

TruLaser Tube

Shape the
future



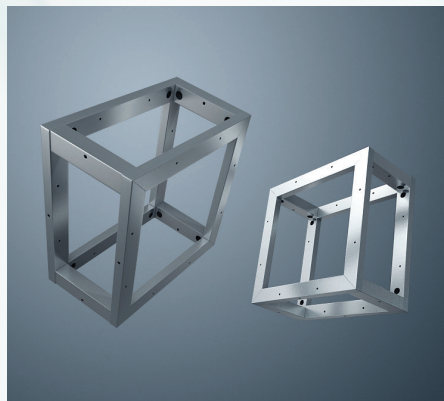
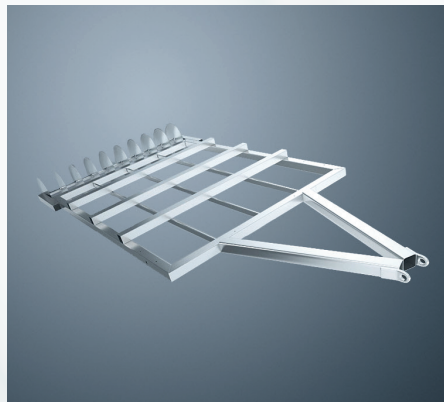
Machine tools/Power tools
Laser technology/Electronics

TRUMPF

Go with growth

Whether you're already in the business of conventional tube cutting or looking for new applications to tackle, the high growth rate of the market for laser-cut tubes offers exceptional opportunities for success.

Tubes and profiles are used in everything from machine and system construction to the furniture industry. The introduction of laser tube cutting has forged the way for a host of new design opportunities in this area, and designers are increasingly taking advantage of laser-cut tubes and profiles. As a result, demand for these products has increased significantly. Does your company stand to benefit from the competitive edge of laser tube cutting?



The process of laser tube cutting requires fewer steps which saves money.

The future is the laser 4–5

Cutting with a laser requires less time and lowers cost per part.

Flexibility and efficiency 6–7

Lay the foundations for long-term success with laser tube cutting.

The road to success 8–9

Real benefits every step of the way.

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The right machine for every job.

Our machines 12–19

Our TruConnect solutions will support you on your way to a Smart Factory.

TruConnect – Your Smart Factory 20–21

As a full service provider with individual advice and a large service network, we are always there for you.

Everything from one source 22–23

The future is the laser

Pressure to manufacture products in shorter time periods and at lower costs is growing in conventional tube cutting. With the laser, entire process steps are no longer necessary, and this means immediate savings. You will expand your part variety and your range of customers at the same time. The laser's versatility makes it possible to produce small lot sizes quickly and efficiently and offers the flexibility needed to tackle custom jobs. The broadened spectrum of design possibilities offered by laser cutting gives both manufacturers and their customers a clear competitive edge over conventional methods.



"Laser tube cutting offers new design options with which tube processors generate a lot of excitement in their customers. In addition, innovative designs make it possible to save a great deal of money."

Norbert Beier, Head of Sales Laser Tube Cutting



Why a laser?

- Take advantage of true flexibility
- Efficient production

Flexibility and efficiency

Contouring freedom

The laser allows you to contour freely. The laser beam makes it easy to cut even the most complex shapes and its intuitive controls let you produce even small, high-quality lots quickly.

Cut down on tools

A laser is a single tool which allows you to process a variety of materials, wall thicknesses and profile geometries without ever having to touch the material. As opposed to working with other technologies, tool setup and tooling costs are significantly reduced.

Lower cost per part

Laser tube cutting lets you skip entire process steps such as sawing, drilling and milling. It also cuts down on storage and handling expenses. Compared to conventional tube processing, lasers significantly reduce the cost per part.

Minimize time investment

Innovative tube designs reduce the need for downstream work such as welding and mounting. Positioning aids with slots and tabs make assembly much easier. High edge quality makes reworking the material completely unnecessary in most cases.

