

Gamma filtri autopulenti per applicazione macchine utensili

Overview MAHLE Industrial Filtration

Mercati e Prodotti



		MAHLE fluid technology 	MAHLE dust filtration 	MAHLE process technology 	MAHLE fluid separators 
Locations		Öhringen (DE)	Öhringen (DE)	Öhringen (DE)	Hamburg (DE)
Products		hydraulic filter, filter elements	Filtration systems, filter elements	Automatic filter, process filter	oil separators liquid treatment
core markets	engine building	•	•	•	•
	automotive industry	•	•	•	•
	energy / oil / gas	•		•	•
	Ship building	•		•	•
	chemical industry	•	•	•	•
	food industry		•	•	

MAHLE Industrial Process Filter

Applicazioni per filtri autopulenti



■ Metal Machining



■ Colour and Paint Industry



■ Water Treatment



■ Food Industry



■ Chemical Industry



■ Ship Engineering



■ Extraction Technology



■ Petrochemical Industry



MAHLE Industrial Process Filter Vantaggi filtri automatici MAHLE

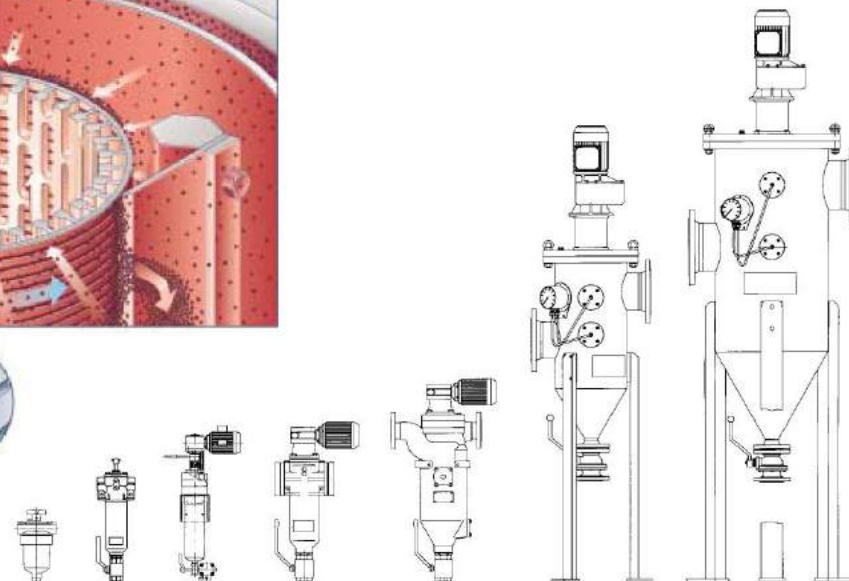
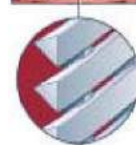
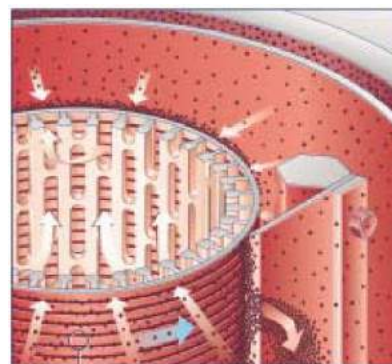
Advantages of MAHLE Process Filters

- MAHLE Process Filters are automatic self cleaning filters without consumption of filter material
- No one-way / disposable filter elements
- Two basic functions:
 - metal edge filters
 - back flush filters
- MAHLE Process Filters are basing on intelligent modular design
- Self adjusting to variable operation conditions
- Self cleaning without process interruption possible
- Low maintenance / low life cycle cost
- High running life of upstream police filters



Automatic Metal Edge Filter

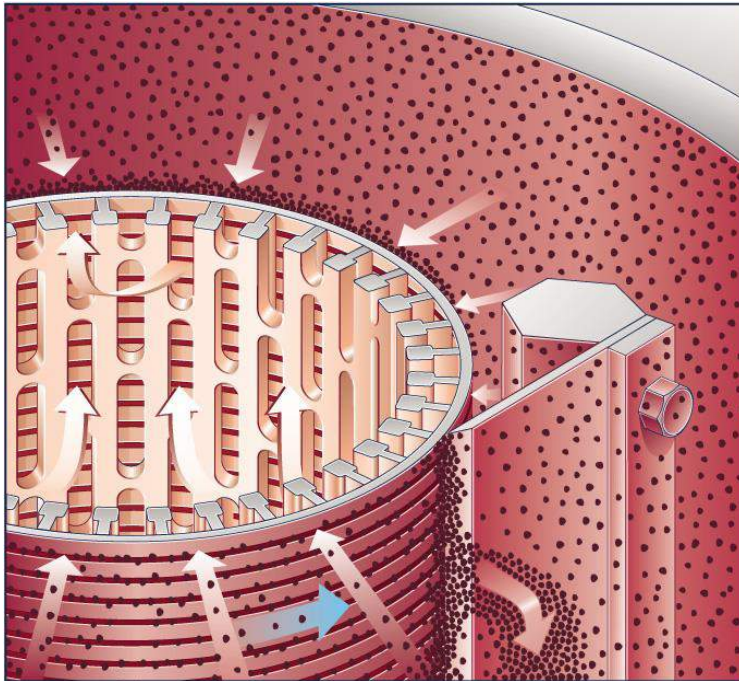
- For low viscous liquids and up to high viscous pastes
- casted/ welded housings
- customized inlet/outlet connection/ orientation
- customized material specifications (housing, seal material)
- max. flow rate 900 m³/h (4000 gpm)
- retention 30 µm ... 2000 µm
- Useful accessories available



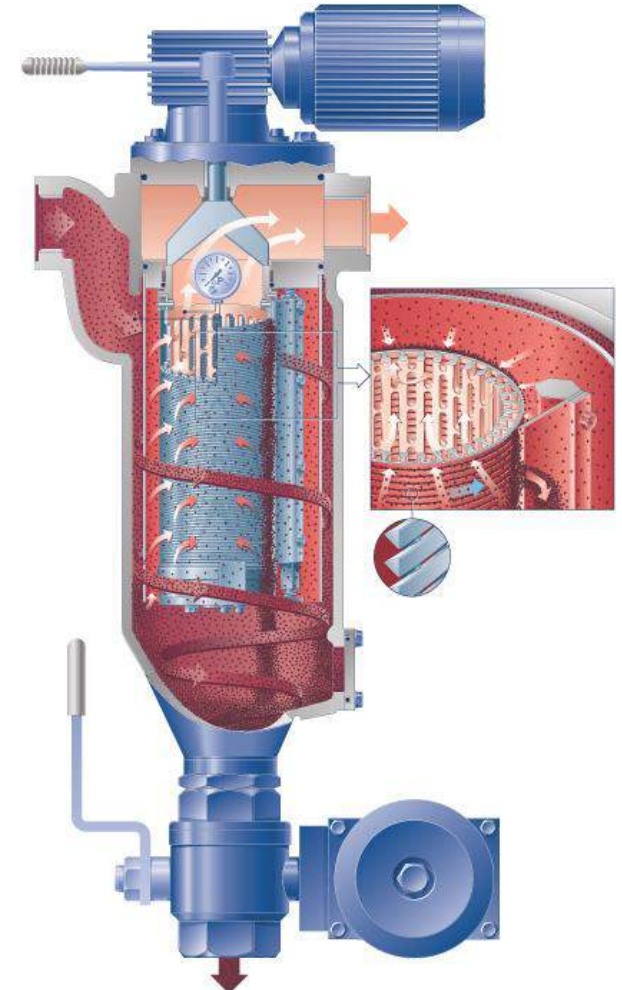
	AF 71 G/H/L/S	AF 72 G/S	AF 73/93 G/S	AF 74/94 S	AF 75/95 S AF 76/96 S
Anschluß- größe	G ½ G 1, G 1½	G 1½ DN 40/50	G 2 DN 50/65/80	DN 100/125/150	DN 200/250/300
Zul. Standard- Betriebsdruck	40, 100 und 400 bar	16, 40 und 100 bar	16 und 63 bar	16 bar	16 bar
Spulen/ Spaltrohre mm	1xØ 42x70 1xØ 42x190	1xØ 65x230	1xØ 110x265	3x2xØ 110x265 3x3xØ 110x265 3x4xØ 110x265	6/12x2xØ 110x265 6/12x3xØ 110x265 6/12x4xØ 110x265
Gesamt- höhe mm	239 362	595	755	1870–2680	2620–3160 2857–3397
Spaltweite µm	30, 40, 50, 60, 80, 100, 130, 160, 200, 250, 360, 500, 1000, 1500, 2000				

