

The EdgeBreaker® 6000 is designed to make deburring much easier, to the satisfaction of TMS employees Michael Lorig and Justin Gruber.



By | Stéphane Itasse

POSITIONING FOR GROWTH

The addition of a new deburring and edge rounding machine has improved the market position, process stability, product quality and service offering of Luxembourg manufacturer, TMS.

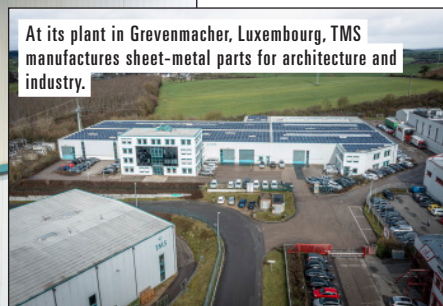
ISMR SAYS:

"More of its customers are requesting workpiece deburring following TMS's installation of a new EdgeBreaker® 6000 from ARKU."



At TMS, the EdgeBreaker® 6000 deburring machine from ARKU also processes sheets as thin as 0.6mm.

At its plant in Grevenmacher, Luxembourg, TMS manufactures sheet-metal parts for architecture and industry.



Founded in 1991 in Luxembourg, family business TMS Metall- und Stahlbau S.A. (or TMS, for short) offers its services in two areas. For architectural applications, the second-generation manufacturer offers light metal and façade elements, structural steel engineering or fire protection elements. For mechanical engineering, it produces special parts or industrial parts in batches.

"In the architectural sector, our unique selling point is that we cover the entire value chain from planning and consultancy to manufacturing and assembly," said Member of the Management Board, Angela Weyer. Those wandering through the streets of Luxembourg can see some of the results of TMS's work. Examples can also be found at the National Stadium or the National Library.

"For the production of sheet-metal facades, the architectural business unit benefits from our second business unit, mechanical engineering. This allows us to fully implement our technical expertise," added Jürgen Decker, managing director of TMS.

A flexible focus

TMS supplies the construction machinery industry as well as the mechanical engineering, electrical and medical technology sectors. The company is also active in sustainable sectors, as demonstrated by orders from solar energy

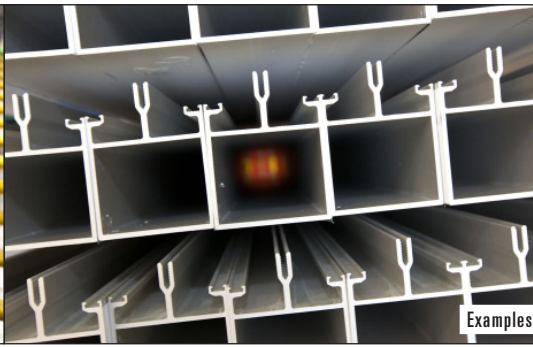
clients, and in the infrastructure sector for mobility projects.

"We attach great importance to a diverse customer structure, because dependencies bring risk," explained Mark Weyer, Head, Architecture Dept,

TMS.

To serve such a diverse customer base, the company works in an agile and flexible manner. It has also ensured that it has the right machinery to meet customer requirements at its two sites in Grevenmacher, Luxembourg, and Konz, Rhineland-Palatinate.

However, even more important to the



Examples of sheet-metal parts at TMS.

company are its almost 200 employees.

“To be able to deliver quality, we only work with skilled workers,” emphasized Angela Weyer.

The need for deburring

TMS’s customers, especially in the medical technology sector, have called for more and more deburred sheets. In this area, quality requirements are always changing.

and apply a surface finish,” he continued.

The core of this deburring machine is a rotor equipped with rotary brushes. The sheet edges are therefore rounded more evenly because the brushes always hit the sheet metal from different directions.

“This means that they remove the material very evenly, both on the inner and outer contours of the workpiece; even radii of up to 2.0mm are possible,” reported Sauter. “The rotor with the brushes is supplemented by

saved us money and we still have a fully-fledged machine that can do its job,” Hemmer continued.

