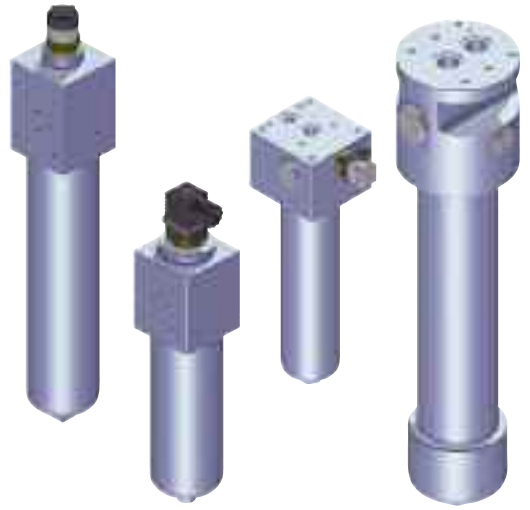


FHM

Maximum pressure 320 bar
Flow rates to 450 l/min



Technical data

Filter housing (Materials)

- Head: Cast iron (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: Steel
- Check valve: Steel

Pressure

- Working pressure: 320 bar (32 MPa)
- Test pressure: 480 bar (48 MPa)
- Burst pressure: 960 bar (96 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 320 bar (32 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 6 bar \pm 10%
- Other opening pressures on request.

Δp Elements type

- Microfibre filter elements series N: 20 bar
- Microfibre filter elements series H: 210 bar (excluded FHM 050 - 500)
- Microfibre filter elements series S: 210 bar (only for FHM 050 - 500)
- Wire mesh filter elements series N: 20 bar
- Fluid flow through the filter element from OUT to IN.

Seals

- Standard NBR series A
- Optional FPM series V

FHM FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

Weights (kg)

| Length | 1 | 2 | 3 | 4 | 5 |
|-----------|------|-------|-------|-------|-------|
| • FHM 006 | 2.17 | - | - | - | - |
| • FHM 007 | - | 4.74 | 5.95 | - | - |
| • FHM 010 | - | 4.74 | 5.95 | - | - |
| • FHM 050 | 5.31 | 5.68 | 6.09 | 6.56 | 7.74 |
| • FHM 065 | 5.47 | 5.83 | 7.04 | - | - |
| • FHM 135 | 8.78 | 10.38 | 11.43 | - | - |
| • FHM 320 | 19.8 | 21.93 | 24.22 | 26.70 | - |
| • FHM 500 | 35 | 39.17 | 42.69 | 54.70 | 60.50 |

Volumes (dm³)

| Length | 1 | 2 | 3 | 4 | 5 |
|-----------|------|------|------|------|------|
| • FHM 006 | 0.12 | - | - | - | - |
| • FHM 007 | - | 0.30 | 0.50 | - | - |
| • FHM 010 | - | 0.30 | 0.50 | - | - |
| • FHM 050 | 0.29 | 0.38 | 0.48 | 0.60 | 0.89 |
| • FHM 065 | 0.27 | 0.34 | 0.56 | - | - |
| • FHM 135 | 0.49 | 0.82 | 1.03 | - | - |
| • FHM 320 | 1.04 | 1.76 | 2.53 | 3.36 | - |
| • FHM 500 | 1.63 | 2.35 | 2.96 | 5.11 | 6.44 |

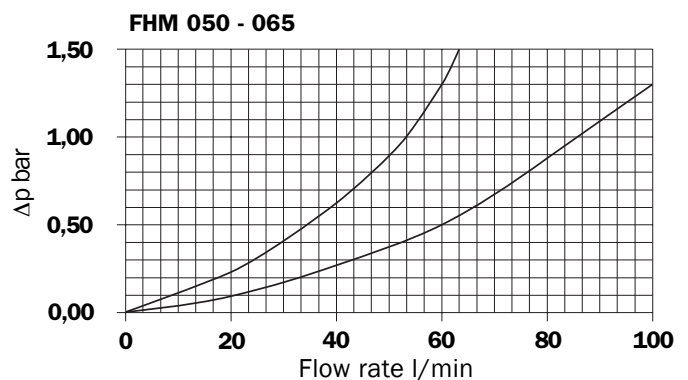
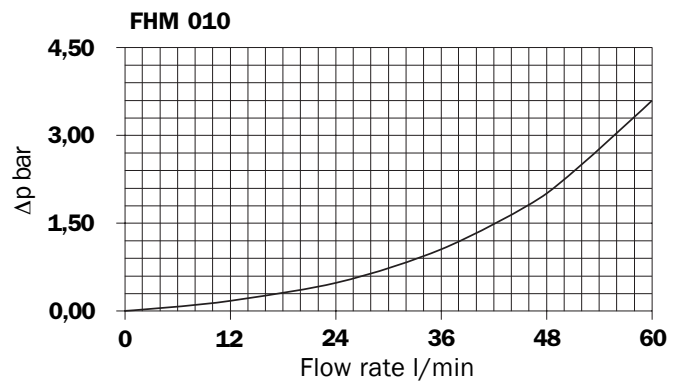
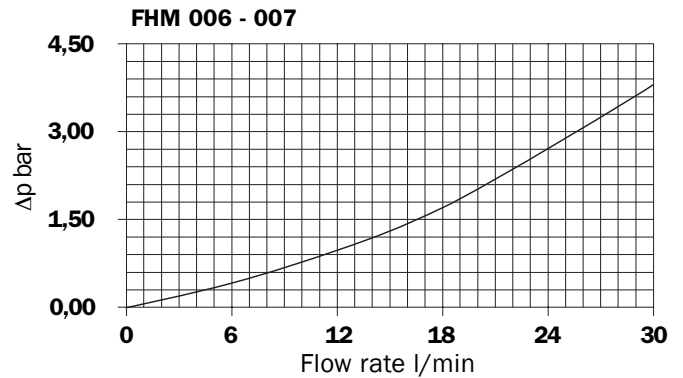
Connections

