



Efficient rounding-off of sheet metal edges achieved by innovative grinding procedure

Sheet metal blanking shops usually have at least one problem: a burr is created on the cutting edge, which is a source of accidents and damage in manual handling. Lissmac SBM-S series grinding machines solve this problem in a very



Lissmac SBM-S 1500 grinding machine

economic manner: they grind the burrs off both sides of the sheet metal, round off the edges and, if needed, clean both surfaces all in a single pass. One of the first sheet metal processing companies to recognize the advantages of the Lissmac grinding technology in production is Wuppermann Rohrtechnik GmbH in the German town of Burgbernheim.

With three divisions consisting of thirteen

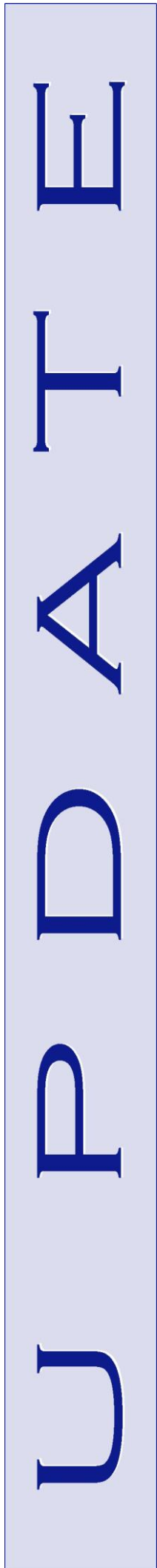
independent companies, the Wuppermann Group provides many different industries with a wide range of steel and steel sheet products and related services. Wuppermann Rohrtechnik GmbH is among the six companies in the "technical products" division, which not only cuts sheet metal parts, but also further processes these parts based on specific customer requirements. "In doing this", says Günther Hempfling

Head of Sheet Metal Processing, "we have taken a path that keeps us moving ahead technologically. Furthermore, the modern machines required for this are coupled with continual improvement of our product quality as well as a higher level of value creation in our company. We produce sheet metal components for a wide array of customers for the lighting industry or displays for example. Various cover plates for packaging machines and apparatus engineering as well as sheet metal components for medical devices are all included in our product spectrum." Especially in the growth sectors of medical technology, pharmaceuticals and the foodstuffs industry, stainless steel sheet is a must. "Therefore", Hempfling points out, "we have placed great emphasis on processing stainless steel sheet." "However, our offering comprises more than just sheet metal



Head of Sheet Metal Processing Günther Hempfling shows that protective films remain affixed to surfaces despite grinding off sharp burrs.

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blanking", adds sales director Roland Otto. "We further process the sheet metal blanks according to our customers' requirements", he explains further. "This includes an entire range of services, from simple preproduction and assembly work all the way through to finished final products. Our extensive machine park allows us to meet almost any customer requirement in an exceptionally economic manner. The spectrum ranges from mechanical work steps, punching and reshaping through to connecting sheet metal parts using modern, to some extent robot-driven welding systems."

"When we heard of a new grinding machine developed by Lissmac three years ago", explains Günther Hempfling, "we immediately wanted to try the new technology. Lissmac sent us one of the first grinding machines to test. It was an SBM-S 1000. When the four-week trial period was over, we immediately bought the machine and never gave it back. That was about two years ago."

Economic quality



Fully processed stainless steel parts for medical technology devices

In looking back, Günther Hempfling says, "We quickly integrated the machine in our production process, because commissioning and employee instruction was fast and absolutely problem-free. The machine has a sturdy construction and is easy to operate. Employees quickly realized that the Lissmac grinding machine deburrs parts in a faster, absolutely even and, most importantly, complete manner. Whereas, before introducing the grinding machine, they required approximately 10 to 20 minutes to manually deburr a specific part, the same

part runs through the machine at a speed of up to 4 m/min. When processing small parts, it is even possible to run several parts through the machine at the same time."

An innovative grinding procedure ensures this extremely high output level: the pieces of sheet metal to be processed run through the machine automatically and are deburred by no less than four tool units in a single work step on the top and bottom as well as all inside and outside contours simultaneously. Two grinding belts running in opposite directions process the blank from below and the same setup is used to process the blank from above all at the same time. The belts comprise abrasive lamellae with abrasive felt in between. In this procedure, the grinding tools serve for deburring as well as rounding the cut edges. In addition to this, a softly shining

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surface can be obtained without removing material by setting the parameters properly if so desired.

