

AN EYE ON EFFICIENCY



L-R: Julian Feldmeier, Department Manager, HALLER Metall, and Markus Heinrich, Technical Operations Manager, HALLER Metall, in front of their ARKU deburring and levelling machines.

HALLER Metall's switch from CO₂ to fibre laser cutting has placed an increasing focus on deburring and levelling operations. By integrating more efficient machinery and processes in these areas, the manufacturer has successfully enhanced its overall product quality while reducing its costs.

ISMR SAYS: "New ARKU deburring and levelling machines, and more efficient processes, have eliminated a great deal of rework at HALLER Metall in Germany."

By | Stéphane Itasse

Author Bio

Stéphane Itasse is a freelance trade journalist in Eibelstadt, Germany. Email: itasse@fachtexte.tech



HALLER Metall GmbH in Pönnig, Germany, is an example of how a metal-working supplier can achieve growth.

Starting as a repair shop for agricultural machinery, it is now a mid-sized company with 250 employees based across two sites. Two machinery systems from surface finishing specialist, ARKU Maschinenbau, have played a key role in this expansion.

HALLER Metall has a key focus on quality. The company, based in Lower Bavaria, has earned an impressive number of certifications and makes use of modern machinery. It now offers far more than metal processing and has expanded its portfolio to include the assembly of complete modules.



In sheet metal and tube processing, the company offers laser cutting of blanks, milling when required and the joining of components into assemblies. An essential part of this capability is a stable of modern machinery that the company consistently keeps updated with the latest technology.

For example, HALLER Metall recently converted from CO₂ to fibre laser cutting systems to better service its customers in commercial vehicle, agricultural machinery, logistics and medical technology sectors.



Petr Müller, a machine operator at HALLER Metall, inspects a component after levelling.

Flatness and edge rounding

“Our customers are placing increasing value on flatness and rounded edges on cut parts,” reported Markus Heinrich, Technical Operations Manager, HALLER Metall. One reason is that coatings adhere better to burr-free, rounded edges.

The switch from CO₂ to fibre lasers has had a significant impact on production planning, as more parts now require deburring. The flatness of individual parts and the reduction of internal stresses are also crucial in minimizing welding distortion in welded assemblies.

“We and our end customers want to work more efficiently,” said Heinrich. This applies to individual parts, welded assemblies and even final assembly, which becomes easier when flatness tolerances are tighter.

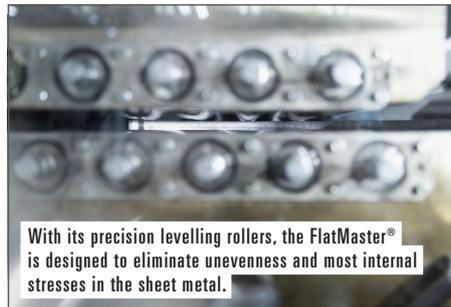
HALLER Metall first contacted surface finishing specialist, ARKU Maschinenbau GmbH, at a trade show.

“We were looking for a new levelling machine,” Heinrich recalled.

Although HALLER Metall already operated a roller leveller, the machine’s performance was not deemed satisfactory. In some cases, sheets and sheet metal parts required several passes through the levelling machine before achieving the required flatness. The maximum dimensions were also limited. Larger parts



Workpieces must be at least 200mm long to run through the EdgeBreaker®.



With its precision levelling rollers, the FlatMaster® is designed to eliminate unevenness and most internal stresses in the sheet metal.

“The switch from CO₂ to fibre lasers has had a significant impact on production planning, as more parts now require deburring. The flatness of individual parts and the reduction of internal stresses are also crucial in minimizing welding distortion in welded assemblies”

also had to be levelled by employees using a hydraulic press, which required significantly more time.

Test runs at ARKU

At the trade show, HALLER Metall and ARKU agreed on the requirements for the new



The linked set-up of the deburring and levelling machines, which now require only two operators.

levelling machine. Heinrich and a colleague then travelled to ARKU’s headquarters in Baden-Baden, Germany, to conduct test runs.

