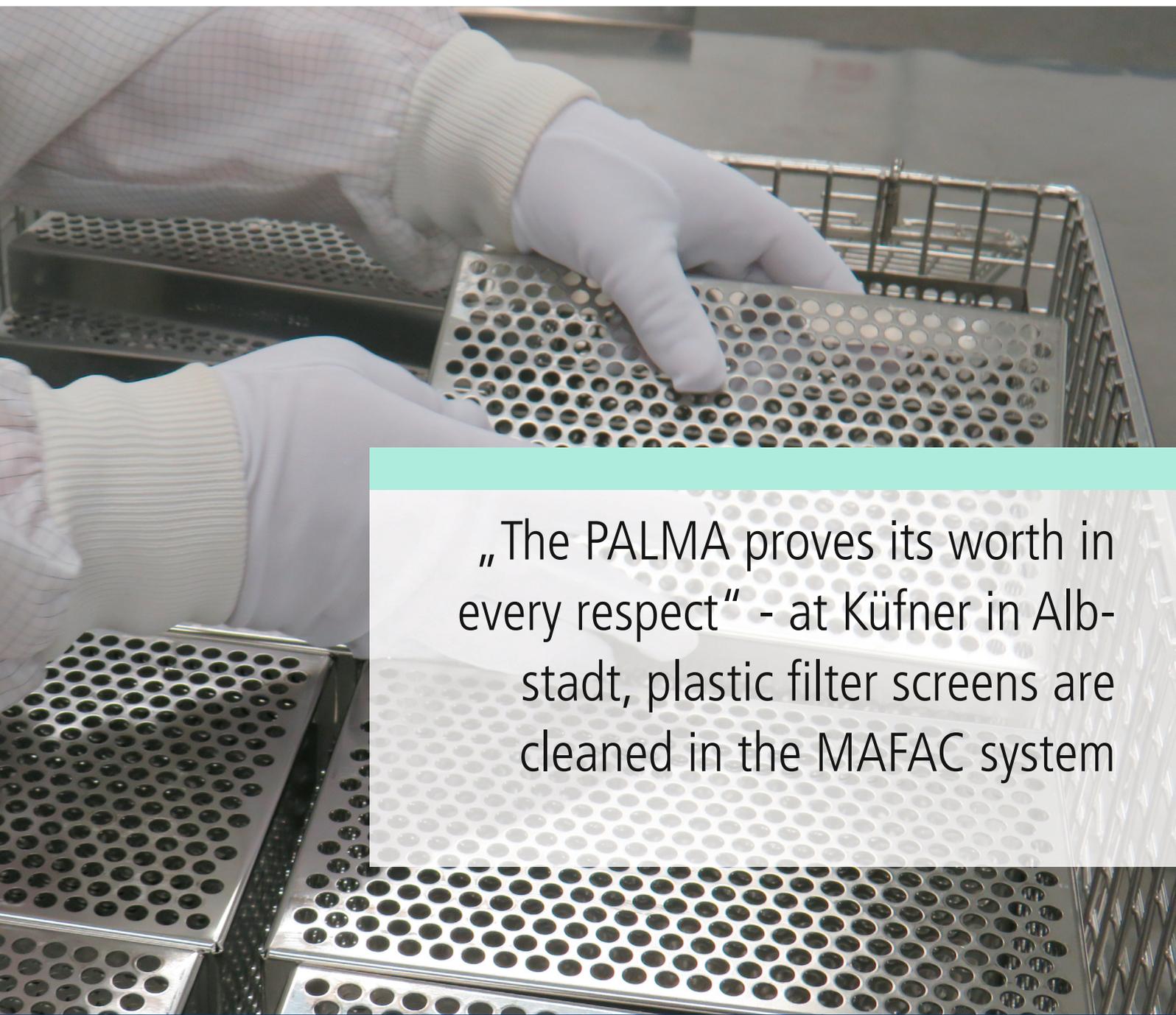




Parts Cleaning. Systems and Solutions.



„The PALMA proves its worth in every respect“ - at Küfner in Albstadt, plastic filter screens are cleaned in the MAFAC system



User report

Karl Kufner GmbH & Co. KG

The PALMA proves its worth in every respect

“For our requirements, aqueous cleaning is the optimum solution,” says production manager Werner Ulfikowski. Around 2.5 million plastic and metal filters are cleaned every week at Kufner - in the PALMA cleaning system. The specialist for filter screen solutions deliberately opted for the MAFAC system. “The economy, the speed and the cleaning result convinced us. Therefore, the decision in favour of MAFAC was made”, says Werner Ulfikowski.

