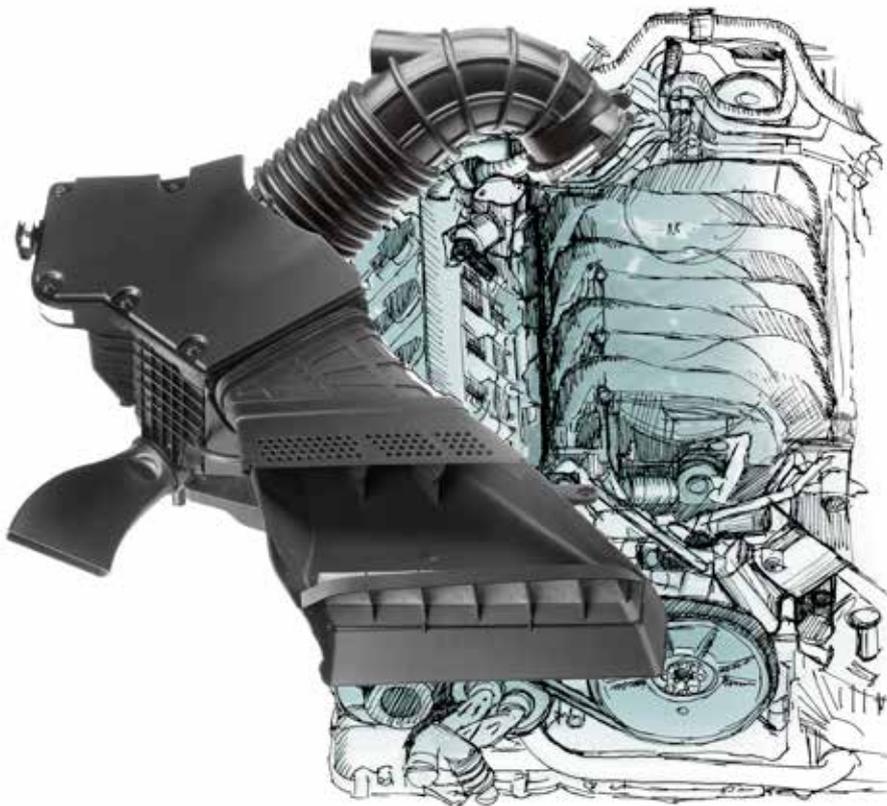


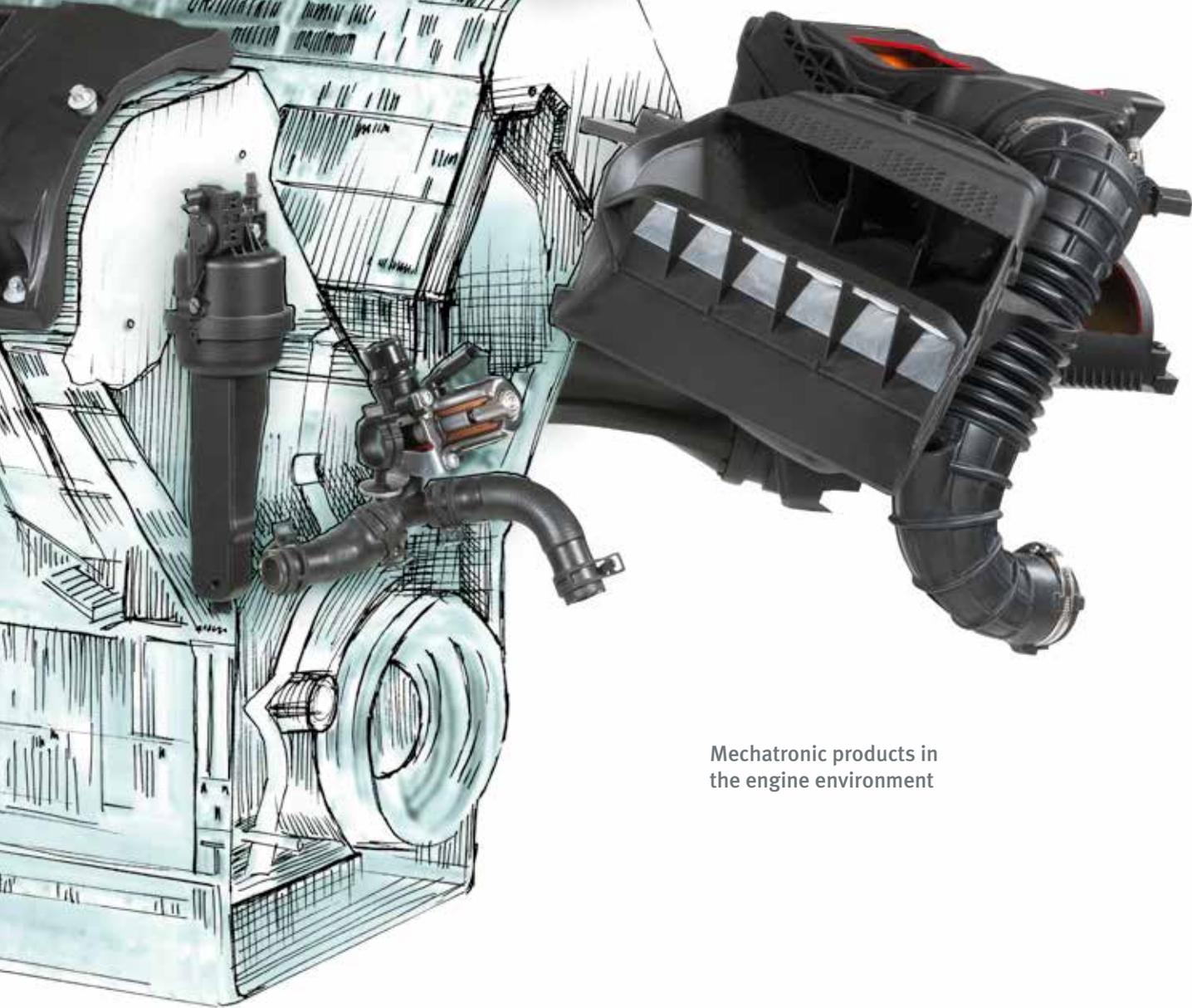
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# Fluid Management

