



With the EdgeBreaker® 6000 deburring machine, Autz + Herrmann closed an important gap in its service spectrum.

A SUITABLE FINISH

Autz + Herrmann is looking to expand beyond its traditional customer industries and close the gaps in its sheet metal process chain. This move includes the latest deburring machine from ARKU.

ISMR SAYS:

"The EdgeBreaker® 6000 can handle a range of requirements with its processing capabilities: deburring, rounding and surface finishing."

Sheet metal unlimited is Autz + Herrmann's new motto. With this, the German manufacturer, founded in 1909, declared its capabilities across all sheet metal processes. There should be no limits, it believes, when searching for new solutions and capabilities.

After engineering and design, the Heidelberg specialist can laser-cut, punch, bend or round its sheet metal parts. Joining methods include laser welding; automated spot welding; manual MIG/MAG and TIG welding; adhesive bonding and press-fitting. Welding robots support the operators on the shop floor, enhancing their efficiency and accuracy. Sheet metal parts can also be painted, laser-inscribed and assembled in-house.

"We undertake our quality awareness and corresponding processes seriously and to such an extent that some customers no longer need to carry out quality inspections on

the functional assemblies that we produce," explained technical managing director, Florian Friedrich.

The company's own jig manufacturing also makes an important contribution to safeguarding final product quality. Logistics round off the current portfolio of services offered by Autz + Herrmann to its customers.

A wide offering

The traditional manufacturer's success is built on three distinct cornerstones.

The first is supplying the printing press industry. The company processes highly polished metal sheet (without scratches) to the exacting 2R quality standard. The second cornerstone concerns housings for machine tools.

"We are particularly strong in the small-to-medium machine tool

segments. This means machines with dimensions of approximately 4m x 2.5m x 3m (13.2ft x 8.2ft x 9.8ft)," explained Florian Friedrich.

The third cornerstone comprises functional assemblies for a wide range of applications. In renewable energy, for example, these include heat exchangers that cool the backs of solar cells or the housings for electricity



Autz + Herrmann in Heidelberg, Germany.



(From left): Daniel Gabriel, Head of Stamping-Laser Processing and Programming; Florian Friedrich, Technical Managing Director; Michael Beck, Managing Director Production, Autz + Herrmann and Stefan Sauter, Sales, ARKU.

storage systems. “We are experiencing significant growth in these areas,” outlined the manufacturer’s technical managing director.

The company primarily processes steel and stainless steel along with aluminium on occasion and, less frequently, brass. The processed metal sheet includes large formats.

“We are very good with sheet thicknesses from 0.5 to 8mm (0.02 to 0.31 inches) but we can also work with material thicknesses of up to 20mm (0.79 inches),” Friedrich added.

Closing gaps in the process chain

However, before unveiling its new “sheet metal unlimited” claim to the market, Autz + Herrmann first had to do its homework.

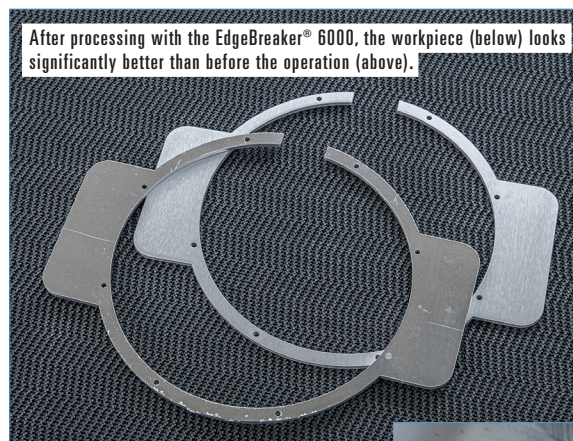
“We have discovered that our broad portfolio reduces procurement complexity for our customers. But this also means that we had to close several gaps in the process chain,” continued Florian Friedrich. In addition to laser inscribing and the foaming of seals, deburring and edge rounding were also identified as specific gaps. In the past, these two procedures had played a relatively minor role.