Design and Self Cleaning Principle AF 7X / AF 9X

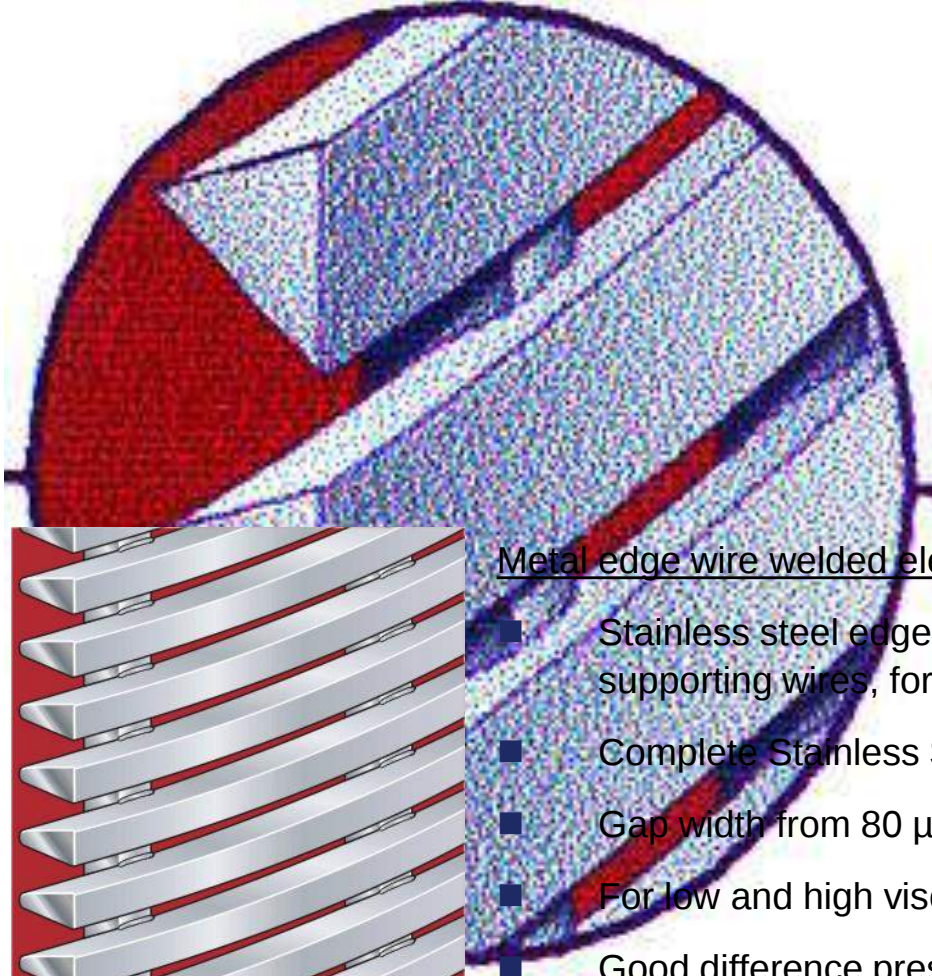
- Metal Edge Filter with Scraper Cleaning
(Filter gap width 30 - 2000 μm)
- Suitable for coolants at steel cutting, conditional for non-ferrous metal and GG cutting, conditional for Al (<12% Si) cutting, for dirt loads up to 2000 mg/l



AF 7X / AF 9X

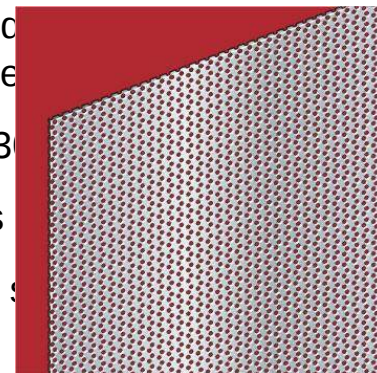


Filter media for AF 7X/9X/15X



Metal edge wire coiled element:

- Stainless steel edge wire with triangular profile (60°)
- Wire coiled into machined tube (aluminium or stainless steel)
- Precise Gap width from 300 µm to 5000 µm
- For low and high viscous products
- High difference pressure stability



Metal edge wire welded element:

- Stainless steel edge wire welded onto supporting wires, forming a tube
- Complete Stainless Steel
- Gap width from 80 µm to 5000 µm
- For low and high viscous products
- Good difference pressure stability

NEW:

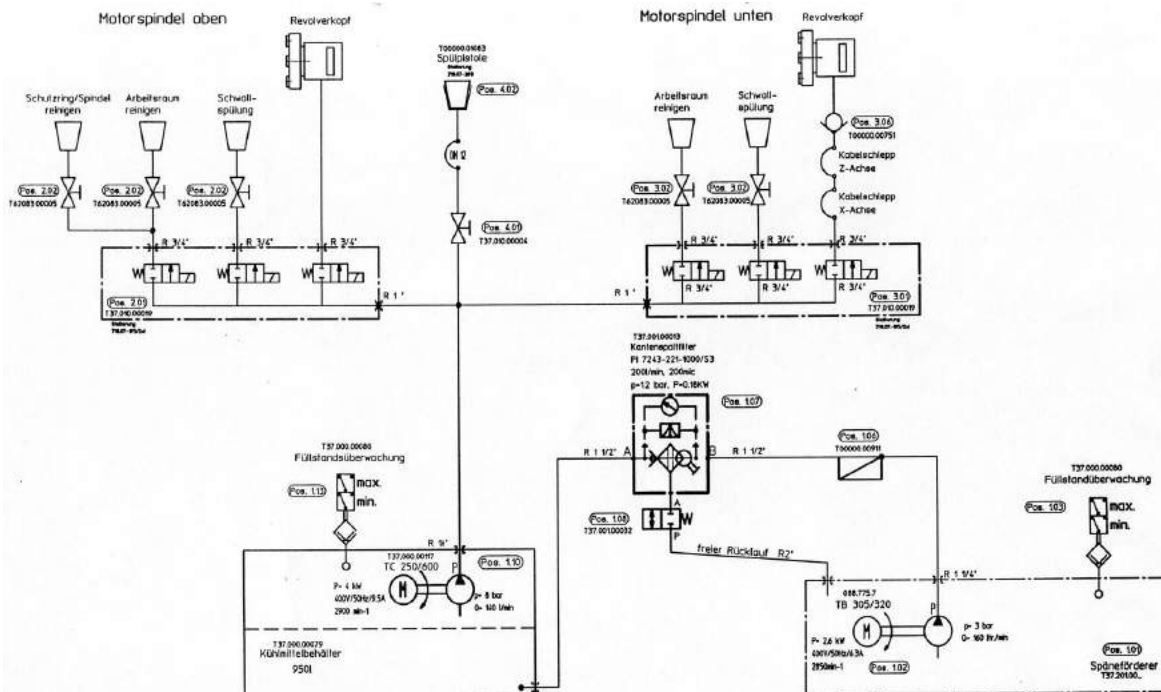
Metal screen foil, conical bores

- Precise bores of 100 µm and 200 µm
- For low and high viscous products
- Less problems with fibres

AF 7243-221-10000/G4

AF 6014-020

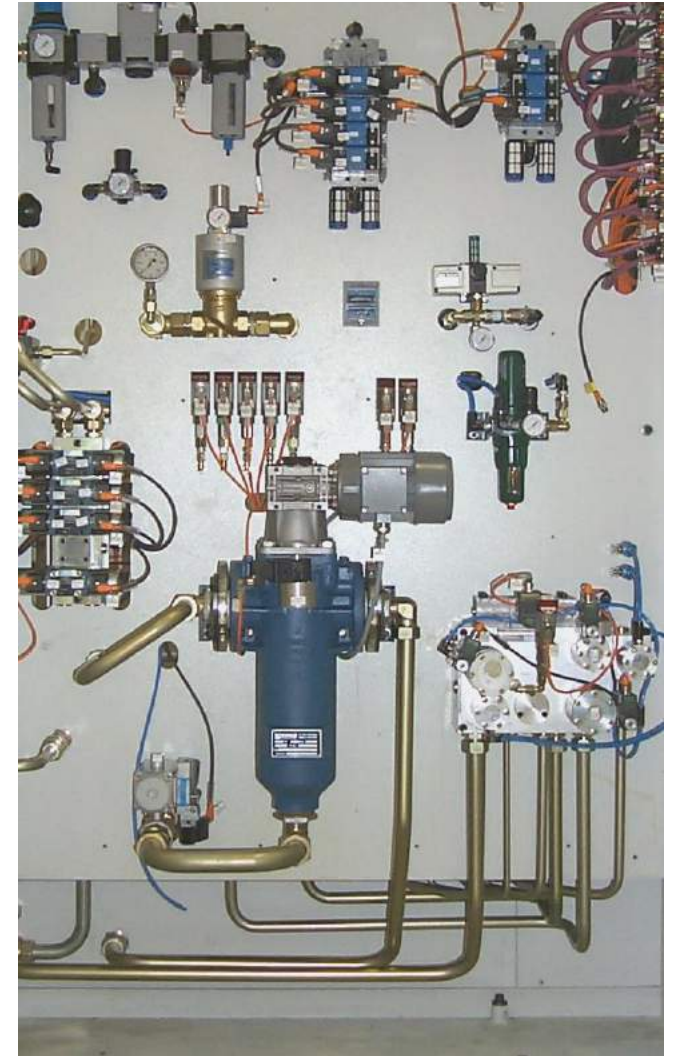
MAG (ex Hüller Hille) Diedesheim



MAHLE AF 72
with “world driving gear motor”
(CSA + UL stamped)
at MAG (ex Hüller-Hille)
tooling center “Specht”,

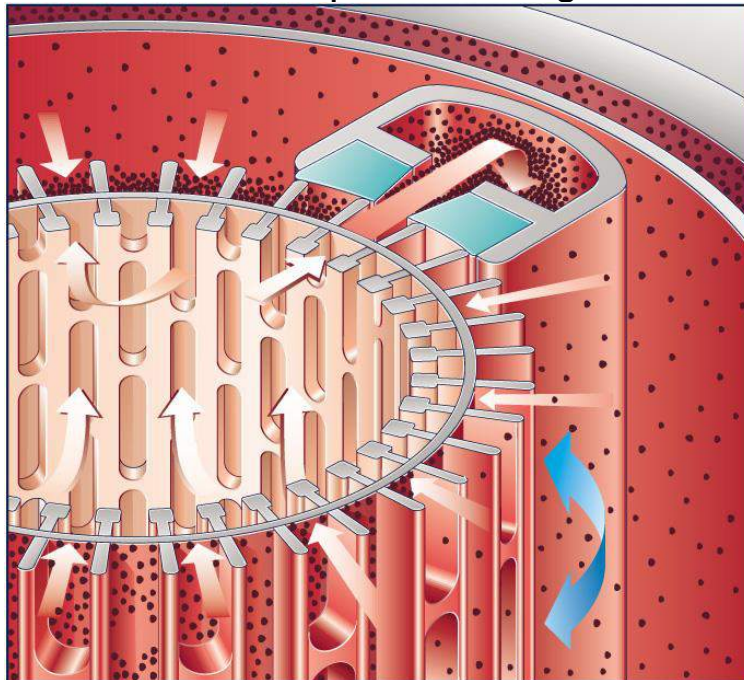
Customer FORD

Filtration 50 µm / 100L/min
cooling emulsion

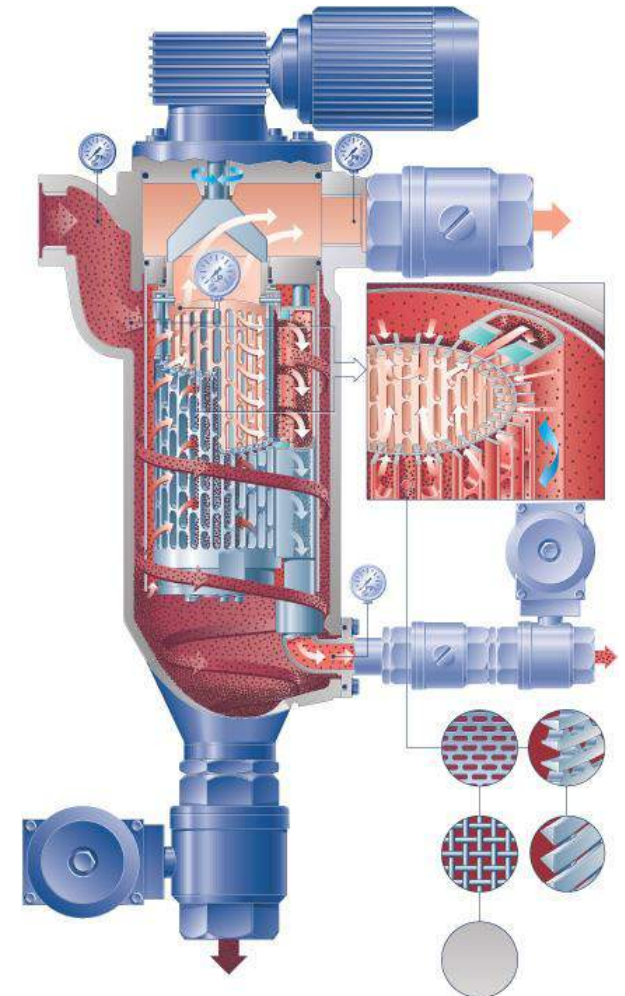


Design of Self Cleaning Principle AF 11X

- Automatic Back Flush Filter using inlet pressure for segmental back flush
- Filter Fineness 30 - 200 μm
- For dirt loads up to 2000 mg/l