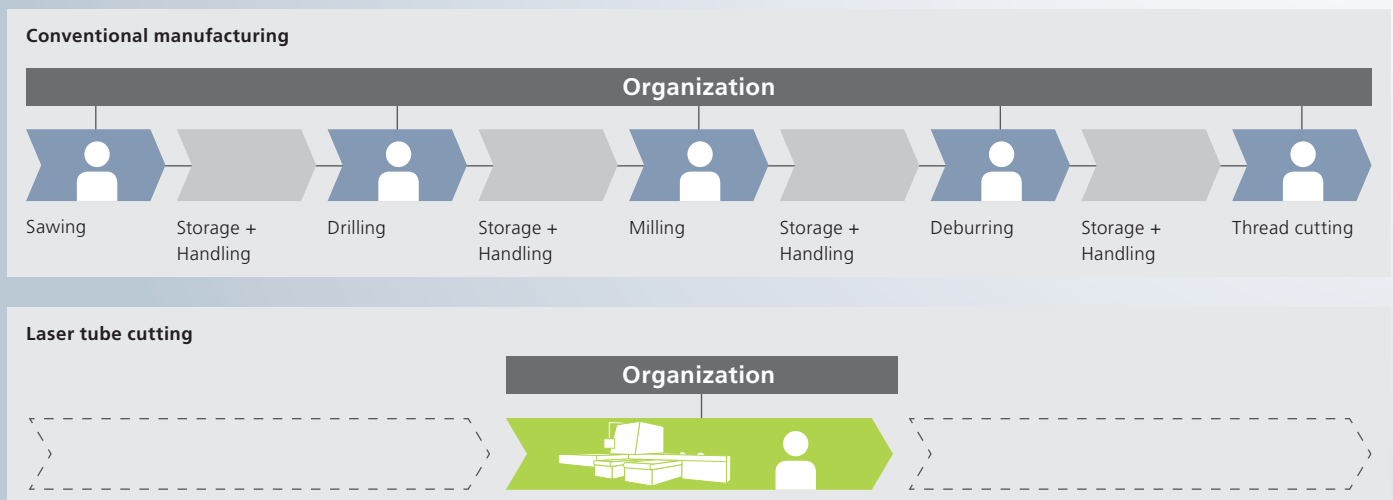
New business opportunities

Impress customers with products and design variants which cannot be achieved, or are not economically feasible, with conventional methods.



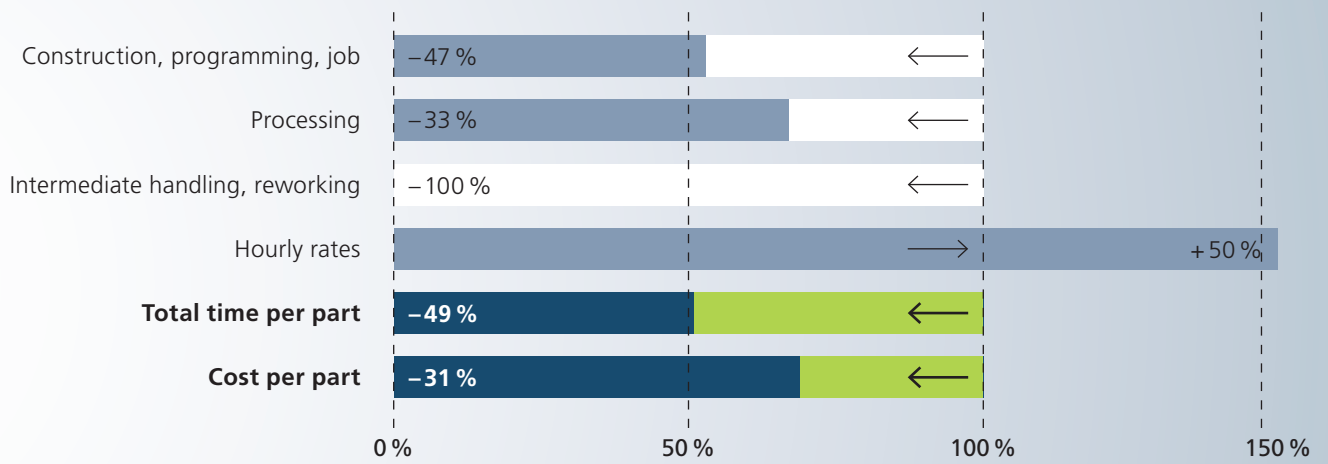
Flexible designer cable guide, cut from a single tube.

