FRI series

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 1500 l/min

FILTER SIZING

INDEX

THE CORRECT FILTER SIZING HAVE TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING BY THE APPLICATION.
FOR EXAMPLE, THE MAXIMUM TOTAL PRESSURE DROP ALLOWED BY A NEW AND CLEAN RETURN FILTER HAVE TO BE IN THE RANGE 0.4 ÷ 0.6 bar.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³); all the graphs in the catalogue are referred to mineral oil with density of 0.86 kg/dm³.
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt).

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar]
Δpe = Filter element pressure drop [bar]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min)
V1 reference oil viscosity = 30 mm²/s (cSt)
V2 = operating oil viscosity in mm²/s (cSt)

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt)

Δpe = Y : 1000 x Q x (V2:V1)
Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

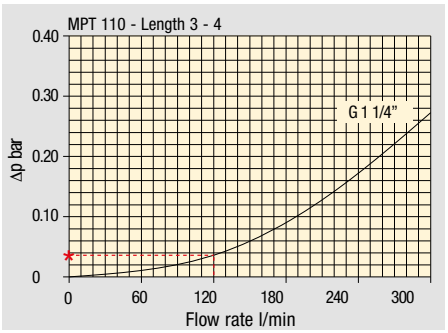
Maximum total pressure drop (Δp max) allowed by a new and clean filter

Application	Range (bar)
Suction filters	0.08 ÷ 0.10
Return filters	0.4 ÷ 0.6
Low & Medium Pressure filters	0.4 ÷ 0.6 return lines
	0.3 ÷ 0.5 lubrication lines
	0.3 ÷ 0.4 off-line in power systems
	0.1 ÷ 0.3 off-line in test benches
	0.4 ÷ 0.6 over-boost
High Pressure filters	0.8 ÷ 1.5
Stainless Steel filters	0.8 ÷ 1.5

Generic filter calculation example

Application data:
Tank top return filter
Pressure Pmax = 10 bar
Flow rate Q = 120 l/min
Viscosity V2 = 46 mm²/s (cSt)
Oil density = 0.86 kg/dm³
Required filtration efficiency = 25 µm with absolute filtration
With bypass valve and G 1 1/4" inlet connection

Calculation:
Δpc = 0.03 bar (see graphic below)



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968.
Δp varies proportionally with density.

Δpe = (2.00 : 1000) x 120 x (46 : 30) = 0.37 bar

Filter element		Absolute filtration H Series					Nominal filtration N Series		
Type		A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
Return filters		74.00	50.08	20.00	16.00	9.00	6.43	5.51	4.40
MF 020	2	29.20	24.12	8.00	7.22	5.00	3.33	2.85	2.00
	3	22.00	19.00	6.56	5.33	4.33	1.68	1.44	1.30
MF 030 MFX 030	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MF 100 MFX 100	1	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	2	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	3	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
	4	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82

Δp Tot. = 0.03 + 0.37 = 0.4 bar

The selection is correct because the total pressure drop value is inside the admissible range for top tank return filters.
In case the allowed max total pressure drop is not verified, it is necessary to repeat the calculation changing the filter length/size.

FILTER SIZING Corrective factor

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm²/s

Return filters

Filter element		Absolute filtration H Series					Nominal filtration N Series		
Type		A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
MF 020	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	4.40
	2	29.20	24.12	8.00	7.22	5.00	3.33	2.85	2.00
	3	22.00	19.00	6.56	5.33	4.33	1.68	1.44	1.30
MF 030 MFX 030	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MF 100 MFX 100	1	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	2	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	3	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
	4	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82
MF 180 MFX 180	1	3.67	3.05	1.64	1.56	1.24	1.18	1.06	0.26
	2	1.69	1.37	0.68	0.54	0.51	0.43	0.39	0.12
MF 190 MFX 190	2	1.69	1.37	0.60	0.49	0.44	0.35	0.31	0.11
MF 400 MFX 400	1	3.20	2.75	1.39	1.33	1.06	0.96	0.87	0.22
	2	2.00	1.87	0.88	0.85	0.55	0.49	0.45	0.13
	3	1.90	1.60	0.63	0.51	0.49	0.39	0.35	0.11
MF 750 MFX 750	1	1.08	0.84	0.49	0.36	0.26	0.21	0.19	0.06
MLX 250	2	3.00	3.04	1.46	1.25	1.17	-	-	M25 0.20
MLX 660	2	1.29	1.26	0.52	0.44	0.38	-	-	M25 0.10
CU 025		78.00	48.00	28.00	24.00	9.33	9.33	8.51	1.25
CU 040		25.88	20.88	10.44	10.00	3.78	3.78	3.30	1.25
CU 100		15.20	14.53	5.14	4.95	2.00	2.00	0.17	1.10
CU 250		3.25	2.55	1.55	1.35	0.71	0.71	0.59	0.25
CU 630		1.96	1.68	0.85	0.72	0.42	0.42	0.36	0.09
CU 850		1.06	0.84	0.42	0.33	0.17	0.17	0.13	0.04
MR 100	1	19.00	17.00	6.90	6.30	4.60	2.94	2.52	1.60
	2	11.70	10.80	4.40	4.30	3.00	2.94	2.52	1.37
	3	7.80	6.87	3.70	3.10	2.70	2.14	1.84	1.34
	4	5.50	4.97	2.60	2.40	2.18	1.72	1.47	1.34
	5	4.20	3.84	2.36	2.15	1.90	1.60	1.37	1.34
MR 250	1	5.35	4.85	2.32	1.92	1.50	1.38	1.20	0.15
	2	4.00	3.28	1.44	1.10	1.07	0.96	0.83	0.13
	3	2.60	2.20	1.08	1.00	0.86	0.77	0.64	0.12
	4	1.84	1.56	0.68	0.56	0.44	0.37	0.23	0.11
MR 630	1	3.10	2.48	1.32	1.14	0.92	0.83	0.73	0.09
	2	2.06	1.92	0.82	0.76	0.38	0.33	0.27	0.08
	3	1.48	1.30	0.60	0.56	0.26	0.22	0.17	0.08
	4	1.30	1.20	0.48	0.40	0.25	0.21	0.16	0.08
	5	0.74	0.65	0.30	0.28	0.13	0.10	0.08	0.04
MR 850	1	0.60	0.43	0.34	0.25	0.13	0.12	0.09	0.03
	2	0.37	0.26	0.23	0.21	0.11	0.08	0.07	0.03
	3	0.27	0.18	0.17	0.17	0.05	0.04	0.04	0.02
	4	0.23	0.16	0.13	0.12	0.04	0.03	0.03	0.02

Return / Suction filters

Filter element		Absolute filtration		
Type		A10	A16	A25
RSX 116	1	5.12	4.33	3.85
	2	2.22	1.87	1.22
RSX 165	1	2.06	1.75	1.46
	2	1.24	1.05	0.96
	3	0.94	0.86	0.61

Filter element		Absolute filtration N Series							
Type		A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.16	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05

Low & Medium pressure filters

Filter element		Absolute filtration N-W Series					Nominal filtration N Series		
Type		A03	A06	A10	A16	A25	P10	P25	M25
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.15	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05
CU 210	1	5.30	4.80	2.00	1.66	1.32	0.56	0.43	0.12
	2	3.44	2.95	1.24	1.09	0.70	0.42	0.35	0.09
	3	2.40	1.70	0.94	0.84	0.54	0.33	0.23	0.05
DN	016	7.95	7.20	3.00	2.49	1.98	0.84	0.65	0.18
	025	5.00	4.53	1.89	1.57	1.25	0.53	0.41	0.11
	040	3.13	2.66	1.12	0.98	0.63	0.38	0.32	0.08
CU 400	2	3.13	2.55	1.46	1.22	0.78	0.75	0.64	0.19
	3	2.15	1.70	0.94	0.78	0.50	0.40	0.34	0.10
	4	1.60	1.28	0.71	0.61	0.40	0.34	0.27	0.08
	5	1.00	0.83	0.47	0.34	0.20	0.24	0.19	0.06
	6	0.82	0.58	0.30	0.27	0.17	0.22	0.18	0.05
CU 900	1	0.86	0.63	0.32	0.30	0.21	-	-	0.05
CU 950	2	1.03	0.80	0.59	0.40	0.26	-	-	0.05
	3	0.44	0.40	0.27	0.18	0.15	-	-	0.02
MR 630	7	0.88	0.78	0.36	0.34	0.16	0.12	0.96	0.47

