

MAHLE

Industrial Filtration

Low Pressure Filter Spin-on Cartridge

Operating pressure 10/16/25 bar, Nominal size up to 160

1. Features

Efficient filters for modern hydraulic systems

- Modular design principle
- Compact design
- Minimal pressure drop
- Threaded connection

Quality filters, easy to service

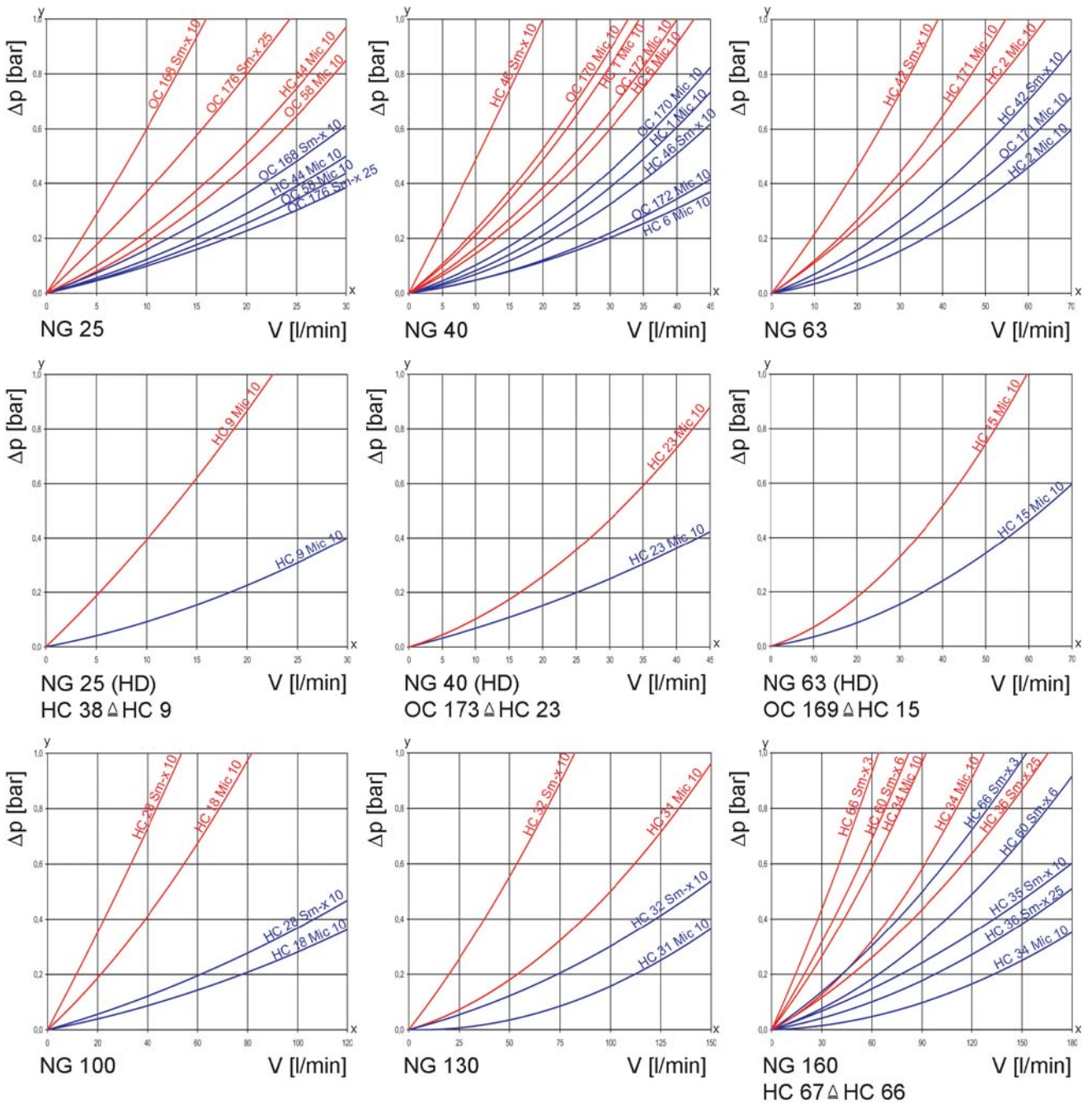
- Highly efficient Mic- or Sm-x filter elements
- β -valued elements per ISO 16889
- High dirt holding capacity and differential pressure stability providing optimal element service life