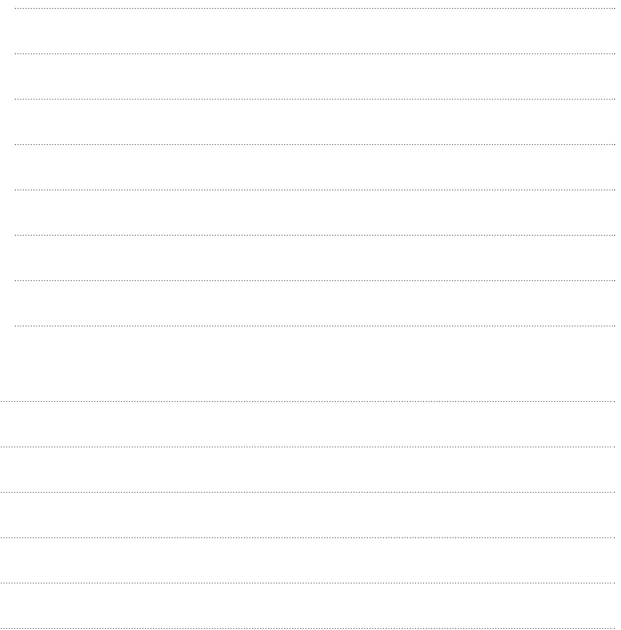
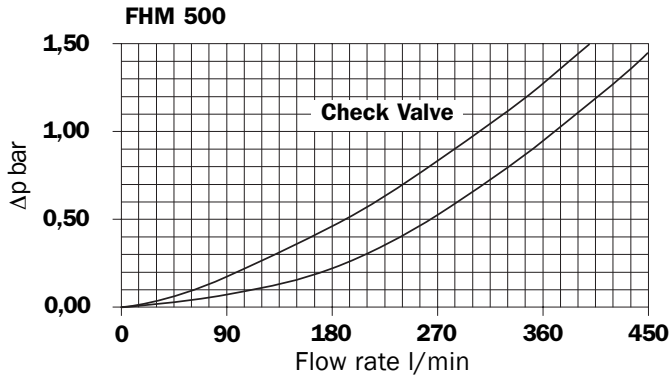
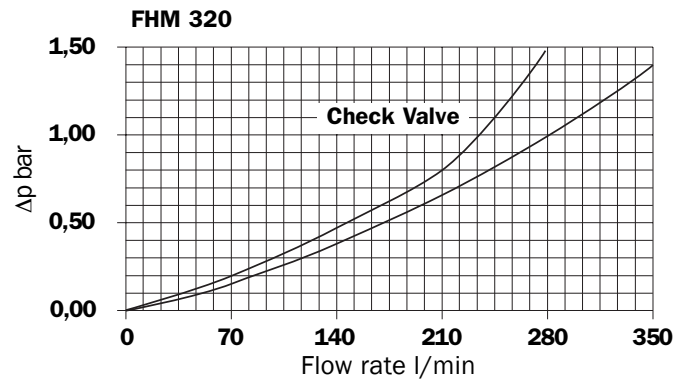
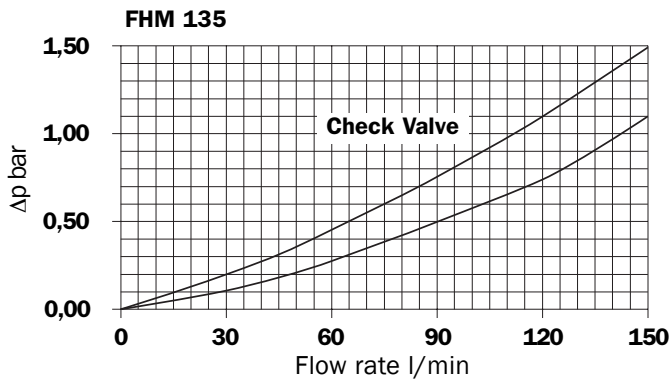
- FHM: In-line Inlet/Outlet

Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

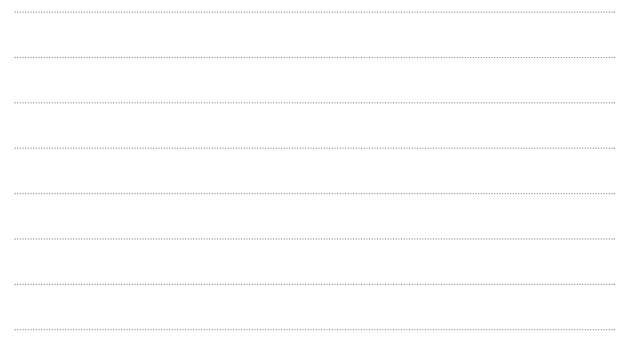
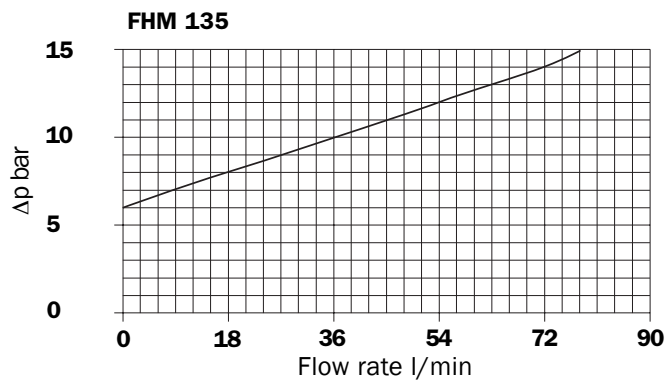
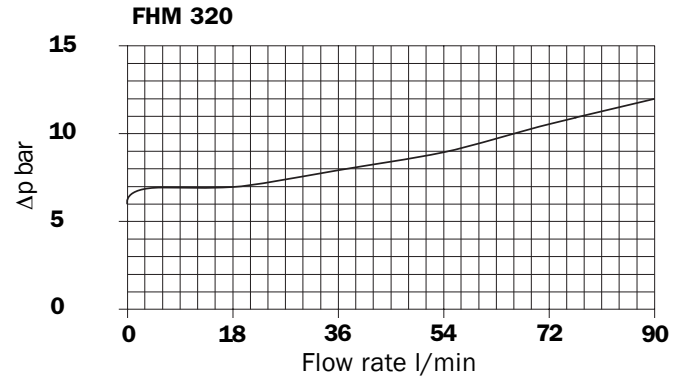
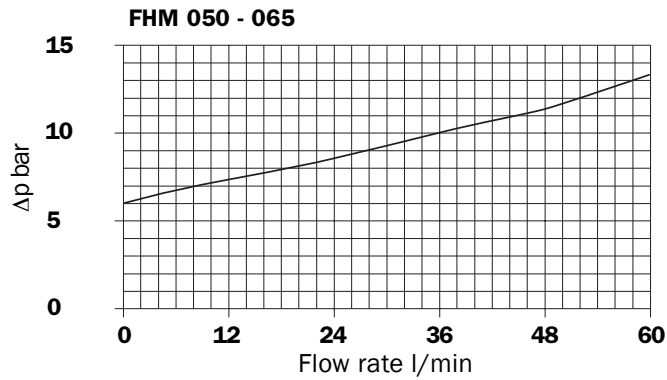
Δp varies proportionally with density.





Valves

Bypass valve pressure drop



Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 1,5 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0,86 kg/dm³.

