TRUMPF

TruMatic

Punching and lasers in perfect harmony

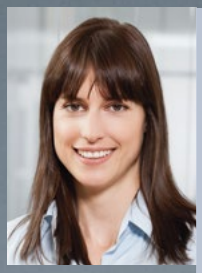


The best of both worlds

Whether you are a puncher or laser cutter: your customers' quality requirements are on the increase. At the same time, cost pressure is on the increase and batch sizes are decreasing. It is therefore important to make precise calculations – which isn't exactly easy when a part is manufactured on several machines. Your in-house logistics is also becoming more complex. So how do you obtain an overview and reduce your costs? By combining two technologies on a single machine. This simplifies your scheduling as well as your logistics, reduces throughput time – and opens up a tremendous pool of potential orders.



"When I only operated 2D laser cutting machines, I was one of thousands. With my TruMatic, I'm a specialist in producing highly precise combined parts. I can produce these **on just one machine much more precisely than I used to on several different machines."**



"Without combined machines, there were often problems with components requiring several formings. If we forgot a thread, for example, post-production was required. This interrupted our production processes – and didn't bring in any extra revenue either. Nowadays, **cutting and threading is carried out fully automatically and accurately on a single machine."**



- **Punching:**
  Process parts in 3D
- **Laser processing:**
  Complete freedom when it comes to contours
- **Logistics:**
  Automated and transparent solutions

"As a result of **secondary processes** it was previously difficult for us to make **full use of our machines** around the clock. The automation functions on the punch laser machines have solved these problems for us."



TruMatic 1000 fiber 8–11
Small and clever – creates sheets of up to 6 mm

TruMatic 3000 fiber 12–15
The productive universal machine

TruMatic 6000 16–19
Its CO_2 laser delivers best quality up to 8 mm

TruMatic 6000 fiber 20–23
The thin sheet specialist for all materials

TruMatic 7000 24–27
The economic high-end machine

Automation 28–29
Make full use of your machines

A combination that pays off

With a TruMatic machine, you combine all the benefits of punch and laser processing: The punching head reaches standard contours and formings, whereas the laser cuts more complex contours, allowing you to produce a wide range of parts and even complete challenging orders on a single machine – which definitely pays off.

Lean logistics – gain freedom

If you integrate the process steps cutting, punching and forming on a single machine, that will reduce your calculation risk and the floor space required. Reduced waiting times and workflows such as setup and handling allow you to make multiple savings – and win all the way.

Combined processing – best quality

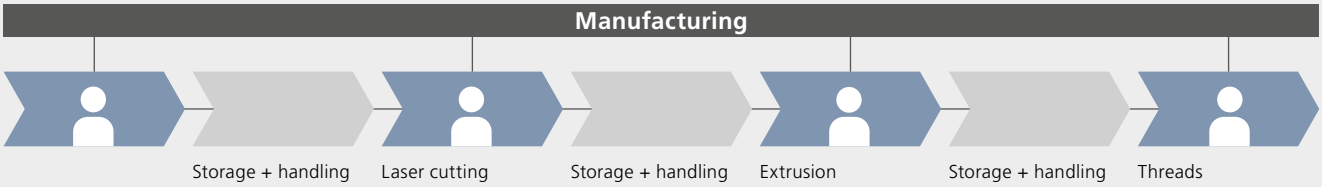
Combining fits or forming with laser cutting not only reduces the waste you produce, but allows you to manufacture high-precision components in a quality that wasn't possible to achieve when processing on several machines. And that pays off.

Short process chain – simple logistics

With the corresponding automation functions, your TruMatic can handle all parts fully automatically – it takes care of loading, manufacturing, sorting, stacking, unloading, and storage. There are virtually no limits to its loading and unloading capacity. Your machine therefore works round the clock as needed – and pays for itself that much sooner.

Processing on several machines or integrated in a single punch laser machine: Workflows compared

Conventional production



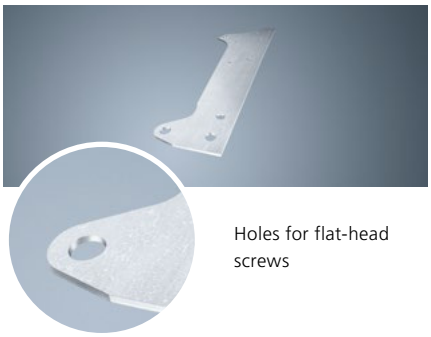
Studies have revealed that intralogistics takes up to 30% of the throughput time. The combined processing is causing this percentage to drop significantly.

