



## Press Release

# **Euroblech 2018: TRUMPF ushers in new era of autonomous factories**

**Connected production environment gives rise to the smart factory // Heinz-Jürgen Prokop, CEO Machine Tools: “Artificial intelligence is the key to productivity gains” // Smart data analysis helps TRUMPF develop and enhance its machine tools**

*Ditzingen/Hanover, September 25, 2018* – TRUMPF will be showcasing numerous solutions for autonomous factories at Euroblech 2018 in Hannover. The company is set to present a range of digitally connected applications for sheet metal processing that are designed to make manufacturing processes simpler and more efficient. “As they become increasingly autonomous, our machines are taking on more tasks and making life easier for the people who work with them. But you can only unlock these benefits with a connected, intelligent production environment. That’s what enables us to achieve productivity gains and secure our customers’ competitive edge – and artificial intelligence is the key,” says Heinz-Jürgen Prokop, Chief Executive Officer Machine Tools at TRUMPF. Prokop notes that there is now little to be gained by striving for ever higher laser power. Instead, the focus should be on connected machines and the processes that occur upstream and downstream from the actual production process. Combined with intelligent data analysis, he argues that this is where the biggest productivity gains can be achieved.

### **Assistance systems makes processes more reliable**

TRUMPF has already laid the foundations for the autonomous factory by including numerous assistance systems in its machines. One example that makes cutting processes more reliable is Smart Collision Prevention. This function’s programming already takes account of tilting parts and then develops a processing strategy in its calculations to avoid collisions with the cutting head. More and more machine functions now control processes autonomously. One example is Smart Nozzle Automation, a function that periodically inspects the nozzle and automatically replaces it if it is damaged. And that’s not the only



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milestone on the path toward autonomous laser cutting that TRUMPF is showcasing at this year's Euroblech in Hannover.

### **Self-learning machines**

The fully automatic TruLaser Center 7030 laser system takes the whole concept of autonomous machines to the next level. From programming to part sorting, everything it does is completely automated. "We've already started using intelligent data analysis to improve the processes executed by this machine. By incorporating customer feedback in the form of data, our aim is to steadily perfect the entire system. Artificial intelligence is the next stage of Industry 4.0," says Thomas Schneider, who heads up machine tool development at TRUMPF. A good example is the machine's unloading unit. The pins that lift the sheet out of the scrap skeleton are designed to ensure efficient and reliable part removal using suction cups. If the pins fail to get it right the first time around, the machine initiates a new part removal cycle on its own, without requiring any intervention. It then repeats this cycle as many times as necessary until it works. The machine processes and assimilates each of these retry attempts and learns from them.

### **Smart factory, intelligent logistics**

TRUMPF will also be presenting a connected intra-logistics solution at Euroblech, something that TRUMPF has already tested successfully at its Industry 4.0 showcase factory and at selected customer locations. The solution improves the logistics processes that run on the shop floor, for example the routing of parts from one processing station to the next. "Customers participating in our product testing program have sometimes made five-figure savings by deploying our indoor localization system," says Schneider. "It enables them to reduce search times and prioritize jobs in an intelligent fashion." This is steadily becoming more important because batch sizes are shrinking and sheet metal fabricators are increasingly struggling to keep track of jobs throughout the entire production process. At the same time, the sheet metal fabricators' customers want to know what stage their order has reached – a level of transparency they have come to expect from doing business online. The indoor localization system enables

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TRUMPF customers to manage their production processes more efficiently and satisfy their own customers' expectations.

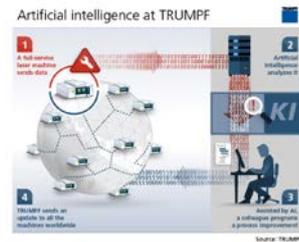
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### Self-learning machines

The TruLaser Center 7030 repeats the removal cycle of the parts several times if necessary. The machine processes and assimilates each of these retry attempts and learns from them.

