

Galvo laser systems

SpeedMarker

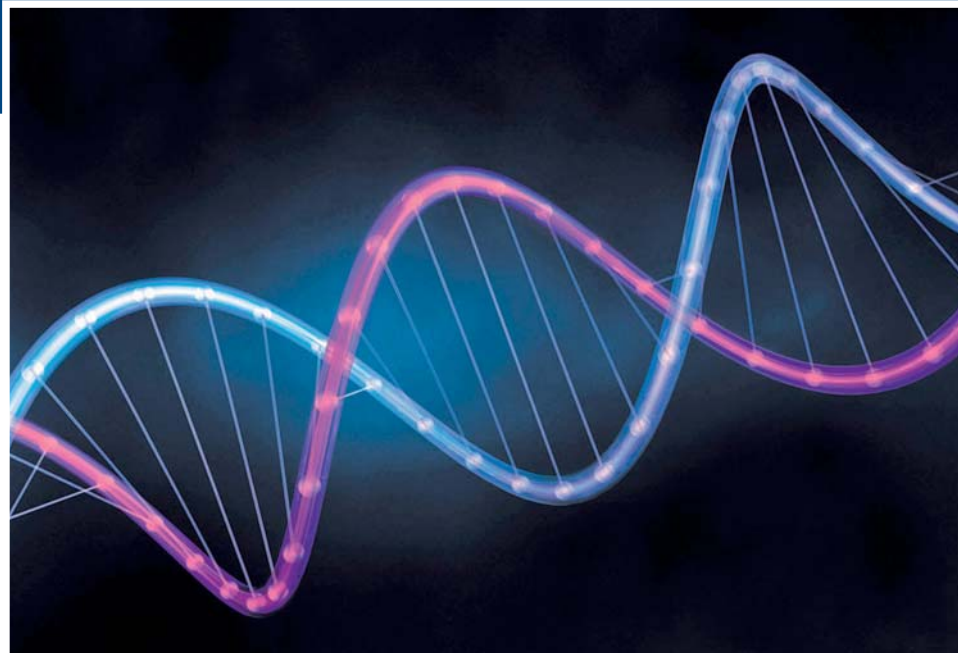


**High-speed lasers
for marking, engraving and cutting**

trotec[®]
laser engraving technology

Applications

as individual as our customers



These days it is hard to imagine not using laser marking technology for numerous applications in various industries. Additionally, laser marking and cutting technology is being used in new fields every day.

Trotec offers the product line **“SpeedMarker”** for industrial high-speed laser marking. Using Trotec industrial laser systems is often the most economic and sometimes the only possible solution, as it has numerous advantages over traditional marking and cutting methods.

