Solid-state laser meets XXL tube processing

The TruLaser Tube 7000 fiber processes tubes with diameters of up to 254 millimeters. Its solid-state laser and RapidCut functionality allow it to cut at high speeds.

Ditzingen/Düsseldorf, April 16, 2018 – Delicate tubes for office furniture. Large profiles for agricultural machines. The new TruLaser Tube 7000 fiber processes both, and does so extremely quickly. This tube-cutting machine combines the high speeds of a solid-state laser with a broad range of processing capabilities. It can cut tubes and profiles with diameters of up to 254 millimeters and materials as thick as 10 millimeters. In addition, this machine executes high-quality bevel cuts up to 45 degrees. High-tech manufacturer TRUMPF will exhibit the TruLaser Tube 7000 fiber in April at its in-house trade fair in Ditzingen and at the Tube trade show in Düsseldorf.

High cutting speed
At the heart of the machine is a four-kilowatt TruDisk 4001, a high-power disk laser manufactured by TRUMPF itself. The beam source is robust and reaches the high cutting speeds typical of solid-state lasers. Moreover, the RapidCut function further increases productivity. By superimposing the movements of the tube axis and cutting head, TRUMPF design engineers have achieved a fourfold increase in machine dynamics. As a result, the high feed rates of the solid-state laser are noticeable even in small contours. Meanwhile, PierceLine speeds up the piercing process. This option is just one function that TRUMPF has transferred from sheet to tube processing. The developers have also drawn on expertise from laser flatbeds for the cutting data. All in all, the TruLaser Tube 7000 fiber processes tubes and profiles faster than its CO₂ laser cousins. “Taking the typical mix of parts worked by our customers, we increase productivity by 15 percent – thanks to solid-state laser technology alone. Depending on the part geometry, RapidCut can substantially increase this percentage even further,” says Karl Schmid, Head of Product Management for Laser Tube Cutting.
Cleverly designed beam protection
Laser safety is always important – particularly for machines with solid-state lasers. The beam guard for TruLaser Tube 7000 fiber is designed to give the operator unrestricted access to the loading and unloading side of the machine. “Our cleverly designed and technically sophisticated beam-protection solution provides Class 1 laser safety,” says Schmid. “At the same time, the operator can easily access the loading and unloading side as well as the work area. He can also use a crane to freely load large tubes individually.”

Comprehensive automation
With LoadMaster Tube, the TruLaser Tube 7000 fiber system is capable of fully automated operation. The loading unit’s tube magazine holds up to four metric tons of raw materials. LoadMaster Tube performs all the necessary settings automatically, which reduces setup times. Before loading, software compares the geometry of the tubes and profiles with the data stored in the control system, thereby ensuring that the right material has been loaded. A gripper system transfers the tubes from the magazine to the machine. Collet chucks position and hold the tube while handling the material gently. Sensors monitor the clamping system and ensure that it adjusts automatically to each tube geometry and profile geometry. For small-scale series and special profiles, the operator can use the swivel-mounted conveyor system, which also loads the machine automatically. In addition, individual tubes can be loaded manually at any time. While finished parts are being unloaded, sensors test whether the machine has discharged them correctly. According to requirements, conveyor tables transport the parts directly in wire mesh boxes or in containers – sorted, if necessary. In automatic mode, the operator can take the finished parts off the conveyor tables at an ergonomic working height.

Well prepared for the connected future
TRUMPF provides flexible automation solutions so that customers can cost-effectively manufacture shrinking batch sizes. The TruLaser Tube 7000 fiber also has the Central Link interface, which can be used to gather and evaluate machine data. This allows customers to optimize production plans for machines and efficiently load even small batch sizes. In order to increase utilization of lasers in
the initial phase, users can operate equipment in a laser network, which gives them a more cost-effective way to adopt new technology. In a laser network, the tube cutting system uses the beam source of a machine that is already there. As companies therefore do not have to invest in a laser in the first instance, this reduces the initial investment.

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TruLaser Tube 7000 fiber
In the TruLaser Tube 7000 fiber tube cutting machine, the high speeds of a solid-state laser are combined with a wide range of processing capabilities.

RapidCut
The superimposed movement of the tube axis and of the cutting head increases the machine's dynamics more than fourfold.

Beam guard
The machine’s clever beam-protection design makes it possible to load tubes using a crane.

Bevel cuts
The TruLaser Tube 7000 fiber executes high-quality bevel cuts up to 45 degrees.

Adaptive clamping system
The TruLaser Tube 7000 fiber’s adaptive clamping system adjusts automatically to each tube or profile geometry.
The product described in this press release will be available as of April 2018 in Europe, the U.S., Canada, Mexico and South Korea.

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 2016/17, the TRUMPF Group – which has about 12,000 employees – achieved sales of 3.11 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.

For more information about TRUMPF go to www.trumpf.com

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Visit us at the Tube trade show in Düsseldorf from April 16 to 20, 2018. You can find us at Booth A08/A09/E22 in Hall 6.