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm²/s

High pressure filters

Filter element		Absolute filtration N - R Series					Nominal filtration N Series
Type		A03	A06	A10	A16	A25	M25
HP 011	1	332.71	250.07	184.32	152.36	128.36	-
	2	220.28	165.56	74.08	59.13	37.05	-
	3	123.24	92.68	41.48	33.08	20.72	-
	4	77.76	58.52	28.37	22.67	16.17	-
HP 039	2	70.66	53.20	25.77	20.57	14.67	4.90
	3	36.57	32.28	18.00	13.38	8.00	2.90
	4	26.57	23.27	12.46	8.80	5.58	2.20
HP 050	1	31.75	30.30	13.16	12.3	7.29	1.60
	2	24.25	21.26	11.70	9.09	4.90	1.40
	3	17.37	16.25	8.90	7.18	3.63	1.25
	4	12.12	10.75	6.10	5.75	3.08	1.07
	5	7.00	6.56	3.60	3.10	2.25	0.80
HP 065	1	58.50	43.46	23.16	19.66	10.71	1.28
	2	42.60	25.64	16.22	13.88	7.32	1.11
	3	20.50	15.88	8.18	6.81	3.91	0.58
HP 135	1	20.33	18.80	9.71	8.66	4.78	2.78
	2	11.14	10.16	6.60	6.38	2.22	1.11
	3	6.48	6.33	3.38	3.16	2.14	1.01
HP 150	1	17.53	15.91	7.48	6.96	5.94	1.07
	2	8.60	8.37	3.54	3.38	3.15	0.58
	3	6.53	5.90	2.93	2.79	2.12	0.49
HP 320	1	10.88	9.73	5.02	3.73	2.54	1.04
	2	4.40	3.83	1.75	1.48	0.88	0.71
	3	2.75	2.11	1.05	0.87	0.77	0.61
	4	2.12	1.77	0.98	0.78	0.55	0.47
HP 500	1	4.44	3.67	2.30	2.10	1.65	0.15
	2	3.37	2.77	1.78	1.68	1.24	0.10
	3	2.22	1.98	1.11	1.09	0.75	0.08
	4	1.81	1.33	0.93	0.86	0.68	0.05
	5	1.33	1.15	0.77	0.68	0.48	0.04

Filter element		Absolute filtration N Series					Nominal filtration N Series
Type		A03	A06	A10	A16	A25	M25
HF 320	1	3.65	2.95	2.80	1.80	0.90	0.38
	2	2.03	1.73	1.61	1.35	0.85	0.36
	3	1.84	1.42	1.32	1.22	0.80	0.35

Suction filters

Filter element	Nominal filtration N Series	
Type	P10	P25
SF 250	65	21

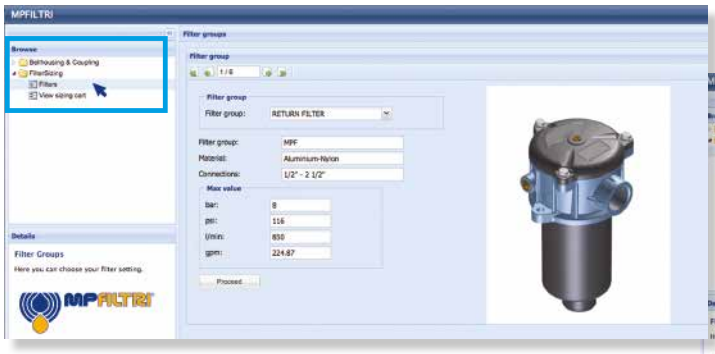
Stainless steel high pressure filters

Filter element		Absolute filtration N Series				
Type		A03	A06	A10	A16	A25
HP 011	1	332.71	250.07	184.32	152.36	128.36
	2	220.28	165.56	74.08	59.13	37.05
	3	123.24	92.68	41.48	33.08	20.72
	4	77.76	58.52	28.37	22.67	16.17
HP 039	2	70.66	53.20	25.77	20.57	14.67
	3	36.57	32.28	18.00	13.38	8.00
	4	26.57	23.27	12.46	8.80	5.58
HP 050	1	31.75	30.30	13.16	12.3	7.29
	2	24.25	21.26	11.70	9.09	4.90
	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25
HP 135	1	20.33	18.80	9.71	8.66	4.78
	2	11.14	10.16	6.60	6.38	2.22
	3	6.48	6.33	3.38	3.16	2.14

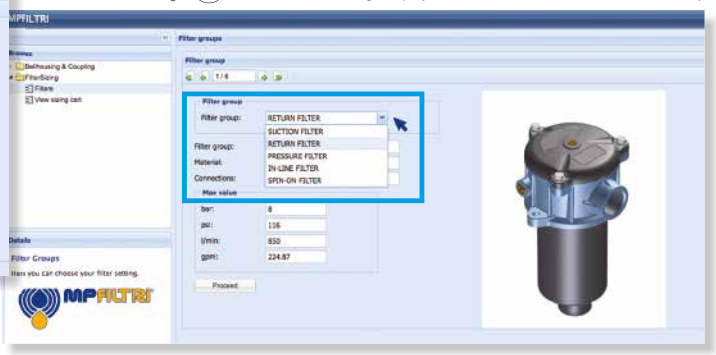
Filter element		Absolute filtration H - U Series				
Type		A03	A06	A10	A16	A25
HP 011	1	424.58	319.74	235.17	194.44	163.78
	2	281.06	211.25	94.53	75.45	47.26
	3	130.14	97.50	43.63	34.82	21.81
	4	109.39	82.25	36.79	29.37	18.40
HP 039	2	73.00	57.00	28.00	24.00	17.20
	3	40.90	36.33	21.88	18.80	11.20
	4	31.50	28.22	17.22	9.30	6.70
HP 050	1	47.33	34.25	21.50	20.50	14.71
	2	29.10	25.95	14.04	10.90	5.88
	3	20.85	19.50	10.68	8.61	4.36
	4	14.55	12.90	7.32	6.90	3.69
	5	9.86	9.34	6.40	4.80	2.50
HP 135	1	29.16	25.33	13.00	12.47	5.92
	2	14.28	11.04	7.86	7.60	4.44
	3	8.96	7.46	4.89	4.16	3.07

FILTER SIZING Selection Software

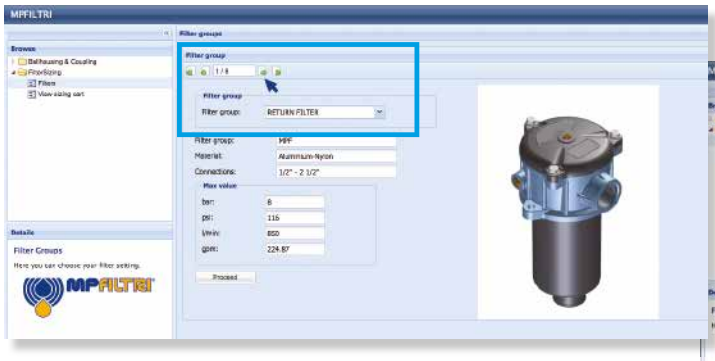
Step 1 Select “FILTERS”



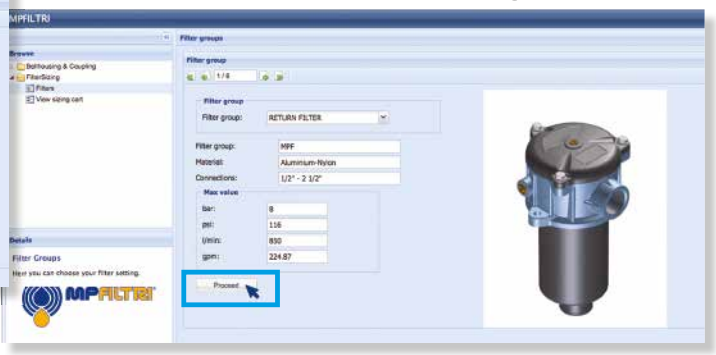
Step 2 Choose filter group (Return Filter, Pressure Filter, etc.)

