

trotec

SP-xP Series

Laser Cutting Systems
Experience the precision and
productivity in large format
laser cutting



SP3000

trotec

Why SP-xP Series?

The SP-xP series laser cutter offers reliability, productivity, and safety for high-volume and large-area cutting and engraving.

With work dimensions ranging from 1245 x 1680 mm (49 x 28 in) to 3210 x 2210 mm (126 x 87 in), it seamlessly integrates into process flows, optimizing efficiency.

OptiFlow-xP technology enhances airflow management for precision and longevity, while Section Mode boosts productivity.

Ruby® software centralizes control for efficient monitoring and optimization. SP-xP offers precision and productivity across various applications.



Centralized smart system control with Ruby® software

The Ruby® laser software for our laser cutters integrates all components efficiently, monitoring conditions and optimizing performance. Precise control includes laser as well as peripheral devices and real-time data access via an intuitive dashboard.

Operator protection and laser safety compliance

SP-xP features retractable safety panels ensuring operator safety and compliance with laser class 2 standards. Panels facilitate loading and unloading while maintaining an unobstructed view of the processing area.

Revolutionizing airflow management with OptiFlow-xP

This superior extraction and airflow concept ensures efficient smoke and dust removal, enhancing precision, extending machine service life, and minimizing maintenance costs.

A comprehensive business solution

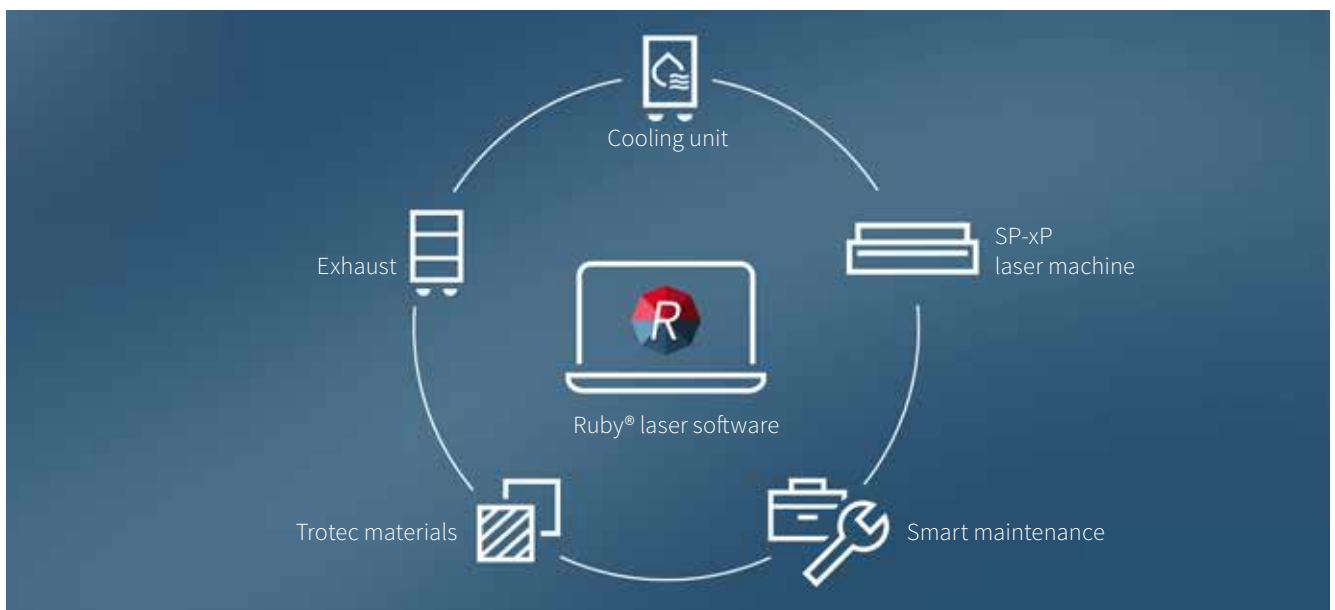
Trotec provides an all-inclusive package, including the laser system, software, exhaust, materials, and service, allowing you to focus on your core operations.