Diverse part handling

A wide range of parts can be processed by the deburring machine while other areas of TMS’s production benefit from the machine’s edge-rounding capabilities. The range of parts handled is correspondingly diverse.

In upstream cutting, TMS has two flatbed lasers, a punching/laser machine combo, two punching machines and a waterjet cutting system.

“We can deburr the parts with the EdgeBreaker® and then bend and weld them. In some cases, they also go directly to coating after deburring,” explained Hemmer.

Since the workpieces at TMS have their own special features, handling them on the deburring machine requires expertise and experience. Some of the sheet formats are quite large, up to 1 m x 2 m. At the same time, there are also thin stainless-steel sheets with a thickness of 0.6-1 mm.

“The EdgeBreaker® 6000 can also be used to reliably process sensitive sheet metal that is only 0.6 mm thick,” commented TMS.

To confirm this, TMS had corresponding sample parts processed at ARKU in advance and were happy with the results.

“Unless the 0.6 mm metal sheets exhibit any unusual curvatures, they are processed correctly,” added Hemmer.



TMS plant manager, Johannes Hemmer (left), and his production employees Michael Lorig and Justin Gruber (centre) discuss the processing results with Stefan Sauter, ARKU sales (right).

“There are two reasons for this,” explained plant manager, Johannes Hemmer. One reason was handling, because employees can injure themselves on metal sheets that are not deburred and have sharp edges. Secondly, the medical equipment is regularly disinfected and the cleaning cloths can lose fibres on the remaining burrs. These fibres then become a breeding ground for germs.

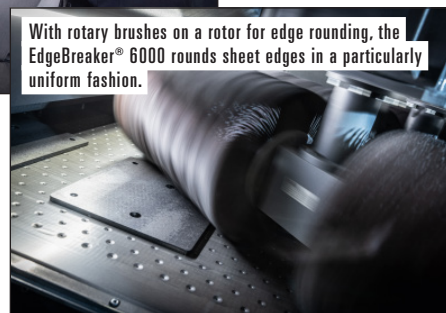
TMS previously used an old wet deburring machine for deburring. This could only meet its requirements to a limited extent and left water spots on the workpieces. Therefore, in 2020, the managers decided to look for a new machine. When they had almost finished sifting through available offerings, they came across the EdgeBreaker® 6000.

“ARKU Maschinenbau designed this system specifically for complete processing after punching and laser cutting,” explained Stefan Sauter from ARKU’s sales team. “In just one pass, the machine can deburr, round edges

a sanding belt for deburring and an optional fleece for surface finishing.”

As soon as the EdgeBreaker® 6000 was available, things moved quickly at TMS. “The sample part results were satisfactory and the contact was also very good,” Hemmer confirmed. “We ordered the machine in March 2021 and configured it to our own requirements.” At the beginning of September 2021, the system was delivered on time and integrated into TMS’s production.

“The EdgeBreaker® is now much more central than the old deburring machine. It is directly in the material flow immediately after cutting and highlights how deburring is becoming more central,” said the plant manager. “The surface finish is less relevant for us, so we left out the third unit. This has



With rotary brushes on a rotor for edge rounding, the EdgeBreaker® 6000 rounds sheet edges in a particularly uniform fashion.