Source of image: TRUMPF, IW Medien/Gottfried Stoppel



### Artificial intelligence at TRUMPF

From the data of a fully automatic laser machine, process improvements can be derived, which can be applied to all machines worldwide.

Source of image: TRUMPF



### About TRUMPF

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In 2017/18 the company – which has about 13,400 employees – achieved sales of 3.6 billion euros. With over 70 subsidiaries, it is represented in nearly all the countries of Europe, North and South America, and Asia. It has production facilities in Germany, France, Great Britain, Italy, Austria, Switzerland, Poland, the Czech Republic, the USA, Mexico, China and Japan.

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## Press Release

# Breakthrough at Euroblech: TRUMPF achieves major gains in productivity with Active Speed Control

**Smart sensor system takes laser cutting speeds to a new level // Fewer interruptions to cutting process and less scrap // Excellent process reliability thanks to data analysis, even with rust and paint**

*Ditzingen/Hannover, October 23, 2018* – This year's Euroblech sees TRUMPF present a major milestone on the road toward autonomous machines: Active Speed Control. With this new feature, the system looks straight through the nozzle right at the cutting zone, monitoring it in real-time and autonomously controlling the feed rate of solid-state laser machines. This new function ensures a more reliable process for both flame and fusion cutting, reducing scrap and saving on rework. Active Speed Control also responds immediately to any changes in the material being processed. The system allows users to achieve tangible gains in productivity with their machines, significantly lowering part manufacturing costs. Active Speed Control monitors numerous different process parameters. One example is the position of the laser beam in relation to the center of the nozzle during the entire cutting process. The system informs the operator of any deviations, helping to avoid scrap. Additional functions for automated laser cutting can easily be added to the system in the future thanks to the software update feature. TRUMPF is well ahead of the curve when it comes to investing in digitally connected, autonomous factories, and this year's Euroblech sees the high-tech company showcasing numerous other innovations for the smart factory in addition to Active Speed Control.

### **Maximum speed even with variations in material thicknesses**

The kerf reveals all sorts of information about part quality and process stability. The easier it is for the molten material to escape from the kerf, the smoother the cutting process. Active Speed Control keeps a careful eye on this flow of molten material in mild and stainless steel plates that are four or more millimeters thick. The sensor system looks straight through the nozzle to observe the radiation that



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is emitted as the material melts. This “process radiation” allows the system to determine whether the molten material is emerging as planned, to identify the fastest possible feed rate, and to make any necessary adjustments – a process it repeats many hundreds of times a second. In this way, Active Speed Control maintains the optimum feed rate even in cases where the thickness of the material varies within a single sheet, or where the top of the sheet is contaminated with rust or paint. In conventional systems, these kinds of variations and changes in material would typically lead to slag formation or interruptions in the cutting process.

### **Smart sensor system makes life easier for machine operators**

Currently, machine operators have to tailor the feed rate – a critical parameter – to the material they are cutting, and adjust it as necessary. One way they do this is by making test cuts. Active Speed Control eliminates the need for these kinds of tests. That simplifies the production process, particularly in single part manufacturing.

To allow for variations in the material, operators also frequently reduce the machine’s feed rate. That makes the process more reliable in many cases, but it often has a negative impact on the cutting process and the quality of the cut. For example, a lower feed rate can cause heat to accumulate within the material. This build-up of heat can cause the material to melt in an uncontrolled fashion, reducing the reliability of the machining process. By automatically controlling the feed rate, Active Speed Control prevents this accumulation of heat from developing in the first place.

This feature also offers plenty of other benefits. For example, the operator can view a live image of the cutting zone as seen through the nozzle, and they can browse key process parameters at any time on the machine’s control panel or on a tablet. That makes it easier to monitor the machine during production.

Previously, operators had to manually create what is known in the industry as a “tapeshot” to ensure that the parameters were set to their optimum values – and that was a laborious and time-consuming process.