AF 11X





Coolant filtration applications

@ BMW

Machine tool manufacturer: **Schautd**
Preseparation/secondary filtration: central filter
Machining: grinding
Material: steel
Mahle-filter: **AF 113 G**



Coolant filtration applications

@ Iveco

Machine tool manufacturer: **Ingersoll-Naxos**

Preseparation/secondary filtration: central filter

Machining: grinding

Material: steel

Mahle-filter: **AF 113 G**

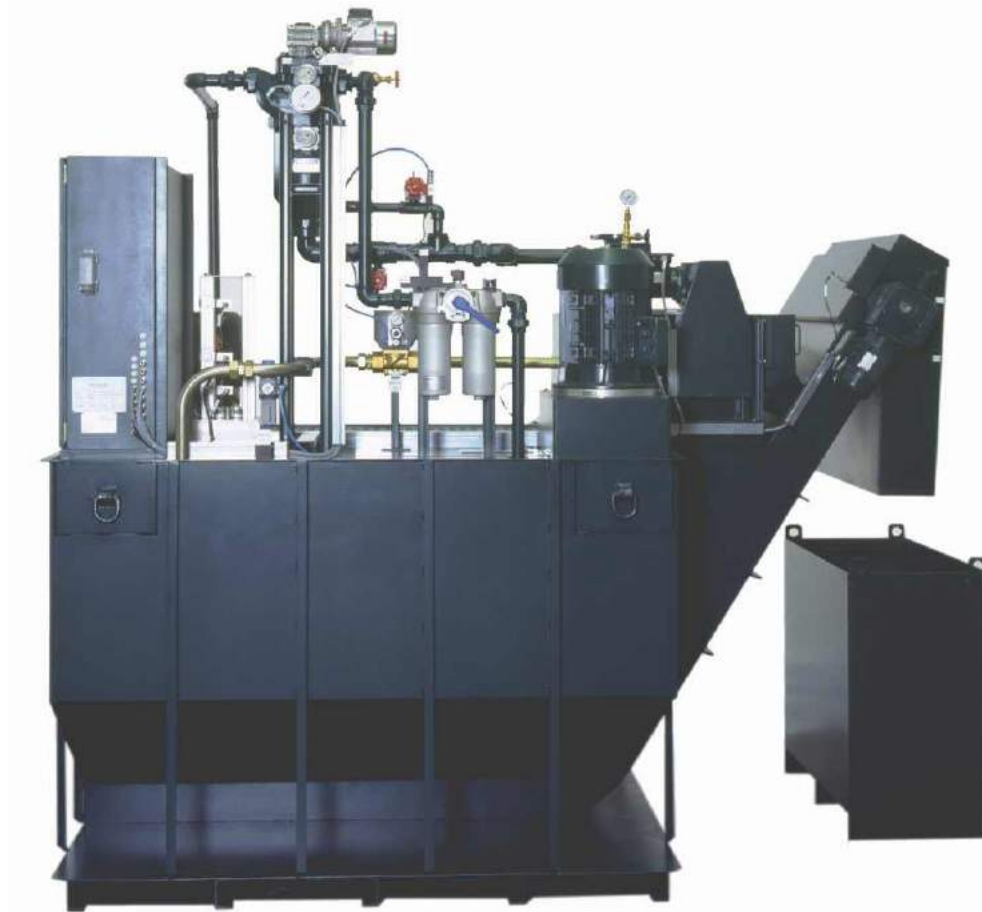
MAHLE Industrial Process Filter

Application: Coolant supply systems



Smaller filter system

Grinding/ turning,
sedimentation,
magnetic separator,
AF 113
safety filter PI 210