Unlock efficiency with a connected solution

With our SP-xP series we prioritize the efficiency of the entire workflow, not only on pure cutting speed. With our Ruby® laser software, we offer a comprehensive networked solution designed to maximize the potential of your SP-xP laser cutter.

A connected solution:
smart production – smart monitoring – smart maintenance

Ruby® is the central control hub, seamlessly integrating various components including the laser machine, laser cooling system, extraction system, laser materials, service, and support. This unified system enables smart monitoring and optimization of production processes. Streamline operations, boost productivity, and achieve unparalleled results with our innovative approach to laser cutting and engraving technology.



Get measurement data, such as laser positions or machine errors on the screen.



Ruby® orchestrates the operation of all peripheral devices with precision.



Benefit from maximum machine availability through strategic job management.



Exhaust is activated before the commencement of laser jobs, entering standby mode when not in use.



Setting the optimum exhaust power prolongs the lifetime of your laser and saves cost.



Automated monitoring of critical components vital for laser operations, from anywhere within the network.

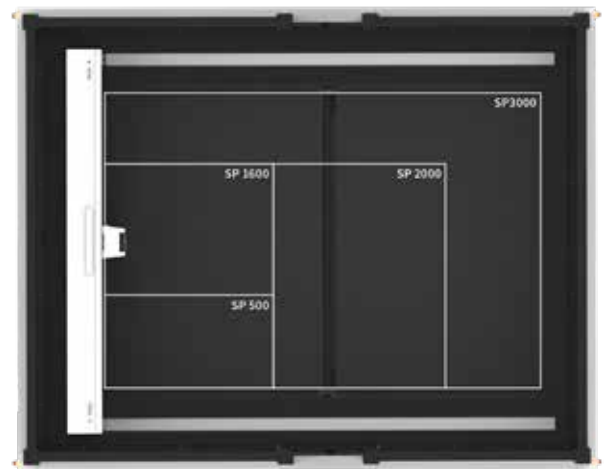
Choose SP-xP to enhance your laser cutting and engraving operations with precision, productivity, and a complete business solution. Elevate your work with Trotec SP-xP laser cutter.

SP-xP Series

All machines in the SP-xP series have a super-pulsed CO₂ laser source (wavelength 10600 nm), high-resolution motion system, 4-sided access, a central, smart system control, actively cooled mirrors, programmable second Z-axis, OptiMotion™, Sonar Technology™, industrial-grade components, InPack Technology™ and the Ruby® laser software for large format.



products.troteclaser.com/sp-xp-series



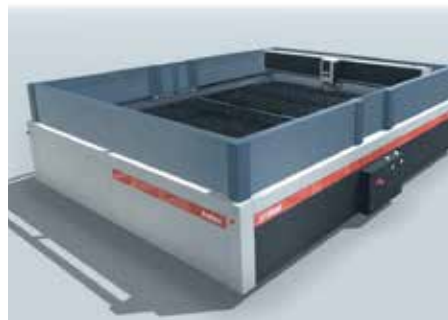
| | SP3000-xP | SP2000-xP | SP1600-xP | SP500 |
|-----------------------------|-------------------------------|------------------------------|------------------------------|-----------------------------|
| Working area (W x D) | 3210 x 2210 mm 126 x 87 in | 2510 x 1680 mm 99 x 66 in | 1245 x 1680 mm 49 x 66 in | 1245 x 710 mm 49 x 28 in |
| Laser power CO ₂ | 180 – 500 W | 180 – 500 W | 180 – 500 W | 120 – 200 W |
| Max. processing speed | 1.5 m/s 59 ips | 1.5 m/s 59 ips | 1.5 m/s 59 ips | 2.5 m/s 100 ips |
| Max. workpiece height | 50 mm 1.97 in | 50 mm 1.97 in | 50 mm 1.97 in | 95 mm 3.7 in |

What are the benefits of an SP-xP laser machine?



