TruPunch
The time-saving technology
Punching – versatile with strong future potential

Punching encompasses far more than just making holes in sheets. You can manufacture complete parts on a punching machine. Reshaping processes open up new dimensions for you. The versatility of the technology is the result of the wealth of tools used. With appropriate loading and unloading aids, you can even automate your production. For many applications, punching is a true time-saving technology; use punching machines for specific applications to help secure the future success of your company.

Discover the versatility of punching with example parts.

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The fascination of punching

From 0 to 1600 in one minute? Only a punching machine can manage that. In just 60 seconds it can punch 1600 strokes in your sheet metal. But punching can do far more than that: It creates contours, forms sheet metal, and transforms surfaces. Tapping, embossing, marking, engraving or deburring? With the right tool, your punching machine can become a multipurpose solution.
Punch, reshape and insert threads all with one machine

Unbeatably economical for many applications

Part variety thanks to clever tools
79 applications provide you with endless opportunities:

44 standard geometries
10 slitting applications
20 forming applications
5 marking tools
Bends up to 90°
360° tool rotation

1600 strokes in 60 seconds
– only a punching machine can manage that.
142840

different configuration variations are
offered even by the simple round punch.
This standard tool enables you to modify
the diameter, beveled sections, and
coatings in almost any combination.

Psst!
Angled punch surfaces reduce
punching noise by up to 50%
while also minimizing sheet metal
distortion. When you order tools
from TRUMPF, these bevels are
even available free of charge.
Material variety – good to know
A punching machine lets you process more than just sheet metal. We would be happy to offer you tailored advice.

“Thread forming in particular has accelerated our process enormously. We now produce housings four times faster than before, and we can manage significantly larger batch sizes.”

Jack Percival, Design Manager, Future Automation, United Kingdom

“Punching makes you extremely flexible – with just one machine, you can produce complete parts with punched holes, threads, and reshaped surfaces.”

Denis Macak, Head of Production for Punching Tools, TRUMPF
One technology – many benefits

Punching technology has continuously developed in the last few years: look forward to a new level of part variety, user-friendliness, and quality. High-quality punching tools therefore now leave behind virtually no punching burr. Set up, sorting, and removal is easier than ever before – this means that you can produce even small lot sizes with flexibility as well as efficiently.

**Forming to geometric perfection**

Only a punching machine can achieve geometrically precise shapes to the highest levels of quality – with no seams, no spatter and no waves or scratches. This means for example that you can create a perfectly round circle or a perfect square.

**Complete processing**

Punching, slitting, forming, countersinking, tapping, rolling, marking, and deburring: A punching machine is fully capable of performing all of these processing steps. This saves time, as setup and programming only needs to be carried out once. The benefit to you: You can manufacture a wide range of parts entirely on just one machine – and these processes can be fully automated if desired.

**Punch faster**

If you are producing a number of identical shapes in one go, punching is unbeatably fast and has no competition when it comes to price – TRUMPF punching machines guarantee this with nearly limitless options for slitting, forming, and bending.

**Perforated sheets are a classic example:**

For this application, punching machines outperform all other technologies in terms of speed and cost-effectiveness.

**Find out for yourself with this example:**

Perforated plate with 15510 holes, medium format 2500 x 1250 mm, plate thickness of 1 mm, hole diameter of 8 mm

**Result:**

You can reduce processing time by 76% with a single tool, or by as much as 95% with a cluster tool!
Pull out all the stops

Smaller batch sizes with increasing variance and quality requirements – how can you meet the demands of your customers in future? Modern punching machines from TRUMPF provide you with enormous opportunities: with versatile tools, precise processes, and intelligent automation solutions. Rely on the best punching solution for your future – and get the edge over the competition.
**Clever tool concept**

With high-quality tools from TRUMPF you can meet any customer wishes. The special thing about it is: The punching head can tilt and turn all tools to any desired angle. All tools can be positioned at any tool station, regardless of their size.

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**Reliable machine processes**

Intelligent functions and a wide range of discharging and sorting options assist you in working on the machine and make your processes smooth and reliable.

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**Earn more automatically**

You can easily automate your TruPunch; a wide range of options are also available for integrating it into existing production systems. Intelligent possibilities for automation take pressure off the operator and increase your throughput.