A comparison of the production steps involved in laser tube cutting and conventional manufacturing



Simply efficient

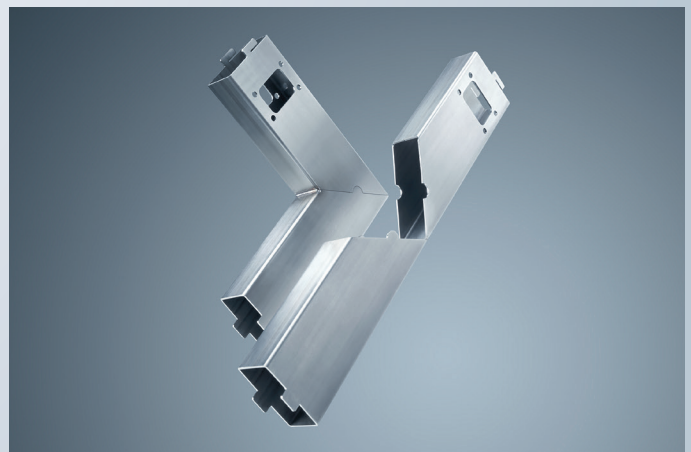
Taking the example of a bending connection, laser tube cutting is 49% more time-efficient and 31% more cost efficient per part.



Laser tube cutting with TruLaser Tube
 Conventional manufacturing (Sawing, milling, drilling)



Conventional welding of two separate parts.



Efficient production of bend connections and positioning aids using a laser.

The road to success

With laser tube cutting, you will lay the foundation for long-term success. Get yourself the right partner to achieve this: As the global market leader in laser technology and machine tool building, we set the pace for innovation in the market, and as such we offer you ideal solutions for the world of laser tube cutting.

Complete service

With TRUMPF there's no need to buy additional components. We are your single source for everything you need: machine, laser, automation, software and the support of our international service network.

Know-how comes standard

Hit the ground running with our turnkey solution: complete with an industrial-quality machine, simple controls, and technology and cutting data.

Set yourself up for future success

To secure your long-term success, we invest more than average in the development of tube cutting technology.





Why TRUMPF?

- The right laser for your application
- Highest productivity
- Innovative features such as bevel cutting
- Comprehensive technology and cutting data
- Open and ergonomic machine design