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 007 | 2 | 12 | 13 | 14 | 15 | 16 |
| | 3 | 13 | 14 | 15 | 16 | 17 |

Serie H - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FHM 050 | 1 | 38 | 39 | 65 | 67 | 80 | 100 |
| | 2 | 46 | 50 | 68 | 75 | 88 | 102 |
| | 3 | 56 | 58 | 75 | 80 | 93 | 103 |
| | 4 | 67 | 70 | 84 | 85 | 95 | 104 |
| | 5 | 81 | 82 | 93 | 95 | 100 | 105 |

Serie N - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FHM 065 | 1 | 23 | 30 | 47 | 53 | 71 | 102 |
| | 2 | 30 | 44 | 58 | 63 | 80 | 103 |
| | 3 | 51 | 59 | 78 | 82 | 92 | 105 |

Serie N - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FHM 135 | 1 | 60 | 65 | 98 | 104 | 130 | 149 |
| | 2 | 90 | 96 | 117 | 119 | 154 | 165 |
| | 3 | 118 | 119 | 143 | 145 | 156 | 167 |

Serie N - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FHM 320 | 1 | 111 | 121 | 187 | 217 | 252 | 310 |
| | 2 | 200 | 215 | 280 | 292 | 320 | 328 |
| | 3 | 245 | 267 | 311 | 320 | 325 | 332 |
| | 4 | 266 | 280 | 314 | 325 | 336 | 340 |

Serie N - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FHM 500 | 1 | 240 | 268 | 320 | 330 | 350 | 410 |
| | 2 | 275 | 298 | 345 | 350 | 375 | 420 |
| | 3 | 325 | 339 | 382 | 385 | 400 | 430 |
| | 4 | 348 | 370 | 395 | 400 | 410 | 440 |
| | 5 | 374 | 383 | 405 | 410 | 425 | 450 |

Serie N - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 006 | 1 | 8 | 9 | 12 | 13 | 14 |

Serie H - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 010 | 2 | 19 | 21 | 27 | 28 | 31 |
| | 3 | 26 | 27 | 31 | 32 | 33 |

Serie H - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 050 | 1 | 28 | 36 | 50 | 52 | 62 |
| | 2 | 41 | 44 | 63 | 70 | 85 |
| | 3 | 51 | 53 | 71 | 77 | 90 |
| | 4 | 62 | 65 | 80 | 81 | 92 |
| | 5 | 73 | 74 | 83 | 88 | 97 |

Serie H - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 065 | 1 | 22 | 23 | 43 | 50 | 67 |
| | 2 | 30 | 34 | 56 | 62 | 75 |
| | 3 | 51 | 57 | 76 | 81 | 91 |

Serie H - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 135 | 1 | 45 | 51 | 83 | 85 | 122 |
| | 2 | 78 | 91 | 109 | 110 | 134 |
| | 3 | 102 | 111 | 130 | 136 | 146 |

Serie H - Flow rate I/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 320 | 1 | 97 | 102 | 156 | 162 | 228 |
| | 2 | 162 | 181 | 236 | 240 | 282 |
| | 3 | 206 | 233 | 275 | 280 | 305 |
| | 4 | 232 | 246 | 280 | 284 | 310 |

Serie H - Flow rate I/min

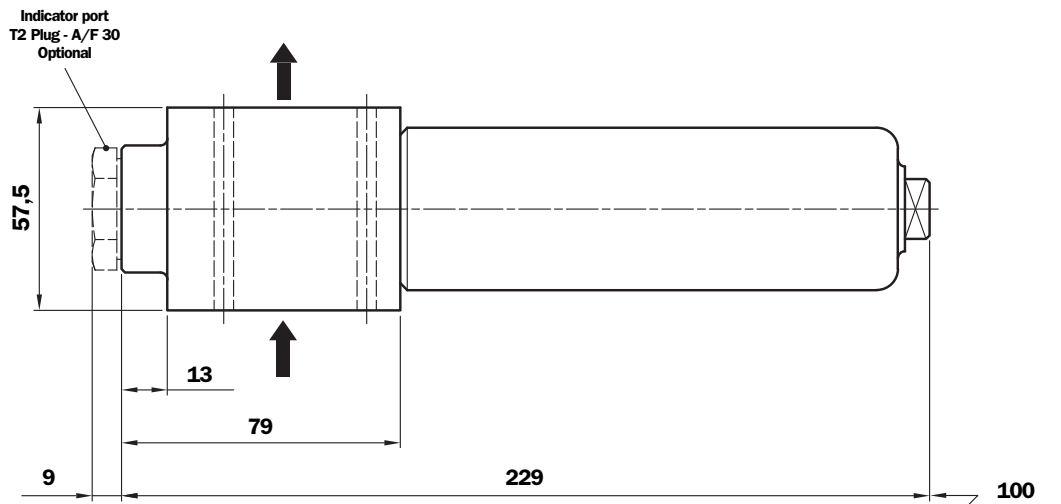
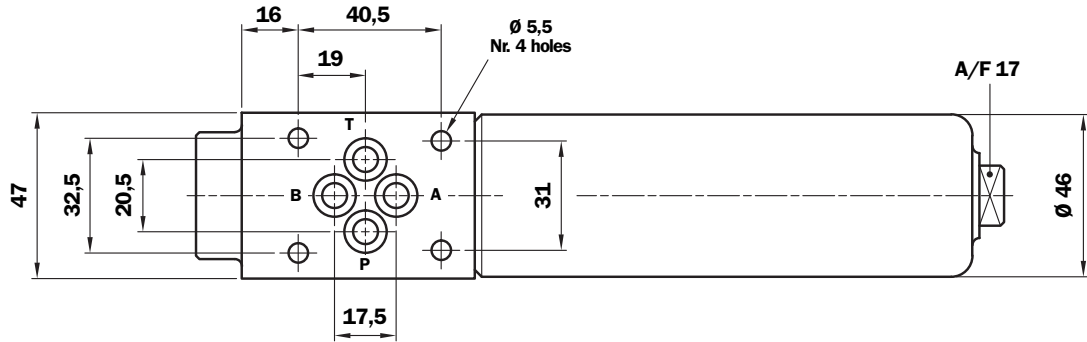
Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHM 500 | 1 | 140 | 150 | 238 | 240 | 300 |
| | 2 | 210 | 235 | 298 | 305 | 325 |
| | 3 | 258 | 265 | 325 | 330 | 360 |
| | 4 | 287 | 315 | 360 | 365 | 390 |
| | 5 | 340 | 347 | 385 | 390 | 410 |