Worldwide distribution



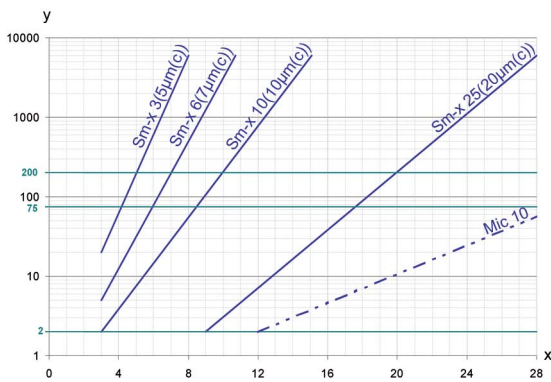
2. Flow rate/pressure drop curve complete filter

■ 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 16 889)
calibration according to ISO 11171 (NIST)

4. Specifications

| | |
|-------------------------------|--|
| Operating pressure: | 10/16/25 bar |
| Burst pressure: | 16/35 bar |
| Temperature range: | - 10 °C to + 120 °C |
| Housing material: | steel |
| Sealing material: | Perbunan |
| Opening pressure check valve: | ≤ 0.12 bar |
| Installation: | preferably vertical |
| Collapse pressure of element: | $\Delta p \geq 5$ bar |
| Long time rupture strength: | min. 105 load alternations at operating pressure |

Spin-on cartridges are resistant against mineral oil.

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.

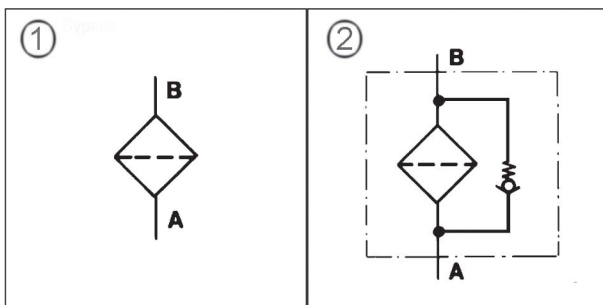
Subject to technical alteration without prior notice!

5. 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 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 |

