TRUMPF is certified according to ISO 9001:2008
(for further information see www.trumpf.com/en/quality)

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TRUMPF

Ident-No. 20_201407 – Subject to change


Marking with TruMark:

# Marked simplicity.

Machine Tools/Power Tools
Laser Technology/Electronics

TRUMPF

Without TruMark

With TruMark

## TruMark marks the difference.

Reach your goal more easily with the Simple[5] Program.

Plan | Integrate | Program | Operate | Profit

Simple to find the right solution. Simple to integrate. Simple to program. Simple, precise, and safe to operate. Or simply more productive. With TruMark, laser marking is simple times five. Reach your goal faster. It's as simple as that.

## The Simple[5] Program.

### Simple planning.

At the outset of a marking process, there are many questions. We find the right answer to every one of them. Not only do we have a large selection of lasers, we also supplement your projects from conception to realization with a full range of services and service packages, such as our Laser Application Centers with their industry-specific application experience or our practical on-site service.

### Simple integration.

With TRUMPF's wealth of experience, you do not have to make compromises with TruMark. Whether you are interested in precisely defined user interfaces, embedding lasers in production processes, linking databases, or other technical features, we provide you with advice and support to help you integrate your new laser marker into production. The goal is to install the system easily and put workflows in place with minimal interruption.

### Simple programming.

Only a short training is needed instead of extended software studies. Whether inscribing, inserting variables, or drawing, TRUMPF software solutions help you to use the full potential of your machine quickly and easily. With our easy "drag and drop" programming and a wide variety of features, inscription files are adapted to your individual requirements and needs.

### Simple operation.

All TruMark lasers are simple, safe, precise, and easy to learn how to operate. The reason for this is their intuitive operating concept. While its numerous features are designed to meet the full range of everyday requirements, application remains simple, and additional control mechanisms ensure ease of operation.

### Reap the benefits. It's as simple as that.

TruMark makes highly profitable laser marking easier than ever before. With a flexible variety of applications and reliable service support from TRUMPF, you are ideally equipped for all your future needs. And last, but not least, the high quality pays dividends with consistent use, making it an extremely sound investment.

# More experience. It's as simple as that.

## Contents


Page 2 More experience. It's as simple as that.

Page 4 Persuasive marking results. It's as simple as that.

Page 5 Perfect marking. It's as simple as that.

Page 6 Processes at a glance.

Page 8 Always the right solution. It's as simple as that.

Page 10 Faster and better marking. It's as simple as that.

Page 13 Integration-friendly. It's as simple as that.

Page 14 Highly robust and flexible. It's as simple as that.

Page 16 TruMark Series 6000

Page 20 TruMark Series 5000

Page 24 TruMark 5010

Page 26 TruMark Series 3000

Page 30 TruMark 1110

Page 32 TruMark 5010 Mobile Marker

Page 34 TruMark Station 7000

Page 38 TruMark Station 5000

Page 42 TruMark Station 1000

Page 44 Better software. It's as simple as that.

Page 46 TruServices: Service like no other.


## Our edge is your edge.

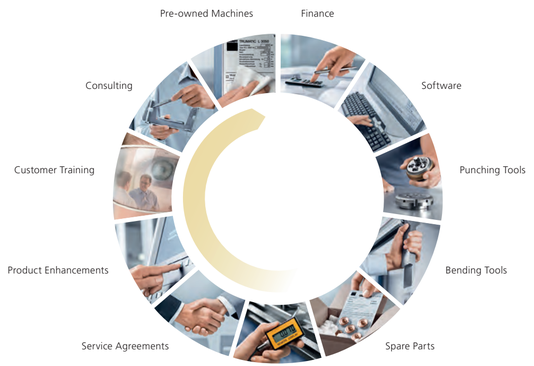
TRUMPF has been a cutting-edge global leader in the field of industrial lasers and laser systems for many years. Our products set standards in manufacturing technology. The highest quality standards and reliable customer care are cornerstones of our identity. We stand for innovative, easy-to-use solutions and highly efficient processes.

## Impressive variety.

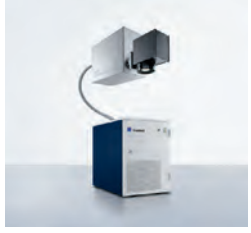
TRUMPF's portfolio of laser technologies for welding, brazing, cutting, drilling, ablating, structuring and marking is unique in the world. The marking laser product segment is comprised of beam sources in a wide range of different power classes and all common wavelengths. This means that you will find the right laser for every marking job. Depending on the application, either diode-pumped solid-state lasers with high pulse peak outputs or fiber lasers with high average outputs are used.

**The Power of Choice**
LASERS BY TRUMPF

## About the lifecycle of your TRUMPF system.



Simply comprehensive: the TruMark product portfolio.



## TruMark Series 6000

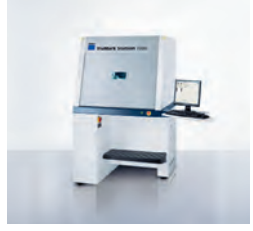
High-performance tools for extremely short processing times and maximum marking precision with high pulse-to-pulse stability.

## TruMark 5010 Mobile Marker

Flexible marking laser for the mobile, permanent marking of large and heavy components.

## TruMark Series 5000

Specialists for high processing speed through high pulse frequencies. They also feature adjustable pulse duration.



## TruMark Station 7000

Laser workstation with a large work space for marking big and heavy parts as well as smaller parts arranged in a row.

## TruMark Series 3000

Flexible-integration solution for cost-effective marking.

## TruMark Station 5000

Compact laser workstation with ergonomic design for a wide variety of marking jobs.

## TruMark Series 1000

Compact, cost-effective and easily integrated all-in-one marking laser.

## TruMark Station 1000

Flexible mobile desktop laser work station for marking small parts.

# Persuasive marking results. It's as simple as that.

## Laser marking. Benefits at a glance.

1. Economical, due to high processing speeds.
2. High quality and reliability.
3. High flexibility and individualization.
4. Permanent traceability.
5. Material processing that is gentle on the part.

## A quick and flexible route to perfect results.

Laser marking is the method of choice for those looking to create precise, permanent markings – even in difficult-to-access areas – using a fast, flexible process. Innovative solutions from TRUMPF make programming easy and enable you to inscribe information on workpieces as part of your production setup. The permanence of laser markings ensure optimum traceability. Moreover, there are several advantages to non-contact marking, such as environmental compatibility, low material stress, and low costs due to the absence of tool wear.

## Marking processes and materials.

In laser marking, the laser beam interacts with the material in different ways, which produces changes in the material surface. Typical marking processes are engraving, ablating, and annealing metals as well as coloring, ablating, and foaming plastics. The laser also has several advantages when marking labels, ceramics, glass, silicon, and inorganic materials. In principle, it is possible to laser mark any material. TruMark lasers create every kind of marking, from functional, technical inscription to fine ornamentation. In addition to marking, TruMark lasers are also used for creating functional layers, cleaning surfaces, and structuring.

# Perfect marking. It's as simple as that.

## TRUMPF Laser Application Centers.

Perfection is standard at TRUMPF. Our service starts before you have even decided to purchase a TruMark laser. We have application laboratories across the globe, with highly qualified engineers and state-of-the-art machinery. Just send us sample parts and your specific requirements, such as what markings you want, your quality specifications, etc., along with how much time you have available for the process. We will get to work on it for you.

We perform tests with lasers from our diverse product portfolio and offer you a selection of possible marking qualities and processing times, along with the corresponding process parameters. You can compare the alternatives at your leisure and choose the combination that is best for you. In addition to application tests and process development, we also offer machine demonstrations in our application centers.

## Your marking project with TRUMPF.

### You supply:

**Sample parts**

**A description of the markings**
(logo, text, data matrix, etc.)

**Constraints**
(process duration, parts handling, manufacturing environment, etc.)

### We calculate:

**Optimum marking time**

**Different qualities for you to choose from**

**The best laser and/or workstation**

**Ideal process parameters**
(marking process, wavelength, performance parameters, etc.)

### We also offer:

**Personal participation**
in laser tests for fine tuning of results according to your particular needs.

**Installation**

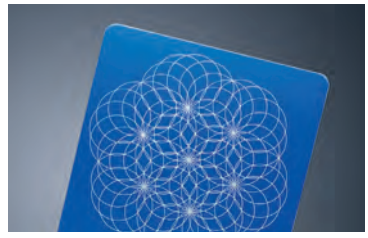
**Training, maintenance contracts, telepresence, service**

# Processes at a glance.

## Metals:



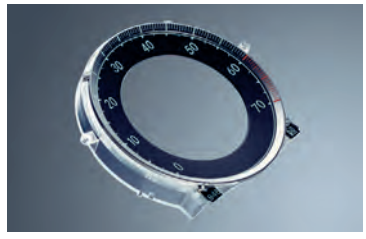
**Annealing:** When a workpiece is heated up using this process, its surface changes color but is not damaged. Dirt and germs are unable to accumulate.



**Ablation:** Coated or painted metals, such as anodized aluminum, can be marked by ablating the top layer. This process achieves a particularly high contrast.

## Plastics:

**Coloring:** When material and laser wavelength are perfectly matched, it is possible to color or bleach pigment molecules in specific ways. The surface remains smooth.



