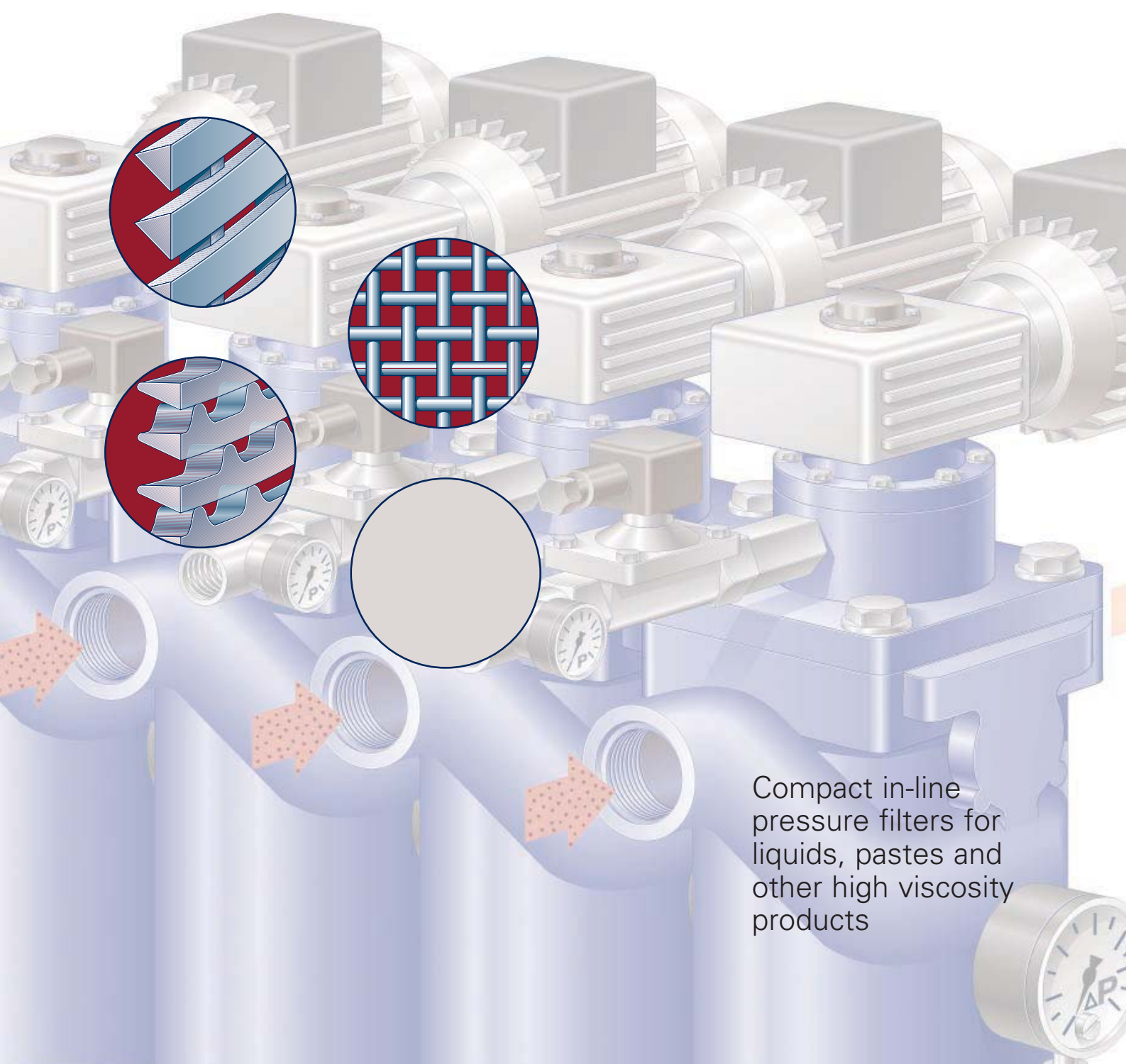




AUTOMATIC FILTERS



MAHLE
Industriefilter



Compact in-line
pressure filters for
liquids, pastes and
other high viscosity
products

THE COMPANY



MAHLE Filtersysteme GmbH, Industrial Filters Division

The Öhringen plant has been developing and manufacturing industrial filters since 1962. MAHLE GmbH took over the plant in 1974 and merge with KNECHT Filterwerke GmbH in 1977.

Today, the MAHLE Group, with its Pistons and Engine Components, Filter Systems and Valve Train Systems divisions, employs a global workforce of 28,000 employees on trend-setting high-precision, high-reliability components and modules for engines and vehicles.

MAHLE Filtersysteme GmbH, a successful and expanding company with a turnover in excess of EUR 1 million, specialises in filters and filter systems, developing trend-

setting solutions to problems arising in the car manufacturing industry and in industrial applications.

