

# Press Release

TRUMPF



TRUMPF Group  
Business Field Machine Tools  
Press and Public Relations

TRUMPF at Tube, Düsseldorf , March 31 – April 4, 2008, Hall 08a, Exhibit D30

TRUMPF GmbH + Co. KG  
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## Modern Tube Processing

Lasers as an alternative to sawing and milling

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Tubes and profiles make up a large segment of metal processing – they are so common that they are now taken for granted. Whether they are used for support, framing, weight-bearing or as pipelines, tubes and profiles can meet any demand. They are always an affordable solution in terms of function and durability given the variety of their shapes and materials.

For versatile processing, laser beams are a good choice for tubes and profiles. The coherent, monochromatic light can cut almost any contour regardless of complexity. Compared to chip cutting methods, the laser's strength lies in its ability to process a wide variety and thickness of materials with almost no distortion. The laser cuts the material without touching it, contours are smooth, and the parts are almost always ready for assembly without needing additional work.

Tube structures that only a laser can produce simplify and reduce additional production steps. The cost of welding is significantly reduced by inflection and plug-in connections. Positioning aids with taps and perforations make component assembly easier, while coding aids prevent assembly errors. Compared to traditional methods like sawing, scribing, drilling and milling, the manufacturing costs are significantly lower and flexibility is higher.

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In many cases it is necessary to automate tube and profile processing. That is why TRUMPF's laser tube processing system, TruLaser Tube, comes equipped with the necessary automation components. All assemblies are seamlessly coordinated: from the TruFlow laser unit and the beam guidance system, rotating units and system control, to the modules for handling the tubes and profiles.

### Versatility with the TruLaser Tube 5000

The TruLaser Tube 5000 makes it possible to trim tubes and profiles in a clamp and to create cavities and contours with the laser. Individual tubes can be aligned on the assembly line or placed in the jaw chuck by hand. The jaw chucks have self-centering parallel clamping units, and together with the rotation and feed station, they ensure that the workpieces are precisely delivered to the laser station.

Cut parts are ejected through a brush table that is gentle on materials and serves as an easily accessible finished part buffer. A chute transports small parts no longer than 300 mm from the work area while larger parts can easily be taken directly from the ejection station and put into containers.

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### Stainless steel for the “little sister”

Besides the TruLaser Tube 5000, there is the “little sister,” the TruLaser Tube 3000, which is typically used to cut high-quality round tubes, particularly those made of stainless steel. The burr-free cutting is a significant advantage over chip cutting methods, and the cut edges are oxide-free and dry because cooling lubricant is unnecessary. The TruLaser Tube achieves this high cutting quality even with thin-walled tubes. The laser’s non-contact, gentle operation is what makes it possible.

### Modern machine program

The high tech programming software TruTops Tube was specifically developed for the TruLaser Tube 5000 tube processing center. It includes standard settings for all kinds of cutting patterns, laser charts and additional rules.

The tube geometry is drawn during the first step. In the second step, the software defines the processing mode and generates NC data. TruTops Tube analyzes the cutting geometries and calculates the contours, and the program automatically masters such complex tasks as corner processing for tubes with a rectangular cross-section. The program also checks for any possible collisions. TruTops Tube needs only a PC for a hardware platform. The software can be easily integrated into the in-house networks and linked to the online connection of the TruLaser Tube 5000.

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Tube connections are a rising trend because the tube enables completely new structures that help reduce both cost and weight. In the automotive industry, for example, solid components are more often being replaced by tubes – in head rests, cross-beams, or even crankshafts in the engine block. Nevertheless, many engineers know far too little about the new possibilities of versatile laser-based tube processing. TRUMPF offers seminars for laser-optimized design that teach the fundamentals of effectively implementing laser, tube and profile processing – all “at full bore.”



TRUMPF is a high-tech company that specializes in production and medical technology. For further information about the company, please visit [www.trumpf.com](http://www.trumpf.com)