

LASER CUTTING FROM COIL



ISMR SAYS:

"ARKU Maschinenbau and its partner, TRUMPF, welcomed around 100 guests to its TecDay in Baden-Baden, Germany."

The new coil laser systems from ARKU and TRUMPF (image: TRUMPF Group).

The fischer group showcased live demonstrations of laser cutting from coil as part of TRUMPF's TecDay at ARKU in Baden-Baden, Germany.

As word spreads amongst sheet metal experts about the advantages of laser cutting directly from coil, ARKU Maschinenbau and its partner TRUMPF welcomed around 100 guests (including guests from other European countries) to TRUMPF's TecDay at ARKU in Baden-Baden, Germany.

The focus of the event on **13 March 2024** at ARKU's facility was on coil-fed laser blanking lines; TRUMPF and ARKU have jointly developed this type of system. This fully automated system (featuring coil, laser and a centralised control unit) is ready for fully automated production.

ARKU's product range comprises precision levellers; deburring and edge-rounding machines for parts; automated parts handling via robots; in-line levellers; cut-to-length lines; press feeding lines and coil entry lines for roll-formers. It also provides engineering expertise to many manufacturing industries including automotive; railway equipment; shipbuilding; construction and furniture, as well as laser job shops and others.

Coil-fed laser blanking line

The highlight of the event was a trip to Achern in Germany to visit the fischer group. Visitors were able to see a coil laser system live in operation and ask questions on-site. The automotive supplier uses the system for its new aluminium hot-formed parts business segment. It mainly produces structural components such as sills, A and B pillars or door rings made from 6000 series aluminium alloys.

"The coil-fed laser blanking line is at the very beginning of our process chain. We use it to cut parts from the sheet metal before they are



ARKU's managing director, Dr. Jochen Kappler, welcomed visitors to TecDay in Baden-Baden, Germany. Image: ARKU Maschinenbau GmbH.

formed,” explained Marc Schweizer, Business Development Manager, fischer group. The new system offers several advantages for production. For example, changes to blank cutting with the coil laser system only require a small adjustment of the software.

“If we were stamping, such a change would be a much larger project,” outlined Schweizer. In addition, waste is minimal because the parts can be better nested on the “virtually endless” coil. With stamping blanks, on the other hand, there is always a certain margin, and that is wasted material. “Ultimately, the coil-fed laser blanking line offers us a high degree of flexibility,” confirmed Schweizer.

After being welcomed by ARKU managing director, Dr. Jochen Kappler, visitors to the TecDay were able to find out more about the technology during the presentations. Johannes Decker, Sales Manager, Coil Lines, ARKU, explained why levelling before laser cutting is so important.

“Every coil has certain defects that you want to remove,” he said. In the simplest case, it is the coil curvature but, depending upon the supplier and quality, there are also other defects. The coil curvature and other bends in the sheet metal indicate residual stresses that impair further downstream processes.

Preparing sheet metal for processing

To prepare sheet metal material for further processing, sheet metal workers should level it in the best possible way. In the ARKU leveller, rollers plastically deform the sheet metal with the bend becoming smaller and smaller towards the outlet.

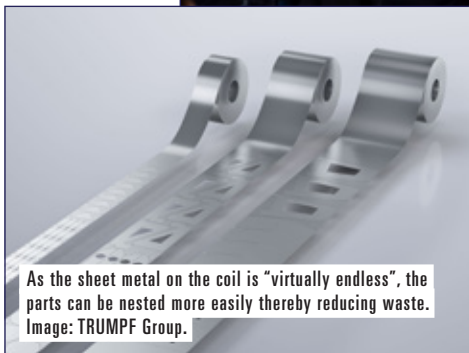
“The size of the levelling rollers ultimately determines which material can be levelled on the machine,” explained Decker.



In ARKU's levelling and deburring centre, visitors watched levelling and deburring machines in action. Image: ARKU Maschinenbau GmbH.



The highlight of the event was a trip to Achern to visit the fischer group and watch the operation of a coil laser system live. Image: fischer group.



As the sheet metal on the coil is “virtually endless”, the parts can be nested more easily thereby reducing waste. Image: TRUMPF Group.

Oliver Müllerschön, Head of Specialised Sales, Laser Blanking, TRUMPF, presented the coil-fed laser blanking line in more detail.

example, no pit is required; the system is built on the existing shop floor level. A bridge serves as a buffer station between the levelling and laser cutting processes. This buffer is needed because laser cutting takes place on a stationary sheet metal part.

“We deliberately avoid cutting sheet metal ‘on the fly’. This allows us to [make] precise cuts,” confirmed Müllerschön. During this time, the levelling process continues at minimum speed, as marks would be created on the sheet if it stopped.

Following its successful TecDay, ARKU Maschinenbau provided further information on coil processing specifically for laser cutting companies at its InfoDays Levelling + Deburring. Visitors were also able to view the company's latest levelling and deburring machines for sheet metal parts and parts handling. The in-house exhibition took place at ARKU's facility in Baden-Baden, Germany, from **22-26 April 2024**. ■

The Ditzingen-based machine manufacturer sells it under the name TruLaser 8000 Coil Edition.

“The benefits for users are higher productivity due to the elimination of pallet/sheet changing times, lower material costs and less material waste,” he emphasised.

“TRUMPF has calculated that the purchase prices for coil material are around 15 per cent lower than for sheet material. In addition, material utilisation is improved by 20 per cent thanks to optimal nesting.”

Ease of installation

The installation of the coil laser system itself does not involve any major modifications. For



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About ARKU

ARKU Maschinenbau GmbH was founded in 1928 as a family-owned company. It is a global specialist in roller leveller and press feeding technology with nearly 60 years of experience. It offers an extensive range of high-capacity and precision levellers, as well as deburring and edge-rounding machines plus parts handling solutions for levelling and deburring machines.

With its headquarters in Baden-Baden, Germany, and ISO-certified facilities in Cincinnati (USA) and Kunshan (China), the company operates in more than 30 countries worldwide. ARKU also offers toll processing services in its three levelling and deburring centre locations.