Guiding of air, water and oil.

[www.wocogroup.com](http://www.wocogroup.com)





Mechatronic products in the engine environment

## Fluid Management

For Woco, Fluid Management in the automobile means the development and global production of components for the sealing, separation, intake and regulation of media such as air, water and oil. From individual components to entire modules – development and manufacturing expertise assure our competitiveness and future sustainability in these product segments.

Woco serves the air intake segment from the point of air intake to the cylinder head. In the area of sealing points, Woco can draw on its vast experience in the development and manufacturing of elastomers. The full range of functional and process simulation completes the product expertise. Woco serves the water medium segment with electromagnetic and

electric motor-driven water valves, water distributors and flexible hose connections. The latest developments rely on versatile functional integration and as compact modules facilitate the controllability of different circuits on the engine. Here, with its long-standing assembly expertise Woco has good prerequisites to serve future market requirements for the management of coolants.

In the oil medium segment, Woco manufactures components such as oil collection and oil distribution pipes, highly efficient coarse and fine oil separation systems and sealing technology. Oil pump modules will complement the product portfolio in this segment in the future.

## Air intake

The intake and cleaning of air for the engine combustion process are primary tasks of air intake systems. A low pressure drop, high filter service life and homogeneous loading of the filter cartridge are indispensable. Turbulence-free inflow to the mass air flow meter also has to be guaranteed under all engine operating conditions.

Development goals also include the air intake noise relevant to internal and external noise and resonance-free, sound-optimized emission of the components. In addition, the customer expects an attractive design, because air intake systems represent an important and distinctive element in engine compartment design.



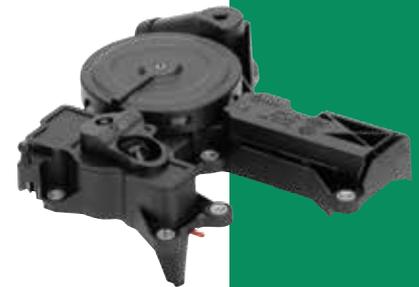
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## Oil separators

Oil particles contained in the blow-by volume flow of crankcase ventilation systems are returned reliably to the oil circuit using Woco oil separators. Legal and environmental regulations and demands require the exhaust air to be returned into the intake air of the engine. Inadequate oil separation systems can therefore impact combustion; the result is an impact on the performance and particulate emissions of the engine.

So-called passive oil separators frequently use the kinetic energy of the blow-by flow. The oil particles are passed, for example, through a labyrinth or cyclone and thus, due to their mass inertia, they are separated from the flow and can be returned to the oil circuit.

In active oil separators, however, additional energy is applied to the particles in order to achieve maximum efficiency, in a similar way as occurs in centrifuges or electrostatic precipitators. In the latter method, particles are electrically charged, attracted by an oppositely charged surface and separated.





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#### **Woco Industrietechnik GmbH**

Hanauer Landstrasse 16 | 63628 Bad Soden-Salmünster | Germany

Phone +49 (0) 60 56 / 78-0 | Fax +49 (0) 60 56 / 78-7212

info@de.wocogroup.com | [www.wocogroup.com](http://www.wocogroup.com)

## The Woco Group worldwide

Woco develops future-oriented technologies based on innovative material, product and process solutions. We achieve our goals by continuously identifying and evaluating trends in markets and technology and through the consistent benchmarking of products, processes and materials. Through close cooperation with universities and research institutions and continuous exchange and transfer of knowledge with our internal departments, the Woco Group develops market-oriented, future-proof functional solutions for automotive power train and vehicle body. The global presence of the Woco Group ensures proximity to our customers and markets and their specific requirements.