



Press Release

The Dream Machine

A revolution in 2D laser cutting: at the Euroblech 2016 TRUMPF presents a brand new, freshly developed, fully automated and compact machine concept. The TruLaser Center 7030 promises unmatched efficiency and process reliability in the manufacture of laser-cut parts.

Hanover / Ditzingen, October 25, 2016 – A high-precision, fully automatic machine that takes care of production largely autonomously – that's the new TruLaser Center 7030. It offers extremely efficient, automated and synchronous processes, from its programming all the way to sorted and stacked workpieces. The machine works with a hybrid drive system to meet the ambitious development goal of eliminating all obstacles to smooth processing in laser cutting today. These include shutdowns due to collisions involving parts tilting over, refinishing work on microjoints, spatter on the undersides of components, and excessive programming work.

The TruLaser Center 7030 moves the sheet and the cutting head simultaneously, and the slats have now been replaced by brush tables. The machine can eject small parts safely and sort them into containers; it disposes of residue and slag; it sorts and stacks larger parts during machining; it can load itself with blank sheets on a very tight space; it stacks scrap skeletons; and the programming is also largely automatic. Numerous innovative and patented solutions contribute to the coherence of the entire concept. Heinz-Jürgen Prokop, Head of Development and Procurement in the TRUMPF Machine Tools division, explains: "We were gradually having to face more and more calls for help from our customers, asking us for solutions that would create a secure overall process. It turned out that this wasn't possible with the machine concepts we already had, so a complete re-think was required."

High dynamics through additional axis of the optic

The TruLaser Center 7030 works with a TruDisk solid-state laser, with six kilowatts of laser power. In terms of cutting productivity, it is easily on a par with today's high-end machines with flying optics, even though the sheet, with its



Press Release

relatively high mass, is moved precisely over the brush table in the Y direction. This was made possible by two solutions. Firstly, the sheet – maximum large format 3000 mm by 1500 mm – is moved across the short side. And secondly, the cutting optic, which moves mainly in the X direction, has an additional axis in the Y direction with travel of ± 55 mm. This means that with smaller contours, only small masses need to be accelerated, enabling high dynamics.

Secure part support thanks to the mobile “SmartGate”

On a hybrid machine, the support table for the sheet has to be divided beneath the path taken by the cutting head. This creates a gap through which the laser beam can escape downwards, but through which slag, slugs and cutting gas are also extracted. To prevent any sheet contours from getting caught there and to enable a far more efficient exhaust system, the TRUMPF developers invented the SmartGate: two slides which move synchronously with the cutting head. They can also change their distance from each other, to create different-sized gaps. This results in two major benefits: The sheet is securely supported during the cutting process, and small parts measuring up to 160 mm by 160 mm can be simultaneously ejected downward.

To ensure maximum process reliability, an ejector cylinder has been attached to the cutting head that presses the sheet metal parts outward and downward. The programming system TruTops Boost calculates the ideal pressing-out point automatically to suit the respective part contour. Since the slides below form a counter-bearing parallel to the sheet, the workpieces cannot tilt over. Scrap and slag fall directly into the scrap cart, or are transported out of the machine on a conveyor belt. Good parts are intercepted by a retractable sorting flap, and the SortMaster Box Linear distributes them into a maximum of eight containers.

Process-safe removal of parts from the scrap skeleton

For the automatic removal of the remaining parts from the scrap skeleton, the TRUMPF experts developed SmartLift and SortMaster Speed – and this represents an intelligent, completely new and, above all, process-safe solution. With one stroke on the SmartLift, the cut parts are lifted off the scrap skeleton from below via a total of 180 freely positionable pins. Each individual pin can lift a



Press Release

weight of up to ten kilograms, making the process far more powerful than today's suction solutions. At the same time, the SortMaster Speed pushes down from above with its suction plates, ensuring precise linear guidance during lifting. As a result, any risk of parts tilting over into the kerf can be safely ruled out. The two telescopic arms on the SortMaster Speed are equipped with three suction plates each, and can sort and stack parts onto a maximum of eight Euro pallets across a total area of 1.6 by 4.8 meters.

