

FRI

Maximum pressure 20 bar
Flow rates to 1500 l/min



Technical data

Filter housing (Materials)

- Filter body: Aluminium: FRI 255
 Anodized Aluminium: FRI 025-040-100-250-630
 Phosphated Steel: FRI 850
- Cover: Nylon (only for: FRI 255)
 Anodized Aluminium (all the other)
- Valve: Nylon - Steel

Pressure

- Working pressure: 20 bar (2 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 2,4 bar \pm 10%

Δp Elements type

- Microfibre filter elements series N: 10 bar
- Fluid flow through the filter element from OUT to IN.

Seals

- Standard NBR series A
- Optional FPM series V

FRI FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

Weights (kg)

| Length | 1 |
|-----------|------|
| • FRI 025 | 1,0 |
| • FRI 040 | 2,0 |
| • FRI 100 | 3,8 |
| • FRI 250 | 6,3 |
| • FRI 255 | 4,2 |
| • FRI 630 | 13,8 |
| • FRI 850 | 48,0 |

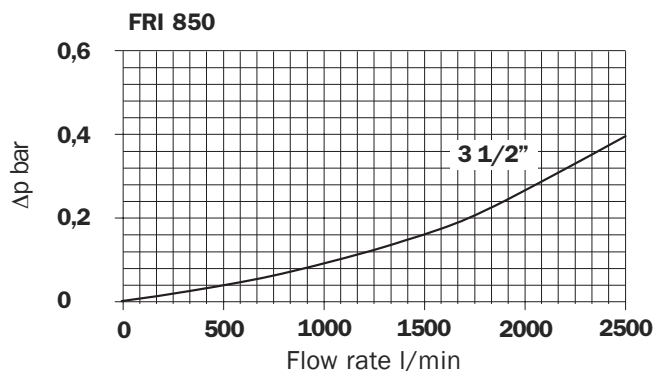
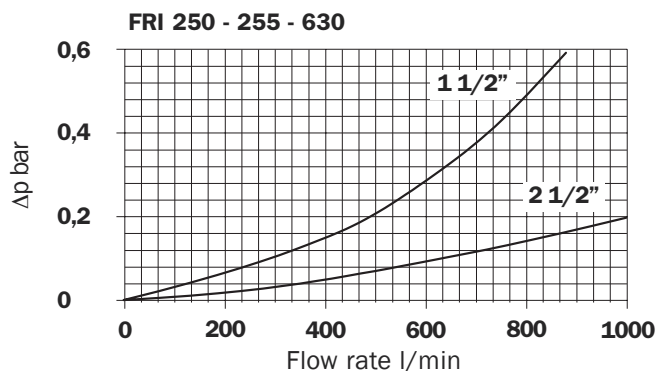
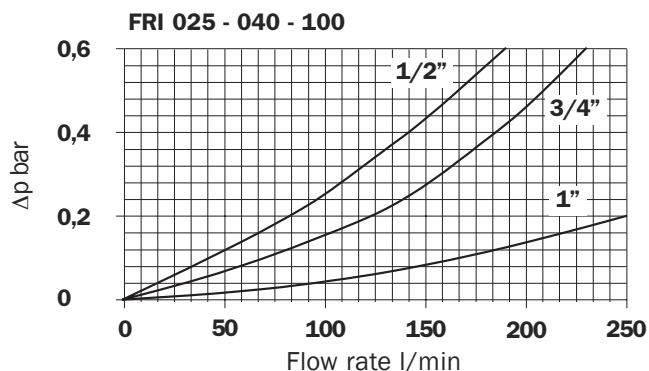
Volumes (dm³)

| Length | 1 |
|-----------|------|
| • FRI 025 | 0,28 |
| • FRI 040 | 0,70 |
| • FRI 100 | 1,09 |
| • FRI 250 | 2,60 |
| • FRI 255 | 3,2 |
| • FRI 630 | 7,05 |
| • FRI 850 | 21,5 |