The know-how of the filter pioneers, MAHLE and KNECHT, has been concentrated at the Öhringen plant for the industrial filters division. The decision-making procedures and close and intensive exchange of experience between Development, Production and the global Sales network have yielded great success. The complete industrial filter range, with market segments in fluid technology, dust collection and process technology, has been on the market since 1990 under the trade name of MAHLE Industrial Filters.

THE MARKET

In order to remain competitive in the face of rising costs, companies are making full use of their potential for rationalisation and are increasingly automating their production processes.

Consequently, **automatic filter systems** are being used more commonly in industry for the filtration of liquids, pastes and such like.

If machines and systems are to run non-stop around the clock to make better use of capacity, important criteria must be guaranteed. Process fluids must be cleaned and regenerated in order to meet the high quality requirements of the parts being processed. Manufactured products must meet requirements exactly. High safety standards must be met on systems and in processes. The maintenance and disposal procedures required in consumable filter systems must not be disruptive, overly work-intensive or cause operations to be interrupted. Consequently, operating automatic filters is the only solution that will be effective.

MAHLE Industrial Filters have consistently used a wide array of innovations in developing its Variable Automatic Filter series, which is protected by a variety of patents. They consistently offer the perfect solution for a wide range of different requirements.

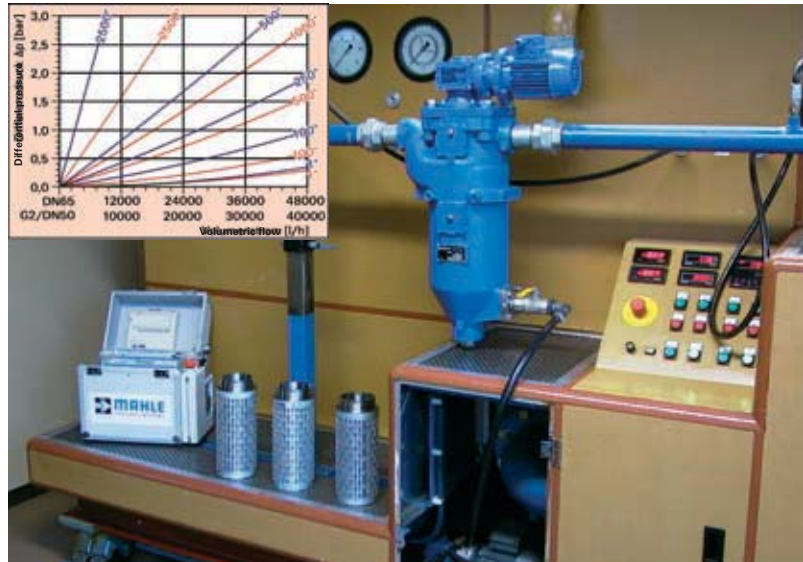
These in-line pressure filters, which can be cleaned in-process using state-of-the-art technology,

do not require the extra maintenance or disposal measures commonly associated with consumable filter systems. A variety of cleaning systems, filter materials and control options enable the compact MAHLE automatic filters to be geared very flexibly towards all filtration requirements and to be used in the ultra-fine to coarse filtration or homogenisation of:

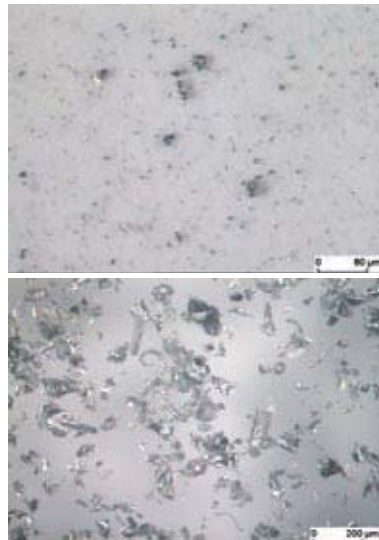
- cooling lubricants for metal cutting or sheet metal pressing in mechanical or automotive engineering
- liquids for industrial parts and car wash installations
- marine fuel and engine oils
- varnish and paint industry products, as well as greases, pastes and adhesives used in manufacturing and processing
- other liquids and products, such as those used or produced in the chemical and foodstuff industries

THE KNOW-HOW

Decades of experience in industrial filtration, the early detection of problems in the market and the consistent conversion of innovative ideas into product solutions designed to meet customers' requirements have formed the bedrock for the success which MAHLE's range of automatic filters enjoys. With a continuous stream of product advancements and new developments, MAHLE has managed to meet the greatly varying requirements arising within industry, thereby permanently expanding its ranges of applications. MAHLE automatic filters boast consistent reliability and cost efficiency in a very wide range of exacting applications. Choosing the best filter for the job depends on the operating parameters. The filter size and the filtration and cleaning performance are judged on the basis of viscosity and fluid characteristics, as well as of the scale, nature and concentration of the particles or substances arising.



