



MANN-FILTER air filters

Protection you can rely on – for consistent engine performance and quiet driving

**MANN
FILTER**

MANN-FILTER – Perfect parts. Perfect service.



The benefits of MANN-FILTER air filters:

- reliability throughout the whole service interval
- optimum dirt separation efficiency
- low flow resistance
- permanently 100 % leakproof
- specially embossed paper for good pleat stability
- special impregnation prevents water absorption

MANN-FILTER air filters: Reliable technology for the best protection

Clean intake air is essential for problem-free driving. However, pollutants such as particles, soot, fine dust etc. are taken in with the air. The result: dirt particles get into the combustion chamber, causing grooves and premature wear on the engine. Electronic components, such as sensors which are located between the intake and the combustion chamber are impaired in their function or even destroyed.

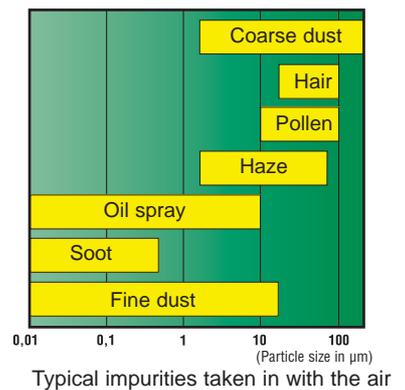
MANN-FILTER air filters ensure reliable protection

Modern MANN-FILTER filter media for air filters demonstrate particularly high mechanical stability. They filter the intake air efficiently and reliably. This allows optimum composition of the air/fuel mix and ensures consistent engine performance.

Multifaceted talent:

Functions of MANN-FILTER air filters

MANN-FILTER air filters perform many important functions. They filter harmful particles such as dust, pollen, sand, soot or even drops of water out of the intake air. They ensure that only clean air gets into the combustion chamber. In addition, MANN-FILTER air filters prevent damage caused in various ways to electronic components such as for example, highly delicate sensors (air flow meters). MANN-FILTER air filters have other important functions: they reduce intake noise, balance the air flowing towards the air flow meter and seal off adjacent components. MANN-FILTER is setting new standards for the air filtration of the future with its air filter solutions.



For a clean environment:

Most air filters from MANN-FILTER can be incinerated completely, and can thus be disposed of easily. What is more, the MANN+HUMMEL plants are "environmentally certified" to DIN EN ISO 14001.

MANN-FILTER air filter shapes

Available installation space is constantly reduced through developments in engine design with increasingly sophisticated technology, more and more components and modules, as well as stricter legislation regarding vehicle safety and passenger protection resulting in a constant reduction in space for installation. Modern air filter systems must therefore be more compact to meet the increasing requirements.



Trapezium air filter



Oval-conical air filter



Air filter with stepped bellows



Air filter with spiral wound technology

MANN-FILTER is developing innovative air filters which fit the installation location exactly in form and function. Air filters do not always need to be rectangular. Where the installation conditions make it necessary, alternative models are available (trapezium-shaped,

oval-conical filters etc). One example of optimum utilisation of the space available is the MANN-FILTER air filter with stepped pleats. The stepped arrangement significantly increases the filter surface and improves filtration capacity.

The air filter with a hole for bracing a hood and housing also demonstrates MANN+HUMMEL's ingenious technology.

MANN-FILTER offers a wide variety of products with hundreds of types and sizes, all of course in OE quality.

Micrograde N – High performance air filter non-woven

As filtration technology has to meet increasingly stringent demands, more and more air filters now contain synthetic fibre filter media. The automotive industry demands improved filtration performance, more compact design, higher dust capacity and longer service intervals.

The non-woven filter media developed by MANN+HUMMEL is entirely made up of polyester fibres between 5 and 22 microns in diameter. It has a gradient structure, with the

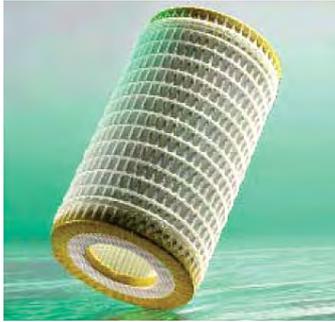
width of the fibres increasing towards the clean air side. This structure provides higher dust capacity, compared with conventional paper media. Dust particles are absorbed throughout the whole fleece ("deep bed filtration"); with paper filters, on the other hand, contaminants are mainly trapped on the flow side. The specific structure of Micrograde N provides optimum performance, even in the rain. The non-woven filter media Micrograde N achieves up to 50%

higher dust capacity, compared with cellulose-based filters of the same size. The filter also takes up to 30% less space without any reduction in service life.



Compared with a standard paper element, an air filter element with Micrograde N filter media takes up approximately 30% less space, with the same service life and filtration efficiency.

MANN-FILTER product innovation: Spiral wound technology



Air filter with spiral wound technology



Detailed view of spiral wound design



Spiral wound technology – easy to handle during servicing

Several process-optimised functions are combined in this innovative solution:

- stabilisation of pleats
- uniform pleat spacing maintained
- safe and convenient handling when replacing the filter

This well-established product innovation, tried and tested in oil filter element HU 718/5, is now employed for other filters. The radial seal air filter C 30 1353 already uses the new spiral wound technology. This stabilising and weight-saving technology will in future be extended to other air filters.

Its special feature: this pioneering technology ensures that pleats remain evenly

spaced across the entire filter. Even when distorted, for example, if the filter is displaced, the filter shape remains stable thanks to its flexible spiral wound design. Through this technology, pleats are also protected when handling, with smaller spacing widths at the point of handling.

You can order more product brochures, catalogues (also on CD-ROM), a cross-reference list and a dimension table under www.mann-filter.com or by telephone. Or you can use our internet catalogue.



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