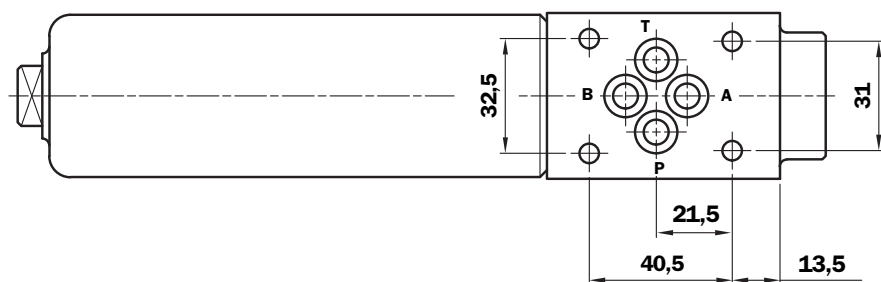
Serie H - Flow rate I/min

FHM 006

G1 - Housing side "A"



G2 - Housing side "B"

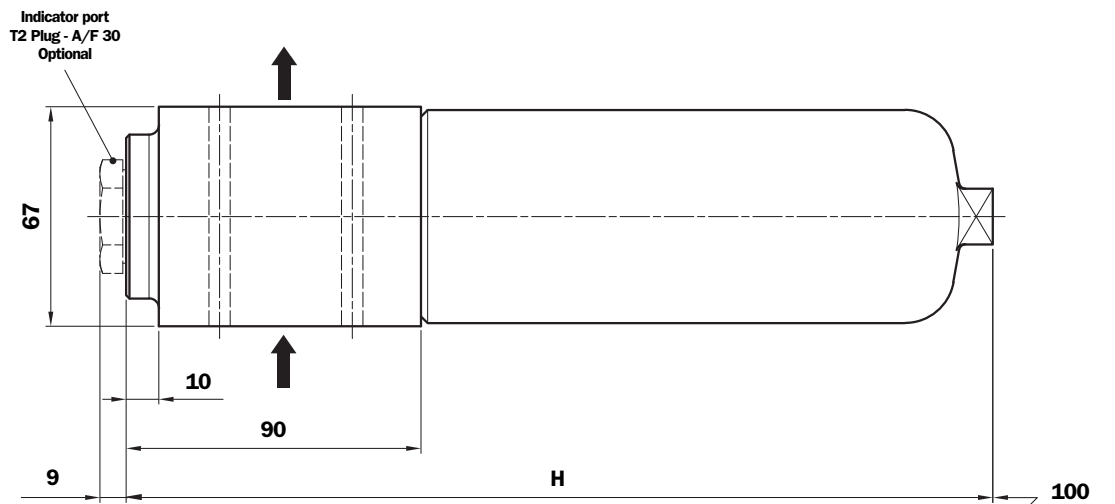
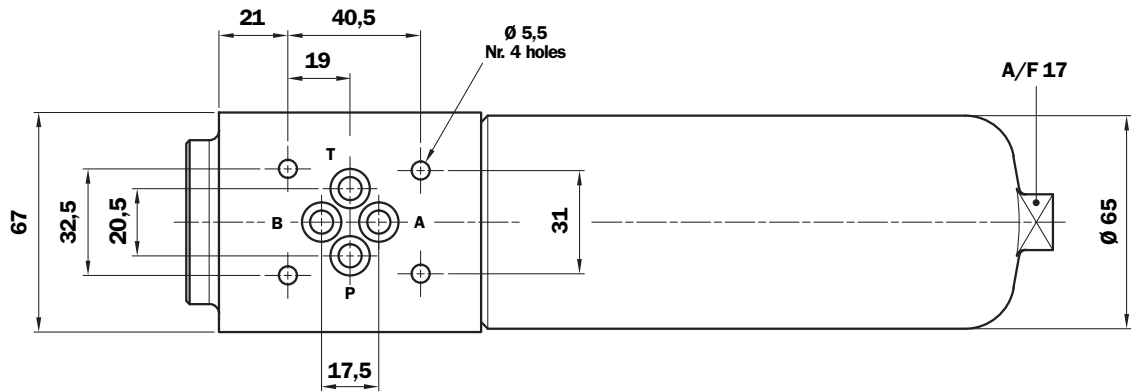


Manifold connections

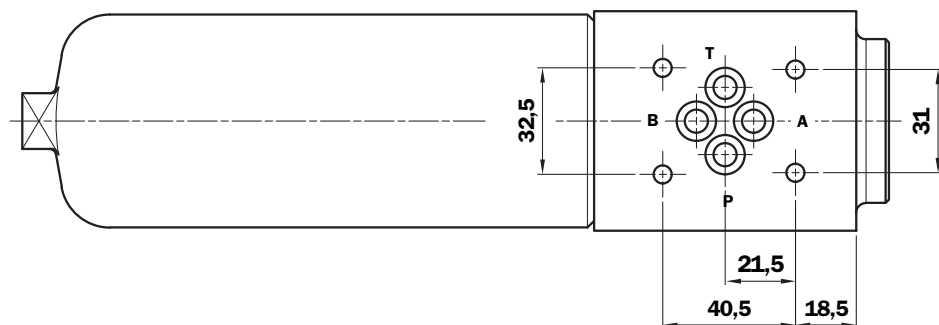
| Type | Size |
|------|------------------|
| G1 | Housing side "A" |
| G2 | Housing side "B" |

FHM 007

G1 - Housing side "A"



G2 - Housing side "B"