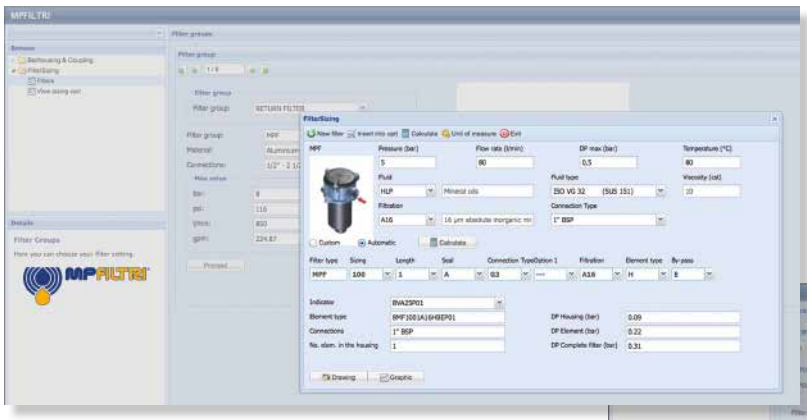


Step 3 Choose filter type (MPF, MPT, etc.) in function of the max working pressure and the max flow rate



Step 4 Push “PROCEED”





Step 5

Insert all application data to calculate the filter size following the sequence:

- working pressure
- working flow rate
- working pressure drop
- working temperature
- fluid material and fluid type
- filtration media
- connection type

Step 6

Push “CALCULATE” to have result; in case of any mistake, the system will advice which parameter is out of range to allow to modify/adjust the selection

Step 7

Download PDF Datasheet “Report.aspx” pushing the button “Drawing”

FRI series

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 1500 l/min

Description

Return filter

Maximum working pressure up to 2 MPa (20 bar)
Flow rate up to 1500 l/min

FRI is a range of return filters for protection of the reservoir against the system contamination.
They could be directly fixed to the reservoir in immersed or semi-immersed position or connected to the lines of the system through the hydraulic fittings.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:
- Female threaded connections up to 2 1/2" and flanged connections up to 3 1/2", for a maximum flow rate of 1500 l/min
- Double input connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

Common applications:
Heavy duty industrial equipment

Technical data

Filter housing materials
- Filter body
  Aluminium: FRI 255
  Anodized Aluminium: FRI 025-040-100-250-630
  Phosphatized Steel: FRI 850

- Cover
  Polyamide, GF reinforced: FRI 255
  Anodized Aluminium: FRI 025-040-100-250-630-850

- Valve: Polyamide, GF reinforced - Steel

Bypass valve
Opening pressure 240 kPa (2.4 bar) ±10%

Δp element 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

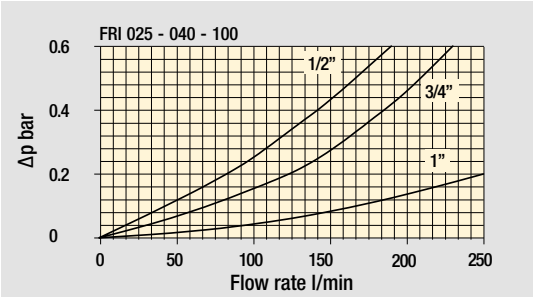
Temperature
From -25 °C to +110 °C

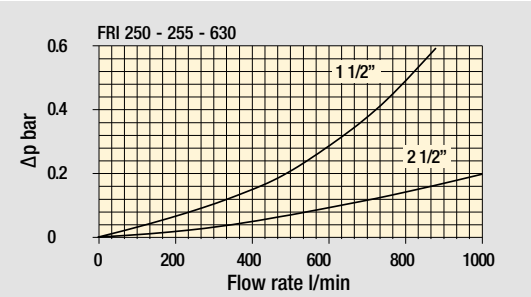
Note
FRI filters are provided for vertical mounting

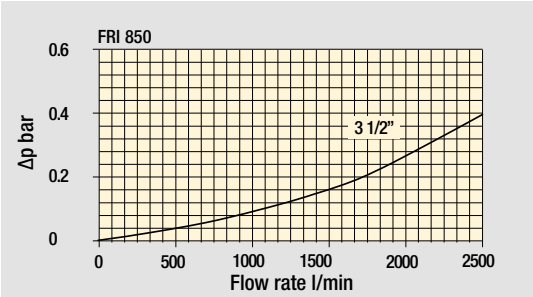
Weights [kg] and volumes [dm³]

Filter series	Weights [kg]		Volumes [dm³]	
	Length	1	Length	1
FRI 025		1.0		0.28
FRI 040		2.0		0.70
FRI 100		3.8		1.09
FRI 250		6.3		2.60
FRI 255		4.2		3.20
FRI 630		13.8		7.05
FRI 850		48.0		21.50

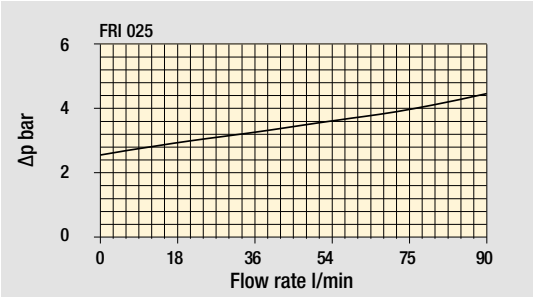
Filter housings Δp pressure drop

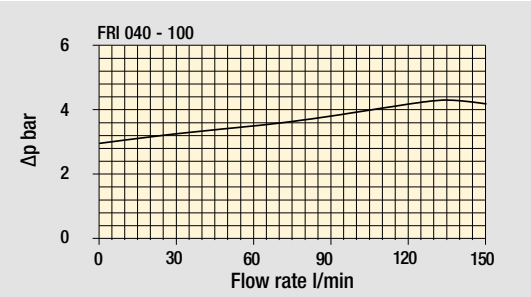


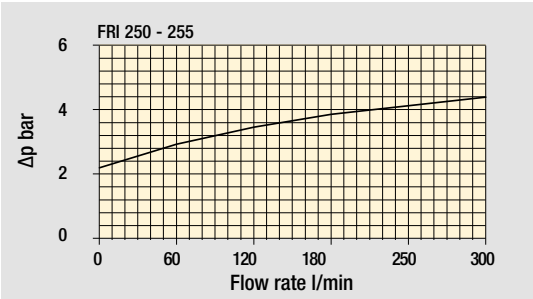


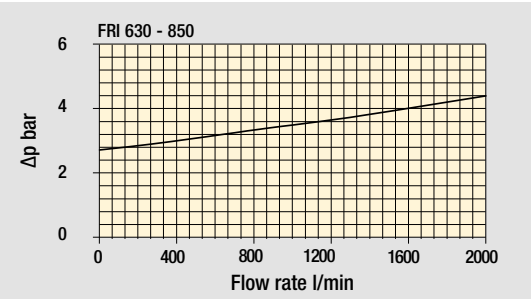


Bypass valve pressure drop









The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

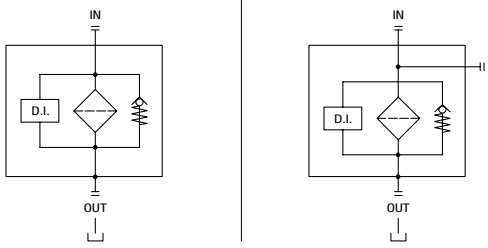
Flow rates [l/min]