Punch laser processing

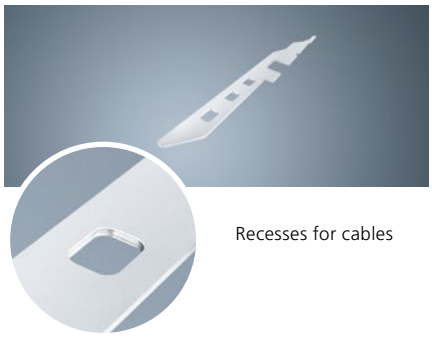


Even with just the laser cut

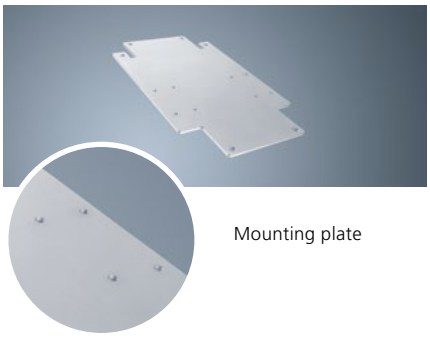
Laser-cut parts, produced on a 2D laser or punch laser machine
The comparison of part costs shows: Even with traditional 2D parts, the punch laser machine is able to keep up with the pure laser machine, in addition she can remove parts independently.



Holes for flat-head screws



Recesses for cables

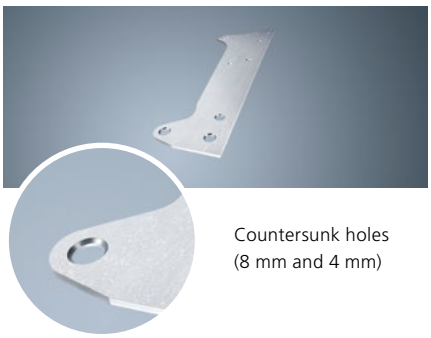


Mounting plate

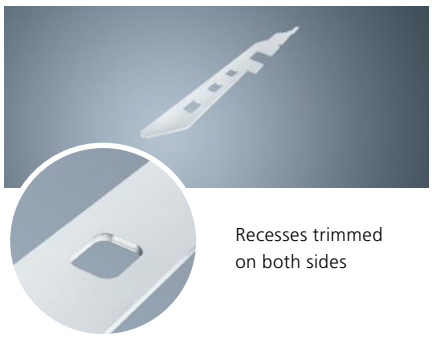


1: 2D laser cutting with a 4-kW solid-state laser in a comparison of part costs with 2: TruMatic 1000 fiber; cost basis = Central Europe

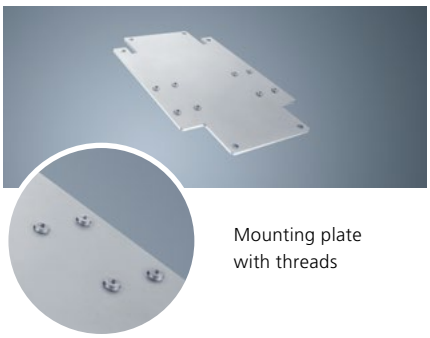
Parts with formed sections: processing on a punch laser machine or 2D laser machine including follow-up process steps
Parts that require additional processing steps face a risk with regard to quality, calculation and expenditure with each change of process. Therefore, the punch laser machine achieves inbeatable part costs.



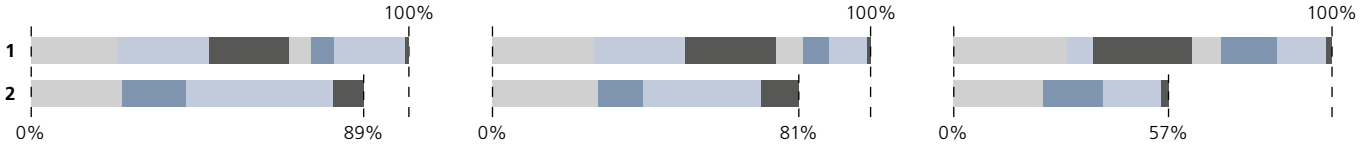
Countersunk holes (8 mm and 4 mm)



Recesses trimmed on both sides



Mounting plate with threads



1: 2D laser cutting with a 4-kW solid-state laser in a comparison of part costs with 2: TruMatic 1000 fiber; cost basis = Central Europe

Work preparation Process Parts logistics Setup

An ideal strategy for your success



Machine

With the aid of the unique machine concept, the tools demonstrate their strengths as comprehensively as possible: The punching head turns them at breakneck speed to any angle you wish – offering you maximum flexibility. The construction methods used by the TruMatic also avoid interfering contours in easily accessible processing space.

Laser tool

CO_2 or solid-state laser: Your intended use determines which laser is best suited to you. For best results, laser, optics, machine and software also need to harmonize perfectly. Which is why we develop and build all lasers ourselves – and provide you with comprehensive support.

Before anyone opts for punch laser processing, they often ask: Does the technology do what it promises to do? Make the right choice: Only TRUMPF offers you 100% integration. Leading worldwide, we develop harmonious overall concepts: Laser, tool system, material flow, sorting of parts, automation and software – all the components of a TruMatic work hand in hand for your success. Benefit from the greatest experience: back in 1979, we were the first suppliers to launch this combined technology onto the market.





