

Line filter

Pi 1907

Nominal pressure 16 bar (230 psi), nominal size 400 up to 6000

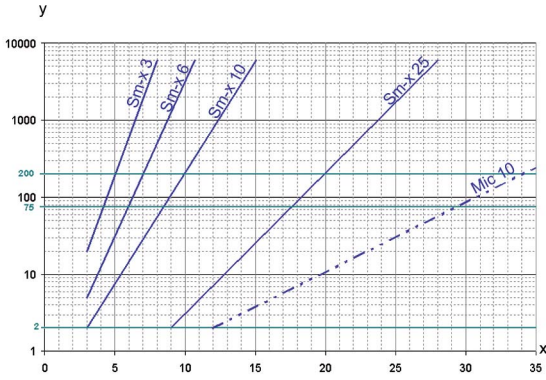
1. Features

High performance filters for modern hydraulic systems

- Provided for pipe installation
- Modular design
- Compact design
- Minimal pressure drop through optimal flow design
- Visual/electrical/electronic maintenance indicator
- Flanged connections
- Quality filters, easy to service
- Equipped with highly efficient glass fibre Sm-x filter elements
- Beta rated elements according to ISO 16889 multipass test
- Elements with high differential pressure stability and dirt holding capacity
- Worldwide distribution



2. Separation grade characteristics



y = beta-value
x = particle size [μm]

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

3. Filter performance data

tested according to ISO 16889 (multipass test)

Sm-x elements with max. Δp 10 bar

Sm-x	3	$\beta_{5(C)}$	\geq	200
Sm-x	6	$\beta_{7(C)}$	\geq	200
Sm-x	10	$\beta_{10(C)}$	\geq	200
Sm-x	25	$\beta_{20(C)}$	\geq	200

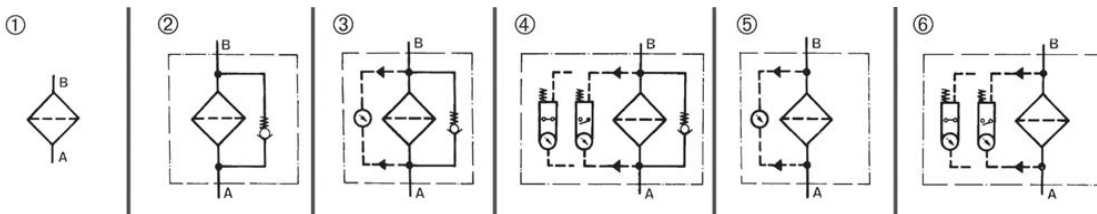
values guaranteed at 5 bar differential pressure

4. Quality assurance

MAHLE filters and filter elements are produced according to the following international standards:

Norm	Designation
DIN ISO 2941	Hydraulic fluid power filter elements; verification of collapse/burst resistance
DIN ISO 2942	Hydraulic fluid power filter elements; verification of fabrication integrity
DIN ISO 2943	Hydraulic fluid power filter elements; verification of material compatibility with fluids
DIN ISO 3723	Hydraulic fluid power filter elements; method for end load test
DIN ISO 3724	Hydraulic fluid power filter elements; 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. Types (Example for ordering filters)

Pi 1907	3	16	150	V	E	Mg	Abh	852888 Sm-x 10
1	2	3	4	5	6	7	8	9

1 Filter type

2 Number of elements

(up to DN 125, 1; DIN 150 and 200 3 ea.)

3 Nominal pressure

4 Connection size

5 Bypass valve

6 Maintenance indicator

E = electrical, M = visual

7 Magnets

(available for flange size DN 100 up to DN 200)

8 Cover lifting device

(available for flange size DN 150, DN 200)

9 Filter element

7. Technical specifications

Design:

line mounting filter

Fitting position:

preferable upright

Nominal pressure:

16 bar (NG 150 and 200 also available with operating pressure 10 bar)

Connections:

NG	400	630	800	1250	1800	3500	6000
DN	50	65	80	100	125	150	200

Flange connections up to DN 200/ PN 16: DIN 2633

Flange connections DN 150 and DN 200/ PN 10: DIN 2632/DIN 2633

Temperature range:

- 10 °C to + 100 °C

(other temperature ranges on request)

Filter housing material:

steel welded construction

Sealing material:

NBR (other material on request)

Bypass setting:

Δp 3.5 bar \pm 10 %

Maintenance indicator setting:

Δp 2.2 bar \pm 10 %

Electrical data of maintenance indicator:

Maximum voltage:

230 V \sim /=

Maximum current:

2.5 A

Contact load:

60 VA/40 W

Inrush current:

70 VA

Type of protection:

IP 65 in inserted and secured status

Contact:

normally open/closed

Cable sleeve:

M20x1.5

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. By inductivity in the direct current circuit the use of suitable protection circuit should be considered. Further maintenance indicator details and designs are available in the maintenance indicator data sheet.