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### **Speeds well above the norm**

Cutting data tells the machine how to process material of a certain thickness. The calculation of this data includes a buffer to compensate for any variations in the composition of the sheet and to allow for less experienced operators who may not have configured the machine optimally for the next job. Ultimately, this means the machine is cutting at a lower feed rate than it is capable of. Active Speed Control eliminates the need for this buffer. The sensor system allows the machine to always work as fast as it can while maintaining the required levels of process reliability. In many cases, Active Speed Control even achieves speeds that are significantly higher than the default values specified in the cutting data.

### **Improving part quality while reducing part costs**

Parts that have not been completely cut from the skeleton or that feature a lot of slag lead to higher scrap rates and wasted time – especially if the cutting problems occur during a night shift. But with automatic feed control, this hardly ever happens. In the event of a miscut, Active Speed Control brings the machine to a halt, and the TruTops Monitor software immediately notifies the operator that they need to take action. Active Speed Control also reduces burr and slag formation.

### **Innovation for autonomous laser cutting**

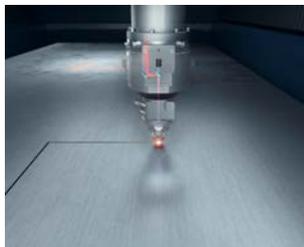
TRUMPF 2D laser cutting machines feature numerous different assistance systems that help operators cut parts in a reliable fashion. One example is Smart Collision Prevention, which is programmed to take tilting parts into account and then develops a processing strategy in its calculations to avoid collisions with the cutting head. Meanwhile, the Drop&Cut assistance system makes it easier than ever to produce additional parts from scrap skeletons. As well as providing assistance, TRUMPF machines also feature an increasing proportion of functions that control processes autonomously. One example is Smart Nozzle Automation, a function that periodically inspects the nozzle and automatically replaces it if it is damaged. The TruLaser Center 7030 runs all its processes in a completely automated fashion, from programming to part sorting. Active Speed Control is yet



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another example of TRUMPF's ongoing mission to create innovations on the path toward autonomous laser cutting.

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### **Intelligent sensor system**

Active Speed Control looks straight through the nozzle to observe the radiation that is emitted as the material melts. This "process radiation" allows the system to determine whether the molten material is emerging as planned, to identify the fastest possible feed rate, and to make any necessary adjustments – a process it repeats many hundreds of times a second.



### **Cutting process without Active Speed Control**

Material chips are clearly visible when flame cutting mild steel of inferior quality.



### **Cutting process with Active Speed Control**

The sensor system actively responds to rust and dirt on the surface of the sheet, automatically adjusting the speed of the process in order to avoid miscuts.



### **About TRUMPF**

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## Press Release

### TRUMPF machines join the cloud

**Five new apps delivered as standard with many new machines // Digital analysis of machine, tool and program data via the cloud // Live machine status available on the move**

*Ditzingen/Hannover, October 23, 2018* – TRUMPF customers who purchase a new machine now get an automatic ticket to digitized manufacturing in the form of five new apps. These innovative apps are designed to analyze the data generated before, during and after production. By choosing machines with this digital feature, customers get handy access to the information they need to increase the transparency of their manufacturing operations, optimize their processes, and boost productivity.

#### **Secure, cloud-based data analysis**

The data is processed by TRUMPF subsidiary AXOOM on its cloud platform. Its servers are located in Germany and Europe to ensure compliance with strict data protection legislation. Customers can decide for themselves whether they wish to link their machines to the cloud. Engineers can then establish the connection when they set up the machine for the first time. The information collected by the apps can be accessed at any time on a PC, tablet or smartphone.

#### **What the five apps do:**

1. The first app, “Live Status”, notifies users if a machine comes to a halt. It provides access to the machine’s status from anywhere and enables users to see how long a program has left to run. That makes it easier for the machine operator to determine the best moment to set up the machine for its next job and load it with the required material.
2. The “Machine Analytics” app provides an overview of the machine data and status updates from the preceding three days. It shows when the machine was in operation and highlights any downtime or interruptions in the production process. This information can be used to improve the machine’s capacity utilization.