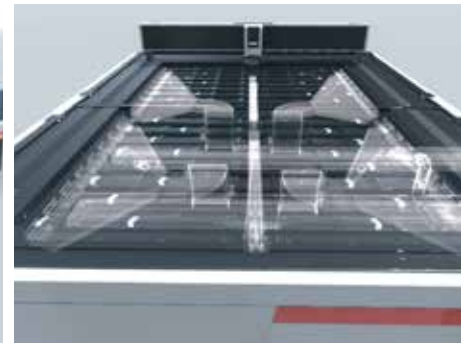
Central, smart monitoring

Ruby® serves as the central control system for the SP-xP series, seamlessly connecting the laser machine, extraction system, and cooling unit. Monitor axis positions and mirror temperatures with precision, while the customizable dashboard provides access to vital machine data for informed decision-making.



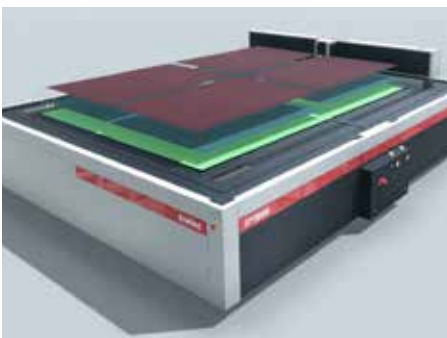
Laser protection panels

Our retractable laser protection panels are designed to enhance convenience and safety in your workspace. Featuring a laser class 2 safety rating, they ensure protection during laser processing while providing a clear view of the processing area. Facilitating easy loading and unloading, these panels are essential for efficient operations.



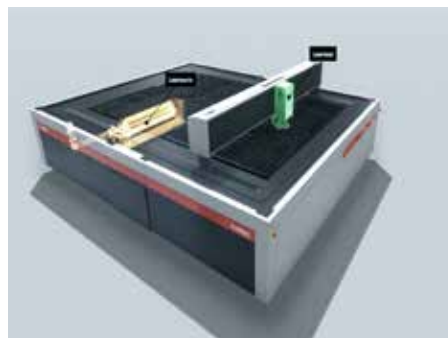
Airflow management OptiFlow-xP

Efficient gas and dust extraction are crucial for precise cutting and engraving, and prolonging laser machine lifespan. The SP-xP's OptiFlow-xP system uses an intelligent 16-area table design for even extraction, effective particle removal, and segmented ventilation control. The innovative head ensures high-quality cuts and supports two process gases managed via Ruby®.



Section Mode

Our SP-xP series allows for up to four different applications in a single pass, accommodating various designs and materials. Set production increases productivity, while tandem operation enables non-stop production with effortless and safe access.



Modular versatility

Embrace efficiency with the SP-xP's modular concept, facilitating swift access to all components for quick maintenance, without the need for specialized tools. This design ensures minimal downtime, maximizing productivity and operational continuity.



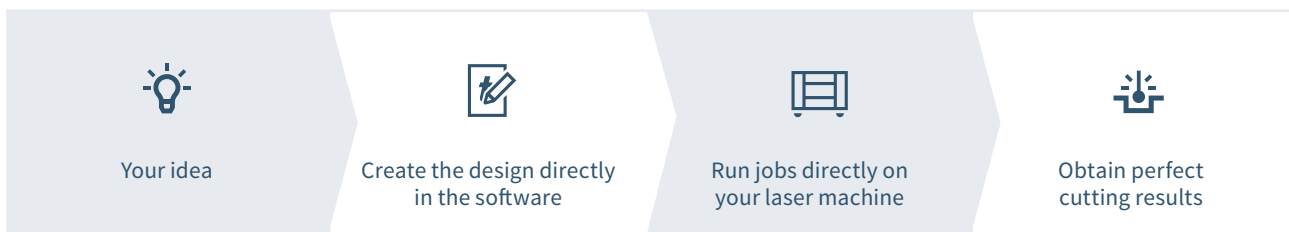
Efficient Laser Software

Digitally at its core, Ruby® ensures accessibility anytime and anywhere within the network. It achieves compatibility with nearly every program through file importing. Additionally, Ruby® seamlessly connects all devices, encompassing lasers and exhaust systems.