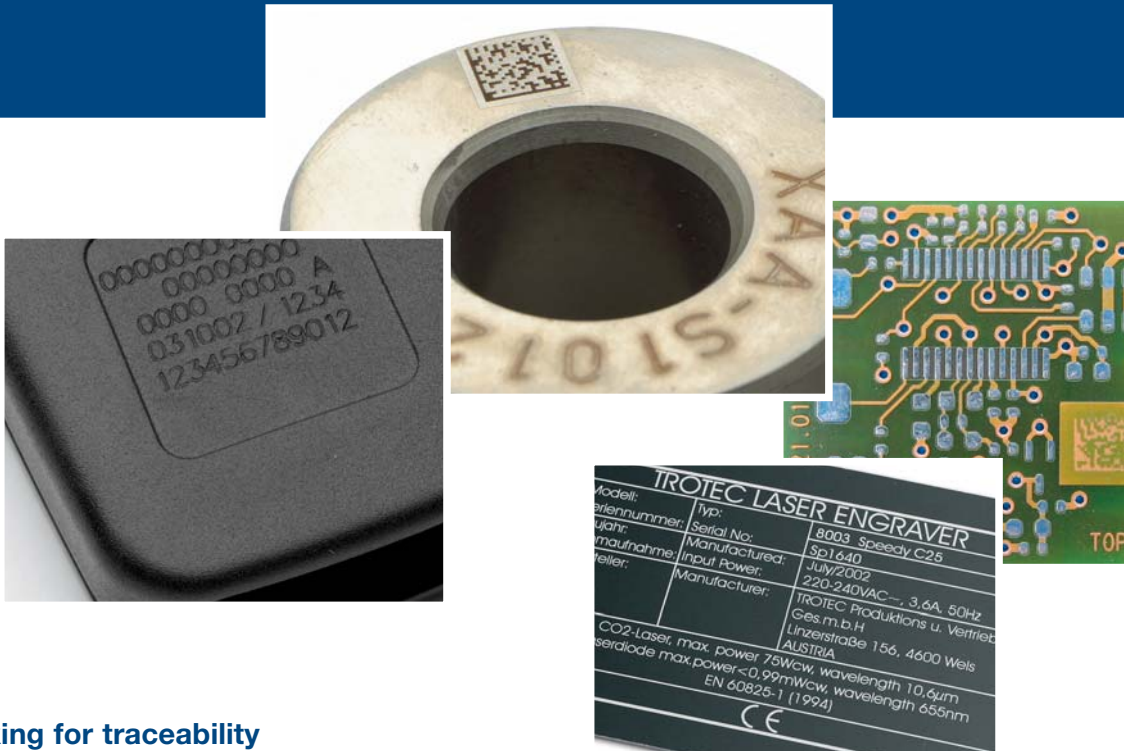
Marking with a Trotec laser system is always high quality, permanent and resistant to chemicals and heat. It can also be applied to a large variety of materials quickly, easily and cost effectively.

Whether it is colour change, relief effects, annealing or removal of material: Trotec high-speed laser marking systems offer numerous **advantages:**

- very high processing speeds, even on moving work pieces
- very high system availability because of maintenance-free system components and high grade design
- easy to use system with its own software and intuitive user commands
- in-situ quality control and consistent traceability using autonomous image processing
- optimum choice of laser technology independent of the system

The SpeedMarker is often the first choice for marking parts in the automobile industry, in medical engineering, food packaging and advertising industries as well as in many other fields. Depending on the application, specific requirements on labelling and marking systems may arise. With a Trotec high-speed laser system you are always optimally equipped for your individual marking application.

Marking and guaranteeing



Marking for traceability

In many industries, such as the automobile and aircraft industries, the electronics and food industries, as well as in medical technology, topics such as safety, traceability and product liability are increasingly important. Strict legal requirements—especially for manufacturers of end products—have to be taken into account as well as company-specific guidelines—especially for suppliers.

Parts labelling (examples):

- machinery (parts)
- packaging materials
- medical products such as implants, hearing aids, prostheses and surgical instruments
- groceries

Types of information:

- barcodes, serial numbers, data matrix codes
- use-by dates, product information
- manufacturer information, logos

Requirements:

- high quality, even on uneven surfaces
- permanent, abrasion resistant, impervious to heat and chemicals
- hygienic (especially in the medical and food industries)
- maintenance of product properties, such as corrosion protection, mechanical stability, sterility, taste, etc.

Marking for protection against plagiarism

Premium manufacturers use Trotec technology to apply their logos or various hidden codes to their products helping to prevent product piracy, as plagiarism is quickly and easily identifiable. Laser coding turns an original into a distinctive individual item, which can also be traced accurately.

Parts labelling (examples):

- premium products and valuable parts

Types of labelling:

- logos
- number codes

Requirements:

- precise and unambiguous
- high quality
- permanent and resistant
- high density of information on small surfaces

Marking and informing



Functional marking

The labelling of tools, instruments and housings of all kinds with essential information for the user is described as functional marking.

Precision, durability and sometimes sterility are the main requirements of this type of marking.

Parts labelling (examples):

- electrical assembly boards
- tools
- surgical instruments
- keyboards and consoles
- all kinds of housings

Types of information:

- product information
- scales, numbers
- instrument-specific labels

Requirements:

- precise and easily legible
- durability—resistance to mechanical, thermal and chemical environmental influences
- surface condition must be maintained (sterility, corrosion protection, etc.)
- high density of information on small parts

Aesthetic, high quality marking

Sometimes, the main marking requirement is aesthetics, especially if the brand is well known or indicates an exclusive product. Trotec high-speed marking systems are able to produce markings that fulfill these requirements thanks to an extremely fine beam diameter.