Punching tool

Thanks to the large number of designs, polished sections and coatings, you are equipped to fulfill any order. With up to ten punch and die inserts in a single tool, the MultiTool is a true all-round solution – it lets you punch parts with different small punched holes in next to no time. But your TruMatic can do more than simply punch: 90° angles up to 90 mm, threads, a great variety of formings and even lettering can be performed directly on the machine.

The best manufacturing partner for you

Get to know the individual TruMatic machines on the next few pages and find out which is the right partner for you.

TruMatic 3000 fiber

The productive punch laser machine for your sheet metal processing – forming and tapping included.



01

Scratch-free

thanks to descending die

02

Simple operation

with the new Touchpoint HMI

03

Automatic loading and unloading

with automation solutions



04

Dynamic and compact

thanks to Delta Drive and small footprint

01

Scratch-free
thanks to descending die

The descending die enables scratch-free punching and forming processes. If required, the die can be lowered during positioning, so the sheet does not have any contact with the die – for both punching as well as higher forming dies. When forming downwards, there is no longer the risk of things getting caught.



The descending die ensures scratch-free parts.

02

Simple operation
with the new Touchpoint HMI

It can be very easy to produce punching or punch laser parts – machine operation becomes as intuitive as when using a tablet or smartphone with the new Touchpoint HMI from TRUMPF. It helps you finish the part much more quickly – and even novices will quickly learn how to work with the software.

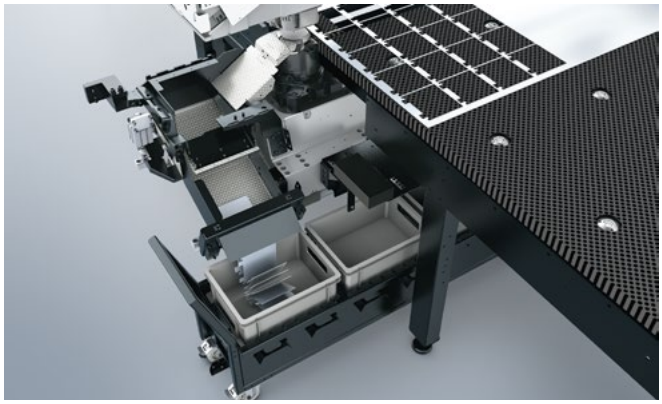


The touch display makes work pleasant and easy for the operator.

03

Automatic loading and unloading
with automation solutions

Removal and sorting solutions for small to large parts. The SheetMaster Compact takes over the process-reliable loading of sheets as well as the unloading of microjoint sheets and scrap skeletons. The SortMaster Compact removes and sorts the parts from your punch laser machine fully automatically. Individually controllable suction cups enable optimum part removal, especially for small and complex parts. Your machine automatically sorts parts up to a size of 180 × 180 mm.



Good parts enter an intermediate buffer via a part chute.

04

Dynamic and compact

thanks to Delta Drive and small footprint

With the powerful, dynamic Delta Drive, the TruMatic 3000 fiber works particularly productively. It eliminates the need to move the sheet and support table on the Y-axis, ensuring high productivity and process reliability. Compared to a sheet-mover machine, the new TruMatic 3000 fiber saves 25% of the installation area.



Small footprint thanks to compact design.

Technical data			
Working range		**Medium format**	**Large format**
Combined processing (X × Y)	mm	2535 × 1250	3050 × 1550[1]
Max. sheet thickness	mm	6.4	6.4
Max. workpiece weight	kg	150	230
Effective punching force	kN	180	180
Laser data			
Average power consumption during production	kW	8	8
Max. laser power	W	3000	3000
Mild steel	mm	6	6
Stainless steel	mm	6	6
Aluminum	mm	5	5
Speeds			
C-axis punching	U/min	350	350
C-axis tapping		M2 – M10	M2 – M10
Maximum punching stroke rate (in increments = 1 mm)	1/min	800	690
Maximum punching stroke rate (in increments = 25 mm)	1/min	400	400
Maximum marking stroke rate	1/min	1000	1000
Tools			
Linear magazine: Number of tools/clamps	Items	21 / 3	21 / 3
Rotatability of tools		All tools 360°	All tools 360°
Tool size for punching	mm	All tools 76.2	All tools 76.2
Programmable presser foot		Yes	Yes
Tool change time	s	0.3	0.3
MultiTool (5s)		Tools (Ø 16 mm), can be rotated 360°	Tools (Ø 16 mm), can be rotated 360°
MultiTool (10s)		Tools (Ø 10.5 mm), can be rotated 360°	Tools (Ø 10.5 mm), can be rotated 360°
Accuracy: Positioning range	mm	± 0.03	± 0.03
Programmable part removal			
Size of part chute punching	mm	180 × 180	180 × 180
Size of part removal flap laser	mm	400 × 600	400 × 600

[1] With repositioning.

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TRUMPF is certified to ISO 9001
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