Laser Efficiency with Ruby® Software

Ruby® laser software is your ultimate tool for efficient laser operation. No need to open customers' layouts separately.

Drag and drop designs into Ruby®, regardless of your graphic program's version. Split design and preparation from production. While the laser works on current jobs, prep the next ones. Accessible from PC, Mac, tablet, or mobile, whether you're right by the machine or anywhere within your network.



Compatibility and connectivity

Ruby ensures digital accessibility at all times, seamlessly connecting various devices, such as laser, exhaust systems or water cooler, and is compatible with nearly every program through file importing.

Your benefit:

- Efficient working with seamless connectivity: All users can work simultaneously anytime and anywhere within your network.
- Increased productivity and streamlined workflows: Files from programs like Adobe® Illustrator or CorelDraw® can be uploaded without owning the program.
- Saves time, money, and relieves worries.
- Seamless automation of processes: Importing CSV files for automatic template filling speeds up production and standardizes results.

Anybody can use the laser

Simple laser access, seamless collaboration, file uploads without program ownership, Ruby® saves time and money, with automated processes boosting production speed and standardizing results.

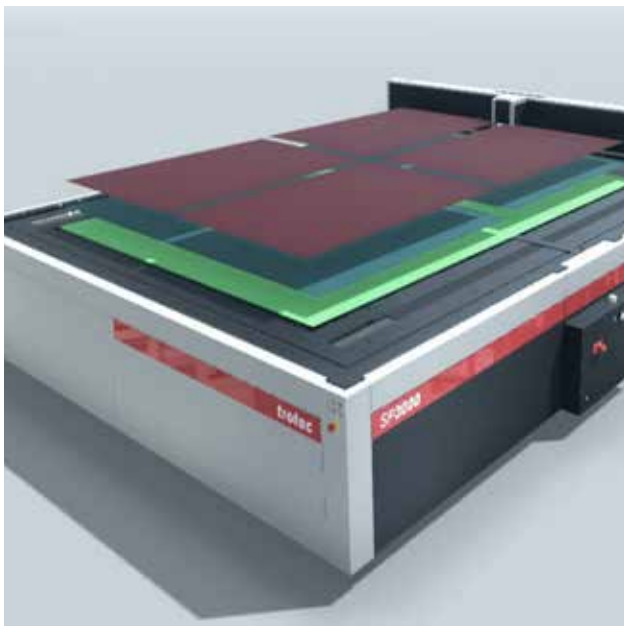
Your benefit:

- User-friendly interface: Simple and intuitive, reducing training needs for accessibility by anyone.
- Streamlined operations: One program, one efficient process, eliminating the need for printer drivers and enabling direct graphic operations.
- Simplified workflow for all users: No expertise required from file preparation to production for both laser owners and their customers.
- Enhanced security: User management with different roles and levels of permissions prevents from unauthorized alterations.



products.troteclaser.com/ruby

Productivity and Efficiency- Increasing Innovations



Section Mode: Up to 4 different applications simultaneously on one machine

- SP-xP's Section Mode enables up to four simultaneous laser applications in one pass.
- Seven operation modes allow independent processing of diverse designs and materials.
- Select full section (up to 3210 x 2210 mm | 126 x 87 in), half section (up to 1485 x 2210 | 58 x 87 in) or quarter section (up to 945 x 1485 mm | 37 x 58 in)
- Capable of cutting or engraving e.g. thick acrylic, printed cardboard, wood veneer, and foils concurrently.
- Implementation of production strategies enhances productivity by minimizing intermediate storage and optimizing material flow.
- Streamlines operations, boosts efficiency, and maximizes output while maintaining quality. Maximize output without compromising on quality.



OptiFlow-xP: Excellent cutting results and more output thanks to our innovative suction concept

- Intelligent table design divided into 16 areas, ensuring even extraction regardless of surface coverage.
- Fumes and particles are efficiently extracted, with a separator for smaller parts to prevent filter contamination.
- Airflow and extraction centrally and directly controlled in Ruby® laser software.
- Segmented ventilation control allows selective opening and closing of ventilation, aiding material flatness or enhancing airflow.
- Innovative processing head with integrated extraction system ensures consistent airflow for high-quality cuts and precise engraving.
- Active air-cooling of mirrors prevents contamination, monitored for optimal performance.
- Rail system guides particles along the X-axis for removal, with easy manual cleaning access.