MAHLE Industrial Process Filter

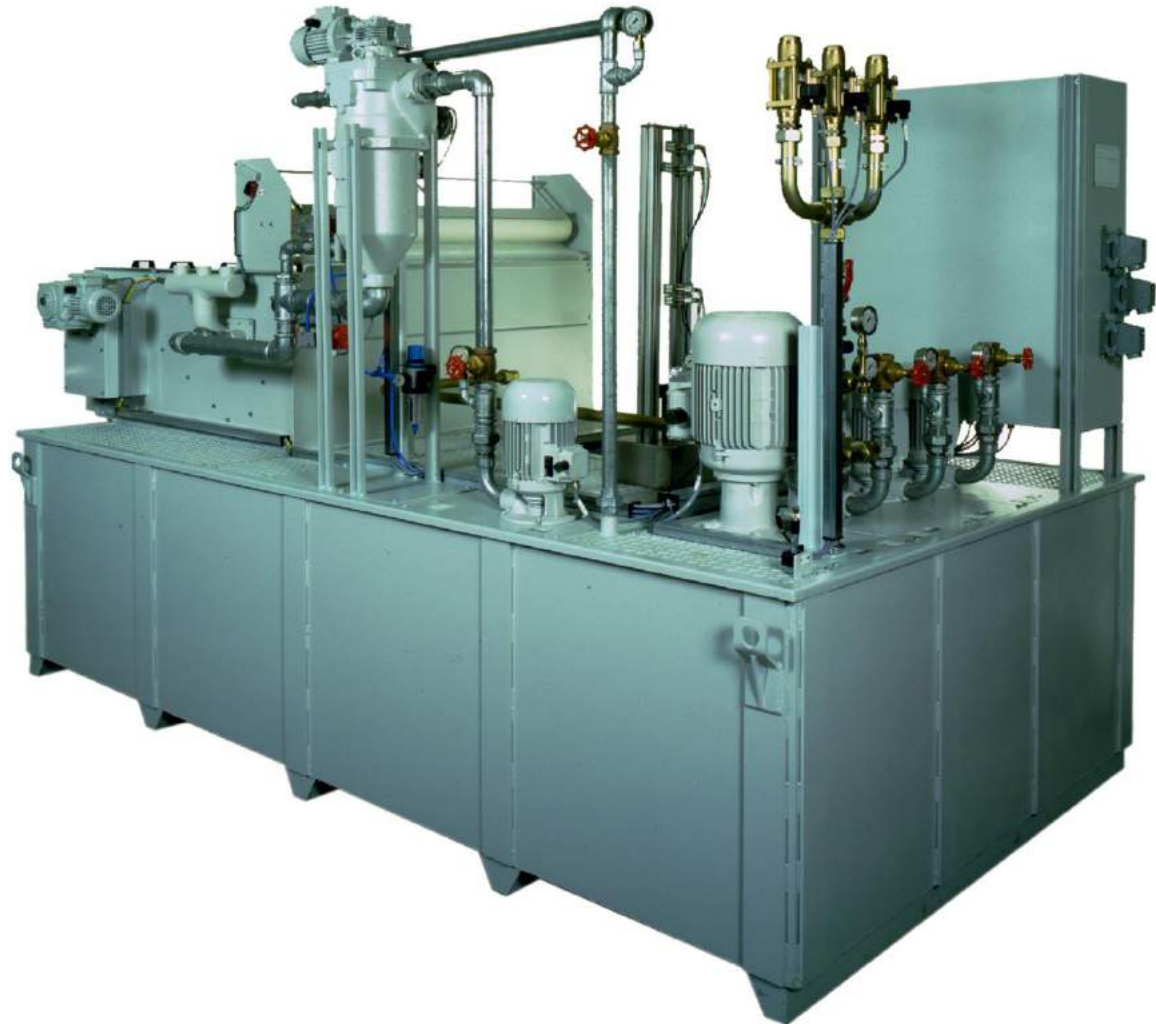
Application: Coolant supply systems



Smaller filter system

Turning/ drilling/ grinding,
band filter,

AF 113





Coolant filtration applications

@ Volvo

Coolant system supplier: **Alfing Kessler**

Machining: turning, milling, drilling

Material: aluminum, steel, brass

Mahle-filter: **AF 113 G**

Automatic Filter Advanced Training

Application AF 113 Parallel Operation



2 * AF 113
parallel unit

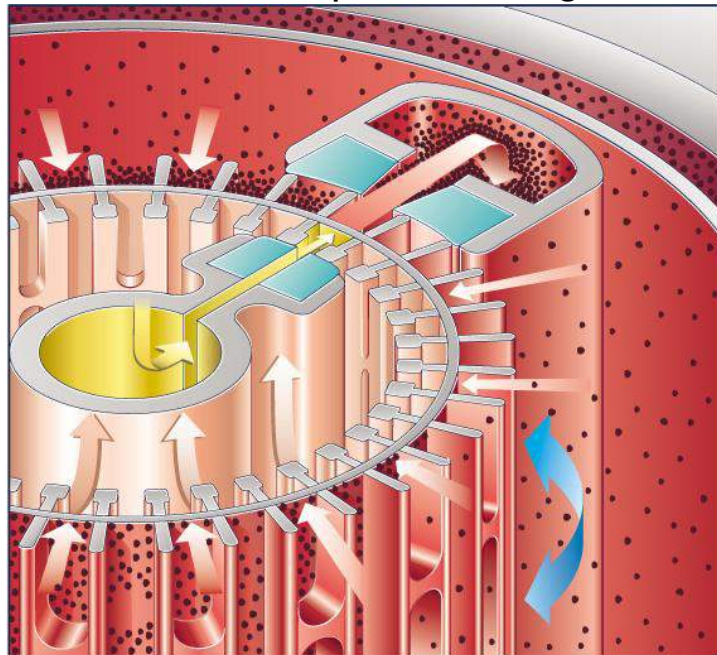
polishing of
honing oil

- Fineness 10 μm
- Volume flow 80 L/min
- Viscosity 8 mm²/s

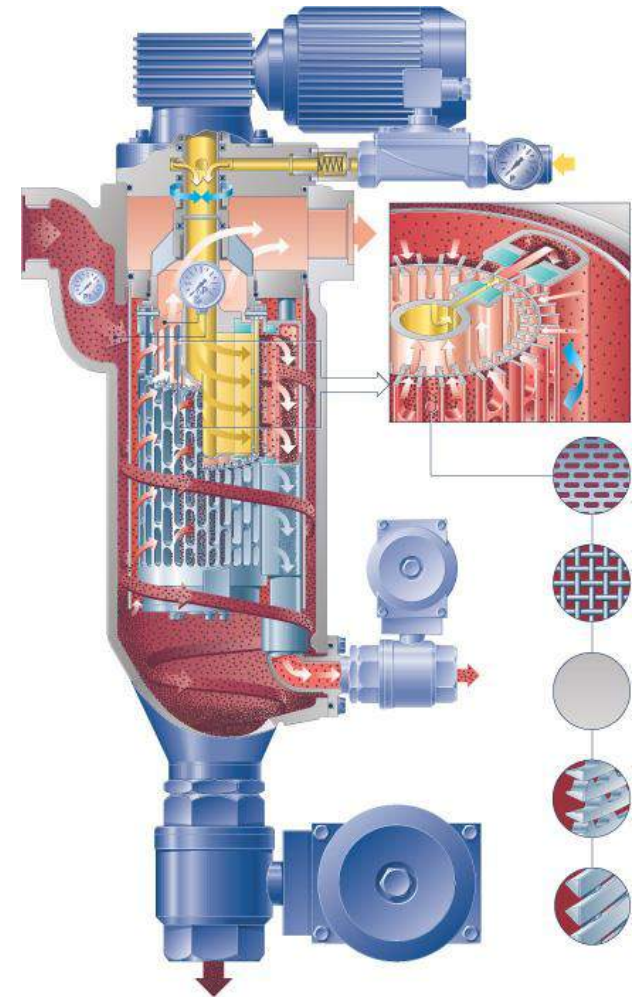


Design and Self Cleaning Principle AF 17X

- Automatic Back Flush Filter using external pressure for segmental back flush
- Self Cleaning process without interruption of filtration
- Filter Fineness 5 - 200 μm
- For dirt loads up to 2000 mg/l



AF 17X





@ Daimler AG

Machine tool manufacturer: **Ex-cell-o (now MAG)**
(Preseparation/secondary filtration: central filter
Machining: milling, drilling
Material: nodular cast iron

Mahle-filter: **AF 173 G**

Daimler Chrysler Powertrain made excessive tests 1998 – 2000.
Result:

- The type of coolant filter influences the **life time of screw pumps**.
- By using MAHLE pressure filter instead of belt filter the life time of pump was **increased by factor 2,5**.
- The purchase regulations have been changed and are stipulating consumable free pressure filters for inner coolant cycle.

Coolant filtration applications

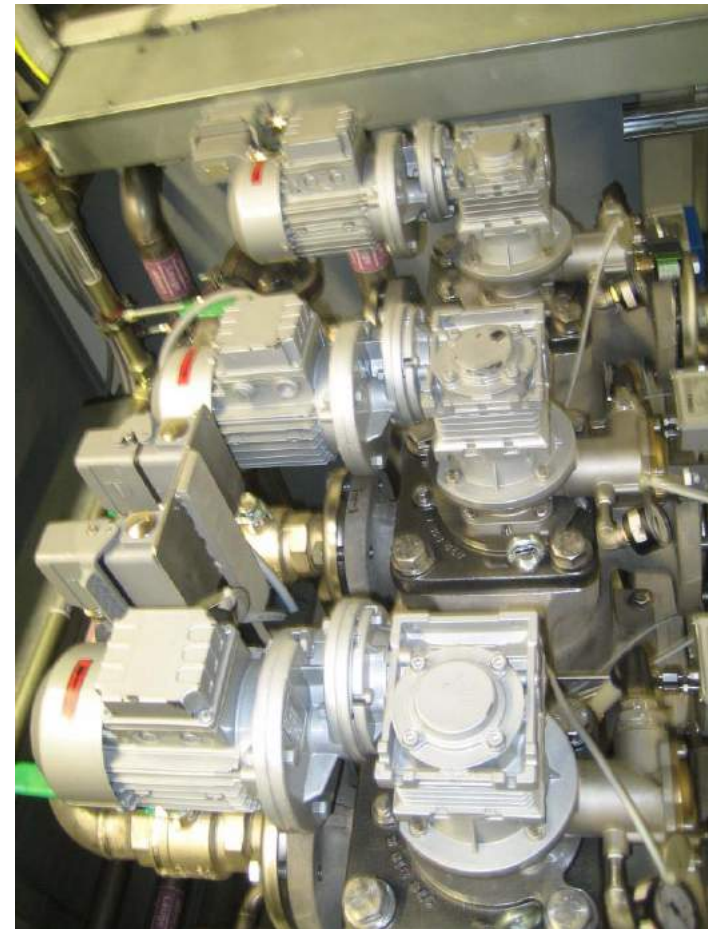
@ Porsche

Machine tool manufacturer: **Werner**





AF 173 at CBN grinding



AF 173 stainless steel at washing plant

- 4 – fold plant AF 179
- 2 elementes / Filter
- 4 X 1600 L/min
- Grinding of broaching needles
- @ Nachi Ltd., Toyama Japan
- Similar Installations @:
 - 2 x VW Salzgitter
 - Daimler Rastatt
 - Daimler Gaggenau
 - Daimler Untertürkheim
 - Mahle Rottweil
 - WEMATEC



