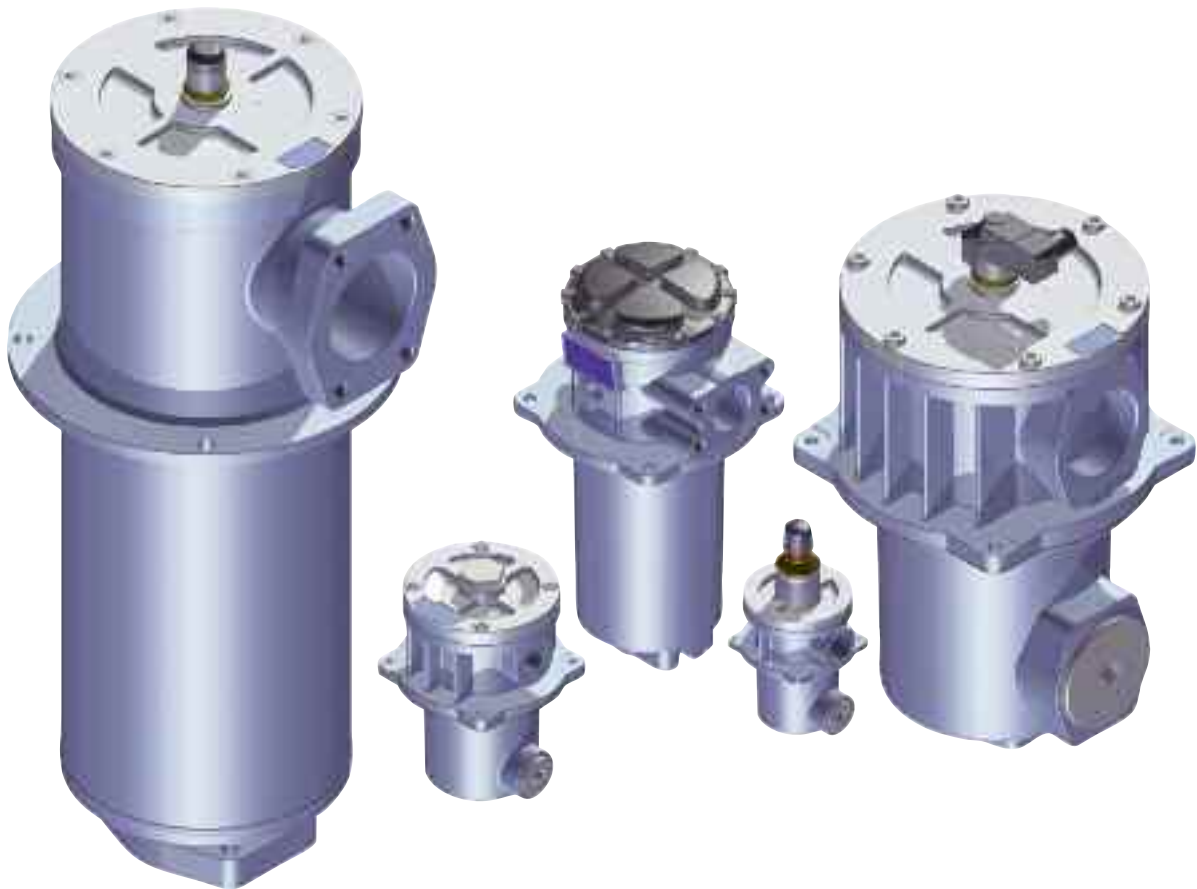


# FRI



**Maximum pressure 20 bar**  
**Flow rates to 1500 l/min**

## 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

## Temperature

- From -25 °C to +110 °C

## Bypass valve

- Opening pressure 2,4 bar  $\pm$ 10%

## $\Delta p$ Elements type

- Series N elements: 10 bar
- Oil flow from outside to inside.

## Seals

- Standard NBR series A
- Optional FPM series V

## Weights (kg)

- 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 (dm<sup>3</sup>)

