FABTECH 2026: Accelerating Part Production with TRUMPF's AI-Powered Laser Welding Cell

Thanks to artificial intelligence (AI), programming the new TruLaser Weld 3000 is significantly faster and easier // Compact welding optics reach even hard-to-access areas within the component // Ideal for companies with a wide variety of part variants and limited space

Farmington, Conn., September 2, 2026 – A shortage of skilled workers, frequently changing components, and limited production space pose challenges for many manufacturing companies. At FABTECH 2026, TRUMPF is introducing the new TruLaser Weld 3000, a compact robotic laser welding cell that can be programmed significantly faster thanks to AI while requiring very little space.

"The TruLaser Weld 3000 provides competitive advantages, particularly for companies that manufacture high-quality sheet metal assemblies and housings in small batches with a wide variety of variants," says TRUMPF Inc. Head of Product Management for Welding Robin Stuhler. "The new laser welder enables stable processes, short cycle times, and a high degree of flexibility in production."

From CAD model to finished program in half the time

The new TruLaser Weld 3000 can be programmed directly at the machine in the conventional way or offline using the TruTops Weld software from another location such as an office. This ability to easily edit the program is particularly useful when working with frequently changing components. Employees can create new programs on the computer while the machine continues production.

In addition, welding programs based on CAD data are created significantly faster than with conventional programming. The "TeachLine Touch" function is used to correct minor deviations. Weld points can be repositioned simply by tapping on the machine screen. This reduces programming and setup time by up to 50 percent. Corrections are even easier with the "TeachLine AI" feature extension. An AI-based process detects deviations in the weld points and corrects the robot path according to the actual component configuration. This allows the system to be set up more quickly for new components. Another advantage of the new technology is that even less experienced employees can operate the laser welding cell.

Smaller welding optics expand the range of parts that can be processed

Newly developed welding optics - approximately 40 percent smaller - expand the range of applications for the TruLaser Weld 3000. Thanks to its compact design, the welding robot can reach even hard-to-access areas within a component, such as the interiors of deep housings, crates or boxes. This enables users to automate the production of a wider range of parts and reduce manual rework.

TRUMPF relies on proven laser welding technologies to ensure process stability and weld quality. These technologies include BrightLine Scan, which combines a high-frequency scanner and motorized focus adjustment. In fillet welds or overlap seams, BrightLine Scan enables users to increase the connecting area by increasing the weld seam width and as a result, also increase the strength. The BrightLine Weld function distributes the laser power between an inner and outer core in the laser light cable. This reduces spatter - particularly during deep welding - and ensures high-quality results. For larger gaps of up to approximately 0.06 inches or materials that require filler metal, FusionLine combines the laser with filler wire for targeted material deposition.

Small footprint, great flexibility

The TruLaser Weld 3000’s protective enclosure has a footprint of 11.98 x 11.98 feet, making it about 24 percent smaller than the smallest version of the TruLaser Weld 5000. This means that the laser welding cell is ideal for confined production environments. Despite its compact design, the machine can process pallet-sized components thanks to a KUKA Iontec robot with a 82.68-inch reach. To align the components, the user can choose a conventional welding table, a tilt-rotate positioner, or a compact rotary changer for loading and unloading parallel to production.

With a laser power of three or four kilowatts, the TruLaser Weld 3000 welds stainless steel and structural steel up to 0.31 inches of material thickness, as well as aluminum up to 0.24 inches. Typical applications include equipment and plant engineering, sheet metal components for data centers, medical technology, and the kitchen and food industries.



Smaller welding head
A newly developed welding optic—approximately 40 percent smaller expands the TruLaser Weld 3000's range of applications. This makes it particularly well-suited for manufacturing deep components such as control cabinets. (Source: TRUMPF)



TruLaser Weld 3000
At FABTECH 2026, TRUMPF is introducing the new TruLaser Weld 3000, a compact robotic laser welding cell that can be programmed significantly faster thanks to AI. (Source: TRUMPF)



TeachLine Touch
The TeachLine Touch software allows the welding cell to be set up and programmed up to 50 percent faster. (Source: TRUMPF)

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About TRUMPF

TRUMPF is a high-tech company offering manufacturing solutions in the fields of machine tools, laser technology and semiconductor industry. It drives digital connectivity in manufacturing through consulting, platform products and software. TRUMPF is one of the technology and market leaders in highly versatile machine tools for sheet metal processing, in the field of industrial lasers and power electronics. In 2025/26, TRUMPF employed 16,960 people and generated sales of 5.01 billion USD. With about 90 companies, the TRUMPF Group is represented in nearly every European country as well as in North America, South America and Asia. The company has production facilities in Germany, France, the United Kingdom, Italy, Austria, Switzerland, Poland, the Czech Republic, the United States, Mexico and China. Find out more about TRUMPF at www.trumpf.com.

Press contact:

Catherine Flynn, APR
Public Relations & Communications Specialist
860 255-6518
catherine.flynn@trumpf.com
TRUMPF Inc. 3 Leibinger Way, Farmington, CT 06032