MAHLE Industrial Process Filter Project ThyssenKrupp Nirosta



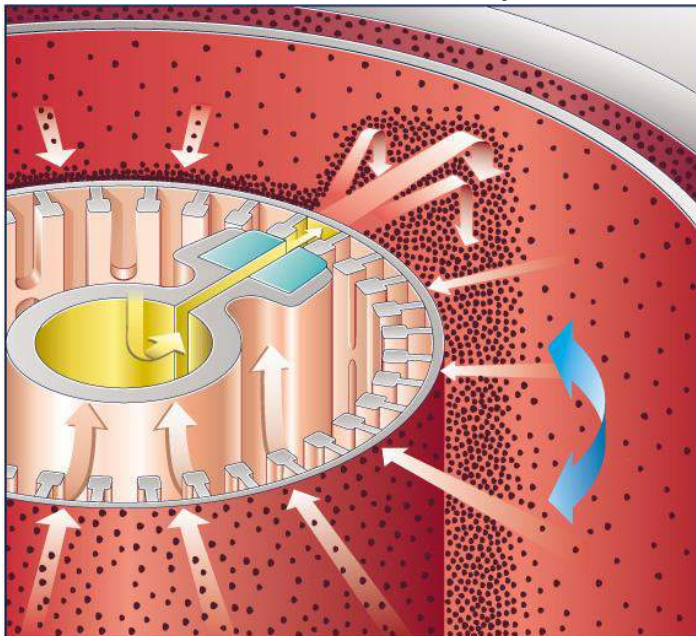
**Filtration
of oil at steel mill**

12.000 l/min

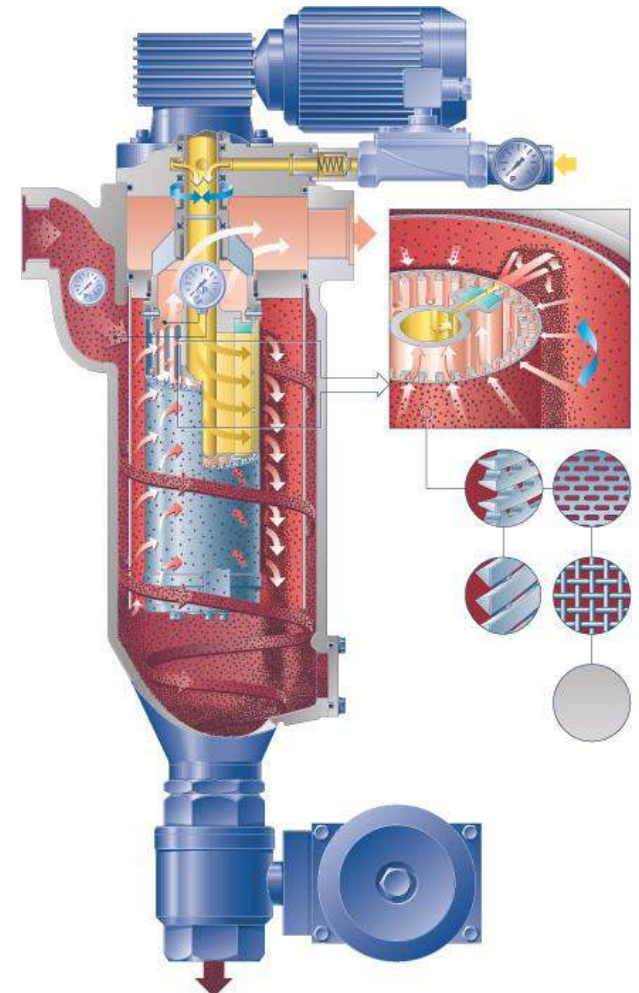
10 μ m

Design and Self Cleaning Principle AF 13X

- Automatic Back Flush Filter using external pressure for back flush
- For applications with high and coarse particle freight (up to 5000 mg/l)
- Filter Fineness 30 - 200 μm