- 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

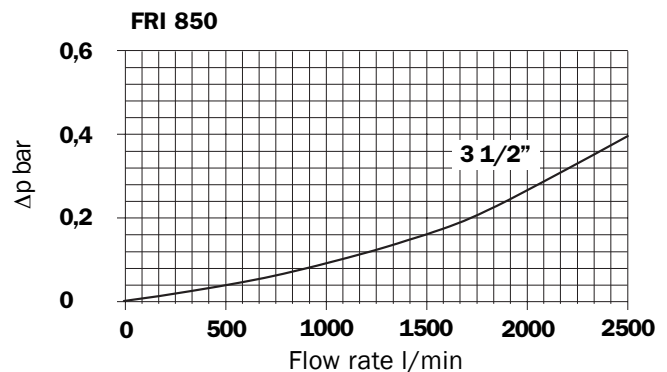
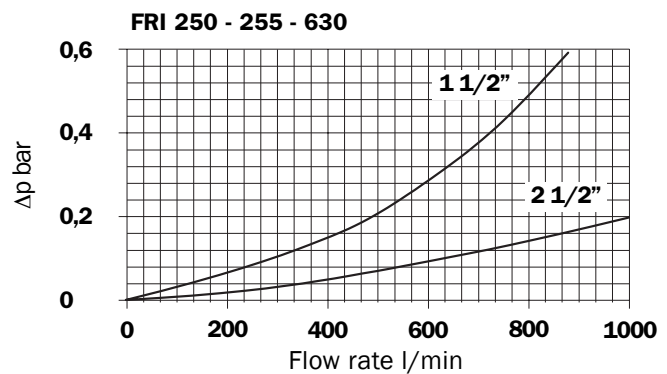
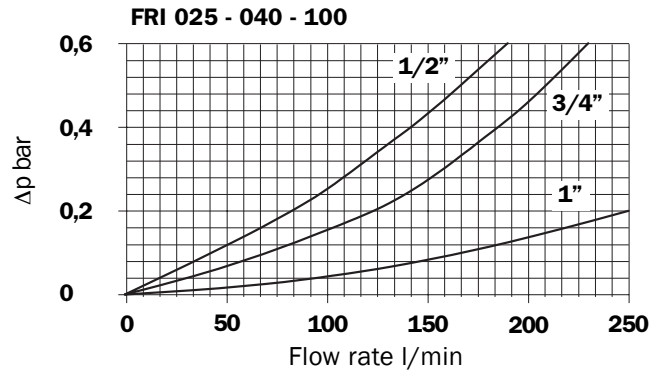
## Compatibility (to ISO 2943)

- Housings compatible with:  
Mineral oils, synthetic fluids.  
Aqueous emulsions, water and glycol.
- The filter elements are compatible with:  
Mineral oils, synthetic fluids.  
Aqueous emulsions, water and glycol  
(series W required).
- NBR seals series A, compatible with:  
Mineral oils, synthetic fluids.  
Aqueous emulsions, water and glycol.
- FPM seals V series, compatible with:  
Synthetic fluids type HS-HFDR-HFDS-HFDU

## Filter housings $\Delta p$ pressure drop

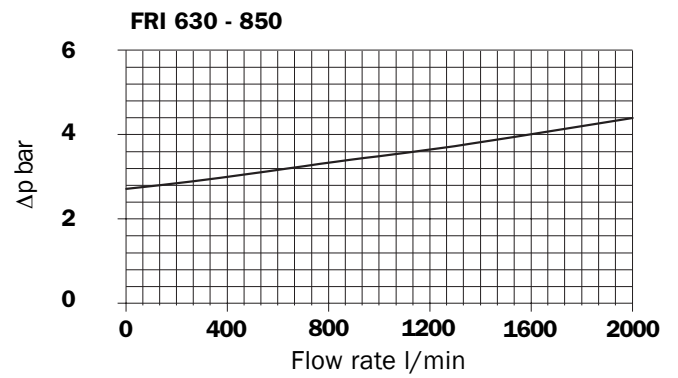
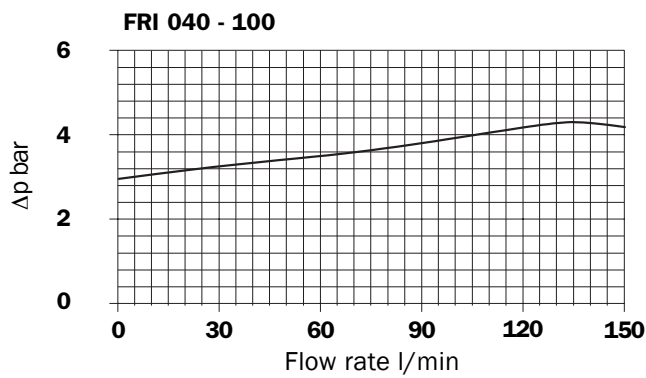
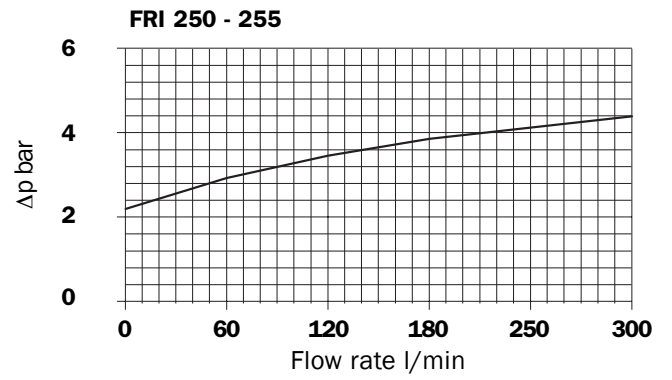
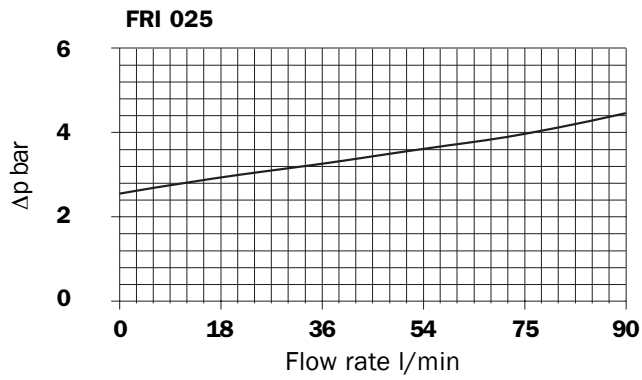
The curves are plotted utilising mineral oil with density of 0.86 kg/dm<sup>3</sup> to ISO 3968.