The company Kufner

The company Kufner in Albstadt was founded by Karl Kufner in 1951. The company quickly developed into a specialist for filter screen solutions and high-quality weaving reeds. Kufner is the technology leader in the field of hybrid filter screen solutions (metal mesh with plastic overmoulding). Today, the company is divided into three divisions: “Customised screens and filters”, “High-quality weaving reeds” and “Medical engineering technology”. More than 2,000 different products are produced for around 500 customers worldwide. The quality feature “Made in Germany” is an important part of the Kufner corporate philosophy. The entire manufacturing chain - from development to equipment design, toolmaking and sample production through to the production departments with manual and automated series production - is bundled under one roof. The company Kufner is still an owner-managed family business. The more than 350 employees work at two locations in Germany.

High customer demands

The PALMA cleaning system is used at Kufner in the “Screens and Filters” division. 75 percent of the parts manufactured there are produced for the automotive industry and are mainly used in transmissions, fuel systems and engine management components. The remaining 25 percent can be allocated to applications in building technology, medical engineering and mechanical engineering.

“In order to meet the high cleanliness requirements of our customers, cleaning is indispensable as the last step in the manufacturing process,” says Sales Manager Henning Oetjen. Since three years this process has been carried out in the aqueous cleaning plant PALMA. Before the PALMA was installed at Kufner, cleaning trials were carried out at the MAFAC technical centre in Alpirsbach. With excellent results: “The cleaning process is gentle and the cleanliness of the parts convincing. In addition, the concept of aqueous cleaning meets our requirements as an environmentally certified company”, says Werner Ulfikowski.

Effective cleaning process

The entire cleaning process, including loading, is highly effective. For cleaning, the parts are placed as bulk material in special receiving systems - standard baskets with individual basket inserts - and transported to the PALMA via a fully automatic conveyor belt. As the contents of the small receiving system correspond to the packaging lot sizes, the filters can be packed ready for dispatch immediately after cleaning.

Minimum contaminations

An average of 30,000 workpieces pass through the PALMA per cleaning cycle. The filters are made of a wide variety of plastics - “we are highly diversified when it comes to plastics”. The filter fabrics are also made of plastic or stainless steel. The mesh width of the filter fabric is between 30 µ and 0.5 mm. Contamination is minimal, particles and fibres to be removed are often smaller than 100 µ.

PALMA with three holding tanks

The PALMA installed at Kufner is equipped with three holding tanks. One holding tank was adapted to the individual needs of the company so that the workpieces can also be deoiled. Two holding tanks are used in the sequence cleaning and rinsing. The water in all three holding tanks has a temperature of 75 degrees.

Wet phase cleaning process

A total of seven program groups with further subdivisions are stored

in the PALMA control system. During the wet phase, the process technology of spray and flood cleaning developed by MAFAC is used. This means that the loading system counter-rotates to the rotating spraying system and is equipped with special spray nozzles. In the process, the cleaning chamber is flooded. “Especially with fine-meshed fabrics, we need this movement in order to achieve the optimum cleaning effect,” says Werner Ulfikowski. In addition to this process technology the PALMA at Kufner is equipped with an ultrasonic unit.

“Optimal drying process”

Drying certainly plays a major role in the entire cleaning process. The workpieces made of plastic must be surface-dry after cleaning, but must exhibit a certain residual moisture in order to be processed optimally. “For these requirements MAFAC offers the optimal drying process,” says Werner Ulfikowski. During the drying process, the default built-in special hot air drying system of the PALMA is used. As during the wet phase, the loading system counter-rotates with respect to the drying



system which is equipped with specially arranged nozzles. Supplementary to this, the Kufner PALMA is equipped with infrared drying. "In this way, we are able to reduce cycle times by a further 25 percent," explains Henning Oetjen.

Multilayer filtration system

The bath service life of the PALMA running in three-shift operation is between seven and eight weeks. One holding tank is equipped with a coalescence oil separation system

with integrated floating suction device and with maximum monitoring of the oil capture vessel. Before the cleaning and rinsing process, fine dirt particles are filtered out by means of the main flow ultrafine filtration.

"The PALMA proves its worth in every respect," is how Werner Ulfikowski sums it up. In concrete terms, this has already led Kufner to order a second system.



An important component of the extremely effective cleaning process is the fully automatic loading system with which the PALMA at Kufner is equipped.



A total of seven program groups with further subdivisions are available in the PALMA control system at Kufner. They are activated by the respective employee as required. Photo: Kufner.

The workpieces, which are cleaned in the PALMA installed at Kufner, are placed as bulk material in special receiving systems - standard baskets with basket inserts. Photo: Kufner.



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