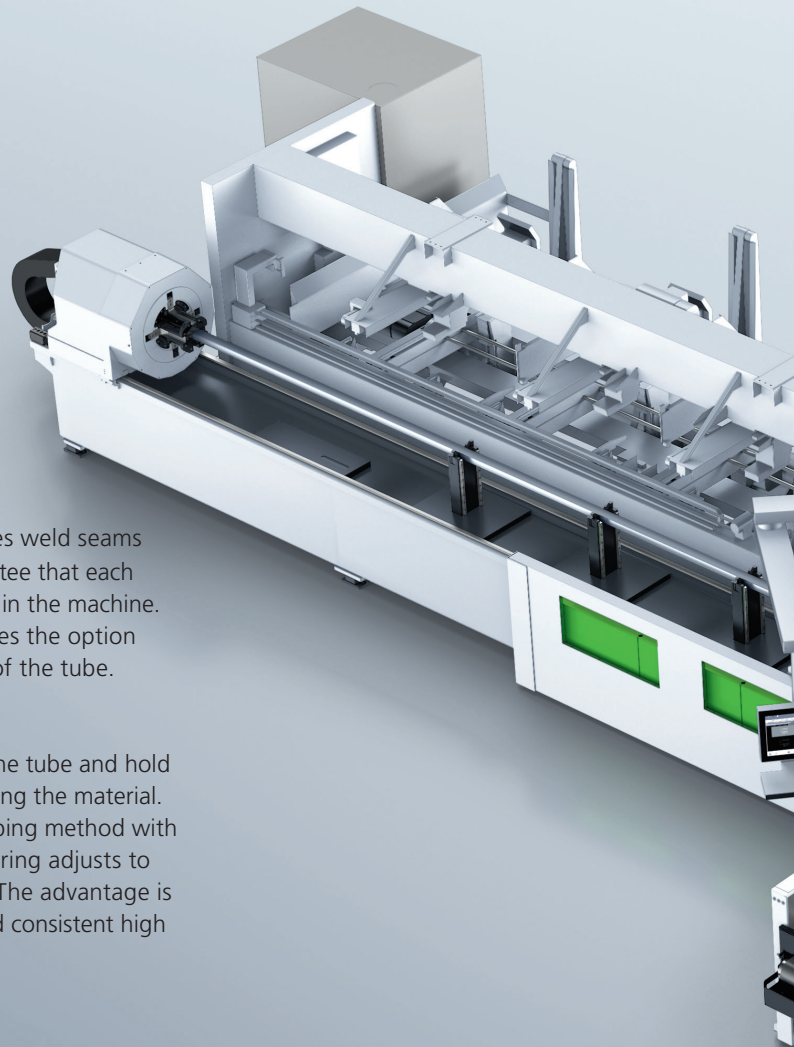
For tube enthusiasts

Learn more about innovative construction options and intelligent machine functions to set yourself apart from the competition in the long run.

www.trumpf.com/s/world-of-tubes

Solutions that move you forward

Our functional features and integrated know-how support your tubes and profiles every step of the way through the machine. Each component is designed to achieve optimal results: Real benefits every step of the way.



Loading

Automation

The LoadMaster Tube reduces setup time. Its tube magazines can hold up to four tons of raw material and loaded tubes are automatically verified before being fed for cutting.

Flexibility

The open and ergonomic machine concept even makes it easy to load individual tubes.

Smart features

Smart Profile Detection allows you to automatically load profiles with geometries that could previously only be loaded manually. This allows you to tap into new fields of application.

SeamLine Tube identifies weld seams and markings to guarantee that each tube is properly aligned in the machine. This feature also provides the option of scanning the inside of the tube.

Perfect clamping

Collet chucks position the tube and hold it in place while protecting the material. The self-centering clamping method with constant sensor monitoring adjusts to fit any tube geometry. The advantage is clear: precise results and consistent high quality.

Software

TruTops Tube

The TruTops Tube programming software lends a helping hand with more complex constructions. The 3D construction module makes it easy to perform complicated tube intersections.

TruTops Monitor

TruTops Monitor reduces idle times by gathering and analyzing machine data to inform you of any problems with the machine.

TruTops Fab

Take control of the entire production process with TruTops Fab. Handle quotations and invoicing, plan production, and monitor and operate your machines.

Cutting

Sturdy laser

At the core of the TruLaser Tube is a high-powered TRUMPF laser. Choose between a TruFlow CO₂ laser or a TruDisk solid-state laser (SSL).

Intelligent cutting head

The one-cutting-head strategy reduces downtimes. The slim nozzle even allows you to process profiles with internal edges. A magnetic coupling protects the cutting unit during collisions.

Concentrated expertise

The machine includes a complete set of high-quality cutting data. TRUMPF technology guarantees quick results and the best possible cutting quality right from the start.

Optimal focal position

FocusLine automatically adjusts the focal position of your laser in accordance with material type and thickness.

Controlled piercing

Need to quickly make small, precise piercing holes without damaging the material? PierceLine is the perfect feature for you.

Bevel cutting up to 45°

The bevel cut option with patented TRUMPF technology* opens up a whole new world of possibilities for designers. Expand your range of parts with high-quality bevel cuts up to 45°.

Unloading

Ergonomic design

The conveyor tables sit at an ergonomic height to make unloading much more comfortable. These also serve as a useful material buffer.

Gentle with material

Finished parts are discharged from the machine onto the conveyor table in a material-friendly way.

Smart

Your machine thinks along with you. Sensors detect whether a part has been properly removed or not – a real plus for your process reliability.



TruLaser Tube 5000 fiber

Solid-state laser technology means fast and flexible processing. The TruLaser Tube 5000 fiber is built on these strengths like no other laser tube cutting machine.