Filter housings Δp pressure drop

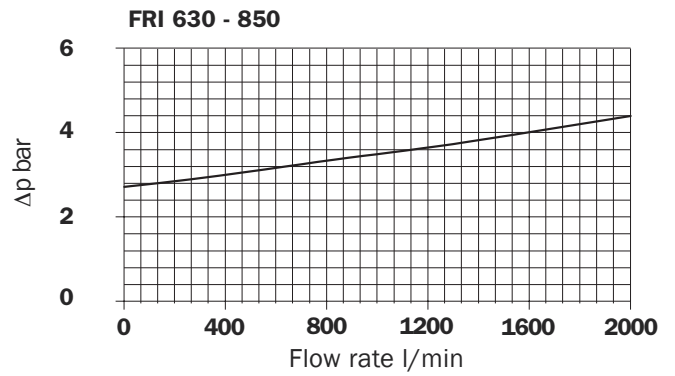
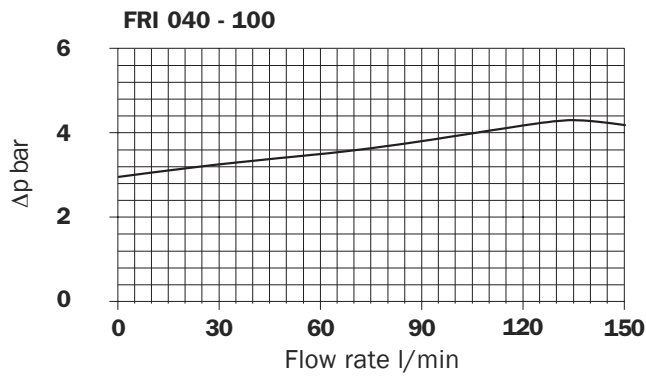
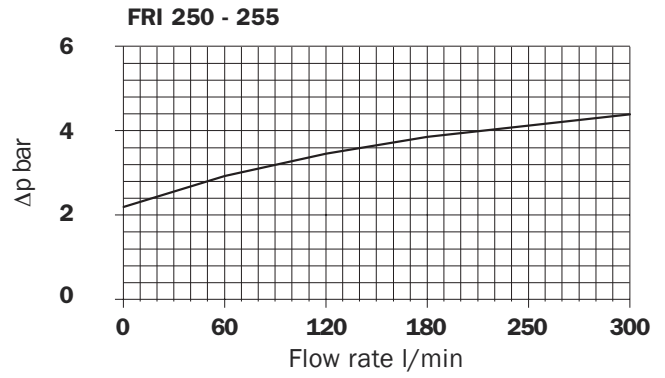
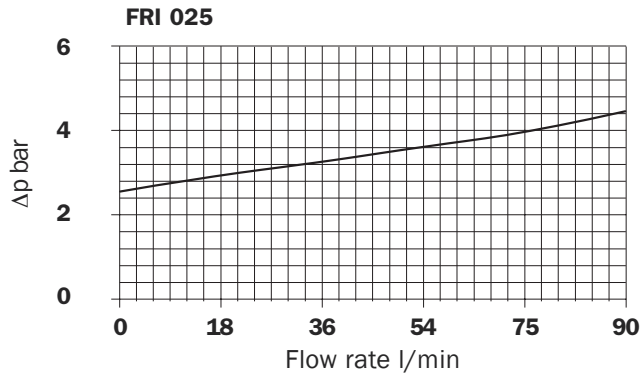
The curves are plotted utilising mineral oil with density of 0,86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



Valves

Bypass valve pressure drop



Recommended maximum flow rate

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

| | Filtration | | | | | | | | |
|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-------------|
| | Length | A03 | A06 | A10 | A16 | A25 | P10 | P25 | M25-M60-M90 |
| FRI 025 | 1 | 6 | 10 | 16 | 19 | 43 | 43 | 47 | 50* |

Flow rate l/min

| | Filtration | | | | | | | | |
|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-------------|
| | Length | A03 | A06 | A10 | A16 | A25 | P10 | P25 | M25-M60-M90 |
| FRI 040 | 1 | 18 | 22 | 42 | 44 | 80 | 80 | 80 | 80* |

Flow rate l/min

| | Filtration | | | | | | | | |
|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-------------|
| | Length | A03 | A06 | A10 | A16 | A25 | P10 | P25 | M25-M60-M90 |
| FRI 100 | 1 | 32 | 33 | 88 | 91 | 140 | 140 | 140 | 140* |

Flow rate l/min

| | Filtration | | | | | | | | |
|----------------------|------------|-----|-----|-----|-----|-----|-----|-----|-------------|
| | Length | A03 | A06 | A10 | A16 | A25 | P10 | P25 | M25-M60-M90 |
| FRI 250 - 255 | 1 | 143 | 178 | 270 | 300 | 350 | 350 | 350 | 350* |

Flow rate l/min

| | Filtration | | | | | | | | |
|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-------------|
| | Length | A03 | A06 | A10 | A16 | A25 | P10 | P25 | M25-M60-M90 |
| FRI 630 | 1 | 240 | 278 | 507 | 575 | 700 | 700 | 700 | 700* |

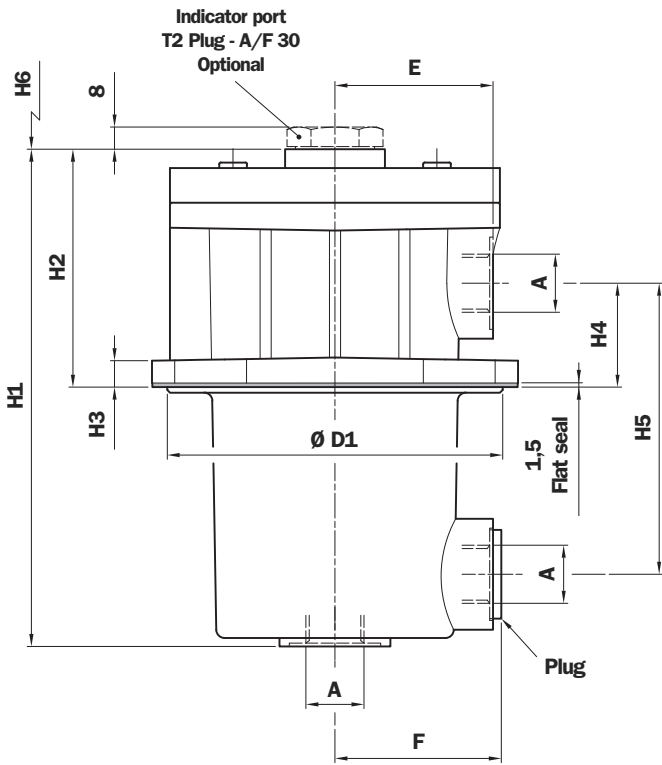
Flow rate l/min

| | Filtration | | | | | | | | |
|----------------|------------|-----|-----|-----|------|------|------|------|-------------|
| | Length | A03 | A06 | A10 | A16 | A25 | P10 | P25 | M25-M60-M90 |
| FRI 850 | 1 | 440 | 540 | 970 | 1140 | 1600 | 1600 | 1600 | 1600* |

