MAHLE Industriefilter

High Pressure Filter
Pi 430
Operating pressure 450 bar, Nominal size 5

1. Features

Efficient filters for modern hydraulic systems

- Modular design
- Minimal pressure loss
- Compact design
- Visual / electrical / electronic differential pressure indication
- Threaded ports

Quality filters, easy to service

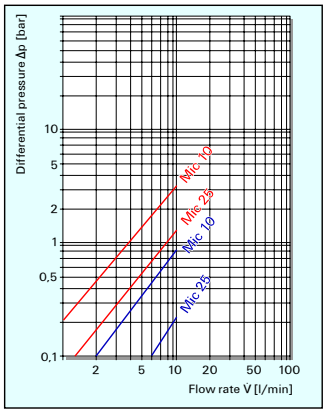
- Highly efficient Sm-x-filter elements
- ß-rated elements per ISO 4572
- Large dirt holding capacity and high differential pressure stability providing optimal element service life
- 100% bubble-point tested elements

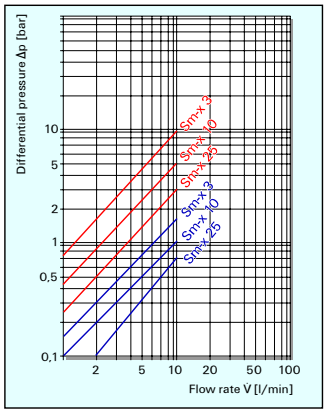
World-wide sales

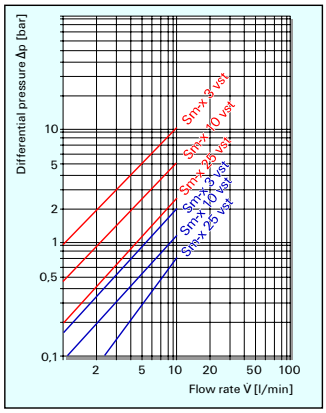
MAHLE Filtersysteme GmbH · **Bereich Industriefilter** · Postfach 13 09 · 74603 Öhringen · Telefon (0 79 41) 67-0 · Telefax (0 79 41) 67-4 29

2. Flow rate / pressure drop curve complete filter

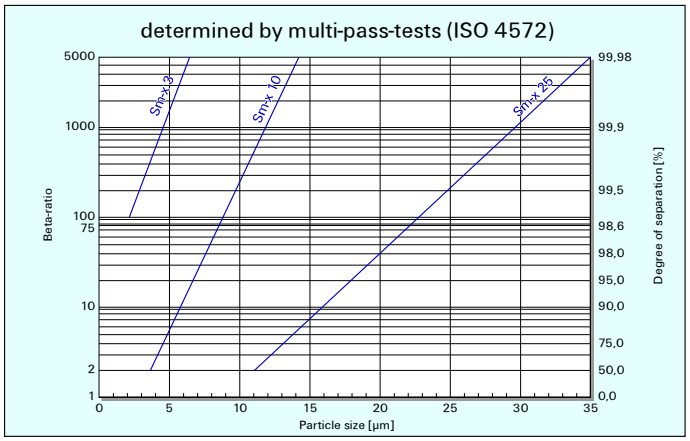
190 mm²/s (25 ° E)
33 mm²/s (4,5 ° E)







3. Separation characteristics



4. Filter performance data

tested according to ISO 4572 (multi-pass-test)

Sm-x elements with Δp 20 bar		Sm-x-vst elements with Δp 210 bar	
Sm-x 3	$\beta_3 \geqq 75$	Sm-x vst 3	$\beta_3 \geqq 75$
Sm-x 10	$\beta_{10} \geqq 75$	Sm-x vst 10	$\beta_{10} \geqq 75$
Sm-x 25	$\beta_{25} \geqq 75$	Sm-x vst 25	$\beta_{25} \geqq 75$
at 7 bar differential pressure		at 16 bar differential pressure	

Example for ordering filters:

1. Housing design with V̇ = 5 l/min, electrical indication
   Type-no. **Pi 4301-15** Order-no. **766.680.3**
+ 2. Filter element Mic 25
   Type-no. **852.149 Mic 25** Order-no. **768.458.2**

5. Test regulations

MAHLE filter elements are manufactured respectively, tested in accordance with the following international standards:

No.	Designation	
ISO 2941	Hydraulic-filter elements:	Verification of burst resistance
ISO 2942	Hydraulic-filter elements:	Determination of fabrication integrity
ISO 2943	Hydraulic-filter elements:	Verification of material compatibility with hydraulic fluids
ISO 3723	Hydraulic-filter elements:	Method for testing end-cap load
ISO 3724	Hydraulic-filter elements:	Verification of flow fatigue characteristics
ISO 3968.2	Hydraulic-filters:	Evaluation of pressure drop versus flow
ISO 4572	Hydraulic-filter elements:	Testing of filter performance (multi-pass-test)

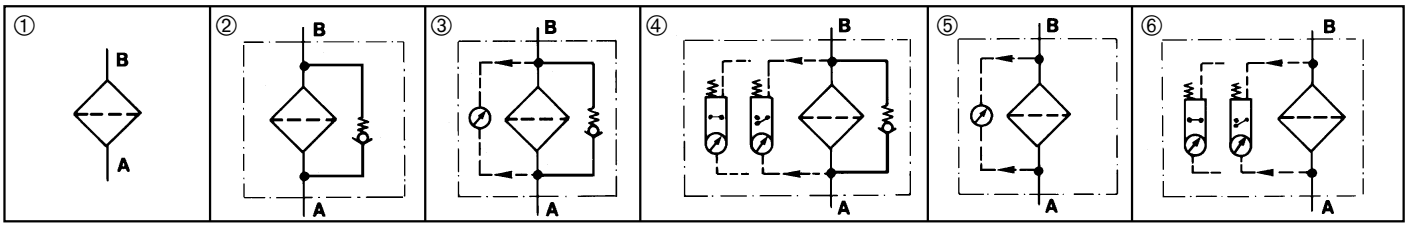
6. Order numbers

6.1 Housing design

Order Number	Type number	Nominal size (NG)	① Standard*	② with bypass valve	③ with bypass valve and visual indicator	④ with bypass valve and electrical indicator	⑤ with visual indicator	⑥ with electrical indicator	
		5							
766.675.3	Pi 4301–10		■						
766.676.1	Pi 4301–11			■					
766.677.9	Pi 4301–12				■				
766.678.7	Pi 4301–13					■			
766.679.5	Pi 4301–14						■		
766.680.3	Pi 4301–15							■	

*When using standard filter (without options) Δp of 20 bar may not be exceeded.

7. Symbols



8. Specifications

Design:	line mounting filter
Nominal pressure:	450 bar
Test pressure:	900 bar
Temperature range:	−10 °C to +120 °C
Bypass opening pressure:	Δp 7 bar ±10 %
Filter head material:	St
Filter bowl material:	St
Material of seals:	NBR / PTFE / CU
Activating pressure of visual / electrical differential pressure indicator:	Δp 5 bar ±10 %
Electrical data of contamination indicator:	
Maximum voltage:	230 V ∼/=
Maximum current on contact:	2,5 A
Maximum contact load:	60 VA/40 W
Inrush current:	70 VA
Type of protection:	IP 65 when inserted and secured
Contact:	bistable
Cable connection:	PG 11 Ø 6-10

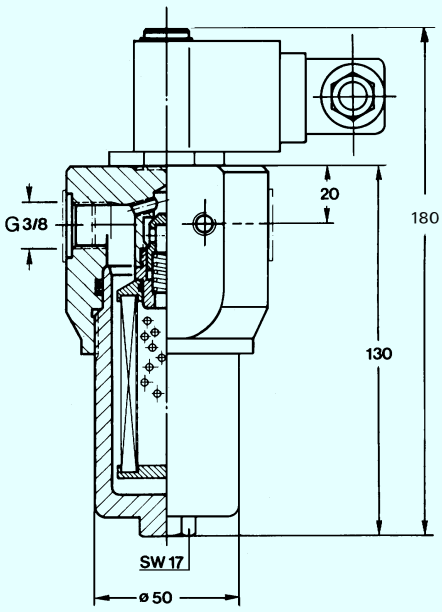
The electrical indicator function can be changed from the Normally Open position to the Normally Closed position or visa versa by inverting the electrical section.

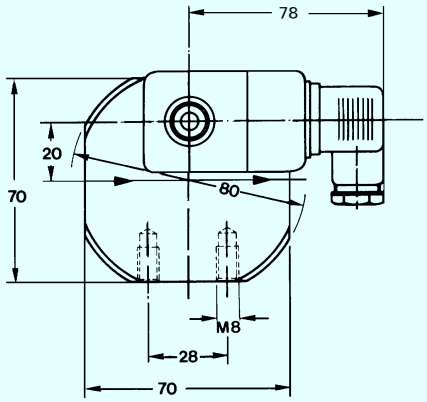
With the inrush current of 70 VA the indicator can trigger small contactors or contactor relays.