They brought with them the parts that had been causing the most difficulty during levelling.

“When we saw how the parts were perfectly levelled after just one single pass, we were truly impressed,” outlined Markus Heinrich.

“The robustness of our levelling machines and their comparatively low maintenance requirements were also important factors.

HALLER Metall’s decision was therefore quickly made in favour of a FlatMaster® 88,” confirmed ARKU.

“This precision leveller is particularly well suited for levelling laser-cut, punched and flame-cut parts,” explained Christian Nau, Sales Representative, ARKU.



L-R: Markus Heinrich, Technical Operations Manager, HALLER Metall; David Hujber, Shift Supervisor, HALLER Metall; Julian Feldmeier, Department Manager, HALLER Metall and Christian Nau, Sales, ARKU.

FOCUS ON SURFACE FINISHING



The combined work of the EdgeBreaker® and the FlatMaster®: the parts are deburred, edge-rounded and levelled.



The results: flat parts with rounded, burr-free edges.

Efficiency in focus

For several years, two operators at HALLER Metall worked with the ARKU levelling machine—one loading the system and the other unloading and stacking the parts. At the same time, two additional operators were assigned to an older, wet deburring machine.

However, the shortage of skilled workers is being felt everywhere, including at HALLER Metall.

“Finding qualified personnel is a major challenge, and that’s unlikely to change,” Heinrich confirmed.

He and his team therefore looked for ways to make processes more efficient—and once again turned to ARKU. The idea: since all sheet metal parts must be deburred before levelling, why not link the FlatMaster® 88 with an EdgeBreaker® 4000 deburring machine?

As before, the specialists from HALLER Metall insisted on testing their parts at ARKU’s facility. They then purchased an EdgeBreaker® 4000. Unlike the old wet deburring machine, it processes both sides of the part simultaneously.

“This eliminates at least one additional pass and the need to flip the parts in between,” Nau explained. “The machine’s powerful deburring roller removes even stubborn burrs from fibre laser-cut parts. The second unit, equipped with deburring brushes, cleanly rounds the edges.”

Heinrich highlighted another advantage over the old wet deburring machine: “A dry deburring machine is significantly easier to maintain,” he confirmed.

Smart linking reduces staffing requirements

At HALLER Metall, the EdgeBreaker® and the FlatMaster® are directly linked by conveyor belts. As a result, only two operators are now required: the first loads the parts onto the levelling machine and the second removes the parts at the outlet of the deburring machine and stacks them.

Today, all parts (that are large enough) run

through the combined EdgeBreaker® and FlatMaster® line. The double-sided deburring machine requires a minimum part size of 200mm “but that applies to 80 per cent of our parts,” said Heinrich.

The primary material processed is structural steel, although stainless steel and aluminium are also used.

“As with any machine, it must be thoroughly cleaned before changing materials,” Heinrich added.

At HALLER Metall, production is therefore organised so that as many aluminium or stainless-steel parts as possible are processed in batches during a material changeover.

This allows employees to avoid some of the cleaning cycles for the EdgeBreaker®.

The benefits of the ARKU machines are clear.

“We have achieved better quality. That reduces costs because we spend less time on rework,” Heinrich concluded with a smile. ■



<https://haller-metall.de/en>



www.arku.com

About ARKU

ARKU, founded in 1928 as a family-owned company is a global specialist in roller levellers 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. This portfolio is completed with the addition of 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 over 30 countries. ARKU also offers toll processing services in four levelling and deburring centres in Baden-Baden (Germany), Cincinnati (USA) and Greenville (USA) with modern machinery.

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. ARKU also provides engineering expertise to various manufacturing industries including automotive; rail; shipbuilding; construction and furniture, as well as laser job shops and others.



(L-R): Markus Heinrich, Technical Operations Manager, HALLER Metall, Florea Ilies, Machine Operator, HALLER Metall, and Christian Nau, Sales, ARKU, inspect the processed parts.