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3. “Program Analytics” shows users which programs typically experience the most problems. Programmers can then use this information to make improvements. Program Analytics also makes it easier to choose programs that are particularly suitable for night or weekend shifts.
4. “Material Analytics” focuses on material consumption. The app analyses the quantities of each material used by a machine. That makes it easier to plan future orders and set the terms of framework agreements.
5. “Punching Tool Analytics” identifies which tools are used most frequently and gives users suggestions on which ones to convert into standard tools. That reduces the number of tool changes. The app also provides an overview of the number of strokes per tool class, indicating when the time has come to regrind or order a new tool.

These five apps are a further addition to the smart factory solutions that TRUMPF offers under its TruConnect label. They will initially be available to customers in Germany, Austria, Switzerland and the Netherlands. Customers can use them at no charge for 12 months and then decide whether they wish to continue using the products.

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### **TRUMPF Maschinen gehen in die Cloud**

Five new apps are designed to analyze the data generated before, during and after production. By choosing machines with this digital feature, customers get handy access to the information they need to increase the transparency of their manufacturing operations, optimize their processes, and boost productivity.



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## Press Release

### **Euroblech: TRUMPF showcases connected solution for intralogistics**

**TRUMPF booth at Euroblech 2018 presents system for determining position of parts in sheet metal fabrication within a few centimeters // “Track & Trace” creates greater clarity on the shop floor // Ultra-wideband technology enables indoor positioning even when surrounded by metal**

*Ditzingen/Hanover, October 23, 2018* – This year’s Euroblech sees TRUMPF showcasing an indoor positioning system based on ultra-wideband (UWB) technology. “As a leading provider of Industry 4.0 solutions, we are pleased to be offering yet another key component of connected manufacturing. This system allows our customers to determine the position of parts within just a few centimeters, enabling them to reduce throughput times on the shop floor and significantly increase their productivity,” says Thomas Schneider, Managing Director Research & Development at TRUMPF. The solution accurately locates sheet metal parts in real time and also tracks and documents the routes they take. That effectively eliminates the annoying and costly task of searching for parts on the shop floor, and it makes it easier to pinpoint express jobs in the production facility and prioritize their fabrication as required. The positioning system works not only for parts, but also for tools.

#### **Track & Trace can also be used with thick walls and metal parts**

Conventional positioning systems cannot be used in metal-rich environments such as between machines or in sheet metal storage areas because the signals emitted by the transmitters get corrupted or even completely lost. TRUMPF’s Track & Trace solution sidesteps this problem by utilizing a robust frequency and by placing tracking devices referred to as ‘satellites’ on the ceiling. These miniature satellites communicate with devices known as markers, which can simply be placed on, or attached to, stacks of parts or load carriers, much like a paper batch of job documents. That enables production workers to track down parts to within just a few centimeters. “Metal and radio waves are not really very compatible. That’s why it always seemed impossible to achieve this kind of



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positioning accuracy in sheet metal fabrication. But our ultra-wideband technology can track objects effectively even in environments that contain lots of metal,” says Schneider. TRUMPF has already successfully deployed Track & Trace at test customer sites as well as in its own production facilities. The solution is quick to install, simple to use, and easy to integrate in existing manufacturing processes.

### **Small computer chip in marker holds the key**

Track & Trace works using a computer chip installed inside each marker. This chip transmits data to an industrial computer via the satellites, allowing users to access clear information on the part and its location on the computer screen. They can also transmit data back to control the marker, for example displaying the job number or any other information required for the production process on a small ink display.

All the data can also be transferred to smartphones and tablets. Select a job on the screen, and the corresponding marker will respond by emitting a series of light signals, making it quick and easy to identify. This makes Track & Trace one of the first steps in the paperless manufacturing systems of the future.

The solution currently on show at Euroblech is based on more than ten years of research. TRUMPF worked closely with the French company BeSpoon to develop the product, a company in which it acquired a 60 percent stake in 2017.

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### Track & Trace

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### Track & Trace, Satellite

These miniature satellites communicate with devices known as markers. That enables production workers to track down parts to within just a few centimeters.