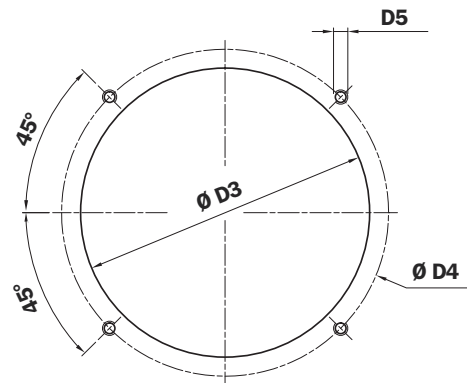
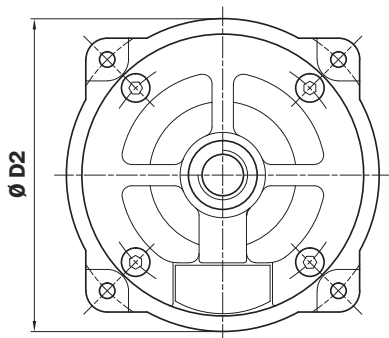
Flow rate l/min

*
Maximum
flow recommended

FRI 025 - 040



Holes on the tank

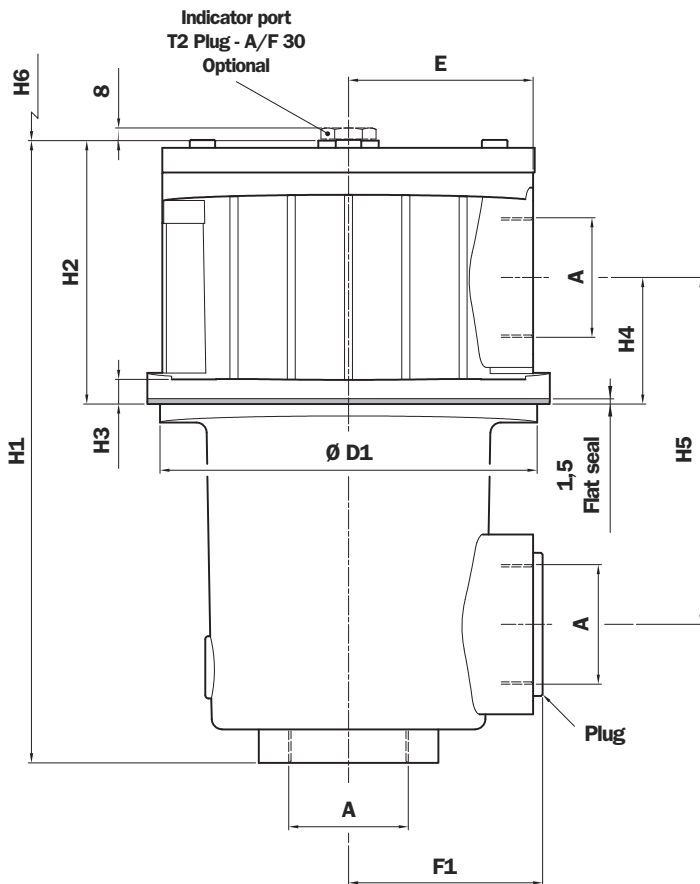


Thread connections

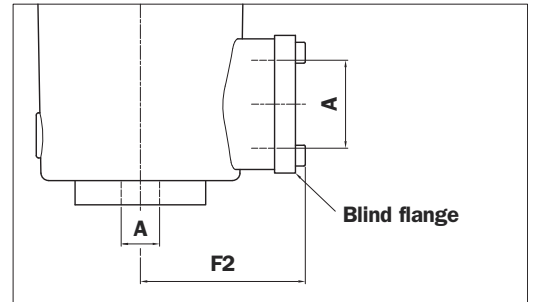
| Type | A | |
|------|-----------------------|--------------------------|
| | FRI 025 | FRI 040 |
| G1 | G 1/2" | G 3/4" |
| G2 | 1/2" NPT | 3/4" NPT |
| G3 | SAE 8 - 3/4" - 16 UNF | SAE 12 - 1.1/16" - 12 UN |

| Filter Length | H1 mm | H2 mm | H3 mm | H4 mm | H5 mm | H6 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | E mm | F mm |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| FRI 025 | 140 | 73 | 6,5 | 21 | 62,5 | 115 | 83,5 | 89 | 84,5 | 95 | M5 | 44 | 46 |
| FRI 040 | 180 | 86 | 10 | 38 | 105 | 135 | 121 | 132 | 122 | 138 | M6 | 57 | 60 |

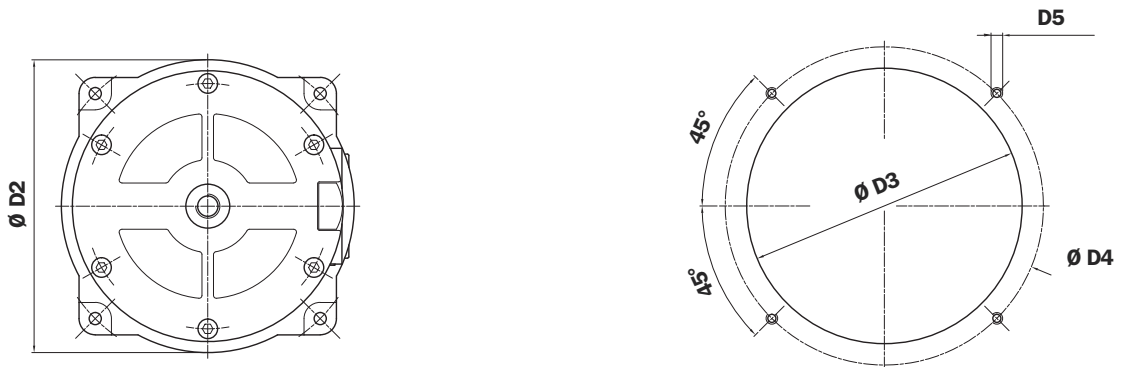
FRI 100 - 250 - 630



Flange connections



Holes on the tank



Thread connections

| Type | A | | |
|------|--------------------------|-------------------------|-------------------------|
| | FRI 100 | FRI 250 | FRI 630 |
| G1 | G 1" | G 1 1/2" | G 2 1/2" |
| G2 | 1" NPT | 1 1/2" NPT | 2 1/2" NPT |
| G3 | SAE 16 - 1.5/16" - 12 UN | SAE 24 - 1.7/8" - 12 UN | SAE 32 - 2 1/2" - 12 UN |