**Ablating:** Multi-layer plastics can be marked by removing a thin top layer, e.g. to create day-and-night designs.

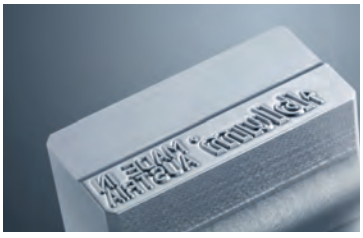
## A wide range of other materials can also be laser marked:

Leather

Glass

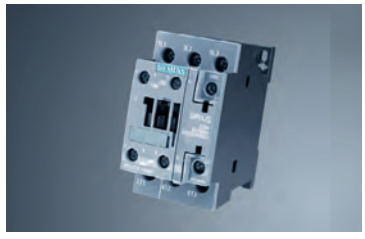

Silicon


Wood



**Engraving:** To produce a deep engraving, the laser beam removes part of the material, creating a depression which can even be conical in shape.

**Surface treatment:** Surfaces are structured or cleaned for a specific purpose using lasers. For example, laser processing can be used to remove layers of rust, oil or phosphate in preparation for subsequent processes.



**Foaming:** Following a brief melting operation, small gas bubbles become trapped in the material as it cools. These bubbles diffuse and reflect any light that strikes them, producing a raised marking.


Additional organic materials

# Always the right solution. It's as simple as that.

## For every requirement.

No matter what material you want to process, how large the workpieces are, or how fast you want the process to be, our product portfolio always contains the right solution. TruMark marking lasers are available in all wavelengths required for surface processing. They can be individually adapted to your requirements and easily integrated directly into your production process. They are simple to program and operate. In addition, we can remotely access your machine at any time from our service subsidiary via our secure telepresence links.

## Basic configuration: quality.

For TRUMPF, quality means setting industry standards and meeting the expectations of our customers in every detail. Each marking laser undergoes a battery of comprehensive, time-consuming tests and is precisely set according to the device configuration. All components are exactly attuned to each other, ensuring that they work in perfect harmony. The hardware and software form a unified whole. This is possible because optics, electronics, systems, and software developers work in close partnership when creating our products. This makes TruMark lasers synonymous with perfectly balanced marking tools.

## efficiency+

Because we want to work cost-effectively and demonstrate responsibility, we are careful in our use of resources.

- Thanks to consistent improvements, TruMark lasers are consuming less and less energy.
- The high quality and reliability of our products result in extremely low levels of spare part consumption.
- We systematically identify and eradicate waste in our processes through our innovative SYNCHRO production system.


## A good investment. It’s as simple as that.

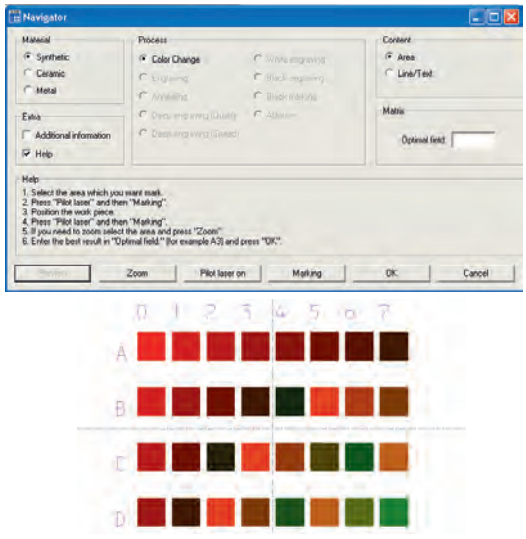
Anyone who invests in TRUMPF marking lasers can be sure they are making the right decision for the future. This certainty is justified not only by the excellent quality of our products and the diverse options we offer, but also by our more than 40 years of experience as a laser specialist. We continuously improve and develop our innovative, industry-oriented laser products and ensure that they are reliable right down to the last detail.

# Faster and better marking. It’s as simple as that.

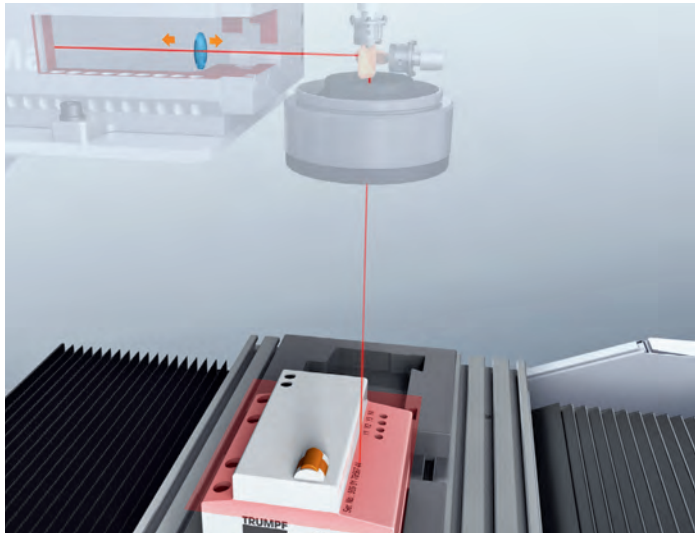
## Well thought out in every detail.

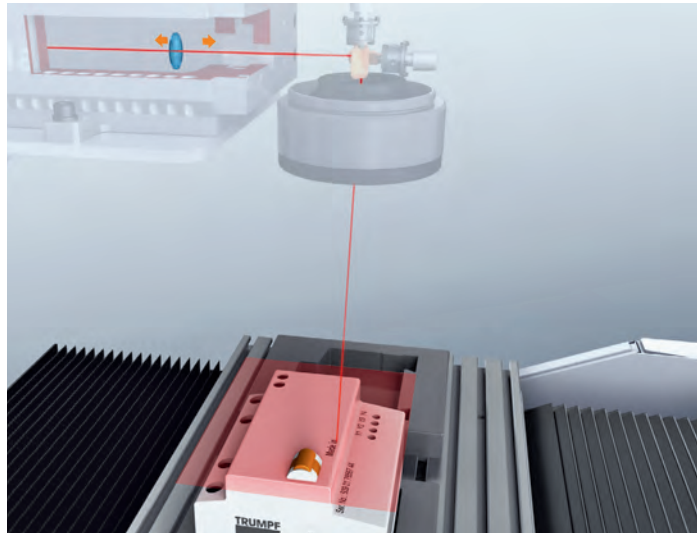
Numerous technical highlights make TruMark marking lasers a particularly future-proof solution. They can be optimized precisely to suit your application. This applies not only to setting parameters such as pulse shape and pulse duration, but also to integrating the lasers into your production process and to the easy operation resulting from innovative software solutions and other options. This flexibility and user-friendliness optimizes productivity, helping you to achieve the best possible quality at the lowest possible cost.


**Pilot laser.** The pilot laser produces a simulated image of the marking in visible, safe red light (laser safety class 2). This makes it easy to position the workpiece in the marking area.

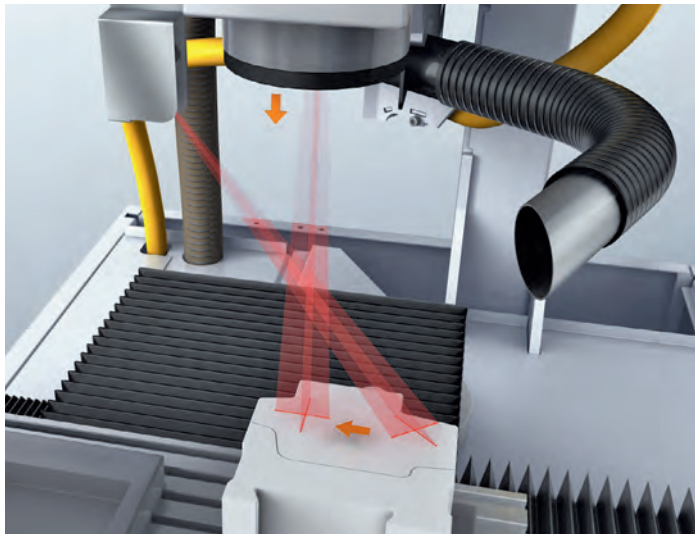



**Navigator.** Obtaining good laser marking results requires a good understanding of laser technology – or so the theory goes. However, our NAVIGATOR software module makes this theory a thing of the past. Our experience in application development is an integral part of our lasers. Even operators without prior knowledge can quickly and easily find the right laser settings for different materials.



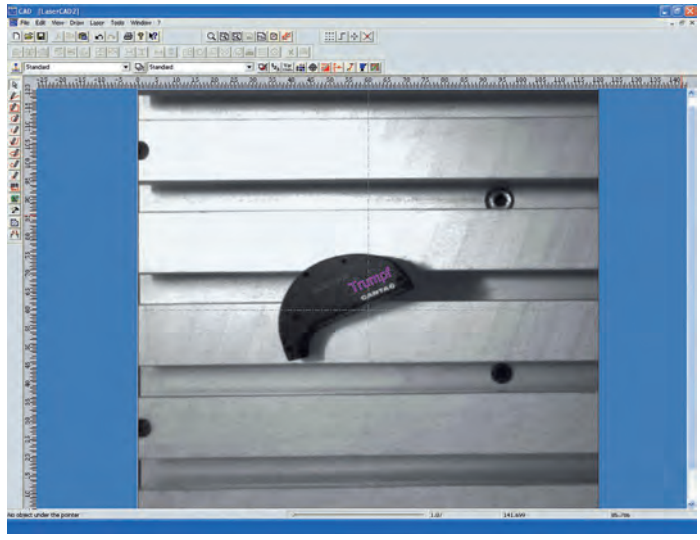

**Internal focal point adjustment.** TruMark lasers allow the focus position to be shifted vertically by up to +/- 2.5 inches, enabling you to mark workpieces of different heights quickly, at once, and with top-quality results. In production machinery, you can often omit the Z-axis. This creates an additional laser parameter to optimize marking results.