### Track & Trace, Marker

Track & Trace works using a computer chip installed inside each marker. This chip transmits data to an industrial computer via the satellites, allowing users to access clear information on the part and its location on the computer screen.



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## Press Release

# The new TruBend Series 7000: Convenience and speed reloaded

**New model now available with 50 metric tons press force // Control panel accelerates handling // Ergonomic features support the user**

*Ditzingen/Hanover, October 23, 2018.* TRUMPF will present its new TruBend Series 7000 at Hanover's EuroBLECH fair. It features machines with a higher press force of 50 tons – a first for this series. A new control system and ergonomic features are on board to facilitate handling. The TruBend Series 7000 bends small and medium parts extremely fast, just like its predecessor series. More than 2000 units have rolled off the production line at the TRUMPF plant in Pasching, Austria.

### **50 or 36 tons of press force**

The TruBend Series 7000 consists of two models: The TruBend 7036 has a press force of 36 tons and a bending length of 1020 millimeters. Its usable installation height is 295 millimeters. The TruBend 7050 is built for users who work with thicker sheets or manufacture larger parts. It bends with a press force of 50 tons. Its bending length is 1530 millimeters; its usable installation height comes to 385 millimeters.

### **Fast and precise**

A six-axes backgauge helps the operator position components with remarkable precision. The gauge fingers move very fast, traveling 1500 millimeters per second along the X axis and 2200 millimeters per second along the Z axis. A bending line laser helps to properly align parts. This new generation of TruBend Series 7000 machines comes with the ACB Wireless angle measuring system. Little metal contact plates at the bottom of the sensor tools send a signal to the machine when they touch the sheet metal. The TruBend Series 7000 uses these signals to calculate the bending angle.



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### **Focus on the operator**

Bending is an exercise in convenience with the TruBend Series 7000. A new control panel simplifies programming on the shop floor. The streamlined views present just the essentials so users can quickly find the right screen for entering data. The operator does not need a mouse or keyboard to use the controller's touchpad – even with work gloves on. The machine may be fitted with another screen alongside this panel on the press beam, for example, to display part diagrams. The operator has another quick-and-easy option for sending simple commands to the machine – the MobileControl module. This little control unit may be mounted on a rail above the tools. A sit-stand stool, a table to support the arms, a shelf for documents and a footrest keeps the operator comfortable and minimizes fatigue.

### **Convenient tool handling**

An LED strip on the upper tool clamp indicates where the operator has to set up tools and where the next bend will be. The TruBend 7036 and TruBend 7050 come with a right-hand cabinet to store tools right there on the machine. Tools slide out on telescopic rails, so they are always ready to hand. The TruBend 7036's cabinet offers 10.5 meters of space for tools. The TruBend 7050 can hold up to 15.1 meters worth of bending tools. It also contains a shelf that users can pull out to store things, for example, boxes for finished parts.

### **Small and compact**

These next-generation TruBend Series 7000 models are still small and compact. A roller gate is another space-saving feature. The TruBend 7036's footprint is 3075 x 1292 millimeters; the TruBend 7050's is 3553 x 1756 millimeters. Both machines can be hauled by forklift.

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### TruBend 7036

The TruBend 7036 has a press force of 36 tons and a bending length of 1020 millimeters. Its usable installation height is 295 millimeters.



### TruBend 7050

The TruBend 7050 bends with a press force of 50 tons. Its bending length is 1530 millimeters; its usable installation height comes to 385 millimeters.



### Backgauge

A six-axis backgauge helps the operator position components with remarkable precision.



### ACB angle measuring system

Little metal contact plates at the bottom of the sensor tools send a signal to the machine when they touch the sheet metal. The TruBend Series 7000 uses these signals to calculate the bending angle.



### Multi-touch control panel

The operator does not need a mouse or keyboard to use the controller's touchpad – even with work gloves on.



### MobileControl

This small MobileControl unit may be mounted on a rail above the tools.



### Tool cabinet

The TruBend 7036 and TruBend 7050 come with a right-hand cabinet to store tools right there on the machine.



