			
Rectangle			
Oblong			

Important ordering specifications
Machine, form, dimensions.

RTC tool cartridge

Application range	
Tool type	All tools size 0, 1, and 2
Technical data	
Weight (without tools)	0.6 kg
Material of die base	Fiber-reinforced plastic
Ordering information	
Order no.	2258880
EUR	

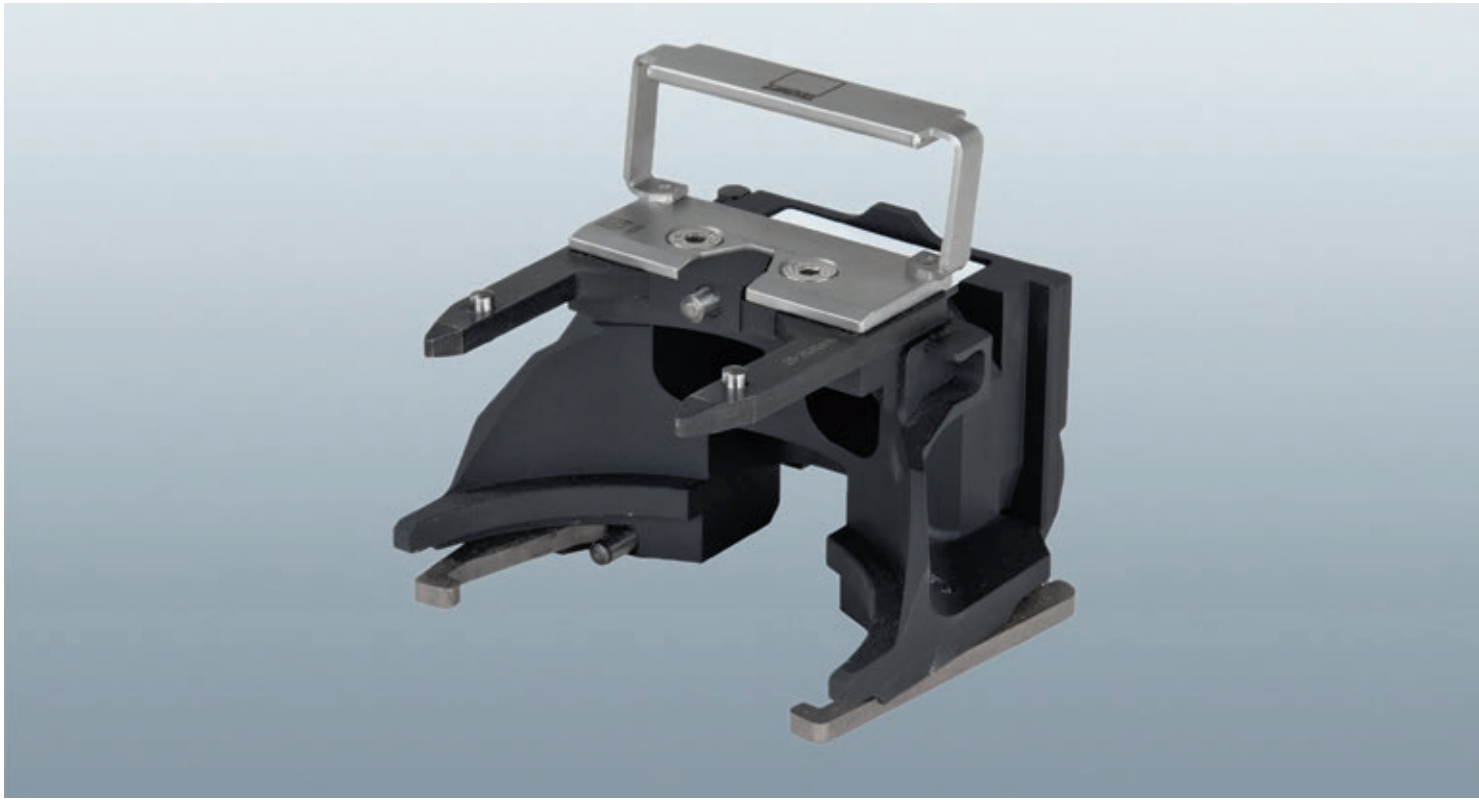
Description and application
The new generation of the original standard tool cartridge from TRUMPF made out of fiber-reinforced plastic for maximum productivity and reliable tool change

Your benefits at a glance
- Low weight for high acceleration values and productivity
- Long service life
- Quick and reliable punching tool change
- Secure grip on tools, holding even heavy tools firmly thanks to optimally supported cartridge arms
- Efficient handling with the ergonomic handle and integrated carrying aid to transport three tool cartridges at a time in one hand
- Easy tool organization by machine program, application or sheet thickness using color-coded cartridge identification with five possible color clips

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Die carrier	0222137	
Storage medium (magnetic)	0909671	
Color clip blue	2055137	
Color clip green	2055136	
Color clip yellow	2055139	
Color clip orange	2055138	
Color clip light gray	2055135	

Tool cartridge size 5



Application range	
Tool type	All size 5 tools
Technical data	
Weight (without tools)	0.9 kg
Material of die base	Aluminum
Ordering information	
Order no.	1500495
EUR	

Description and application
The original tool cartridge from TRUMPF for the reliable setup of tools size 5

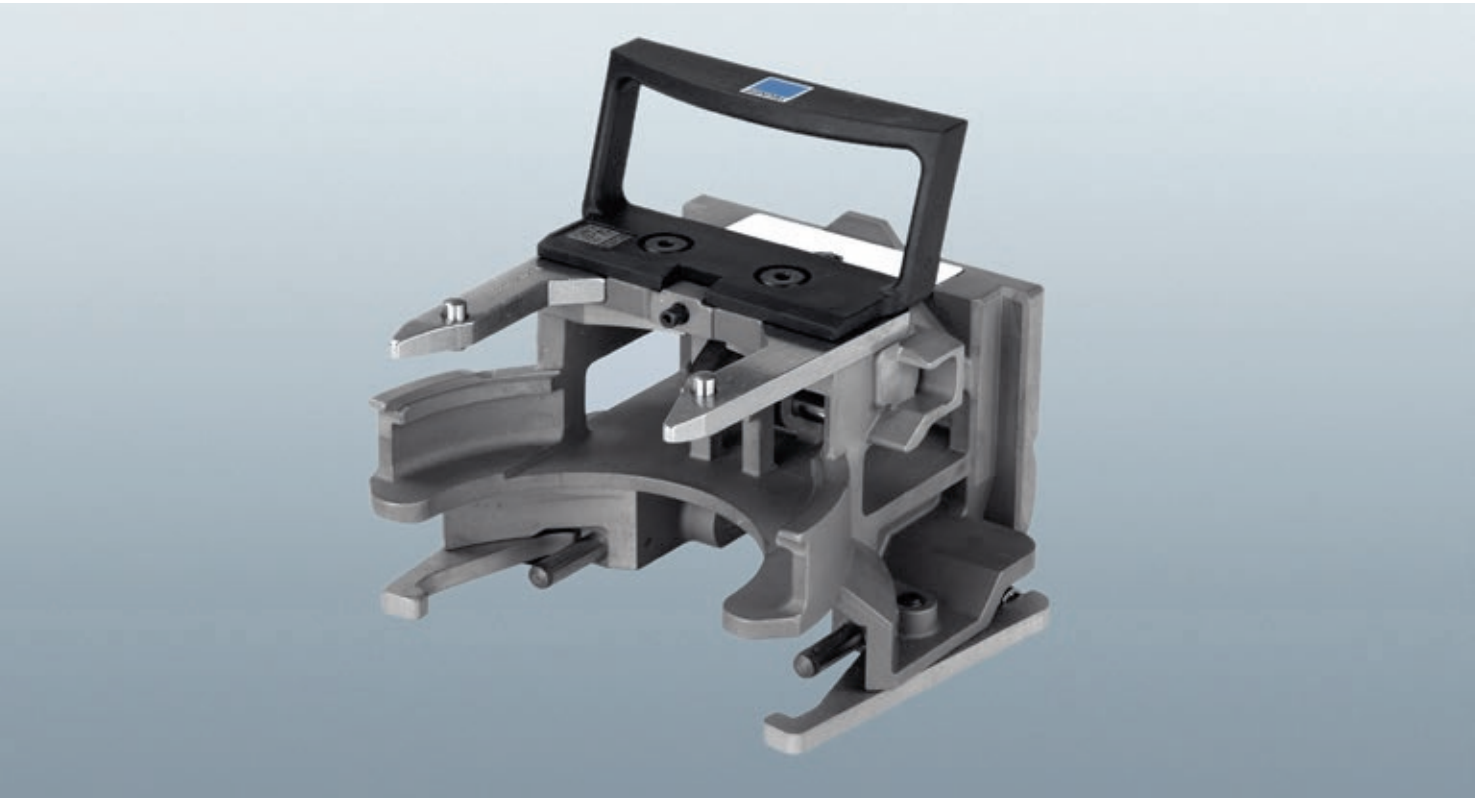
Your benefits at a glance
- Top acceleration values on the machine with reinforced retaining springs
- The cartridge arms are specially heat treated, resulting in a longer service life
- High stability level for heavy tools size 5 due to the aluminum die base

Important ordering information
When using a size 5 tool cartridge in machines with ToolMaster, an additional modification kit is required (order no. 1550283).

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Adapter (for stripper)	1633067	
Information carrier (magnetic)	0909671	

Steel tool cartridge – universal



Application range	
Tool type	All tools size 0, 1 and 2
Technical data	
Weight (without tools)	2.3 kg
Material of die base	Steel
Ordering information	
Order no.	1602725
EUR	

Description and application
The original steel cartridge from TRUMPF for secure tool change

Your benefits at a glance
- Fast and reliable change of punching tools
- Secure grip on tools due to the extra strong springs
- The cartridge arms are specially heat treated, resulting in a longer service life
- Efficient handling due to the ergonomic handle
- Long service life

Important ordering information
Steel tool cartridge – universal required with the TC 500 R with ToolMaster, TC 600 L with ToolMaster, TC 6000 L with ToolMaster and TruMatic 6000 (K01) with ToolMaster.

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Die carrier	0222137	
Information carrier (magnetic)	0909671	

QuickSharp

Application range	
Tool type	All TRUMPF punching tools
Shear	flat, beveled (Whisper, roof)
Technical data	
Space requirements	630 x 780 mm
Weight	415 kg
Height	1,835 mm
Grinding area (ø x Z)	100 x 99.9 mm
Grinding wheel (ø)	125 mm (CBN)
Grinding drive speed	4,600 rpm
Scope of delivery	
QuickSharp	
Punching fixture for Whisper shear with adjustment aid	
Pulling fixture	
Clamping fixture for reinforced dies	
10 paper band filters	
5 l cooling lubricant concentrate	
Setup aids	
Documentation	
Ordering information	
Order no.	358910
EUR	

Description and application
The fully automatic QuickSharp tool grinding device is the perfect solution for regrinding your TRUMPF punching tools

Your benefits at a glance
- Simple, safe grinding process and user-friendly operation
- Outstanding surface finish with the front grinding process for long service life
- Integrated clamping tool provides intelligent tool clamping
- Simple regrinding process, even for punches with shears such as the Whisper or roof shear
- Automatic tool length measurement

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Boron nitride grinding wheel	0032498	
5 l cooling lubricant concentrate	1645498	
Filter package	1234583	
Corundum brick	0038843	

Item		
Designation	**Order no.**	**EUR**
Universal clamping fixture for grinding	1242673	
MultiShear punch adapter	1295486	
Stepped clamping fixture for MultiTool die	1247313	
Punch grinding fixture for Whispertool punch	1214030	

Experience the **QuickSharp** in action:
www.trumpf.info/1wmxz0

QuickGrind

Application range	
Tool type	All TRUMPF punching tools
Shear	flat, beveled (Whisper, roof)
Technical data	
Space requirements	520 x 820 mm
Weight	150 kg
Height	675 mm
Grinding wheel (ø)	125 mm (CBN)
Grinding drive speed	4,200 rpm
Scope of delivery	
QuickGrind	
1 hook wrench	
1 l cooling lubricant concentrate	
Documentation	
Ordering information	
Order no.	1250244
EUR	

Description and application
The easy-to-use QuickGrind manual tool grinding device for TRUMPF punching tools

Your benefits at a glance
- Easy grinding process by manual placement and feed
- Integrated tool clamping for safe, reliable handling
- Low investment costs
- Punches with shears, such as the Whisper or roof, can also be reground

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
1 l cooling lubricant concentrate	1651216	
Grinding wheel	0357935	
Sieve	0357933	

Experience the **QuickGrind** in action:
www.trumpf.info/1wmxz0

QuickSet

Application range	
Tool type	All TRUMPF punching tools
Shear	Flat, beveled (Whisper, roof)
Technical data	
Space requirements	315 x 310 mm
Weight	25 kg
Height	355 mm
Scope of delivery	
QuickSet	
Tool holder for stripper	
Supply and power cable (global use)	
Documentation	
Ordering information	
Order no.	984245
EUR	

Description and application
QuickSet enables punching tools to be set up quickly and accurately for increased service life and maximum processing results

Your benefits at a glance
- TRUMPF punching tool (lower case) are set up quickly and reliably
- Precise alignment of punch and die
- Aligning the punch and alignment ring is simple
- Easily check the cutting clearance between the punch and die using a test stroke
- Punch length and regrind amount can be measured quickly and easily
- Plunging depth of the punch into the stripper is determined to avoid collisions

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Tool holder for stripper	979815	

Experience the **QuickSet** in action:
www.trumpf.info/1wmxz0

QuickLoad

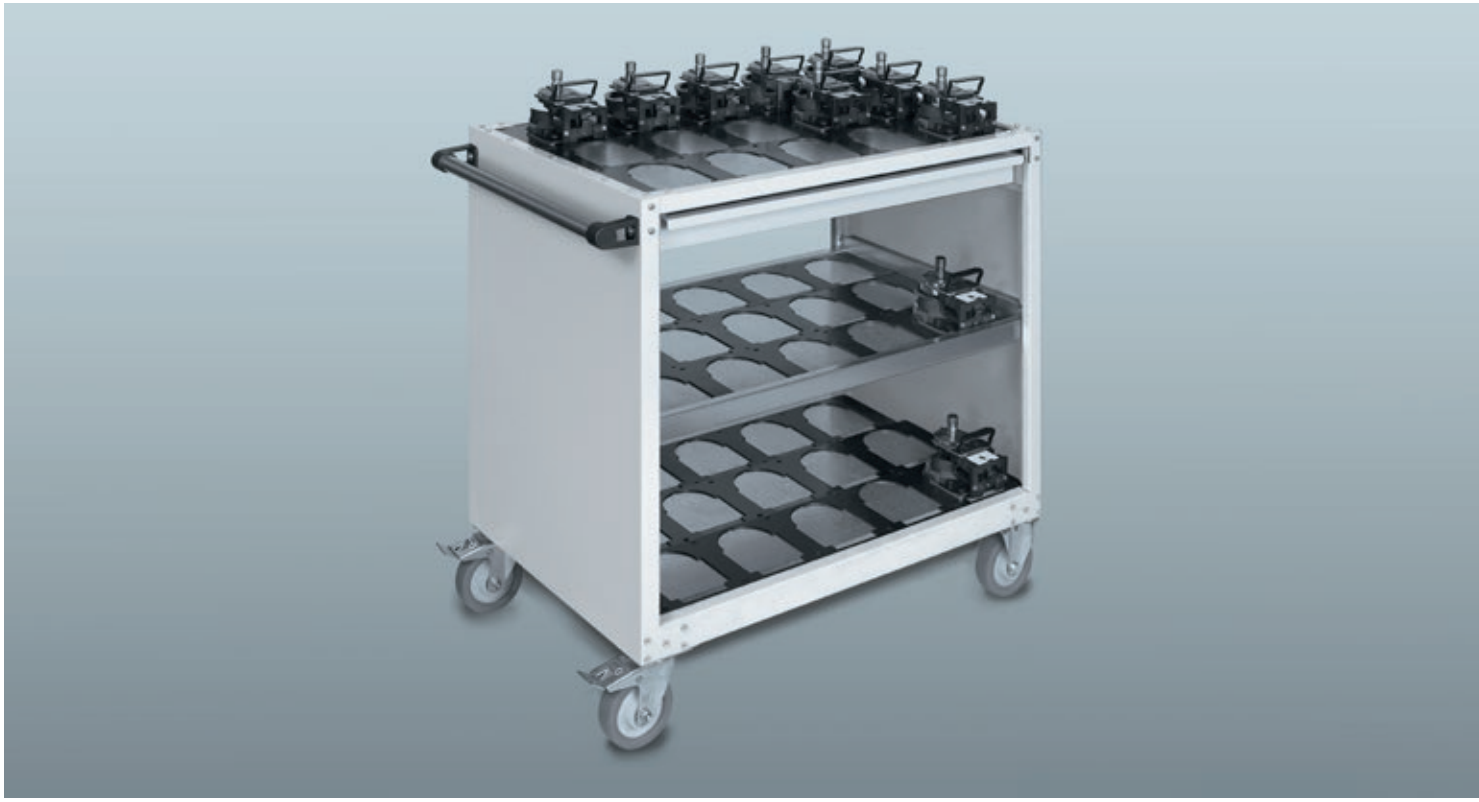
Application range	
Tool type	All TRUMPF punching tools
Tool cartridges	RTC tool cartridge Tool cartridge size 5 Steel tool cartridge – universal
Technical data	
Space requirements	455 x 295 mm
Weight	15.4 kg
Height	115 mm
Scope of delivery	
QuickLoad	
Documentation	
Ordering information	
Order no.	970221
EUR	

Description and application
QuickLoad enables tool cartridges to be set up quickly and securely with a punch, stripper, and die

Your benefits at a glance
- Short setup times because it is easy to load the cartridge with a punch, stripper and die
- Easy handling with pneumatic release of the tool sets
- Handles sharpened tools gently
- Reduction in idle time due to time-saving setup parallel to production

Experience the **QuickLoad** in action:
www.trumpf.info/1wmxz0

Punching Tool Cart



Application range	
Tool type	All TRUMPF punching tools
Tool cartridges	RTC tool cartridge Tool cartridge size 5 Steel tool cartridge – universal
Technical data	
Number of cartridge stations	45
Space requirements	582 x 1,002 mm
Weight	78 kg
Height	922 mm
Max. load	400 kg
Ordering information	
Order no.	1948969
EUR	

Description and application
The Punching Tool Cart makes it possible to transport previously set up tool cartridges quickly and conveniently from the setup station to the machine

Your benefits at a glance
- Comprehensive overview of the tool cartridges with 45 stations
- Simple loading and unloading of set-up tool cartridges
- Easy to steer and position with its 2 fixed rollers, 2 pivotal rollers and parking brake
- Pull-out holder which can be mounted on either side for the setup plan and accompanying documents
- Solid stainless steel handle for reliable placement

Punching Tool Cabinet

Application range	
Tool type	All TRUMPF punching tools
Tool cartridges	RTC tool cartridge Tool cartridge size 5 Steel tool cartridge – universal
Technical data	
Number of storage spaces	up to 700 punching tools
Space requirements	1,040 x 1,050 mm
Height	1,240 mm
Weight (without tools)	380 kg
Scope of delivery	
Punching Tool Cabinet	
4 shelves for punch size 1 and 2	
4 shelves for die size 1	
4 shelves for size 2 dies and strippers	
4 shelves for strippers	
2 shelves for shape tools and special tools	
2 shelves for tool cartridges	
3 shelves for punch size 0 and alignment rings	
2 shelves for cutting blades	
Documentation	
Ordering information	
Order no.	383987
EUR	

Description and application
The Punching Tool Cabinet is a place to store your tools cleanly, and in a clearly organized way, providing more order and efficiency in production

Your benefits at a glance
- Ergonomic tool handling with the perfectly designed pull-out cabinet
- Reduced setup times because of clear organization and easily accessibility of tools
- Safe and secure storage of tools with specially designed tool holders
- Moving the cabinet is quick and easy with the practical notches for forklifts
- Outstanding quality and maximum occupational safety due to a wheel load of up to 900 kg for each vertical pull-out compartment
- Dust-free storage means that tool cleaning time is reduced

Accessories and single parts

Item		
Designation	**Order no.**	**EUR**
Shelf for punch size 1 and 2	383965	
Shelf for size 2 die and stripper	383978	
Shelf for special tools and shape tools	383979	
Shelf for punch size 0 and alignment rings	383980	

Item		
Designation	**Order no.**	**EUR**
Shelf for size 1 die	383981	
Shelf for stripper	383983	
Shelf for tool cartridges	383984	
Shelf for cutting blades	383985	

Consumables and additional equipment

Setup aids

Tool setup aid

- Setting up tool cartridges

Order no.	EUR
232090	

Tool adjustment aid

- Aligning punch and alignment ring

Order no.	EUR
937592	

Lever

- Removing the tools in the linear magazine

Order no.	EUR
259684	

Operating tool

- Removing a jammed die

Order no.	EUR
919978	

Punching and nibbling oil

Punching and nibbling oil 500 ml spray

Order no.	EUR
111309	

Punching and nibbling oil 10 l container

Order no.	EUR
111311	

Application range
Spray lubrication of punch and die for processing steel and stainless steel.