“We are very familiar with the parts and where they are used; we know what has to be rounded and what doesn’t,” Friedrich explained. By contrast, highly polished sheets cannot be deburred by machines as this would impair the surface. A vibratory finishing machine was available for smaller parts. The cut edges on other workpieces were reworked in the punch-laser combination machine using a special

deburring tool in the form of a ball. However, this procedure also has its limits.

The market, said the manufacturer, was not entirely aware of this process.

“We had to explain things to some new customers because we did not explicitly include edge rounding in our portfolio,” said Friedrich.



After processing with the EdgeBreaker® 6000, the workpiece (below) looks significantly better than before the operation (above).

Since 2021, Autz + Herrmann has also been working with the Laserhub platform, where edge rounding is a standard requirement. This is what prompted the Heidelberg sheet metal specialists to purchase an EdgeBreaker® 6000 from ARKU.

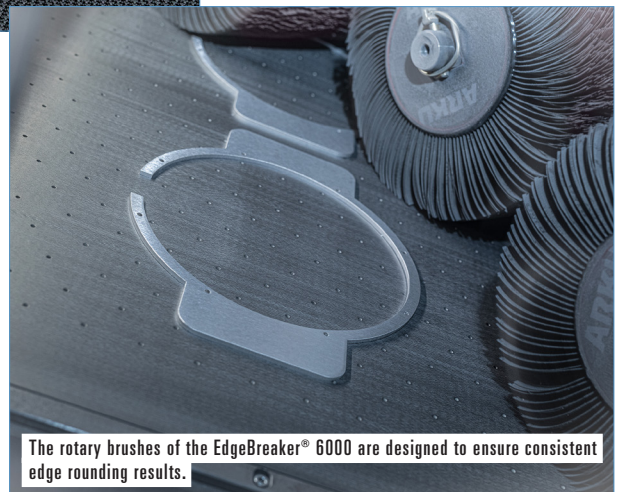
Flexible deburring

ARKU Maschinenbau GmbH, based in Baden-Baden, Germany, developed its EdgeBreaker® 6000 deburring machine

specifically to meet the requirements of laser cutting sheet metal companies. The system is therefore focused on flexibility. The EdgeBreaker® 6000 can handle a range of requirements with its processing capabilities: deburring, rounding and surface finishing.

“The heart of the new deburring machine is the rotary brush system. This can achieve optimum rounding on the edge of the sheet metal: the brushes contact the sheet metal in various directions, delivering an exceptionally consistent finish on the inner and outer contours of the material. A radius of up to 2.0mm (0.078 inches) is possible,” ARKU told ISMR.

In addition to the rotor and its brushes, the system also includes a grinding belt and a finishing belt. The finishing belt is designed to ensure an attractive surface finish which is often required for high-quality, stainless-steel sheets.



The rotary brushes of the EdgeBreaker® 6000 are designed to ensure consistent edge rounding results.

FOCUS ON SURFACE FINISHING

After deburring, there is a clear difference to the unprocessed material, as Stefan Sauter, Sales, ARKU, explained to Autz + Herrmann's technical managing director, Florian Friedrich.



"The deburring machine is especially flexible because of its quick-change system for tools. This reduces set-up times, a key factor when it comes to small batch sizes. Using a vacuum table as a support surface, the EdgeBreaker® 6000 can also hold smaller parts in place during processing," added ARKU.

The reworking process

Daniel Gabriel, Autz + Herrmann's head of punch-laser processing and programming, is highly impressed with the new deburring machine.

"We used to need an employee to handle manual deburring, but now it is incredibly fast," he explained. "Laser cutting makes burr formation more likely as the material thickness increases. Sooner or later, you must rework the material. It is more ergonomic and more cost-effective with the EdgeBreaker® than by hand."

He continued: "We have a new medical technology product made of 5mm-thick aluminium (0.19 inches). This is difficult to laser-cut and relatively delicate. However, the EdgeBreaker® processes it very well and, afterwards, the low-quality side ends up looking better than the good side."