Inductivity in the direct current may require the use of a signal eraser.

For further information and executions please see our leaflet: Contamination indicators.

9. Dimensions



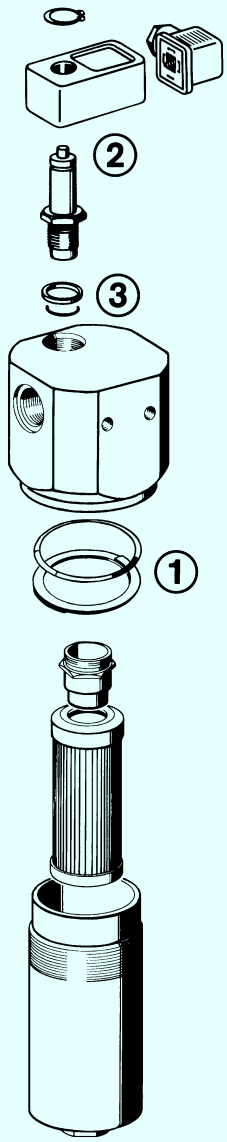


6.2 Filter elements*

( ) = filter surface [ ] = type number

Mic 10 Δp 20 bar	Mic 25 Δp 20 bar	Sm-x 3 Δp 20 bar	Sm-x 10 Δp 20 bar	Sm-x 25 Δp 20 bar	Sm-x vst 3 Δp 210 bar	Sm-x vst 10 Δp 210 bar	Sm-x vst 25 Δp 210 bar
(180 cm²)	(180 cm²)	(150 cm²)	(150 cm²)	(150 cm²)	(150 cm²)	(150 cm²)	(150 cm²)
					768.468.1	768.469.9	768.471.5
768.456.6	768.458.2	768.463.2	768.464.0	768.466.5			
768.456.6	768.458.2	768.463.2	768.464.0	768.466.5	[852 149 Sm-x vst 3]	[852 149 Sm-x vst 10]	[852 149 Sm-x vst 25]
768.456.6	768.458.2	768.463.2	768.464.0	768.466.5			
[852 149 Mic 10]	[852 149 Mic 25]	[852 149 Sm-x 3]	[852 149 Sm-x 10]	[852 149 Sm-x 25]	768.468.1	768.469.9	768.471.5
					768.468.1	768.469.9	768.471.5

*Further elements available upon request.



11. Spare parts list

Pos.	Type number / housing **PI 430**
①	Seal kit for filter housing NBR 761.728.5 FPM 761.736.8 EPDM 761.737.6
②	Contamination indicator visual 766.991.4 Pis 3093 electrical 766.986.4 Pis 30922 electrical upper part only 753.655.0
③	Seal kit for contamination indicator NBR 776.027.5 FPM 776.028.3 EPDM 776.029.1

10. Installation, operating and maintenance instructions

10.1 Filter installation

When installing the filter make sure that sufficient space is available to remove filter element and filter bowl.
Preferable the filter should be installed with the filter bowl pointing downwards.
The contamination indicator must be visible.

10.2 Connecting the electrical contamination indicator

The electrical indicator is connected via a 2-pole appliance plug according to DIN 43650 with poles marked 1 and 2.
The electrical section can be inverted to change from Normally Open position to Normally Closed position or visa versa.

10.3 When must the filter element be replaced?

1. Filters equipped with visual and electrical contamination indicator:
   During cold starts, the indicator may give a warning signal. Depress the red button of the visual indicator once again only after operating temperature has been reached. If the red button immediately pops out again and/or the electrical signal has not switched off after reaching operating temperature, the filter element must be replaced after the end of the shift.
2. Filters without contamination indicator:
   The filter element should be replaced after the trial run or flushing of the system. Afterwards follow instructions of the manufacturer.
3. Please always ensure that you have original MAHLE-replacement elements in stock: disposable elements (Mic or Sm-x) cannot be cleaned.

10.4 Element replacement

1. Stop system and relieve filter from pressure.
2. Unscrew the filter bowl by turning counter-clockwise.
   Clean the bowl using a suitable cleaning solvent.
3. Remove filter element with a side-to-side motion.
4. Check O-ring and back-up ring on the filter bowl for damage. Replace, if necessary.
5. Make sure that the part number on the spare element corresponds with the part number on the filter label.
   Open the plastic bag and push element over the receiving piece in the filter head.
   Now remove plastic bag.
6. Complete installation by screwing on the bowl, turning clockwise until it comes to a full stop. Back off the bowl ⅛ to ½ turn.

Subject to technical alteration without prior notice.

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