

MAHLE

Industrial Filtration

Low Pressure Filter

Pi 1975

Operating pressure 6 bar, Nominal size 50

1. Features

Efficient filters for various applications

- Compact design
- Minimal pressure drop
- Optical/electrical contamination indicator
- Thread connection

Quality filter, easy to service

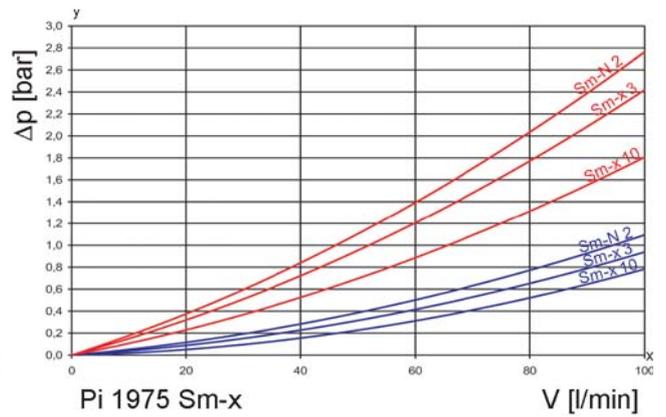
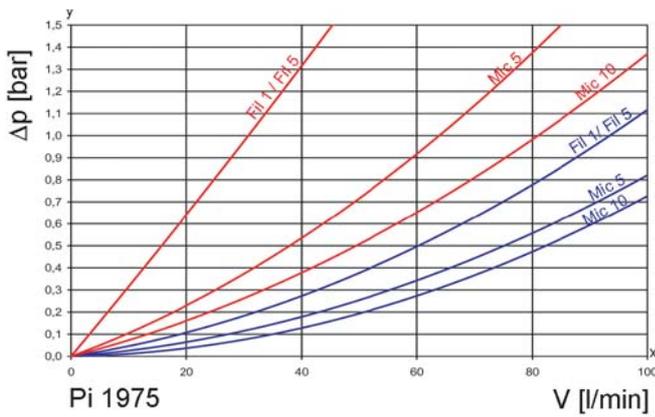
- Equipped with highly efficient filter elements
- β -valued elements per ISO 16889
- High dirt holding capacity and differential pressure stability providing optimal element service life
- Mic 5 elements for spark erosion equipment
- FIL elements with very large dirt holding capacity for spark erosion equipment with waterless dielectric
- Sm-N 2 element for bypass filtration

Worldwide distribution



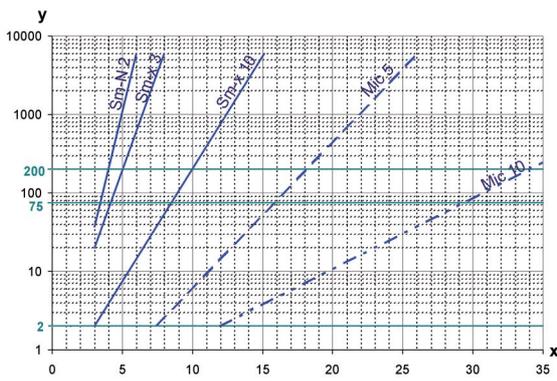
2. Flow rate/pressure drop curve complete filter

190 mm²/s (25° E)
33 mm²/s (4,5° E)



y = differential pressure Δp [bar]
x = flow rate V [l/min]

3. Separation characteristics



y = beta - ratio
x = particle size [μm]

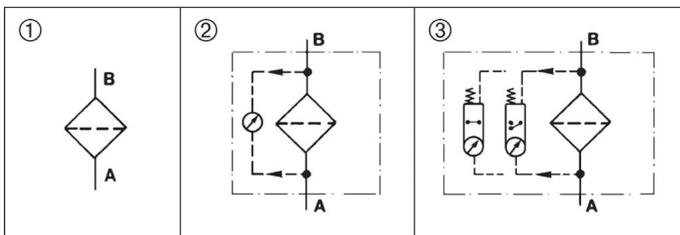
determined by multipass test (ISO 16889)
calibration according to ISO 11171 (NIST)