With Central Link, the interface for Industry 4.0



01

Highly productive

with solid-state laser and RapidCut

02

Setup time

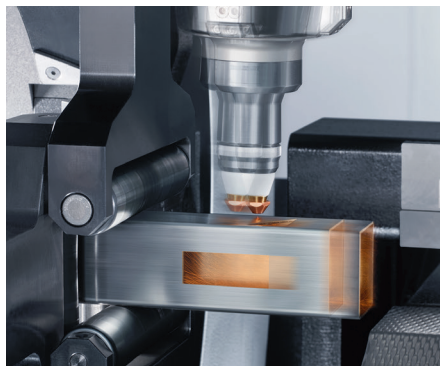
is virtually eliminated

01

Highly productive

with solid-state laser and RapidCut

Thanks to RapidCut, the solid-state laser's high feed rate is noticeable even for small contours. This represents a huge plus for productivity when processing thin sheet material.



With RapidCut, you can reduce part times for material thicknesses of up to 0.12 in.

02

Setup time

is virtually eliminated

Setup is now a thing of the past, thanks to the TruLaser Tube 5000 fiber's clamping method. Tubes can be processed across the entire clamping range without the need for modifications.

Technical details			
Max. outside diameter of round tubes	in.	6*	
Max. outer circle diameter of rectangular tubes	in.	6.7	
Max. raw material length for automatic loading	ft.	21/26**	
Max. finished part length	ft.	10/15**/21**/26**	
Max. weight of workpiece	lbs/ft.	13 (287/353** lbs in total)	
Laser details		TruDisk 2001	TruDisk 3001
Max. output	kW	2	3
Average power consumption in production	kW	11	13
Max. material thickness			
Mild steel	in.	0.3	0.3
Stainless steel	in.	0.16	0.2
Aluminum	in.	0.08	0.16
Copper/brass	in.	0.12	0.16

* Manual loading of round tubes with outside diameter of 6 – 6.7 in. optionally possible. ** Figure applies to larger model (optional). Subject to alteration. Only specifications in our offer and order confirmation are binding.



04

Easily expandable

for follow-up processes such as tapping

03

Easy access

thanks to the intelligent beam guard

03

Easy access

thanks to the intelligent beam guard

Tube processing with a solid-state laser can also be done without a complete housing – the TruLaser Tube 5000 fiber’s open machine concept guarantees easy access. Individual tubes can be quickly and easily loaded and unloaded from the front.



The innovative clamping method virtually removes the need for setup.

04

Easily expandable

for follow-up processes such as tapping

Simply integrate additional processes: With the technology package for tapping you can carry out machining processes such as flow drilling, tapping, and twist drilling. In the laser network, you can operate several TRUMPF machines with one laser.

TruLaser Tube 5000

Open and modular down to the last detail. The machine concept has proven its worth worldwide, through the course of day-to-day industrial production – it is an ideal choice for entry into laser tube processing.

With Central Link, the interface for Industry 4.0



01

Open machine design

Keeping an eye on everything, at all times

02

Modular installation

customized to your requirements

01

Open machine design

Keeping an eye on everything, at all times

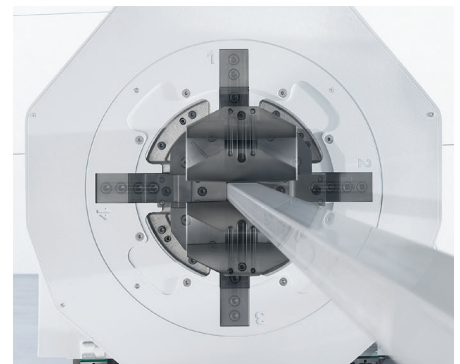
Due to the machine's open design, the operator can keep an eye on the entire process at all times. The exceptional accessibility makes it possible for individual tubes to be loaded and unloaded quickly.

02

Modular installation

customized to your requirements

Install your TruLaser Tube in line with your requirements. Here, you can place the LoadMaster Tube either in front of or behind the machine, as desired. You can set up conveyor tables, wire mesh boxes, and containers on the unloading side.



Due to the innovative clamping system, you can produce with virtually no setup.

