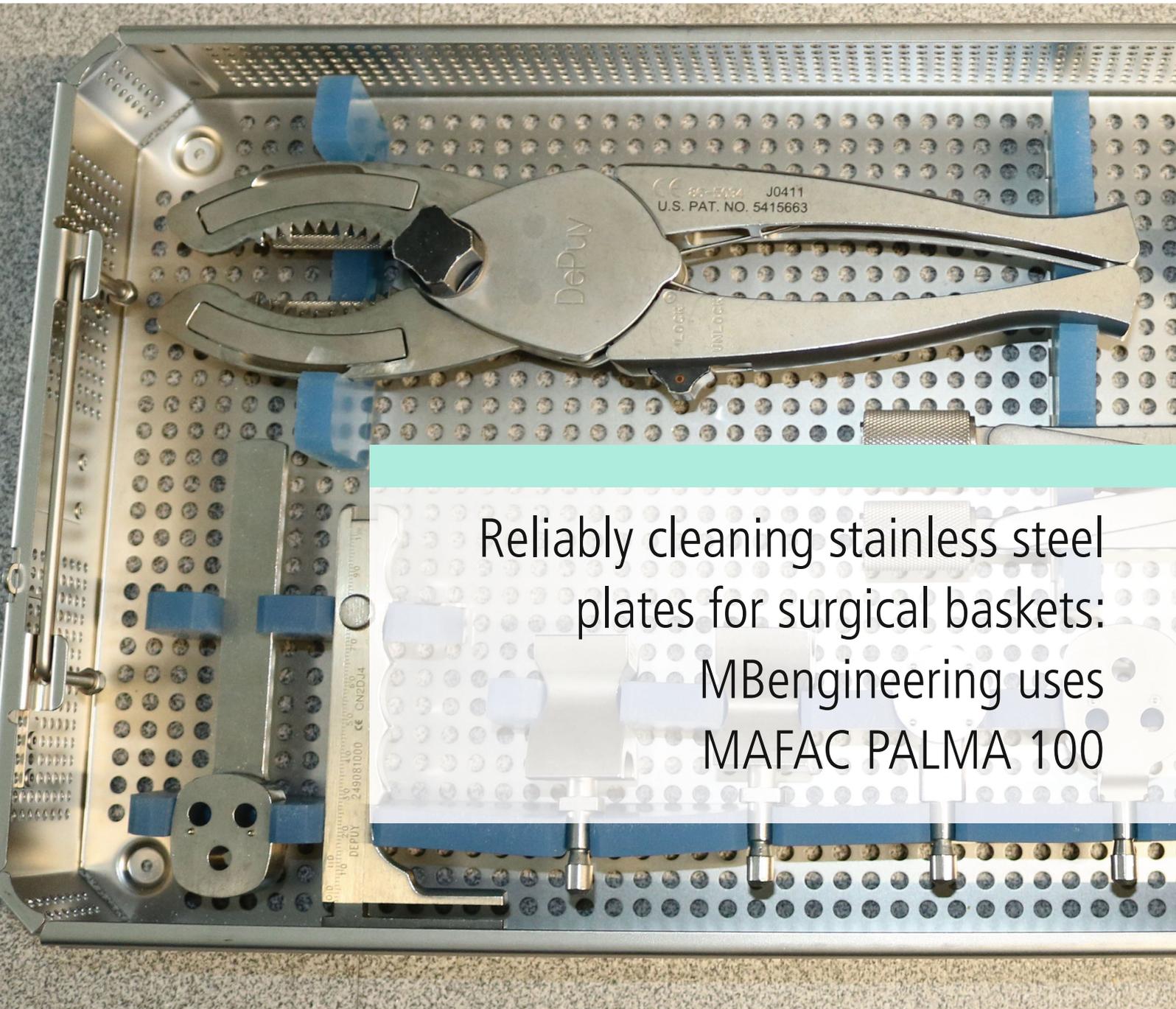




Parts Cleaning. Systems and Solutions.