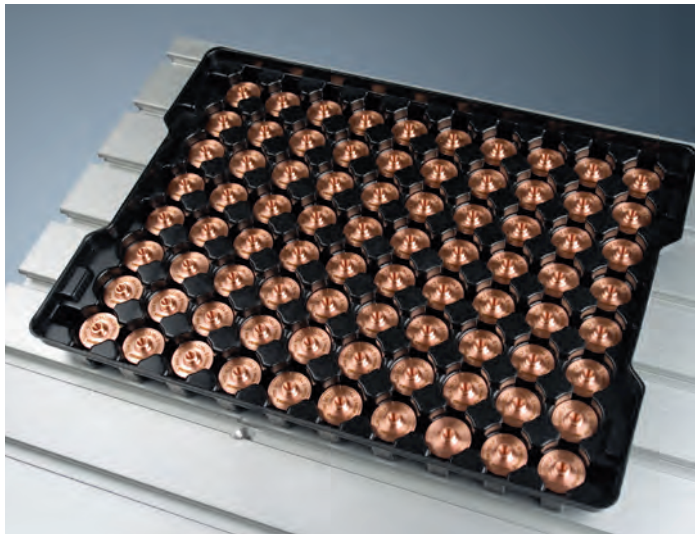
**Focus finder.** The user-friendly focus finder allows you to determine the perfect focal position quickly and easily. It also enables you to bring concave or complex surfaces into focus with flexibility.


**Imager.** The imager enables you to mark complex images and even photos at high speed on suitable materials. You can import file formats such as .bmp, .jpg, .pcx, and .tif. A variety of shades of gray ensures excellent quality and contrast.

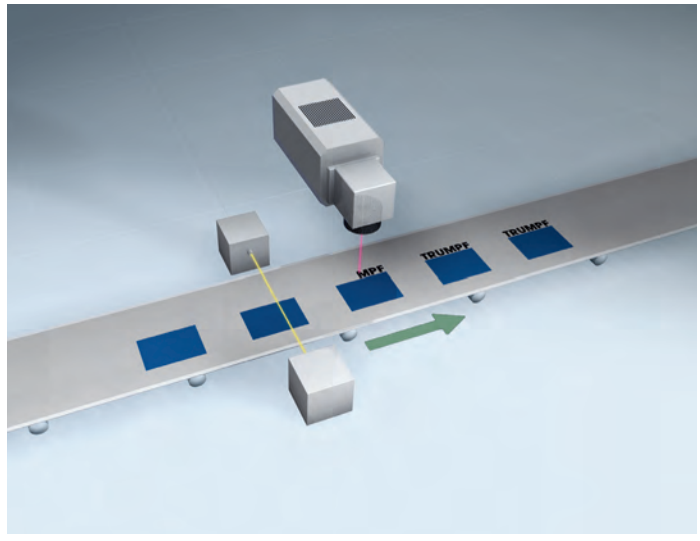
# Faster and better marking. It’s as simple as that.



**Observer.** The observer is a simple, quick means of obtaining optimum alignment of the marking on the workpiece. An angle-corrected camera image of the relevant marking is superimposed on the graphical user interface.



**Palletizing.** With a large selection of lenses you can use marking areas of greatly different sizes allowing you to mark very large workpieces at once. In addition, the marking field segmentation allows you to mark entire workpiece series in a single operation.



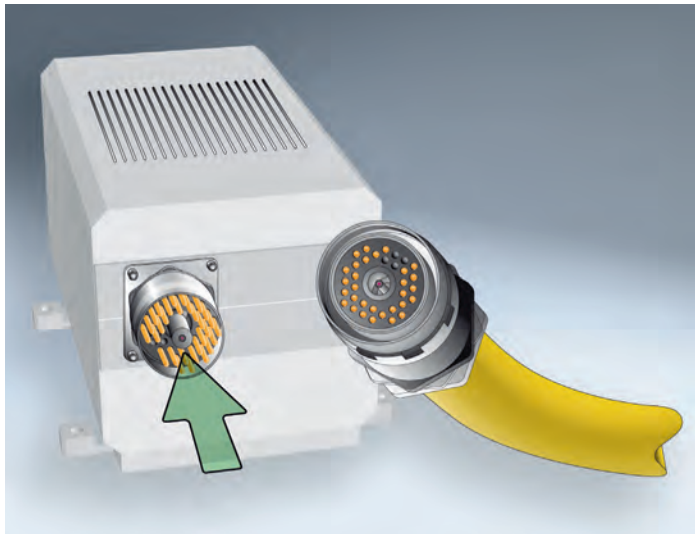

**Marking On The Fly.** The undistorted marking of individual parts or continuous workpieces as they pass along on the conveyor belt is possible with TruMark. The marking laser recognizes and adjusts to the transport speed.

# Integration-friendly. It's as simple as that.

## Fast and flexible integration.

TruMark lasers can be integrated quickly and easily into your production process. You can choose whether you want to integrate a laser into your production line or if you require a standalone laser workstation. In addition, you can select from many different interface options and versions with different features. The large number of analog and digital inputs and outputs, serial connections (RS 232), and the use of a TCP/IP protocol via Ethernet or the use of a field bus system (e.g. Profibus) means the lasers can be integrated into practically any work environment.

TLV commands enable easy integration of the marker into a higher level programming structure with a comprehensive library of specific commands and functions for controlling the TruMark laser. And, that is not the end of the advantages of TruMark lasers when it comes to integration. The laser head is rotatable, depending on the installation position. You can mark continuous workpieces or individual workpieces on the fly as they pass along on conveyor belts – and when you need to be especially productive, simply use two scanner optics per laser head.



**Plug-and-produce.** In order to keep the integration, start-up, and maintenance of our TruMark products as user-friendly as possible, power and water are transported via a single cable.

### ▸ Interfaces

**Field bus systems and real-time Ethernet systems**
For example: PROFIBUS, PROFINET, EtherCAT, etc.

**Input/Output extension:**
An additional 16 inputs and 16 outputs (digital), eight of which are high-speed ports, real-time input and output for rapid list processing (up to 15 different lists can be addressed), rotary encoder and proximity switch inputs for marking on the fly.

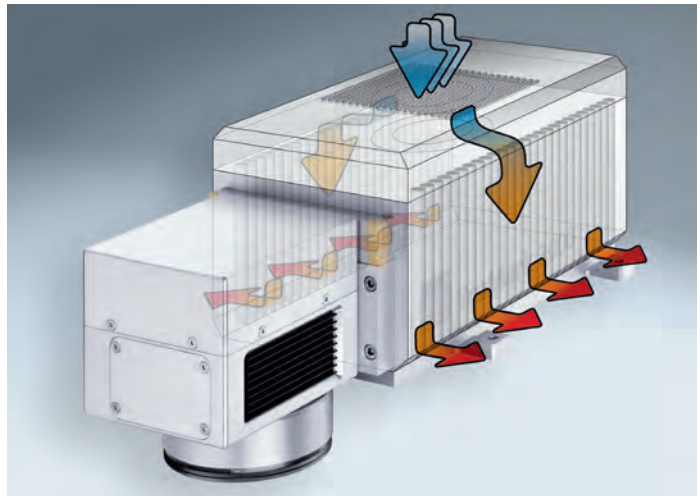
# Robust and flexible. It’s as simple as that.

## Developed for industrial use.

TRUMPF marking lasers are robust, industrial and particularly reliable - even under rough conditions. Designed for industrial use, they are not only protected against dust, but are also protected against water spray, etc.

With their innovative cooling concept, our laser systems can be used in industrial applications at ambient temperatures of up to 113°F. The strict separation of optical and electronic components, and the cooling system mean that TruMark lasers are especially robust and low-maintenance. To ensure high product quality, our lasers undergo various tests at the development stage. These tests include the simulation of rough environmental conditions, as well as lengthy test series, to ensure consistent laser performance over long periods.

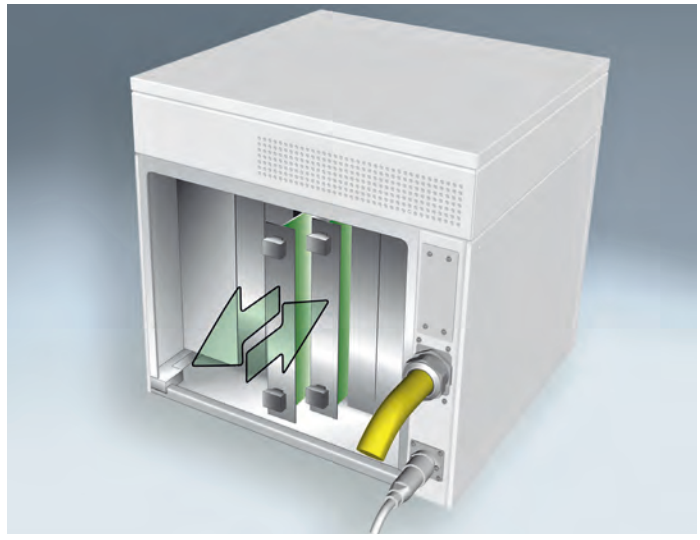

**Laser power calibration.** TruMark marking lasers come with a pump back-up which can offset any degeneration of the pump diodes several times over. This means your marking results look just as good several years down the line as they did on the first day.