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**Short setup times and high productivity**

**Smooth processes and high machine availability**

**Lower manpower, higher throughput**
Tools: Punching with brains

Whether a standard or special solution: always choose the right tool from the largest range on the market. We manufacture all punching and reshaping tools ourselves, using top-quality steels – to ensure that they meet your highest requirements. Look forward to short delivery times for standard and special tools and a wide range of additional services such as punch beveling at no extra charge.

The right tool for every application

Whether for marking, engraving or deburring: all TRUMPF punching and forming tools are available as standard tools or, if required, as special tools.

You can use our conventional punching tools on TRUMPF punching and punch laser machines of any generation. These tools are particularly durable thanks to their high-quality coating. They are available in a wide variety of shapes and sizes. All you need to use these tools is the RTC universal tool cartridge.

Punching machines can do more than make holes in sheets. Reshaping means punching in the third dimension – producing countersinks, bridges, eyelets, and many more features besides. These tools can also form threads directly into sheets. This can be performed in just one step and is therefore cheaper than using weld nuts or insert nuts.

Thanks to the intelligent punching head and corresponding tool, you can process a huge variety of challenging components entirely on one machine, without even causing burrs if necessary. This can be achieved cost-effectively, even for small quantities – thanks to low tool costs and setup times.

When developing our punching tools, we place a great deal of emphasis on dialog and close collaboration with you. And what if there is still no suitable tool for your requirements? Our specialists develop special tools for your requirements together in a team with you. Thanks to our in-house manufacturing and intensive testing, you can rest assured that your new tool will work properly, right from the start.
Clever setup saves time

Your TruPunch machine offers an unbeatable short setup time thanks to its monotool punching head, MultiTools, and tool cartridges.

The fully rotating tool holder also acts as the drive for TRUMPF MultiTool tools. You can integrate up to ten punches in a single MultiTool – this increases the tool capacity of your machine. Each individual tool in the MultiTool can of course be rotated in any direction. This enables you to work more productively and reduce investment costs and setup time.

TRUMPF tool cartridges are made from fiber-reinforced plastic and provide a variety of benefits: Their low weight enables high acceleration values to be achieved on the machine while ensuring that even heavy tools are securely held in place. Thanks to the carrying aid, you can transport three cartridges with one hand. Labeling with colored clips helps you identify cartridges at a glance.

Did you know?
All TRUMPF tools come from our own manufacturing facility. We ship 80% of our tools within 24 hours. You can place orders easily and conveniently in our MyTrumpf e-shop.
Built for your success

From setup to punching to discharging your parts: TruPunch machines are designed down to the details to provide you with the greatest possible benefits. This results in highly precise and scratch-free parts – you will still be able to rely on them one hundred percent, even after many years.

“As our customer you can find the perfect machine for your needs that also meets your requirements for power and cost-effectiveness. Every machine offers you a wide range of functions that support you in your day-to-day manufacturing.”

Andreas Kettner-Reich, Head of Product Management and Technical Sales Support, TRUMPF
Our solutions

360° punching freedom

An all-rounder instead of a revolver: The monotool punching head can rotate any tool to any desired angle. This reduces material use, the number of tools needed, and setup time.

The freely rotating punching head gives you unrivaled flexibility. The ability to align each tool differently reduces the total amount of tools you need. This reduces your investment costs. The rotational axis in the punching head provides you with full freedom of motion and enables functions such as MultiTool, deburring and rolling technology, as well as thread forming.

Discharging, unloading and sorting

The discharging and sorting options of TruPunch machines enable your punching production to reach its full potential.

Good parts travel along a chute onto the conveyor belt and from there are transported reliably, safely, and with minimal material wear to the operator, who can remove them without interrupting production. The large parts flap automatically unloads parts up to a format of 400 mm x 600 mm into containers or onto Euro pallets or conveyor belts. Your machine automatically sorts parts up to 180 x 180 mm in size into up to four different boxes.*

Your machine – your concept

From entry-level processing to high-end operation: what machine concept best suits your needs?

TRUMPF offers customized machine concepts for individual requirements. The hybrid concept of the TruPunch 1000 (S19) has been developed specifically for entry-level users: Sheets are not moved in the Y-direction, minimizing the required installation space. Its electrical drive makes it particularly economical. All other TruPunch machines work according to the sheetmover principle. This is where the punching head is still while the sheet metal moves. Your stamping drive offers large reserves of productivity – ensuring that you are ideally equipped for medium- to high-power operational ranges.

Your machine thinks for itself

Intelligent functions shorten your processes and help you to get the best possible performance from your system.