		Filter element design - N Series							
Filter series	Length	A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
FRI 025	**1**	6	10	17	19	43	122	43	47
FRI 040	**1**	19	23	43	45	94	155	94	102
FRI 100	**1**	32	34	89	92	187	260	187	206
FRI 250	**1**	144	179	271	300	448	645	448	490
FRI 255	**1**	144	179	271	300	448	645	448	490
FRI 630	**1**	242	279	508	577	834	1446	834	911
FRI 850	**1**	440	541	971	1143	1705	2528	1705	1880

Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

Hydraulic symbols

Filter series	Style 1 connection + Diff. indic.	Style 2 connections + Diff. indic.
FRI 025		•
FRI 040		•
FRI 100		•
FRI 250		•
FRI 255	•	
FRI 630		•
FRI 850	•	



Designation & Ordering code

COMPLETE FILTER

Configuration example 1: FRI025 | B | A | G1 | A25 | N | P01
Configuration example 2: FRI040 | S | W | G2 | M25 | N | P01

Series and size
- **FRI025**
- **FRI040**

Bypass valve
- **B** With bypass
- **S** Without bypass

Seals and treatments

		Axx	Mxx	Pxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR head anodized	•	•	
Z	FPM head anodized	•	•	

filter element compatible with fluids HFA-HFB-HFC

Connections for FRI025	Connections for FRI040
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

Filtration rating (filter media)

A03 Inorganic microfiber 3 µm	**M25** Wire mesh 25 µm
A06 Inorganic microfiber 6 µm	**M60** Wire mesh 60 µm
A10 Inorganic microfiber 10 µm	**M90** Wire mesh 90 µm
A16 Inorganic microfiber 16 µm	**P10** Resin impregnated paper 10 µm
A25 Inorganic microfiber 25 µm	**P25** Resin impregnated paper 25 µm

Element Δp
- **N** 10 bar

Execution
- **P01** MP Filtri standard
- **Pxx** Customized

FILTER ELEMENT

Configuration example 1: CU025 | A25 | N | P01
Configuration example 2: CU040 | M25 | W | P01

Element series and size
- **CU025**
- **CU040**

Filtration rating (filter media)

A03 Inorganic microfiber 3 µm	**M25** Wire mesh 25 µm
A06 Inorganic microfiber 6 µm	**M60** Wire mesh 60 µm
A10 Inorganic microfiber 10 µm	**M90** Wire mesh 90 µm
A16 Inorganic microfiber 16 µm	**P10** Resin impregnated paper 10 µm
A25 Inorganic microfiber 25 µm	**P25** Resin impregnated paper 25 µm

Seals and treatments

		Axx	Mxx	Pxx
N	NBR	•	•	•
V	FPM	•	•	•
W	NBR	•	•	
Z	FPM	•	•	

filter element compatible with fluids HFA-HFB-HFC

Execution
- **P01** MP Filtri standard
- **Pxx** Customized

ACCESSORIES

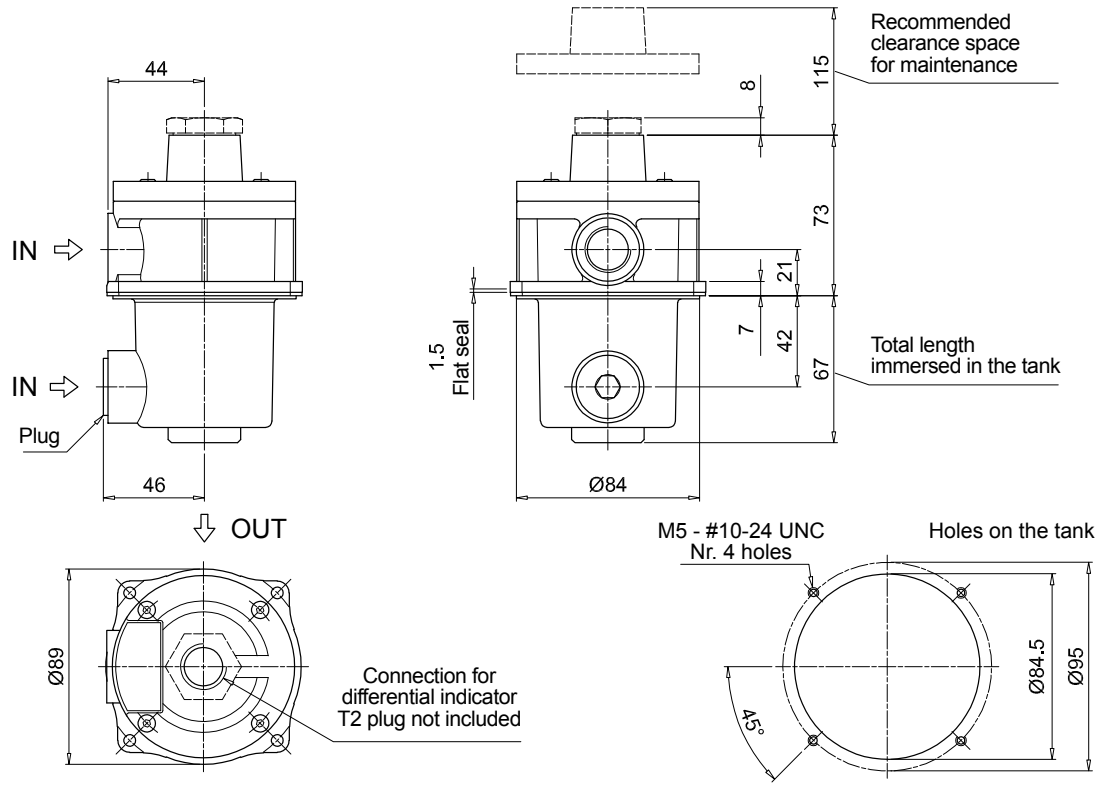
Indicators

		page
DEA	Electrical differential indicator	242
DEM	Electrical differential indicator	242-243
DLA	Electrical / visual differential indicator	243-244
DLE	Electrical / visual differential indicator	244
DTA	Electronic differential indicator	245
DVA	Visual differential indicator	245
DVM	Visual differential indicator	245