When manufacturing other products, such as flanges for its customer Rotoclear, employees had to closely examine the quality of the laser cutting results.

"However, since we began deburring, we can rely on consistent high-quality results," Gabriel explained. The new deburring machine also proved its value for the manufacturer far earlier in the process.

"During sales discussions, we no longer need to ask customers whether edge-



Carefully processed sheet edges are essential for subsequent processes such as robot welding.

rounding is truly necessary. We simply have this capability in our portfolio, which makes discussing this issue far easier," Friedrich reported.

The specialists at Autz + Herrmann also looked at various other deburring machines. However, several aspects distinguished ARKU's offer, including the vacuum suction principle for securing parts. However, one particular recommendation made all the difference....

"TRUMPF included ARKU as a partner for deburring and levelling at its digitalised factory in Ditzingen. This impressed us because very few companies have succeeded in achieving this," explained Friedrich.

"We also carried out deburring trials together at our Levelling and Deburring Centre with successful results," added Stefan Sauter, Sales, ARKU.

User-friendly operation

However, ease of operation was eventually the deciding factor.

"The user interface and parameterised programming are effortless to understand and utilise. Individual programs can also be saved," said Florian Friedrich.

"The controls are self-explanatory," added Gabriel, saying: "Everyone is familiar with the play and stop buttons. The material thickness and infeed can vary, but they are very easy to configure once you understand how."

The EdgeBreaker® 6000 at Autz + Herrmann is also equipped with the ARKU Wizard. This intelligent software connects the workpiece, tool and machine data. This means that operators just have to enter the part properties and the desired processing result; the wizard handles the rest. With the help of the

software, the machine automatically adjusts its configuration to achieve the expected result with the best possible processing speed. The machine subsequently stores the values based on this experience.

To complete the project, the two companies still had to overcome one particular challenge; the limited space available.

“Autz + Herrmann relocated to its greenfield site in the 1920s. But, today, this has become the centre of the city,” outlined Friedrich. Nevertheless, it managed to install the extraction unit for the deburring machine outside the production hall. This reduces noise emissions and creates a more pleasant working environment inside the production hall.

He also described the cooperation with ARKU as excellent. “Stefan Sauter from ARKU sales and ARKU’s service technician were competent and friendly. Overall, it was a very good collaborative project,” smiled Friedrich.

All in all, he is highly satisfied with the purchase.

“We are a fourth-generation family business. We do not have to demonstrate return on investment figures, such as an ROI, in less than two years. Instead, we can make decisions with a longer-term outlook on the future,” said Friedrich.

In his experience, deburring and edge-rounding are unwillingly included in cost estimations, or often simply ignored, because people are not aware of their importance.

“However, these procedures are a fundamental prerequisite today. We can handle this processing step in a way that the customer wants,” Friedrich concluded. ■



www.arku.com

About ARKU

ARKU Maschinenbau GmbH was founded as a family-run company in 1928 and is a market specialist in levelling technology with more than 50 years of experience. The German company offers a huge selection of precision levellers as well as deburring and rounding machines. In addition, ARKU has its own parts handling business unit to support its straightening and deburring machines.

Its headquarters are in Baden-Baden, Germany, and the company maintains ISO-certified subsidiaries in Kunshan (China) and Cincinnati (USA), serving markets in more than 30 countries. ARKU carries out contract work with its machines at its Levelling and Deburring Centres in these three locations.

The product range covers precision levellers and deburring machines for parts; automated part handling with robots; levellers for coils; cut-to-length lines; press feeding lines and coil preparation lines for profile manufacturers.



The EdgeBreaker® 6000 rapidly deburrs the materials and rounds the edges cleanly.



With intuitive controls, the EdgeBreaker® 6000 is designed to be user-friendly.



From left: Daniel Gabriel, Head of Stamping-Laser Processing and Programming and Florian Friedrich, Technical Managing Director, Autz + Herrmann, as well as Stefan Sauter, Sales, ARKU, inspect the edges of a part after processing on the EdgeBreaker® 6000.