4. Quality assurance

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

Norm	Designation
DIN ISO 2941	Hydraulic fluid power filter element; verification of collapse/burst resistance
DIN ISO 2942	Hydraulic fluid power filter element, verification of fabrication integrity
DIN ISO 2943	Hydraulic fluid power filter element, verification of material compatibility with fluids
DIN ISO 2923	Hydraulic fluid power filter element, method for end load test
DIN ISO 2924	Hydraulic fluid power filter element, verification of flow fatigue characteristics
ISO 3968	Hydraulic fluid power filters; evaluation of pressure drop versus flow characteristics
ISO 10771.1	Fatigue pressure testing of metal containing envelopes in hydraulic fluid applications
ISO 16889	Hydraulic fluid power filters; multipass method for evaluation filtration performance of a filter element

5. Symbols



6. Order numbers

Example for ordering filters:

1. Housing design	2. Filter elements
with electrical indicator Type: Pi 1975-E Order number: 77664980	Sm-x 10 Type: 852 275 Sm-x 10 Order number: 77725583

6.1 Housing design					
Nominal size NG [l/min]	Order number	Type	① with indicator	② with optical indicator	③ with electrical indicator
50	77664956	Pi 1975			
	77664964	Pi 1975-M			
	77664980	Pi 1975-E			

Make sure that collapse pressure of the element may not be exceeded.

6.2 Filter elements*					
Nominal size NG [l/min]	Order number	Type	Filter material	Collapse pressure [bar]	Filter surface [cm ²]
50	77698814	852 275 Mic 5	Mic 5	5	27000
	77675903	852 275 Mic 10	Mic 10		27000
	77678121	852 275 FIL 1	FIL 1	1.4	-
	77678113	852 275 FIL 5	FIL 5		-
	79309303	852 275 Sm-N 2	Sm-N 2	5	13150
	77956220	852 275 Sm-x 3	Sm-x 3		15500
	77725583	852 275 Sm-x 10	Sm-x 10		15500

* further elements available in request.

7. Specifications

Design:	line mounting filter
Operating pressure:	6 bar
Test pressure:	8 bar
Temperature range:	- 10 °C to + 120 °C (other temperature ranges on request)
Filter head material:	St
Sealing material:	NBR/Cu
Activating pressure of optical/ electrical differential pressure in- dicator:	Δp 1.2 bar \pm 0.2 bar
Electrical data of contamination indicator:	
Maximum voltage:	250 V AC/200 V DC
Maximum current on contact:	1 A
Inrush currentg:	70 W
Type of protection:	IP 65 when inserted and secured
Contact:	bistable
Cable connection:	M 20 x 1.5

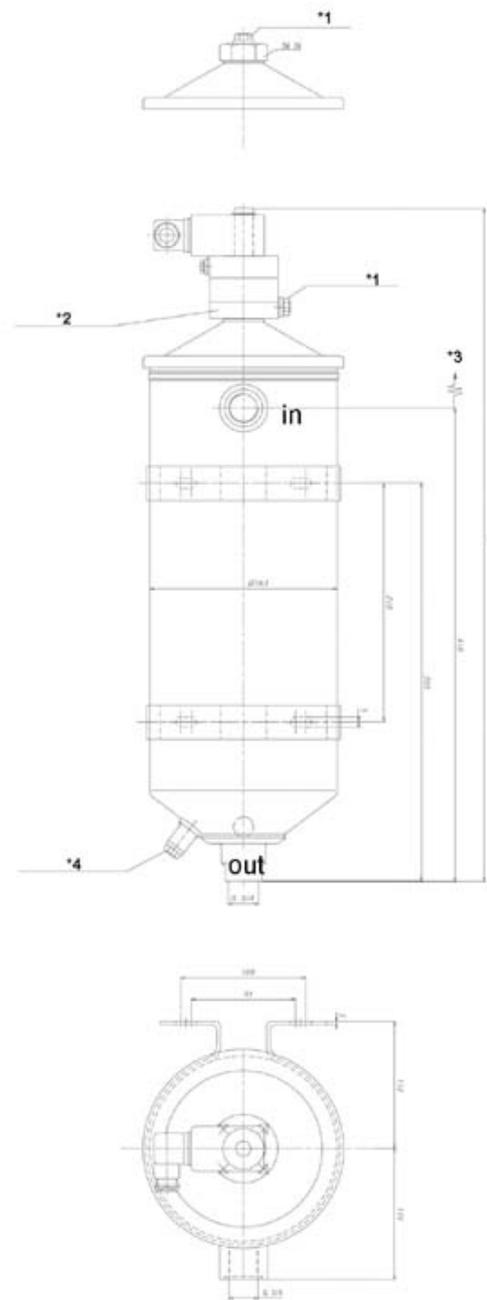
The switching function can be changed by turning the electric upper part by 180° (normally closed contact or normally open contact). The state on delivery is a normally closed contact.