"In order to deburr sheet metal parts as required, round the edges, or create a semi gloss surface", says Günther Hempfling of his experience with the Lissmac grinding machine, "one only has to determine the right feed speed and the appropriate grinding unit setting. Just a few trials are needed to find the suitable parameters needed to complete any deburring task with the required processing quality."

The frequency controlled belt feed allows for continuously variable setting of the throughput speed 0 to 4 m/min. A hand wheel is used to set the thickness of the sheet metal parts to be ground. When the grinding tools show signs of wear, it is also possible to manually readjust the grinding units. A separate scale reliably shows the operator the current working range setting.



Simple operation due to manual adjustment options

"The SBM-S 1000 grinding machine", Günther Hempfling mentions, "processes sheet metal that can be up to 20 millimetres thick and that have to be at least 150 mm long. It provides a throughput width of 1000 millimetres. In fact this throughput width was the reason", continues Hempfling, "why we bought a new Lissmac grinding machine. The SBM-S 1500 provides a throughput width of 1500 millimetres, which we need for further orders. The SBM-S 1000 immediately found new users within the company group. Passing on innovative grinding machines is just one of many ways that we generally handle good experience within our company group. Our company philosophy includes open communication, an unselfish exchange of experience and production aids and fulfilling all of our customers' requirements on time."

Efficient stainless steel processing with the Lissmac SBM-S 1500 grinding machine

"With regard to production technology", says Günther Hempfling, "the SBM-S 1500 has all of the mentioned advantages of the SBM-S 1000 plus a larger throughput width. We use this grinding machine exclusively for processing stainless steel sheet in a monitored quality and production process chain. This means we make sure that steel does not come in contact with the stainless steel sheet in any of the production steps."

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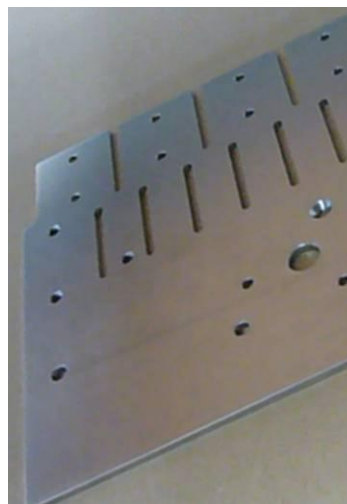
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"Especially in the medical technology industry", adds Roland Otto, "full deburring and rounding of parts is required. Several of the devices, for which we supply sheet metal components, are assembled in cleanroom conditions for example. This means the parts are cleansed and free of germs. They are handled with rubber gloves for assembly. Wuppermann uses the Lissmac SBM-S 1500 to ensure that the parts are absolutely fully deburred. It can only be ensured that the parts are not exposed to germs if the rubber gloves are not torn. However, this is a constant risk if the parts have razor-sharp burrs."

Subsequent measures to remove germs require extensive effort and incur tremendous costs.

"The Lissmac grinding machines", says Günther Hempfling, "provide the following advantages for subassemblies that we produce for medical technology applications, but also for other parts: It is very difficult to scratch other parts with deburred parts during assembly. Thus we are making a noticeable contribution to assuring assembly quality. In addition to this, during the deburring and rounding process, the grinding machine protects the surfaces of the parts that have already been finished. Even though sharp burrs are ground off, protective films remain



The SBM-S 1500 grinding machine can process the surface so as to create a semi gloss shine.



Even fine engravings remain fully intact

affixed to the surfaces and even fine engravings remain fully intact.

On the other hand, the surface can be processed to produce a semi gloss shine. Especially when it comes to devices and equipment made of stainless steel, this not only gives a visual impression of hygienic

cleanliness, but the highly detailed processing of the metal surfaces actually serves to simplify daily cleaning of these devices and equipment, which are used in the chemical, pharmaceutical and foodstuffs industries. In this way", Günther Hempfling points out, "the Lissmac grinding machine generates a true added value, which the customer does not have to pay in full."

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Grinding off punch burrs

However, potential accident risks are not only caused by sharp-edged, laser-cut sheet metal blanks, but also by burrs that are incurred in the punching process. "Even these burrs", says Günther Hempfling, " are rounded by the Lissmac SBM-S 1500 grinding machine in a single pass. Therefore we can be sure that all parts and all perforated sheet that we use in tool carts for example are fully deburred and that the edges are rounded in such a way as to prevent any risk of cutting by these carts."

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The SBM-S 1500 even removes punch burrs so perfectly that the tool cart bears no risk of cutting or quality hazards to the goods that it transports.

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