What can you produce with an SP-xP Laser?

Trotec customers, spanning diverse industries, manufacture a broad spectrum of products.



Produce printed interior signs using various materials



Accurate contour cutting of foils for keypads with Print&Cut option



Cutting intricate designs from veneer for inlay work



Engraving signs made of wood or other materials



Production of displays



Precise cutting of printed materials



Cutting and engraving of logoblocks using thick acrylic



Production of individual shapes for cardboard displays



Kiss-cutting of foils for individual stickers

What materials can you cut or engrave?

The system can process cutting and engraving of acrylics, woods, textiles, paper and so much more. Scan or follow the link to get the full list of materials.



products.troteclaser.com/material-list

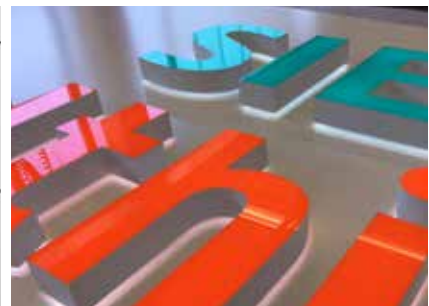
| | Engrave | Cut |
|----------------|---------|-----|
| Acrylics | ✓ | ✓ |
| Glass | ✓ | |
| Plastic sheets | ✓ | ✓ |
| Leather | ✓ | ✓ |
| Paper | ✓ | ✓ |
| Plastics | ✓ | ✓ |
| Stone | ✓ | |
| Textiles | ✓ | ✓ |
| Wood | ✓ | ✓ |
| Metal | | |



Laser-cutting of solid wood or veneered wood for interior design









Manufacturing of exterior signage







Production of illuminated signs








More features, options and accessories of SP-xP

- 
Ergonomic excellence: Clever designed ergonomic layout, granting unrestricted access to the laser cutter from all four sides. Easy adaptable for integration into existing spatial configurations.
- 
Modular versatility: Facilitating swift access to all components for quick replacement, without the need for specialized tools. Ensures minimal downtime, maximizing productivity and operational continuity.
- 
Vision Print&Cut integration: A built-in camera identifies register marks, facilitating precise and efficient cutting of printed materials. Seamless integration between printing and cutting processes.
- 
Rapid cutting performance: Accelerated production processes thanks to swift cutting and engraving speeds, propelled by a super-pulsed laser source. Rapid position changes between cutting geometries.
- 
Efficient extraction systems: Partnering seamlessly with SP-xP laser cutters, Trotec's Atmos Power Jet extraction systems efficiently eliminate dust and fumes. Enhance operational safety and cleanliness.
- 
Processing tables: Select the ideal table configuration to suit your specific application needs and achieve impeccable results with ease: aluminum grid, aluminum lamella, large and small honeycomb (12.5 or 6.4 mm), and rigid tables.



- 
InPack Technology™: Protects vital machine components from dirt and dust. Engineered to shield sensitive elements such as axes, laser heads, optics, and lense. Ensures uninterrupted performance even during heavy-duty usage.
- 
Diverse focus lenses: To suit your specific application needs. Enhance precision and versatility with lenses designed for various cutting and engraving tasks.
- 
Actively cooled mirrors: Prevent particle burn-in and prolong mirror lifespan. Monitor mirror temperature through the dashboard of our central, smart system control.
- 
Laser power upgrade: Upgrade to higher laser power effortlessly. Enhance productivity and expand your application possibilities.

- 
Automatic focusing: With just a click, the ultrasonic sensor on the laser head detects the workpiece surface, ensuring precise and efficient processing.
- 
Gas-Kit: Optimize cutting performance on materials like wood. Improve results and achieve greater efficiency with compressed air assistance.
- 
Laser pointer: The laser pointer indicates the exact impact point of the laser beam on the material with a red dot.
- 
CE certificate: Rest assured knowing our machines meet all official requirements and adhere to strict safety standards, as evidenced by our CE certification.
- 
Touch panel: Manage job preparation with your computer while using the touch panel to process job lists. Intuitive operation and enhanced efficiency.