Akamin cutting oil

Akamin cutting oil 1 l container

Order no.	EUR
125874	

Akamin cutting oil 20 l container

Order no.	EUR
61461	

Application range
Spray lubrication of punch and die for processing aluminum and aluminum alloys.

Lubricant for punches and dies

Gadus S2 V220 0.5 kg

- For MultiUse punching tool

Order no.	EUR
40265	

Microlube GL 261 1 kg

- For MultiBend and roller tools

Order no.	EUR
106491	

Gleitmo 805 1 kg

- For tapping punch

Order no.	EUR
98749	

Variocut C462 tapping oil

Variocut C462 1 l container

Order no.	EUR
116941	

Variocut C462 20 l container

Order no.	EUR
116938	

Application range
Spray lubrication for tapping aluminum and aluminum alloys.

Variocut B30 tapping oil

Variocut B30 1 l container

Order no.	EUR
124302	

Variocut B30 20 l container

Order no.	EUR
113149	

Application range
Spray lubrication for tapping mild and stainless steel.

Useful information:

Knowing how

Useful information on TRUMPF tools.

Different issues and problems occur during production. For example, how do you avoid scratches, or how can you increase the service life of your tool? In addition to answering these questions, this chapter contains important basic information on punching. Images, examples from experience, cutting clearance tables, and explanations on punch lengths and the correct stripper selection enable improved understanding of the punching process.

If you find that your question has not been answered, please contact us. We would be happy to help you.

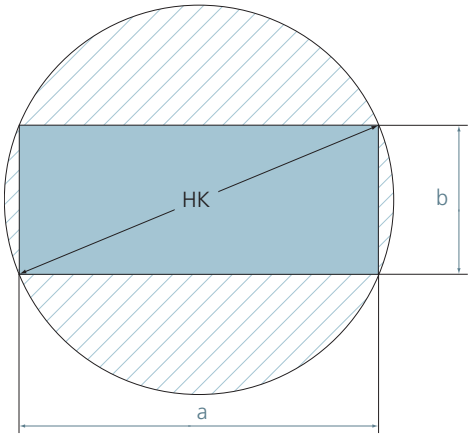
Useful information

Dimensions and regrinding

With punching, there are a variety of important dimensions to consider. They don't just include the dimension of the cut geometry, but also the punch length and permissible reduction in the tool length caused by regrinding.

Outer circle

Outer circle (OC) using a rectangle as an example

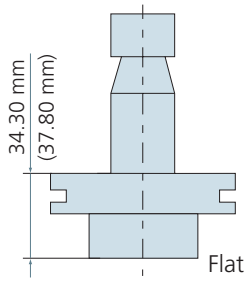


Outer circle = $\sqrt{(a^2+b^2)}$

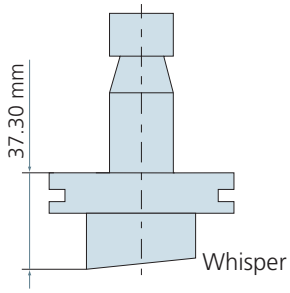
■ The outer circle is the circle that completely surrounds the punching geometry.

Punch lengths

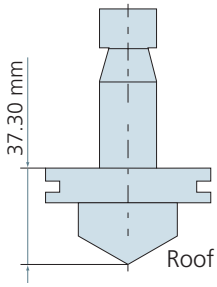
Punch lengths of different shear types



■ Punch with flat cutting surface



■ Punch with beveled cutting surface in Whisper form



■ Punch with beveled cutting surface in roof form

Punches with flat cutting surfaces are available in the flat version (34.3 mm) and in the long, flat version (37.8 mm). The length is measured from the upper edge of the alignment ring to the end of the tool. A punch with a length of 37.8 mm is advantageous because of the greater regrinding length and the faster stroke rate when the presser foot is active.
All current TRUMPF punching machines (e.g. TruPunch 1000) can be fitted with flat punches of both lengths; older machines (e.g. TC 500 R) can only be fitted with the shorter version.

Rule of thumb

The general rule of thumb is: punch width = at least sheet thickness s. For punch dimensions that are smaller than the sheet thickness, it is advisable to use punches with a guided cutting edge.

Dimensions and regrinding

Regrind amounts

Tool	Tool component	Tool length (in mm)	Regrind amount (in mm)
Classic System	Punch, flat	34.3	3.0
	Punch, flat, long	37.8	6.5
	Punch, beveled (Whisper, roof)	37.3	3.0
	Die size 1	18.0	1.0
	Die size 2	20.0	1.0
MultiShear	Punch	44.2	2.8
MultiTool	Punch inserts	24.0	0.5
	Die inserts	24.0	1.0
	Blanking die d = 72 mm	12.0	1.0
MultiUse	Punch insert	Flat: 28.3	6.0
		Beveled: 31.3	6.0
		Long: 31.8	9.5
	Die insert	10.0	2.0
Slitting tool	Punch cutting blade	25.3	3.0
	Die cutting blade	5.0	1.0

Punching force and shear strength

The choice of punching force depends on a number of different factors. It depends on the sheet thickness and the length of the cutting edge, as well as the choice of shear on the punch.

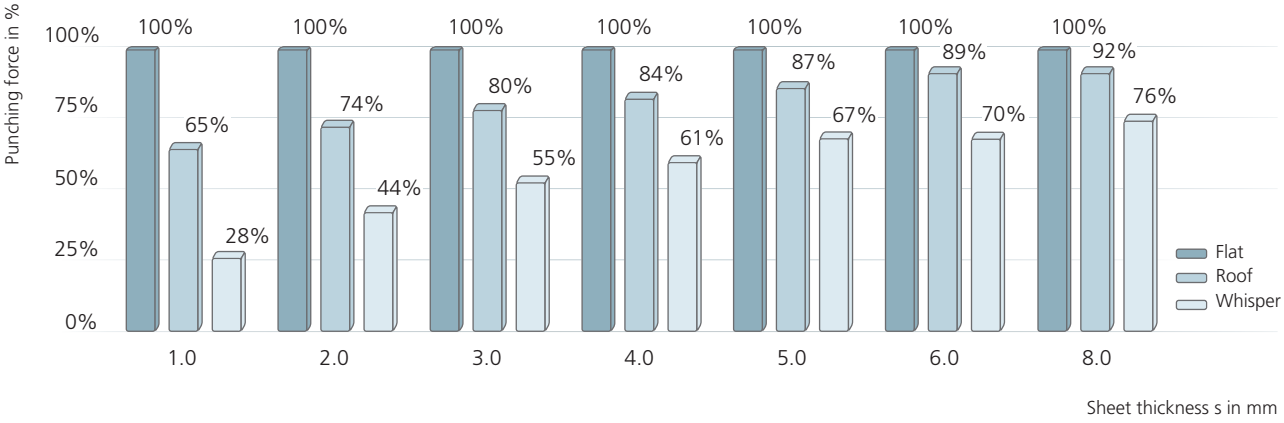
Beveled punches

Beveled punches are 3 mm longer than punches with flat cutting surfaces. The additional length comes from the bevel, which has a maximum angle of 5°. TRUMPF will put a bevel grind on a punch free of charge.

Once the outer circle of a punch reaches a certain size, the use of beveled punches has considerable advantages:

- Decreased sheet metal distortion as tension in the part is up to 20% lower
- Sound level is reduced by up to 14 dB(A); this corresponds to a reduction in the sound level of more than 50%
- Required punching force is reduced by up to 72%, depending on the sheet thickness

How the punch shear and sheet thickness affect the punching force:



Determining the theoretical punching force

The punching force F is determined using the following formula:

$$F = \frac{\text{Cutting edge length L (mm) x Sheet thickness s (mm) x Tensile strength RM of the material (N/mm²)}}{\text{Shear factor X (only for bevels)}}$$

This means:

Round punch:	**F = Π x Ø x s x RM ÷ X**
Square punch:	**F = 4 x a x s x RM ÷ X**
Rectangular/oblong hole punch:	**F = (a+b) x 2 x s x RM ÷ X**

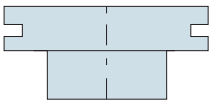
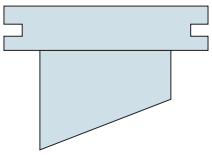
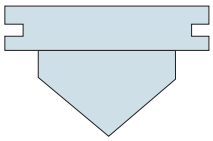
Overview of tensile strength RM:

Steel	approx. 400 N/mm²
Stainless steel	approx. 700 N/mm²
Aluminum	approx. 300 N/mm²

Key	
Π	Pi
s	Sheet thickness
a	Side dimension
RM	Tensile strength
X	Shear factor
Ø	Diameter

Punching force and shear strength

Shear factor

Sheet thickness s (in mm)	Shear factor flat X	Shear factor Whisper X	Shear factor roof X
			
1.0	1.00	3.50	1.53
1.5	1.00	2.66	1.44
2.0	1.00	2.25	1.35
2.5	1.00	2.00	1.30
3.0	1.00	1.83	1.25
3.5	1.00	1.71	1.11
4.0	1.00	1.62	1.19
5.0	1.00	1.50	1.15
6.0	1.00	1.41	1.12
8.0	1.00	1.31	1.08
10.0	1.00	1.25	approx. 1.00

Example:

Calculation of the required punching force for a square punch-out measuring 40 x 40 mm in 2 mm thick sheet steel.
A Whisper punch is used.

$$\frac{4 \times 40\ \text{mm} \times 2\ \text{mm} \times 400\ \text{N/mm}^2}{2.25} = 56{,}889\ \text{N}$$

The reduced punching force is therefore F = 57 kN or 5.7 tons.

Punching force in relation to the punch type and sheet thickness

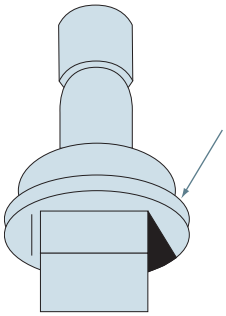
Punch type	Max. punching force	Max. sheet thickness		Material
		Punching	Nibbling	
Flat punches, size 0: Up to 6 mm outer circle diameter	50 kN	Mild steel: 2.0 mm Stainless steel: 1.5 mm	Not recommended	HSS HSS
Punch, size 0: 6 - 10 mm outer circle diameter	50 kN	Mild steel: 6.0 mm Stainless steel: 3.0 mm	Mild steel: 3 mm Stainless steel: not recommended	HSS HSS
Flat punches, size 1: (max. outer circle diameter: 30 mm)	200 kN	Up to maximum permissible sheet thickness of the machine	Up to maximum permissible sheet thickness of the machine	HSS
Flat punches, size 1 or 2: (max. outer circle diameter: 76.2 mm)	300 kN	Up to maximum permissible sheet thickness of the machine	Up to maximum permissible sheet thickness of the machine	HSS, oxidized
Punch with bevel	200 kN	Up to maximum permissible sheet thickness of the machine	For a tensile strength of 400 N/mm² up to 3 mm For a tensile strength of 800 N/mm² up to 2 mm	HSS

Punch selection

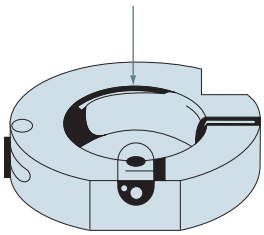
After the punch geometry has been selected, you must decide whether the punch should be adapted further. This is advantageous under certain conditions, above all when processing thick materials or when the punching force is high.

Reinforcement

A reinforced version of a punch and alignment ring



■ Punch with reinforced shoulder



■ Alignment ring with larger inside diameter

Reinforced punches are used for punching forces over 200 kN, sheet thicknesses over 5 mm and for punching or nibbling high-tensile sheets. As the punch is reinforced at the shoulder, the inside diameter of the alignment ring is increased accordingly.
The maximum outer circle is therefore only 42 mm.

Guided cutting edge

A punch with a guided cutting edge is a special tool for punching and nibbling very small holes in sheet up to 4 mm thick.

The application range of a punch with a guided cutting edge is dependent on the material and sheet thickness:

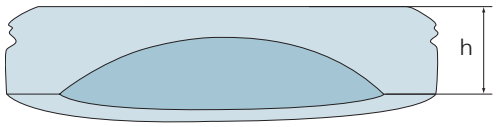
Material	Tensile strength	Minimum punch diameter
Stainless steel Chromium-nickel steel	700 N/mm²	1 x sheet thickness s
Mild steel	400 N/mm²	0.8 x sheet thickness s
Aluminum Aluminum alloy	300 N/mm²	0.6 x sheet thickness s

Die selection

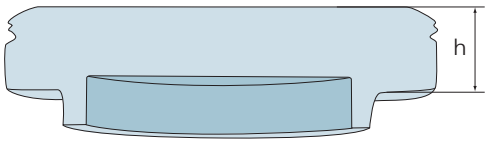
There are a variety of dies to choose from and picking the right one depends on the intended application. For example, keyways can make tools easier to use if they are a special shape.

Die selection

Standard die



Reinforced die



Reinforced dies are available in addition to the standard version dies. The punch measurements, punching force and sheet thickness determine which die is the correct one to use. The last factor is of particular importance: As the sheet thickness increases, a larger cutting gap is required between the punch and the die. All dies can be reground by up to 1 mm. If the die is reground by more than 1 mm, burrs form and there is a risk that the die might break. Because the clamping height is decreased, the die may become tilted and this can lead to dangers during processing. In the tool holder, shims (0.1/0.3/0.5 mm) are placed under the reground dies. TRUMPF also gives its standard dies a life-long warranty if the die should break.
The correct die dimension depends on the cutting clearance and is calculated from the punch geometry and the sheet thickness (see chapter "Cutting clearance").

Choosing the die appropriate for a given punching force

Die size	Die version	Max. punching force (in kN)	Die height h (in mm)	Max. outer circle (in mm)
1	All	250	Up to 18.00	Up to 32.00
2	Standard	180	Up to 20.00	32.01 - 78.40
2	Reinforced	250	Up to 20.00	32.01 - 62.00

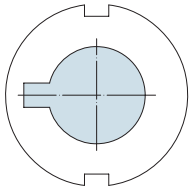
Keyway position

In contrast to symmetrical shapes, every asymmetrical shape is equipped with multiple keyways. This ensures that the punch and die are correctly aligned with each other. It also makes programming easier as the die can be given a direction.

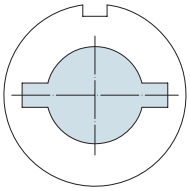
Die selection

Keyway position for shapes 1-20

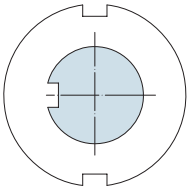
Shape 1



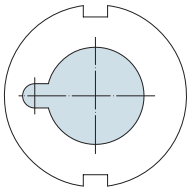
Shape 2



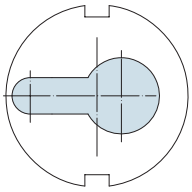
Shape 3



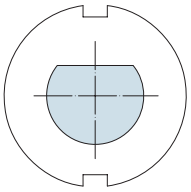
Shape 4



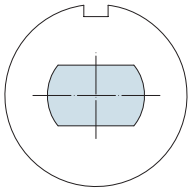
Shape 5



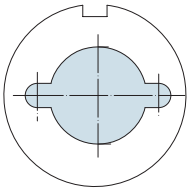
Shape 6



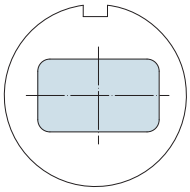
Shape 7



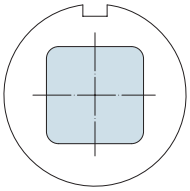
Shape 8



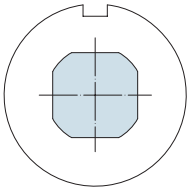
Shape 9



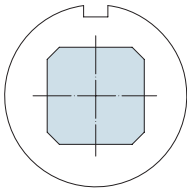
Shape 10



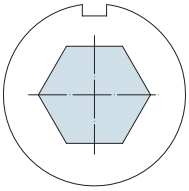
Shape 11



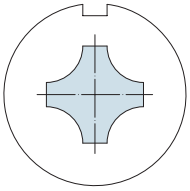
Shape 12



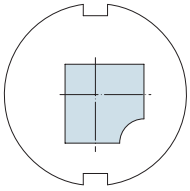
Shape 13



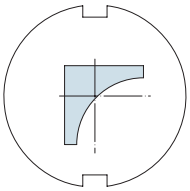
Shape 14



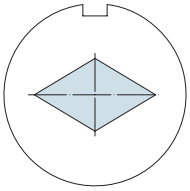
Shape 15



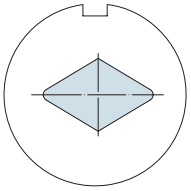
Shape 15



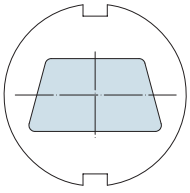
Shape 16



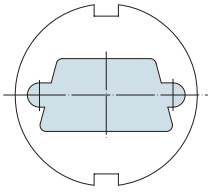
Shape 17



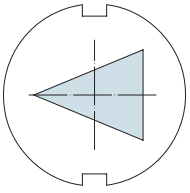
Shape 18



Shape 19

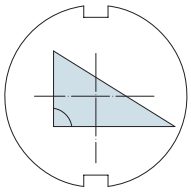


Shape 20

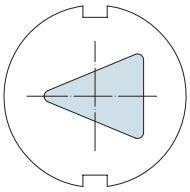


Keyway position for shapes 21-40

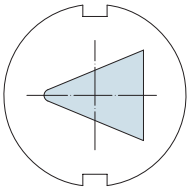
Shape 21



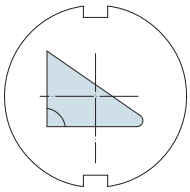
Shape 22



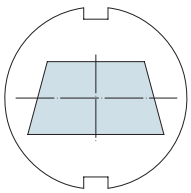
Shape 23



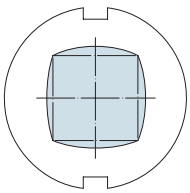
Shape 24



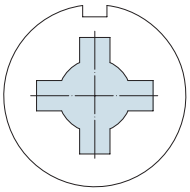
Shape 25



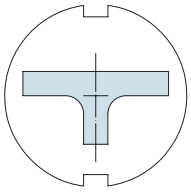
Shape 26



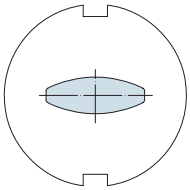
Shape 27



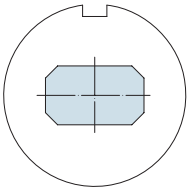
Shape 28



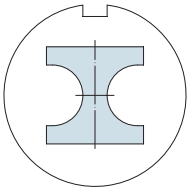
Shape 29



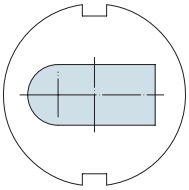
Shape 30



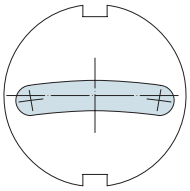
Shape 31



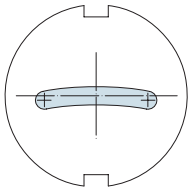
Shape 32



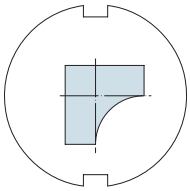
Shape 33



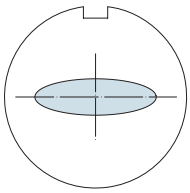
Shape 34



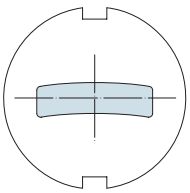
Shape 35



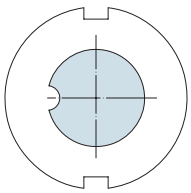
Shape 36



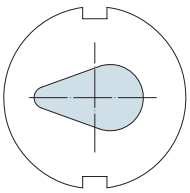
Shape 37



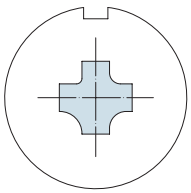
Shape 38



Shape 39



Shape 40



Stripper selection

Selecting the right stripper is important to ensure that the punching process runs smoothly. But it is also difficult, as the right stripper is dependent on so many factors. The following tables and explanations will make it much easier to find the right stripper in the future.

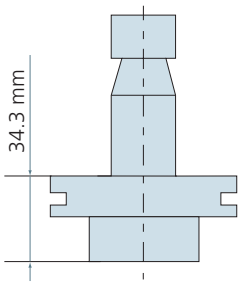
Determining the right stripper in 4 simple steps

1. Measure the length of the punch.
2. Determine the sheet thickness to be processed.
3. Identify the outer circle diameter of the punch.
4. Using the tables below, establish which stripper is needed.

1. Measuring the length of the punch

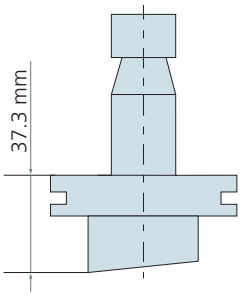
If the length of the punch has been decreased through regrinding, it must be measured again. The punch length is measured from the upper edge of the alignment ring to the end of the tool.

