



Haas Metallguss - High-end
final cleaning of oil pump housings
in a spray-and-flood process



User Report

Haas Metallguss

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In the premises of Haas Metallguss GmbH in Mühlhausen, a MAFAC JAVA parts washer provides for high-end cleaning of oil pump housings. As a key component of a fully automated manufacturing process, the compact machine uses spray-and-flood washing to meet the challenging demands in cleanliness posed by the company's automotive customers.

Haas Metallguss GmbH, headquartered in Mühlhausen im Täle, was established in 1987. Now, the company has a staff of 85. It is managed by Jürgen Haas and Dr. Michael Haas, the second generation of family owners. Their product portfolio comprises aluminium and zinc die-cast components for renowned manufacturers in the automotive, control engineering, pneumatics systems, machine engineering and toolmaking industries. The company offers all production steps from casting over deburring, machining on CNC units and grinding to frictional grinding.

Aluminium die-cast oil pump housings are one of the major Haas products. They are produced in fully automated two-shift operation and are subject to very strict cleanliness requirements specified by the automotive customers. "Over the last years, the demands have been constantly increasing. Now, the tolerances are extremely small. For this reason, cleaning has become an important value-creating step within our manufacturing chain," ex-

plains Managing Director and Head of Production Jürgen Haas. Looking for a suitable solution, he opted for aqueous parts cleaning and found the MAFAC JAVA. Thanks to its sophisticated combination of spray-and-flood cleaning in the patented rotation principle, the machine was well-equipped to offer high-quality removal of the particles - some of them tiny - from the various undercuts in the oil pump housings. Jürgen Haas names the other advantages which made them go for the MAFAC JAVA: "MAFAC is approved for mechatronics components. The company is also well-known for its serial machines, which offer a wide range of different applications. And when we saw the excellent results of the trial cleaning runs in the MAFAC Technikum, we did not hesitate to decide in favour of the MAFAC JAVA". "Also the economical aspects were convincing: Considering its purchasing and operating costs, the machine is highly cost-efficient.

The compact design of the MAFAC JAVA was another important factor, because we did not want the cleaning process to interrupt the existing production flow but rather wanted to integrate it in the automation. For this reason, we were looking for a not overly large but powerful machine which fits in the robot cell and is able to deal with the high speed of the automated process."

Directly integrated in the robot cell, the machine is now fed by a robot. First, it inserts the raw parts in the adjacent CNC machine for filing and brushing. Then, it removes the soiled parts and feeds them to the MAFAC JAVA. By means of a spray-and-flood process in dual-wash technology, the MAFAC JAVA removes the emulsion residues and particles,



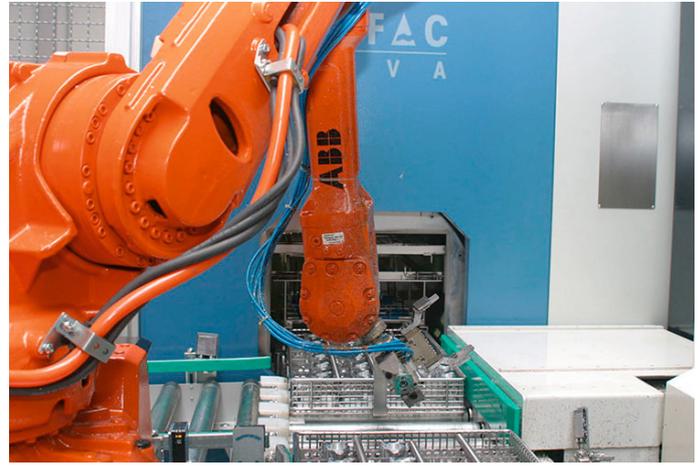
some of them extremely small, preparing the oil pump housings for final assembly. The cleaning process takes seven minutes in total; half of this falls to cleaning and rinsing. The two fluid tanks are arranged in cascades and have a volume of 500 and 300 litres. This increases the bath service lives and improves the economic efficiency of the machine. During the wet phase, the spray system counter-rotates to the basket receptacle system, which is likewise rotating. The specific arrangement of the nozzles ensures premium cleaning results. The spraying process is followed by a combined spray-and-flood process. Spray cleaning supports flood cleaning, generating a high degree of turbulence in the treatment chamber, 50% of which is flooded. Flood cleaning provides for efficient removal of contamination in the hidden, difficult-to-access interior contours of the parts. Fast draining of the cleaning chamber with less clearing volume ensures reduced non-productive times and less carry-over of cleaning agents.

After the rinsing phase, drying takes place. The parts are dried by means

of a warm air impulse blowing and hot air drying system. Here, the workpieces are first blown off by a blowing system with highly pure compressed air in a pulsed manner; next, ultra-finely filtered hot air is applied to the parts in a rotating manner.

Just as the entire process at Haas, the JAVA on the company's production floor runs in two-shift mode. Every day, 1,500 parts leave the parts washer, ready for assembly. The two fluid tanks are fed by rain water, the water temperature is 60 °C. To extend the useful life of the baths, the dual-bath system is equipped with a highly effective chips filtration. With an above-average capacity of 105 litres, the large coalescence separator ensures efficient bath care.

Meanwhile, the MAFAC JAVA and its additional features have proved their worth on the Haas shop floor. Running at high capacity, they ensure efficient operation and excellent cleaning results. Convinced by this experience, Haas already decided to buy a second machine of this type.



 **HAAS Metallguss GmbH**
Lösungen aus Aluminium- und Zinkdruckguss

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