The use of quenching circuits must be checked in the case of inductivity in the DC current circuit. The contamination indicator data sheet contains further information and additional contamination indicator versions.

We draw attention to the fact that all values indicated are average values which do not always occur in specific cases of application. Our products are continually being further developed. Values, dimensions and weights can change as a result of this. Our specialized department will be pleased to offer you advice.

When using our filters in areas which are to be classified according to EU Directive 94/9 EC (ATEX 95), we recommend prior discussion with us. The standard version can be used for liquids based on mineral oil (corresponding to the fluids in Group 2 of Directive 97/23 EC Article 9). Please consult with us if using other media.

Subject to technical alteration without prior notice.



Design without indicator- weight 8 kg

*1 vent screw G ¼

*2 SW 36 / for maintenance

*3 heigh required for element removal 400

*4 drain plug G ¼ 90° ill. turned by 90°

in = intake

out = outlet

8. Installation, operating and maintenance instructions

8.1 Filter installation

When installing filter make sure that sufficient space is available to remove filter element and filter bowl.

8.2 Connecting the electrical contamination indicator

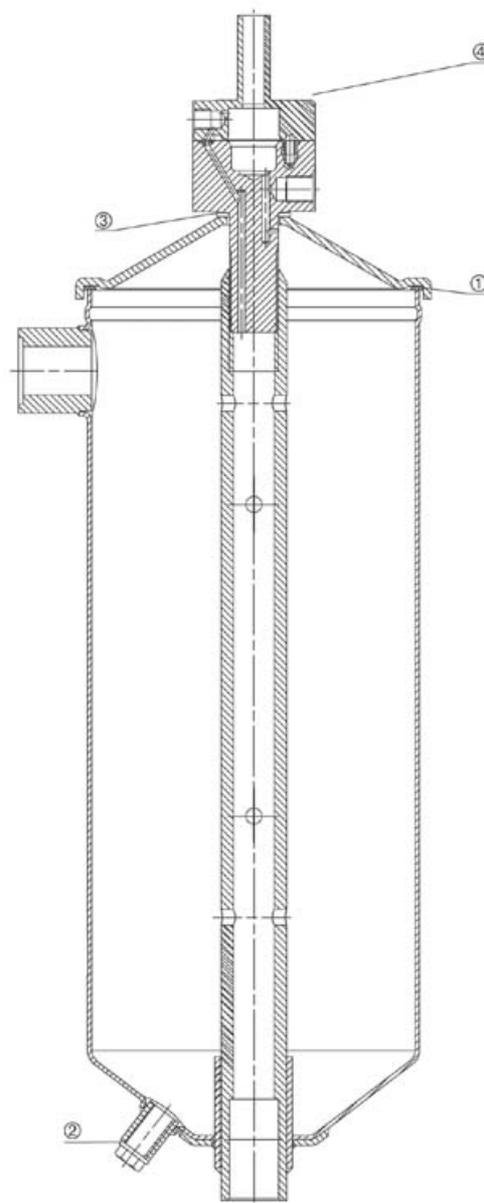
The electrical indicator is connected via a 2-pole appliance plug according to DIN EN 175301-803 with poles marked 1 and 2. The electrical section can be inverted to change from normally open to normally closed position or vice versa.

8.3 When must the filter be replaced?

- Filters equipped with optical and electrical contamination indicator:
During cold starts, the indicator may give a warning signal. Depress the red button of the optical 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.
- 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.
- Please always make sure that you have Original MAHLE replacement elements in stock: disposable elements (Mic, FIL oder Sm-x) cannot be cleaned.

8.4 Element replacement

- Stop system and relieve filter from pressure.
- Remove cover screw, then lift off cover. On executions with indicator please unscrew contamination indicator.
- Remove filter element.
- Check seals for damages, replace if necessary.
- Make sure that the part number on the spare element corresponds with the part number on the filter label. Remove plastic bag and push element over the spigot in the filter housing.
- Close drain screw, relocate cover and close it with cover screws and/or the indicator. Filters are automatically vented via the air bleeder valve. (Back off the screw 1-2 turns till medium escapes. Tight vent screw).



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9. Spare parts list

Order number for spare parts		
Position	Type	Order number
①	Seal kit for housing	
-	NBR	77898836
③		
④	Contamination indicator	
	Optical PiS 3112/1.2	78287690
	Electrical PiS 3113/1.2	78287708
	Electrical upper section only	77536550
	Seal kit for contamination indicator	
	NBR	78389280