



Parts Cleaning. Systems and Solutions.



Water replaces solvent:  
At Hecker Werke GmbH the  
MAFAC JAVA ensures  
component cleanliness for coating

**HECKER® WERKE**



## User report

### HECKER WERKE GmbH

#### Component cleanliness for coating

An important prerequisite for coat-able surfaces is their cleanliness. At Hecker Werke GmbH, a seal manufacturer in Weil im Schönbuch, MAFAC's cleaning technology reliably ensures this condition.

A large number of different composite parts, consisting of a plastic or metal core and a polyurethane layer, leave the production halls of Hecker Werke every day. They are usually manufactured for special requirements in small or medium series and shipped worldwide, depending on the location of the customers. Their rapid availability and high product quality are essential elements of the company's promise. To ensure that this continues to be possible in the course of increasing requirements, the production managers at Hecker Werke rely on the MAFAC JAVA parts washer: It cleans the workpiece blanks to be coated by means of a spray-flood process and prepares them for the coating process.

#### Conversion to aqueous parts cleaning

"With the MAFAC JAVA we are breaking new ground," explains production manager Ralph Fischer. So far, Hecker had used a solvent-based cleaning process, but the previous system had grown outdated and reached its limits. With the new machine, the company now opted for a conversion to a water-based cleaning system and took advantage of the opportunity to eliminate another source of hazardous materials with regard to storage and disposal. "The constant search for better so-

lutions for people, the environment and energy efficiency runs like a thread through our company's history," says department head Daniel Meyer, explaining why an aqueous system can provide a clear advantage in terms of occupational safety.

#### Manufacturer of sealing elements

Founded in 1904 by Arthur Hecker, the fourth generation of the family-owned company is meanwhile active in the gasket and seal industry. Thanks to numerous innovations, the company has developed from an "asbestos and rubber plant" to a specialist for high-quality gasket and seal products. A total of 200 employees and six product groups characterise the manufacturer's wide range of products. This range includes GSM® seals and moulded parts, seal plates, packing glands for sealing valves and pumps, Euraflon® sealing elements for extreme sealing tasks, prefabricated parts or plastic/metal composite parts made of polyurethane, and AEGIRA® face seals for sealing rotating shafts against liquids and gases. All products are used for the safeguarding of machines and industrial plants and are manufactured within short delivery times in series or as special orders. An essential basis for the high-tech sealing elements are the company's own recipe development and production, its modern laboratory and its own test benches.

#### The coating of composite parts

In the "polyurethane products" range, Hecker manufactures seals as well as composite parts made of



plastic or metal. For these, blanks are delivered to the factory and provided with a corresponding polyurethane jacket. After the coating process, they are used as rollers, wheels or drums in industrial sectors where, for space reasons, they have to carry and transport heavy loads with small diameters, for instance in mechanical and plant engineering or in the food and paper industries. "These are all tasks in which the parts are exposed to high mechanical stress and must be particularly tear-resistant and abrasion-resistant. This is only possible if the coating jacket adheres securely to the core," explains Ralph Fischer. If the coating fails to meet its requirements, this leads to high failure rates or complaints.

### **Coating quality due to perfectly clean surfaces**

"Highly resilient coatings can only be produced on perfectly clean surfaces. Against the backdrop of increasing requirements, the whole process not only has to be of high quality, but also time-saving, economical and gentle," explains Ralph Fischer. Exactly these criteria the technicians considered fulfilled in the MAFAC JAVA with dual tank

design. It works with the patented cleaning technology of co- or counter rotation of the basket receptacle and spraying system and, thanks to the combination of targeted turbulences with temperature, cleaning additives and time, ensures safe and effective cleaning of the parts surfaces. A decisive criterion was that for sensitive parts, the movement of the basket receptacle system can be adjusted from rotation to rocking or even standing. "With this variant, we can machine our parts gently and guarantee even surfaces and edges, which is also important for the coating," says Daniel Meyer.

### **Effective and gentle cleaning at the same time**

The profiles to be cleaned before coating consist of aluminium, brass, steel or plastic. They have very different shapes and are between two centimetres and one metre in size. Prior to cleaning, they undergo a sand-blasting process in which their surfaces are roughened for the benefit of adhesability. After this step the parts exhibit residues such as oil, particles, hand perspiration and other deposits. All things that complicate the coating process," says Ralph Fischer.

The cleaning process takes place in two phases: Phase one, the actual cleaning, with holding tank one and cleaning additive. This is followed by phase two, the rinsing process, with holding tank two and clear water. In phase one, the processes of spraying, spray-flooding and spraying alternate. During this process, all dirt particles are dissolved and safely removed by flooding. The first cleaning phase is completed after a pulse blowing and lifting process, which prevents the media from being carried over into tank two. Then phase two starts with renewed spraying. This additional rinsing process is very important for coating as it completely removes the cleaning agent residues and ensures adhesability. For this purpose, phase two also ends with a drying process in which the parts are first blown off with ultrapure compressed air in a pulsed fashion and then subjected to micro-filtered hot air and completely dried.

### **One machine to meet many requirements**

After almost a year of operation, the two department heads Meyer and Fischer see the versatility of the MAFAC JAVA confirmed. Still during

the planning phase, they realised that the new machine would also be used across departments. It should therefore be able to handle a wide range of parts as well as different types and degrees of soiling. The MAFAC JAVA was chosen because it already includes many standard machine components. Only its full heat insulation in favour of a resource-saving operation, the special dimensions of the treatment chamber (1,000 L x 480 W x 338 H), the second holding tank and the special standard basket with cover unit to protect the mixed bulk material batches were additionally ordered.

Another aspect in favour of purchasing the MAFAC JAVA was its ease of use and versatility: "Many different employees access the system without any problems. We have only set up three programmes with different runtimes and are nevertheless very flexible. We can even process mixed batches," says Daniel Meyer.



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The logo for Hecker Werke, with the word 'HECKER' in a multi-colored, blocky font and 'WERKE' in a white, blocky font on a teal background.

# HECKER<sup>®</sup> WERKE

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