$\Delta p$  varies proportionally with density.



**Valves**

**Bypass valve pressure drop**



**Recommended maximum flow rate**

- Pressure drop of filter assembly equal to  $\Delta p$  0,5 bar.
- Oil kinematic viscosity 30 mm<sup>2</sup>/s (cSt).
- Density 0,86 kg/dm<sup>3</sup>.

**Filtration**

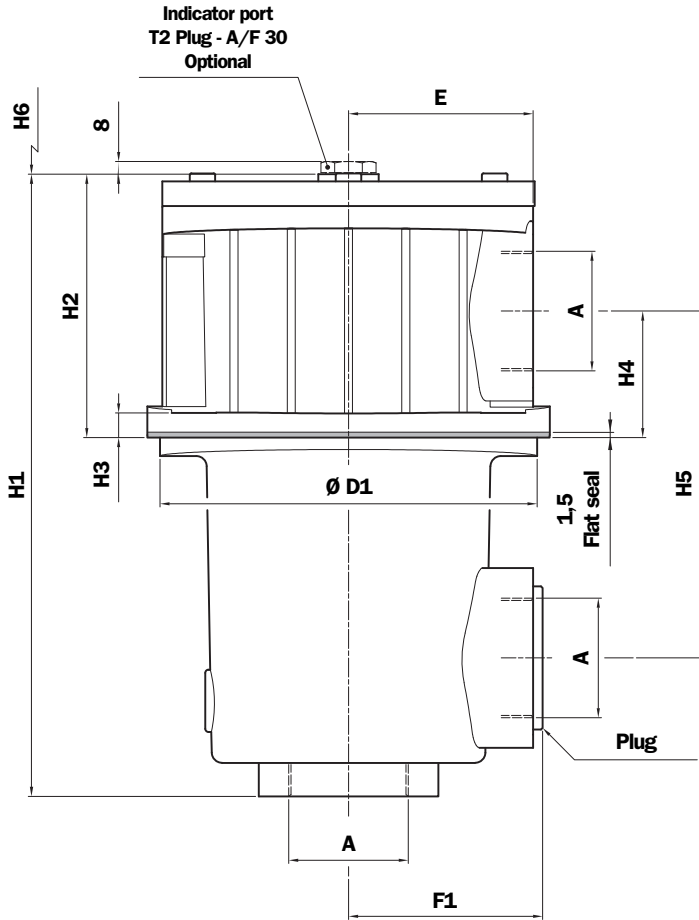
	Length	A03	A06	A10	A16	A25	P10	P25	M25 - M60 - M90
<b>FRI 025</b>	1	6	10	16	19	43	43	47	50*
<b>FRI 040</b>	1	18	22	42	44	80	80	80	80*
<b>FRI 100</b>	1	32	33	88	91	140	140	140	140*
<b>FRI 250 - 255</b>	1	143	178	270	300	350	350	350	350*
<b>FRI 630</b>	1	240	278	507	575	700	700	700	700*
<b>FRI 850</b>	1	440	540	970	1140	1600	1600	1600	1600*