Flange connections*

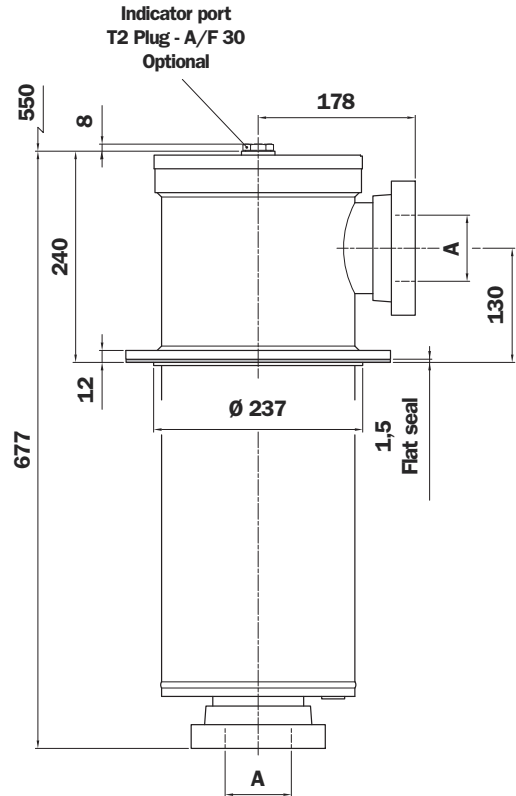
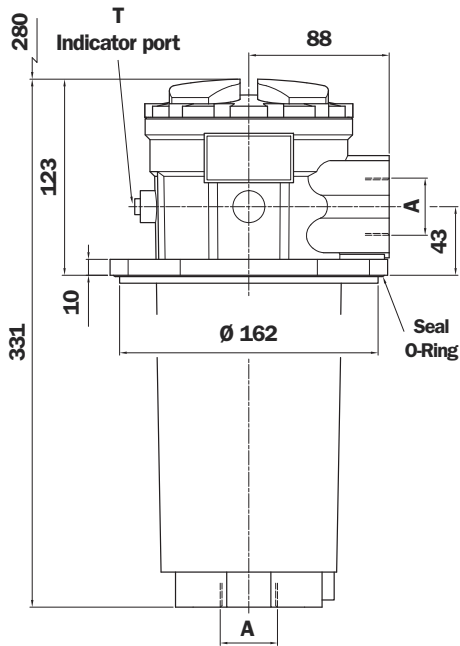
| Type | A | | |
|------|---------------------|-------------------------|-------------------------|
| | FRI 100 | FRI 250 | FRI 630 |
| F1 | 1" SAE 3000 psi/M | 1 1/2" SAE 3000 psi/M | 2 1/2" SAE 3000 psi/M |
| F2 | 1" SAE 3000 psi/UNC | 1 1/2" SAE 3000 psi/UNC | 2 1/2" SAE 3000 psi/UNC |

*Connections table "DN/SAE flange" see page 39

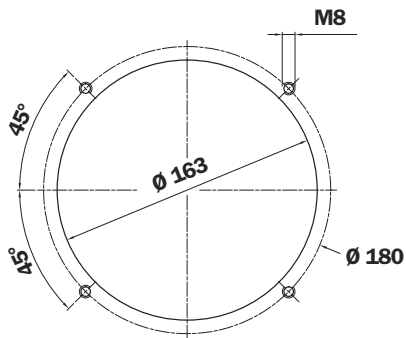
| Filter Length | H1 mm | H2 mm | H3 mm | H4 mm | H5 mm | H6 mm | D1 mm | D2 mm | D3 mm | D4 mm | D5 mm | E mm | F1 mm | F2 mm |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| FRI 100 | 245 | 106 | 12 | 51 | 140 | 175 | 135 | 146 | 136 | 154 | M6 | 67 | 73 | 90 |
| FRI 250 | 335 | 129 | 14 | 59 | 177 | 265 | 162 | 174 | 163 | 180 | M8 | 82 | 86 | 108 |
| FRI 630 | 391 | 166 | 16 | 80 | 218 | 300 | 237 | 253 | 238 | 275 | M10 | 116 | 122 | 143 |

FRI 255

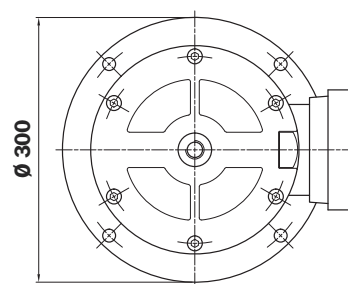
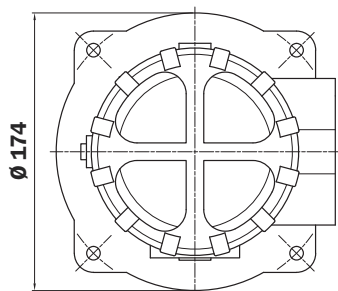
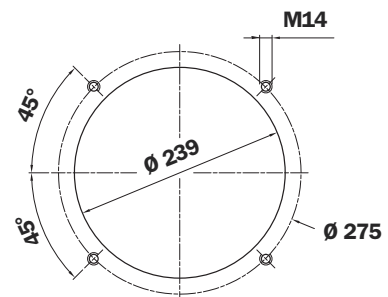
FRI 850