FHM 007

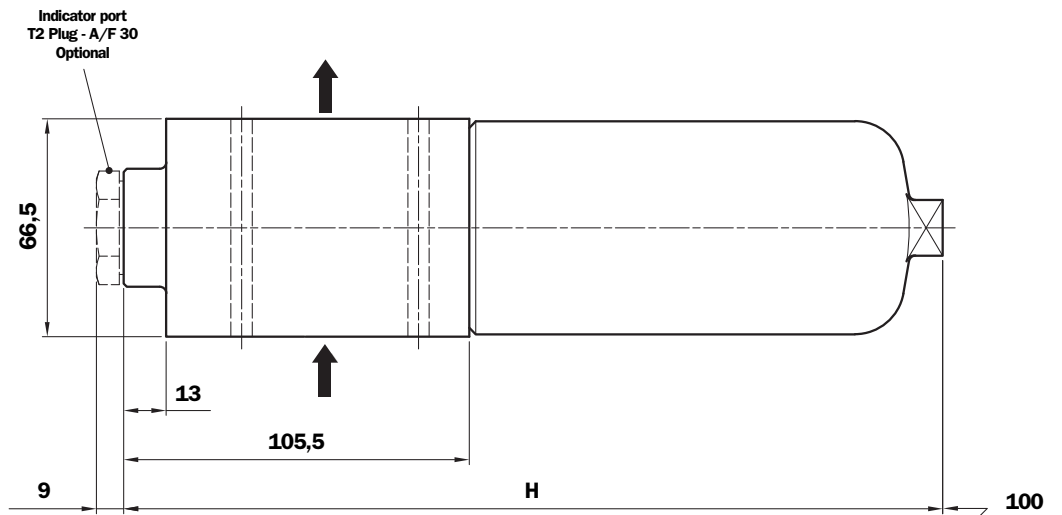
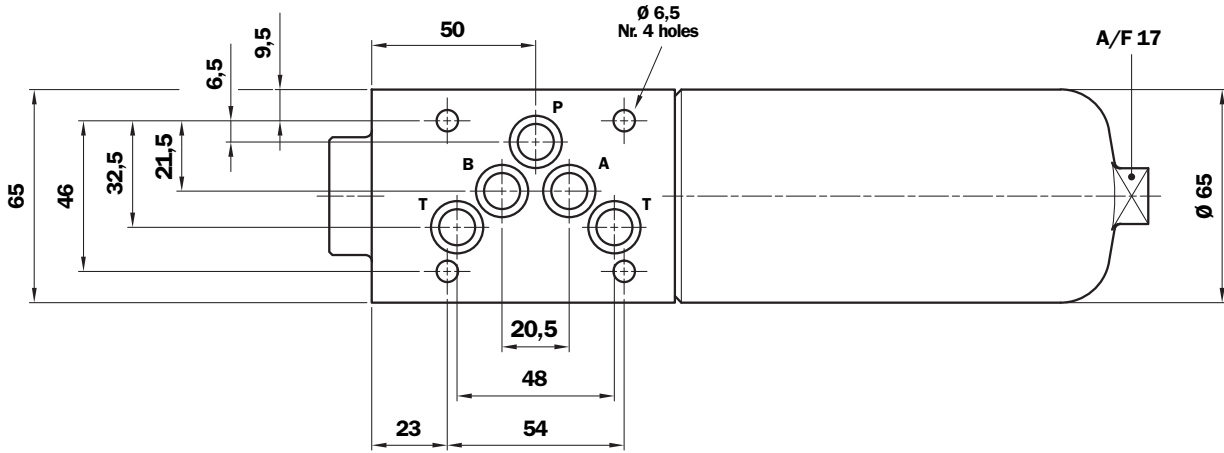
| Length Filter | H mm |
|---------------|------|
| 2 | 265 |
| 3 | 366 |

Manifold connections

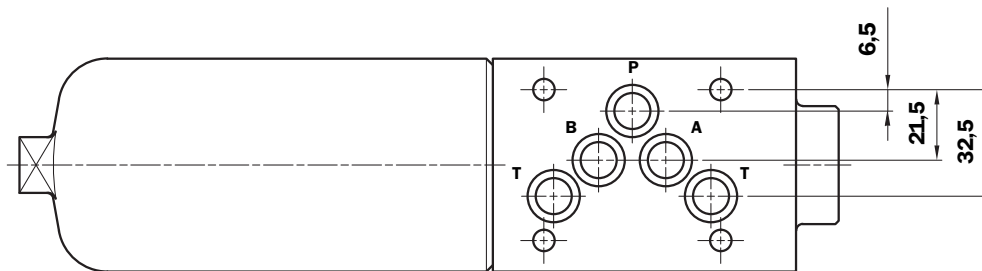
| Type | Size |
|------|------------------|
| G1 | Housing side "A" |
| G2 | Housing side "B" |

FHM 010

G1 - Housing side "A"



G2 - Housing side "B"



FHM 010

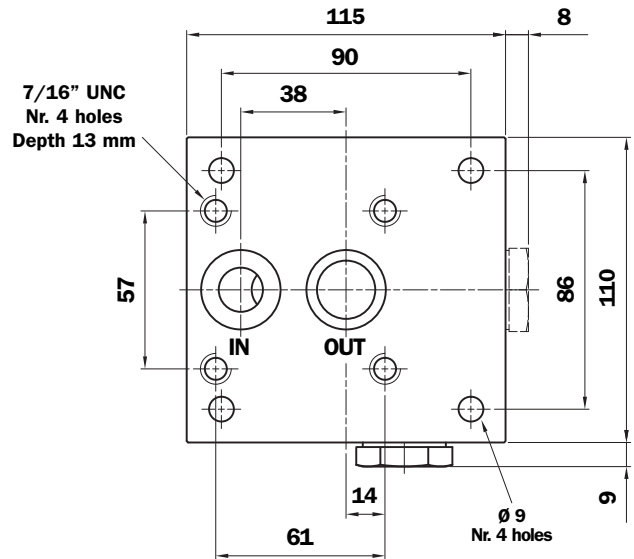
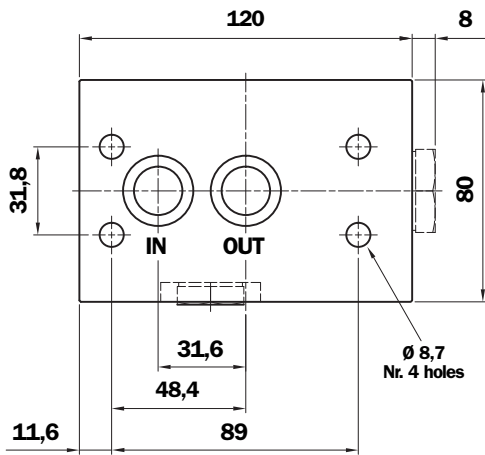
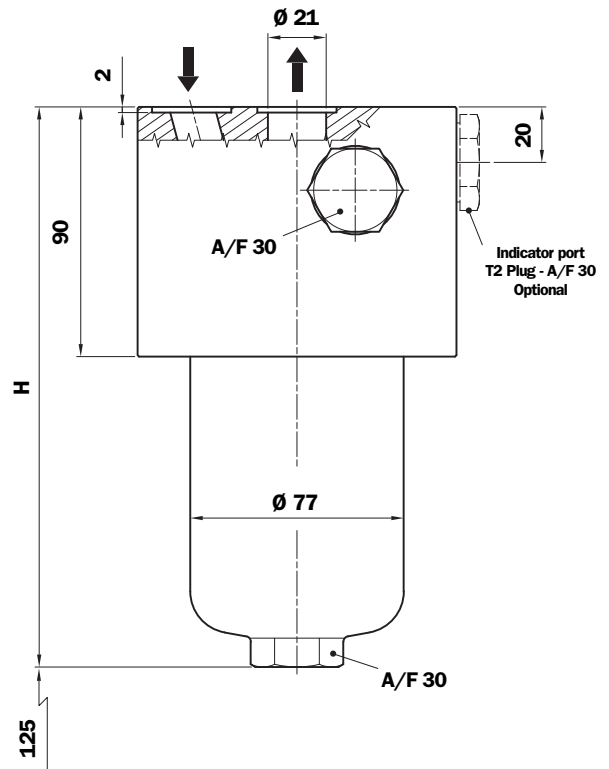
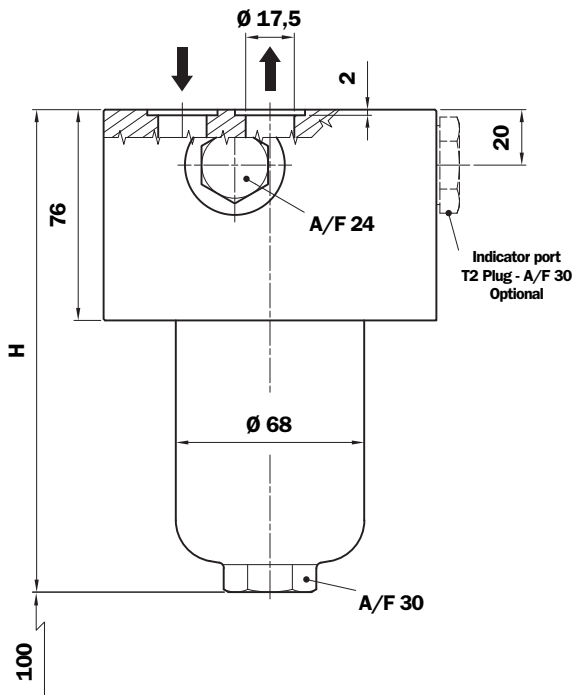
| Length Filter | H mm |
|---------------|------|
| 2 | 280 |
| 3 | 381 |