Overview



| | SP3000-xP | SP2000-xP |
|---------------------------------------|--|---|
| Working area (W x D) | 3210 x 2210 mm 126 x 87 in | 2510 x 1680 mm 99 x 66 in |
| Max. height ¹ of workpiece | 50 mm 1.97 in | |
| Overall dimensions (W x D x H) | 3468 x 4341 x 1281 mm 137 x 171 x 50 in | 2938 x 3661 x 1281 mm 115 x 144 x 50 in |
| Max. processing speed | 1.5 m/s 59 ips | |
| Max. acceleration | 10 m/s ² 393 ips ² | |
| Technology motion system | Brushless DC servo motors | |
| Laser power CO ₂ | 180 - 500 W | |
| Laser class | 2 | |
| Water chiller | SMC HRS 050, SMC HSSH 100 | |
| Weight ² | Approx. 2610 kg 5754 lbs | Approx. 2160 kg 4762 lbs |
| Power consumption | 3x400V+N 50A 50/60Hz | |

Software

| | | |
|---------------|---|---|
| Ruby* | ● | ● |
| Trotec Vision | ○ | ○ |

Functions and Options

| | | |
|-----------------------------|---|---|
| Four sides access | ● | ● |
| Central smart monitoring | ● | ● |
| Section Mode | ● | ● |
| Programmable 2nd Z-axis | ● | ● |
| OptiFlow-xP exhaust concept | ○ | ○ |
| Air-flushed optics | ● | ● |
| Actively cooled mirrors | ● | ● |
| InPack Technology™ | ● | ● |
| OptiMotion™ | ● | ● |
| Sonar Technology™ | ● | ● |
| Gas kit | ○ | ○ |
| Ergonomic control desk | ● | ● |
| Rotary attachment | | |
| Pass-through | | |
| TroCare | ○ | ○ |
| 2 years warranty | ● | ● |

Multifunctional table concept

| | | |
|--|---|---|
| Aluminum cutting grid table | ○ | ○ |
| Acrylic cutting grid table or tabletop | | |
| Aluminum slat cutting table | ○ | ○ |
| Acrylic slat cutting table | | |
| Vacuum table | | |
| Honeycomb cutting table | | |

Lenses

| | | |
|---------------------------------------|---|---|
| 2.0 in CO ₂ | | |
| 2.5 in CO ₂ | ○ | ○ |
| 2.5 in CO ₂ clearance lens | | |
| 5.0 in CO ₂ | ● | ● |
| 7.5 in CO ₂ | ○ | ○ |

Compatible exhaust systems

| | | |
|--|---------------------------------|---------------------------------|
| | Vent Set 3000 Atmos PowerJet | Vent Set 3000 Atmos PowerJet |
|--|---------------------------------|---------------------------------|