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## **EuroBlech debut: TRUMPF makes the world's most flexible 3D laser system even faster**

**TruLaser Cell 7040 boasts biggest range of beam sources and highest laser power on the market // Automation reduces non-productive time // System enables high-volume production of a wide range of parts**

*Ditzingen, Germany, October 23, 2018* – At this year's EuroBlech, TRUMPF will be launching the latest generation of its TruLaser Cell 7040, one of the most productive and versatile 3D laser systems in the world. As with previous versions, users can opt to equip their machine with either an energy-efficient disk laser or a CO<sub>2</sub> beam source. This allows the machine to process a broad range of materials, including steel and light metals, without the need for time-consuming retooling. Operators can choose between cutting and welding operations in 2D or 3D, and TRUMPF has given this new model a major productivity boost by reducing non-productive time, integrating automation features and improving processing quality. Users also benefit from consistently high quality parts and excellent reproducibility as well as reduced energy and material costs. The new machine is particularly suitable for industries that need to produce many different product variants in a short space of time, for instance job shops, the automotive industry and aviation.

### **Productivity increased, non-productive time significantly reduced**

The TruLaser Cell 7040 is an inherently powerful and flexible machine, offering the largest range of beam sources and highest laser power on the market, and capable of executing multiple machining processes. To make the machine even more efficient, TRUMPF has worked on cutting down non-productive time. This encompasses any activity before or after processing that does not add value to the process – retooling or loading and unloading, for instance. “When companies are making batches of products that change on a frequent basis, the cost of this non-productive time really adds up,” says TRUMPF product manager Thomas Kirchhoff.



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The TruLaser 7040 saves time thanks to its smart optic set-up station, a swivel-mounted apparatus mounted on the machine frame that automatically orientates the optics within the work area. This improves accuracy, resulting in consistently reproducible, high quality cutting results.

It also enables the operator to start producing batches much faster than before, since hardly any time needs to be spent on the set-up. As a further improvement, the TRUMPF engineers have also included optimized cutting parameters for both beam sources in the machine control system. Thanks to these integrated laser technology tables, operators need only select the material and thickness and the machine will automatically choose the right cutting parameters for settings such as power and gas pressure. That eliminates the need to hunt for the best parameters manually and enables operators to start the process quicker. What's more, it increases machining quality and decreases scrap rates by locking in the optimal parameters right from the very first part.

In a bid to further boost productivity, TRUMPF experts have also drawn on the latest generation of TRUMPF lasers. The range of compatible products includes highly efficient TruDisk lasers up to 5kW as well as tried-and-tested CO<sub>2</sub> TruFlow lasers offering as much as 6kW of laser power. During laser cutting, X-Blast technology ensures increased process reliability by enabling the nozzle to machine the sheet metal at twice the distance. That results in fewer collisions, guaranteeing higher quality, burr-free cutting results even in the case of highly complex components.

### **Improved cutting and weld quality with the very latest TRUMPF technology**

The TRUMPF experts have also set out to significantly boost part quality by integrating BrightLine Weld, a technology developed by TRUMPF for low-spatter laser welding. "With this technology, not only do we get a better quality of weld seam, we can also triple welding speed and achieve a major boost in overall productivity," says Kirchhoff. The developers have also incorporated doors made of glass fiber composites into the new design. These are almost half the weight of

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their steel equivalent, shaving the time needed to open and close the doors by three seconds. That can help achieve time savings of up to 35 percent per processing cycle.

### **New ergonomic operating concept**

Last but not least, TRUMPF has taken operators' needs very much into account in this new version of the TruLaser Cell 7040. Programming and teach-in are easier because operators can now see inside the machine without having to make unnatural movements. This improvement stems from a moveable, swivel-mounted control panel that operators can quickly adjust to their height and stature. The white paint finish and balanced lighting give operators a clear view of the work area at all times.



### **TruLaser Cell 7040**

TRUMPF's TruLaser Cell 7040 will be making its world debut at EuroBlech 2018.