**Flow rate l/min**

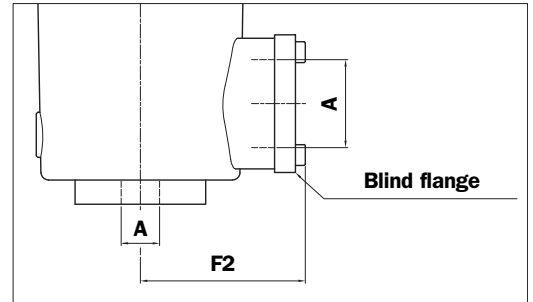
\* Maximum flow recommended



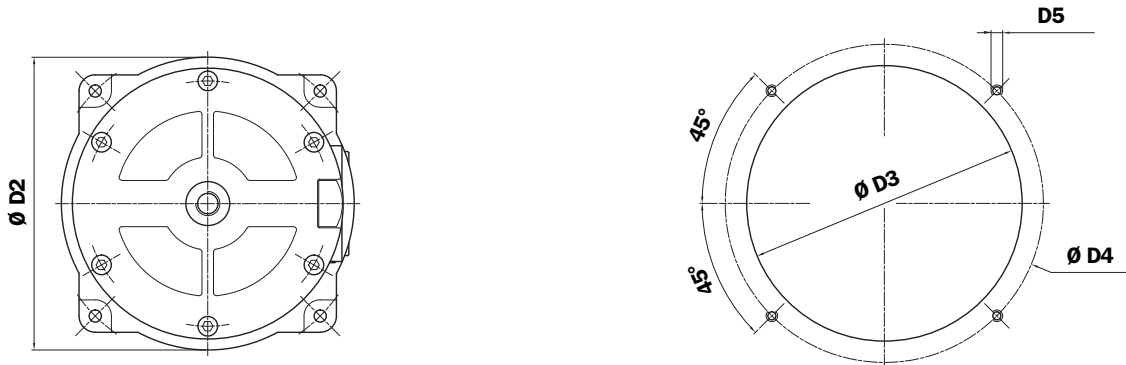
# FRI 100 - 250 - 630



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\*

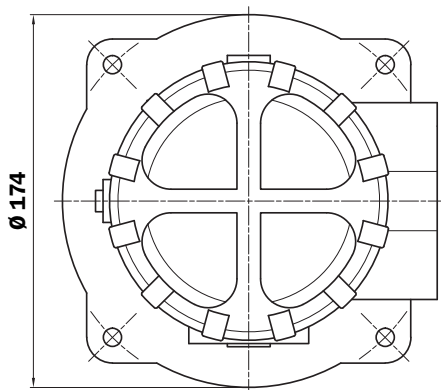
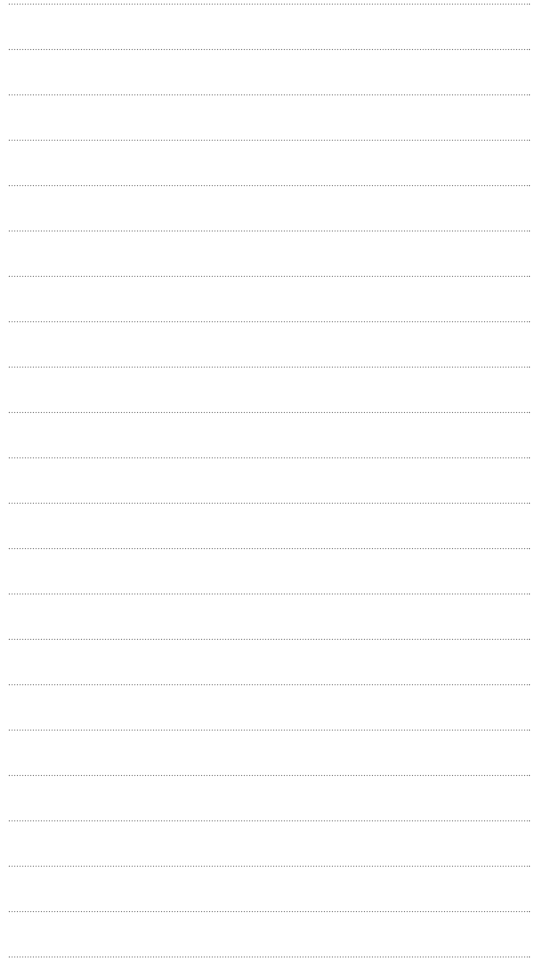
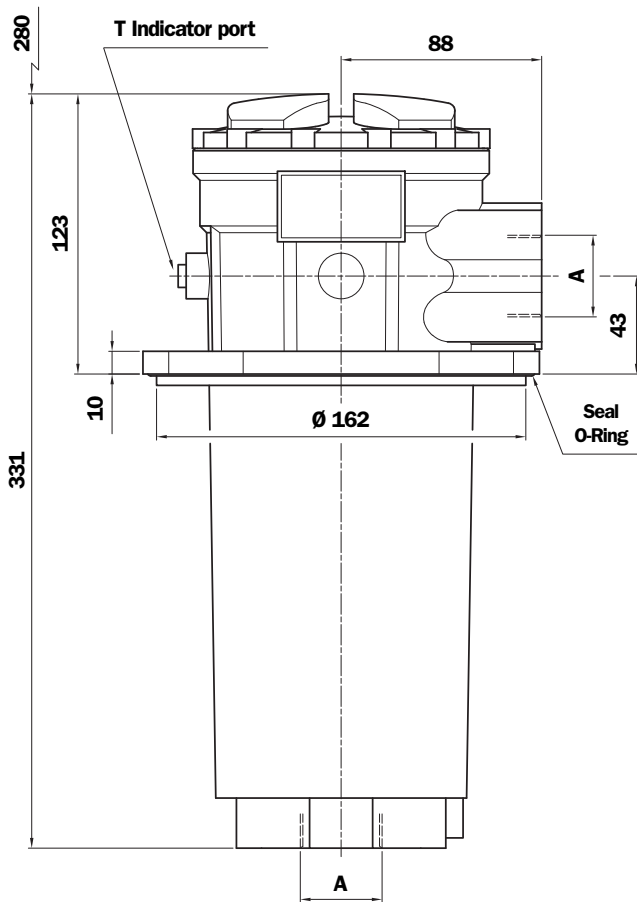
Type	A		
	FRI 100	FRI 250	FRI 630
F1	1" SAE 3000 psi/M	1 1/2" SAE 3000 psi/M	2 1/2" SAE 3000 psi/M
F2	1" SAE 3000 psi/UNC	1 1/2" SAE 3000 psi/UNC	2 1/2" SAE 3000 psi/UNC