We draw attention to the fact that all values indicated are average values and 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.

We recommend you to contact us concerning applications of our filters in areas governed by the EU Directive 94/9 EC (ATEX 95). 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). If you consider to use other fluids please contact us for additional support.

8. Filter elements

Filter-material	Degree of filtration [µm]	NG 400/ DN 50	NG 630/ DN 65	NG 800/ DN 80	NG 1250/ DN 100	NG 1800/ DN 125	NG 3500/ DN 150	NG 6000/ DN 200
Sm-x Δ p 10 bar		(9090 cm ²)	(14750 cm ²)	(14750 cm ²)	(21850 cm ²)	(28500 cm ²)	(65550 cm ²)	(85506 cm ²)
	3	Pi 21040 RN	Pi 21063 RN	Pi 21063 RN	852 888 Sm-x 3	852 884 Sm-x 3	852 888 Sm-x 3	852 884 Sm-x 3
	6	Pi 22040 RN	Pi 22063 RN	Pi 22063 RN	852 888 Sm-x 6	852 884 Sm-x 6	852 888 Sm-x 6	852 884 Sm-x 6
	10	Pi 23040 RN	Pi 23063 RN	Pi 23063 RN	852 888 Sm-x 10	852 884 Sm-x 10	852 888 Sm-x 10	852 884 Sm-x 10
	25	Pi 25040 RN	Pi 25063 RN	Pi 25063 RN	852 888 Sm-x 25	852 884 Sm-x 25	852 888 Sm-x 25	852 884 Sm-x 25
Mic Δ p 10 bar		(9450 cm ²)	(15550 cm ²)	(15550 cm ²)	(21850 cm ²)	(28500 cm ²)	(65550 cm ²)	(85500 cm ²)
	10	Pi 13040 RN	Pi 13063 RN	Pi 13063 RN	852 888 Mic 10	852 884 Mic 10	852 888 Mic 10	852 884 Mic 10
Drg Δ p 10 bar		(6370 cm ²)	(10320 cm ²)	(10320 cm ²)	(16500 cm ²)	(23700 cm ²)	(49500 cm ²)	(71100 cm ²)
	25	Pi 35040 RN	Pi 35063 RN	Pi 35063 RN	852 888 Drg 25	852 884 Drg 25	852 888 Drg 25	852 884 Drg 25
	40	Pi 36040 RN	Pi 36063 RN	Pi 36063 RN	852 888 Drg 40	852 884 Drg 40	852 888 Drg 40	852 884 Drg 40
	60	Pi 37040 RN	Pi 37063 RN	Pi 37063 RN	852 888 Drg 60	852 884 Drg 60	852 888 Drg 60	852 884 Drg 60
	100	Pi 38040 RN	Pi 38063 RN	Pi 38063 RN	852 888 Drg 100	852 884 Drg 100	852 888 Drg 100	852 884 Drg 100