Endurance test bed for automatic filters



Sample analysis with computer image analysis

If there is insufficient reliable data available for making an assessment, pilot trials can be

conducted in practical conditions with test filters. This enables the customer to see for himself how effective the solution is. The company has an extensive range of test equipment at its disposal for use in pilot trials, volumetric flow measurements, fluid sample examination, particle size analysis and pressure tests. Certifications conforming to ISO 9001 guarantee the high quality standards of MAHLE products.



Quality assurance on a three-dimensional measuring machine

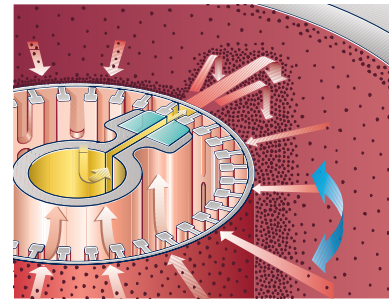
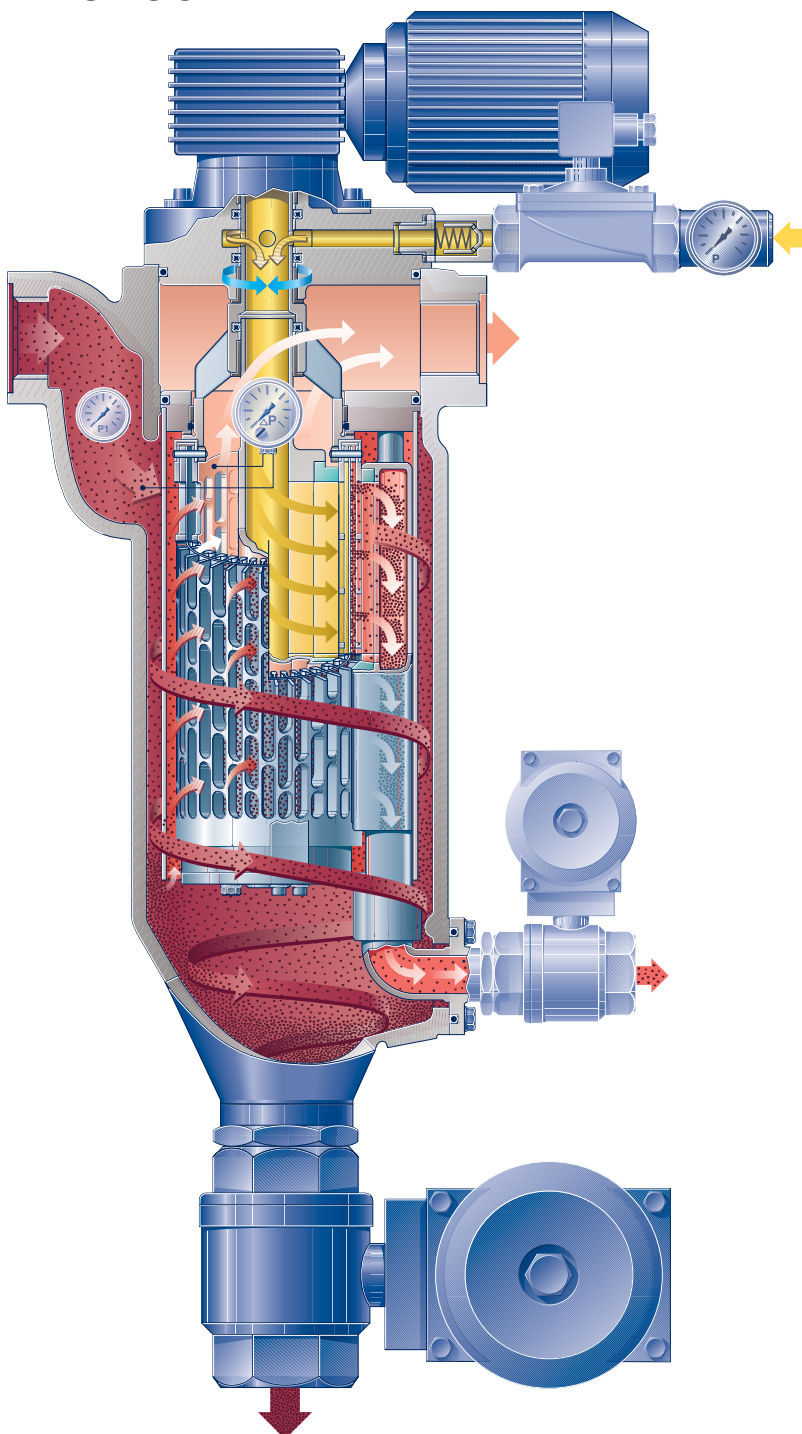