Technical details

Max. outside diameter of round tubes	in.	6.0*		
Max. outer circle diameter of rectangular tubes	in.	6.7		
Max. raw material length for automatic loading	ft.	21/26**		
Max. finished part length	ft.	10/ 15**/21**/26**		
Max. weight of workpiece	lbs/ft.	13 (287/353** lbs in total)		
Laser details		TruFlow 2000	TruFlow 2700	TruFlow 3200
Max. output	kW	2	2.7	3.2
Average power consumption in production	kW	17	20	24
Max. material thickness				
Mild steel	in.	0.3	0.4***	0.4***
Stainless steel	in.	0.16	0.2	0.2
Aluminum	in.	0.12	0.16	0.16

* Manual loading of round tubes with outside diameter of 6 – 6.7 in. optionally possible. ** Figure applies to larger model (optional).

*** With PierceLine (optional).

Subject to alteration. Only specifications in our offer and order confirmation are binding.



03

Minimum idle states

with a clamping system that does not require setup

04

Reduced part costs

due to integration of follow-up processes

03

Minimum idle states

with a clamping system that does not require setup

Setting up means increased expense – especially for small lot sizes. Thanks to the innovative clamping system of your TruLaser Tube 5000, you can produce tubes in the entire clamping range with virtually no setup.

04

Reduced part costs

due to integration of follow-up processes

By integrating upstream and downstream processes into the TruLaser 5000, you save time and money. For example with the technology package for tapping, you can produce threads even in thin materials, due to flow drilling. You avoid having to travel from one machine to the next and in doing so, reduce part costs and the risk of errors.



The technology package for tapping makes flow drilling easily viable.

TruLaser Tube 7000

With Central Link, the interface
for Industry 4.0

Our flexible high-end machine for
XXL laser tube cutting.



01

Highly flexible

for tubes up to 10 in.

02

Sorting included

via flexible part-removal station

01

Highly flexible

for tubes up to 10 in.

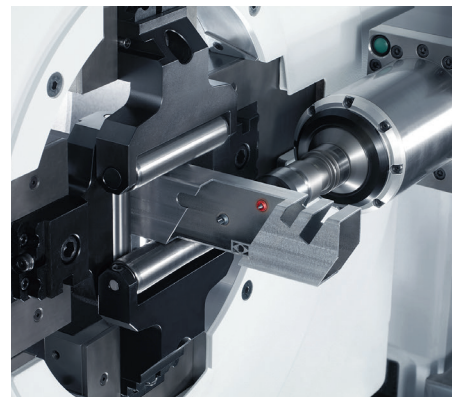
The TruLaser Tube 7000 is the choice for XXL laser tube cutting. Process tubes and profiles with diameters up to 10 in. and wall thicknesses of up to 0.4 in. on mild steel. The perfect machine for all jobs: process small, rectangular, round and oval tubes.

02

Sorting included

via flexible part-removal station

The flexible part-removal station sorts the finished parts onto a movable conveyor table, into wire cages or into transport containers, as desired. All components can be placed freely.



Suitable for thick, thin, small, and large tubes.

Technical details

Max. outside diameter of round tubes	in.	8 / 10*		
Max. outer circle diameter of rectangular tubes	in.	8 / 10*		
Max. raw material length for automatic loading	ft.	21 / 30*		
Max. finished part length	ft.	10/15*/20*/21*/26*		
Max. weight of workpiece	lbs/ft.	17 (331 lbs in total) / 25** (496 lbs in total)**		

Laser details

		TruFlow 2000	TruFlow 2700	TruFlow 3600
Max. output	kW	2	2.7	3.6
Average power consumption in production	kW	20	23	26

Max. material thickness

		TruFlow 2000	TruFlow 2700	TruFlow 3600
Mild steel	in.	0.3	0.4***	0.4***
Stainless steel	in.	0.16	0.2	0.24
Aluminum	in.	0.12	0.16	0.2

* Figure applies to larger model (optional). ** Figure applies to model with 10 in. max. outer circle diameter (optional). *** With PiercLine (optional). Subject to alteration. Only specifications in our offer and order confirmation are binding.



04

Efficient

from lot size 1 due to open machine design

03

Integration

of follow-up processes

03

Integration

of follow-up processes

Carry out follow-up processes on your machine with ease: With the optional technology package for tapping, for example, you can carry out machining processes such as flow drilling, tapping, and twist drilling – automatically. Upon request, the spatter protection device protects the insides of your tubes against slag, and in doing so reduces the need for reworking.