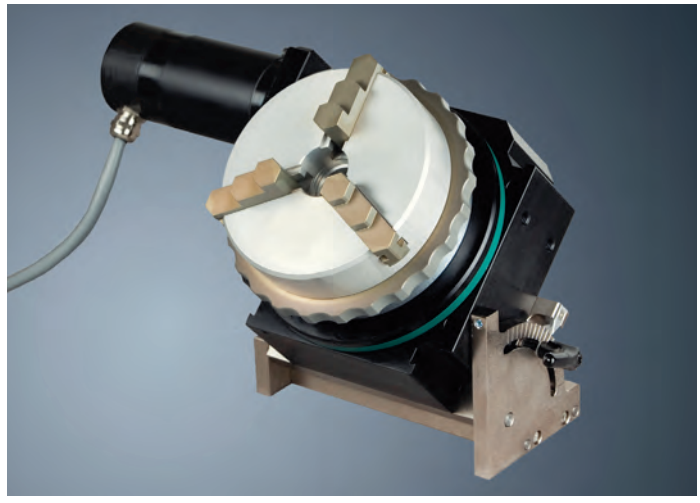
**Cooling concept.** The TruMark lasers feature a zero-maintenance air cooling system. For ambient temperatures of over 104°F, we also offer you the TruMark Series 6000 with an internal water cooling option.

## Better equipped for every challenge.

Every laser project is as unique as a fingerprint. This is where the modular design of all TruMark products really pays off. Along modular lines, you can configure a laser system that fits your purpose as well as custom manufacturing would. Unlike a customized solution, however, your project costs remain transparent and manageable at all times. On top of the comprehensive range of features in the basic versions of our marking lasers, we also offer a wide range of supplementary equipment that suits the lasers and workstations perfectly. This includes rotary axes, camera systems, focus finder, etc. Your TRUMPF representative will be glad to run through the full program of accessories with you.



**Modularity.** The power-supply unit for TruMark lasers has a modular design, in regards to both hardware and internal system architecture. This makes the lasers extremely easy to service, and we can offer you upgradable solutions with a wide range of options and accessories at any time.



**Supplementary axes:** X/Y-axes, rotary axes. For clamping rounded parts and for circumference marking, additional axes with different clamping and pivoting mechanisms are available.

# TruMark Series 6000

## TruMark Series 6000: Benefits at a glance.

1. High performance with shorter processing times.
2. Excellent beam quality.
3. High marking precision for ultra-fine structures.
4. Diverse application opportunities.

## Simple integration.

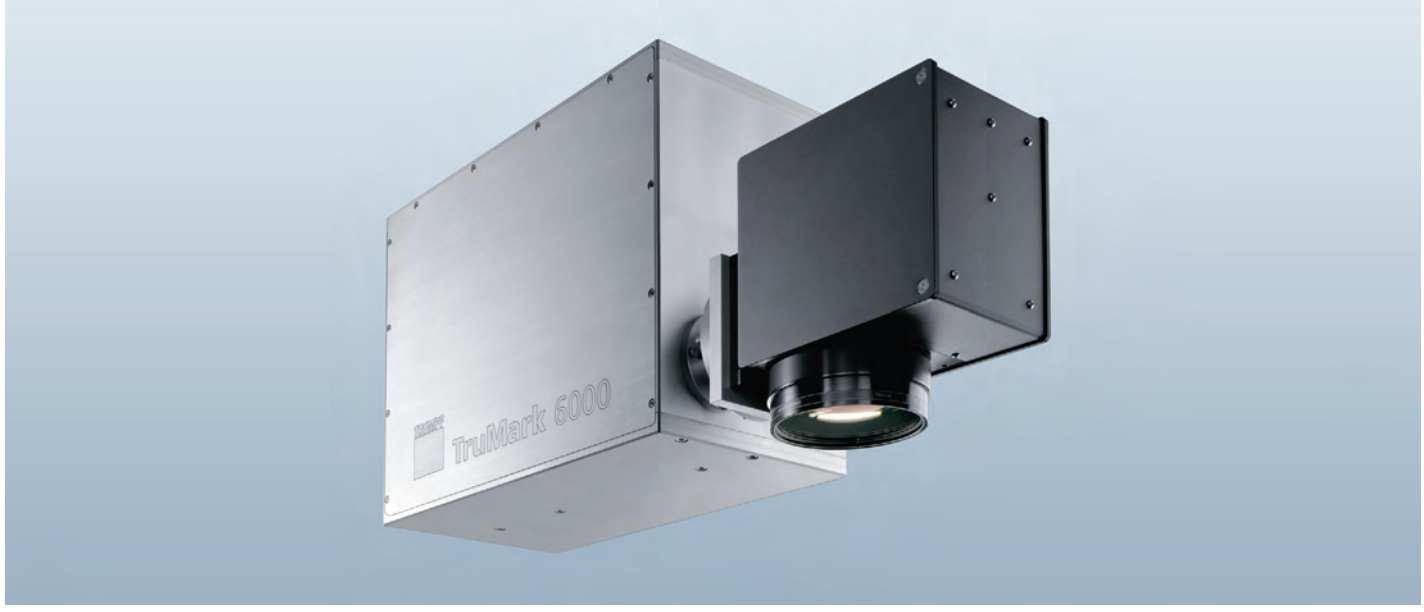
Integration of the TruMark Series 6000 is very easy, due to the open interface architecture and the plug connection between the processing unit and the power-supply unit. The scanner optics are factory-set to be adjustable in 90 degree increments and give you the full range of options when designing your system. You can choose between a standalone air-water cooling system and a water-water cooling system. The externally water-cooled system can also be used in heavily contaminated environments and in clean rooms.

## Performance and quality.

All products in the TruMark Series 6000 have the following in common: high output and excellent beam quality combined to produce uniquely brilliant laser light. With this series, we offer models in the infrared and ultraviolet wavelengths, ensuring the ideal laser unit for every job. These lasers are high-performance tools for extremely short processing times, maximum marking precision, and consistent marking quality – even in continuous operation and at ambient temperatures of up to 113°F. With your approval, our technicians can maintain your laser in real time via telediagnosis.

## Mark at twice the speed.

With the outstanding characteristics of the series, you can use two scanner optics per laser head. This gives you the option of marking twice as fast or from two sides. With their top rate of 2,800 characters a second, the dual-head systems set the standard in the field of ultra-fast marking. You can decide whether the two scanners should mark identical or different content. For applications with high workpiece throughput, the dual-head technology means you do not have to reposition the laser head, which reduces set-up costs and increases system capacity.




ABS and SBS dual-head system: laser output is split, with 50% going to each marking field. The system is used for the synchronous marking of identical content or for the sequential marking of different content, for example, for binning or personalization puposes.

ABX and ABX 90° dual-head system: sequential marking which involves a beam switch alternately steering the entire laser output from one of the two scanner systems to the other.

# TruMark Series 6000

## ▸ Which product for which application?

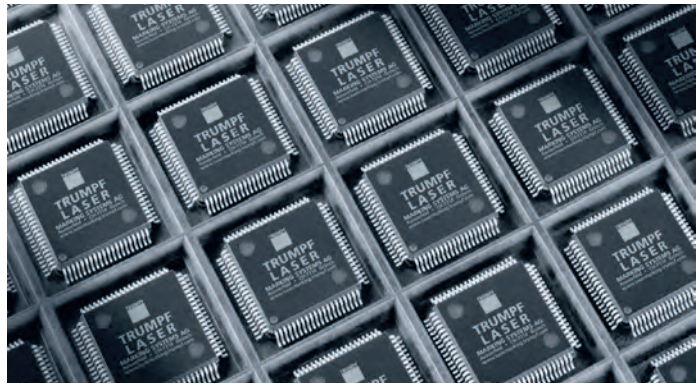
**TruMark 6020/6030**
For optimum traceability of metal components as used, for example, in automotive manufacturing, the aviation industry, and medical engineering, as well as for the high-quality processing of ceramics.

**TruMark 6130**
Materials are subjected to low thermal stress – ideal for processing plastics, semiconductors, and sensitive metals. Materials are processed economically by virtue of high pulse peak outputs at high pulse repetition frequencies.

**TruMark 6330**
For high processing speed when marking plastic, without the need for expensive laser-sensitive additives. Also for laser materials processing of glass and a variety of organic materials.

**TruMark 6350**
Even higher output and faster processing times than TruMark 6330, making it ideal for marking flame retardant plastics and cutting and texturing glass. Opens up new possibilities in terms of materials and marking effects.


Data matrix code and plain text for permanent traceability in series production.




Rapid execution of markings on sensitive electronic materials.