\*Connections table "DN/SAE flange" see page 5

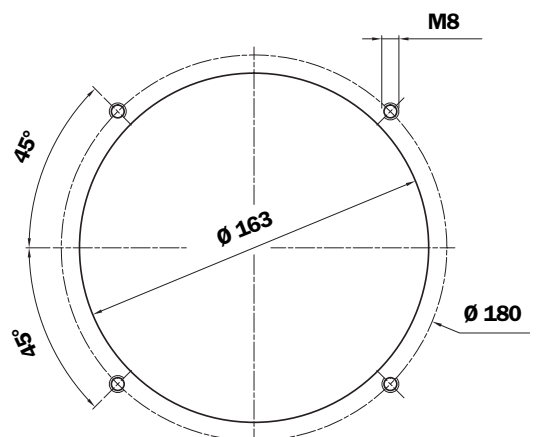
Filter Length	H1 mm	H2 mm	H3 mm	H4 mm	H5 mm	H6 mm	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	E mm	F1 mm	F2 mm
FRI 100	245	106	12	51	140	175	135	146	136	154	M6	67	73	90
FRI 250	335	129	14	59	177	265	162	174	163	180	M8	82	86	108
FRI 630	391	166	16	80	218	300	237	253	238	275	M10	116	122	143



# FRI 255



## Holes on the tank



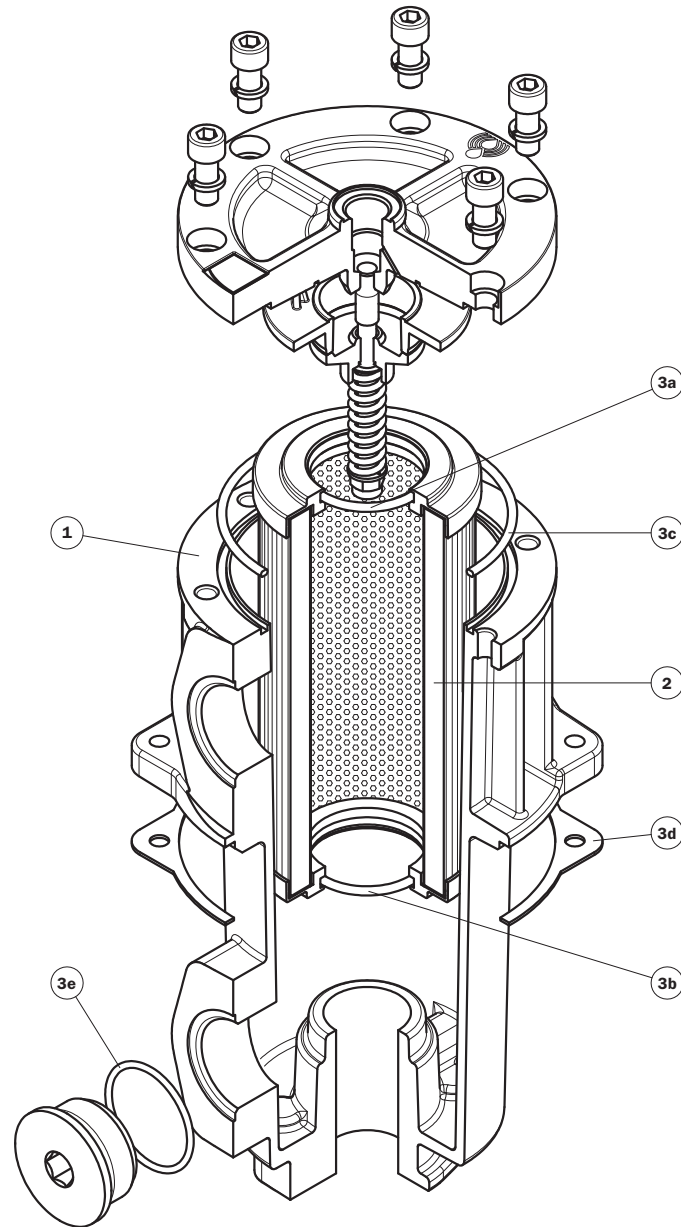
## Thread connections

Type	A	T
G1	G 1 1/2"	G 1/8"
G2	1 1/2" NPT	G 1/8"
G3	SAE 24 - 1 7/8" - 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"