Parts labelling (examples):

- premium products and valuable parts
- advertising media

Types of information:

- logos
- product information
- coding

Requirements:

- precision
- high quality and permanence
- high flexibility of laser system

Marking and cutting



Cutting applications

Trotec high-speed marking systems are also able to cut, drill and perforate thin materials such as paper, cardboard or foil with a thickness of up to 2 mm.

Trotec laser technology enables the cutting of complicated geometric designs and is very economical even with small batch quantities as neither the change nor the purchase of tools are necessary. Traditional punch machines can be supplemented or replaced depending on throughput.

Requirements:

- high cutting quality, even with complicated geometric designs
- fast, as must frequently be used on conveyor systems
- economical, even with small batch quantities

SpeedMarker FL

Fiber laser



Technical data

Laser type	Ytterbium fiber laser, maintenance-free			
Laser power	10 W and 20 W			
Wave length	1062 nm			
Pilot laser	635 nm			
Operating mode	pulsed 20 kHz – 100 kHz			
Beam quality	M ² = 1,4			
Focal length	F=100	F=160	F=254	F=420
Processing speed (mm/sec) (inch/sec)	6000 236	9600 378	15000 591	25200 992
Working area (mm) (inch)	70 x 70 2,8 x 2,8	110 x 110 4,3 x 4,3	180 x 180 7,1 x 7,1	290 x 290 11,41 x 11,41
Safety	with work station: laser safety class 1 as OEM Version: laser safety class 4 certified for CE, FDA compliant			

The SpeedMarker FL fiber laser is a modern and often more economical alternative to an Nd:YAG laser system. Thanks to its small dimensions, the IP 65 specified, air-cooled SpeedMarker FL fiber laser can be easily integrated into existing production lines. The life span of the pump diodes is extremely long. This enables operation for more than 20,000 hours without servicing. The compact SpeedMarker FL is of robust construction and offers excellent beam quality. It performs applications that you might expect from an Nd:YAG laser extremely quickly and precisely.

Typical materials:

- blank metals
- coated metals
- untreated plastics
- coated plastics
- solid coloured plastics
- ceramics

... and many more

SpeedMarker CL

CO₂-Laser



Technical data

Laser type	sealed-off CO ₂ Laser, maintenance-free
Laser power	from 7 W to 400 W
Wave length	10,6 µm
Pilot laser	650 nm
Operating mode	pulsed 0,1 kHz - 50 kHz
Beam quality	M ² = 1,1
Focal length	100 to 1200 mm (3,9 to 47,2 inches)
Processing speed	> 1000 characters/ second (valid for font size 1 mm or 0,04 inches)
Working area	70 x 70 bis 850 x 850 mm (2,76 x 2,76 up to 33,5 x 33,5 inches)
Safety	with work station: laser safety class 1 as OEM Version: laser safety class 4 certified for CE, FDA compliant

The CO₂ galvo laser SpeedMarker CL embodies a state of the art system in the field of industrial high-speed marking. The air-cooled SpeedMarker CL is specified for IP 54—the machine is well protected against dust and water and can be used in the most difficult of environments. Trotec offers a broad range of compact equipment from 7W up to an extremely powerful 400W laser.

Typical materials:

- acrylic
- anodized aluminum
- cardboard
- coated Metals
- cork
- fabrics
- foam
- glass
- leather
- MDF
- melamine
- paper
- plastics
- polyester
- rubber
- silicone
- stone
- veneer
- wood

... and many more

Options



Smartcam decodes
a laser engraved
4-digit-number (7518)

Name	Method	Output	Result
Image Acquisition			PASS
find_edge	Positioning: ...	Distance = 88.644 pixels, X = 428.063 p...	PASS
read_ss_speed	Character Read	Contrast= 0.00, String=7518	PASS
Inspection Results			PASS
Communications Ex...			