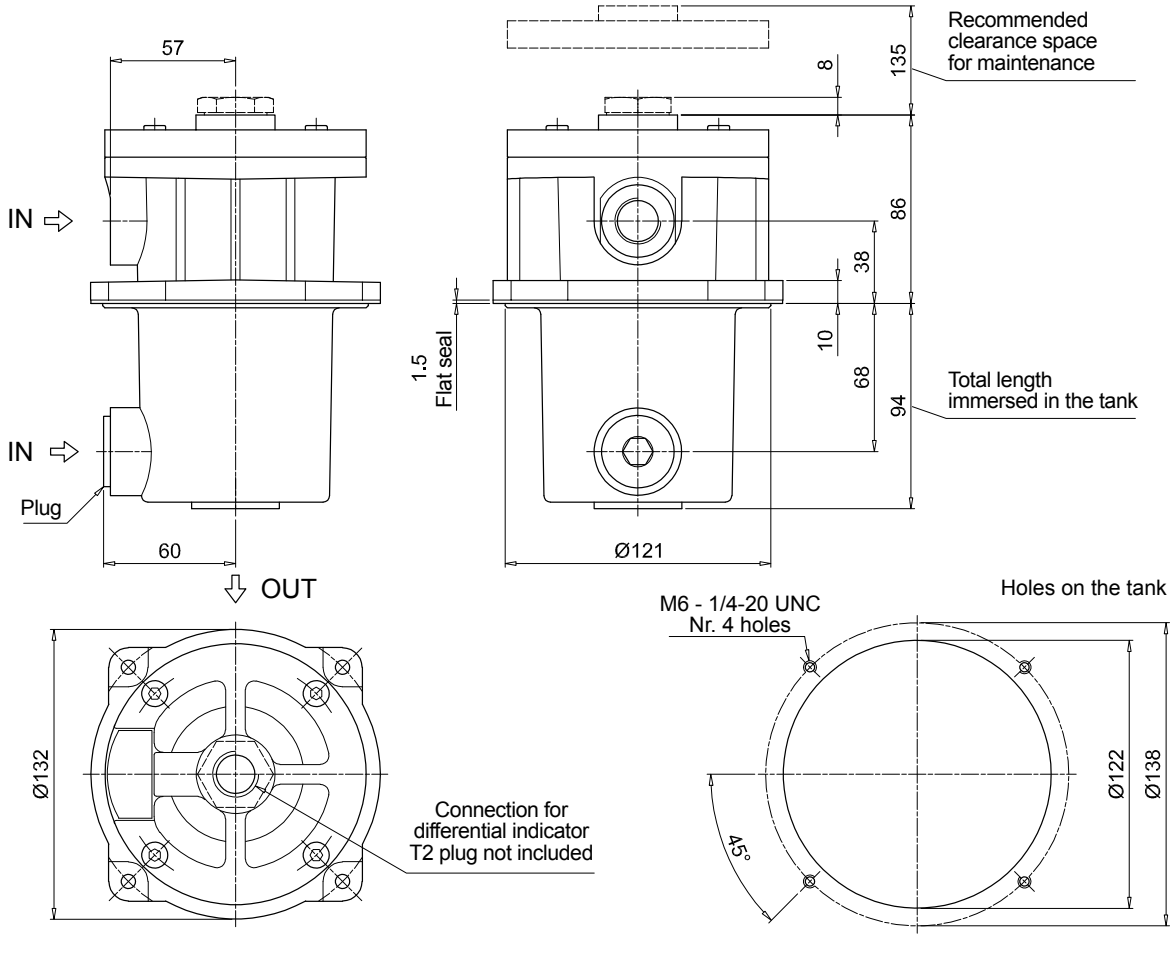
Additional features

		page
T2	Plug	246

FRI025



FRI040



Designation & Ordering code

COMPLETE FILTER

Configuration example 1: FRI100 | B | A | G1 | A25 | N | P01

Configuration example 2: FRI630 | S | W | F2 | M25 | N | P01

Series and size

FRI100
FRI250
FRI630

Bypass valve

B	With bypass
S	Without bypass

Seals and treatments

		Axx	Mxx	Pxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR head anodized	•	•	
Z	FPM head anodized	•	•	

filter element compatible with fluids HFA-HFB-HFC

Filtration rating

Connections for FRI100		Connections for FRI250	Connections for FRI630
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
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

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

Element Δp

N	10 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example 1: CU100 | A25 | N | P01

Configuration example 2: CU630 | M25 | W | P01

Element series and size

CU100
CU250
CU630

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

Seals and treatments

		Axx	Mxx	Pxx
N	NBR	•	•	•
V	FPM	•	•	•
W	NBR	•	•	
Z	FPM	•	•	

filter element compatible with fluids HFA-HFB-HFC

Filtration rating

Execution

P01	MP Filtri standard
Pxx	Customized

ACCESSORIES

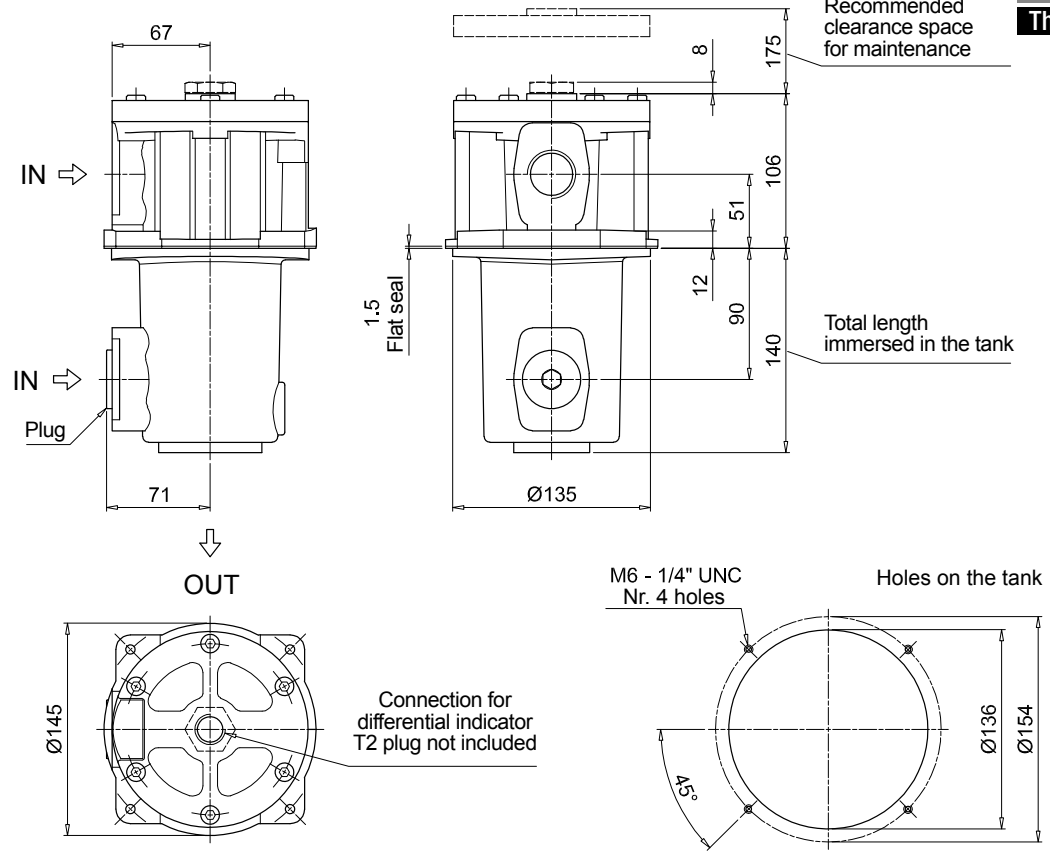
Indicators

		page
DEA	Electrical differential indicator	242
DEM	Electrical differential indicator	242-243
DLA	Electrical / visual differential indicator	243-244
DLE	Electrical / visual differential indicator	244
DTA	Electronic differential indicator	245
DVA	Visual differential indicator	245
DVM	Visual differential indicator	245