## 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"

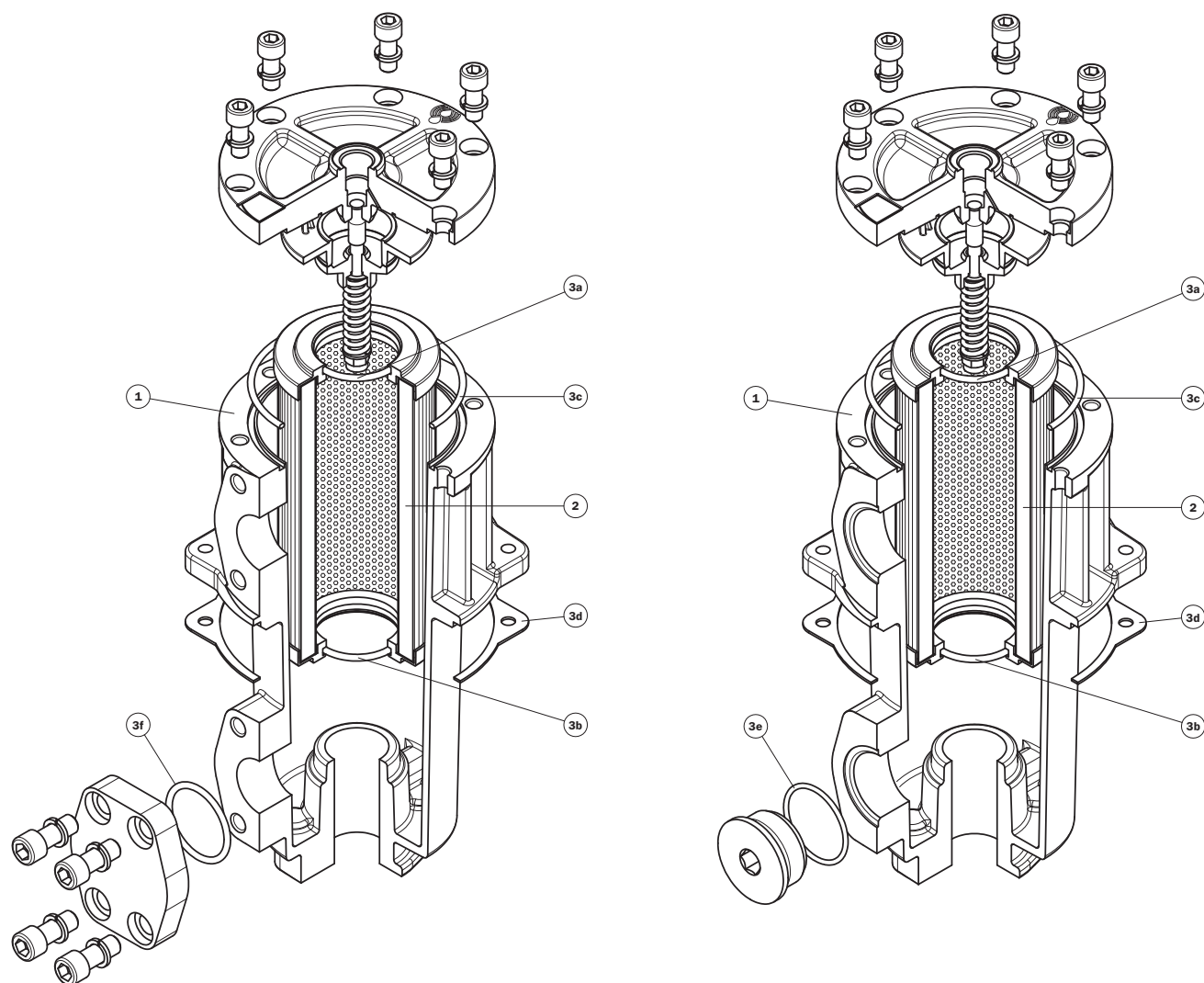
\*Connections table "DN - SAE flange" see page 5



