



WORLD WIDE WEAVE

Parts Cleaning in the Automotive Industry:

Maxflow convinces with low residual particle concentration in washing water

In view of a growing variety of options, shorter delivery times and ever-increasing output quantities, the international competitiveness of automotive manufacturers and suppliers is ensured by short cycle times coupled with high parts quality and production precision. Efficiency and reliability during parts cleaning are among the crucial success factors. The filters used in industrial washing processes have a direct influence on the required quality and quantity of engine component processing. Customised cleaning plants with powerful filter systems guarantee optimal, reproducible cleaning results and the necessary profitability. For more than three years the Maxflow concept from GKD – Gebr. Kufferath AG has proven successful in the automotive industry. The sector is increasingly seeking compact filter solutions with high throughput at low component contamination. As a space-saving filter unit with impressive filtration performance, the Maxflow system fulfils these requirements. In addition, it offers chip removal by type without interruption of the filtration process.

Filtration of aluminium chips without the need for consumables

German manufacturers are among the most efficient in the world when it comes to engine production. The chip volume, for instance during cylinder head production, is accordingly high. After processing, the aluminium cylinder heads are cleaned in high-pressure cleaning systems. Cleaning nozzles direct water at high pressure through the drilling channels, flushing



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out chips and wear debris. The contaminated water flows into a dirt tank. This tank feeds the connected filter system. The current state of the art uses a complex combination of paper band, bag and cartridge filters. These filter technologies are characterized by a high carry-over of process liquid. The high consumption of filter bags, filter bands and filter cartridges results in considerable costs. The disposal of these contaminated consumables entails additional costs. The application of the Maxflow concept eliminates the separation and disposal of consumables. Short downtimes affect efficiency, since conventional filter media must be replaced in regular intervals. By combining filtration and solid discharge in one unit, the Maxflow system offers users a wholly convincing alternative. This system has already impressively demonstrated its efficiency for sophisticated production processes in the automotive industry. Switching to the Maxflow concept also produces significantly improved process results and considerable cost savings in terms of paint removal from skids.

High throughput, low costs

The Maxflow filter head consists of a stainless steel body in which vertically arranged static filter discs made of stainless steel composite mesh are surrounded by unfiltrate in cross flow. In the process, the multidimensional mesh construction YMAX[®] allows particle separation right down to the microfiltration range. The filter cake, which is formed without filter aids, is detached from the discs by automatic backwashing. The integrated pressing unit discharges the chips without interruption of filtration. A specially developed design of the system is used for specific applications, such as cylinder head cleaning. The filter head is separated from the pressing unit by a slider, allowing a throughput of up to 1.200 l/minute at low unproductive times for automatic backwashing. Chip removal is also performed automatically. In addition to the high throughput of up to 72 m³/h



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per filter head, Maxflow features a particularly high purity level of the filtrate. The requirement by an automotive manufacturer - maximum 7 mg residue per component - is permanently more than 50% lower (3 mg residue per component) with the Maxflow system. Disposal costs are considerably reduced by the chip removal by type, since secondary waste treatment is eliminated as well. The high purity of the filtrate increases the parts quality. Furthermore, the spray nozzles of the cleaning plant are less impaired by residual particles, which in turn has a positive effect on their service life. The optimised throughput reduces processing time and thus production costs. Last but not least, the low space requirement also speaks in favour of the innovative system.

Long service life, impressive results

Throughput, long service life and purity of filtrate characterise the system's efficiency. Coupled with cost efficiency for parts cleaning, the Maxflow concept has proven successful as a sustainable solution for challenging filtration tasks in the automotive industry.

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GKD – WORLD WIDE WEAVE

As a privately owned technical weaver, GKD - Gebr. Kufferath AG is the world market leader in metal, synthetic and spiral mesh solutions. Four independent business divisions bundle their expertise under one roof: Industrial Mesh (woven metal mesh and filter solutions), Process Belts (belts made of mesh and spirals), Architectural meshes (façades, safety and interior design made of metal fabrics) and Mediamesh® (Transparent media façades). With its headquarter in Germany and five other facilities in the US, South Africa, China, India and Chile – as well as its branches in



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France, Spain, Dubai and worldwide representatives, GKD is close to markets anywhere in the world.

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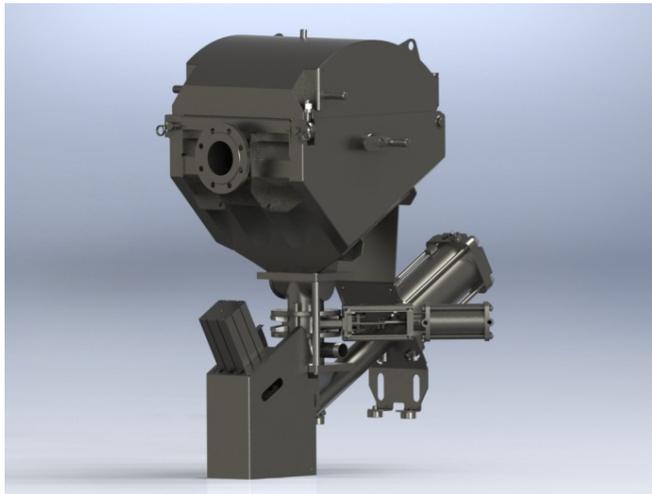
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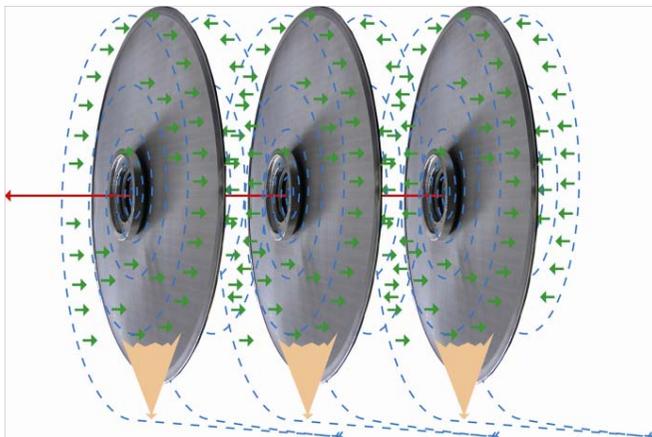
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Picture 1: The Maxflow system combines filtration and solid discharge in one unit.



Picture 2: Opened Maxflow filter head 504-80-DN100 with vertically arranged, static filter discs made of stainless steel composite mesh.



Picture 3: The static filter discs made of stainless steel composite mesh are surrounded by unfiltrate in cross flow.

Picture 1-3 © GKD

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