Manifold connections

| Type | Size |
|------|------------------|
| G1 | Housing side "A" |
| G2 | Housing side "B" |

FHM 050 - 065

FHM 135



FHM 050

| Length Filter | H mm |
|---------------|------|
| 1 | 154 |
| 2 | 191 |
| 3 | 233 |
| 4 | 281 |
| 5 | 403 |

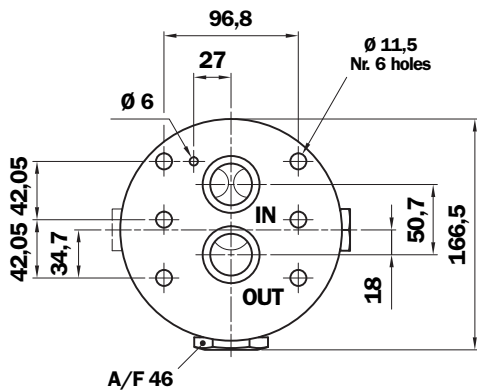
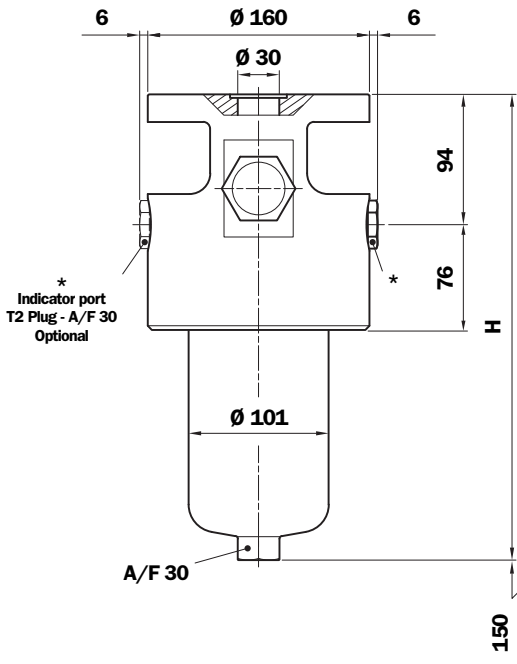
FHM 065

| Length Filter | H mm |
|---------------|------|
| 1 | 162 |
| 2 | 193 |
| 3 | 295 |

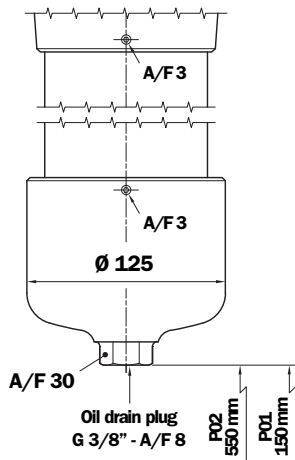
FHM 135

| Length Filter | H mm |
|---------------|------|
| 1 | 202 |
| 2 | 315 |
| 3 | 390 |

FHM 320

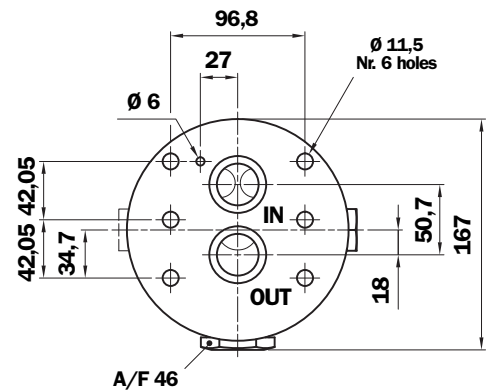
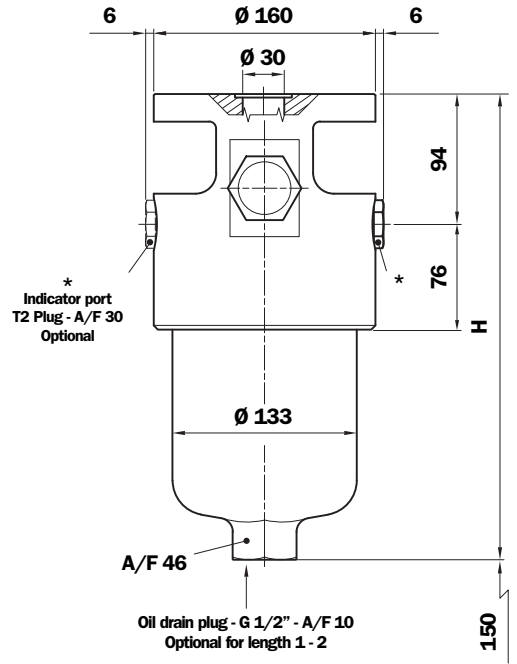


FHM 320 length 4

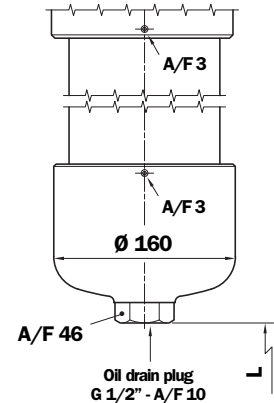


Style P01
Standard maintenance from head.
Style P02
Maintenance option from housing base.