Holes on the tank



Holes on the tank



FRI 255 - Thread connections

| Type | A | T |
|------|-------------------------|--------|
| G1 | G 1 1/2" | G 1/8" |
| G2 | 1 1/2" NPT | G 1/8" |
| G3 | SAE 24 - 17/8" - 12 UN | G 1/8" |
| G4 | G 1 1/4" | G 1/8" |
| G5 | 1 1/4" NPT | G 1/8" |
| G6 | SAE 20 - 1.5/8" - 12 UN | G 1/8" |

FRI 255 - Flange connections*

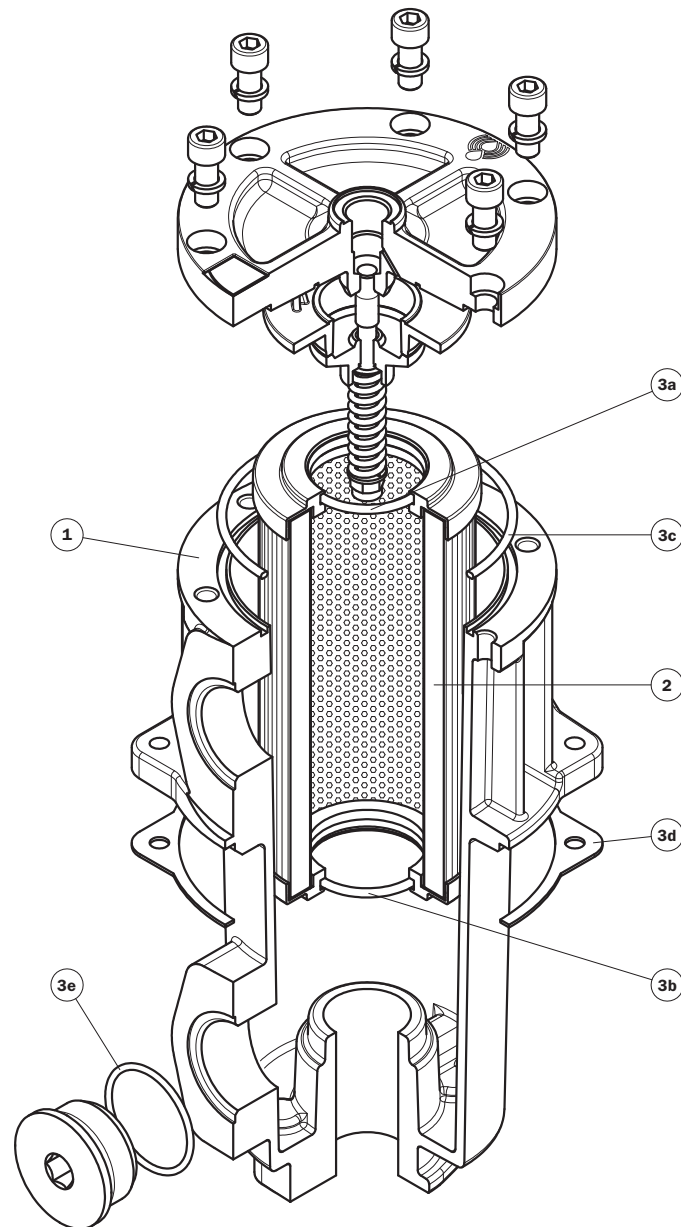
| Type | A | T |
|------|-------------------------|--------|
| F1 | 1 1/2" SAE 3000 psi/M | G 1/8" |
| F2 | 1 1/2" SAE 3000 psi/UNC | G 1/8" |