To provide the total solution for your marking requirements, the following options are available for all SpeedMarker versions:

Camera

If required, the Trotec SpeedMarker can be equipped with an “intelligent” camera to provide continuous traceability and overall product monitoring. If the actual marking does not conform to the designed marking then this is recognized by the camera (“pattern matching”), and a signal is activated. The camera also enables text recognition and the decoding of barcodes and data matrix codes. The camera communicates with other devices and interfaces by standard SPS signals and/or TCP/IP.

Marking on the Fly

The SpeedMarker is not restricted to marking on objects that are static. Even moving parts, such as those being transported on a conveyor belt through a production process, can be marked without distortion using Trotec technology. A speed sensor matched to the Trotec laser system is available as an optional extra.

Stand Alone “Workstation”

Besides the standard OEM version, the SpeedMarker is also available as a “stand-alone” solution (laser class 1). We will be happy to discuss any variations on request.

Output sensor

Both the SpeedMarker FL and the SpeedMarker CL are equipped with an in-situ output sensor. If the value falls below the critical level, a fault alarm is activated.

The SpeedMarker CL is sensitive to fluctuations in ambient temperature for physical reasons, so output is actively controlled. This ensures constant output under different operating conditions.

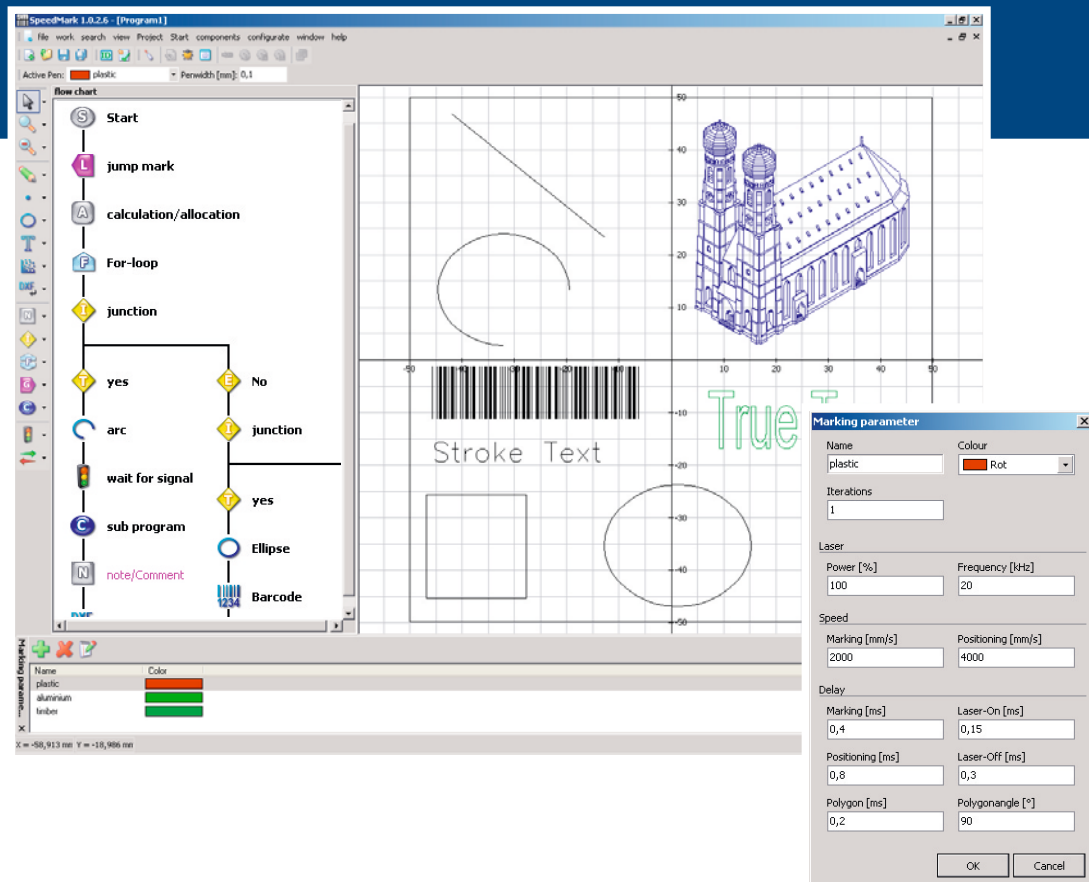
Remote maintenance

We offer our customers a very special service. Using a secure PC connection, Trotec provides remote maintenance of the laser control software to help quickly and efficiently.

