Intralogistics manufacturer utilises modern grinding and deburring technology

*Time-saving techniques help to optimise and make the internal material flow more efficient. Sheet metal is often used in the manufacture of these systems and components. Intralogistics manufacturers use modern grinding and deburring technology in order to be able to easily handle these processes.*

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The grinding and deburring machine of the SMW 5 series enables deburring and edge rounding on inner and outer contours of workpieces up to 120 mm material thickness, while producing a high-quality surface finish (Photo: LISSMAC)

Well thought-out processes are important, from incoming goods and in-house transport to warehousing and order picking processes – in intralogistics. Gebhardt Fördertechnik GmbH from Sinsheim / Germany develops and manufactures individual and tailor-made solutions for this area. The company's customers come from all manner of industries. These include automotive, electronics, retail, manufacturing industries and a host of other areas in which there is some form of transport within the company. In addition to storage and
sorting technology, the company's portfolio also includes driverless transport systems and robot technology. “Today, we are supplying more and more warehouse technology as well as complete automated warehouse centres. Gebhardt acts as general contractor in such cases. We offer solutions for the entire process chain including mechanics, control systems and software, such as picking and warehouse management software. However, the customer can choose whether to order everything or just individual components,” explains David Schneider. He has been plant manager in Sinsheim since the beginning of 2018 and is responsible for the areas of work preparation and internal logistics. The industrial engineer, who previously worked for a car manufacturer for seven years, attaches great importance to efficiency and knows what is important. “Process orientation is always the goal in manufacturing. Efficient technology is essential for this.” says Schneider.

Gebhardt has around 650 employees worldwide, and over 450 at the Sinsheim location. The company has seen massive sales growth in recent years. For this reason, almost three years ago, the decision was made to build a new plant directly adjacent to the motorway in Sinsheim. Investments are also being made in new plant technology for manufacturing.

LSISMAC machines of the SMW 5 series are based on the modular principle and can be individually tailored to customer requirements and configured accordingly (Photo: LSISMAC)
New plant technology based on complex decision-making

The philosophy of the intralogistics manufacturer involves a very high level of vertical integration. Flexibility in the process is very important, since customer enquiries and solutions are highly individual. The sheet metal being processed is often laser-cut in the initial step. In other words, it is sharp-edged. Previously, the deburring process was often performed manually. As an alternative, multiple parts were collected and then transported for deburring. Both options were expensive and time consuming. “We wanted the technology to be in-house. The aim was to implement more efficient processes and to establish more in-house added value and greater flexibility,” says David Schneider. In addition, safety in terms of handling the sheets was an important aspect. The appearance of the surfaces also plays a major role, in the case of visible aluminium parts.

Initial considerations for the purchase of in-house deburring technology were already made in 2016. Various manufacturers were contacted, including LISSMAC Maschinenbau GmbH from Bad Wurzach / Germany. Together, a project team from
Gebhardt Fördertechnik and LISSMAC searched for a suitable system solution based on a specified catalogue of requirements. In addition, tests were carried out with various sheet metals in Bad Wurzach in order to identify and evaluate the grinding and deburring results.

Ultimately, a decision had to be made between dry or wet processing. In this respect, it was important for LISSMAC to explain both the advantages and disadvantages of the two processes and to consider the planned areas of application. “The challenge for us as a machine constructor was to take into account the variety of the tasks to be undertaken at Gebhardt. The system needed to be used for deburring, rounding edges and for surface finishing. In addition to this, there is the wide range of different materials that are processed, including steel, stainless steel, laminated stainless steel, and aluminium. This high level of flexibility required complex considerations,” says LISSMAC area sales manager Michael Braunreiter, who oversaw the project.

It is also important to know how the parts from the preliminary process arrive and what the end product should look like. “This means the tools and technologies from the start through to the end product have to be defined. Ultimately, it is important to determine the optimal machine configuration based on the customer's requirements before the concrete implementation can take place,” adds Braunreiter.

Plant manager, Mr. Schneider, had to observe further key data. The limited space had to be included in the design and the processing needed to be integrated into the regular material flow. In some cases, very large parts are processed at Gebhardt. With a view to all this individual key data, the deburring processes should also be incorporated into the company's ERP system in the future. Ultimately, it was a highly intralogistics manufacturer Gebhardt.

“We still lacked this system in the sheet metal processing process chain. It is our most expedient acquisition in the past five years,” says David Schneider, plant manager at Gebhardt Fördertechnik.

(Photo: Gebhardt Fördertechnik)
Flexible system technology has proven itself in production

Gebhardt Fördertechnik opted for the wet grinding process after taking into account all key data. The company invested in a grinding and deburring machine from the LISSMAC SMW 5 series, equipped with three tool stations. These encompass a wide belt sanding unit, a planetary gear and a Scotch round brush. It is possible to undertake deburring and edge-rounding processes on inner and outer contours of workpieces with material thickness of up to 120 mm, resulting in a high-quality surface finish. The machining units can be individually adjusted or turned on and off electrically. The SMW 5 is particularly suitable for the processing of different materials, since there is no set-up or cleaning effort required when changing materials, as this is part of everyday business at Gebhardt. Quick and easy tool change is possible within a few minutes and its simple, intuitive operation makes machining even easier. Last but not least, the modular, compact design of the system also takes into account the limited space available at Gebhardt. The machine also has an external integrated filter system to separate swarf from the cooling lubricant. This increases the service life of both the cooling lubricant and the machine.

In 2018, LISSMAC completely updated the wet grinding machines of the SMW 5 series. In addition to a new system concept, a planetary head unit has also been developed. This ensures more even and powerful rounding of edges compared to plate brush units. This new system concept was already integrated into the Gebhardt machine. The deburring machine has been in use at the intralogistics manufacturer since summer 2019. It is the first system from LISSMAC for the Sinsheim-based company. "We are impressed by the quality of the system. The service that LISSMAC offers is also an important factor for us. We attach great importance to being able to get them on site quickly," says plant manager David Schneider. He continues, "We still lacked this system in the process chain for sheet metal processing." Manual deburring is no longer necessary, which means significantly less handling and logistics requirements. Ultimately, this also provides a better overview of the process.

André Koch, deputy head of sheet metal production, adds: "We are significantly faster than with manual processing, and we can achieve consistent results, working cleanly and reliably."
David Schneider and his team are extremely satisfied with the acquisition. Moreover, he already has another goal in mind. Namely, production networking and the digitalization of processes are to be driven forward. With a view to deburring technology, machine constructor LISSMAC is also able to implement solutions for interfaces.

LISSMAC area sales manager Michael Braunreiter (right) and Gebhardt plant manager David Schneider are delighted with the quality of the machined components. (Photo: LISSMAC)