Marking with UV laser without surface damage.


| TruMark Series 6000 | | | | | |
|---|---|---|---|---|---|
| | **TruMark 6020** | **TruMark 6030** | **TruMark 6130** | **TruMark 6330** | **TruMark 6350** |
| Wavelength | 1064 nm | 1064 nm | 1064 nm | 355 nm | 355 nm |
| Pulse repetition frequency | cw, 1–120 kHz | cw, 1–120 kHz | cw, 1–120 kHz | 1–120 kHz | 1–120 kHz |
| Max. size of marking field[1] | 11.4 x 11.4 in²; f = 16.5 in. | 11.4 x 11.4 in²; f = 16.5 in. | 11.4 x 11.4 in²; f = 16.5 in. | 6.7 x 6.7 in²; f = 10.2 in. | 6.7 x 6.7 in²; f = 10.2 in. |
| Min. focal diameter[2] | 28 µm | 26 µm | 28 µm | 16 µm | 21 µm |
| Max. internal focal point adjustment[3] | ± 2 in. | ± 2 in. | ± 2 in. | ± 0.7 in. | ± 0.7 in. |
| Laser medium | Nd:YAG | Nd:YAG | Nd:$YVO_4$ | Nd:$YVO_4$ | Nd:$YVO_4$ |
| Beam quality $M^2$/ Intensity allocation | < 1.2/TEMoo | < 1.2/TEMoo | < 1.2/TEMoo | < 1.6/TEMoo | < 1.5/TEMoo |
| Scanner calibration accuracy | ± 50 µm | ± 50 µm | ± 50 µm | ± 50 µm | ± 50 µm |
| **Connection and set-up** | | | | | |
| Electrical connection | 230/115 V; 50/60 Hz, 16 A | 230/115 V; 50/60 Hz, 16 A | 230/115 V; 50/60 Hz, 16 A | 230/115 V; 50/60 Hz, 16 A | 230/115 V; 50/60 Hz, 16 A |
| Max. power consumption | 1.7 kW | 1.7 kW | 1.7 kW | 1.7 kW | 1.8 kW |
| Average power consumption | 1.4 kW | 1.4 kW | 1.4 kW | 1.4 kW | 1.4 kW |
| Protection class | IP 54 | IP 54 | IP 54 | IP 54 | IP 54 |
| Weight of processing unit | 70.5 lbs. | 70.5 lbs. | 70.5 lbs. | 75 lbs. | 77 lbs. |
| Dimensions of processing unit (L x W x H) | 26.5 x 8 x 12 in. | 26.5 x 8 x 12 in. | 26.5 x 8 x 12 in. | 26.5 x 8 x 12 in. | 26.5 x 8 x 12 in. |
| Weight of power-supply unit | 229 lbs. | 229 lbs. | 229 lbs. | 229 lbs. | 229 lbs. |
| Dimensions of power-supply unit (L x W x H) | 31 x 17.5 x 25.5 in. | 31 x 17.5 x 25.5 in. | 31 x 17.5 x 25.5 in. | 31 x 17.5 x 25.5 in. | 31 x 17.5 x 25.5 in. |
| Permitted ambient temperature of water/ air cooling system | 59–113°F/ 59–104°F | 59–113°F/ 59–104°F | 59–113°F/ 59–104°F | 59–113°F/ 59–104°F | 59–113°F/ 59–104°F |

[1] Other lens and marking field sizes available. [2] Where f = 3.9 in. [3] Depending on the focal length.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

# TruMark Series 5000

## TruMark Series 5000: Benefits at a glance.

1. High processing speed.
2. Application-specific pulse duration.
3. Compact, zero-maintenance beam source.
4. Easy, fast integration.

## Finger on the pulse.

The specialty of TruMark 5020, TruMark 5040 and TruMark 5070 fiber lasers is especially high pulse frequencies – a key factor for obtaining high processing speeds. An additional requirement for an accelerated marking process is the highly dynamic scanner modules, which are integrated as standard in the fiber lasers. With the software-controlled focal point adjustment, you can mark stepped parts in a single operation, without having to mechanically move them. The MOFPA (master-oscillator fiber power amplifier) technology, enables you to perfectly adjust the pulse durations of the 5000 series to the particular application. There is no dependency between frequency and pulse duration. This makes it possible to mark even heat-sensitive parts perfectly.

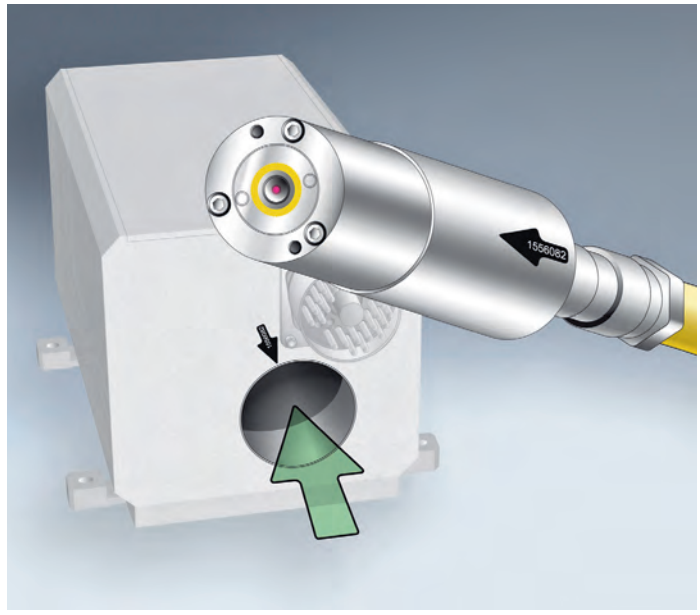
## Enduring quality.

The monolithic system design ensures that the course of the fiber is not interrupted. An integrated optical isolator protects the fiber from being destroyed in the event of laser radiation reflecting off the workpiece.

Like all TruMark lasers, the 5000 series also has a systematic modular design. The scanner optics, processing unit, and power-supply unit are coupled via plug connections, meaning that the lasers can be fitted in a very easy, assembly-friendly manner into your production system or machine set-up. The air-cooled lasers are very compact and have numerous interfaces: a big advantage during integration. The fiber lasers are well suited for applications in an industrial setting and can even withstand dirty production environments.


## Maximum safety.

Laser safety is the top priority when developing fiber lasers. In addition to an especially robust fiber protection sleeve, the TruMark Series 5000 has a mechanical lock. This ensures that no laser radiation escapes between marking operations. The integrated output measurement and calibration features enable you to determine whether the output of the lasers is constant. If you prefer, our service technicians can perform this testing for you via a secure telepresence connection. If needed, you can gain a comprehensive overview in real time of all the lasers' functions.



# TruMark Series 5000

## ▸ Which product for which application?

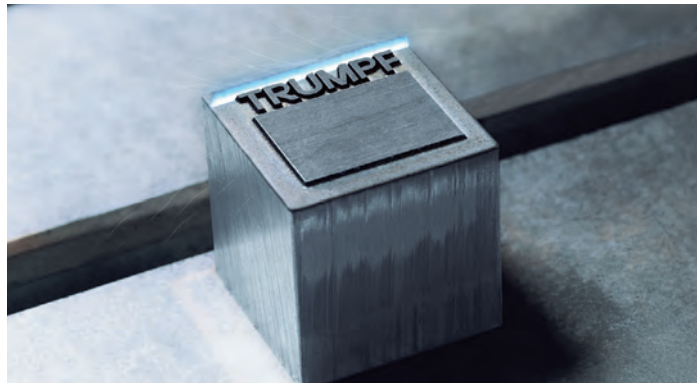
**TruMark 5010**
Performs demanding marking tasks cost-effectively due to the perfect combination of appropriate average power and excellent beam quality.

**TruMark 5020**
Ideal beam quality for engraving, even at high process speeds, as well as for high-quality marking on metals and plastics.

**TruMark 5040**
A variety of applications on metals and plastics, with higher area throughput rates due to its higher average power.

**TruMark 5070**
Perfect for applications requiring high average power and high process speeds, for example when ablating layers and coatings or cleaning surfaces in preparation for welding.


Annealing marking on endoscopic instrument.




Deep engraving through high outputs and short cycle times.


Cattle ear tag with an individualized marking.


| TruMark Series 5000 | | | |
|---|---|---|---|
| | **TruMark 5020** | **TruMark 5040** | **TruMark 5070** |
| Wavelength | 1062 ± 3 nm | 1062 ± 3 nm | 1062 ± 3 nm |
| Pulse repetition frequency | cw, cwm, 1 – 1000 kHz | cw, cwm, 1 – 1000 kHz | cw, cwm, 1 – 1000 kHz |
| Adjustable pulse duration | 9 – 200 ns | 9 – 230 ns | 9 – 250 ns |
| Max. size of marking field[1] | 11.4 x 11.4 in²; f = 16.5 in. | 11.4 x 11.4 in²; f = 16.5 in. | 11.4 x 11.4 in²; f = 16.5 in. |
| Min. focal diameter[2] | 41 µm | 70 µm | 70 µm |
| Max. internal focal position adjustment[3] | ± 2.4 in. | ± 2.4 in. | ± 2.4 in. |
| Laser medium | Yb:fiber | Yb:fiber | Yb:fiber |
| Beam quality M²/Intensity allocation | 2.0/Low-Order-Mode | 3.7/Low-Order-Mode | 3.7/Low-Order-Mode |
| Scanner calibration accuracy | ± 50 µm | ± 50 µm | ± 50 µm |
| **Connection and set-up** | | | |
| Electrical connection | 85 … 264 V; 47 … 63 Hz, 10 A | 85 … 264 V; 47 … 63 Hz, 10 A | 85 … 264 V; 47 … 63 Hz, 10 A |
| Max. power consumption | 0.6 kW | 0.6 kW | 1.0 kW |
| Average power consumption | 0.3 kW | 0.3 kW | 0.5 kW |
| Protection class | IP 54 | IP 54 | IP 54 |
| Weight of processing unit | 17.6 lbs. | 17.6 lbs. | 17.6 lbs. |
| Dimensions of processing unit (L x W x H) | 16.3 x 5 x 6 in. | 16.3 x 5 x 6 in. | 16.3 x 5 x 6 in. |
| Weight of power-supply unit | 104 lbs. | 104 lbs. | 121 lbs. |
| Dimensions of power-supply unit (L x W x H) | 16.5 x 17.5 x 21.7 in. | 16.5 x 17.5 x 21.7 in. | 16.5 x 17.5 x 21.7 in. |
| Permitted ambient temperature of air cooling system | 59 – 104 °F | 59 – 104 °F | 59 – 95 °F |

[1] Other lens and marking field sizes available. [2] Where f = 3.9 in. [3] Depending on the focal length.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

# TruMark 5010

## TruMark 5010:
## Benefits at a glance.

1 Compact and easy to integrate.

2 Brilliant beam quality.

3 Wide variety of materials.

## Compact and brilliant.

The TruMark 5010 combines excellent average power with brilliant beam quality. It delivers cost-effective results, even in demanding marking tasks or with fine structures. With its key interfaces, space-saving design and air cooling, the TruMark 5010 is easy to integrate. Inside its housing is an all-in-one solution that brings together fiber laser, scanner, control unit and internal focal position control. There is no need for a separate power-supply unit.