Scanner performances

Choose from one of four different scanners for each SpeedMarker. During the sampling process Trotec specialists determine the ideal scanner (speed, thermal drift) for your individual application.

Software bespoke



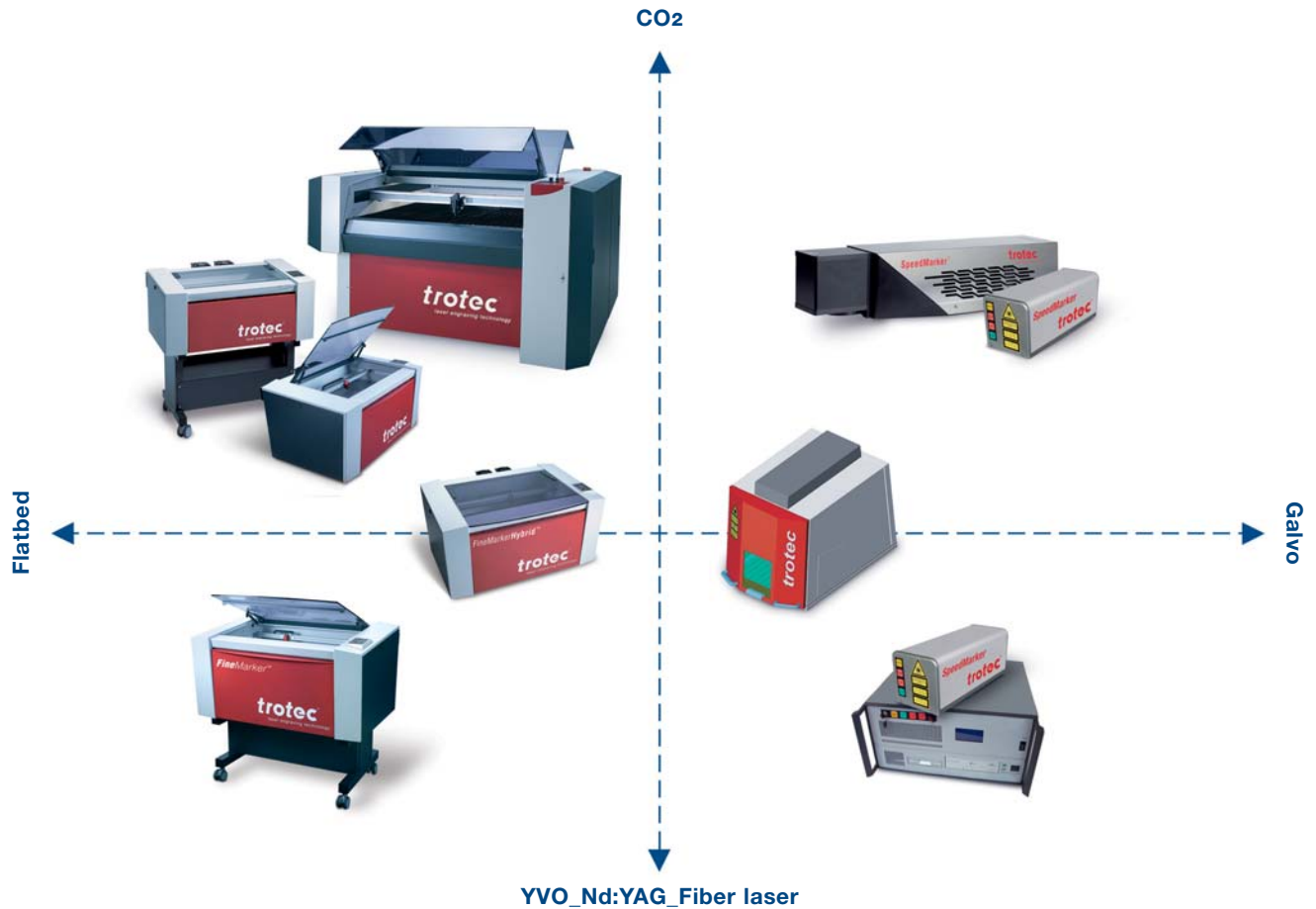
The SpeedMarker has a particularly special feature—it is driven by **“SPEEDMARK”** bespoke software developed in-house. Trotec therefore offers a unique combination of laser marking systems with their own control software. This means that Trotec can deal with individual and custom requests. Trotec specialists implement these quickly and efficiently.