Punch length of a punch with flat cutting surface



QuickSet

Punch length of a punch with beveled cutting surface



It is particularly easy to determine the tool length using the QuickSet tool setting device (see chapter "Accessories"). The new plunging depth of the punch must be entered into the machine control system.

The value for the tool length takes you to the correct column in the stripper table. In this example, the punch length is **33.7 mm.**

Tool length (mm)	34.3 - 33.3								33.2 - 32.3								32.2 - 31.3							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–				7	–	–	–	–			7	7	–	–	–	–
Needle punch 6.01 - 10.50					12	12	–	–				12	12	12	–	–			12	12	12	12	–	–
Punch 1.00 - 5.99			14	14	14	14	–	–		14	14	14	14	14	–	–	14	14	14	14	14	14	–	–
Punch 6.00 - 10.50					14	14	14	31					14	14	14	31					14	14	14	31
Punch 10.51 - 30.00[2]								31						31	31	31					31	31	31	31
Punch 30.01 - 40.00[2]								41						41	41	41					41	41	41	41
Punch 40.01 - 50.80[2]								52						52	52	52					52	52	52	52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

2. Determining the sheet thickness to be processed

The possible columns are narrowed down even further with the addition of the sheet thickness s that is to be processed.
In this example, the sheet thickness is **3 mm.**

Tool length (mm)	34.3 - 33.3								33.2 - 32.3								32.2 - 31.3							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–				7	–	–	–	–			7	7	–	–	–	–
Needle punch 6.01 - 10.50					12	12	–	–				12	12	12	–	–			12	12	12	12	–	–
Punch 1.00 - 5.99			14	14	14	14	–	–		14	14	14	14	14	–	–	14	14	14	14	14	14	–	–
Punch 6.00 - 10.50					14	14	14	31					14	14	14	31					14	14	14	31
Punch 10.51 - 30.00[2]								31						31	31	31					31	31	31	31
Punch 30.01 - 40.00[2]								41						41	41	41					41	41	41	41
Punch 40.01 - 50.80[2]								52						52	52	52					52	52	52	52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

3. Identifying the outer circle diameter of the punch

The outer circle diameter of the punch takes you to the correct row in the table (for outer circle diameter calculations, see chapter "Dimensions and regrinding"). In this example, the outer circle diameter is **5 mm with a size 1 punch.**

Tool length (mm)	34.3 - 33.3								33.2 - 32.3								32.2 - 31.3							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–				7	–	–	–	–			7	7	–	–	–	–
Needle punch 6.01 - 10.50					12	12	–	–				12	12	12	–	–			12	12	12	12	–	–
Punch 1.00 - 5.99			14	14	14	14	–	–		14	14	14	14	14	–	–	14	14	14	14	14	14	–	–
Punch 6.00 - 10.50					14	14	14	31					14	14	14	31					14	14	14	31
Punch 10.51 - 30.00[2]								31						31	31	31					31	31	31	31
Punch 30.01 - 40.00[2]								41						41	41	41					41	41	41	41
Punch 40.01 - 50.80[2]								52						52	52	52					52	52	52	52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

4. Using the tables to establish which stripper is needed

The dimension of the stripper to be used can be found in the cell that has been determined using this method. In the example where the punch length is 33.7 mm, the punch dimension is 5 mm and the sheet thickness is 3 mm, the stripper dimension required is **14 mm.**

Stripper selection

Table overview

If the stripper dimensions specified in the following tables are not observed, the stripper adapter may be damaged.

Strippers for long, flat punches (Table A)

Tool length (mm)	37.8 - 33.8								36.7 - 35.8								35.7 - 34.8							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–					–	–	–	–					–	–	–	–
Needle punch 6.01 - 10.50							–	–						12	–	–					12	12	–	–
Punch 1.00 - 5.99					14	14	–	–				14	14	14	–	–			14	14	14	14	–	–
Punch 6.00 - 10.50							14	31						14	14	31					14	14	14	31
Punch 10.51 - 30.0[2]																31								31
Punch 30.01 - 40.00[2]																41								41
Punch 40.01 - 50.80[2]																52								52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

Strippers for long, flat punches (Table B)

Tool length (mm)	34.7 - 33.8								33.7 - 32.8								32.7 - 31.8							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–				7	–	–	–	–			7	7	–	–	–	–
Needle punch 6.01 - 10.50					12	12	–	–				12	12	12	–	–			12	12	31	31	–	–
Punch 1.00 - 5.99			14	14	14	14	–	–		14	14	14	14	14	–	–	14	14	14	14	14	14	–	–
Punch 6.00 - 10.50					14	14	14	31				14	14	14	14	31					14	14	14	31
Punch 10.51 - 30.00[2]								31						31	31	31					31	31	31	31
Punch 30.01 - 40.00[2]								41						41	41	41					41	41	41	41
Punch 40.01 - 50.80[2]								52						52	52	52					52	52	52	52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

Stripper selection

Table overview

If the stripper dimensions specified in the following tables are not observed, the stripper adapter may be damaged.

Strippers for beveled punches (Whisper form)

Tool length (mm)	37.3 - 36.3								36.2 - 35.3								35.2 - 34.3							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–				7	–	–	–	–			7	7	–	–	–	–
Needle punch 6.01 - 10.50					12	12	–	–				12	12	12	–	–			12	12	12	12	–	–
Punch 1.00 - 5.99			14	14	14	14	–	–		14	14	14	14	14	–	–	14	14	14	14	14	14	–	–
Punch 6.00 - 10.50					14	14	14	31				14	14	14	14	31			14	14	14	14	14	31
Punch 10.51 - 30.00[2]								31						31	31	31					31	31	31	31
Punch 30.01 - 40.00[2]								41						41	41	41					41	41	41	41
Punch 40.01 - 50.80[2]								52						52	52	52					52	52	52	52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

Strippers for flat punches

Tool length (mm)	34.3 - 33.3								33.2 - 32.3								32.2 - 31.3							
	For low-scratch processing: Select programmed sheet thickness + 1 mm.[1]																							
Programmed sheet thickness s (mm)	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]	1	2	3	4	5	6	6.4	>6.4[3]
Punch outer circle diameter (mm)	Min. stripper diameter (mm)																							
Needle punch up to 3.00	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–	7	7	7	–	–	–	–	–
Needle punch 3.01 - 6.00					–	–	–	–				7	–	–	–	–			7	7	–	–	–	–
Needle punch 6.01 - 10.50					12	12	–	–				12	12	12	–	–			12	12	12	12	–	–
Punch 1.00 - 5.99			14	14	14	14	–	–		14	14	14	14	14	–	–	14	14	14	14	14	14	–	–
Punch 6.00 - 10.50					14	14	14	31				14	14	14	14	31			14	14	14	14	14	31
Punch 10.51 - 30.0[2]								31						31	31	31					31	31	31	31
Punch 30.01 - 40.00[2]								41						41	41	41					41	41	41	41
Punch 40.01 - 50.80[2]								52						52	52	52					52	52	52	52
Punch 50.81 - 76.20[2]																								

[1] Example: Programmed sheet thickness 4 mm + 1 mm: Select column 5 mm

[2] Applies to all special shapes

[3] Only for machines with permitted sheet thickness > 6.4 mm

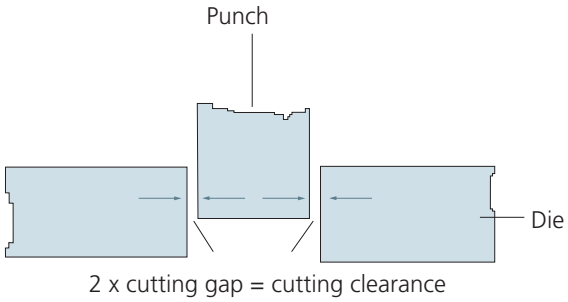
– Sheet thickness not permitted

Stripper dimension corresponds to punch dimension + 0.5 mm all the way around or + 0.5 mm per side

Cutting clearance

The cutting clearance is important for determining the correct die dimension. The cutting clearance changes depending on the sheet thickness to be processed, meaning that the die dimension has to be adjusted.

Cutting clearance



The cutting clearance is the difference between the diameter of the punch and the diameter of the die. It is calculated from the cutting gap, or the distance between the cutting edges of the punch and the die. It is very important to have the correct cutting clearance for punching. If thick material is processed using a die that has excessive or insufficient cutting clearance, the cutting edge of the punch will be under a high load. This means that the service life of the punch is reduced considerably as there is a danger of splinters breaking out of the cutting edge.

Calculating the cutting clearance and die dimension

The cutting clearance generally amounts to approximately 20% of the sheet thickness (0.2 x sheet thickness s).
If punching is being carried out on softer materials such as aluminum, a cutting clearance of 10% is recommended.

The cutting clearance is approx. 20% of the sheet thickness s.	
Cutting clearance	**= 0.2 x sheet thickness s**
Die dimension	**= (0.2 x sheet thickness s) + punch dimension**

Example:

The sheet thickness s is 1 mm and the diameter of a round punch d is 10 mm. This gives the following die dimension:
(0.2 x 1.0 mm) + 10 mm = 10.2 mm

For a round punch with d = 10 mm, a die with d = 10.2 mm is needed if the sheet thickness is 1 mm.

Cutting clearance

In order to determine the desired balance between burr formation and tool wear, the values from the cutting clearance table below can be used as a reference.

The minimum value can be selected in each case for a particularly low level of burr formation. However, this increases the required punching force as well as the tool wear.

If the cutting clearance has been set to the maximum value, multiple sheet thicknesses can be covered. However, burr formation will increase proportionately.

Selection of the optimal value below will result in the ideal balance between burr formation and tool wear.

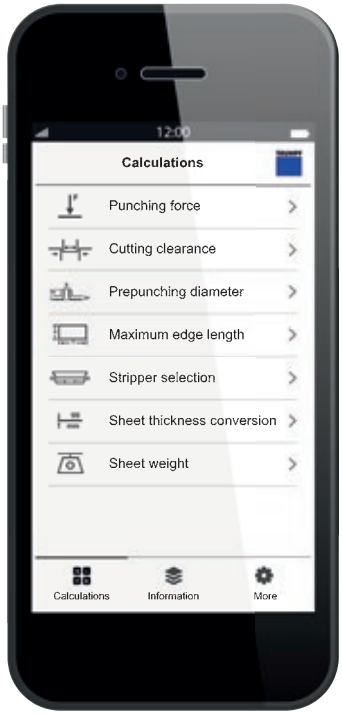
Material type	Sheet thickness in mm							
	1	2	3	4	5	6	7	8
Aluminum (AlMg3)								
Min.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40
Opt. (Cutting clearance 10%)	**0.10**	**0.20**	**0.30**	**0.40**	**0.50**	**0.60**	**0.70**	**0.80**
Max. (Cutting clearance 20%)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Steel (DC01)								
Min.	0.10	0.20	0.30	0.40	0.60	0.70	0.90	1.00
Opt. (Cutting clearance 20%)	**0.20**	**0.40**	**0.60**	**0.80**	**1.00**	**1.20**	**1.40**	**1.60**
Max.	0.30	0.60	0.80	1.00	1.20	1.40	1.60	1.80
Stainless steel (1.4301)								
Min.	0.10	0.20	0.30	0.40	0.60	0.70	0.90	1.00
Opt. (Cutting clearance 20%)	**0.20**	**0.40**	**0.60**	**0.80**	**1.00**	**1.20**	**1.40**	**1.60**
Max.	0.30	0.60	0.80	1.00	1.20	1.40	1.60	1.80

PunchGuide

All important punching calculations can also be made using the PunchGuide, the TRUMPF app for fast and simple punching calculations.

The following calculations are available in the PunchGuide:

- Punching force
- Cutting clearance
- Prepunching diameter
- Maximum edge length
- Stripper selection
- Sheet thickness conversion
- Sheet weight



Useful brochures on the topic of punching are also available to download.

Helpful additional features make the PunchGuide app quick and easy to operate: Under the menu item "More", the units of measurement can be converted from metric to imperial. In addition, the customer's own machines can be saved in the PunchGuide.

PunchGuide is available free of charge for iOS and Android in the respective app stores. Simply scan the QR code on this page and you will be automatically redirected to the appropriate app store, where you can install the app on your smartphone or tablet immediately.

With the PunchGuide from TRUMPF, punching calculations are easier than ever before. When it comes to punching sheet metal, you can benefit from TRUMPF's expertise.

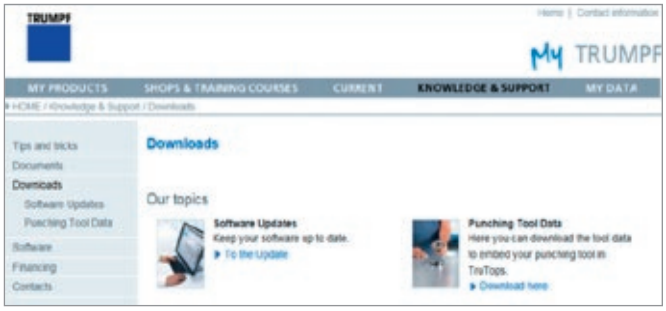
▶ PunchGuide in the iTunes Store
▶ PunchGuide in the Google Play Store

Tool Data Import

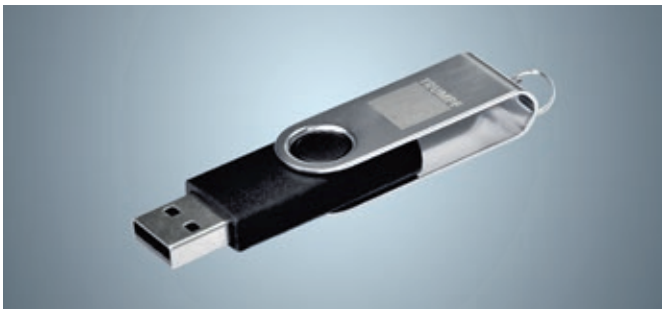
To put customized tools into service as quickly and conveniently as possible, all necessary tool data is already made available to download in the MyTRUMPF customer portal before the tools are delivered. This allows programming work to be conducted before the tools are delivered, meaning that production can start immediately after they arrive.

Information and benefits

When ordering a special tool, all the data required for programming is provided in the form of a download in the MyTRUMPF customer portal and additionally supplied on a USB flash drive: This includes tool parameters, technical information and a tool data file.



Download portal in MyTRUMPF: www.mytrumpf.com



USB flash drive with all the relevant tool data

The Tool Data Import significantly shortens the programming time for parts that have to be processed using a special tool. It is therefore not necessary to copy the tool geometry and measure the tool, and this helps avoid costly errors and run-in times on the machine. All technical information can be retrieved directly in TruTops. In addition, the geometric data is available in DXF format for users who do not have TruTops.

Tool life

The harder the surface of a punching tool, the longer the service life. The high-quality MultiDur coatings from TRUMPF make your tools harder, more resistant and improve the coefficients of friction. Consequently, a coating prevents the metal particles of the processed material from fusing to the surface of the tool and building up at the edge. If material builds up at the edge, particles could break off from the punch during the punch upstroke. In turn, these imperfections are contact surfaces that cause additional wear.

The protection that a coating offers remains effective even after several regrinding operations. During a punching process, the majority of the friction originates on the cutting part of the punch, where the coating is not affected by regrinding.

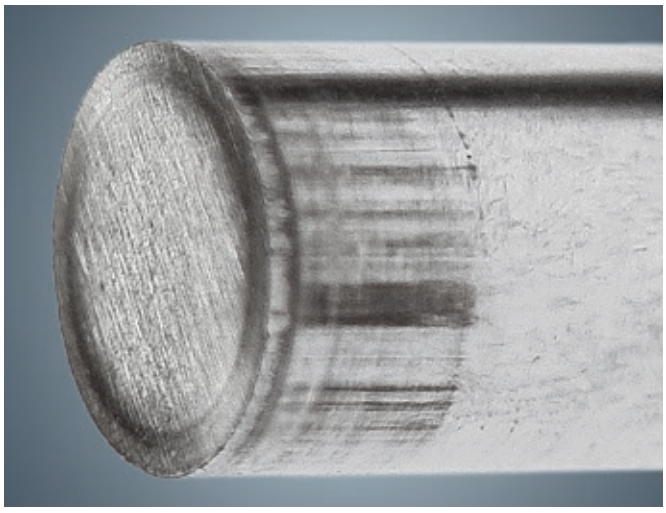
MultiDur TiCN (Titanium carbo-nitride)

This coating, which has been tried and tested over many years, is suitable for all TRUMPF punching tools. MultiDur TiCN is characterized by its outstanding toughness and durability, and its excellent wear resistance, without being brittle. The service life is doubled. If the tool is used to punch mild steel, the period until the first regrinding can be doubled. And after regrinding, you can achieve better results as the level of wear is lower.

MultiDur Performance

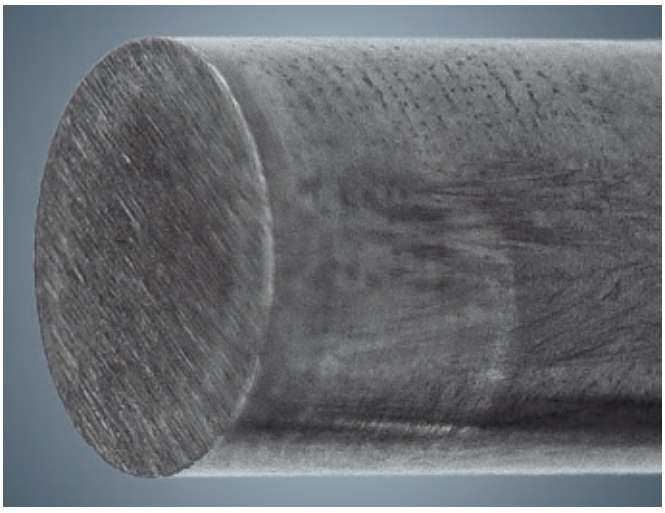
The MultiDur Performance coating is also suitable for the whole TRUMPF punching tool range. It reduces friction between the tool and the material and increases the oxidation resistance of the tool. Compared to tools that are coated with MultiDur TiCN, the level of wear is considerably lower still and the service life is increased by a factor of 4 in comparison with uncoated punches. In addition, less lubricant is required.

1 mm



Uncoated punch after 120,000 punching strokes in stainless steel using lubricants

1 mm



Punch with MultiDur Performance coating after 120,000 punching strokes in stainless steel using lubricants

Tool life

MultiDur Alu

The MultiDur Alu coating is the perfect coating for processing non-ferrous metals, such as aluminum. It increases the sliding capability of the tool, thus ensuring that only a small amount of lubricant is needed, if at all. The service life of punches with this coating is increased by a factor of 5 in comparison with uncoated punches. In addition, the occurrence of fine material abrasion and material build-up at edges is minimized.

Other factors

The degree to which a tool's resistance to wear can be increased depends on a number of factors. In addition to the coatings, the properties of the material also influence the service life of a tool. Sheets made of stainless and other high-strength steels place enormous demands on tools and can lead to noticeably faster wear in comparison with other engineering steels.

Special requirements often have to be taken into account when using customized tool materials. For special geometries or if a longer service life is required with the same operating conditions, it is possible to resort to using powder metallurgy tool steels as the punching material. These steels feature an excellent grindability and are very resistant to bending, compression and wear.

To increase the service life of tools, the whole punch should always penetrate into the sheet metal. Our special trimming tools are perfect for trimming the edges of sheet metal if desired (see chapter "Edge quality").

Tool maintenance and setup

Having the right tool maintenance regime is important for ensuring a long service life and for a precise and high-quality punching result.

Regrinding

Regularly regrinding punching tools, for example using the QuickSharp (see chapter "Accessories"), ensures maximum edge quality and therefore produces the best possible results in punching. This means that there are fewer problems with the stripper. In addition, tools that have been reground preemptively will last longer.

QuickSharp

For a sharp cutting edge, the tool should be reground by between 0.1 and 0.25 mm using sufficient coolant. Cooling the tool well will prevent the formation of grinding cracks and the annealing of the material. It is advisable to use an oil stone to slightly sharpen the tool after the grinding process and to demagnetize it.

As a general rule, tools that are not coated should be reground after 60,000 to 80,000 strokes and tools that have a coating should be reground after 120,000 strokes.

In addition, it is important to regularly check the following factors to determine the grinding requirements:

- **Cutting edges**. The tool should be reground if the radius is larger than 0.1 - 0.25 mm.
- **Punching noise**. If there are discernible changes in the punching noise, the tool should be checked and reground if necessary.
- **Punching power**. The punching result should be checked for excessive burr formation and the tool should be reground if necessary.

Lubrication

It is essential to have sufficient lubrication for punching and forming processes. However, excessive lubrication can encourage an accumulation of fine material abrasion and can render the tool inoperative. TRUMPF provides the perfect lubricant for your application in a range of container sizes.

Punching	
Material	**Suitable lubricants**
Steel and stainless steel	TRUMPF punching and nibbling oil
Aluminum and steel	Akamin cutting oil

Tapping	
Material	**Suitable lubricants**
Steel and stainless steel	Variocut B30
Aluminum and aluminum alloys	Variocut C462

Different lubrication intensities can be set on the machine. Increased lubrication is required in particular for processing stainless steel and aluminum to avoid wear and material adhesion at the edges. The technical information for the corresponding forming tool provides a range of useful information to find the ideal lubrication and/or the ideal lubricant for a specific tool and material.