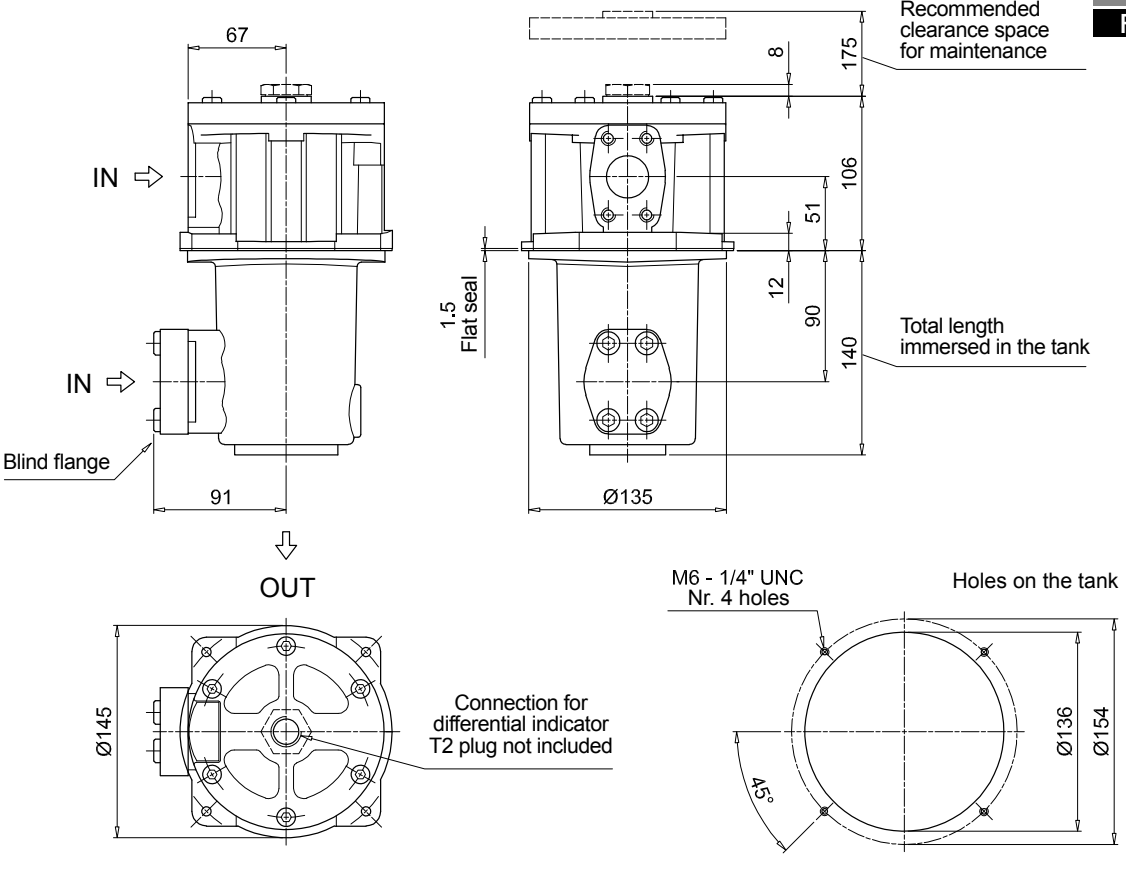
Additional features

		page
T2	Plug	246

FRI100
Threaded connections "G"

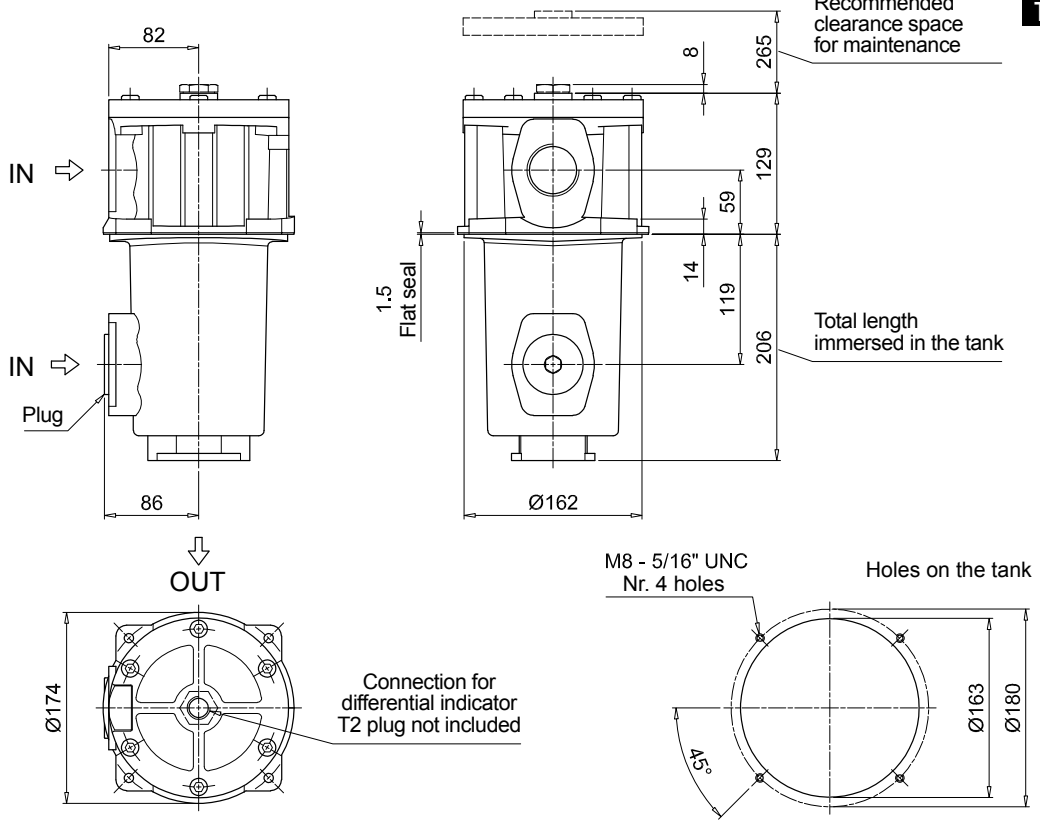


FRI100
Flange connections "F"

