

A man with grey hair and a beard, wearing a grey sweater over a light blue collared shirt and dark trousers, is looking intently at a small metal component he is holding in his left hand. He is also holding a magnifying glass in his right hand, positioned over the component. The component has a barcode and some text on it. The background is white with a faint blue geometric pattern of intersecting lines.

**trotec**

eBook  
Laser safety marking &  
functional marking

As a manufacturer, you have invested a lot of time and money in the development and production of your product. No sooner have you achieved market maturity and initial success than problems such as theft or product piracy (plagiarism) arise. This issue is globally relevant. According to a report by the OECD and the EUIPO, the annual economic damage caused by trade in counterfeit physical products worldwide amounts to around 710 to 917 billion US dollars\*.

You will lose money and market share if you fail to label your (high) value products. Make it easier for yourself and the police to detect such cases. Otherwise, thieves will have an easy game in the retail trade, but also within the company!

Read more about the possibilities and advantages of safety marking with laser marking on the following pages.



\*Source: <https://iccwbo.org/news-publications/policies-reports/economic-impacts-counterfeiting-piracy-report-prepared-bascap-inta/>

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# 1 / From start-ups to large corporations

## Industrial goods as well as branded products

Theft, plagiarism, product recalls and complaints affect start-ups and large corporations alike. With downstream or upstream tracing, you have the option of precisely tracking the production, supply and consumer chain.

Traceability has been mandatory in the EU for many years, e.g. in the food industry, arms manufacturing and also in medicine. The possibilities of traceability are also used in many other industries, such as jewelry and watches, automotive, aviation, mechanical engineering, fashion, etc.

But what does traceability actually mean? The product history (the path or process from raw material to finished product to disposal) can be traced at any time. This is known as traceability.



Mechanical engineering



Watches & jewelry



Industrial supplier



Branded products



Automotive



Electronics

## 2 / Importance of traceability

There are two variants of process tracing:

**Downstream tracing = from the producer to the consumer**

This downstream tracing is used, for example, for product recalls. With end-to-end downstream tracing, the manufacturer has an overview of where its products are in use throughout the entire value chain.

**Upstream tracing = from the consumer back to the producer**

This procedure is also known as upward tracking. In the event of any problems with the goods, the causes and possible originators can be identified quickly and specifically (e.g. in the production of the product, storage or logistics).



### 3 / Reliable & cost-effective marking

Anyone who has now decided to label their products is faced with the choice of which technology to use. When deciding on printing, etching, needle embossing, milling, etc., it is important to consider not only the acquisition costs of the technology, but also the ongoing costs for the supply and disposal of consumables such as inks, chemicals, pastes, marking tips or milling cutters.

For many companies, the means of choice for marking is the laser. In contrast, lasers do not require any consumables as they work without contact. This process allows even the smallest geometries to be marked gently and precisely. Even with dynamic content or changing / different markings on a wide variety of products, you do not have to retool or change the tool.



This saves time & money!

### 4 / Permanently safe to read

Whether high-contrast marking or deep engraving, laser-processed products are (depending on the type of material) resistant to abrasion, heat, cold and acids, chemicals or alcohol **and, above all, durable!** Even font sizes of 1 point are no problem for the precise laser beam.

A wide range of materials such as coated or bare metals (e.g. steel, aluminum, etc.), numerous plastics (e.g. polyamides, PP, ABS, etc.), composite materials, natural or synthetic fibers and many more can be processed with the laser.



## 5 / Contents of the marking

Up to now, many have only used one or a few pieces of labeling information, such as the serial number. This is a start, but much more is possible in safety marking, e.g. by applying individual check digits. It can make sense not only to form these check digits from conventional characters, but also to put them together individually.

An individually created barcode is a very good solution here. This can contain all kinds of data such as Customer, supplier or raw material number, plant name, storage location, delivery bill or production date, package number, batch number or quality characteristics etc. With the Ruby® and SpeedMarker software, you can make such individual check digit calculations and apply them directly to the product with the SpeedMarker series devices.