Tool maintenance and setup

Maintenance

It is advisable to clear material abrasion and lubricant residues from the tool during removal. Minor damage on the tool can be removed by using an oil stone, for example. A visual inspection of the punch will reveal whether a material adhesion around the edge has formed. This deposition should be removed. Forming tools, and in particular their associated spring elements and ejectors in spring-loaded dies, should be continuously checked and kept free from material build-up around the edges. The punch should then be lubricated for conservation purposes, preferably with an oil that does not resinate. The die carrier and the adapter should also be regularly cleaned of dirt and material abrasions, then lubricated. Spring elements in forming tools can wear out over time and as a result of dirt and heat production. If this happens, the spring elements should be replaced.

Storage

It is important to store tools in a clean and orderly manner: If the tools are not exposed to dirt then they will not begin to rust and the cutting edges will not be damaged. Conserving the tools with oil will also protect against rust. TRUMPF tool cabinets (see chapter "Accessories") create the perfect conditions for storing tools: Specially designed tool holders carefully store the tools in a dust-free environment, reducing the cleaning times required for the tools.

Punching Tool Cabinet

Setup

During setup, the main concerns are reducing non-productive times and avoiding setup errors. A few points should be taken into account in order to set tools up quickly and correctly.
When setting up a punch, for instance, it must be ensured that the punch cutting edge is precisely aligned to the alignment ring and that the correct alignment ring size is selected. For example, a size 2 punch must be fitted in a size 2 alignment ring within a tool cartridge. The QuickLoad tool cartridge loading device ensures a convenient setup (see chapter "Accessories").

Over the following pages tool features are presented which contribute to fast, simplified setup and help prevent errors in the process.

Tool maintenance and setup

EasyUse

Fig.1: EasyUse die

When setting up a die, it is important to check whether the die has been reground or not because the shims need to be selected accordingly. The patented TRUMPF tool standard EasyUse in the Classic System, uses a regrind scale on the die to show how much a die has already been reground, without the need for remeasuring. The corresponding shims are just as easy to find thanks to the hole labeling system. Several shims can be used to compensate for the regrind amount.

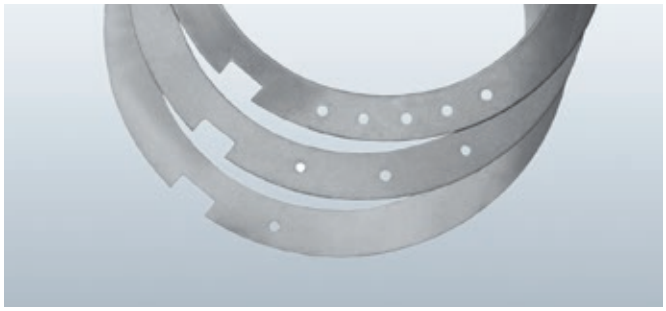


Fig.2: EasyUse shims

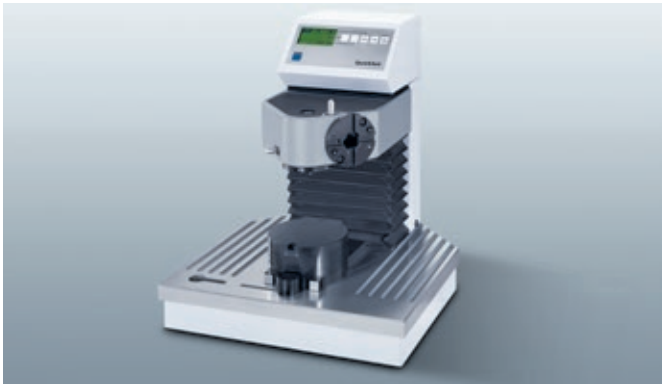
The correct shim is identified as follows:

1. **Read the regrind scale interval.**
   The value of the interval indicates the thickness of the shims required in tenths of a millimeter. Compare with Fig.1.
2. **Select the shims.**
   The shims feature hole labeling. One hole corresponds to a thickness of 0.1 mm. Select the shims so that their thickness corresponds to the value that has been determined using the regrind scale of the die. Compare with Fig.2.

Experience simple set-up with **EasyUse**:
www.trumpf.info/xfptjk

More tips

- A test stroke with the QuickSet device can check whether the die and punch are positioned for best results (see chapter "Accessories").
- When setting up the tools, it is important to ensure that the correct cutting clearance (see chapter "Cutting clearance") and the correct stripper (see chapter "Stripper selection") are selected.
- The Punching Tool Cart (see chapter "Accessories") allows you to quickly and conveniently transport tool cartridges that have been set up from the setup station to the machine.



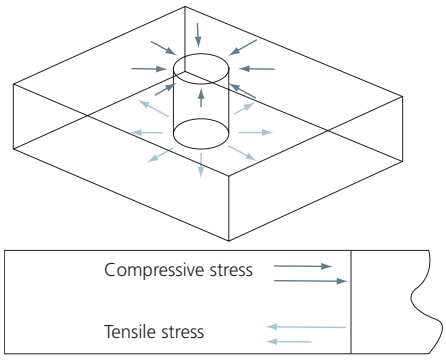
QuickSet

Sheet flatness

Unwanted deformations can occur in the sheets, particularly if lots of geometries are punched very close to one another. These deformations then have to be corrected in a separate work cycle, which requires considerable effort.

Development of sheet unevenness

Tensions when punching in sheet metal



Tensile and compressive stresses are generated in the sheet during the punching process. When the punch penetrates the sheet metal, the material on the upper side of the sheet is pulled into the cutting gap and is deformed in the process. This can lead to sheet unevenness, particularly if lots of punching strokes occur close together. Formed sections pushed upward or downward also generate tensions in the workpiece, which can severely affect the sheet evenness.

There are numerous approaches to counteracting sheet unevenness: using the active presser foot, tools with a leveling effect, the “integrated flattening” function with the corresponding tools and an appropriate choice of processing strategies.

Active presser foot

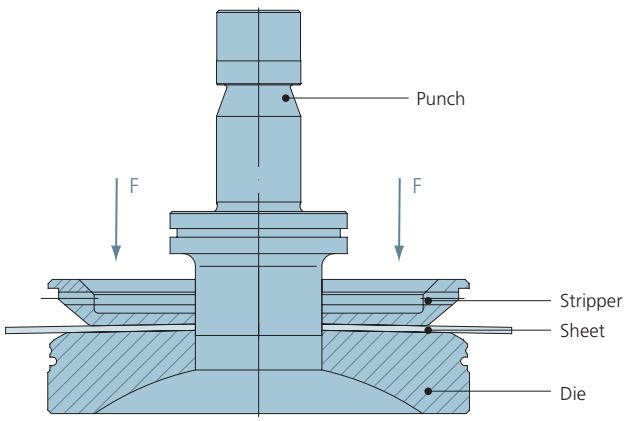
The active presser foot reduces sheet deformation: On the upstroke of the punch as it pulls out of the sheet, the sheet is held steady by the stripper and is not pulled upward. In this way, the sheet does not become wedged with the punch when the punch returns to its working height.

With malleable materials such as copper or aluminum, the presser foot may also have the opposite effect if it pushes against the sheet, causing the sheet metal to sag. This risk can be reduced if necessary on machines that have an adjustable presser foot pressure. To improve the positioning accuracy and the cut quality of the punches, the "delayed single stroke – precision stop" can also be activated on the machine.

Tools with leveling effect

If tools with a leveling effect are used, this leveling effect will be more pronounced than when using the active presser foot. Tools with a leveling effect have a non-regrindable, convex die and a stripper with a concave-turned lower surface which are individually adapted to the customer's workpieces. The punch is still a standard punch.
It is important that the die and stripper are precisely aligned with each other. This means that the angle of both bevels needs to be exactly the same. This leveling effect generates counter-stresses in the sheet that limit the tensions caused by the punching process. In this way, the sheet metal distortion can be minimized.
The angle of the die and stripper must be adjusted depending on the material being processed.

Leveling effect



Sheet flatness

Integrated flattening,

With integrated flattening, the sheet is pressed against the stripper by the active die of the machine and the tool's die before every punching stroke. This means that compressive and tensile stresses in opposition to the stresses created by the punching process are applied to the sheet. The punching stroke is then applied to the pre-tensioned sheet using the same tool. Once the punching process has ended, the tensions will have neutralized each other and the sheet remains flat.

Integrated flattening is performed using convex size 1 dies. The stripper with a special coating features a recess that allows the sheet to be flattened appropriately.

TruTops' integrated rules provide support for programming. The flattening parameters can still be adjusted afterwards on the machine itself.

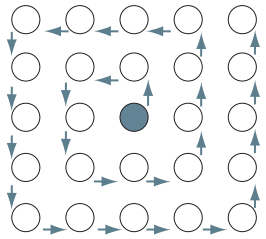
The following table gives an overview of the various options:

	Active presser foot	Tools with leveling effect	Integrated flattening
Improvement of flatness	+	++	+++
Influence on the flattening effect	Using the force of the presser foot	Using the force of the presser foot and the tool geometry	Using the active die and a special tool design
Flexibility	Manual or programmable adjustment of the presser foot force	Manual or programmable adjustment of the presser foot force	The customer can make a custom setting for the flattening effect independently and easily (on the machine itself)
Tools	No special tools required	Various tools necessary depending on requirements; determination of the appropriate tool for specific customer application in cooperation with your contacts at TRUMPF	One tool (die and stripper) can be flexibly used for any requirement

Experience **tools for integrated flattening** in action:
www.trumpf.info/hsc0lm

Processing strategy

Processing strategy from the inside out



■ Schematic diagram of the spiral

The tension in the sheet can also be decreased using a skillful processing strategy. A good flat surface can be achieved with a differentiated setting of punches and formed sections in the sheet. However, there are no hard and fast rules on how to do this, though. The right strategy can only be discovered through experience. It may be helpful to process the sheet following a spiral pattern, working from the inside out. This can be easily programmed in TruTops.

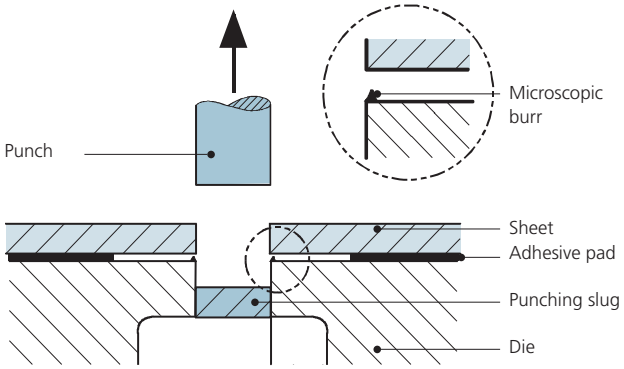
Low-scratch/scratch-free processing

The standards expected of the processed sheet metal surface finish are constantly increasing. Whether you are producing a housing, facade or a device, TRUMPF offers a range of solutions for minimizing the formation of scratches and marks during sheet processing. It goes without saying that these solutions can be combined with an existing tool inventory.

Development of scratches

When punching a workpiece, the friction between machine parts, tools and the workpiece can cause scratches to occur on the upper side and underside of the workpiece.
One typical cause of scratches is a minuscule burr on the upper edge of the die. A protrusion of size 1 dies beyond the intermediate ring likewise leads to increased formation of scratches.

Development of scratches



Avoiding scratches

Intermediate ring with Ampco insert

1. Ampco

The malleable and wear-resistant Ampco alloy, made from copper, aluminum and tin, prevents scratches on the underside of the sheet thanks to its flexibility and lubricating effect. Ampco alloys are particularly good at preventing scratches when used with intermediate rings for forming dies. The intermediate rings are supplied with an Ampco insert for thin sheets or with an Ampco lid for all sheet thicknesses. An ejector for forming tools is also available in this variant.

Intermediate ring with brush insert

2. Brush inserts

Another possible method for reducing scratches on the underside of the sheet is to use brush inserts in dies and intermediate rings. They can be used flexibly and are particularly suited to use with thin sheet metal. As the brush inserts are approx. 1 mm higher than the upper edge of the tool, they prevent the tool surface from making direct contact with the sheet being processed.

Adhesive pad

3. Adhesive pads

Adhesive pads are preformed, self-adhesive films that are 0.3 mm thick. Different adhesive pads can be adhered to dies, intermediate rings (for the underside of the sheet) and strippers (for the upper side of the sheet). They prevent the formation of scratches and stripper marks on the workpiece. They are a simple and cheap way to improve the surface finish on the workpiece. Before applying the pad, the tool should be cleaned and all grease removed so that the adhesive pad sticks securely.

Specially coated stripper

4. Specially coated stripper

The specially coated stripper prevents marks and scratches forming on the upper side of the sheet. When it is used as an active presser foot, there are hardly any marks compared to an uncoated standard stripper. The stripper has a permanent coating that is wear-resistant thanks to its smooth, dirt-repellent surface; material abrasions have very little chance of sticking to the surface. The high-quality coating gently transfers the presser foot force onto the sheet.

Low-scratch/scratch-free processing

5. MultiTool, mark-free

This special MultiTool features a patented control element in the punch which holds the inactive punches back. The blanking die of the die and the specially coated stripper, which is specifically adapted to the punch inserts and configuration also ensure a flawless result on the upper and underside of the sheet.

6. Correct tool maintenance

Another measure that can be taken to avoid scratches is regular tool maintenance. If there are signs of wear such as abrasion or damage to the tool cutting edges,, the punch and die must be reground on the front to ensure low-scratch processing. The correct shims must then be placed underneath the reground die (see chapter "Tool maintenance").

MultiTool, mark-free

7. "Descending die" or "active die" machine option

By using the descending die or active die, sheet metal parts with an outstanding finish can be produced. As the descending or active die moves downward, there is no contact between the die and the sheet during the travel motion.

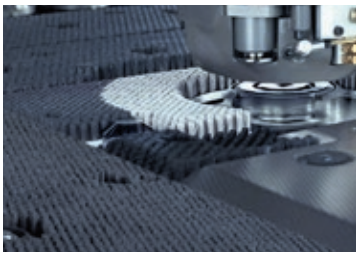
8. Slug retaining function

Slug retention dies prevent the punching slug from being pulled upward on the upstroke of the punch and the travel motion from scratching the sheet metal. During the punching stroke, the high forces exerted cause the material to enter small grooves in the die. If the punching slug on the punch is then pulled upward, it is held back by the grooves. Using beveled punches remains possible. The use of slug retention dies is advisable if the suction system on the machine is turned off to prevent scratching.
Warning: If you are working in nibbling mode, the slug retaining effect described is not possible.

Slug retention die

9. Brush table

The use of brush tables prevents contact between the underside of the sheet and machine and tool parts that cause scratches, in particular the die. The sheet slides along on the brushes, which give in to the direction of movement due to their length. In contrast to tables that are equipped with ball rollers, where the ball marks may show up on the underside of the sheet, the brush table does not leave any kind of mark.



Brush table

Tips for your daily work

Working with an active presser foot

Working with an active presser foot considerably reduces deformations in the sheet and therefore reduces the formation of scratches. Using a specially coated stripper can prevent marks from forming.

Elevated working height

Scratches on the upper side of the sheet that are caused by the stripper can be prevented by using an elevated working height (stripper is 1 mm higher).

Additional measures

- The punch and die should be precisely aligned with one another to avoid burr formation (for example, by using the TRUMPF QuickSet device, see chapter "Accessories") and regularly reground (for example, by using the TRUMPF QuickSharp device, see chapter "Accessories").
- Cleaning table surfaces, brushes and brush fields daily will prevent the formation of deposits that may cause scratches. It is advisable to readjust or replace the brushes and brush fields as and when required.
- Polishing the upper edges of dies and intermediate rings – and the underside of the stripper – will also help to prevent scratching.

Increasing dimensional accuracy

In some cases, it is necessary to ensure a particularly high level of dimensional accuracy, for example when producing blanks or punches for joints. TRUMPF has a range of solutions for increasing dimensional accuracy.

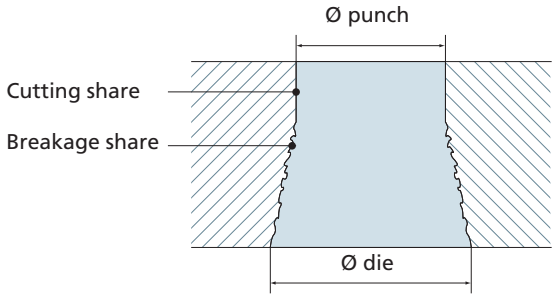
Restricted tool tolerance

TRUMPF tools are high-precision tools and are manufactured as standard with restricted tool tolerances. However, in particular circumstances, it may be sensible to restrict the manufacturing tolerance of the punch and die even further. This is advisable when processing thin sheet metal using very narrow cutting gaps, for example.
The following table shows the manufacturing tolerances and restricted tolerances of standard tools for punches and dies.

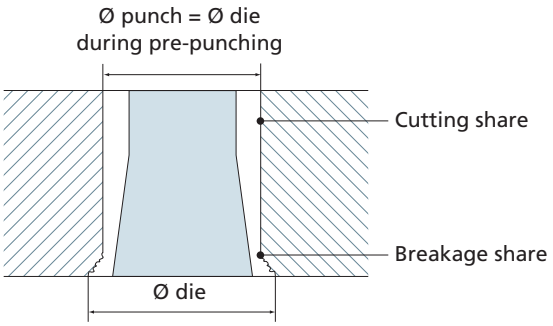
Manufacturing tolerances of standard tools (in mm)		Restricted tolerances (in mm)	
Punch	0.00 - 0.03	Punch	0.00 - 0.01
Die	+ 0.05 0.00	Die	+ 0.03 0.00

Punching precision fits

Cutting shares for normal punching operations in comparison with precision fits



■ Normal punching



■ Precision fit punching

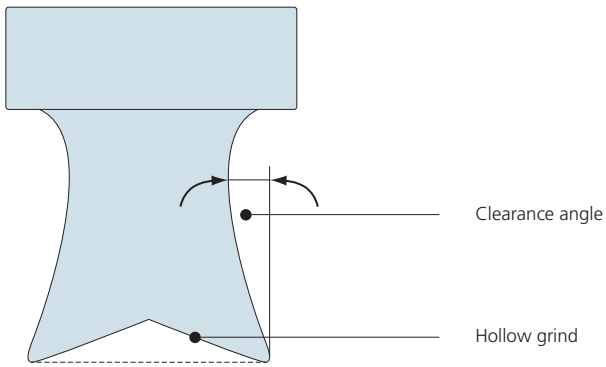
As well as being able to restrict the tolerances, TRUMPF offers another solution for high-precision punching operations: a special punch for precision fits. The tolerance class that can be achieved varies depending on the measurement range and is approx. H9/10. The tolerance is also influenced by the sheet thickness and material quality. Precision fits are more exact as the cutting share is increased by the following values in comparison with normal punching operations:

	Normal punching	Precision fit punching
Cutting share	33%	80%
Breakage share	67%	20%

Increasing dimensional accuracy

Operating principle

Special punch for precision fits (for post-punching)



To increase the cutting share when punching precision fits, the punching process must take place in two working steps. A special punch featuring a specific design for precision fits is required.

1. Prepunching

The first working step consists of prepunching using a standard punch where the diameter is reduced by the size of the cutting clearance (see chapter "Cutting clearance").

Prepunching diameter d = punch dimension - cutting clearance

Example: Round 4 mm punch in 2 mm sheet, cutting clearance: 0.4 mm
Prepunching diameter d = 4.0 mm - 0.4 mm = 3.6 mm

2. Post-punching

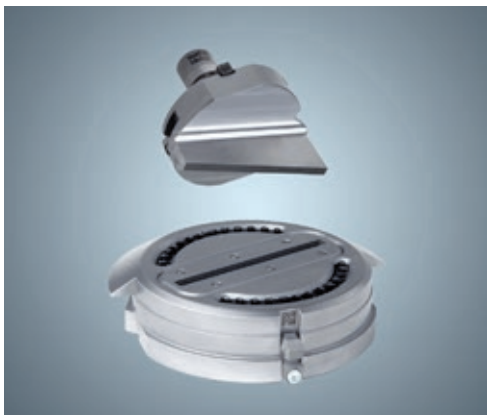
In the second working step, the special punch for precision fits is used for post-punching. A standard die with a cutting clearance of approx. 0.1 – 0.2 mm can be used for this.
The special punch has a larger clearance angle and a hollow grind and therefore has an extremely sharp cutting edge, which is used to scrape out the hole.

Punch with integrated alignment ring

When processing sheet metal thicker than 2.5 mm or using nibbling mode, it is advisable to use a punch with an integrated alignment ring. This prevents the punch from twisting in the event of off-center load and heavy forces.

Edge quality

Sharp sheet edges present a risk of injury and are particularly undesirable on visible edges. In these cases, it is often necessary to carry out follow-up work where the punching burrs are subsequently removed. With its special punching tools, TRUMPF demonstrates how the edge quality can be improved with complete processing performed directly on TRUMPF punching and punch laser machines.