FHM 500



FHM 500 length 4 - 5



FHM 500

| Length Filter | H mm |
|---------------|------|
| 1 | 355 |
| 2 | 445 |
| 3 | 521 |
| 4 | 679 |
| 5 | 845 |

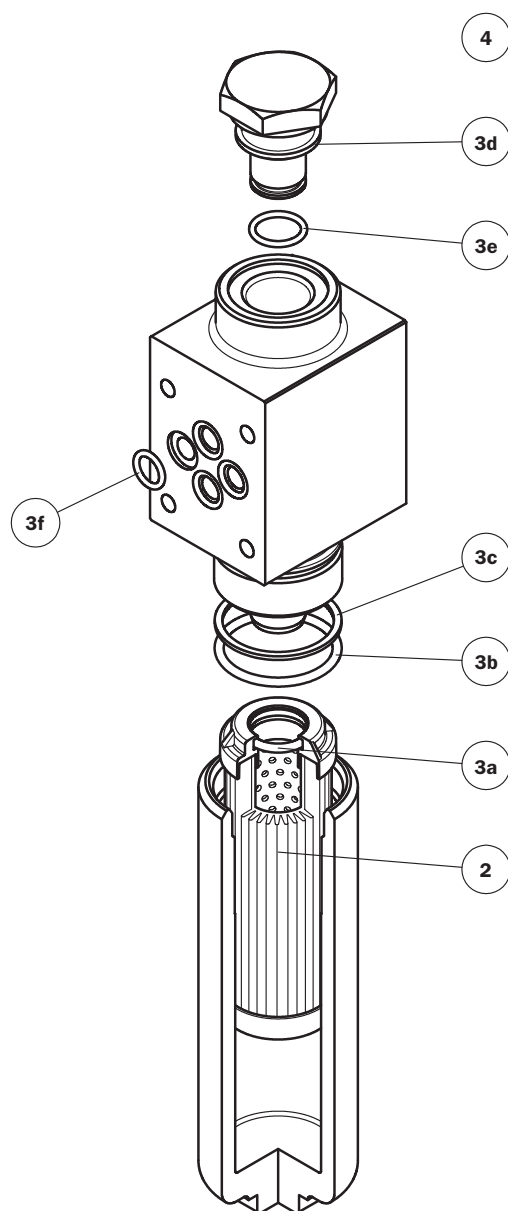
| Style P01 | |
|---------------|--------|
| Filter length | L (mm) |
| 4-5 | 150 |

| Style P02 | |
|---------------|--------|
| Filter length | L (mm) |
| 4 | 480 |
| 5 | 650 |

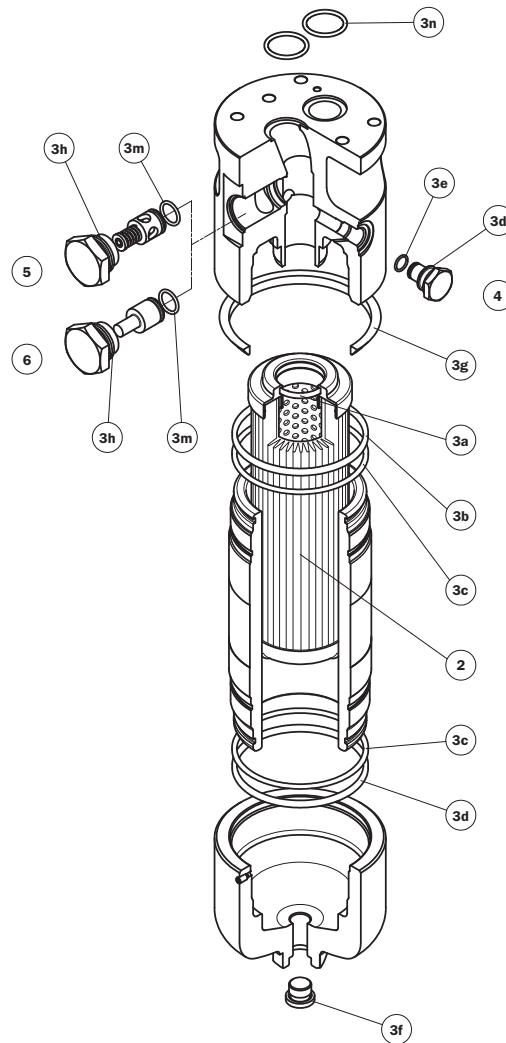
FHM 320

| Length Filter | H mm |
|---------------|------|
| 1 | 293 |
| 2 | 416 |
| 3 | 548 |
| 4 | 702 |

Spare parts



| Item | Description | Q.ty | FILTER Series | | | | | |
|------|---------------------------|------|------------------------------|--------------------------|------------------------------|--------------------------|------------------------------|----------------------------|
| | | | FHM 006 | | FHM 007 | | FHM 010 | |
| 1 | Filter assembly | 1 | See order table | | | | | |
| 2 | Filter element | 1 | See order table | | | | | |
| 3 | Seal Kit | 1 | NBR 02050324 | FPM 02050325 | NBR 02050600 | FPM 02050601 | NBR 02050320 | FPM 02050321 |
| 3a | Filter element seal | 1 | O-R 121 Ø 15,88 x 2,62 | | O-R 4100 Ø 24,99 x 3,53 | | O-R 4100 Ø 24,99 x 3,53 | |
| 3b | Bowl seal | 1 | O-R 3125 Ø 31,22 x 2,62 | | O-R 3187 Ø 47,29 x 2,62 | | O-R 3187 Ø 47,29 x 2,62 | |
| 3c | Bowl anti-extrusion ring | 1 | Parbak 124 Ø 32,21 x 2,18 | | Parbak 134 Ø 48,08 x 2,18 | | Parbak 134 Ø 48,08 x 2,18 | |
| 3d | Gasket | 1 | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) |
| 3e | O-Ring indicator | 1 | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | |
| 3f | Head seal | 1 | 4 pcs | O-R 108 Ø 8,73 x 1,78 | 4 pcs | O-R 108 Ø 8,73 x 1,78 | 5 pcs | O-R 2050 Ø 12,42 x 1,78 |
| 4 | Indicator connection plug | 1 | T2H | T2V | T2H | T2V | T2H | T2V |