## Multi-purpose.

The infrared marking laser marks a wide variety of materials including metal, plastic or organic materials. The robust TruMark 5010 delivers particularly impressive results in deep engraving and in surface finishing. Typical applications include the automotive and consumer goods industries, medical technology and sheet metal processing.


| TruMark 5010 | |
|---|---|
| Wavelength | 1062 ± 3 nm |
| Pulse repetition frequency | 1 – 200 kHz |
| Pulse duration | 250 ns |
| Max. marking field size | 6.7 x 6.7 in²<br>f = 10 in. |
| Min. focal diameter | 45 µm; f = 6.3 in. |
| Max. internal focal position adjustment | ± 0.9 in.; f = 10 in. |
| Laser medium | Yb:fiber |
| Beam quality M²/Intensity allocation | 1.6/Low-Order-Mode |
| **Connection and set-up** | |
| Electrical connection | 24 V DC; 20 A |
| Max. power consumption | 480 W |
| Average power consumption | 250 W |
| Protection class | IP 54 |
| Weight | 20 kg |
| Dimensions (L x W x H) | 17 x 10 x 7 in. |
| Permitted ambient temperature | 59 – 104°F |

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

# TruMark Series 3000

## TruMark Series 3000: Benefits at a glance.

1 Compact.

2 Cost-efficient.

3 High pulse peak outputs.

4 Flexible application.

## Compact and efficient.

With the TruMark Series 3000, TRUMPF offers you everything a marking laser needs to facilitate integration: an extremely compact size, low costs, and the entire knowledge base of the technological leader in this field. Its modular design is unparalelled: the scanner optics, processing unit, and the connecting cables delivering laser power and control functions are connected with each other via tried-and-tested industrial connectors. Despite the extremely compact size of the TruMark Series 3000, the software controlled focal point adjustment mechanism, the pilot laser, and the mechanical shutter are all integrated in the laser head.

## Flexible application.

The TruMark Series 3000 is characterized by pulse peak outputs of up to 100 kW, high pulse-to-pulse stability, diffraction-limited beam quality, open interface architecture, and easily accessible control components. The space-saving power-supply unit can be integrated into your switch cabinet without any difficulty. It is available as either a front or a rear operated unit.

With the TruMark Series 3000 you are ideally equipped whatever the location. The wide input range accommodates voltage supply from every industrial power grid, and the laser works reliably with active air cooling up to an ambient temperature of 104°F. On request, we can provide you with customer care and support for the TruMark Series 3000 worldwide via telepresence.


TRUMPF
TruMark 3000

# TruMark Series 3000

## ▸ Which product for which application?

**TruMark 3020**
For the cost-effective processing of metal and plastic with unique energy efficiency.

**TruMark 3130**
Flexible marking laser for applications with minimal heat input and tasks with higher pulse repetition frequencies. For a wide range of different marking techniques, materials, and marking content.

**TruMark 3230**
Its green wavelength makes the TruMark 3230 ideal for silicon, plastics, and special plastics, as well as for delicate markings on precious metals and for processing glass.


Eyepiece sleeve with a high-quality marking.


Day-and-night design by precise laser ablation.


Permanent laser marking on a copper cutting nozzle.


| TruMark Series 3000 | | | |
|---|---|---|---|
| | **TruMark 3020** | **TruMark 3130** | **TruMark 3230** |
| Wavelength | 1064 nm | 1064 nm | 532 nm |
| Pulse repetition frequency | cw, 1–100 kHz | cw, 1–100 kHz | 1–100 kHz |
| Max. size of marking field[1] | 11.4 x 11.4 in²; f = 16.5 in. | 11.4 x 11.4 in²; f = 16.5 in. | 9 x 9 in²; f = 13 in. |
| Min. focal diameter[2] | 30 µm | 28 µm | 15 µm |
| Max. internal focal point adjustment[3] | ± 2.4 in. | ± 2.4 in. | ± 2.4 in. |
| Laser medium | Nd:YAG | $Nd:YVO_4$ | $Nd:YVO_4$ |
| Beam quality $M^2$/Intensity allocation | 1.5/TEMoo | 1.2/TEMoo | 1.2/TEMoo |
| Scanner calibration accuracy | ± 50 µm | ± 50 µm | ± 50 µm |
| **Connection and set-up** | | | |
| Electrical connection | 85 … 264 V; 47 … 63 Hz, 10 A | 85 … 264 V; 47 … 63 Hz, 10 A | 85 … 264 V; 47 … 63 Hz, 10 A |
| Max. power consumption | 0.6 kW | 0.6 kW | 0.6 kW |
| Average power consumption | 0.3 kW | 0.3 kW | 0.3 kW |
| Protection class | IP 54 | IP 54 | IP 54 |
| Weight of processing unit | 22 lbs. | 22 lbs. | 22 lbs. |
| Dimensions of processing unit (L x W x H) | 15 x 5.5 x 5.5 in. | 15 x 5.5 x 5.5 in. | 15 x 5.5 x 5.5 in. |
| Weight of power-supply unit | 75 lbs. | 75 lbs. | 75 lbs. |
| Dimensions of power-supply unit (L x W x H) | 16.5 x 17.5 x 18 in. | 16.5 x 17.5 x 18 in. | 16.5 x 17.5 x 18 in. |
| Permitted ambient temperature of air cooling system | 59–104°F | 59–104°F | 59–104°F |

[1] Other lens and marking field sizes available. [2] Where f = 3.9 in. [3] Depending on the focal length.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

# TruMark 1110

## TruMark 1110:
## Benefits at a glance.

1 Cost-effective and compact.

2 Very easy to integrate.

3 Excellent processing quality.

4 Ideal for a wide variety of materials.

## Compact and cost-effective.

The TruMark 1110 stands out for its low investment costs and space-saving design. This all-in-one solution brings together laser, scanner, control unit and internal focal position control. Together with its industrial interfaces, this makes the TruMark 1110 very easy to integrate. Not only does it deliver high standards of quality and performance, it is also an attractive entry-level laser.

With its excellent beam quality, the TruMark 1110 guarantees the highest precision. The vanadate laser's short pulses ensure high quality marking. This means you can process a wide variety of materials productively and with traceability. The solution is ideal for use in the automotive sector, the electrical and precision engineering industries as well as in medical technology.


| TruMark 1110 | |
|---|---|
| Wavelength | 1064 nm |
| Pulse repetition frequency | 15 – 100 kHz |
| Max. size of marking field | 4.3 x 4.3 $in^2$<br>f = 6.3 in. |
| Min. focal diameter | 50 µm |
| Max. internal focal position adjustment | ± 0.3 in. |
| Laser medium | $Nd:YVO_4$ |
| Beam quality $M^2$/Intensity allocation | < 1.5/TEMoo |
| **Connection and set-up** | |
| Electrical connection | 24 V DC; 20 A |
| Max. power consumption | 480 W |
| Average power consumption | 240 W |
| Protection class | IP 54 |
| Weight | 29 lbs. |
| Dimensions (L x W x H) | 13 x 6.7 x 10.4 in. |
| Permitted ambient temperature | 59 – 104°F |

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

# TruMark 5010 Mobile Marker

## TruMark 5010 Mobile Marker: Benefits at a glance.

1. Mobile laser marking.
2. Ergonomic and easy to use.
3. Excellent traceability.
4. Maximum safety.

## More freedom in laser marking.

The TruMark 5010 Mobile Marker enables you to mark large and heavy metal components safely and conveniently. Simply move the air-cooled marking laser to wherever you need it – minimizing your unproductive time and sparing you the trouble of transporting workpieces to the marking station.

The hand-held processing unit features an ergonomic design and can be conveniently operated with the touch panel. You can use the comprehensive TruTops Mark software to apply complex marking content to your components and to guarantee traceability. Smart sensors ensure safety in line with laser protection class 1 directly on the component, which means you don’t need a laser protection cabin to operate the TruMark 5010 Mobile Marker.


| TruMark 5010 Mobile Marker | |
|---|---|
| Wavelength | 1062 ± 3 nm |
| Pulse repetition frequency | 1 – 200 kHz |
| Pulse duration | 250 ns |
| Max. size of marking field | 2 x 1.2 in² |
| Min. focal diameter | 70 µm |
| Laser medium | Yb:fiber |
| Beam quality M²/Intensity allocation | 1.6/Low-Order-Mode |
| **Connection and set-up** | |
| Electrical connection | 230/100 V, 50/60 Hz, 2,5/5 A |
| Max. power consumption | 480 W |
| Average power consumption | 300 W |
| Dimensions (L x W x H) | 38.5 x 18 x 47 in. |
| Weight | 198 lbs. |
| Dimensions processing unit (L x W x H) | 19.3 x 7.5 x 12.5 in. |
| Weight processing unit | 11 lbs. |
| Length of connection hose | 67 in. |
| Laser protection class[1] | 1 |
| Suction | integrated |

[1] For use on metal components only.
Subject to alteration. Only specifications in our offer and order confirmation are binding.