MultiShear slitting tool

MultiShear slitting tool

When cutting out sheet metal parts, conventional slitting tools often create annoying nibbling marks. By contrast, the MultiShear slitting tool for TruPunch and TruMatic machines ensures exceptional edge quality and saves on costly reworking. The MultiShear can be used for outer and inner contours as well as for common separating cuts. The MultiShear die has brush inserts for low-scratch processing. When the sheet is moved, it slides across the brushes so that there is no direct contact between the sheet and the die. A stepped stripper is available for cutting close to formed sections. The edge quality is further improved by subsequently using deburring tools.

MultiShear for trimming

The TRUMPF MultiShear for trimming is specially designed for trimming sheet edges without leaving marks.
When trimming with the MultiShear, the overlap, i.e. the separated sheet metal strip, should be at least 3 mm wide. An overlap of 10 mm is recommended. This ensures the lowest possible wear on the tool and the highest possible part quality. Compared with conventional tools for trimming, this small overlap saves on material and costs. In addition, the punch is supplied with a MultiDur Performance coating to prolong the service life (see chapter "Tool life").

Trimming punch with bevel shear

Trimming punch with bevel shear

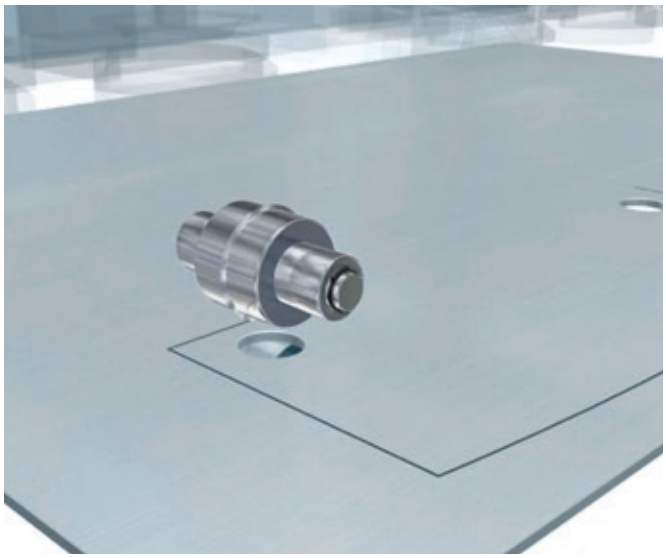
The trimming punch with bevel shear offers another option for trimming. The geometry of the punch stabilizes it and makes it possible to use the punch from all four sides.
The TRUMPF MultiDur TiCN coating also ensures that the punch is particularly resistant to wear and can therefore be used longer (see chapter "Tool life"). The integrated alignment ring prevents the punch from twisting while processing.

Edge quality

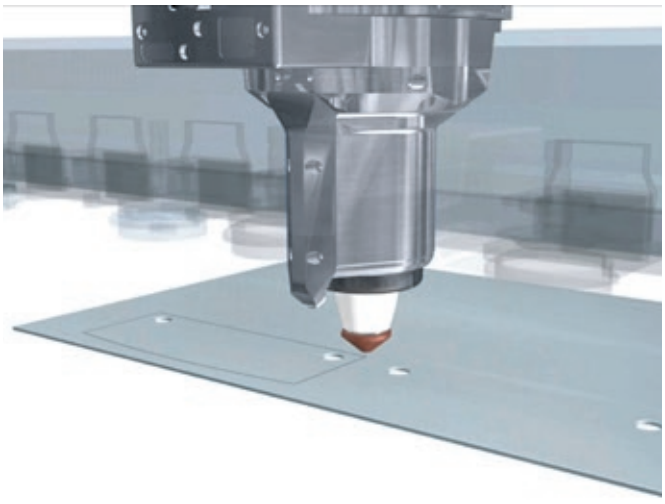
Chamfered laser edge

When producing laser edges, a chamfer is often required to round off the sharp 90° edges. This guarantees simple and safe handling.

With the "chamfered laser edge" function, this is easy to do: On the TruMatic 6000 and TruMatic 7000 machines, laser edges can be quickly finished using the roller pinching tool to chamfer, without having to adjust the laser parameters or perform follow-up work. First, a notch with a 120° angle is made in both sides of the sheet metal using a roller pinching tool. Then the laser separates the sheet by directing the cutting beam at the notch base. The result: a perfectly chamfered laser edge.



Notch. The roller pinching tool creates a 120° notch on both sides.



Laser cut. The cutting beam is directed at the notch base and perfectly separates the sheet by chamfering.

Experience how to produce chamfered laser edges with the **roller pinching tool**: www.trumpf.info/j6udxg

Deburring

When manufacturing burr-free sheet metal parts on punching and punch laser machines, there are various tools to allow components to be deburred on the machine itself. This eliminates the need and effort of subsequently removing the punching burrs and considerably reduces throughput time, particularly in the case of coated sheets and formed parts. What's more, the improved edge quality reduces the risk of injury during the subsequent processing.

Depending on the application in question and the required quality, there are various solutions available to increase edge quality: the patented roller deburring tool – which delivers the highest quality results in combination with the deburring MultiTool – and the ball deburring tool as an alternative for flexible use.

Ball deburring tool

For deburring small and large contours alike

The ball deburring tool can be used for deburring both small and large contours and therefore offers the highest flexibility. It is especially well suited for the deburring of complex holes and the corners of workpieces. The punching burr is compressed between the two balls in the punch and die, which causes a chamfer to develop on the upper and lower side of the sheet. Deburring is also possible near to formed sections thanks to the beveled punch head.

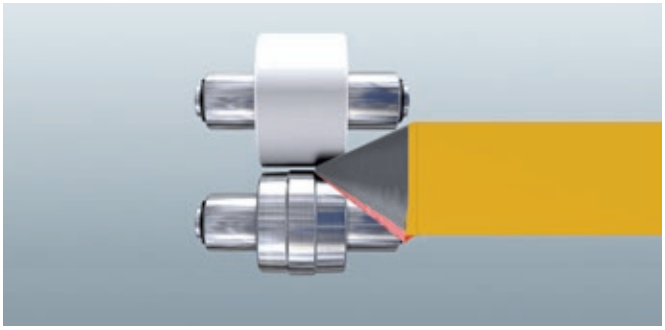
Ball deburring tool: Both balls in the punch and die compress the punching burr.

Roller deburring tool and deburring MultiTool

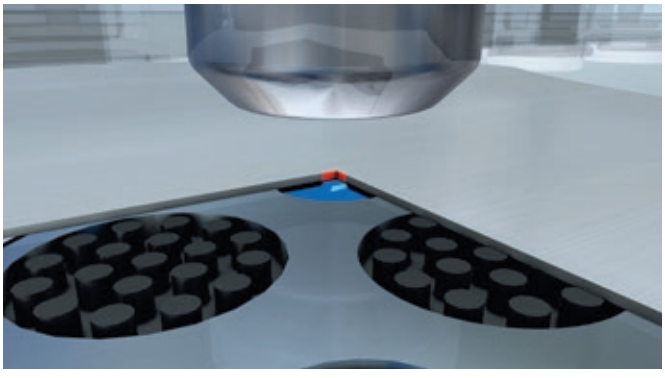
For deburring simple, large contours with optimum deburring results

The roller deburring tool is mainly used for simple, large contours. The deburring MultiTool is used for forms whose travel radius is smaller than 20 mm. The remaining punching burr is processed in single-stroke or nibbling mode using the three integrated embossing inserts in the die.

Due to the fact that the punched edges are perfectly rounded off with the roller deburring tool and parts which are practically free of burrs can be achieved, it is particularly suited for visible edges. By modifying the roller contour to the altered burr and the width of the separation gap, a high-quality result is ensured in all sheet thickness ranges. You can achieve an even better edge quality if the MultiShear slitting tool is used as well.



Roller deburring tool: The embossing roller (below) dislodges the burr (red) and chamfers the sheet edge (gray).



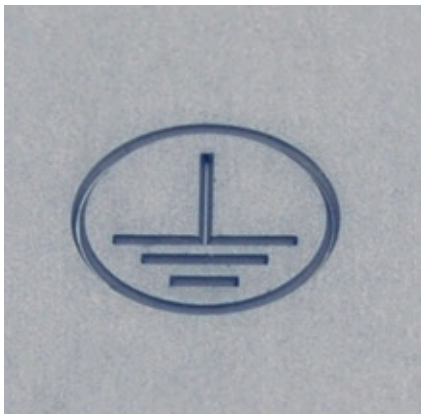
Deburring MultiTool: :The embossing insert in the die dislodges the burr at the corner and chamfers the sheet edge.

Experience how to deburr punching contours with the **roller deburring tool** and the **Deburring MultiTool**: www.trumpf.info/23clmq

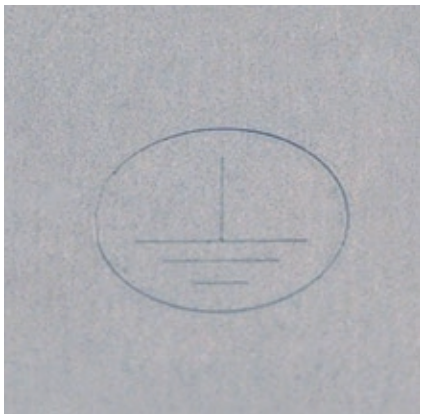
Embossing quality

In practice, sheet thickness is rarely consistent and, according to DIN EN 10139, may even exhibit tolerances within a single batch. Variations in the sheet thickness may negatively impact the forming and embossing processes and therefore the part quality.
This means that the depths of the embossing and identification marks in the sheet fluctuate and the proportions of formed sections vary as well. TRUMPF provides a simple solution in the form of adaptive stroke calibration; you can determine the exact sheet thickness before processing and adjust the tools in use to that sheet thickness.

Adaptive stroke calibration



Embossing too deep



Embossing too shallow

Ideal embossing – with adaptive stroke calibration

Using adaptive stroke calibration and the calibration tool, TRUMPF punching machines and punch laser machines can determine the sheet thickness on their own, thus avoiding embossing that is too deep or too shallow. After the measuring procedure, the machine accurately adjusts the lower dead point of the ram's movement to the measured sheet thickness: As soon as the calibration tool detects the position of the sheet surface, the ram control on the machine detects the position of the ram. The ram stroke is then accurately calibrated. This achieves the best possible results in embossing and forming. Sheet thickness tolerances are automatically compensated and products are of the highest quality from the very first part.
Another advantage: The processing result can be reproduced as you require, even on other machines with adaptive stroke calibration.

Calibration tool

Adaptive stroke calibration with a calibration tool is worthwhile for the following processes:

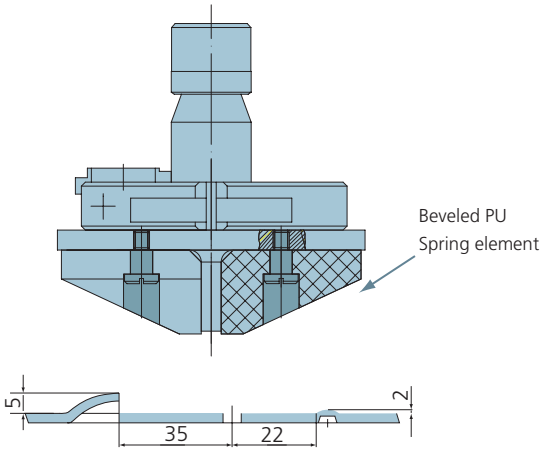
- Embossing tools: for a consistent embossing depth
- Forming tools: for a consistent forming height
- MultiShear: for consistently good cutting quality
- MultiBend: for angles that are always correct
- Roller pinching: for consistent predetermined breaking points

Cutting close to formed sections

It is often necessary to cut sheet metal parts close to formed sections. In doing so, though, you will soon come across problems with the standard slitting tool. If the cut is too close to the formed section, the formed section or the tool could be damaged. For this reason, TRUMPF offers customized solutions for cutting close to formed sections, namely a stripper with an elastomeric spring made from a special synthetic (PU stripper) or the steel presser foot.

PU stripper

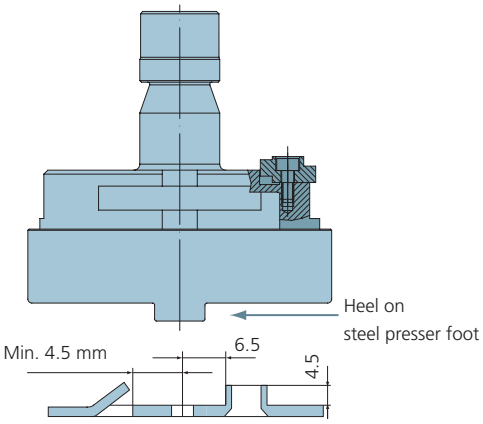
Slitting tool for cutting close to formed sections



The TRUMPF slitting tool for cutting close to formed sections has an integrated PU spring element that replaces the use of a standard stripper. The PU spring element takes on the stripper function. The bevel on the spring element means that it is possible to cut closer to an existing formed section than with a conventional slitting tool with a standard stripper. In addition to the standard PU spring element, TRUMPF offers spring elements for specific requirements that can be customized to your needs.

Steel presser foot

Slitting tool for cutting close to formed sections



To cut even closer to formed sections, a steel presser foot can be used. As the steel presser foot has a heel, it is possible to have a smaller clearance between the separating cut and the formed section. The steel presser foot works in a similar way to an active presser foot by pushing the sheet metal down on the upstroke. Specially adapted spring packages are available from TRUMPF.

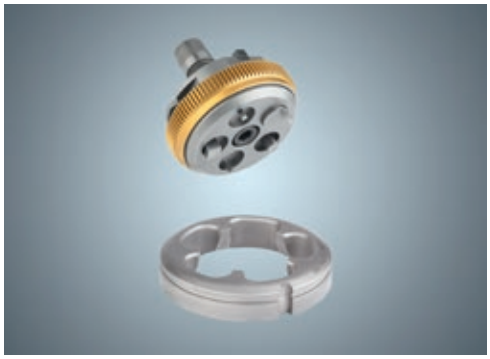
Reliable removal

The removal of small parts may cause errors: With thin sheets, parts may catch when being pushed out, and removal through the chip tube means that sorting is necessary later. TRUMPF offers a range of solutions that can make the removal of small parts simple and reliable.

Ejector tool

Ejector tool

With small, laser-cut parts that have complicated geometries, removal using a part removal flap or a laser console is often not possible. The ejector tool offers support in this process. It is used to eject small laser-cut parts using microjoint technology – quickly and with high process reliability. For this purpose, the ejector punch is placed on the microjoint, the part is cut off with a single stroke and ejected through the die. The maximum part area to be ejected is limited by the die size and amounts to 50.1 mm (square) or 70.1 mm (round).



Ejector MultiTool

Ejector MultiTool

The ejector MultiTool likewise reliably separates microjoints and ejects small laser-cut parts through the die and into the punching console with high process reliability. By contrast to the ejector tool, the ejector MultiTool features a punch with five different round or angular inserts to match any part geometry. A round or straight contour can be processed without the need for a tool change.

Experience the **Ejector MultiTool** in action:
www.trumpf.info/gdk7si

Ejector tool for sorting

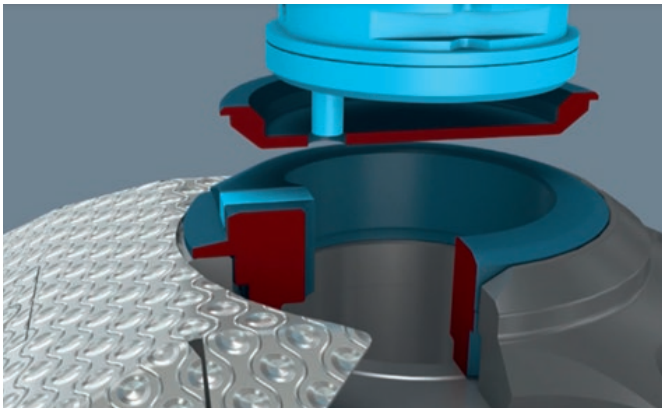
Ejector tool for sorting

The ejector tool for sorting doesn't only eject small laser-cut parts with high process reliability. Its advantages become obvious when sorting finished parts and remaining parts in particular: Thanks to the special machine drive on the TruMatic 1000 fiber, the so-called Delta Drive, the ejector tool sorts small laser-cut parts into up to four different containers. This is made possible because the patented Delta Drive allows the punching head to move in the Y-direction for the first time. Because of this, the punch and die are able to move independently of each other and both cutting edges of the dies can be moved into position.

Experience the **Ejector tool for sorting** in action:
www.trumpf.info/b6uo7f

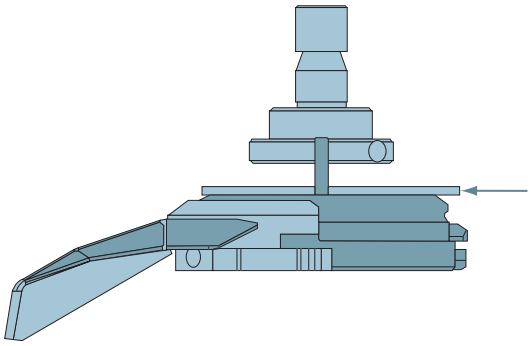
Reliable removal

In the ejection process itself, the scrap pieces are first separated from the sheet using the cutting edge on the inside of the die. These fall through the die into the chip container. The finished parts are then ejected into the finished parts container via the cutting edge on the outside of the die and the part chute. This renders the subsequent sorting of finished parts and scrap pieces unnecessary and minimizes scratches on the finished parts. If the size of the scrap pieces exceeds the size of the die opening, they can also alternatively be ejected via the part chute

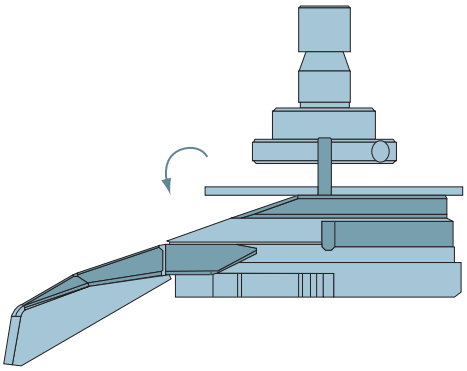


Slitting tool size 5 for removing small parts

Pushing out vs. tipping



■ Until now, small parts have been ejected by, for instance, getting pushed out.



■ However, with the size 5 slitting tool, small parts can now also be tipped by the die and reliably ejected.

The size 5 slitting tool substantially simplifies the removal of small parts: The part is tipped by the bevel on the die and is removed reliably through the part removal flap or part chute.
But the size 5 slitting tool for removing small parts also has other functions. It can be used for cutting, as is usual, or for clamping and rotating in combination with the bi-level stripper for skeleton-free processing (see following page). This simplifies processing on all machines that have an active or descending die.

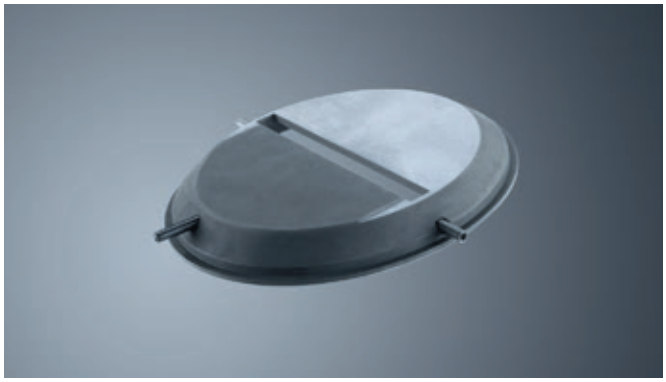
Slitting tool size 5 for removing small parts

Experience the **slitting tool size 5 for removing small parts** in action:
www.trumpf.info/5wmjgs

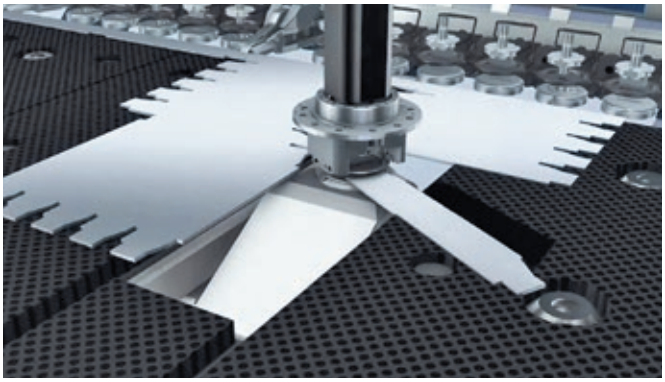
Reliable removal

Bi-level stripper with clamping function for skeleton-free processing

The bi-level stripper allows sheet metal parts to be clamped and rotated between the die and the stripper during separation. The sheet metal parts can then be easily ejected via the part chute. This means that even large parts which exceed the maximum dimensions of 180 mm in width and 500 mm in length can be ejected via a part chute. The remaining strips of scrap can also be cut into smaller pieces and ejected via the bi-level stripper, meaning that it is no longer necessary to manually remove the strips of scrap.