Reliably cleaning stainless steel plates for surgical baskets: MBEngineering uses MAFAC PALMA 100

mb•engineering

User report

Reliably cleaning stainless steel plates for surgical baskets

The requirements on parts cleanliness in medical engineering are high and also don't stop at peripheral equipment. At the mechanical engineering and metal processing company MBEngineering in Tuttlingen, a MAFAC PALMA 100 meets these stringent specifications. The spray-flood cleaning machine with special format in the basket receptacle is equipped with a triple bath system and releases residue-free and absolutely dry surfaces thanks to its technology.

"We were specifically looking for a parts cleaning machine that is using validated processes and permits a high variety of applications also in terms of other workpieces and components. At the same time, it should be possible to individually optimise the machine depending on the requirements, both for current cleaning projects but also to deal with increasing requirements and more complex geometries," project engineer Martin Zepf explains the decision.

Crucial for purchasing the machine was a new order placed by a renowned manufacturer in the field of medical engineering, for whom MBEngineering manufactures filigree punched stainless steel plates of the format 730 x 450 x 1 mm (L/W/H), which are later formed into surgical baskets. Along their path from blank to finished punched blank, the stainless steel plates pass through a manufacturing process that involves the individual steps laser punching, straightening, grinding and deburring. "Before the punched blanks leave our premises they must be reliably cleaned of the processing residues oil, swarf and abrasives and be absolutely dry. With this we guar-

antee that the subsequent forming process can take place without the systems getting contaminated. Also, no wrong connections may arise during spot welding, as the baskets have to be very sturdy and efficient for sterilisation," team colleague Gianni Leocata explains the cleaning task. Another important point he mentions is the cytotoxicity test according to ISO 10993-1 the cleaned blanks have to pass. "As surgical instruments are stored and transported in the baskets, no adverse effect on human tissue may be demonstrated for their surfaces."

Third holding tank with rinsing bath care as important trump card

All these requirements Martin Zepf and Gianni Leocata considered to be met by the MAFAC PALMA 100. The spray-flood cleaning machine is equipped with a rotating, multi-sided spray system with counter-rotating basket receptacle system with the special dimensions of 1000 x 480 x 338 millimetres (L/W/H). Both processes, spraying and flooding, can be individually combined, thus allowing for a high process variability where the process can be adjusted to the respective cleaning task in a highly customised manner. An essential point that also spoke for the MAFAC PALMA 100 was the option of equipping the machine with a third media tank including rinsing bath care. The cascaded layout and an additional rinsing phase achieve a long bath service life despite the high oil input after punching-laser cutting: "Currently we only change the cleaning baths every three to four months despite the high workload," explains Gianni Leocata.



With its high-grade machinery, MBEngineering manufactures a wide range of sheet metal parts and individual components for different sectors of industry: from medical engineering and mechanical engineering to ventilation engineering and the plastics processing industry.



MBEngineering uses water jet cutting to manufacture a variety of components for medical engineering. To protect their own manufacturing machines, components are subjected to interim cleaning in the MAFAC PALMA 100.

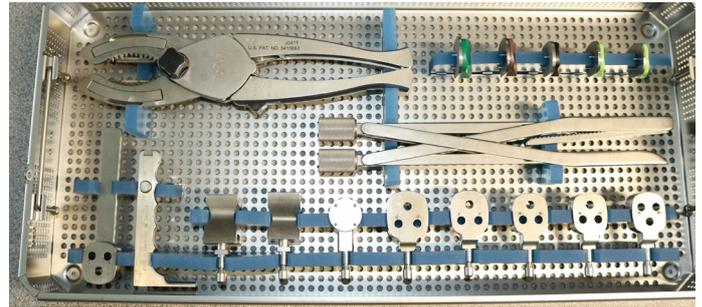
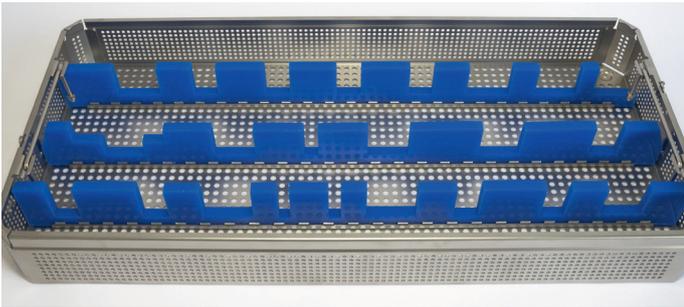
Multi-stage cleaning and drying process