| Item | Description | Q.ty | FILTER Series | | | | | | | | | |
|------|---------------------------|------|-------------------------------------|-------------------|-------------------------------------|-------------------|--------------------------------------|-------------------|--------------------------------------|-------------------|--------------------------------------|-------------------|
| | | | FHM 050 | | FHM 065 | | FHM 135 | | FHM 320 | | FHM 500 | |
| 1 | Filter assembly | 1 | See order table | | | | | | | | | |
| 2 | Filter element | 1 | See order table | | | | | | | | | |
| 3 | Seal kit | 1 | NBR 02050410 | FPM 02050411 | NBR 02050268 | FPM 02050279 | NBR 02050271 | FPM 02050282 | NBR 02050275 | FPM 02050286 | NBR 02050332 | FPM 02050333 |
| 3a | Filter element seal | 1 | O-R 3093 Ø 23,67 x 2,62 | | O-R 4100 Ø 24,99 x 3,53 | | O-R 3106 Ø 26,65 x 2,62 | | O-R 144 Ø 39,69 x 3,53 | | O-R 153 Ø 49,21 x 3,53 | |
| 3b | Bowl seal | 1 | O-R 3225 Ø 56,82 x 2,62 | | O-R 159 Ø 55,56 x 3,53 | | O-R 3256 Ø 64,77 x 2,62 | | 2 pcs. O-R 3350 Ø 88,57 x 2,62 | | 2 pcs. O-R 4462 Ø 117,10 x 3,53 | |
| 3c | Bowl anti-extrusion ring | 1 | Parbak 139 Ø 56,03 x 2,18 | | Parbak 227 Ø 54,53 x 3 | | Parbak 144 Ø 63,96 x 2,18 | | 2 pcs. Parbak 153 Ø 89,36 x 2,18 | | 2 pcs. Parbak 247 Ø 117,63 x 3 | |
| 3d | Gasket | 1 | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) |
| 3e | O-Ring indicator | 1 | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | |
| 3f | Drain plug | 1 | - | | - | | - | | G 3/8" with bonded seal | | G 1/2" with bonded seal | |
| 3g | Protective seal | 1 | 01026521 | | 01026521 | | 01026509 | | 01026510 | | - | |
| 3h | Bp or no Bp O-Ring | 1 | O-R 121 (90 Sh A) Ø 15,88 x 2,62 | | O-R 121 (90 Sh A) Ø 15,88 x 2,62 | | O-R 3087 (90 Sh A) Ø 21,89 x 2,62 | | O-R 3143 (90 Sh A) Ø 36,14 x 2,62 | | O-R 3143 (90 Sh A) Ø 36,14 x 2,62 | |
| 3m | Bp or no Bp O-Ring | 1 | O-R 2031 Ø 7,66 x 1,78 | | O-R 2031 Ø 7,66 x 1,78 | | O-R 2037 Ø 9,25 x 1,78 | | O-R 3106 Ø 26,65 x 2,62 | | O-R 3106 Ø 26,65 x 2,62 | |
| 3n | Protective seal | 2 | O-R 3081 Ø 20,24 x 2,62 | | O-R 3081 Ø 20,24 x 2,628 | | O-R 3093 Ø 23,67 x 2,62 | | O-R 4137 Ø 34,52 x 3,53 | | O-R 4137 Ø 34,52 x 3,53 | |
| 4 | Indicator connection plug | 1 | T2H | T2V | T2H | T2V | T2H | T2V | T2H | T2V | T2H | T2V |
| 5 | Bypass assembly | 1 | NBR 02001400 | FPM 02001401 | NBR 02001400 | FPM 02001401 | NBR 02001404 | FPM 02001405 | NBR 02001408 | FPM 02001409 | NBR 02001408 | FPM 02001409 |
| 6 | Non-Bypass assembly | 1 | NBR 02001402 | FPM 02001403 | NBR 02001402 | FPM 02001403 | NBR 02001406 | FPM 02001407 | NBR 02001410 | FPM 02001411 | NBR 02001410 | FPM 02001411 |

Ordering information FHM

Filter assembly FHM

| | | | | | | | | |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8a |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Example: FHM | 050 | 1 | S | A | F1 | A03 | S | P01 |

Filter element HP

| | | | | | | |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 2 | 6 | 4 | 7 | 8b |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Example: HP | 050 | 1 | A03 | A | S | P01 |

1 - Style

| Filter | Filter element |
|------------|----------------|
| 006 | ⌘ See below |
| 007 | 065 |
| 010 | 065 |
| 050 | 050 |
| 065 | 065 |
| 135 | 135 |
| 320 | 320 |
| 500 | 500 |

2 - Filter length

| | | | | | |
|------------|----------|----------|----------|----------|----------|
| 006 | 1 | | | | |
| 007 | | 2 | 3 | | |
| 010 | | 2 | 3 | | |
| 050 | 1 | 2 | 3 | 4 | 5 |
| 065 | 1 | 2 | 3 | | |
| 135 | 1 | 2 | 3 | | |
| 320 | 1 | 2 | 3 | 4 | |
| 500 | 1 | 2 | 3 | 4 | 5 |

3 - Valves

| | |
|----------|-------------------------------|
| S | Without bypass |
| B | With bypass |
| T | Without bypass + check valve* |
| D | With bypass + check valve* |

*Reduced cross-section oilways

N.B. Style 006 - 007 - 010 are available only in "S" version without bypass.

4 - Filter seals

| | |
|--------------------------|------------|
| A | NBR |
| V | FPM |
| <input type="checkbox"/> | On request |

5 - Connections

Manifold

| Type | Size FHM 006 - 007 - 010 |
|-----------|-----------------------------|
| G1 | Housing side "A" |
| G2 | Housing side "B" |

| Type | Size FHM 050 - 065 - 135 - 320 - 500 |
|-----------|---|
| F1 | - |

6 - Filter element

| | | |
|------------|---------------------------|--|
| A03 | Inorganic microfibre 3 µ | Absolute filtration Inorganic Microfibre βx(c) ≥ 1000 |
| A06 | Inorganic microfibre 6 µ | |
| A10 | Inorganic microfibre 10 µ | |
| A16 | Inorganic microfibre 16 µ | |
| A25 | Inorganic microfibre 25 µ | |
| M25 | Wire mesh 25 µ | Nominal Filtration Metal mesh |

7 - Max filter element differential pressure

| | |
|----------|--|
| N | Δp 20 bar (excluded FHM 006 - 007 - 010) |
| H | Δp 210 bar |
| S | Δp 210 bar (only for FHM 050 - 500) |

8 - Option

a - Filter

| | |
|------------|--|
| P01 | MP Filtri standard |
| P02 | Maintenance from base of housing (only FHM 320 length 4 - FHM 500 length 4/5) |
| Pxx | Customer request |

b - Filter element

| | |
|------------|--------------------|
| P01 | MP Filtri standard |
| Pxx | Customer request |

⌘ Filter element for FHM 006:

- HP 011 3 A03 x H P01
- HP 011 3 A06 x H P01
- HP 011 3 A10 x H P01
- HP 011 3 A16 x H P01
- HP 011 3 A26 x H P01
- HP 011 3 M25 x H P01

"x"= seal

| | |
|--------------------------|------------|
| A | NBR |
| V | FPM |
| <input type="checkbox"/> | On request |

* Indicator plug

Phosphated Steel plug T2 has to be ordered separately.

Code

| | |
|------------|----------|
| T2H | Seal NBR |
| T2V | Seal FPM |

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