Thanks to Smart Functions, your machine can detect problems and sometimes even rectify them by itself. For instance, the Smart Punch Monitoring sensors check whether a hole has actually been punched in the sheet prior to tool changing. This enables the machine to detect possible punch breakage and inform the operator. Smart Load helps you to align the sheet on the machine, while Smart Unload monitors discharging. The sheet format detection function compares the actual format to the target format after loading – which helps ensure reliable and safe processes.

*Values apply to the TruPunch 1000 (S19).
Better punching, automatically

When automated, your TruPunch carries out punching operations even more productively – round the clock if necessary. This enables you to work with particular flexibility and ensures that you are ideally prepared for new requirements. Speaking of which: you can retrofit automation components from TRUMPF at any time.

**SheetMaster**

This component loads and unloads your machine and reliably sorts parts – increasing the service life of your machine.

**SheetMaster Compact**

Automatically supplies your TruPunch with sheets and unloads grid residue. This enables you to use your machine more effectively.

**ToolMaster Linear**

Gain additional tool capacity in order to complete your orders even more quickly.

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**Potential machines**

- TruPunch 1000 (S05)
- TruPunch 1000 (S19)
- TruPunch 2000
- TruPunch 3000
- TruPunch 5000

**Functions**

- Loading, unloading, sorting
- Loading, unloading
- Loading, unloading
- Sorting
- Sorting
- Sorting
- Sorting
- Sorting
- Sorting
- Sorting
## Our solutions

Automated punching with TRUMPF – save time and money.

[www.trumpf.com/s/v1l4xh](http://www.trumpf.com/s/v1l4xh)

### Integrated sorting function

- **ToolMaster**
  - Linear
- **GripMaster**
- **ShearMaster**
- **DisposeMaster**
- **TruStore**
- **Stopa**

### Sorting

- Tool handling
- Disposal
- Storage and logistics systems

### Tool handling

- Disposal

### Disposal

- Storage and logistics systems
Sure-fire success

You have the choice – in every productivity class: from the efficient entry-level machine TruPunch 1000 to the productive high-end machine TruPunch 5000. Which one meets your requirements?
You can also find the right machine for your requirements online: [www.trumpf.com/s/avjtu2](http://www.trumpf.com/s/avjtu2)

<table>
<thead>
<tr>
<th></th>
<th>TruPunch 1000 (S19)</th>
<th>TruPunch 3000</th>
<th>TruPunch 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet thickness</td>
<td>6.4 mm</td>
<td>8 mm</td>
<td></td>
</tr>
<tr>
<td>Format</td>
<td>Medium format</td>
<td>Large format</td>
<td></td>
</tr>
<tr>
<td>Productivity</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Automation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
TruPunch 1000

The new TruPunch 1000 (S19) is radically different. Its automation options are unparalleled in its class. And the best part is that, in line with the development of your business, you can upgrade this machine into an equally compact punch laser production cell.

01 Innovative
thanks to patented Delta Drive

02 Saves space
by using 15% less floor space than the previous model

03 Secure for the future
through growing machine concept

04 Top of its class
in discharging and sorting options
**Innovative**  
thanks to patented Delta Drive

Compact and dynamic – the drive has been completely redeveloped by our developers. The patented Delta Drive makes it unnecessary to move the plate and supporting table in the Y-axis, as for the first time it enables the punching head to move back and forth, or to “fly”. This is made possible by a sophisticated drive system.

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**Saves space**  
by using 15% less floor space than the previous model

With the TruPunch 1000 (S19), you can reduce the space you need for installation by up to 15%. It remains compact even after automation of the loading and unloading processes. SheetMaster Compact: the parts containers are arranged to be space-neutral.

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**Secure for the future**  
through growing machine concept

Pave the way for your success: With the first modular machine concept for punching and laser cutting in the world, you are always able to react flexibly to changing order situations. You grow – and your machine grows with you.

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**Top of its class**  
in discharging and sorting options

The large parts flap enables you to automate the unloading of parts with a format of up to 400 mm x 600 mm. Conveyor belts transport the parts to the correct container. The machine automatically sorts good parts with sizes of up to 180 x 180 mm into waiting containers.

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For more information about the TruPunch 1000 (S19):

www.trumpf.com/s/9xcl3d
TruPunch 3000

Thanks to processing with no grid residue, this resource-saving universal machine reduces material consumption by an average of 10% and is particularly energy-efficient in operation.