*Connections table
"DN - SAE flange" see page 39

FRI 850 - Flange connections*

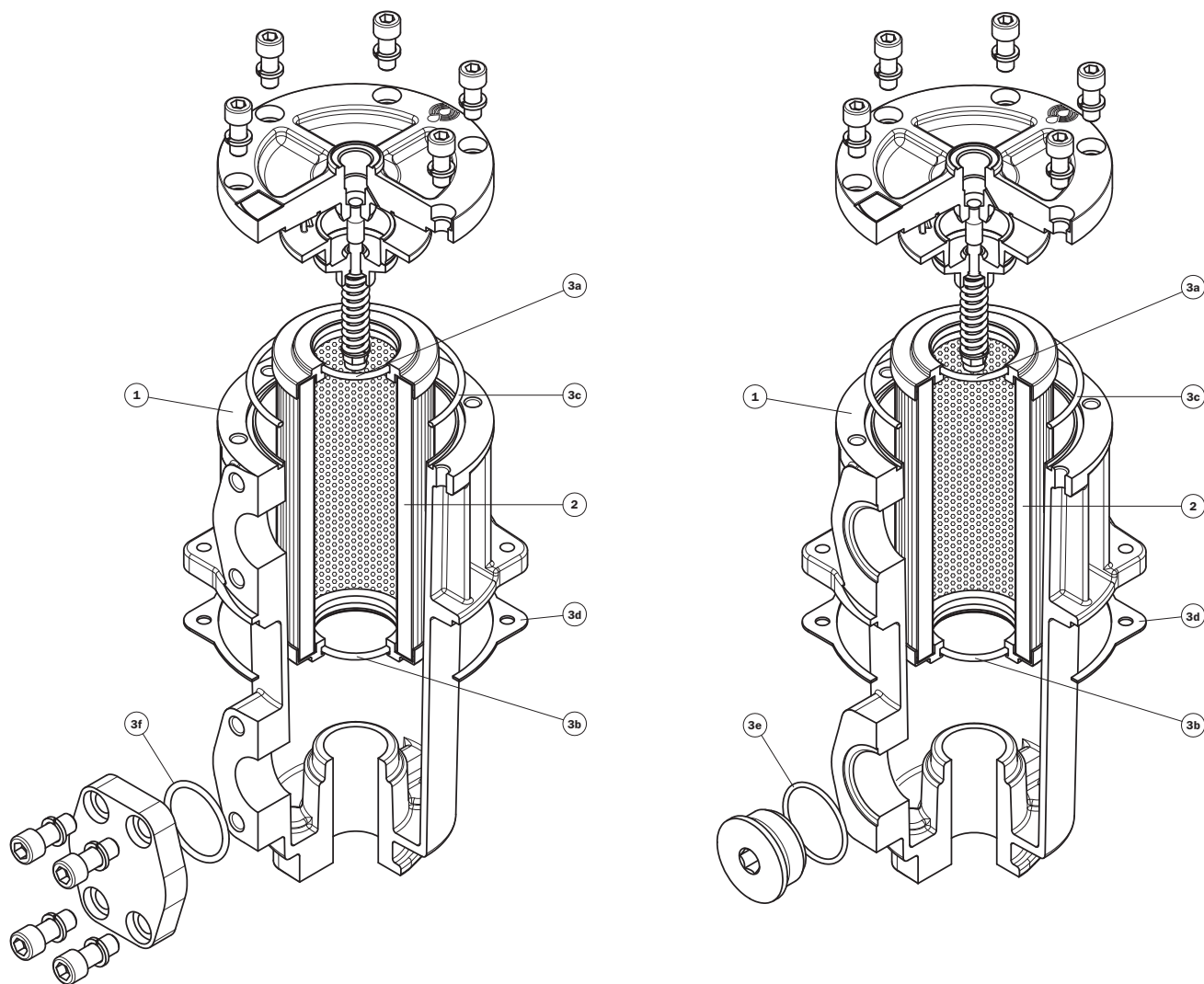
| Type | A |
|------|-------------------------|
| F1 | 3 1/2" SAE 3000 psi/M |
| F2 | 3 1/2" SAE 3000 psi/UNC |

*Connections table
"DN - SAE flange" see page 39

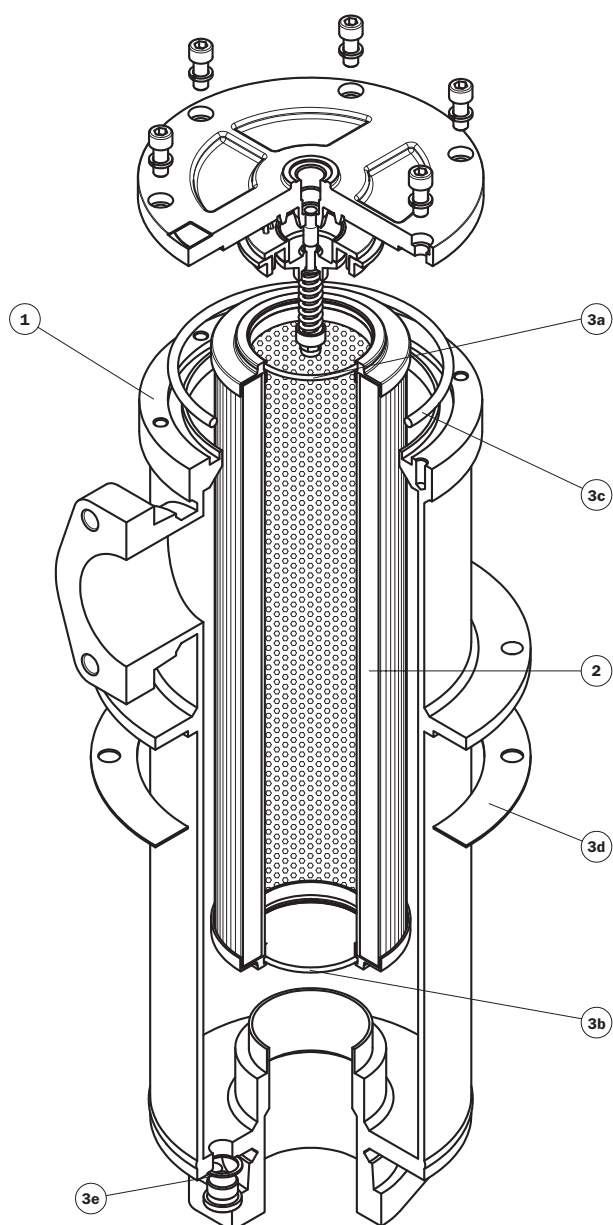


| Item | Description | Q.ty | FILTER Series | | | |
|-----------|----------------------------|------|----------------------------|-----------------|----------------------------|-----------------|
| | | | FRI 025 | | FRI 040 | |
| 1 | Filter assembly | 1 | See order table | | | |
| 2 | Filter element | 1 | See order table | | | |
| 3 | Seal Kit | 1 | NBR 02050213 | FPM 02050220 | NBR 02050214 | FPM 02050221 |
| 3a | Filter element top seal | 1 | O-R 3106 Ø 25,65 x 2,62 | | O-R 4137 Ø 34,52 x 3,53 | |
| 3b | Filter element bottom seal | 1 | O-R 3093 Ø 23,47 x 2,62 | | O-R 4137 Ø 34,52 x 3,54 | |
| 3c | Cover seal | 1 | O-R 3243 Ø 61,60 x 2,62 | | O-R 4350 Ø 88,50 x 3,53 | |
| 3d | Head seal | 1 | 01026404 | | 01026400 | |
| 3e | Plug seal GAS thread | 1 | 01017055 | | 01017030 | |
| | Plug seal SAE thread | 1 | O-R 1064 Ø 16,36 x 2,20 | | O-R 1092 Ø 23,47 x 2,95 | |