### **Processing in 2D and 3D**

Two different beam sources allow the machine to process a broad range of materials, including steel and light metals, without the need for time-consuming retooling.



### **Biggest range of beam sources**

The TruLaser Cell 7040 is one of the fastest and most flexible laser systems of the world.

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### About TRUMPF

The high-technology company TRUMPF offers production solutions in the machine tool and laser sectors. It is driving digital connectivity in manufacturing industry through consulting, platform and software offers. TRUMPF is the world technological and market leader for machine tools used in flexible sheet metal processing, and also for industrial lasers.

In 2017/18 the company – which has about 13,500 employees – achieved sales of 3.6 billion euros (preliminary figures). With over 70 subsidiaries, it is represented in nearly all the countries of Europe, North and South America, and Asia. It has production facilities in Germany, France, Great Britain, Italy, Austria, Switzerland, Poland, the Czech Republic, the USA, Mexico, China and Japan.

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## **Press Release**

### **New offline programming for laser welding cells**

**Create welding programs offline on a computer with TruTops Weld //  
Machine continues producing parts during offline programming //  
TeachLine detects part position**

*Ditzingen, September 11, 2018* – The new TruTops Weld programming software allows users to create welding programs offline on a computer while the laser welding cell is producing parts. They then transfer the program to the machine where the TeachLine sensor system automatically adjusts it to match the actual position of the part. This minimizes the need for teach-in processes.

#### **Twofold benefit for users**

TRUMPF's new TruTops Weld programming software has been specifically designed to work with the TruLaser Weld 5000 laser welding cell. Offering an intuitive, user-friendly interface, the software incorporates a broad range of TRUMPF's accumulated technological expertise, including welding parameters and information on processing angles. It also integrates all the TruLaser Weld functions such as the rotary module and the TeachLine sensor system. TruTops Weld is a valuable addition to any facility. It increases machine availability by allowing users to create welding programs on a computer rather than on the laser welding cell. That means the machine can keep producing parts during programming, and it divides up the workload more efficiently between the machine operator and the programmer. TruTops Weld also makes it much faster to create programs. With teach-in programming, machine operators have to individually program every point the robot will travel to during processing. TruTops Weld calculates these points on the robot's path automatically. It also offers a number of other software features that make life easier for machine operators.

#### **A welding program in four steps**

The new programming process consists of four steps. The first step focuses on the part: the programmer defines the points to be welded by clicking the corresponding part edges. The welding parameters can then be selected from a



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comprehensive database. Alternatively, programmers can choose to use parameters they have calculated themselves. Right at this early stage, the software automatically calculates the paths of motion and creates a preliminary program. TruTops Weld then finalizes the program in what is known as “system mode”. This mode enables the user to virtually position the part on the positioner inside the laser welding cell. TruTops Weld detects any potential collisions and helps the user to find a position and path of motion that the robot can follow without meeting any obstructions. This simulation is particularly helpful for complex parts. Finally, the programmer transfers the program to the welding cell. The TeachLine sensor system then checks the exact position of the part and compares this information to the simulation. If TeachLine identifies any discrepancies, it automatically adjusts the program accordingly. Users still have the option of carrying out a conventional teach-in process.

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### **TruTops Weld**

Welding programs are created on a computer while the machine gets on with production work.



### **TruTops Weld screenshot**

The new TruTops Weld offline programming software from TRUMPF offers an intuitive, user-friendly interface.



### **Fast programming**

Instead of having to teach the robot each individual point of travel, TruTops Weld calculates the robot's movements automatically.



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### TruLaser Weld 5000

TruTops Weld has been optimized for programming the TruLaser Weld 5000. The software offers all the functions that are relevant to this machine without including any unnecessary features.



### TRUMPF's technological expertise

TruTops Weld comes with a wealth of TRUMPF's technological expertise in the form of welding parameters and processing angles for use with FusionLine, heat conduction welding, and deep penetration welding.