- **01** Energy-efficient punching
- **02** Minimal material wear thanks to retractable die
- **03** Intelligent with automatic part sorting
- **04** No grid residue for threefold benefits
**Energy-efficient punching**

With its electrical punching head and an average power consumption of just 4.5 kW, the TruPunch 3000 is highly energy-efficient in operation. Its power consumption in standby mode is also low, and it is equipped with an energy recovery system.

![Image of electrical punching head savings resources.](image)

**Intelligent with automatic part sorting**

The sorting flap separates good and scrap parts quickly and automatically. Processing by rows also reduces your processing time. The SortMaster Box sorts your good parts into inexpensive standard boxes, while the DisposeMaster differentiates between up to three types of waste and unloads it into scrap containers.

![Image of sorting diverter reliably separating good and scrap parts.](image)

**Minimal material wear thanks to retractable die**

The retractable die enables punching and reshaping operations with minimal scratches and eliminates the risk of parts getting caught. Brush beds and brushable part flaps also contribute to part quality.

**No grid residue for threefold benefits**

Punching with no grid residue is particularly reliable, saves material, and reduces the effort for the operator. Grid residue cannot get caught as it is automatically broken up and discharged. Common separating cuts enable you to increase utilization of each sheet by an average of 10%. The sorting flap separates good parts from sheet residue and distributes them flexibly into any desired container.

![Image of sorting flap separating good and scrap parts.](image)

For more information about the TruPunch 3000: [www.trumpf.com/lyzqmo](http://www.trumpf.com/lyzqmo)
TruPunch 5000

This high-end machine sets new standards: it is highly productive with maximum axis dynamics, and can flexibly provide the best possible part quality thanks to its retractable clamping claws and active die.

01 Turbo drive
reaches 1600 strokes/minute

02 Quality and flexibility
thanks to the active die

03 Material efficiency
thanks to retractable clamping claws

04 Rapid tool change
with ToolMaster Linear
**Turbo drive**
reaches 1600 strokes/minute

Thanks to the powerful hydraulic drive, you can carry out stamping operations at up to 1600 strokes per minute and etching operations at 2800 strokes per minute. Drives with zero play enable maximum axis acceleration. The high rotational speed of the C-axis enables you to carry out tapping extremely rapidly and to productively process complex contours.

**Material efficiency**
thanks to retractable clamping claws

Retractable clamping claws ensure maximum part quality and precision. You can improve your material efficiency by using the protective areas when loading panels. This makes it usually unnecessary to change over the claws, increasing your productivity.

**Quality and flexibility**
thanks to the active die

The reshaping die can be retracted for scratch-free processing. You can use reshaping tools with a minimum circumscribed circle of up to 100 mm and process your parts from below thanks to the active stroke axis.

**Rapid tool change**
with ToolMaster Linear

The ToolMaster Linear enables you to benefit from shorter processing times and a capacity of 18, 54 or 90 tool stations with the option for modular expansion. This provides you with exceptional flexibility for your punching operations – including automatic processing round the clock.
## Technical data

These pages provide you with a summary of the technical data of the TruPunch machines:

<table>
<thead>
<tr>
<th>Technical data</th>
<th>TruPunch 1000 (19)</th>
<th>TruPunch 3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working range</td>
<td>mm</td>
<td>2500 x 1250</td>
</tr>
<tr>
<td>Max. Sheet Thickness</td>
<td>mm</td>
<td>6.4</td>
</tr>
<tr>
<td>Max. effective punching force</td>
<td>kN</td>
<td>165</td>
</tr>
<tr>
<td>Axis speed (X and Y simultaneously)</td>
<td>m/min</td>
<td>100</td>
</tr>
<tr>
<td>Max. punching stroke rate (E = 1 mm)</td>
<td>1/min</td>
<td>600</td>
</tr>
<tr>
<td>Tools / with number of claws</td>
<td>Items</td>
<td>18 / 2</td>
</tr>
<tr>
<td>Tool change time for single tool</td>
<td>s</td>
<td>3.2</td>
</tr>
<tr>
<td>Tool change time</td>
<td>s</td>
<td>2.4</td>
</tr>
<tr>
<td>Positioning deviation</td>
<td>mm</td>
<td>0.1</td>
</tr>
<tr>
<td>Part discharge: Max. part size</td>
<td>mm</td>
<td>400 x 1250</td>
</tr>
<tr>
<td>Part discharge: Max. part size with sliding table</td>
<td>mm</td>
<td>–</td>
</tr>
<tr>
<td>Space required</td>
<td>mm</td>
<td>6500 x 5100</td>
</tr>
<tr>
<td>Average power input in production</td>
<td>kW</td>
<td>3.5</td>
</tr>
</tbody>
</table>