Bi-level stripper with clamping function



Clamping and rotating parts

Particularly high/large formed sections

At the customer's request, TRUMPF can produce forming tools with a new scale. Size 5 tools facilitate the production of large forms in a single stroke and can be used on the new generation of punching machines and punch laser machines without additional machine options. This substantially increases the range of processing options.
The TRUMPF product range includes size 5 forming tools for the "active die" machine option which allow you to exploit the potential of TRUMPF machines even further.

Tried-and-tested punching and forming possibilities

Size 0	Size 1	Size 2
Punch outer circle up to 10.5 mm	Punch outer circle up to 30.0 mm	Punch outer circle up to 76.2 mm

Enhanced size 5 forming possibilities

Size 5	Size 5 active die
Punch outer circle up to 110.0 mm	Punch outer circle up to 110.0 mm

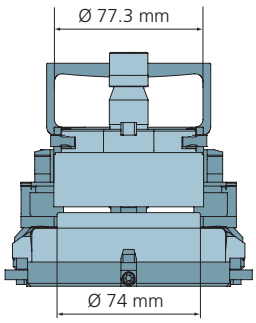
Size 5 forming tools

Louver tool size 5

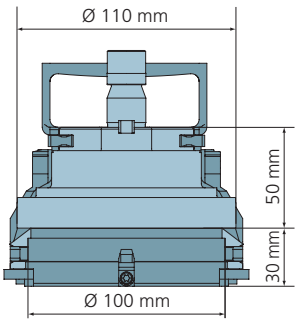
Punches have an outer circle which is limited by the the design of punching machines to 76.2 mm (size 2). TRUMPF goes beyond this, though, offering enhanced design possibilities for sheet metal forming with size 5 tools, meaning that punch dimensions up to 110 mm can be realized. This is made possible by an enlarged installation space for the tools. No new machine options are required for **size 5 forming tools.** The tools can be installed directly into your current machine with a size 5 tool cartridge (e.g. TruPunch 1000). Top quality formed sections are achieved in a single stroke.

The maximum dimensions specified are for general reference. Size 5 forming tools are always accurately tailored to the requirements and produced after individual consultation.

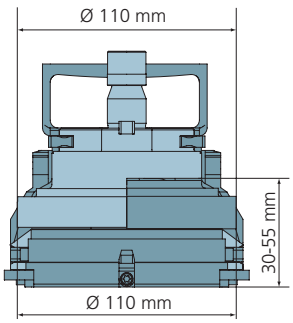
Enlarged installation spaces for size 5 tools



■ Maximum dimensions, size 2



■ Maximum punch, size 5



■ Size 5 offers more flexibility for the die height in machines with the "active die" machine option

Particularly high/large formed sections

Active die

With the "active die" machine option and the appropriate forming tools, either size 2 or size 5, TRUMPF enables formed sections to be processed with heights never before seen. To produce the high formed sections, the die is lowered out of the formed section, enabling an active forming stroke to be performed from below. As processing with an active die is designed to be done with tools that do not have a beveled key tip, a greater surface area is available for tool design and processing. Aside from the forming process, the active die facilitates low-scratch punching and forming processes because it can be lowered automatically so that it does not touch the sheet during positioning. This also makes it even easier to perform forming processes close to a clamp.

Extrusion tool size 5 for the active die

Experience **tools for the active die** in action:
www.trumpf.info/8ycp4x

Tool cartridge size 5

The construction of the size 5 tool cartridge differs from that of the smaller cartridges. Thanks its improved support, large tools can be used reliably.
The die carrier is integrated into the die. The die itself is supported around the outside by a wide collar on the cartridge.
The punch with integrated alignment ring is held in place by a larger centering pin on the cartridge and by reinforced spring-loaded cartridge arms. These measures ensure that no size 2 standard tool can be set up in a cartridge designed for a size 5 tool. Errors can therefore be prevented during setup.

Tool cartridge size 5

Countersinks for every requirement

As a general rule, countersinks of up to 75 percent of the sheet thickness are possible. However, there are applications for which 100 percent countersinks are required – cases in which an improved hold is required for screws.

TRUMPF offers various solutions that enable you to react flexibly to different requirements – both for 75 percent countersinks and countersinks of up to 100 percent of the sheet thickness.

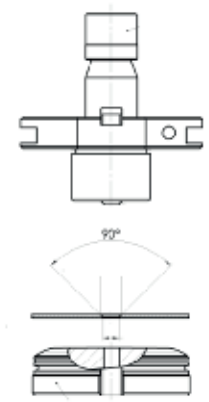
Countersink tool

A cost-effective solution for geometries with a maximum countersink depth of 75 percent

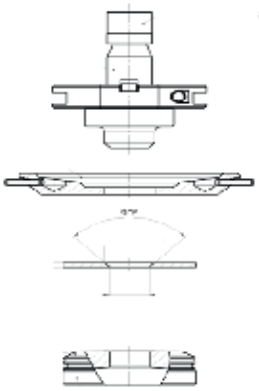
Thanks to its simple construction with a size 2 punch and a size 1 die, this countersink tool is a very cost-effective solution for the production of countersinks for screws.

If greater sheet flatness is required, there is the option of implementing a countersink tool with a reinforced stripper which then functions as an active presser foot.

Prepunching is performed first for both tools before the countersink is put in the sheet. The maximum possible countersink depth is 75 percent of the sheet thickness.



Countersink tool without reinforced stripper



Countersink tool with reinforced stripper

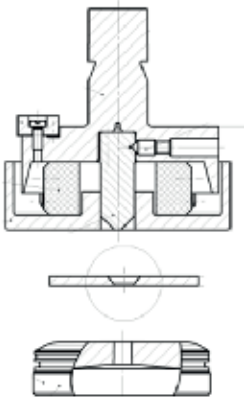
Countersink tool with integrated presser foot

A flexible solution for various countersink geometries with a maximum countersink depth of 75 percent

This countersink tool is highly flexible, covering a wide range of applications. Its interchangeable components allow it to be used for many different countersink geometries. What's more, a high degree of sheet flatness can be achieved using this tool because the presser foot is integrated into the tool itself.

Countersinks conforming to DIN standards can be manufactured with off-the-shelf products. Special geometries can also be manufactured upon request.

Prepunching is also performed first with this countersink tool before the countersink is formed in the sheet. The maximum possible countersink depth is 75 percent of the sheet thickness.



Countersink tool with integrated presser foot

Countersinks for every requirement

Countersinking with the special "star" punching tool

A cost-effective solution for a countersinking geometry with a countersink depth of up to 100 percent

To produce countersinks with a countersink depth of up to 100 per cent of the sheet thickness, a star-shaped prepunching operation is required, for example using the special "star" punching tool.

This tool is designed for a specific countersinking geometry. Prepunching using a round tool is therefore entirely omitted.
After prepunching using the special "star" punching tool, the countersink of almost 100 percent is made using a countersink tool with a reinforced stripper.

If the evenness of the sheet is of great importance, this can subsequently be optimized using a planishing tool.

Special "star" punching tool

Countersinking using tool shape 36

A flexible solution for various countersinking geometries with a countersink depth of up to 100 percent

Countersinks of up to 100 percent can be manufactured with this solution – and that even applies for various countersinking geometries.

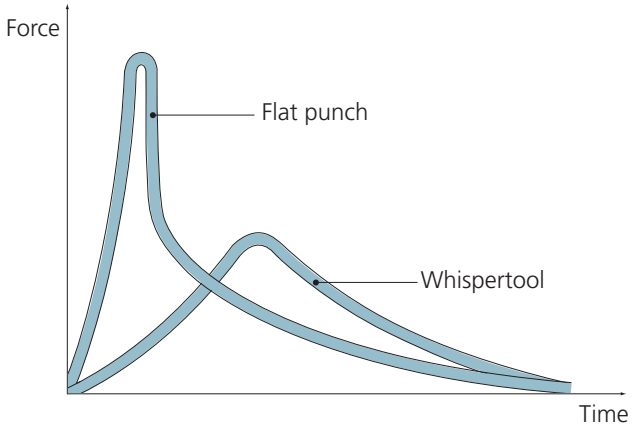
After prepunching with a round tool, the elliptical tool shape 36 is used to create a star shape in eight strokes. In the process, two different sizes of tool shape 36 can cover all standard countersinking depths.
Finally, a countersink tool with a reinforced stripper can in turn be used to achieve the 100 percent countersink.

Countersinks produced in this way can also be post-processed using a planishing tool if the sheet flatness is unsatisfactory.

Tool shape 36

Punching thicker sheets

When processing sheets that are thicker than 3 mm, high punching forces are created, which could reduce the service life of the tool and machine. The punching forces can be decreased with a bevel. The reinforced punch and die versions make the tool more stable. Diameters that are smaller than the sheet thickness can be achieved with a punch that has a guided cutting edge.



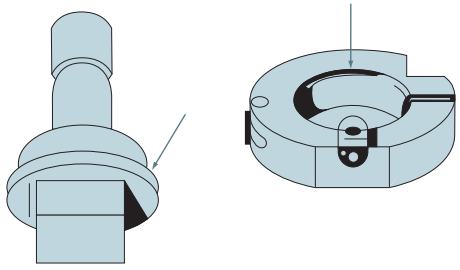
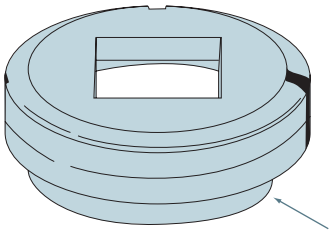
Force/time graph

Bevel to reduce punching force

Beveled punches reduce the punching force that is required for processing thicker sheets (see chapter "Punching force and shear strength"). Depending on the sheet thickness, the punching force required can be reduced by up to 72% in comparison with a flat tool. As the surface of the punch penetrates more slowly into the sheet thanks to the bevel, the force progresses over a longer period of time and only a fraction of the original punching force needs to be applied.

Reinforced version

If the sheet metal is particularly thick, has a high tensile strength, or is made of heavy-duty steel, it is advisable to use reinforced versions of tools to increase stability and avoid tool breakage. In many cases, it is sufficient to just use a reinforced die.

	Punch with reinforced shoulder and alignment ring with large inside diameter	Reinforced die
		
Maximum outer circle	■ 42.0 mm	■ 62.0 mm
Application ranges	■ Dependent on material, sheet thicker than 3 mm ■ For punching and nibbling mode in high-tensile sheets ■ For punching forces from 150 kN ■ For awkward punching geometries	
Result	■ Prevention of tool breakage if punching forces are too high	

Punching thicker sheets

Punch with guided cutting edge

If you are using punch dimensions that are smaller than the thickness of the material, it is worth using punches that have a guided cutting edge. These are specially designed for punching of very small holes in sheet up to 4 mm thick. The application range of a punch with guided cutting edge depends on the material and the sheet thickness:

Material	Tensile strength	Minimum punch diameter
Stainless steel, chromium-nickel-steel	700 N/mm²	1 x sheet thickness s
Mild steel	400 N/mm²	0.8 x sheet thickness s
Aluminum, aluminum alloy	300 N/mm²	0.6 x sheet thickness s

Coatings

When punching thicker sheets, a high level of friction is generated between the punch and sheet. This causes the tools to wear out quickly. By using coatings (see chapter "Tool life"), the friction between the punch and sheet metal can be reduced, thus increasing the service life of the tool considerably.

Punching thinner sheets

Particular challenges arise when punching very thin sheet metal that is no thicker than 0.5 mm. On the one hand, the sheet can be pulled upward by the force of the upstroke during punching; on the other hand, the small cutting clearance required for thin sheets means that the punch and die have to be accurately positioned centrically. TRUMPF has a range of solutions for these challenges.

Slug retention die

Slug retention die

A slug retention die prevents the punching slug from being pulled upward on the upstroke of the punch. This die can be used for the whole punching process. However, this kind of die is particularly recommended for use when processing sheets that are less than 1 mm thick as it prevents the punching slug from catching on the sheet. During the punching stroke, the material "flows" into small keyways in the slug retention die because of the high force exerted. If the punching slug on the punch is then pulled upward, it stays in position in the grooves. It is still also possible to use beveled tools (such as the Whispertool).

Slug retention dies can also be used for low-scratch processing if the suction system on the machine is switched off (see chapter "Low-scratch processing").

Warning: The slug retention effect does not work in nibbling mode.

Close-fit stripper

A stripper with the maximum dimensions is used as standard with a MultiTool. This can cause thin sheets to be pulled upward on the upstroke, creating marks on the sheet.
Using a close-fit stripper that is precisely adjusted to the geometry of the MultiTool inserts means that unwanted marks on the sheet can be avoided.

Punching non-metallic materials

For some applications, conventional sheet metal is not appropriate and non-metallic materials need to be processed instead. These can also be processed extremely efficiently on TRUMPF machines and using TRUMPF punching tools.
As it is not necessary to move to another machine and use different tools, non-metallic materials represent an attractive option: New customers and orders can be acquired and the efficiency of the machinery increases.
To ensure that the interaction between the new material, the machine and the punching tool is the best that it can be, in-depth consultation is required beforehand. The TRUMPF specialists have a wealth of experience in this field.

Application examples

Material type	Application	Feature	Solution
Composite panel	Interior lining in vehicle cabs	Combination of tensile material and elasticity	Punch a plastic layer between two aluminum layers
Wood	Connecting elements in furniture construction without fins, with low waste	The wood fibers must be broken before punching	Emboss a contour and break the grain structure in a single stroke
Plastic	Profile supports with small diameters for radiotherapy	Plastically deformable material at low temperatures	Burr-free holes in thermoplastic material with a cluster tool and special die geometry
Laminate panel	Ceiling lining	Flawless visual effect without burr formation using low number of punching strokes	Process a laminate panel made from paper that is coated with synthetic resin using a cluster tool with narrow cutting clearance
Polyurethane	Sieve bottoms	Flexible material	Process in a clamping frame, special tools with negative cutting gap

Order forms:

Ordering made easy

Order forms for TRUMPF tools.

A convenient and easy ordering process is essential for ensuring that your tool is delivered on time. In this chapter, you will find request and order forms that will simplify the ordering process for you. They will help you ensure that you have given us all the important information we need. Special forms, e.g. for defining and ordering a shape tool, provide additional supporting information.

Have you thought of everything? Our check list in the front inside cover of the catalog provides helpful tips. Please consider the "Important ordering specifications" on each product page as well.

Whether it is by e-mail, phone, fax, or online, we would be happy to advise you promptly and professionally.

Order forms

Order form

Standard punching tools

TRUMPF Werkzeugmaschinen GmbH + Co. KG
Fax: +49 7156 303-31150

Company:	**Order no.:**
	Date:
	Page:
Customer number:	**Machine type:**
Contact person:	**Material:**
Phone:	**Sheet thickness s in mm:**
Fax:	**Delivery date:**

☐ Order ☐ Request

Quantity	Name					Shape					Dimension	Coating MultiDur	Punch shear			Reinforced version	MultiTool	MultiUse	Price
	Punch																		
	Size 0	Size 1	Size 2	Die	Stripper					1 - 40	a, b, d, e, l, R, α	TiCN Performance, Alu	Flat	Whisper	Roof		4-, 5-, 6-, 10-station		EUR

For accessory parts and special tools, please see separate ordering list

Comments

TRUMPF Werkzeugmaschinen GmbH + Co. KG
Hermann-Dreher-Strasse 20 · 70839 Gerlingen · Germany
E-mail: export.tooling@de.trumpf.com
Fax: +49 7156 303-31150

Order form

Accessories + special tools

TRUMPF Werkzeugmaschinen GmbH + Co. KG
Fax: +49 7156 303-31150

Company:	**Order no.:**
	Date:
	Page:
Customer number:	**Machine type:**
Contact person:	**Material:**
Phone:	**Sheet thickness s in mm:**
Fax:	**Delivery date:**

☐ Order ☐ Request

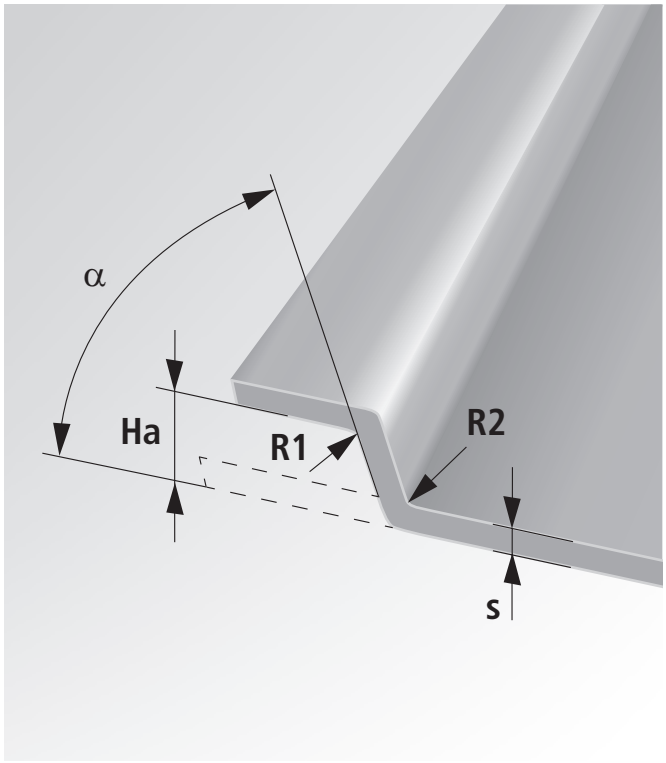
Quantity	Name	Dimension (mm)	Order no.	Price/item in EUR

Comments

TRUMPF Werkzeugmaschinen GmbH + Co. KG
Hermann-Dreher-Strasse 20 · 70839 Gerlingen · Germany
E-mail: export.tooling@de.trumpf.com
Fax: +49 7156 303-31150

TRUMPF

Stepping tool



TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Version:	☐ Continuous process tool ☐ Roller tool
Please note:	For roller tools, the "roller technology" machine option is required
Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Stepping height Ha:	mm
Angle α:	°
Radii:	☐ R1: mm ☐ R2: mm ☐ To be determined by TRUMPF.
Forming direction:	☐ upward ☐ downward

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

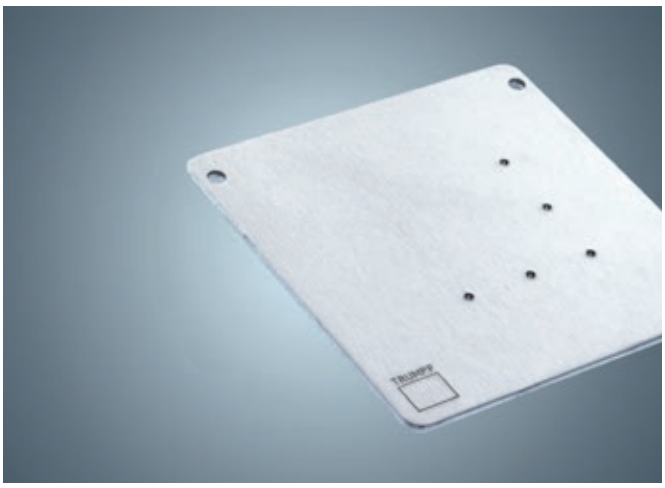
If arc segments are stepped, please include a drawing in a popular CAD format (e.g. DXF).

Sketch/comments

Center punch tool

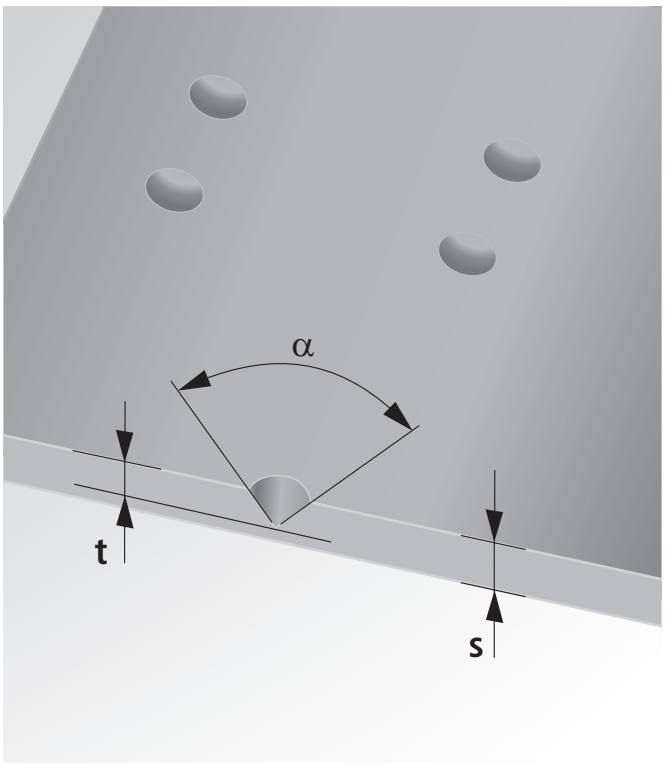
TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	



Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Center punch depth t:	mm
Angle α:	°
Embossing direction:	☐ from above ☐ from below



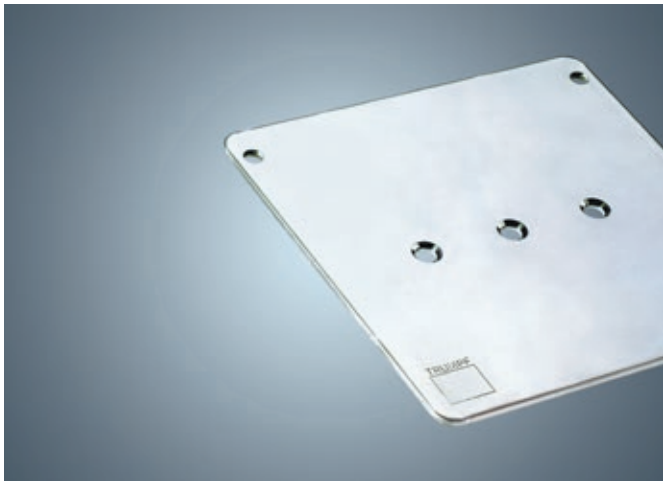
Are there other formed sections within a 50 mm radius?