04

Efficient

from lot size 1 due to open machine design

The design of the machine is characterized by the best possible operator accessibility. Even individual tubes can be loaded quickly from the front and easily by hand. This makes it efficient from a lot size of 1. The swivel-mounted conveyor system is ideal for small batches and special profiles.



The swivel-mounted conveyor system can be used for small lot sizes and custom profiles.

TruLaser Tube 7000 fiber

Highest level of productivity – even for XXL tubes.

With Central Link, the interface for Industry 4.0



01

Dynamic and productive

with solid-state laser and RapidCut

02

XXL

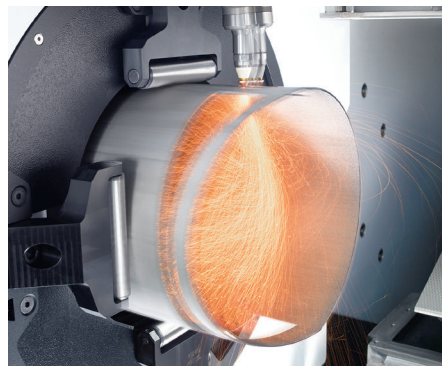
Tubes up to 10 in. diameter

01

Dynamic and productive

with solid-state laser and RapidCut

The superimposed movement of the tube axis and cutting head increases the dynamics of your machine by more than four times. Due to RapidCut, the high feed rates of your solid-state laser make an impact even with smaller contours. Above all, this means an enormous plus for productivity in thin material.



With RapidCut, you accelerate your production by up to four times.

02

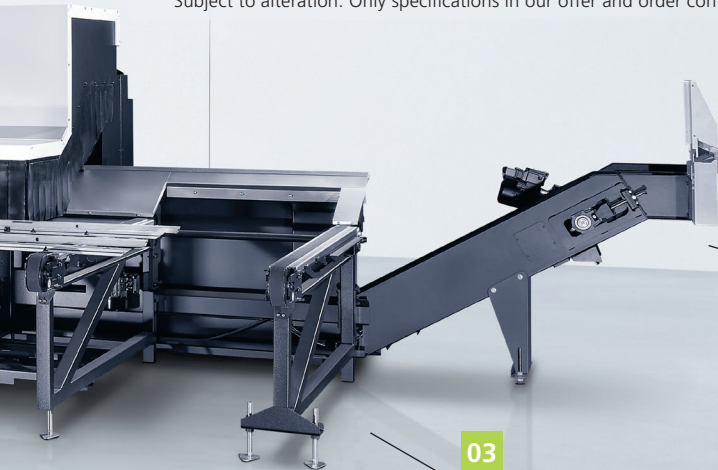
XXL

Tubes up to 10 in. diameter

Whether large or small, thick or thin: With your TruLaser Tube 7000 fiber you can cut a broad spectrum of parts. This includes even extra-large tubes and profiles with diameters up to 10 in., and wall thicknesses of up to 0.4 in. for mild steel.

Technical details		
Max. outside diameter of round tubes	in.	10
Max. outer circle diameter of rectangular tubes	in.	10
Max. raw material length for automatic loading	ft.	21/30*
Max. finished part length	ft.	15/20*
Max. weight of workpiece	lbs/ft.	27 (496 lbs in total)**
Laser details		TruDisk 4001
Max. output	kW	4
Average power consumption in production	kW	14
Max. material thickness		
Mild steel	in.	0.4
Stainless steel	in.	0.24
Aluminum	in.	0.24
Copper/brass	in.	0.16

* Figure applies to larger model (optional). ** Max. total weight of 27 lbs/ft. for manual loading. Subject to alteration. Only specifications in our offer and order confirmation are binding.



03

Easily accessible
during loading and unloading

04

Minimum nonproductive time
with setup-free tube supports

03

Easily accessible
during loading and unloading

The open machine concept makes your TruLaser Tube 7000 fiber optimally accessible. This allows you to load individual XXL tubes – for example by crane – quickly and efficiently. For small lot sizes and special profiles you can use the swivel-mounted conveyor system.