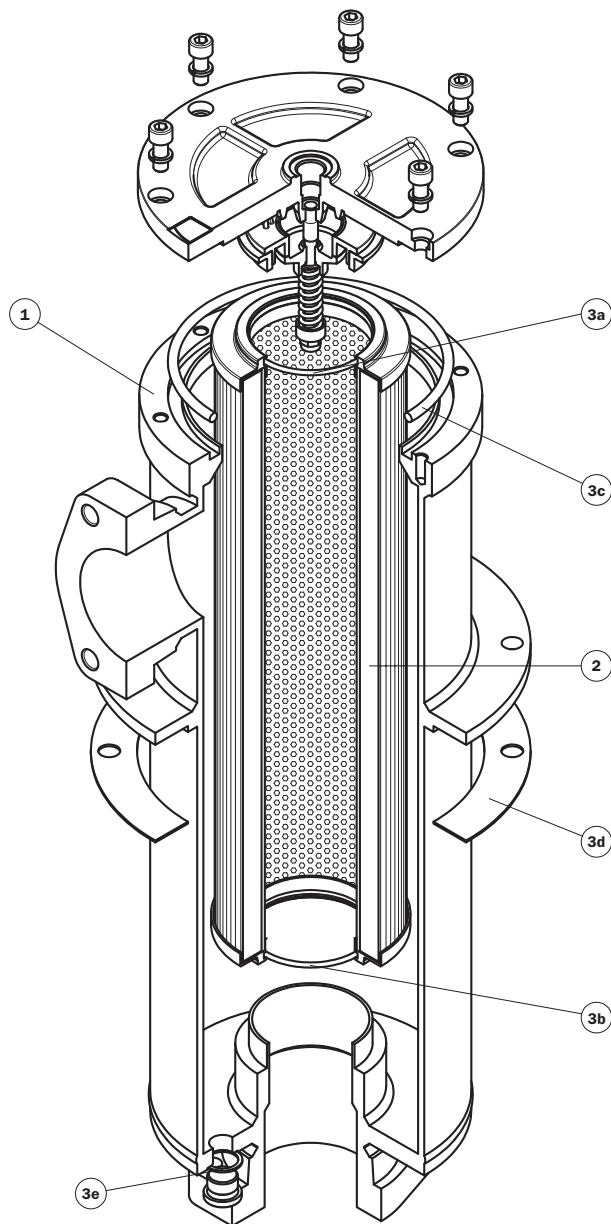
Item	Description	Q.ty	FILTER Series			
			FRI 025		FRI 040	
<b>1</b>	Filter assembly	1	See order table			
<b>2</b>	Filter element	1	See order table			
<b>3</b>	Seal Kit	1	NBR 02050213	FPM 02050220	NBR 02050214	FPM 02050221
<b>3a</b>	Filter element top seal	1	O-R 3106 Ø 25,65 x 2,62		O-R 4137 Ø 34,52 x 3,53	
<b>3b</b>	Filter element bottom seal	1	O-R 3093 Ø 23,47 x 2,62		O-R 4137 Ø 34,52 x 3,54	
<b>3c</b>	Cover seal	1	O-R 3243 Ø 61,60 x 2,62		O-R 4350 Ø 88,50 x 3,53	
<b>3d</b>	Head seal	1	01026404		01026400	
<b>3e</b>	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