To carefully free the parts both of films and particles and then dry them, the blanks are subjected to intermediate and final cleaning. The cleaning process itself starts with a ten-minute intermediate treatment during which the oil residues are cleaned with the sequence cleaning – rinsing – pulse blowing. For the cleaning phase, a mild clean-

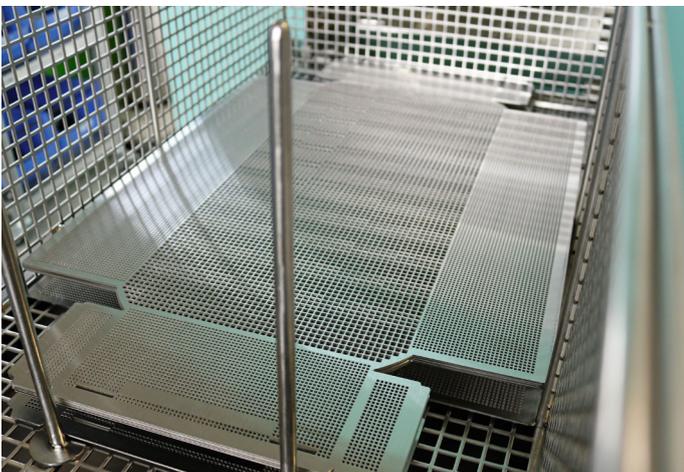
ing agent has been added to tank 1, which is applied during the spray-flooding process. After that, the parts are rinsed with tank 2, then dried and routed to straightening and grinding. This is followed by a 30-minute final cleaning process, during which the new processing residues are carefully removed in a similar sequence. However, other than with intermediate cleaning, a further rinsing phase from tank 3 is added to the final cleaning. This

is finally followed by a two-stage drying process with impulse blowing and hot air as well as vacuum drying two times over. Somewhat tricky: the blanks pass through the drying and cleaning process as compactly stacked packets. “Due to the tightly packed batches, drying takes approximately as long as cleaning. However, we keep up this type of placement because we can have roughly 800 punched parts per shift ready for dispatch and can

dispense them to our customer in accordance with the specifications. The results are impeccable. The surfaces released from the process are free of residues, absolutely dry and free of corrosion,” Martin Zepf rejoices.



An important product segment are punched blanks for surgical baskets manufactured by means of a punching-laser cutting process. These blanks must be very robust and resilient to withstand sterilisation and storage. Damaged or tainted surfaces contaminate the individual forming and welding processes, thus reducing the functionality of products.



Large sized, filigree stainless steel blanks are manufactured in large numbers for surgical baskets. They must leave the factory free of films and particles, without corrosion and absolutely dry.



MBEngineering meets the high medical engineering requirements with the spray-flood cleaning machine MAFAC PALMA 100 of special size.



The stainless steel blanks are stacked on top of each other to make up small packet batches which is particularly challenging when it comes to cleaning and drying.



Work pieces are removed after 30-minutes of final cleaning and drying.



Processing residues such as oil or swarf have been carefully removed and surfaces are absolutely dry.



Martin Zepf and Gianni Leocata measure the quality of the cleaning bath on a daily basis. This guarantees the effectiveness of the bath and the quality of cleaning.



Managing director Manfred Butsch (centre) and his staff members Martin Zepf (left) and Gianni Leocata express satisfaction with the new MAFAC PALMA 100 and see themselves well equipped for future requirements.

About MBengineering

Since 1995, MBengineering GmbH from Dürbheim near Tuttlingen has been producing machines, sheet metal parts and individual components for medical engineering, mechanical engineering, ventilation engineering and the plastics processing industry. The company employs 40 staff members and, thanks to its high level of in-house production and wide range of products, counts among the leading manufacturing companies in South West Germany. More information under www.mbengineering.de.

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