



Parts Cleaning. Systems and Solutions.



Cleaning specialist meets
highest demands in the
manufacture of
high-precision turned parts

grieshaber
PRECISION

User Report

Grieshaber GmbH & Co. KG

Cleaning specialist meets highest demands in the manufacture of high-precision turned parts.

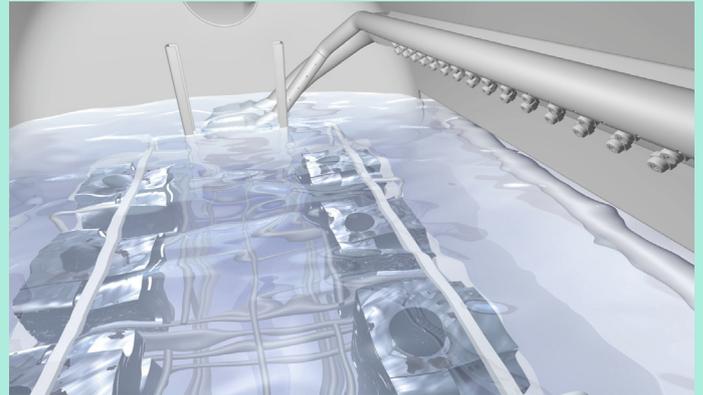
Everything centres on highest precision at Grieshaber GmbH & Co. KG, a manufacturer of turned parts based in Schiltach in the Black Forest. Every year, more than 100 million high-precision parts made of non-ferrous metals - apart from brass, copper and bronze predominantly aluminium and stainless steel - are produced on a production area of more than 8,500 square metres to satisfy high and highest quality demands. To clean these turned parts, the machine manufacturer MAFAC has developed optimum process solutions providing reliable results at the highest level.

The clientele of the long-established, medium-sized family business Grieshaber includes mostly well-known, globally operating enterprises from the automotive supplier industry and from measurement and control technology. The machine park permits the manufacture of batches from size one to average and large quantities that run in the millions, while satisfying all customary certification requirements. "Grieshaber counts among Europe's top 5 in the segment of most sophisticated high-precision turned parts", Peter Ruoff, Head of Marketing and Sales at MAFAC, is convinced. "Accordingly, the cleanliness requirements we have to meet are in the range of 200 µm." The customised operating conditions pose an enormous challenge for the cleaning technology. Parts to be cleaned include among others turned parts with a workpiece size between 6 and 100 millimetres in

diameter; these are partly very intricate with filigree radii and threads in the µm-range. Milling and drilling parts made of non-ferrous metals are also subjected to intermediate or final cleaning. In the case of stainless steel and aluminium parts, it is in addition necessary to meet requirements on the surface tension (38 mN/m). Due to the high sensitivity of the parts manufactured predominantly for customers in the automotive sector, special part-specific tool carriers are used. Thomas Gutmann, Head of Customer Support and MAFAC application expert of many years' standing explains the specific initial situation: "For a large portion of applications, the parts to be cleaned are retained by specially produced plastic inserts. As each layer of parts is followed by a protective cover, this results in a considerable packing density." In Thomas Gutmann's estimation, these conditions place highest demands on the cleaning processes, just like the high ingress of oil and the ambitious throughput figures.

Individual cleaning processes provide for cleanliness

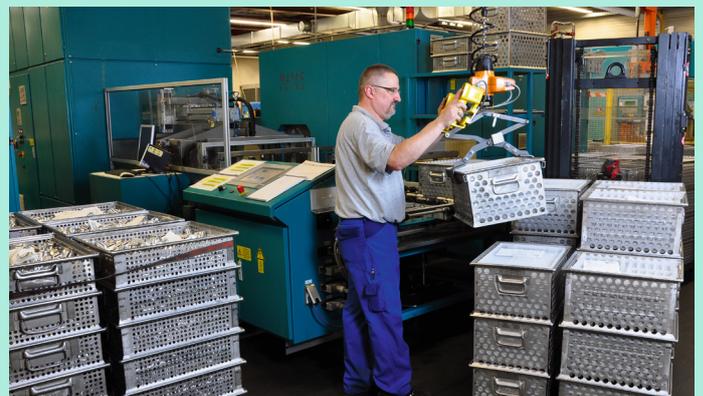
With two cleaning lines that are operated separately from each other, MAFAC offers a reliable solution to the company Grieshaber. Each of these lines consists of a MAFAC PALMA spray flooding system in three-baths design and a transfer system including handling insert for fully automatic parts loading and unloading. In addition, both machines are equipped with an external system for vacuum hot air flow drying. This enables simultaneous cleaning and drying, thus effectively reducing overall cycle times. Baths are arranged in the or-



The spray flooding process technology on the basis of the basket-nozzle-rotation patented by MAFAC enables reproducible cleaning results at Grieshaber.



Every year, Grieshaber produces more than 100 million high-precision parts made of non-ferrous metals on a production area of more than 8,500 square metres.



At Grieshaber, the two MAFAC PALMA spray flooding systems in three-baths design are equipped with a transfer system including handling insert for fully automatic parts loading and unloading.

der cleaning - rinsing - rinsing. The cleaning bath provides bath care by means of distillation, parallel to the cleaning process via bypass. This special process technology is offered by MAFAC as system provider based on a cooperation with an experienced competence partner.

Movement to combat dirt

So as to be able to reliably achieve the cleanliness requirements of 200 µm, further individual adjustments were made, among others as far as oil separation and cleaning agent dosage are concerned.

Head of Marketing and Sales Peter Ruoff sums it up: "The spray flooding process technology plays an extremely important role at Grieshaber. But our patented rotation principle is even more important: Because it is only through co- and counter-rotation that reproduc-

ible cleaning results, in particular by cleaning in flow direction in all conceivable sequences and angle situations, become possible. Based on this, parts become increasingly cleaner during the process sequence, until the demanded cleanliness is achieved.



On a daily basis, the two MAFAC PALMA spray flooding systems at Grieshaber clean up to 100,000 partly intricately designed turned parts at ambitious throughput speeds in two-shift operation.

Apart from brass, copper, bronze and stainless steel, the company mostly processes aluminium. The cleanliness requirements lie in the range of 200 µm.

Parts to be cleaned include among others turned parts with a work-piece size between 6 and 100 mil-

limetres in diameter, partly with filigree radii in the µm-range.



Parts Cleaning. Systems and Solutions.

MAFAC - E. Schwarz GmbH & Co. KG
Max-Eyth-Straße 2, D-72275 Alpirsbach
Phone + 49 (0) 74 44 / 95 09-0, Fax 95 09 - 99
E-Mail: info@mafac.de, www.mafac.de



Grieshaber GmbH & Co. KG
Am Hohenstein 115 | 77761 Schiltach
www.grieshaber-precision.de

You can find more
user reports on our website
www.mafac.de