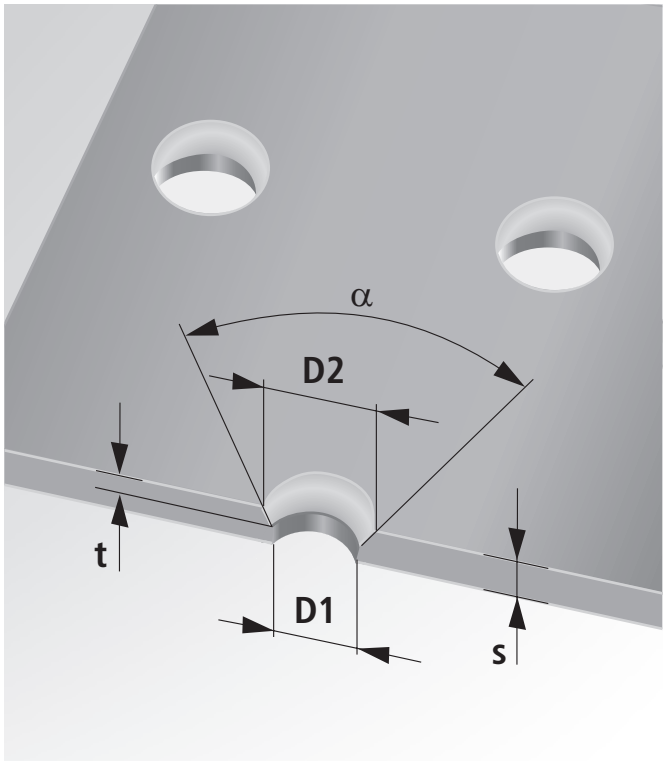
☐ no ☐ yes (please include a sketch)

Sketch/comments

Countersink tool with integrated presser foot

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310





Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Diameter:	D1: mm D2: mm
Countersink depth t (max. 75% of sheet thickness s):	mm
Angle α:	°
Embossing direction:	☐ from above ☐ from below

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Sketch/comments

Knock-out tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Diameter D:	mm
Forming direction:	☐ upward ☐ downward

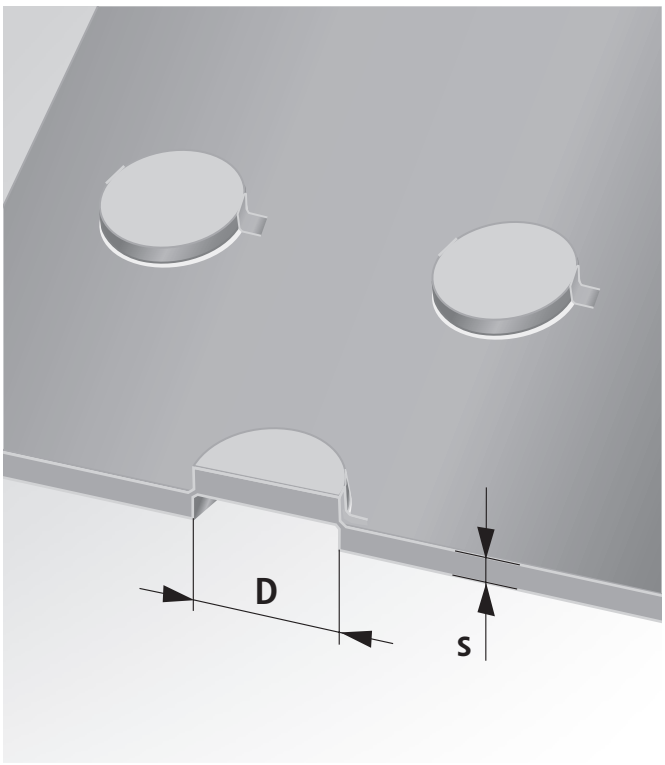
Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

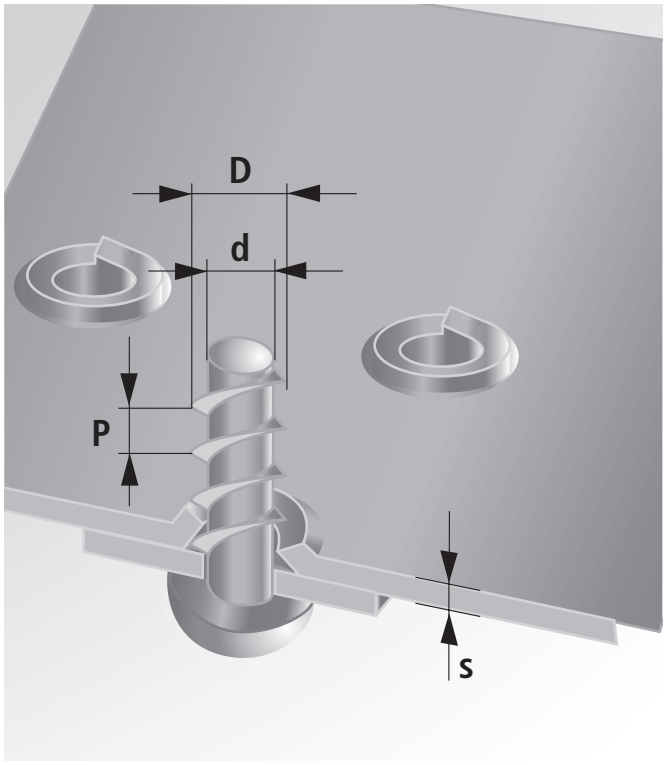
Recommendation: version with 2 tabs



Sketch/comments

Thread punch tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310



Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Pitch P:	mm (min. 1 x sheet thickness s)
Thread size D:	mm
Core diameter d:	mm
Forming direction:	☐ upward ☐ downward

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

Sketch/comments

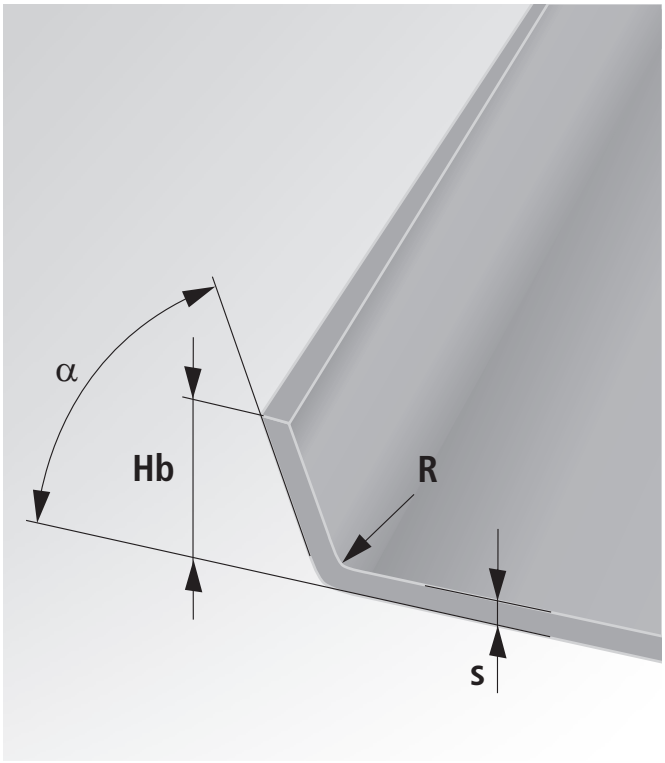
Flanging tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Height Hb:	mm
Angle α:	°
Radius:	☐ R: mm ☐ To be determined by TRUMPF.
Forming direction:	☐ upward ☐ downward



Are there other formed sections within a 50 mm radius?

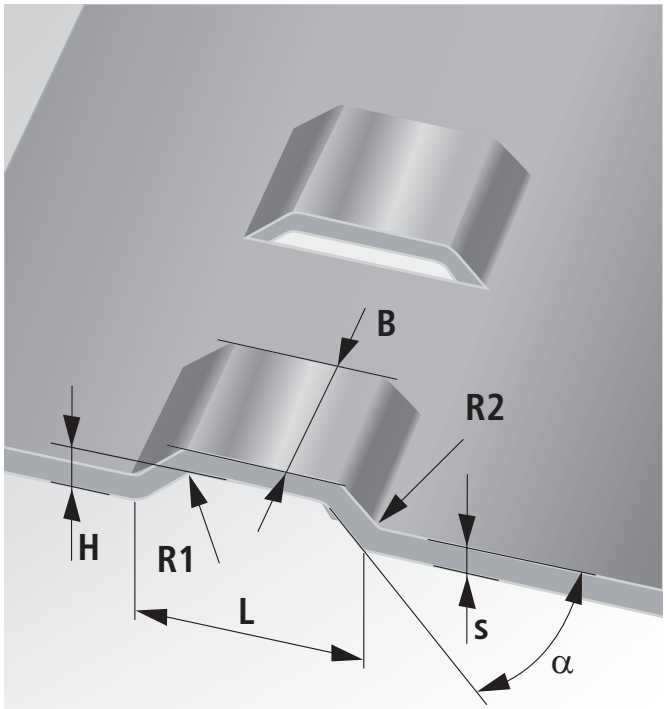
☐ no ☐ yes (please include a sketch)

If arc segments are flanged, please include a sketch.

Sketch/comments

Bridge tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310



Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:			
Material:	☐ ST ☐ SS ☐ AL ☐ _____		
Sheet thickness s:	mm	Height H:	mm
Length L:	mm	Width B:	mm
Angle α:	°		
Radii:	☐ R1: mm ☐ R2: mm ☐ To be determined by TRUMPF.		
Forming direction:	☐ upward ☐ downward		

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

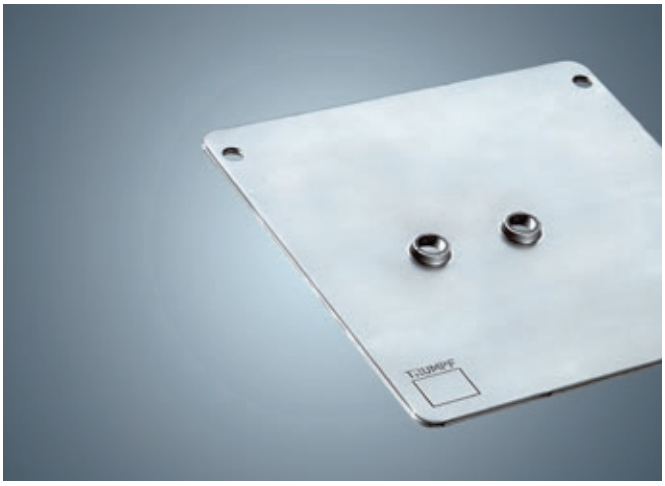
☐ no ☐ yes (please include a sketch)

Sketch/comments

Extrusion tool

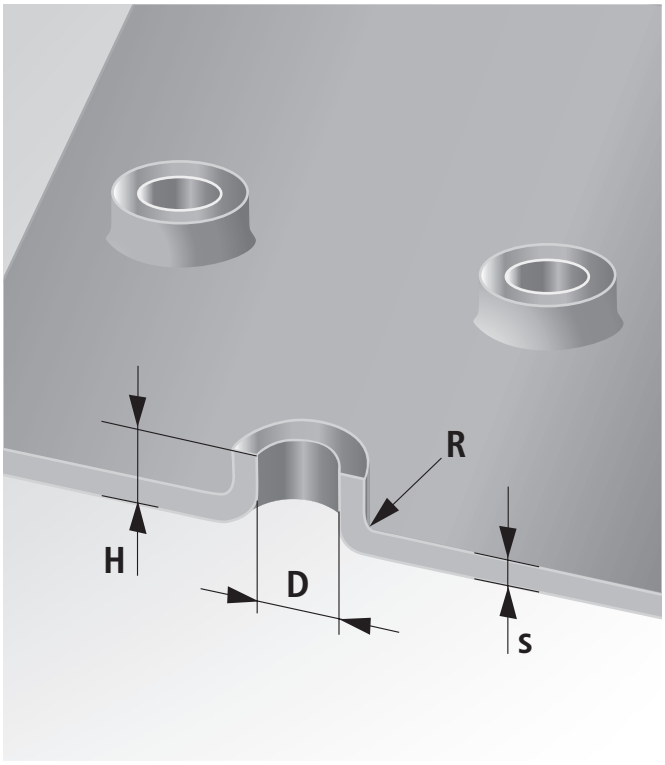
TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	



Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Height H:	mm
Diameter D:	mm
Radius:	☐ R: mm ☐ To be determined by TRUMPF.
Forming direction:	☐ upward ☐ downward



Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

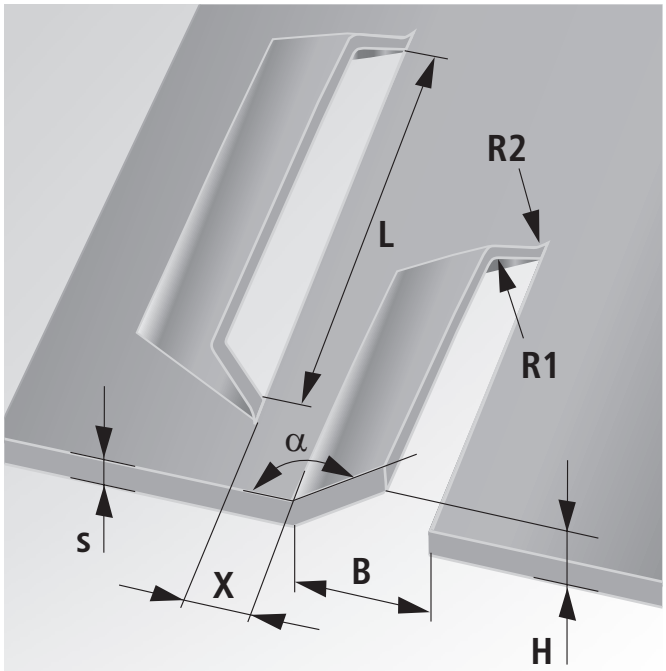
☐ no ☐ yes (please include a sketch)

☐ Tapping ☐ Thread cutting

Sketch/comments

Louver tool (single louvers)

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310



Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:			
Material:	☐ ST ☐ SS ☐ AL ☐ _____		
Sheet thickness s:	mm	Height H:	mm
Length L:	mm	Width B:	mm
Angle α:	°		
Distance X:	mm		
Radii:	☐ R1: mm ☐ R2: mm ☐ To be determined by TRUMPF.		
Forming direction:	☐ upward ☐ downward		

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

Sketch/comments

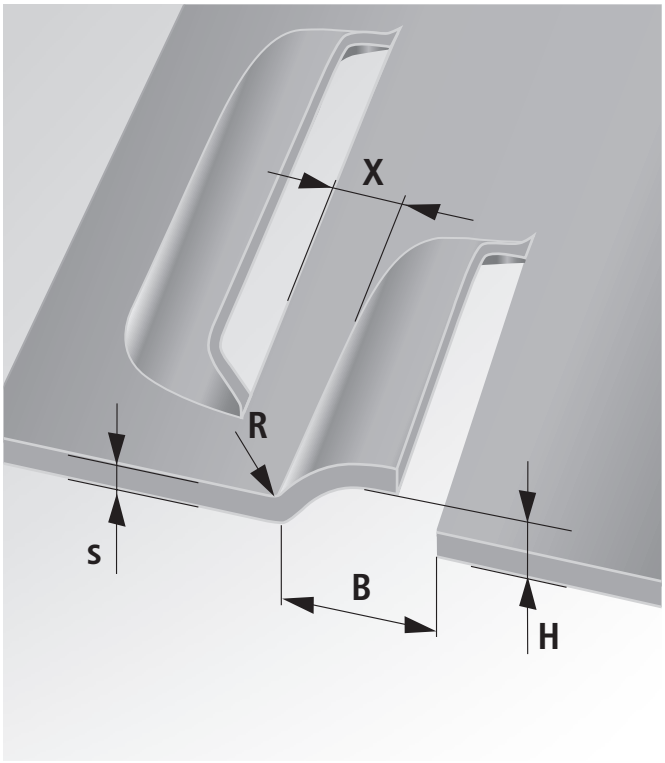
Louver tool (continuous louvers)

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Height H:	mm
Width B:	mm
Distance X:	mm
Radius:	☐ R: mm ☐ To be determined by TRUMPF.
Forming direction:	☐ upward ☐ downward



Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

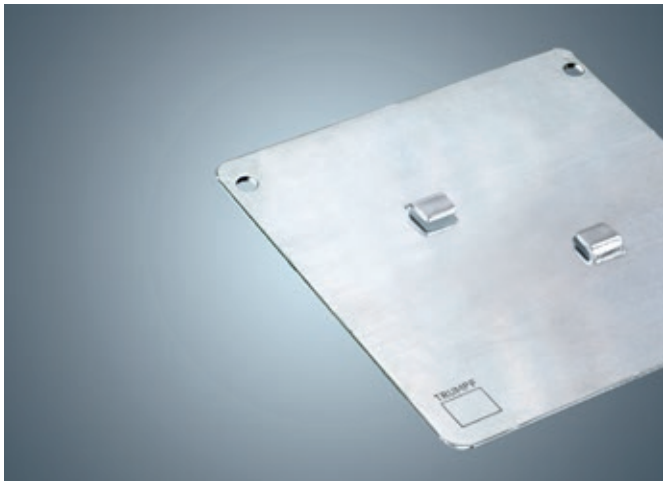
Is the formed section close to the edge of the sheet?