Only minimal cutting interruptions

TruTops Boost also calculates the optimal position of the pins and suction plates automatically – enabling removal of very large parts as well as smaller ones no larger than a credit card. Even highly complex or very filigree geometries – considered impossible to remove mechanically until now – are lifted safely from the sheet, without the need for any additional programming. The strategies for removing and cutting the parts are coordinated in such a way that the machine continues to cut even while the parts are being transported away.

Today, productivity per unit area is an important criterion, and the developers of the TruLaser Center 7030 were instructed to save space wherever they could. They did so successfully, with a solution that temporarily includes the transport route through the production hall. The machine has three electrically powered drawer-type carts, which can be extended as far as the aisle. Pallets with stacks of blank sheets up to 130 mm in height, and weighing a maximum of 3 tons, can be placed onto the middle cart from the aisle by, say, forklift trucks. Similarly, there is a cart for scrap skeleton stacks up to 250 mm in height, and also a cart that transports pallets with cut parts from the machine. Separating, lifting and insertion of the blank sheets into the clamping unit takes place automatically, parallel to unloading of the scrap skeleton.

Programming in a single step

The numerous options, and the synchronized interplay of the individual processes, make near-fully automatic programming indispensable. In fact, the TruLaser Center 7030 operates almost as simply as a printer in an office. If you send it a document with corresponding job data – geometries, amounts, material



Press Release

types, thicknesses – it provides you with the finished parts, sorted and stacked to suit the order. This includes nesting of the parts on the sheet, assignment of cutting technologies, removal strategies, placement of cut parts onto the storage shelves, and ejection into the container.

Here, the SmartGate, ejector cylinder, pins, sorting flap and SortMaster Speed do not have to be individually programmed. Simulations running in the background take into account the component geometry and material characteristics, ensuring an optimal calculation result. They are supported by the clearly laid-out order management of the programming software TruTops Boost. As a result, programming takes place in one single step and largely automatically, but can be adjusted interactively at any time.

Consistently oriented to the future

The TruLaser Center 7030 is capable of working autonomously over long periods, without any operator intervention, and is also equipped with all the necessary interfaces and functions. This makes it an ideal machine for Industry 4.0, and many TruConnect solutions can be used directly. The Performance Cockpit gives an overview of relevant production data. The Dot Matrix Code supports connection to various processing technologies, and creates transparency during part tracking. Moreover, the MobileControl app reduces the already low attendance of the operator to a minimum via remote control.

With the TruLaser Center 7030, TRUMPF is addressing sheet metal fabricators from all sectors who cut sheets from one to twelve millimeters thick at high capacity. And this fully-automatic laser cutting machine reveals its potential from the very first shift onward. With two-shift operation, processing costs are up to 30 percent lower compared to standard automated machines with solid-state lasers. As Heinz-Jürgen Prokop summarizes: “TRUMPF’s mission has always been to define the technological state of the art in its core areas, and to give its customers the competitive edge. The TruLaser Center 7030 is further proof of this.”



Press Release

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SmartGate.jpg

The SmartGate: Two slides move synchronously with the cutting head, and the distance between them changes automatically. As a result, parts rest securely on top, and smaller parts can be directly ejected.



Cutting_Head.jpg

Increased process safety due to a pressing-out cylinder: The TruTops Boost programming software calculates the ideal pressing-out point automatically.



SmartLift_Pins.jpg

Safe removal: With the SmartLift, the freely positionable pins push the cut parts upward from the sheet skeleton, while the SortMaster Speed, with its suction plates, presses down on them from above.



Cutting_Action.jpg

With its cutting productivity, the TruLaser Center 7030 is easily on a par with any classic high-end machine using flying optics.



TruLaserCenter7030.jpg

The TruLaser Center 7030 is capable of working autonomously over long periods, without the need for any operator intervention.



Material_Flow.jpg

The synchronous interaction of the individual processes is the result of near-fully-automatic programming via push-button.



Press Release



About TRUMPF

The high-technology company TRUMPF offers production solutions in the machine tool, laser and electronics sectors. We are 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 2015/16 the company – which has more than 11,000 employees – achieved sales of 2.81 billion euros. With over 70 subsidiaries, the TRUMPF Group 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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