Spare parts

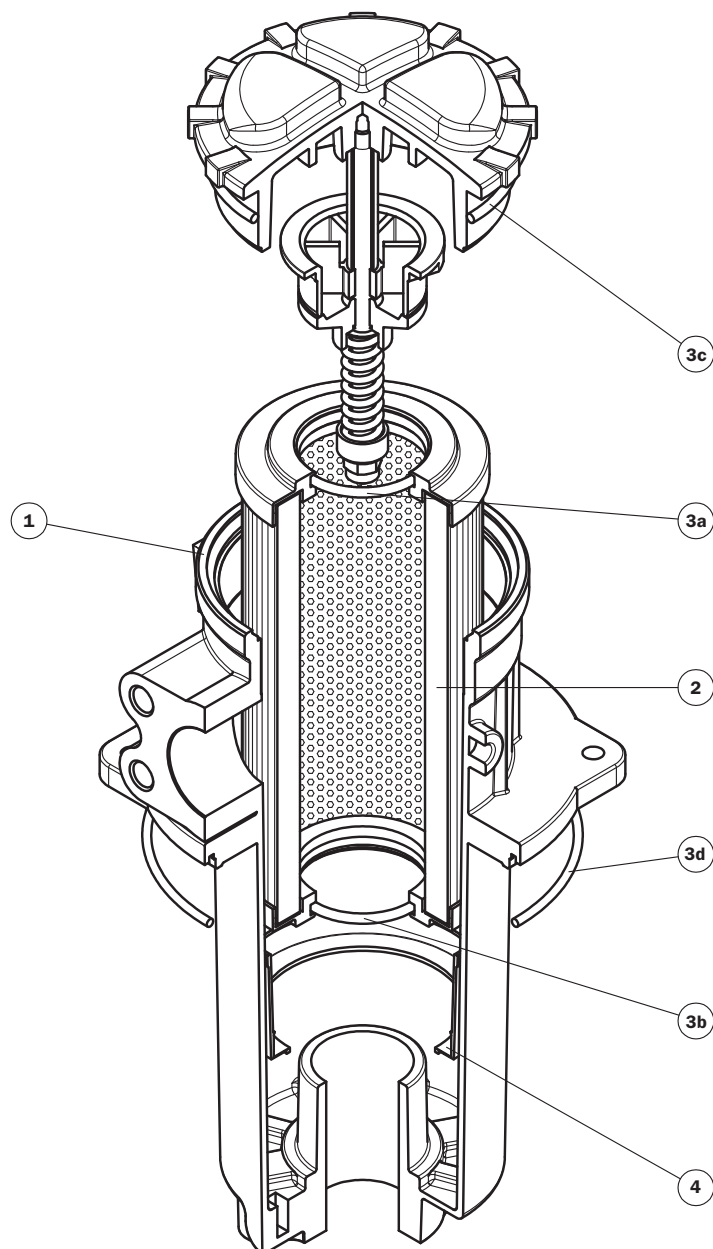


| Item | Description | Q.ty | FILTER Series | | | | | |
|-----------|----------------------------|------|----------------------------|-----------------|-----------------------------|-----------------|----------------------------|-----------------|
| | | | FRI 100 | | FRI 250 | | FRI 630 | |
| 1 | Filter assembly | 1 | See order table | | | | | |
| 2 | Filter element | 1 | See order table | | | | | |
| 3 | Seal Kit | 1 | NBR 02050215 | FPM 02050222 | NBR 02050216 | FPM 02050223 | NBR 02050217 | FPM 02050224 |
| 3a | Filter element top seal | 1 | O-R 4137 Ø 34,52 x 3,53 | | O-R Metric Ø 50 x 4 | | O-R 177 Ø 74,61 x 3,53 | |
| 3b | Filter element bottom seal | 1 | O-R 4137 Ø 34,52 x 3,53 | | O-R Metric Ø 50 x 4 | | O-R 177 Ø 74,61 x 3,53 | |
| 3c | Cover seal | 1 | O-R 4387 Ø 98,02 x 3,53 | | O-R 4475 Ø 120,20 x 3,53 | | O-R 233 Ø 181,00 x 6,99 | |
| 3d | Head seal | 1 | 01026401 | | 01026402 | | 01026403 | |
| 3e | Plug seal GAS thread | 1 | O-R 2131 Ø 33,05 x 1,78 | | O-R 3193 Ø 48,89 x 2,62 | | O-R 3325 Ø 82,22 x 2,62 | |
| | Plug seal SAE thread | 1 | O-R 1117 Ø 29,74 x 2,95 | | O-R 1172 Ø 43,69 x 3 | | O-R 1234 Ø 59,36 x 3 | |
| 3f | Blind flange seal | 1 | O-R 4131 Ø 32,93 x 3,53 | | O-R 150 Ø 46,04 x 3,53 | | O-R 171 Ø 68,26 x 3,53 | |



| Item | Description | Q.ty | FILTER Series FRI 850 | |
|-----------|----------------------------|------|----------------------------|-----------------|
| 1 | Filter assembly | 1 | See order table | |
| 2 | Filter element | 1 | See order table | |
| 3 | Seal Kit | 1 | NBR 02050218 | FPM 02050225 |
| 3a | Filter element top seal | 1 | O-R 4337 Ø 85,32 x 3,53 | |
| 3b | Filter element bottom seal | 1 | O-R 4337 Ø 85,32 x 3,53 | |
| 3c | Cover seal | 1 | O-R 233 Ø 181,00 x 6,99 | |
| 3d | Head seal | 1 | 01026320 | 01026326 |
| 3e | Plug seal | 1 | 01017055 | |