Final assembly of the Metal Edge filters

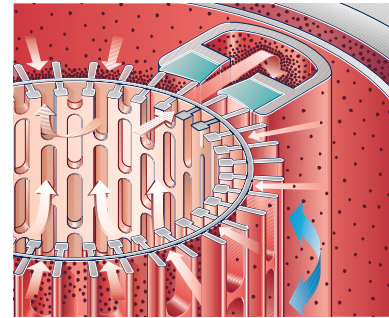
Variable Automatic Filter series

The advantage of the “variable system” is that one basic filter concept can be adapted to suit a wide range of different filtration requirements. If necessary, it also facilitates the switch to a different cleaning principle at very short notice.

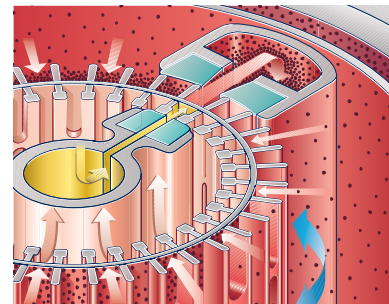
THE PRODUCT



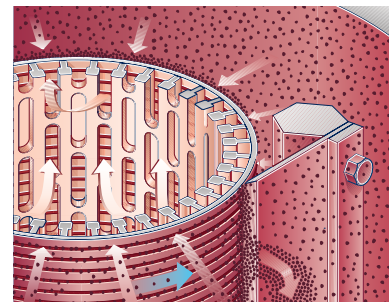
Principle of pulsating external pressure cleaning



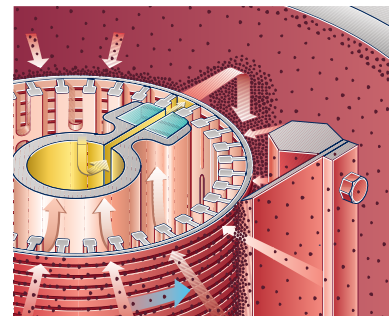
Internal pressure cleaning



Pulsating external pressure cleaning with a continuous flow of filtrate



Scraper cleaning



Scraper with external pressure cleaning

The classic Metal Edge filter range, which comes as standard in connection sizes from G 1/2 to DN 300, can be used to filter a variety of low to high viscosity liquids, pastes and such like. Compact designs with one or more rotating elements are ideal for meeting the required operating parameters. They come in a variety of designs and materials, facilitating a wide scope for application and even include a high-pressure version. Many client-specific applications simply require minor adaptations to existing standard solutions. In the case of larger volumetric flows or comparable filtration requirements, the external pressure-cleaning version can also be combined with a compact parallel unit (illustrated on the cover page). Individually controlled filter cleaning enables the flow of filtrate to continue, even in-process.

The MAHLE control cabinet facilitates versatile filter control within existing process parameters.

The high-grade MAHLE filter elements are available in gap widths from 3 to 2000 µm.



	AF 71 L/G/H/S	AF 72 G/S	AF 73/93 G/S	AF 74/94 S	AF 75/95 S AF 76/96 S
Connection size	G ½ G 1, G 1½	G 1½ DN 40/50	G 2 DN 50/65/80	DN 100/125/150	DN 200/250/300
Operating pressure	40, 100 and 400 bar	16, 40 and 100 bar	16 and 63 bar	16 bar	16 bar
Cartridges	1xØ42x70 1xØ42x190	1xØ65x230	1xØ110x265	3x2xØ110x265 3x3xØ110x265 3x4xØ110x265	6/12x2xØ110x265 6/12x3xØ110x265 6/12x4xØ110x265
Height	239 362	595	755	1870–2680	2620–3160 2857–3397
Gap width	30, 40, 50, 60, 80, 100, 130, 160, 200, 250, 360, 500, 1000, 1500, 2000				

Automatic Metal Edge filter with radial scraper cleaning and optional integrated cyclone effect

AF4...
Radial scraper cleaning device
Option: heating jacket,
integrated cyclone effect

AF8...
Axial scraper cleaning device
Option: heating jacket

Automatic Metal Edge filter with a filtrate chamber emptying function

IN PRACTICE



Automatic filter with internal pressure cleaning for cooling lubricant



Automatic filter with external compressed air cleaning for cooling lubricant



Automatic Metal Edge filter with a radial scraper cleaning device for isocyanate (a component of PU)



Automatic Metal Edge filter with a radial scraper cleaning device for adhesives



Automatic Metal Edge filter with an axial scraper cleaning device for chocolate



Automatic filter with internal pressure cleaning in marine application for engine oil



Car-wash water preparation with an automatic filter and bioreactor



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