1) Reliable removal up to a max. part size of 400 mm x 600 mm.
Content subject to change without notice. The information in our offer and our order confirmation is authoritative.
**100% effective punching force**

The effective punching force is the force that is effectively applied to your sheet. Thanks to the TRUMPF concept, the value for this is 100%. Contrary to the effective punching force, the often cited initial force that a tool applies to the punching head is less significant because, depending on the tool path, a lesser or greater proportion of the force is lost. It is therefore better to rely on the effective punching force – as that is what actually matters.
TruServices.
Your partner in performance

To ensure your future success, you need services that definitely put you ahead of the pack for the long term. Whether that means creating the best conditions for successful production, or using your TRUMPF laser systems perfectly to adapt to changes with flexibility – together we’ll find ways to sustainably maximize your value creation. As a reliable partner, we will provide you with comprehensive solutions and service packages for your requirements – so that you can produce cost effectively and at a constantly high level.

**Comprehensive training program**

**Empower:** If you wish to create the best conditions for successful manufacturing: We will support you in this. Use our comprehensive training program to expand your knowledge and get a competitive edge. Having the appropriate training enables you, for example, to program your punching machine more quickly.

**Technical Service:** If flexibility and availability of equipment in day-to-day operations are essential to you: We are there for you. The Technical Service and the TRUMPF service networks will assist you. You can get in touch with us very easily, even via app.

**Consulting on part design**

**Improve:** If you want to gradually focus your manufacturing on maximum value creation: We will work together to reach your goal. Part design consultation, for instance, enables you to find out how you can reduce your manufacturing costs by up to 60% thanks to smarter sheet designs. What would you like to improve?
Find out about our comprehensive complete package of helpful services:
www.trumpf.com/s/services
The best solution for your Smart Factory

Industry 4.0 is changing our professional world. How can you react to this increasing complexity in your production facility? With TruConnect you optimize your entire value-added process step by step. This is achieved by networking your production, not just digitally but also physically – from software, machines, and services to automation, storage, and logistic systems. Talk to us about the best production solution for your Smart Factory. You can find two example cases here:

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**Your requirement:**
A direct chain from the coil to the bent sheet using “one piece flow”.

**The solution:**
Combine your coil system, punching machine, and bending brake.

**You benefit from:**
- No need to program the coil system
- Coil system communicates with the punching machine as an external loading unit
- Machines can be used within the chain as well as individually
- Buffers compensate for different machine cycle times (for example, use of a BendMaster for the bending brake)

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**Punching and bending production lines with coil connection**

**Automation of oversize format parts**

You want to load sheets up to 4000 x 1500 mm fully automatically, load sheet formats and finished parts in the same dimensions automatically, and unload sorted parts and automatically dispose of grid residue up to 4000 x 1500 mm.

**You can for instance combine a TruPunch 5000 and a LiftMaster.**

- You enjoy increased flexibility in your production facility
- You can adjust your production facility to suit different sheet formats in no time at all
- You can easily master short job changes and small batch sizes

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Discover: the modular networking solutions from TRUMPF with TruConnect.
www.trumpf.com/s/smart-factory

www.trumpf.com/s/smart-factory
Passion is what drives us

Whether it's production and manufacturing technology, laser technology, or material processing – we develop highly innovative products and services which are suitable for industry and absolutely reliable. We put everything we've got into giving you a compelling and competitive edge – expertise, experience, and a lot of passion.

Lasers for manufacturing technology
Whether macro, micro or nano: We have the right laser and the right technology for any industrial application, allowing you to manufacture in an innovative yet cost-efficient manner. Beyond the technology itself, we support you with system solutions, application knowledge, and consulting.

Power-supply systems for high-tech processes
From semi-conductor production to manufacturing solar cells: Our high- and medium-frequency generators give electricity for induction heating, plasma and laser excitation a defined form based on frequency and demand – highly reliable and for repeat accuracy.

Machine tools for flexible sheet metal and tube processing
Whether it’s laser cutting, punching, bending, or laser welding – we offer tailor-made machines and automation solutions, including consulting, software, and services, for all processes in flexible sheet metal processing – so you can reliably manufacture your products to exacting quality standards.

Industry 4.0
The TruConnect range of solutions connects man and machine through information. It covers all steps in the production process – from the offer right through to the shipping of your parts.