Spare parts



| Item | Description | Q.ty | FILTER Series FRI 255 | |
|------|-------------------------------|------|-----------------------------|-----------------|
| 1 | Filter assembly | 1 | See order table | |
| 2 | Filter element | 1 | See order table | |
| 3 | Seal Kit | 1 | NBR 02050013 | FPM 02050014 |
| 3a | Filter element top seal | 1 | O-R Metric Ø 50 x 4 | |
| 3b | Filter element bottom seal | 1 | O-R Metric Ø 50 x 4 | |
| 3c | Cover seal | 1 | O-R Metric Ø 113 x 4 | |
| 3d | Head seal | 1 | O-R 4650 Ø 164,70 x 3,53 | |
| 4 | Contamination retainer binder | 1 | 01060301 | |

Ordering information FRI

Filter assembly FRI

| | | | | | | | |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 8 |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Example: FRI | 040 | B | A | G1 | A10 | N | P01 |

Filter element CU

| | | | | |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 5 | 7 | 8 |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Example: CU | 040 | A10 | N | P01 |

1 - Style

| Filter | Filter element |
|------------|----------------|
| 025 | 025 |
| 040 | 040 |
| 100 | 100 |
| 250 | 250 |
| 255 | 250 |
| 630 | 630 |
| 850 | 850 |

5 - Filter element

| | | |
|------------|----------------------------|---|
| A03 | Inorganic microfibre 3 µm | Absolute filtration Inorganic Microfibre βx (c) ≥ 1000 |
| A06 | Inorganic microfibre 6 µm | |
| A10 | Inorganic microfibre 10 µm | |
| A16 | Inorganic microfibre 16 µm | |
| A25 | Inorganic microfibre 25 µm | |
| M25 | Wire mesh 25 µm | Nominal Filtration |
| M60 | Wire mesh 60 µm | |
| M90 | Wire mesh 90 µm | |
| P10 | Resin - Impregnated paper | Nominal Filtration |
| P25 | Resin - Impregnated paper | |

2 - By-pass valve

| | |
|----------|----------------|
| B | With bypass |
| S | Without bypass |

3 - Filter seals & Treatment

| | |
|----------|--|
| A | NBR |
| V | FPM |
| W | NBR, Filter body anodized. Filter element compatible with fluid HFA, HFB, HFC (only for filter element type Axx and Mxx) |
| Z | FPM, Filter body anodized. Filter element compatible with fluid HFA, HFB, HFC (only for filter element type Axx and Mxx) |

6 - Δp Filter element

| | |
|----------|-----------|
| N | Δp 10 bar |
|----------|-----------|

7 - Filter element seals

| | |
|-----------|--|
| N | NBR |
| V | FPM |
| W* | NBR (only for filter element type Axx and Mxx) |
| Z* | FPM (only for filter element type Axx and Mxx) |

8 - Option

| | |
|------------|--------------------|
| P01 | MP Filtri standard |
|------------|--------------------|

* Compatible with fluid HFA, HFB, HFC

4 - Connections

FRI 025

| Type | A |
|-----------|-----------------------|
| G1 | G 1/2" |
| G2 | 1/2" NPT |
| G3 | SAE 8 - 3/4" - 16 UNF |

FRI 040

| Type | A |
|-----------|--------------------------|
| G1 | G 3/4" |
| G2 | 3/4" NPT |
| G3 | SAE 12 - 1 1/16" - 12 UN |

FRI 100

| Type | A |
|-----------|--------------------------|
| G1 | G 1" |
| G2 | 1" NPT |
| G3 | SAE 16 - 1 5/16" - 12 UN |
| F1 | 1" SAE 3000 psi/M |
| F2 | 1" SAE 3000 psi/UNC |

FRI 255

| Type | A |
|-----------|-------------------------|
| G1 | G 1 1/2" |
| G2 | 1 1/2" NPT |
| G3 | SAE 24 - 1 7/8" - 12 UN |
| G4 | G 1 1/4" |
| G5 | 1 1/4" NPT |
| G6 | SAE 20 - 1 5/8" - 12 UN |
| F1 | 1 1/2" SAE 3000 psi/M |
| F2 | 1 1/2" SAE 3000 psi/UNC |

FRI 630

| Type | A |
|-----------|-------------------------|
| G1 | G 2 1/2" |
| G2 | 2 1/2" NPT |
| G3 | SAE 32 - 2 1/2" - 12 UN |
| F1 | 2 1/2" SAE 3000 psi/M |
| F2 | 2 1/2" SAE 3000 psi/UNC |

FRI 850

| Type | A |
|-----------|-------------------------|
| F1 | 3 1/2" SAE 3000 psi/M |
| F2 | 3 1/2" SAE 3000 psi/UNC |

FRI 250

| Type | A |
|-----------|-------------------------|
| G1 | G 1 1/2" |
| G2 | 1 1/2" NPT |
| G3 | SAE 24 - 1 7/8" - 12 UN |
| F1 | 1 1/2" SAE 3000 psi/M |
| F2 | 1 1/2" SAE 3000 psi/UNC |

For Clogging Indicator:
See page 318

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved.

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