6. Symbols



1. without Bypass
2. with Bypass

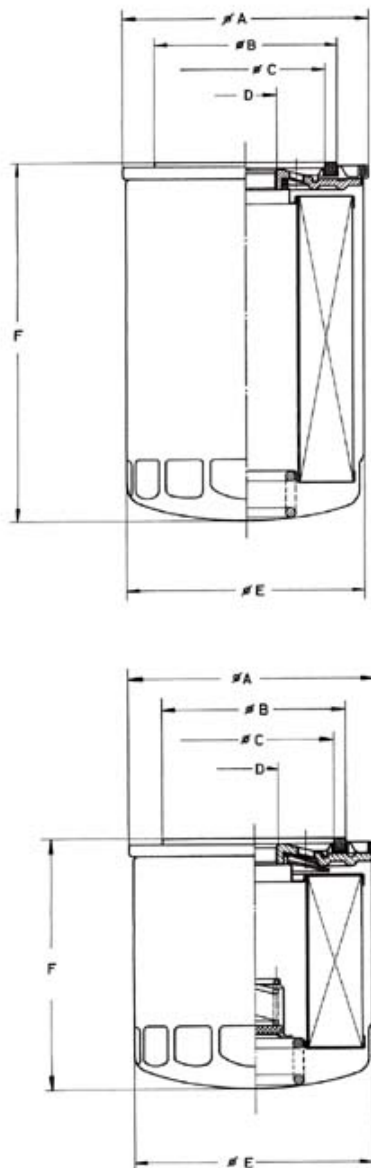
7. Order numbers

| 7.1 Housing design | | | | | | | |
|----------------------------|-----------------|---------|--------------------------------|-----------------|--------------------------------------|-----------------------|-------------|
| Nominal size NG [l/min] | Order number | Type | Operating pressure [bar] | Filter material | Filter surface [cm ²] | Bypass valve [bar] | Check valve |
| 25 | 77785983 | OC 58 | 10 | Mic 10 | 1700 | | |
| | 77500184 | OC 168 | | Sm-x 10 | 1200 | | |
| | 77785918 | OC 176 | | Sm-x 25 | 1200 | | |
| | 77500341 | HC 44 | | Mic 10 | 1700 | 2.5 | x |
| 40 | 77640899 | HC 1 | | Mic 10 | 3200 | | |
| | 77844780 | OC 170 | | Mic 10 | 3200 | 2.5 | x |
| | 77501273 | HC 6 | | Mic 10 | 3200 | | |
| | 77501232 | HC 46 | | Sm-x 10 | 2100 | | |
| | 71348143 | OC 172 | | Mic 10 | 3200 | 2.5 | x |
| 63 | 72013241 | HC 2 | | Mic 10 | 5100 | | |
| | 77501372 | HC 42 | | Sm-x 10 | 3300 | | |
| | 72013027 | OC 171 | | Mic 10 | 5100 | 2.5 | x |
| 100 | 77643331 | HC 18 | | Mic 10 | 7000 | | |
| | 77643398 | HC 28 | | Sm-x 10 | 3400 | | |
| | 77727183 | HC 4 | | Mic 10 | 7000 | | |
| 130 | 77500077 | HC 31 | | Mic 10 | 9700 | | |
| | 77500051 | HC 32 | Sm-x 10 | 5400 | | | |
| 160 | 77504194 | HC 34 | 16 | Mic 10 | 13500 | | |
| | 78714750 | HC 66 | | Sm-x 3 | 7500 | | |
| | 77478829 | HC 60 | | Sm-x 6 | 7500 | | |
| | 77643844 | HC 35 | | Sm-x 10 | 7500 | | |
| | 77643851 | HC 36 | | Sm-x 25 | 7500 | | |
| | 78714768 | HC 67 | | Sm-x 3 | 7500 | | |
| 25 | 77373020 | HC 9 | 25 | Mic 10 | 2000 | 3.5 | |
| | 77503964 | HC 38 | | Mic 10 | 2000 | | |
| 40 | 77803257 | OC 173 | | Mic 10 | 4100 | 2.5 | |
| | 77502180 | HC 23 | | Mic 10 | 4100 | | |
| 63 | 77502511 | OC 169 | | Mic 10 | 5100 | 2.5 | |
| | 77502628 | HC 15 | | Mic 10 | 5100 | | |
| | 78787921 | HC 68/1 | | Sm-x 3 | 3350 | | |