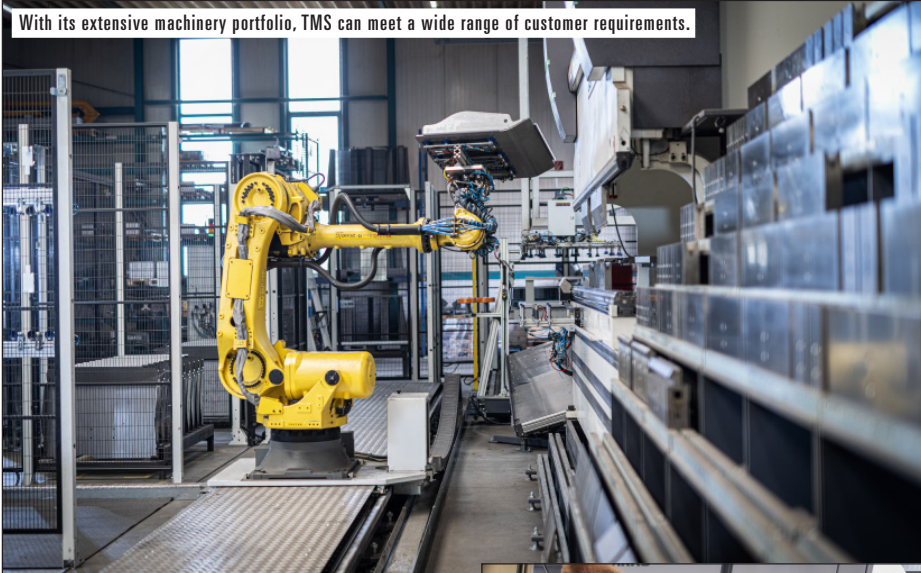
Easy operation and maintenance

The maximum sheet width that can be processed by the company on the new machine has also increased from 980 to 1300 mm.

“Wet deburring is problematic for normal steel parts because of rust. We therefore only used to process stainless steel and aluminium on the old system,” outlined Hemmer. However, operation on the new ARKU machine

FOCUS ON SURFACE FINISHING

With its extensive machinery portfolio, TMS can meet a wide range of customer requirements.



is much easier; a touchscreen displays easily understandable graphics. "That is a relief, particularly for our foreign-language employees since Luxembourg is a multilingual country," explained Angela Weyer.

The EdgeBreaker® 6000 viewing window is also appreciated by TMS.

"For other customers, this may be a

gimmick but for us it is an immense advantage. We can see whether the parts are still on the vacuum belt and can make fine adjustments to the grinding belt. With the old machine, you only noticed an issue with a part when it no longer came out of the machine," added the plant manager.

Maintenance is also easier with the new machine compared to the level of maintenance needed with TMS's wet deburring machine.

"The mixture of grinding dust and water was almost concrete-like after it dried," Hemmer reported. They also had to disassemble the old deburring system to clean it and hose down parts with a high-pressure washer in the yard.

"Now all we have to do with the new



The touchscreen control with graphics.



Stefan Seer, Head of Quality Assurance, TMS.

machine is open the door, drain the water every other day for the wet extraction and vacuum the inside with an industrial vacuum. Overall, it's a much cleaner and easier job," Hemmer confirmed.

Keeping customers happy

In the meantime, the EdgeBreaker® has found its permanent place at TMS.

"We processed around 84,000 individual metal sheets with it in 2022," explained Hemmer. This underscores the trend that more and more customers want their sheets and sheet metal parts deburred, added ARKU.

About ARKU

Founded in 1928, family-owned company ARKU Maschinenbau GmbH is a market specialist in straightening technology with almost 60 years of experience. ARKU offers a large selection of precision straightening machines as well as deburring and rounding machines. It also provides parts handling around the straightening and deburring machines with its own business division.

With headquarters in Baden-Baden, Germany, and ISO-certified subsidiaries in Kunshan (China) and Cincinnati (USA), the company covers markets in over 30 countries. The product range includes precision part straightening and deburring machines; automated parts handling with robots; cut-to-length lines; press feeding lines and coil entry lines for rollformers. This is mainly in the automotive and construction, mechanical engineering and rail industries as well as job shops and others.

"We've definitely been able to keep customers where the critical process was deburring. The moment we determined we were going to buy a new machine, the customers were happy," said the operations manager.

Internally, TMS has also become much more confident in its deburred sheet requirements.

"In the past, the customer would request deburring and we would try to keep the issue small. Now deburring is also actively offered, which has improved our position in the market," outlined Hemmer.

"With the EdgeBreaker® 6000, we have increased process stability and product quality. This has increased overall customer satisfaction," concluded Decker. ■



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