Ideal for lot sizes of 1: crane loading also possible for heavier tubes.

04

Minimum nonproductive time
with setup-free tube supports

Due to fully automatic machine settings, your TruLaser Tube 7000 fiber produces with minimum nonproductive time. The tube supports guide tubes and automatically adjust according to the respective diameter of the workpiece. Setup? Not necessary.

TruConnect – Your Smart Factory



80%

Indirect processes make up 80% of your production time – this represents the greatest potential for savings.



Discover the potential networked production could unlock for you with these two example scenarios:
www.trumpf.com/s/smart-factory

Gain more freedom with digital networking: You see more, know more, and get the most out of your laser systems and your overall production. With TruConnect, the synonym for Industry 4.0 at TRUMPF, you can design your Smart Factory step by step. The pragmatic solutions from TRUMPF support you on your path towards networked production, helping you make your entire process more transparent, more flexible, and above all more efficient.

For companies big and small

From the simple product solution right through to fully networked production.

- **Getting started** with machines that are equipped for networking as standard
- **Improving gradually** with automated machines or autonomous processing cells embedded in a production solution
- **Entirely connected** with a continuous production solution, from order to delivery

Smart functions and Industry 4.0

With the MobileControl app you can operate and monitor your machine easily and flexibly: It transfers the standard control panel interface to the touchscreen of your tablet. Thanks to the Central Link interface, your TruLaser machine is ready for Industry 4.0.



You can monitor and control your machine in the machine environment with the MobileControl app.



You can find more information about networked production here:
www.trumpf.com/smart-factory

Perfect interaction for your success

From the machine to the laser and the optical system, to the technology data: Intelligent machine functions are based on the interaction between different components. This is why we develop and manufacture them ourselves. The result? Consistent solutions down to the details – the ideal basis for your success.



The result

You receive a production system that is always available, comprised of components with perfect interplay.

TruServices

With comprehensive services and a global service network, we are always there for you.

Software

You optimize your production processes with software solutions from TRUMPF. The TruTops Tube programming system is optimally designed for your machine.

Automation

Many automation components are available for your TruLaser Tube machine, for example, the LoadMaster Tube for loading your tubes.

Process expertise

Every machine contains updated technology data checked by TRUMPF for laser tube cutting – so you can get started right away.

Optical system

We develop lasers, fiber optic laser cables and cutting heads for each specific set of requirements and for every series.

The benefit to you: You can make the best possible use of your equipment.

Machine

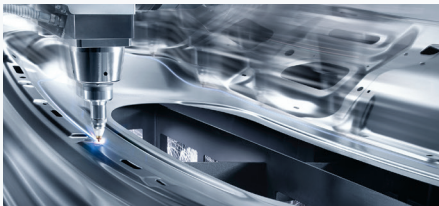
All TruLaser Tube machines are developed and produced by TRUMPF – they are a robust solution for your day-to-day industrial applications.

Commitment is what drives us

Whether manufacturing and production technology, laser technology or material processing: We develop highly innovative products and services for you that are industry standard and completely reliable. In order to offer you persuasive competitive advantages, we give it our all: Expertise, experience and plenty of commitment.

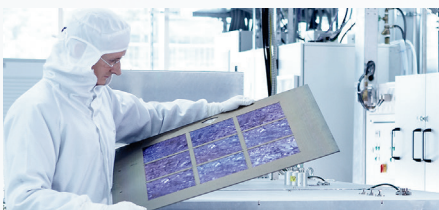


Visit our YouTube channel:
www.youtube.com/user/TRUMPFINC



Lasers for production 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. As well as the technology, we will also support you with system solutions, knowledge of applications and advice.



Power supplies 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 with repeat accuracy.



Machine tools for flexible sheet and raw processing

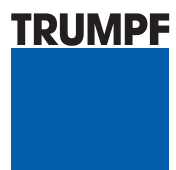
Laser cutting, punching, bending, laser welding: For all processes in flexible sheet production, we offer you custom-fit machines and automation solutions, including consultancy, software, and services – enabling you to produce your products reliably and in high quality.



Industry 4.0

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

TRUMPF is certified to ISO 9001:2015
(find out more: www.trumpf.com/s/quality)



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