AF 13X



MAHLE Industrial Process Filter

Examples of Applications AF 133



MAHLE AF 133
@
Mayfran
chip conveyor and
coolant system



MAHLE Industrial Process Filter

MAHLE Automatikfilter

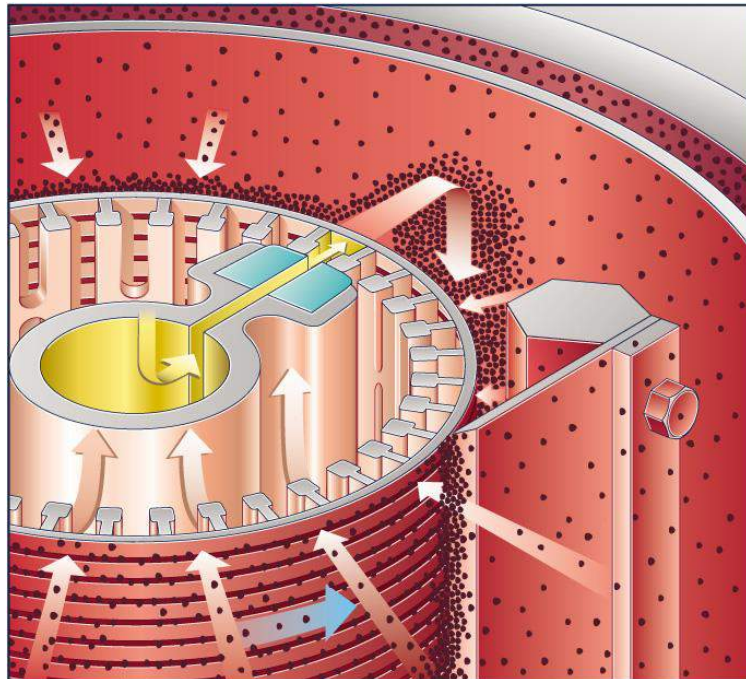
MAHLE
Industry

Examples of Applications AF 133

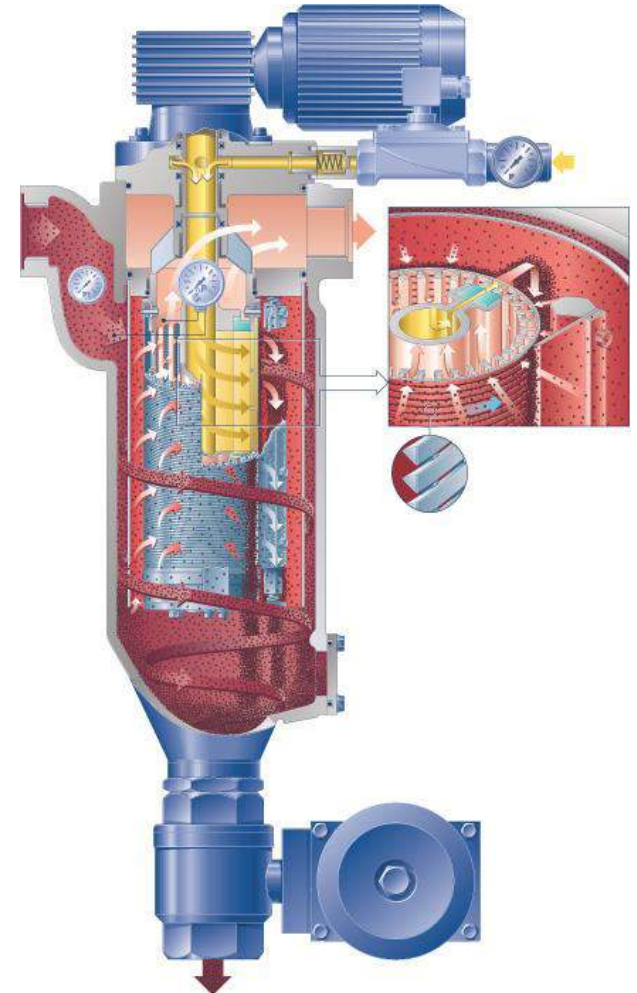


Design and Self Cleaning Principle AF 15X

- Combination of scraper and back flush cleaning
- Back Flush Filter using external pressure
- Filter Fineness 30 - 2000 μm



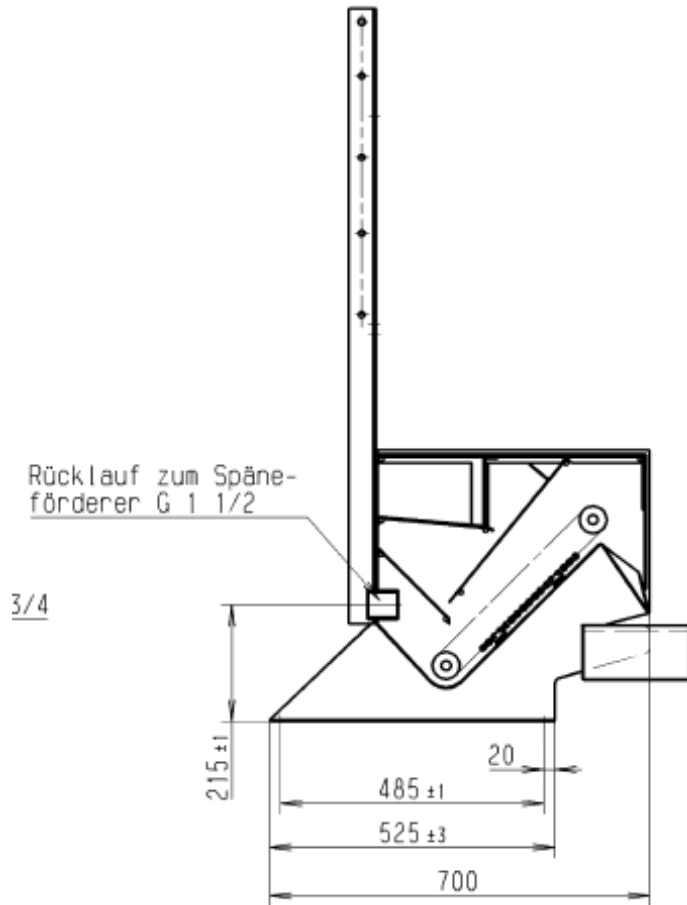
AF15X



MAHLE Industrial Process Filter

MAHLE Secondary Fines Discharge System MFA 500

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MAHLE Industrial Process Filter

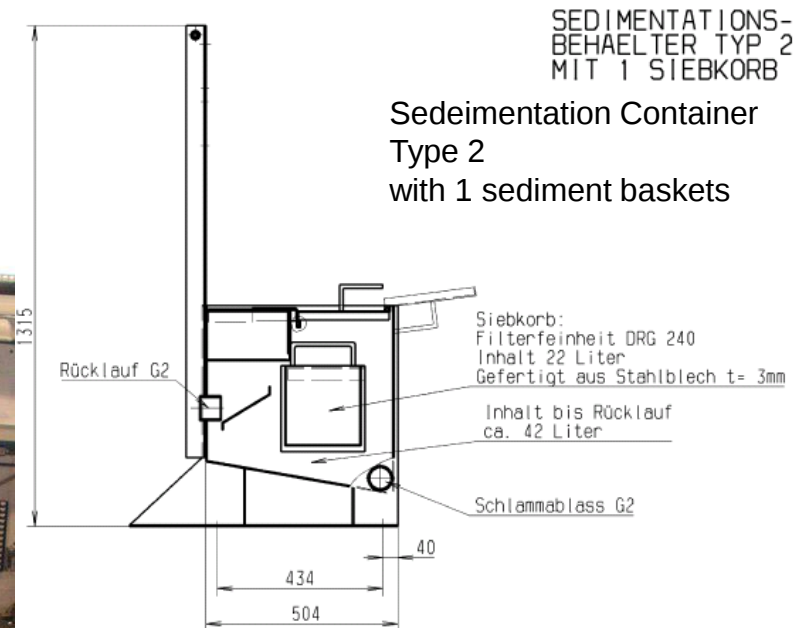
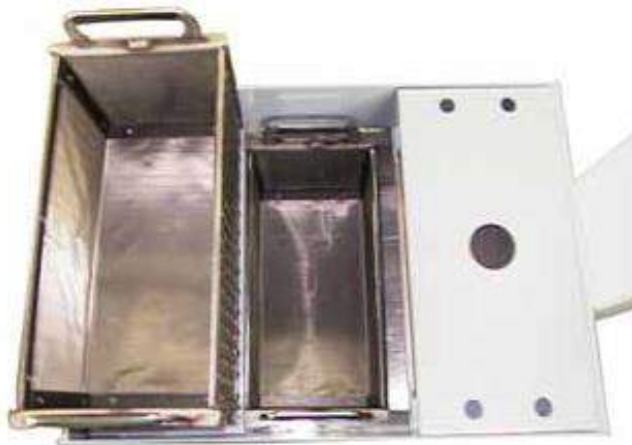
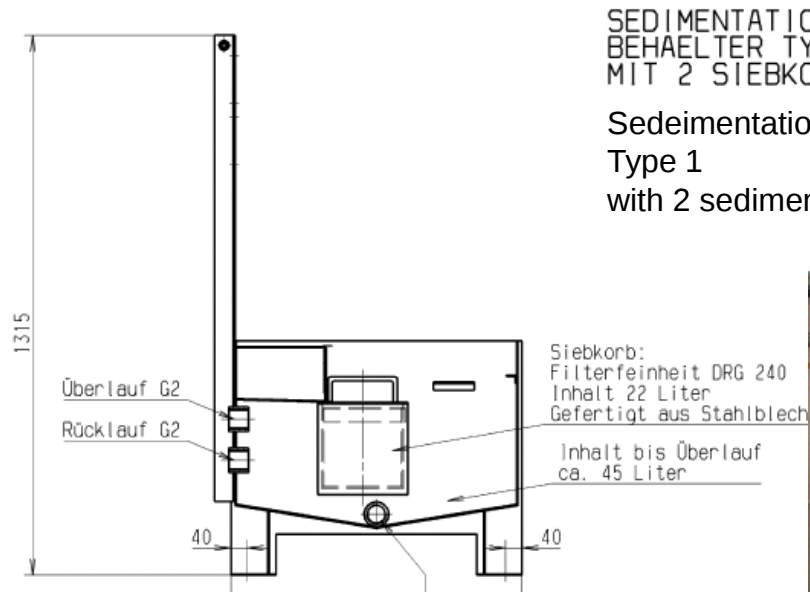
MAHLE Secondary Fines Discharge System
Type MFA 500