# TruMark Station 7000

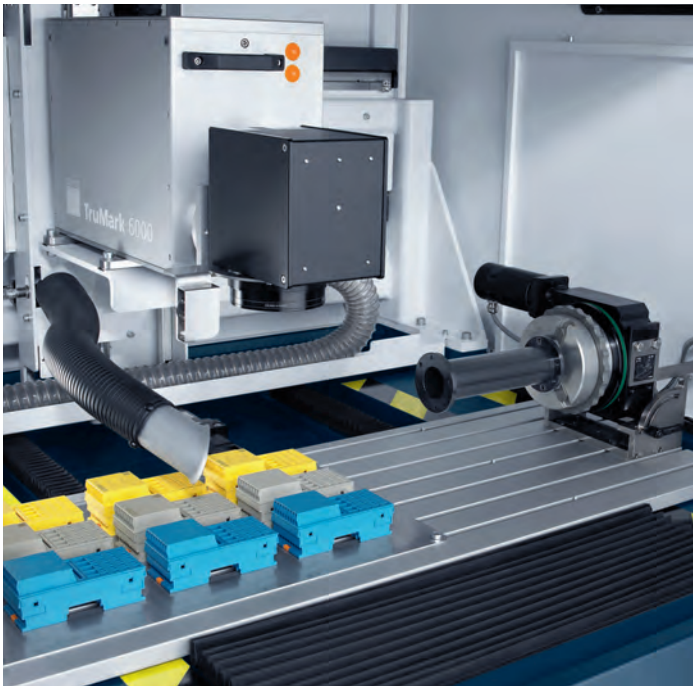
## TruMark Station 7000: Benefits at a glance.

1 Large workspace.

2 Outstanding ergonomics.

3 Minimum non-productive times.

4 For palletized workpieces.




## A class act for big tasks.

With its large internal dimensions, the TruMark Station 7000 laser workstation offers plenty of room for virtually every kind of application. With the TruMark Station 7000, it does not matter whether you want to safely mark individual large or heavy parts or a large number of small parts arranged in a row. There is ideal access to the entire workspace, and with outstanding ergonomics, operation is comfortable.

The large motorized door ensures safety and increases productivity. It can open and close rapidly and, as an option, open part way. The high travel speeds of the axes also keep non-productive time to a minimum. An emission-free work environment is assured even at high laser outputs, as a result of various smoke and particle suction units which are perfectly adapted to our TruMark lasers.


TRUMPF
TruMark Station 7000

# TruMark Station 7000

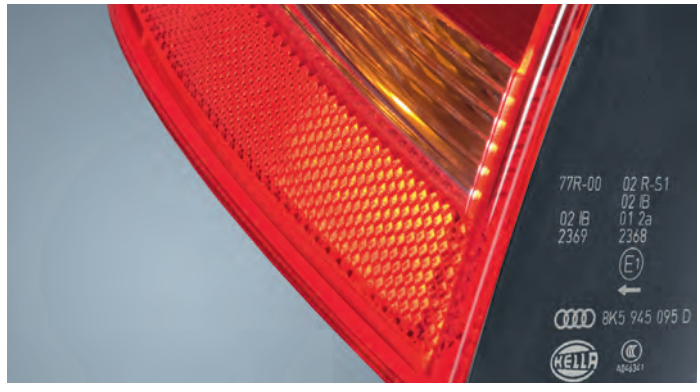
## Making everything simple.

You can mark workpieces of all different sizes using nearly the entire internal area of the TruMark Station 7000. The laser can travel along both the X- and Z-axes, and when the workpiece is positioned in the Y direction, this opens a workspace that leaves nothing to be desired. The easy-to-use TruTops Mark software, which has great programming flexibility, controls all axes, the motorized vertically-opening door, and the peripheral devices. You control axes, laser parameters, and external communication using a convenient single user interface. All axis movements and a large number of device functions can also be saved. The open interface architecture enables easy integration into your IT systems.

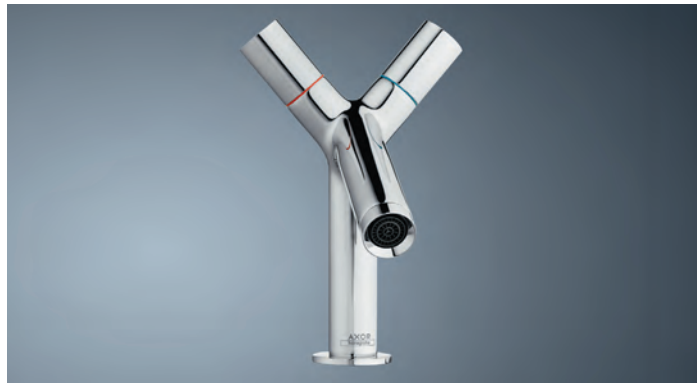
## Equipped with all advantages.

Naturally, this top-of-the-line model possesses all of the advantages of TRUMPF marking workstations, including its stable sheet metal construction which is well suited for industrial use as well as the fact that the laser's power-supply unit is integrated in the machine frame. Various rotary axes can be integrated for circumference marking. The functions of the system can be monitored remotely via our telepresence – once you activate it, our service experts can quickly assist you.


Permanent serial number marking on gear part.




High-contrast marking with logos and production information.



Annealed marking as a design feature.


| TruMark Station 7000 | |
|---|---|
| **Workpiece specifications** | |
| Max. workpiece size (W x H x D) | 39 x 15.8 x 19.7 in. |
| Max. workpiece weight | 220.5 lbs.[1] |
| **Motorized axes** | |
| Travel length Z/X/Y-axis | 15.8/25.6/14.8 in. |
| Travel speed Z-axis | 27.5 in/min |
| Travel speed X/Y-axis | 590.5 in/min |
| Speed of rotary axis A | 14/25/100 rpm[2] |
| **Connection and set-up** | |
| Electrical connection | 400/200 V, 50/60 Hz, 12,5/25 A |
| Max. power consumption | < 5.0 kW |
| Dimensions[3] (W x H x D) | 47 x 78 x 47 in. |
| Weight[4] | 1349 lbs. |
| Laser protection class | Laser protection class 1 in accordance with DIN EN 60825-1 |
| Suction | External/Optionally integrated |
| Available lasers | TruMark Series 6000 |

[1] With movable Y-axis: 55 lbs. [2] According to different axis configurations. [3] Excluding pivot arm for monitor, keyboard, and mouse. [4] Excluding processing unit and power-supply unit. Subject to alteration. Only specifications in our offer and order confirmation are binding.

# TruMark Station 5000

## TruMark Station 5000: Benefits at a glance.

1. High degree of flexibility.
2. High travel speed.
3. Compact, ergonomic design.
4. Universal application and integration.


## Simply flexible.

The TruMark Station 5000 has proven its worth on countless occasions all around the globe. With a Z-axis travel length of 520 inches, this laser workstation gives you maximum flexibility when marking large parts and parts with different dimensions. The linear axes are available as a complete module and can also be retrofitted in a few easy steps. The high travel speed of the X- and Y-axes shortens the time between two marking cycles. You also have the option of moving the axes into the right position at the touch of a button. In conjunction with the focus finder option, this means you can conveniently set the required working height.

## Ergonomic and fast.

With its intelligent design, you have the option of using the TruMark Station 5000 as a seated or standing workstation. Extensive access to the workspace makes job preparation and loading easier. Since you can define how wide the door should open, you can minimize the time between loading and unloading. The TruMark Station 5000 is also available with the option of a rotary indexing table.


TRUMPF
TruMark Station 5000

# TruMark Station 5000

## Especially safe.

Emissions are produced when marking many types of components as a result of material ablation. For this reason, suction units are integrated into our workstations as a standard feature.

## Universal application.

Despite its expanded workspace, the TruMark Station 5000 is compact enough to give you options when choosing an application site. For integration into an assembly line, you have the option of transferring workpieces lengthwise through lateral openings in the housing. And, so that we can support you at all times, you have the option of giving our service specialists access to the full range of sensors for the laser and workstation via our secure TRUMPF telepresence connection.


Serial number and data matrix code fit into the smallest of spaces.


Marking on synthetic bone made of polyurethane.

Flexible marking for a wide range of plastics.


| TruMark Station 5000 | | |
|---|---|---|
| **Workpiece specifications** | **TruMark Station 5000** | **TruMark Station 5000 rotary indexing table** |
| Max. workpiece size (W x H x D) | 26.8[1] x 19.7 x 27.5 in. | 7.8 x 7.5 x 7.9 in. |
| Max. workpiece weight | 110 lbs. | 22 lbs. |
| Diameter of rotary table | | 23.6 in. |
| **Motorized axes** | | |
| Travel length Z-axis | 19.7 in. | 10.4 in. |
| Travel length X/Y-axis | 11.8 in. | |
| Travel speed Z-axis | 59 in/min | 39.4 in/min |
| Travel speed X/Y-axis | 236 in/min | |
| Speed of rotary axis A | 30 rpm | 22.5 rpm |
| **Connection and set-up** | | |
| Electrical connection | 230/200/115 V, 50/60 Hz, 10/13/15/16/20 A | 230/115 V, 50/60 Hz, 10/16 A |
| Max. power consumption | < 2.55 kW | < 2.0 kW |
| Dimensions[2] (W x H x D) | 34 x 79 x 51.5 in. | 32 x 70.5 x 43.5 in. |
| Weight[3] | 904 lbs. | 573 lbs. |
| Laser protection class | Laser protection class 1 in accordance with DIN EN 60825-1 | Laser protection class 1 in accordance with DIN EN 60825-1 |
| Suction | External/Integrated as an option | External/Integrated as an option |
| Available lasers | TruMark Series 3000/5000[4]/6000 | TruMark Series 3000/5000[4] [5]/6000 |

[1] With side opening closed. [2] Excluding pivot arm for monitor, keyboard, and mouse. [3] Excluding processing unit and power-supply unit.
[4] Without TruMark 5010. [5] On request. Subject to alteration. Only specifications in our offer and order confirmation are binding.