● Standard ○ Optional

1 Depending on lens
2 Depending on laser power

For further details, please refer to the technical data sheet



| SP1600-xP | SP500 | |
|--|---|--|
| 1245 x 1680 mm 49 x 66 in | 1245 x 710 mm 49 x 28 in | Working area (W x D) |
| 50 mm 1.97 in | 95 mm 3.7 in | Max. height ¹ of workpiece |
| 2938 x 2381 x 1,281 mm 115 x 93 x 50 in | 1920 x 1240 x 1140 mm 75 x 48 x 45 in | Overall dimensions (W x D x H) |
| 1.5 m/s 59 ips | 2.54 m/s 100 ips ² | Max. processing speed |
| 10 m/s ² 393 ips ² | 19 m/s ² 748 ips ² | Max. acceleration |
| Brushless DC servo motors | Brushless DC servo motors | Technology motion system |
| 180 - 500 W | 120 - 200 W | Laser power CO ₂ |
| 2 | 2 | Laser class |
| SMC HRS 050, SMC HSSH 100 | ○ | Water chiller |
| Approx. 1450 kg 3197 lbs | Approx. 500 kg 1102 lbs | Weight ² |
| 3x400V+N 50A 50/60Hz | 208 - 230 V, 50/60 Hz, 16 A 380-400 V 3 Ph., 50/60 Hz, 3x16 A 380-400 V 3 Ph., 50/60 Hz, 3x20 A | Power consumption |
| | | Software |
| ● | ● | Ruby* |
| ○ | ○ | Trotec Vision |
| | | Functions and Options |
| ● | | Four sides access |
| ● | | Central smart monitoring |
| ● | | Section Mode |
| ● | | Programmable 2nd Z-axis |
| ○ | | OptiFlow-xP exhaust concept |
| ● | ● | Air-flushed optics |
| ● | | Actively cooled mirrors |
| ● | ● | InPack Technology™ |
| ● | | OptiMotion™ |
| ● | | Sonar Technology™ |
| ○ | ○ | Gas kit |
| ● | | Ergonomic control desk |
| | ○ | Rotary attachment |
| | ○ | Pass-through |
| ○ | ○ | TroCare |
| ● | ● | 2 years warranty |
| | | Multifunctional table concept |
| ○ | ● | Aluminum cutting grid table |
| | ○ | Acrylic cutting grid table or tabletop |
| ○ | ○ | Aluminum slat cutting table |
| | ○ | Acrylic slat cutting table |
| | ○ | Vacuum table |
| | ○ | Honeycomb cutting table |
| | | Lenses |
| | ● | 2.0 in CO ₂ |
| ○ | ○ | 2.5 in CO ₂ |
| | ○ | 2.5 in CO ₂ clearance lens |
| ● | ○ | 5.0 in CO ₂ |
| ○ | ○ | 7.5 in CO ₂ |
| Vent Set 3000 Atmos PowerJet | Atmos Pure 600 Vent Set 500 Atmos PowerJet | Compatible exhaust systems |

Full package from machine to service

Choose Trotec, and you're selecting more than a laser machine.

We offer a full solution, encompassing laser software, exhaust systems, materials, training, service, and support – all aimed at ensuring your immediate profitability.



Ruby® Laser Software

Efficiency is at your fingertips with Ruby® laser software. Accessible from PC, Mac, tablet, or mobile, whether beside the machine or anywhere on your network. Ruby® simplifies laser job management.



products.troteclaser.com/ruby



Quality Materials

Explore our extensive range of laserable materials, gifts, and accessories, all rigorously tested to guarantee superior laser processing outcomes. We handle material testing – you concentrate on your business and customers.



products.troteclaser.com/laser-materials



Efficient Exhaust Systems

For premium engraving and cutting results, dust and fumes must be effectively removed. Our specially designed exhaust systems perfectly complement Speedy lasers, delivering optimal performance.



products.troteclaser.com/atmos-exhaust



Efficient Delivery and Installation

When you purchase a Speedy from Trotec, we ensure cost-effective delivery from the nearest supplying plant, often located in your country. Installation is conducted by our local specialists, allowing you to get up and running swiftly.



products.troteclaser.com/installation



TroCare Service

TroCare offers comprehensive coverage for your laser. A single monthly or annual payment includes preventative maintenance, parts, and labor for repairs, ensuring your laser's longevity.



products.troteclaser.com/trocare

About Trotec

Leading international developer and manufacturer of laser machines.

Home of all laser users

Our vision is to be a “home” for all laser users. A place where you get technology, opportunities, guidance and – above all – answers. Along the way, we’re making work simpler, faster and more profitable for laser users. We’re setting new standards. Day after day. To be successful today and tomorrow.



+650

Employees worldwide



14

Subsidiaries



1997

founded



113

Distributors



51

Showrooms



150 M €

Turnover 2023

Where you can find us worldwide.

Our extensive range of first-class laser engravers, laser cutters and laser markers and the large portfolio of laser materials paired with an unrivaled service have made Trotec the technology leader in the industry.

We have 14 sales offices, more than 50 showrooms and 113 sales partners worldwide. Our machines are currently used in more than 90 countries around the world. Wherever you are, we’re close by.



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