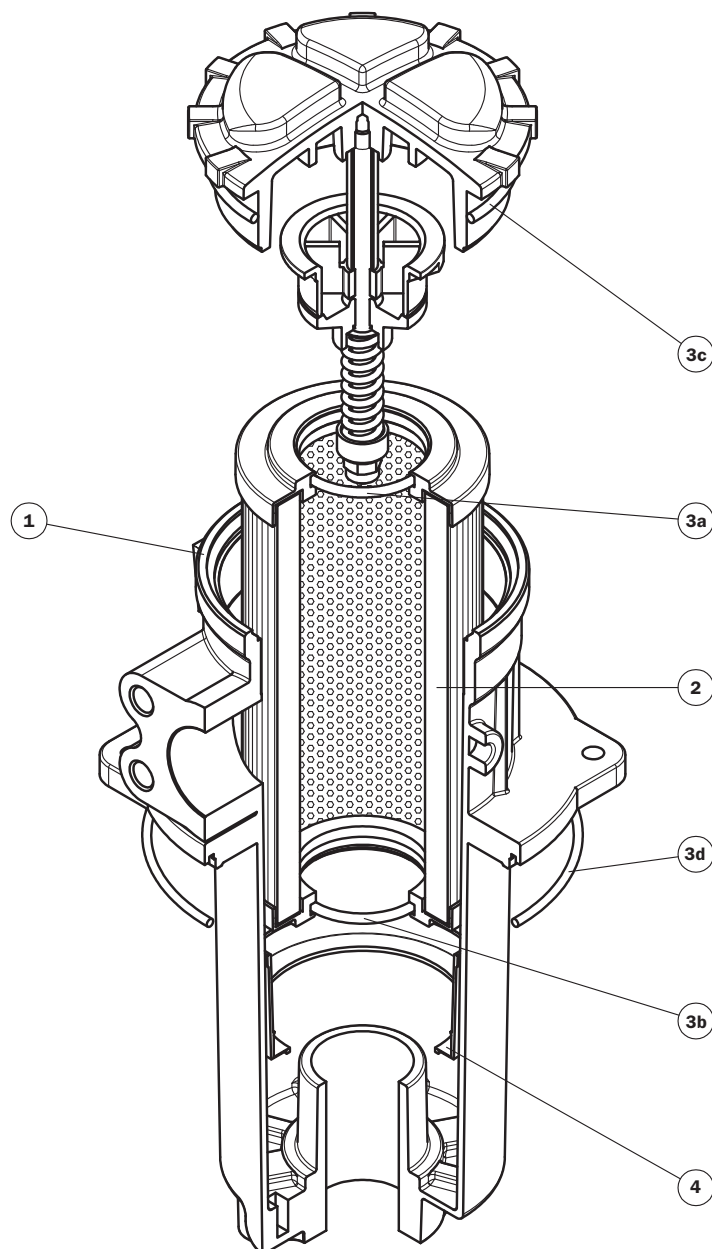


Item	Description	Q.ty	FILTER Series					
			FRI 100		FRI 250		FRI 630	
<b>1</b>	Filter assembly	1	See order table					
<b>2</b>	Filter element	1	See order table					
<b>3</b>	Seal Kit	1	NBR 02050215	FPM 02050222	NBR 02050216	FPM 02050223	NBR 02050217	FPM 02050224
<b>3a</b>	Filter element top seal	1	O-R 4137 Ø 34,52 x 3,53		O-R Metric Ø 50 x 4		O-R 177 Ø 74,61 x 3,53	
<b>3b</b>	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	
<b>3c</b>	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	
<b>3d</b>	Head seal	1	01026401		01026402		01026403	
<b>3e</b>	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	
<b>3f</b>	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	
<b>1</b>	Filter assembly	1	See order table	
<b>2</b>	Filter element	1	See order table	
<b>3</b>	Seal Kit	1	NBR 02050218	FPM 02050225
<b>3a</b>	Filter element top seal	1	O-R 4337 Ø 85,32 x 3,53	
<b>3b</b>	Filter element bottom seal	1	O-R 4337 Ø 85,32 x 3,53	
<b>3c</b>	Cover seal	1	O-R 233 Ø 181,00 x 6,99	
<b>3d</b>	Head seal	1	01026320	01026326
<b>3e</b>	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

Example: FRI

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>8</b>
□	□	□	□	□	□	□
<b>040</b>	<b>B</b>	<b>A</b>	<b>G1</b>	<b>A10</b>	<b>N</b>	<b>P01</b>

## Filter element CU

Example: CU

<b>1</b>	<b>5</b>	<b>7</b>	<b>8</b>
□	□	□	□
<b>040</b>	<b>A10</b>	<b>N</b>	<b>P01</b>

### 1 - Style

Filter	Filter element
<b>025</b>	<b>025</b>
<b>040</b>	<b>040</b>
<b>100</b>	<b>100</b>
<b>250</b>	<b>250</b>
<b>255</b>	<b>250</b>
<b>630</b>	<b>630</b>
<b>850</b>	<b>850</b>

### 5 - Filter element

<b>A03</b>	Inorganic microfibre 3 μ	} Absolute filtration βx(c) ≥ 1000
<b>A06</b>	Inorganic microfibre 6 μ	
<b>A10</b>	Inorganic microfibre 10 μ	
<b>A16</b>	Inorganic microfibre 16 μ	
<b>A25</b>	Inorganic microfibre 25 μ	
<b>M25</b>	Wire mesh	} Nominal Filtration
<b>M60</b>	Wire mesh	
<b>M90</b>	Wire mesh	
<b>P10</b>	Resin impregnated paper	} Nominal Filtration
<b>P25</b>	Resin impregnated paper	

### 2 - By-pass valve

<b>B</b>	With bypass
<b>S</b>	Without bypass

### 6 - Δp Filter element

<b>N</b>	Δp 10 bar
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### 3 - Filter seals & Treatment

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

### 7 - Filter element seals

<b>N</b>	NBR
<b>V</b>	FPM
<b>W*</b>	NBR (only for filter element type Axx and Mxx)
<b>Z*</b>	FPM (only for filter element type Axx and Mxx)

### 8 - Option

<b>P01</b>	MP Filtri standard
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\* Compatible with fluid HFA, HFB, HFC

### 4 - Connections

#### FRI 025

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

#### FRI 040

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

#### FRI 100

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

#### FRI 255

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

#### FRI 630

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

#### FRI 850

Type	A
<b>F1</b>	3 1/2" SAE 3000 psi/M
<b>F2</b>	3 1/2" SAE 3000 psi/UNC

#### FRI 250

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

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