# TruMark Station 1000

## TruMark Station 1000: Benefits at a glance.

1 Extremely compact.

2 Low investment.

3 Flexible installation.

4 Easy to operate.

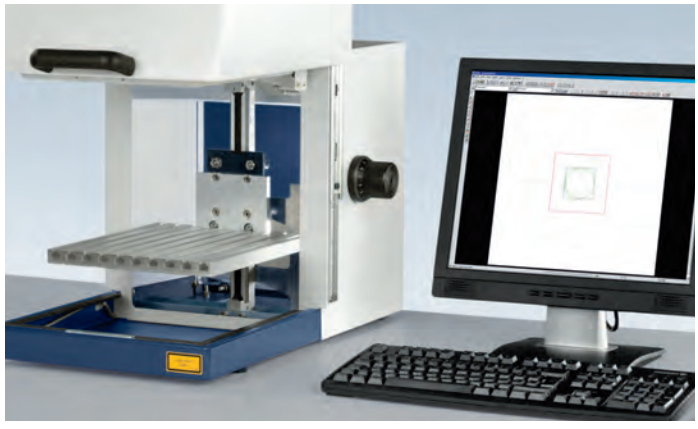
## Flexible marking.

We offer the TruMark Station 1000 either with the TruMark 1110 or TruMark 5010 marking lasers, or with TruMark 3000 Series machines. Its compact size and light weight combined with the intermateability of all connections means you can transport this tabletop workstation in the trunk of your car and use it as a flexible marking laser.

## High technology for your workshop.

Our smallest laser workstation is notable for its low investment costs and its compact design. The desktop workstation consists of a tabletop station accessible from three sides together with a safety-monitored laser access door. You have plenty of freedom when choosing a location, since it integrates the TruMark 1110 or TruMark 5010 lasers as an all-in-one solution. The TruMark 3000 Series offers lots of flexibility as a result of its long connecting cable.

With its integrated marking laser and comprehensive TruTops Mark software, the TruMark Station 1000 is a reliable self-contained unit. Its manually adjustable workbench makes the TruMark Station 1000 even easier to operate.



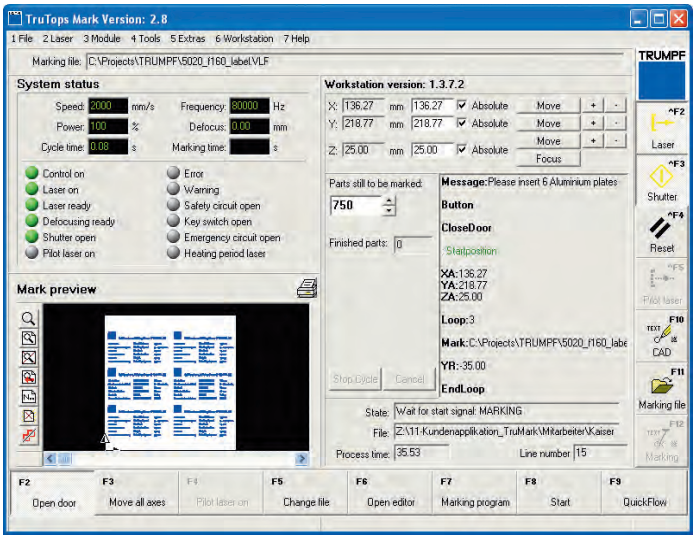

| TruMark Station 1000 | |
|---|---|
| **Workpiece specifications** | |
| Max. workpiece size (W x H x D) | 10 x 6 x 12 in. |
| Max. workpiece weight | 11 lbs. |
| **Axes** | |
| Travel length manual Z-axis | 6 in. |
| **Connection and set-up** | |
| Electrical connection[1] | 240/100 V (single-phase), 50/60 Hz, 10 A |
| Max. power consumption[1] | < 0.6 kW |
| Dimensions[2] (W x H x D) | 16 x 20.5/30[3] x 33 in. |
| Weight with integrated laser[4] | max. 110 lbs. |
| Laser protection class | Laser protection class 1 in accordance with DIN EN 60825-1 |
| Suction | External |
| Available lasers | TruMark 1110/TruMark 5010/ TruMark Series 3000 |

[1] Integrating a power-supply unit with the combination of TruMark Station 1000 and TruMark 1110 or TruMark 5010. [2] Excluding monitor, keyboard and mouse. [3] Door completely open. [4] Excluding connection cables and power-supply unit. Subject to alteration. Only specifications in our offer and order confirmation are binding.

# Better software. It’s as simple as that.

## Everything is under control with TruTops Mark.

With TruTops Mark, mastering laser technology is easy. The marking software is based on Windows 7 and is available in several languages. TruTops Mark combines marking software, a CAD editor, a management tool for laser parameters and interfaces, sequence programming with QuickFlow, and a sophisticated diagnostic tool. This means you have all aspects of your laser operations under control with just this one piece of software. And if you do not want to deal with the nitty-gritty of laser marking, NAVIGATOR is there to help. This laser parameter assistant brings our application development expertise to your business.




## Simple operation.

**CAD editor in TruTops Mark**
Here you will find the full range of options for drawing, designing, creating data matrices and barcodes, and importing vector and pixel formats and TrueType fonts. Numerous laser-optimized standard characters are available.

**Managing parameters and interfaces**
The large number of interfaces allows you to introduce variable data into your marking program. TruTops Mark also offers you plenty of options in regard to integration into existing production machinery via the control unit.

**Parameter library**
You can easily copy parameters you have already used to new marking files. This is a fast and productive means of creating new marking files. It also helps ensure that your parts are consistently marked with the same quality.

**Adjusting the focal position**
The camera solution lets you automatically set the correct focal position. This is an advantage when marking components with varying processing heights.

**Identifying the position**
The software is able to recognize component geometry and align the marking content on the basis of preset contours.

**Processing data matrix codes**
Reading and processing information in the form of data matrix codes simplifies quality control and makes your components more traceable.

## Simple integration.

**Sequence programming with QuickFlow**
An object-oriented environment that makes for easy drag-and-drop programming of sequences. It enables you to control complete marking cycles. It also allows you to respond to production measurement data by varying the markings.

**TruTops Mark Module Interface (TTM-MI)**
This enables you to define the content, appearance, and layout of the user interface according to your individual needs, making operation easier and safer. It also gives you even more options for integrating the laser into an overall system composed of database, measurement equipment, etc.

**Printer drivers for Microsoft Windows applications**
It is easy to use the TruMark marking lasers as a printer for marking content directly from Microsoft Office applications.

**SAP®[1] printer driver for marking lasers**
With TruMark, TRUMPF is the first manufacturer to make lasers that can be connected to an SAP environment. This means you can take product-relevant information straight from SAP and laser mark it onto workpieces. This is as quick and easy as printing information on an adhesive label – except laser marking is permanent and requires no consumables.

**ActiveX TruTops Mark component**
The ActiveX software component for TruTops Mark facilitates integration by ActiveX data exchange. The predefined TLV commands can be easily integrated into your process environment.

[1] SAP and all SAP logos are trademarks or registered trademarks of SAP AG in Germany and in various other countries.

## Simple diagnostics

**Diagnostic tool**
This tool visualizes and analyzes laser operating data and displays a complete list of monitoring notifications and live status information. This means that faults can be quickly identified and corrected.

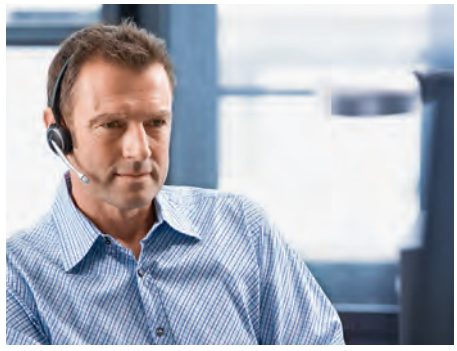
**Laser power monitor**
The laser power monitor is an internal module for measuring laser output. It enables you to control the pump diodes in real time. It is controlled using the software.

**Laser power calibration**
TruMark marking lasers come with a pump back-up which can offset any degeneration of the pump diodes several times over. This means your marking results look just as good several years down the line as they did on the first day.

**SAP® Printer Vendor Program**

TruServices:

# Service like no other.

## Service from the word "go".

We support you with customized services over the entire lifecycle of your machine. We quickly get your new marking laser up and running and productive. We maintain it and retrofit new options on request. We train you and your employees so that you know how to get maximum benefit from your marking laser. If required, our technicians optimize the machine parameters on-site and help you to increase the speed and quality of your production processes.

## Unique telepresence.

All TruMark lasers can be maintained remotely. Various sensors in the laser head, power-supply unit, and workstations measure hundreds of values. On request, our service experts can make swift diagnoses, and they solve most issues right away – shortening downtime and increasing capacity.

## Global service network.

TRUMPF offers a worldwide service network with more than 100 service employees that provide on-site support in more than 40 countries. And if you ever need a spare part, we can be reached around the clock.

## Our spare part quality promise.

Even after the regular warranty period has lapsed, we replace certain components of our marking lasers at reduced prices. With a one-year warranty, for example, you receive the following price reductions for selected components: 75% in the first year (following the end of the warranty period); 50% in the second year; and 25% in the third. There is no need to secure supplementary insurance to receive these discounts. And, naturally, we renew the material warranty for replaced parts.