() Filter surface area

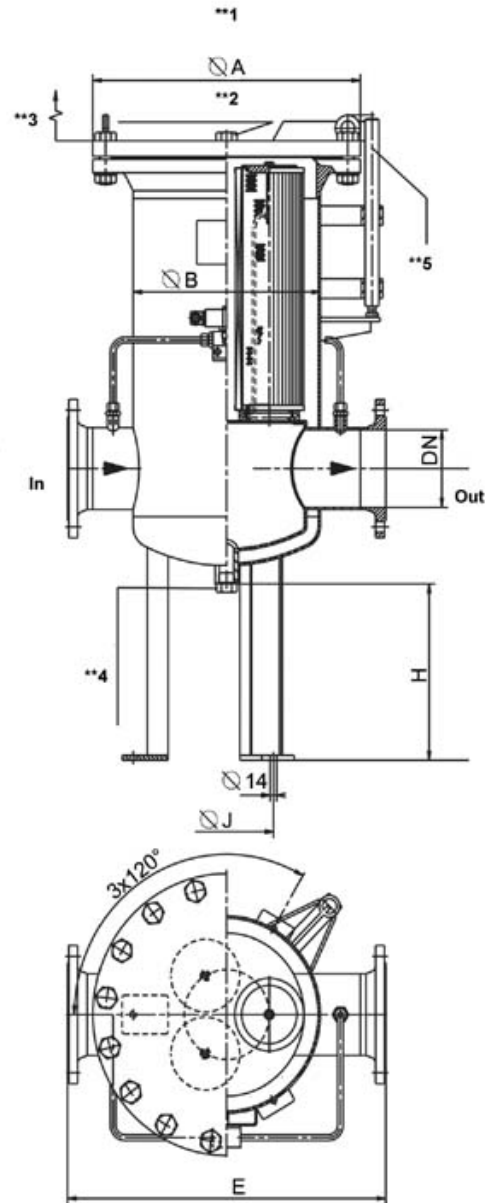
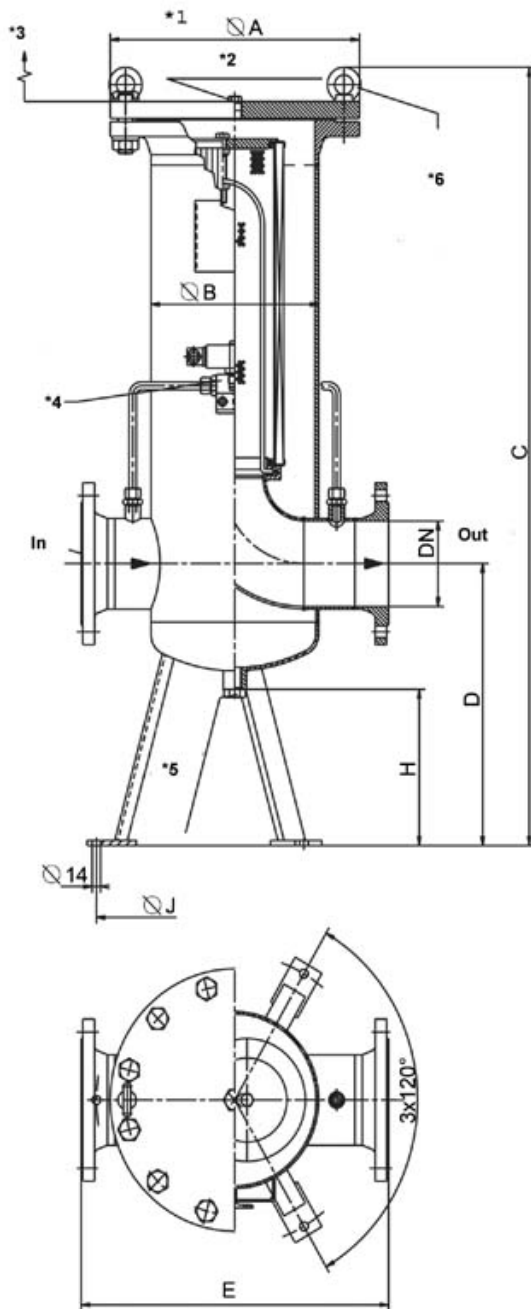
9. Dimensions

All dimensions in mm.

Nominal size NG [l/min]	Connection size DN	Nominal pressure PN [bar]	A	B	C	D	E	G	H	J	K
400	50	16	285	169	890	250	380	G½	110	300	200
630	65		285	169	890	250	380	G½	110	300	350
800	80		285	169	890	250	380	G½	110	300	350
1250	100		340	220	1200	365	450	G½	195	380	450
1800	125		405	273	1200	435	500	G½	240	450	450
3500	150		580	407	1530	600	690	G1	300	440	450
6000	200		715	508	1465	550	740	G1	170	500	450
3500	150	10	565	407	1530	600	690	G1	300	440	450
6000	200		670	508	1465	550	740	G1	170	500	450

NPT- and SAE-connections on request.

9. Dimensions



*1 illustration shows execution up to flange size DN 125

*2 vent screw

*3 "K" height required for element removal

*4 maintenance indicator visual/electrical

*5 drain plug "G"

*6 Lifting eye; available for versions starting with size DN 100

**1 illustration shows execution up to flange size DN 125

**2 vent screw

**3 "K" height required for element removal

**4 drain plug "G"

**5 cover lifting device

Subject to technical alteration without prior notice.

10. Commissioning

- Prior to commissioning the filter open the venting screw and wait until liquid emerges. Then tighten the venting screw.
- After that all sealing points must be optically inspected for leaks.
- If the maintenance indicator gives a signal when the operating temperature has been reached, the filter element must be exchanged after the end of the shift.
- For element exchange stop system and relieve filter from pressure. Empty filter over drain plug, remove hex nuts, remove container top, remove hex nut, remove valve plate, remove nut, remove filter element.
- Clean filter housing using a suitable medium.
- Clean contaminated filter elements or replace by new MAHLE filters (only Drg-elements are cleanable).
- Inspect all sealing points and seals and replace by new if required.
- Assembly is performed in reverse order.
- Following commissioning inspect all sealing points for leaks.

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