The user-friendly software offers intuitive user guidance for the creation and managing of marking jobs and for the controlling of all system and laser functions. Both, standard applications and complex

process control can be easily performed thanks to the function structure in the form of flow charts. The software also controls a number of external options (SPS and data bank linking, image processing, file handshake, etc.)

All kinds of graphics formats can be imported, revised and optimised for the laser. Machine-readable codes, date stamps, serial numbers, etc., can be generated easily and quickly. There are special modules available for serialising codes.

The entire spectrum of industrial marking



If you have a marking requirement—we can provide you with a suitable laser system. We draw on a vast range of resources and develop together with you an ideal solution for your marking needs.

Increase your productivity. Contact us—our specialists look forward to helping solve your marking and cutting requirements.

Trotec is certified for ISO 9001—it goes without saying that all current quality standards are included in our solutions.



Your partner in every case



The Trotec solution

More and more companies in various industries are choosing high quality laser marking systems by Trotec. Trotec offers solutions for most requests related to marking, engraving and cutting with laser technology.

Trotec offers standard and individual solutions. Trotec is the only laser company to provide the full range of innovative flatbed and galvo systems with CO₂, Nd:YVO₄ and fiber laser technology. We offer stand-alone equipment as well as the integration of our lasers into your industrial production line, where even "Marking on the Fly" is possible.

Trotec world-wide

Trotec lasers are used all over the world. Our experience in the field with thousands of systems installed is evidence of our know-how and customer trust.

Our Trotec service and sales partners in more than 80 countries undergo continuous training programmes. Trotec laser systems can therefore be professionally serviced on site.

The Trotec mission

At Trotec the customer is our top priority. We would like you to be more successful with Trotec. In order to be always able to offer the right solution to our customers, our aim is innovation. Our innovations assure you minimal overall costs for your laser system, quality, flexibility, efficiency and productivity.

A Checklist For Your Laser Needs:

- **Is there a perfect laser system for your requirements?**

We have a full product range available and can provide you with neutral advice not dependent on technology.

- **Is the laser system a match for your quality standards and does it work productively?**

The SpeedMarker is tremendously fast and represents high quality and flexibility. It can be combined with quality assurance options such as camera monitoring. We can therefore offer you the total solution for your marking requirements.

- **Will the laser system fit in with your company's production processes?**

High tech marking systems from Trotec can be operated as stand-alone systems or integrated into your production line. Thanks to the Trotec software that we have developed in-house, we are extremely flexible in dealing with your individual requirements. For you, that means: Top flexibility—no matter whether you manufacture unique items or standardised products.

- **Can the laser system supplier be a long-term partner?**

Trotec is a company of the Trodat Group and can continually present increases in growth and turnover. Every year, many hundreds of companies choose to purchase Trotec laser systems. For you, that means: You can rely on our know-how and experience gained from installing thousands of facilities and you may trust in the continuity that Trotec can provide.

- **What happens if anything goes wrong? Can we find a service agent quickly?**

Remote servicing and our network of more than 80 service support points all over the world guarantee the fastest possible support. We quote and work to the motto "Think global—act local".



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