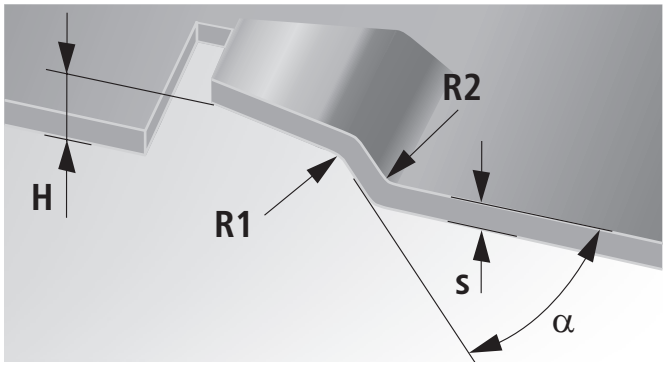
☐ no ☐ yes (please include a sketch)

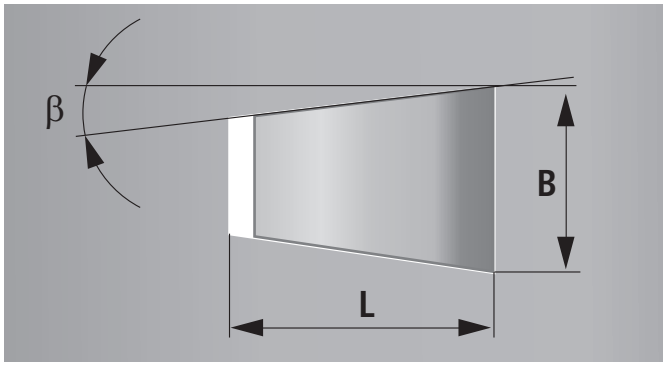
Sketch/comments

Bracket tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310







Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:			
Material:	☐ ST ☐ SS ☐ AL ☐ _____		
Sheet thickness s:	mm	Height H:	mm
Length L:	mm	Width B:	mm
Angle α:	°	Angle β: (2° recommended)	°
Radii:	☐ R1: mm ☐ R2: mm ☐ To be determined by TRUMPF.		
Forming direction:	☐ upward ☐ downward		

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

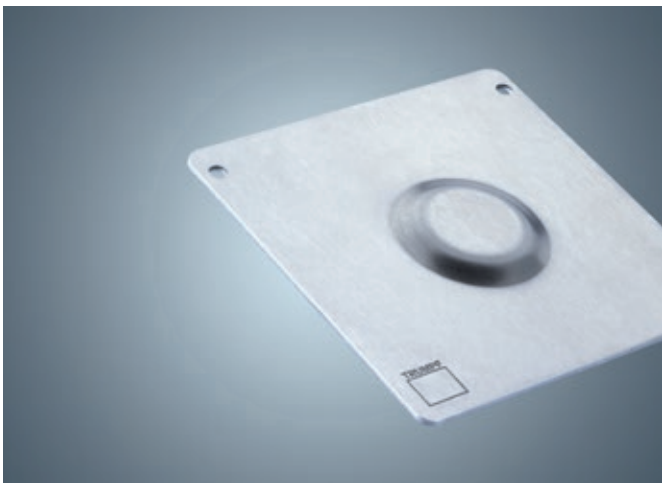
☐ no ☐ yes (please include a sketch)

Sketch/comments

Cup tool

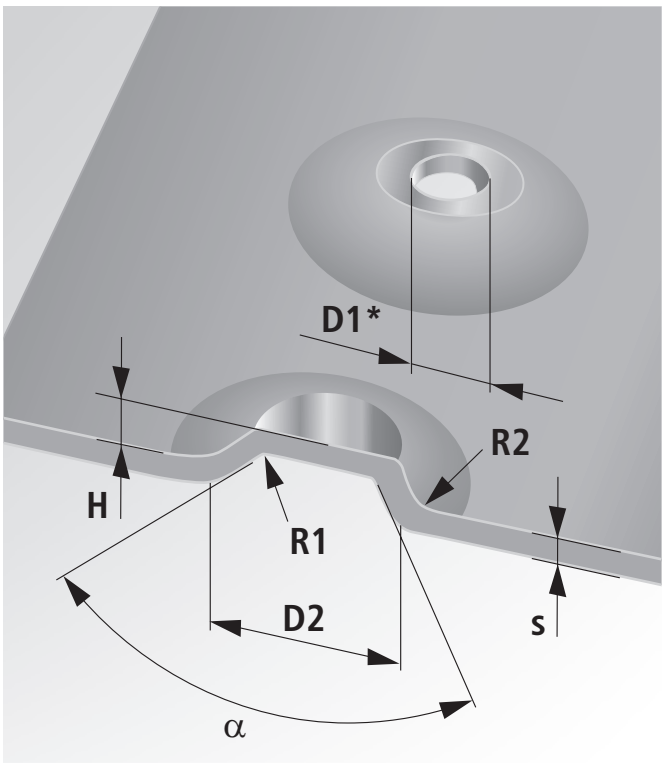
TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	



Important specifications (please provide as much detail as possible)

Machine type:			
Material:	☐ ST ☐ SS ☐ AL ☐ _____		
Sheet thickness s:	mm	Height H:	mm
Diameter:	D1*): mm	D2:	mm
Angle α:	°		
Radii:	☐ R1: mm ☐ R2: mm ☐ To be determined by TRUMPF.		
Forming direction:	☐ upward ☐ downward		



Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

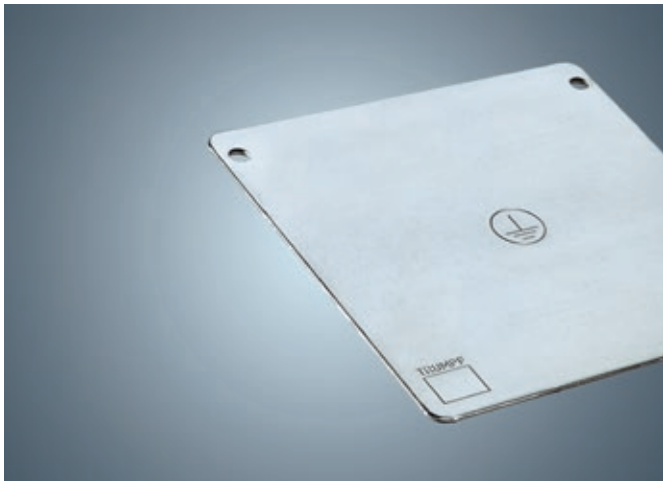
Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

*) If punched hole D1 is required, please specify the diameter.

Sketch/comments

Embossing tool



TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Outer circle K:	mm
Embossing direction:	☐ from above ☐ from below

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

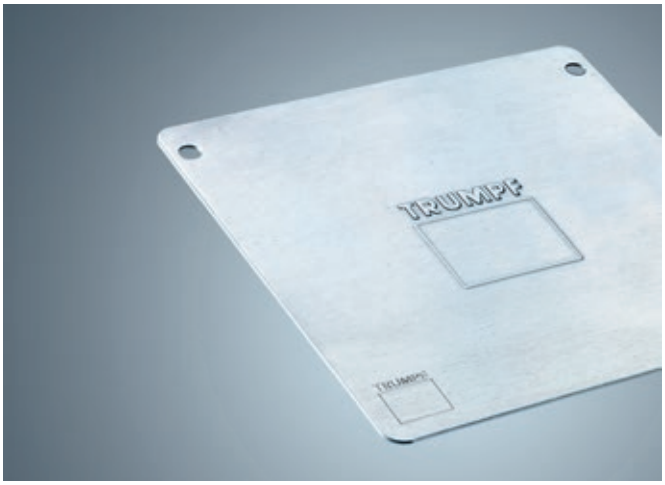
If available, please send us the logo/symbol as a DXF file.

Sketch/comments

Embossing forming tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	



Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Outer circle K:	mm

Are there other formed sections within a 50 mm radius?

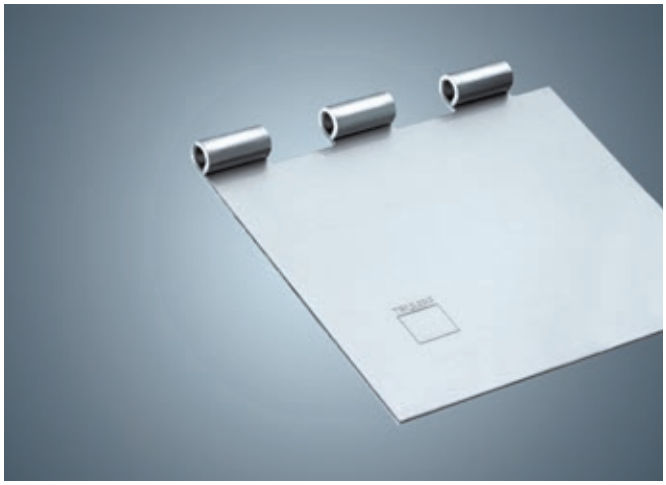
☐ no ☐ yes (please include a sketch)

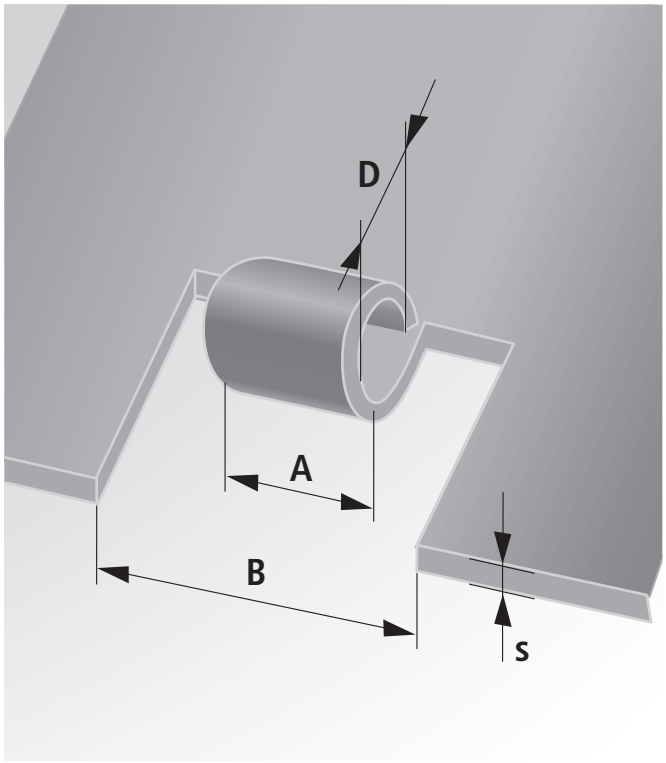
If available, please send us the logo/symbol as a DXF file.

Sketch/comments

Hinge tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310





Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Diameter D:	mm
Hinge length A:	mm
Width B:	mm

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

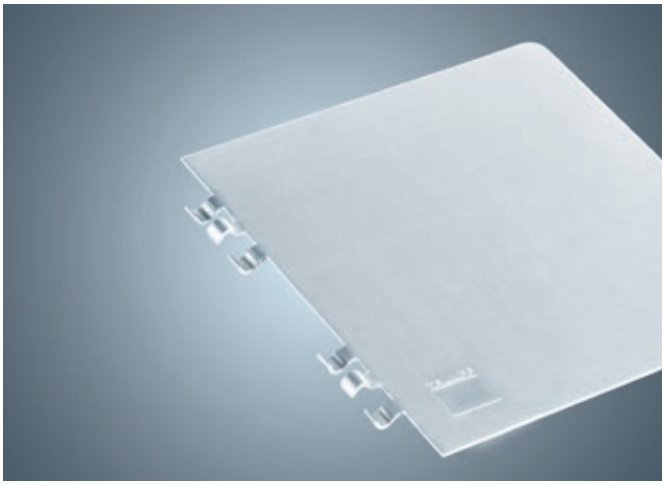
☐ no ☐ yes (please include a sketch)

Sketch/comments

Hinge tool for multiple hinges

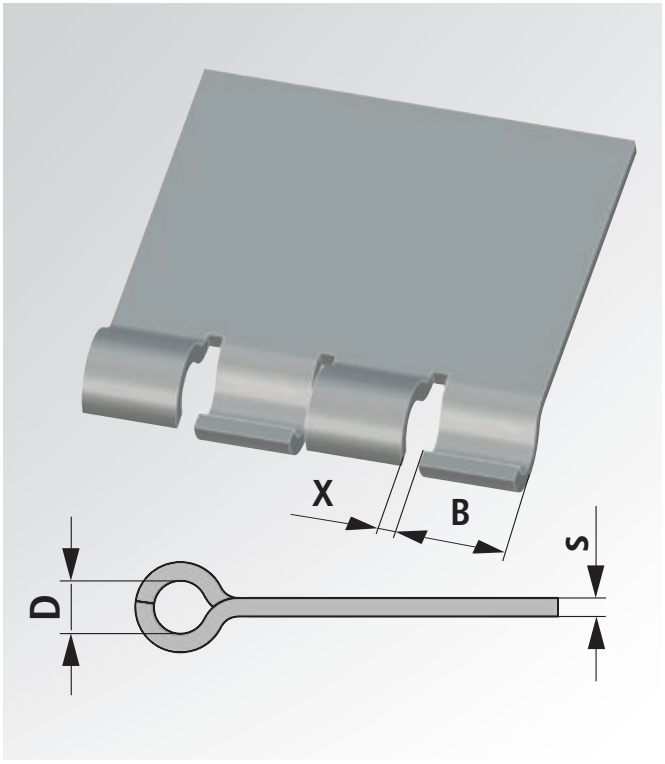
TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	



Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Diameter D:	mm
Width B:	mm
Distance X:	mm



Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

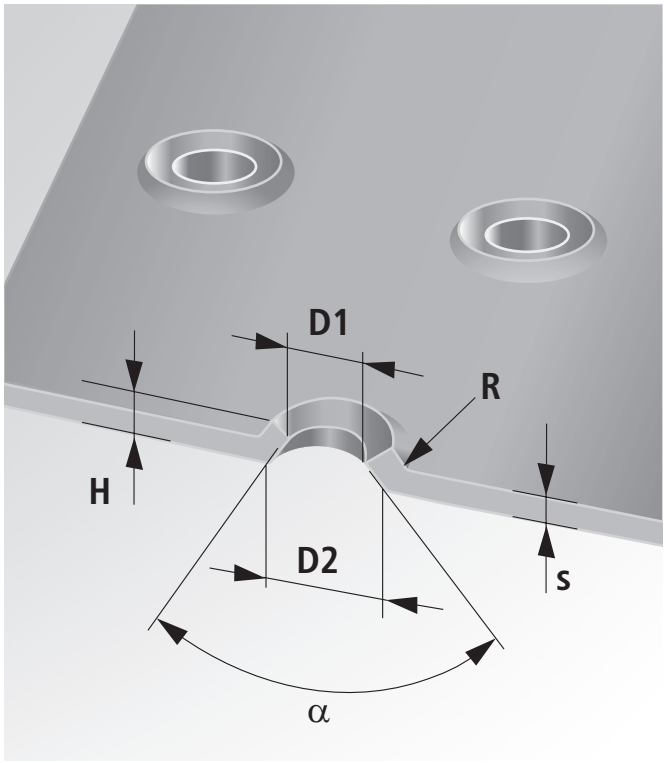
Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

Sketch/comments

Countersink forming tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310



Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:			
Material:	☐ ST ☐ SS ☐ AL ☐ _____		
Sheet thickness s:	mm	Height H:	mm
Diameter:	D1: mm	D2:	mm
Angle α:	°		
Radius:	☐ R: mm ☐ To be determined by TRUMPF.		
Forming direction:	☐ upward	☐ downward	

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

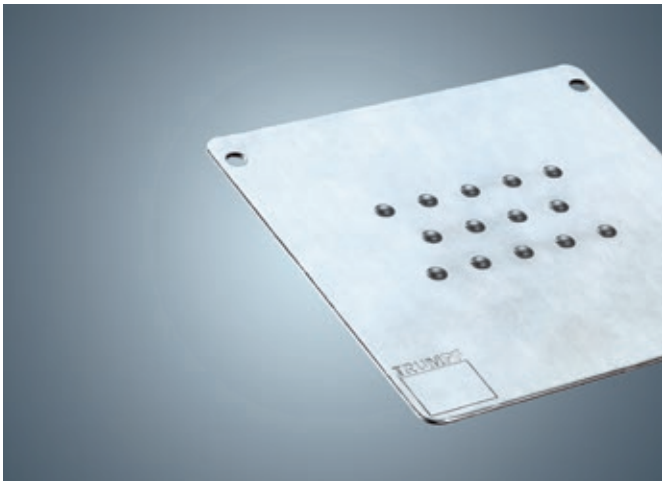
☐ no ☐ yes (please include a sketch)

Sketch/comments

Weld boss tool

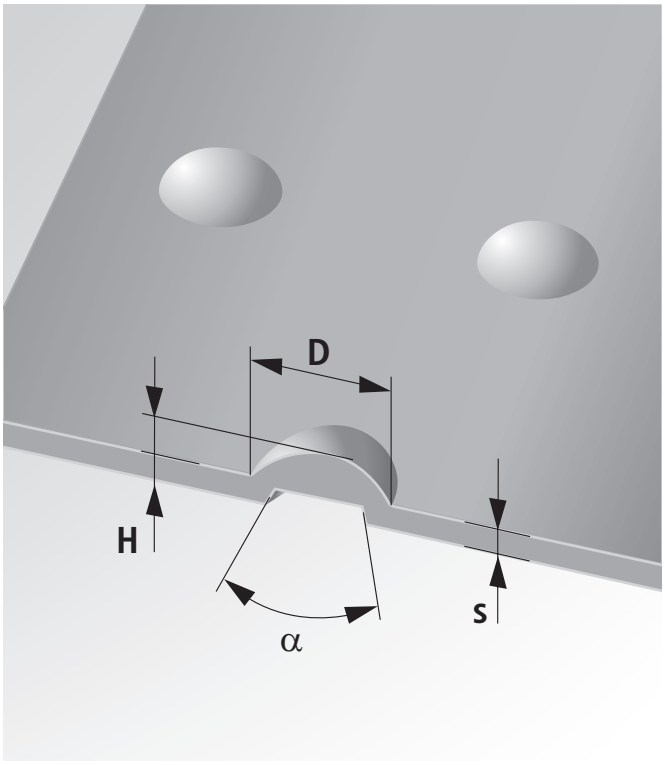
TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	



Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Height H:	mm
Diameter D:	mm
Angle α:	☐ ° ☐ Standard 60°
Forming direction:	☐ upward



Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

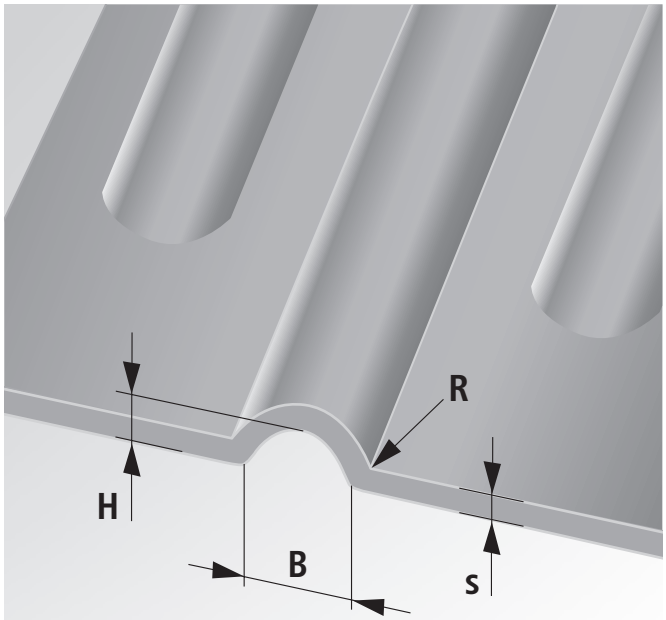
Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

Sketch/comments

Beading tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310



Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Version:	☐ Continuous process tool ☐ Roller tool
Please note:	For roller tools, the "roller technology" machine option is required
Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Height H:	mm
Width B:	mm
Radius:	☐ R: mm ☐ To be determined by TRUMPF.
Forming direction:	☐ upward ☐ downward

Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

Sketch/comments

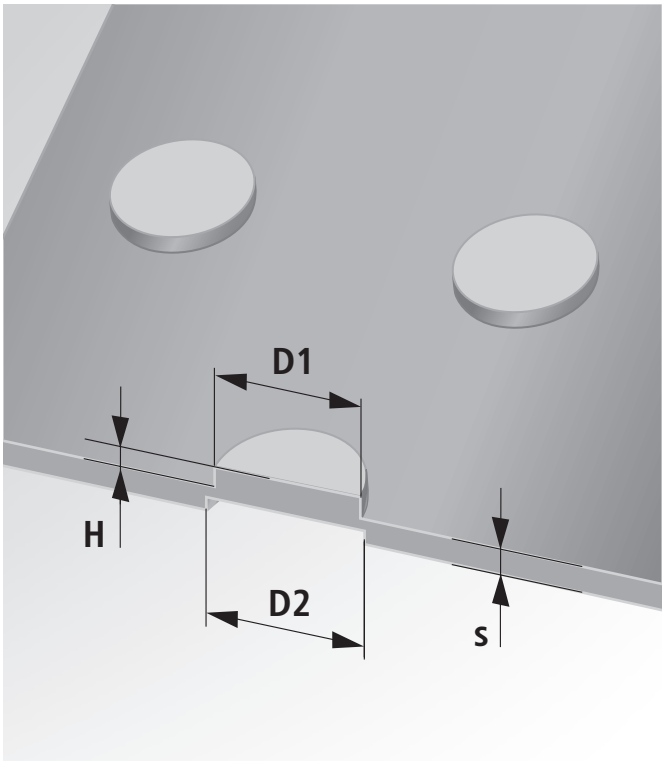
Center boss tool

TRUMPF
technik.tooling@de.trumpf.com
Fax: +49 7156 303-30310

Company:	
Customer number:	
Street:	
Zip code/city:	
Contact person:	
Phone:	
E-mail:	
Fax:	
Date:	

Important specifications (please provide as much detail as possible)

Machine type:	
Material:	☐ ST ☐ SS ☐ AL ☐ _____
Sheet thickness s:	mm
Height H:	mm (max. 0.5 x sheet thickness s)
Diameter:	D1: mm D2: mm
Forming direction:	☐ upward ☐ downward



Are there other formed sections within a 50 mm radius?

☐ no ☐ yes (please include a sketch)

Is the formed section close to the edge of the sheet?

☐ no ☐ yes (please include a sketch)

Sketch/comments

General information

Terms of delivery

For delivery of the products listed in this catalog, the applicable terms of delivery stipulated by the supplying TRUMPF company or its representative are decisive. TRUMPF or its representative will be happy to provide you with these terms.

Price validity

Prices valid as of February 1, 2013. From this date onward, old price lists are no longer valid.
Prices are shown without sales tax at the statutory rate.
TRUMPF reserves the right to change prices.

Service

TRUMPF offers a repair and regrinding service. Please contact your national representative.

We recommend that you use only original spare parts and original accessories from TRUMPF. This will ensure that your tool works faultlessly and that the warranty claim is approved in the event of a problem.

ISO certification

All products listed in this catalog are manufactured in our production facilities, which are certified in accordance with ISO 9001.

Subject to change

The data contained within this catalog is subject to change, errors and printing errors; any liability is excluded. Technical data in particular is subject to change without prior notification. Individual features may vary depending on country-specific factors.

Images are not exact and may contain minor deviations from the original.

All specifications without guarantee.

Index

Index

S

T

U

V

W

Notes

TRUMPF is certified according to ISO 9001:2008

(for additional information see www.trumpf.com/en/company/quality)

Ident. no. 1798794_EN_201704_S – Specifications subject to change without notice

TRUMPF Werkzeugmaschinen GmbH + Co. KG · International Sales Punching Tools
Hermann-Dreher-Strasse 20 · 70839 Gerlingen · Germany · Fax: +49 7156 303-31150
E-Mail: export.tooling@de.trumpf.com · Homepage: www.trumpf.com