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### High-quality edges without post-processing

#### **Ergonomic TRUMPF edge trimmer produces chamfer lengths of up to 15 millimeters**

*Ditzingen/Hannover, October 23, 2018* – The TruTool TKA 1500 is a new edge trimmer developed by TRUMPF that can produce polished metal chamfers with lengths of up to 15 millimeters on both straight edges and inner or outer contours, as well as radii of up to four millimeters. Designed to offer zero emissions and no flying sparks, it offers outstandingly high productivity combined with simple, ergonomic operation.

Metalworkers, steelworkers, vehicle makers, ship builders and railway constructors all use TRUMPF edge trimmers to produce clean, oxide-free edges. They are the tool of choice for chamfering metal sheets, for instance to prepare them for powder coating, painting or the application of weld seams. They are also used to round off sharp edges and remove burrs, reducing the risk of injury to workers. Angles of 30, 45 and 60 degrees can be produced in mild steel, stainless steel and aluminum depending on the requirements in each case.

The new edge trimmer from TRUMPF can produce chamfer lengths of up to 11 millimeters in a single pass, without requiring post-processing. It also offers an efficient method of creating longer chamfers of up to 15 millimeters, as Stefan Anshelm, international sales manager for power tools at TRUMPF, explains: “You need two passes with our TruTool TKA 1500 to get that extra length, but once again it doesn't require any post-processing. Many other commercially available electric tools in this category have to make at least three passes along the edge, and that takes time. Compared to other processing technologies, we can get things done up to five times faster.”

Setting the desired chamfer length is also a quick and painless process. The developers have included a 270 degree stepless dial ring for this purpose,



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enabling users to choose precisely the setting they need without requiring additional tools.

Ergonomically designed handles are a particularly impressive feature of this new model. The front guide handle is set particularly deep, just nine centimeters from the working area. That puts your guide hand close to the surface you are machining, which makes the whole operating process smoother and more stable. Also designed with ergonomics in mind, the motor handle includes special, carefully positioned insulating elements that cut down the amount of vibration transferred to the operator's hand. That means you can use the tool for longer without getting tired – maintaining high-quality chamfers from start to finish.

TRUMPF has equipped its TruTool TKA 1500 with multi-edge cutters that guarantee a long service life – perfect for mild steel, aluminum and stainless steel. The operator can choose between different multi-edge cutters depending on whether they wish to apply a straight edge or a radius, opting for either three or four cutting edges.

Weighing just ten kilograms, the TruTool TKA 1500 comes with a powerful 2600-watt motor. The 'soft start' system ensures that the tool always starts up smoothly and slowly, not with a jolt. An overload protection feature prevents the motor from overheating even in continuous use, while an integrated safety feature prevents the tool from starting up accidentally following an unexpected power cut.



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The new TruTool TKA 1500 edge trimmer from TRUMPF produces polished metal chamfers up to 15 millimeters long.  
Images: TRUMPF



The new edge trimmer from TRUMPF can handle both outer and inner contours with equal ease.



Operators can use the dTKA 1500 to apply radii of between two and four millimeters.



TRUMPF has equipped the TKA 1500 with a 270 degree stepless dial ring, making it quick and easy to set the desired chamfer length.



Thanks to the ergonomically designed guide and motor handles, operators can use the new edge trimmer for long periods without getting tired, maintaining high-quality chamfers from start to finish.





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### **Power tools from TRUMPF**

Power tools for sheet metal processing have long been part of the TRUMPF tradition. In 1934, the company introduced the first motor-operated hand shears for cutting sheet metal, thus laying the foundation for the comprehensive sheet metal expertise of the entire corporate group. As with stationary machines for punching and molding, for laser processing and bending, the sheet metal specialists have also set standards as leaders in innovation for professional power tools.

The TRUMPF Power Tools business is headquartered in Grüşch, Switzerland. Its current product range covers power tools for cutting and joining sheet metal as well as forming weld edges. TRUMPF's portable, easy-to-use tools are used around the world both by customers in industry and by craftspeople.

For more information about TRUMPF go to [www.trumpf.com](http://www.trumpf.com)

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