### International standards for product traceability

There are several international standards for product traceability that help companies to track and identify their products along the entire supply chain, for example:

- **GS1 standards:** GS1 is a non-profit organization that develops global standards for product identification and data exchange in supply chains. The GS1 Global Traceability Standard (GTS) is intended to support organizations and industries such as the rail and automotive industries in the design and implementation of traceability systems based on the GS1 system.
- **UDI (Unique Device Identification):** The UDI system is mainly used in the healthcare sector and enables the unique identification and traceability of medical devices. It consists of a unique device identifier, which is affixed to the device and its packaging, and a database containing additional information about the device



**These standards help companies to improve the transparency and efficiency of their supply chains and ensure compliance with legal regulations.**

## 6 / Added value

for functional marking with a laser

### More sales opportunities with downstream tracing

By marking your products with an individual product ID, you have the opportunity to „know“ your end customer, e.g. through warranty registrations. At the same time, this means that you can not only quickly detect counterfeit products, but also establish direct contact with potential target groups and thus generate follow-up business.

Personalized products are very much in vogue. Whether end customer or reseller, many customers would pay more for it! For you as a manufacturer, it doesn't matter whether you personalize individual items, small or large series - your effort is low. At the same time, you can not only increase your margin, but also boost product popularity.

### Implement more customer requests faster

The laser technology makes it quick and easy to apply logos, decorations and personalization to your products. With the aforementioned check digit calculation by the SpeedMark® software, a QR code can be created in which you can hide the check digit or add a logo. The individual QR code is engraved or marked on the product. The possibilities are virtually unlimited.



Find out more at <https://www.troteclaser.com/en/resources/blog/megatrend-individualization>

## 7 / Transfer & CO<sub>2</sub> balance

Many companies calculate that in-house marking is more expensive than outsourcing. But don't just calculate the acquisition costs! Also calculate the efficiency you will achieve. If you apply the product marking in-house, you not only save on delivery times to and from the supplier, but also on transport costs.

This improves your carbon footprint and no product will leave your premises without marking. You have complete control and remain flexible, because no matter what data is changed at short notice, you have access to the marking at all times.

## 8 / Customer stories

### Machine Fabriek Elburg

The industrial supplier exports its products to Europe and around the world and was looking for a traceability solution. Its new Customer Liebherr from Germany requested traceability of the delivered parts.

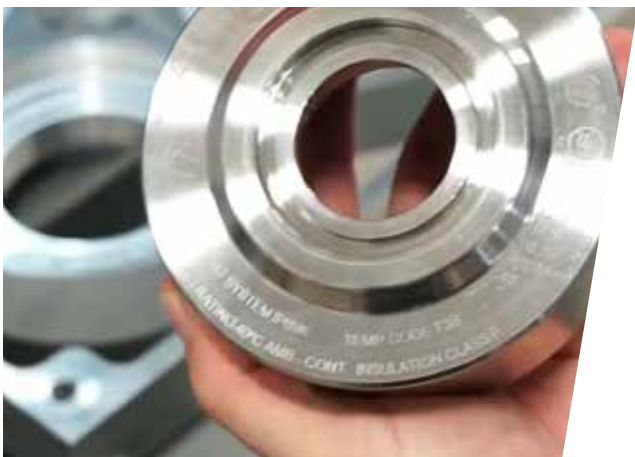


„In our search for a high-quality laser machine, we compared various suppliers. In the end, we opted for a SpeedMarker 700 marking laser from Trotec. In addition to the time and energy that Trotec puts into its product and its (new) customers, Trotec presented a competitive offer and an overall concept that both Maschinenfabrik Elburg and the end customer could agree to. We were also able to have a few small series marked on a demo machine from Trotec before the fast delivery, so that the Customer had a result immediately in-house for evaluation. We are very satisfied with the laser machine because it is easy to operate. It has made us even more complete as a supplier. „

**Herrald Hulst – Project Manager, Machine Fabriek Elburg**

### Van der Graaf

The leading international Canadian manufacturer of drum motors Van der Graaf was looking for a marking solution that was both flexible and adapted to the manufacturing process. The solution needed to be connected to their ERP system.



„We use the SpeedMarker 700 to label our motors with our name and logo as well as all specifications and certifications. The system is fully integrated into our ERP system. As soon as we have scanned the work order, all the information is automatically retrieved. Trotec supported us very well, especially in the beginning with the programming and calibration of the work orders. The SpeedMarker 700 offers the best marking quality for stainless steels and other metals.“

**George Barbuc – Project Manager, Van der Graaf**



More customer stories: <https://www.troteclaser.com/en/about-us/customer-stories>

Information about the Trotec laser machines: <https://www.troteclaser.com/en/laser-machines/laser-marker>

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