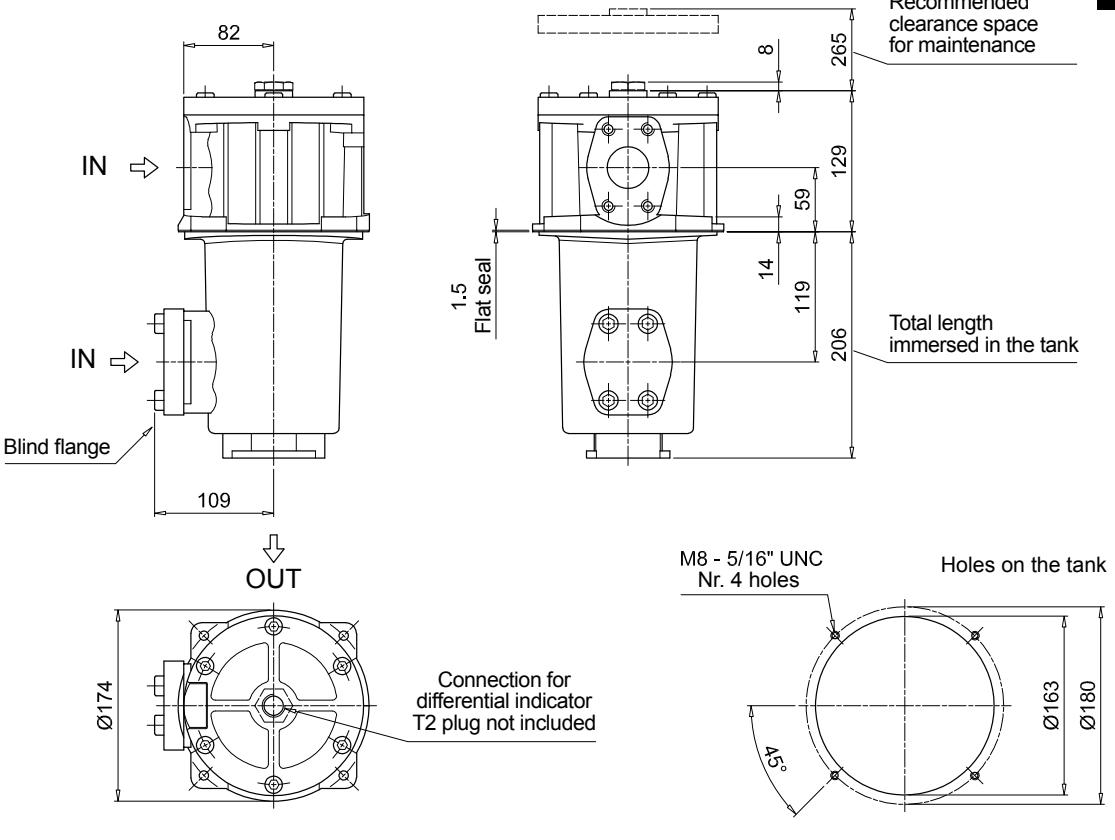


Dimensions

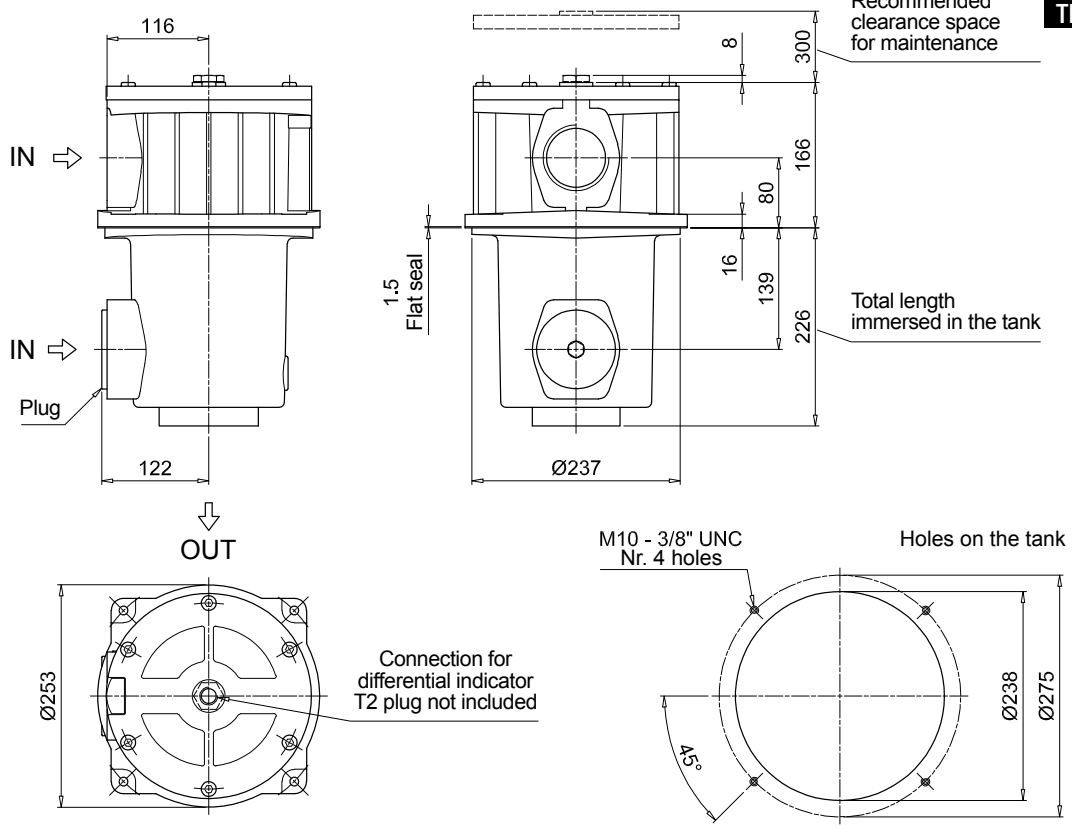
FRI250
Threaded connections "G"



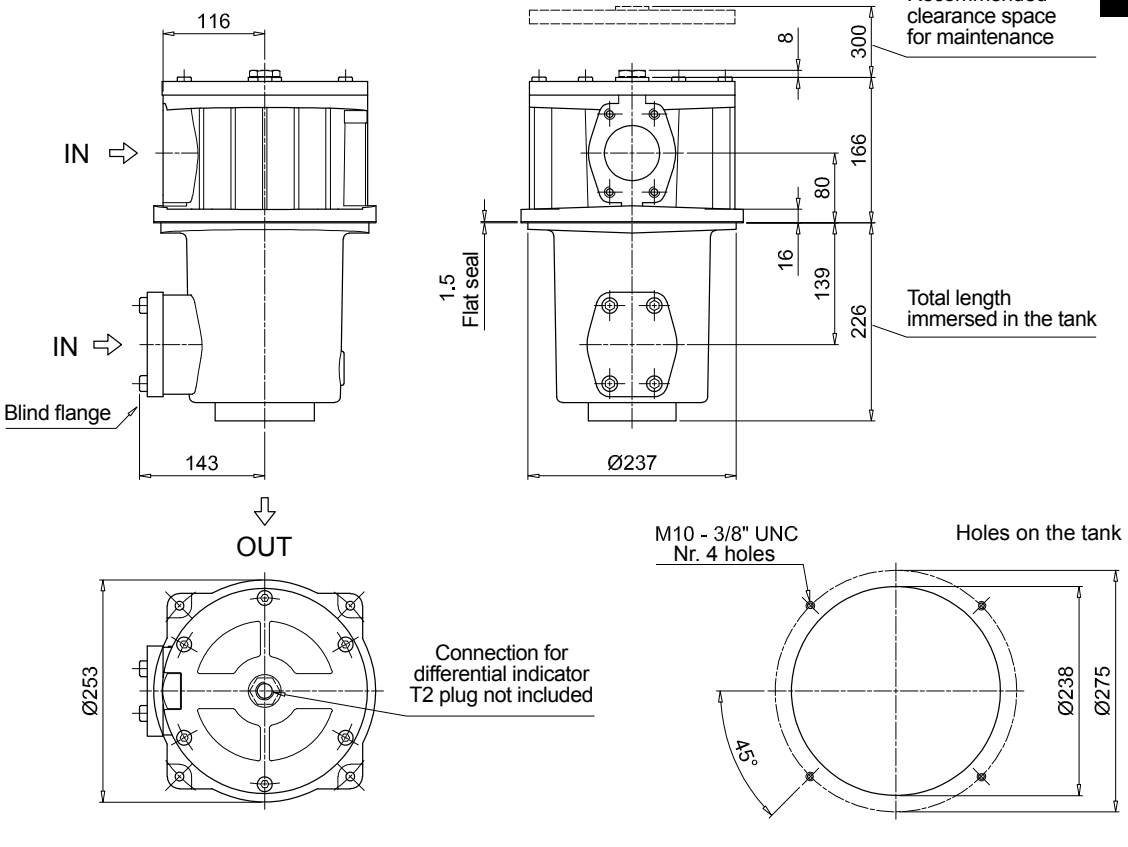
FRI250
Flange connections "F"



FRI630
Threaded connections "G"



FRI630
Flange connections "F"



Designation & Ordering code

COMPLETE FILTER

Configuration example 1: FRI255 | S | W | F2 | M25 | N | P01
Configuration example 2: FRI850 | B | A | F1 | A25 | N | P01

Series and size
FRI255
FRI850

Bypass valve
B With bypass
S Without bypass

Seals and treatments (filter element compatible with fluids HFA-HFB-HFC)

		Axx	Mxx	Pxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR head anodized	•	•	
Z	FPM head anodized	•	•	

Connections for FRI255
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

Connections for FRI850
F1 3 1/2" SAE 3000 psi/M
F2 3 1/2" SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

Element Δp
N 10 bar

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example 1: CU250 | M25 | W | P01
Configuration example 2: CU850 | A25 | N | P01

Element series and size
CU250
CU850

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

Seals and treatments (filter element compatible with fluids HFA-HFB-HFC)