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Industry



MAHLE Industrial Process Filter

MAHLE Sedimentation Container



**Filtration of washing fluid @ Crank-case – wasching line „DUERR“
Testing plant AF 179, stainless steel, with belt filter for
solids concentrate**

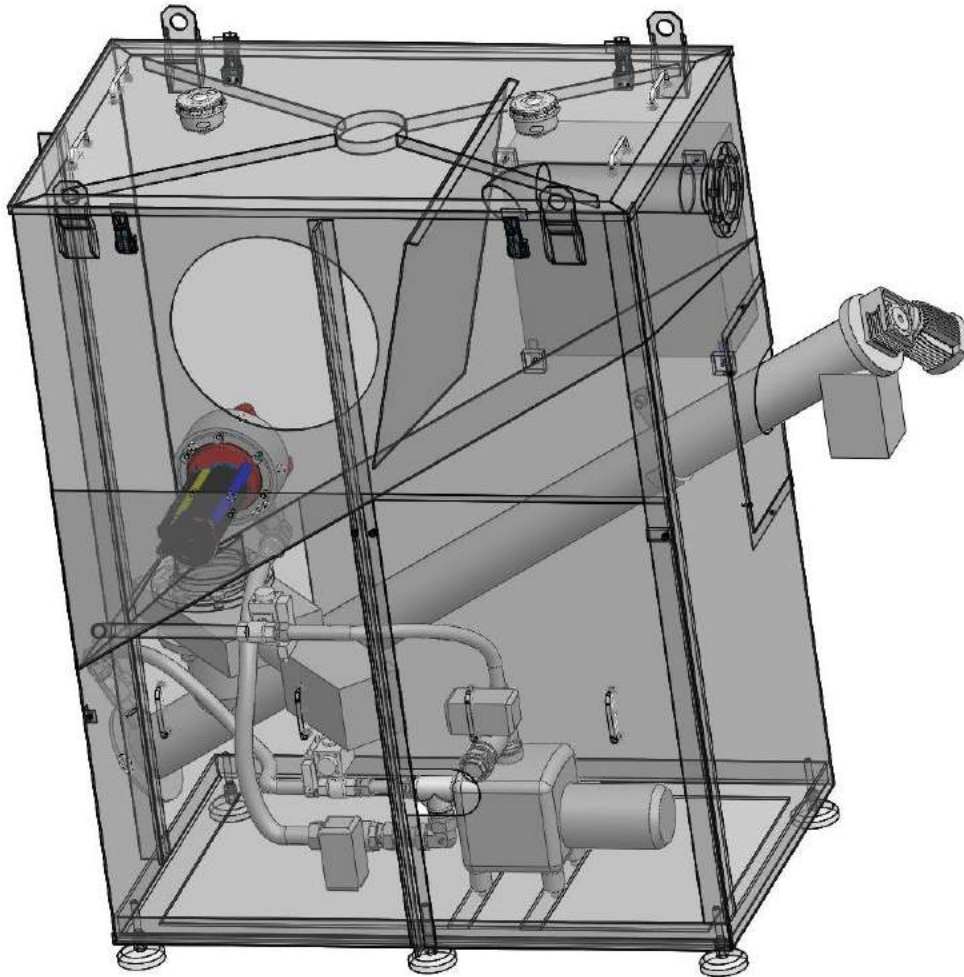


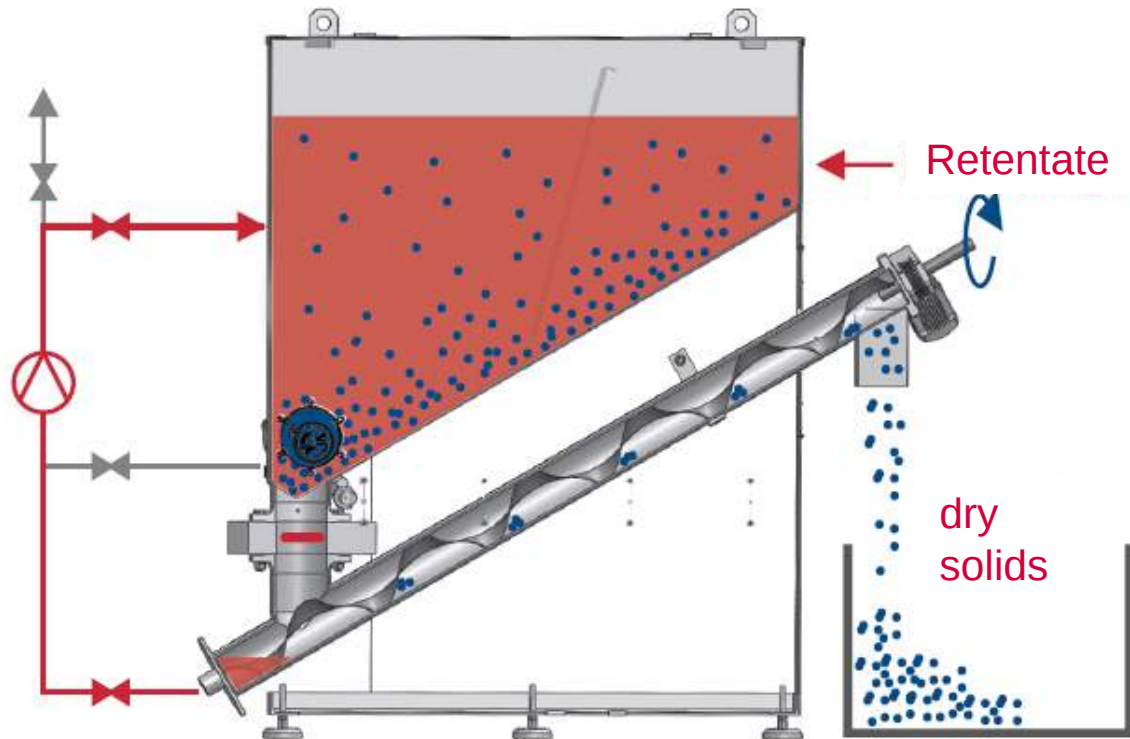
MAHLE Industrial Process Filter

MTS 10

MAHLE Dry Discharge Separator 10

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Industry





The inclined conveyor screw runs very slowly and intermittently to move the solids upwards, leaving the liquid at the sump.

Solids will dry sufficiently during transport and are discharged to collection bin.

When the slide valve has been closed again, already retentate can flow to the buffer tank.

Remaining liquid in the sump will be discharged by the suction pump to the buffer tank.

The retentate treatment circle will be restarted.