7.2 Dimensions

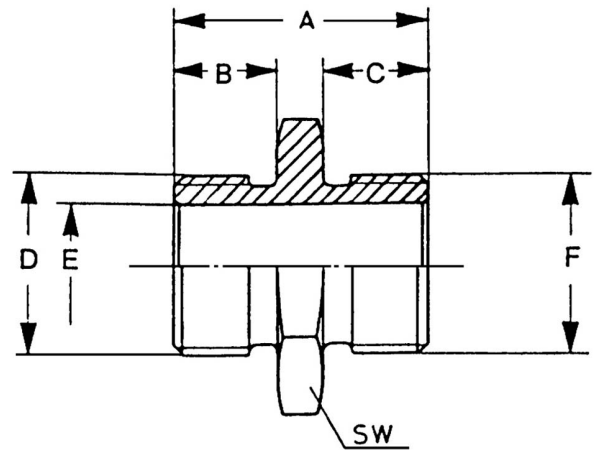
| Nominal size NG [l/min] | Order number | Type | Ø A | Ø B | Ø C | D | Ø E | F | Weight [kg] |
|----------------------------|-----------------|---------|-----|-----|-----|--------------|-----|-----|----------------|
| 25 | 77785983 | OC 58 | 80 | 72 | 62 | ¾" 16 UNF 2B | 76 | 120 | 0.40 |
| | 77500184 | OC 168 | 80 | 72 | 62 | ¾" 16 UNF 2B | 76 | 120 | 0.55 |
| | 77785918 | OC 176 | 80 | 72 | 62 | ¾" 16 UNF 2B | 76 | 120 | 0.55 |
| | 77500341 | HC 44 | 80 | 72 | 62 | ¾" 16 UNF 2B | 76 | 120 | 0.40 |
| 40 | 77640899 | HC 1 | 95 | 72 | 62 | ¾" 16 UNF 2B | 93 | 141 | 0.55 |
| | 77844780 | OC 170 | 95 | 72 | 62 | ¾" 16 UNF 2B | 93 | 141 | 0.55 |
| | 77501273 | HC 6 | 95 | 72 | 62 | 1" 12 UNF 2B | 93 | 141 | 0.55 |
| | 77501232 | HC 46 | 95 | 72 | 62 | 1" 12 UNF 2B | 93 | 141 | 0.75 |
| | 71348143 | OC 172 | 95 | 72 | 62 | 1" 12 UNF 2B | 93 | 141 | 0.55 |
| 63 | 72013241 | HC 2 | 95 | 72 | 62 | 1" 12 UNF 2B | 93 | 310 | 0.75 |
| | 77501372 | HC 42 | 95 | 72 | 62 | 1" 12 UNF 2B | 93 | 310 | 0.75 |
| | 72013027 | OC 171 | 95 | 72 | 62 | 1" 12 UNF 2B | 93 | 310 | 0.75 |
| 100 | 77643331 | HC 18 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 172 | 1.50 |
| | 77643398 | HC 28 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 172 | 1.80 |
| | 77727183 | HC 4 | 143 | 111 | 100 | G 1¼ | 136 | 172 | 1.50 |
| 130 | 77500077 | HC 31 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 240 | 1.70 |
| | 77500051 | HC 32 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 240 | 2.20 |
| 160 | 77504194 | HC 34 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 310 | 1.95 |
| | 78714750 | HC 66 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 310 | 2.65 |
| | 77478829 | HC 60 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 310 | 2.65 |
| | 77643844 | HC 35 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 310 | 2.65 |
| | 77643851 | HC 36 | 143 | 111 | 100 | 1½" 16 UN 2B | 136 | 310 | 2.65 |
| | 78714768 | HC 67 | 143 | 111 | 100 | G 1¼ | 136 | 310 | 2.65 |
| 25 | 77373020 | HC 9 | 80 | 72 | 62 | ¾" 16 UNF 2B | 76 | 140 | 0.55 |
| | 77503964 | HC 38 | 80 | 72 | 62 | ¾" 16 UNF 2B | 76 | 140 | 0.55 |
| 40 | 77803257 | OC 173 | 95 | 72 | 62 | 1" 16 UNF 2B | 93 | 180 | 0.80 |
| | 77502180 | HC 23 | 95 | 72 | 62 | 1" 16 UNF 2B | 93 | 180 | 0.80 |
| 63 | 77502511 | OC 169 | 95 | 72 | 62 | 1" 16 UNF 2B | 93 | 215 | 0.90 |
| | 77502628 | HC 15 | 95 | 72 | 62 | 1" 16 UNF 2B | 93 | 215 | 0.90 |
| | 78787921 | HC 68/1 | 95 | 72 | 62 | 1" 16 UNF 2B | 93 | 215 | 1.20 |

8. Dimensions



9. Accessories

| Order number | A | B | C | D | E | SW | F |
|--------------|----|----|----|----------------|----|----|------------|
| 77802382 | 32 | 15 | 12 | ¾" 16 UNF 2A | 13 | 27 | M 18 x 1.5 |
| 77802390 | 35 | 15 | 15 | 1" 12 UNF 2A | 17 | 28 | M 24 x 1.5 |
| 77893860 | 27 | 15 | 10 | 1" 12 UNF 2A | 16 | 27 | M 22 x 1.5 |
| 77802408 | 35 | 15 | 15 | 1 ½" 16 UNF 2A | 25 | 40 | M 38 x 1.5 |



The sealing surface for block mounting should be in accordance with ISO 6415.

Figure shows spin-on cartridge with relief valve and check valve.

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