		Axx	Mxx	Pxx
N	NBR	•	•	•
V	FPM	•	•	•
W	NBR	•	•	
Z	FPM	•	•	

Execution
P01 MP Filtri standard
Pxx Customized

FRI255 ACCESSORIES

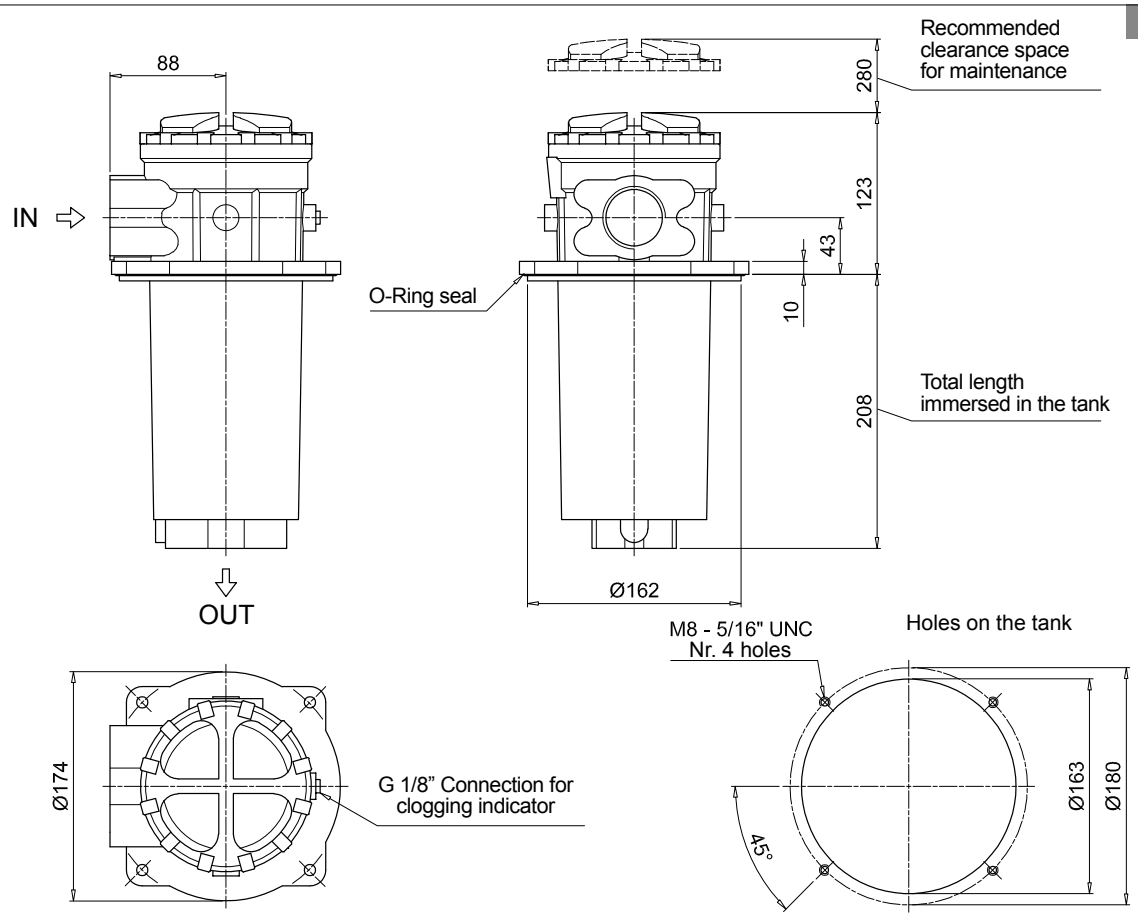
Indicators		page
BVA	Axial pressure gauge	240
BVR	Radial pressure gauge	240
BVP	Visual pressure indicator with automatic reset	241
BVQ	Visual pressure indicator with manual reset	241
BEA	Electrical pressure indicator	239
BEM	Electrical pressure indicator	239
BLA	Electrical / visual pressure indicator	239-240

FRI850 ACCESSORIES

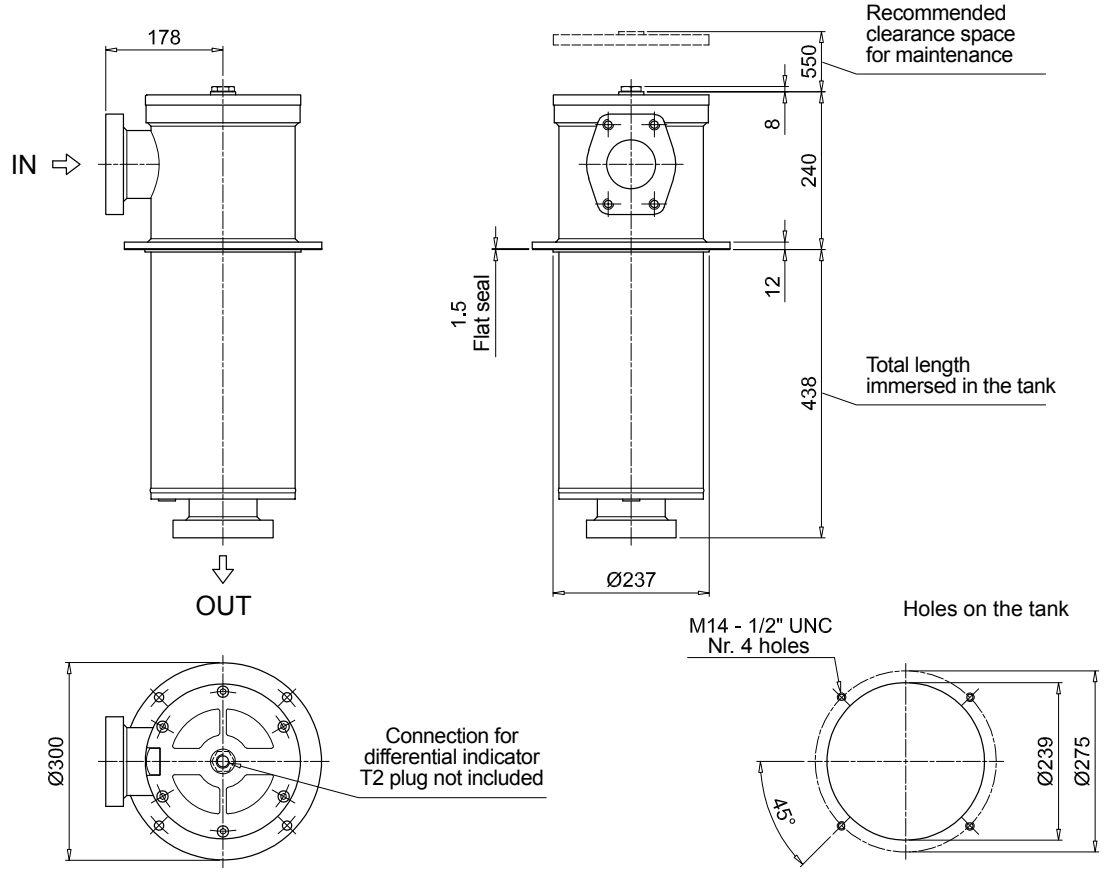
Indicators		page
DEA	Electrical differential indicator	242
DEM	Electrical differential indicator	242-243
DLA	Electrical / visual differential indicator	243-244
DLE	Electrical / visual differential indicator	244
DTA	Electronic differential indicator	245
DVA	Visual differential indicator	245
DVM	Visual differential indicator	245

Additional features		page
T2	Plug	246

FRI255

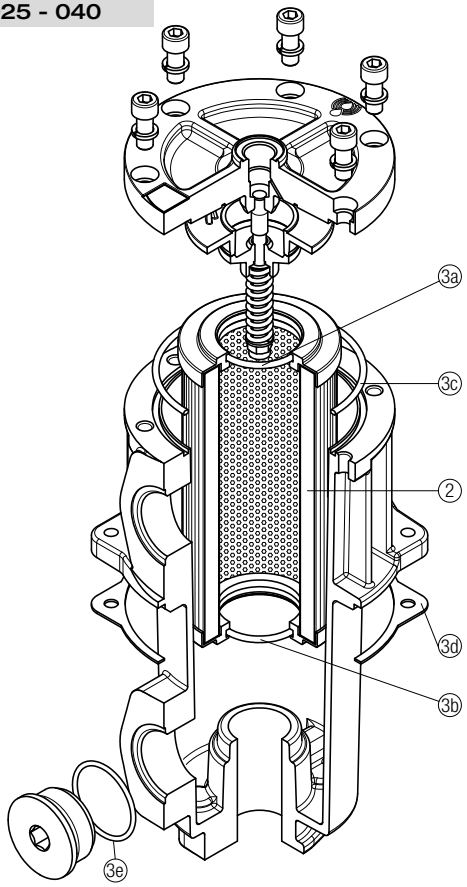


FRI850



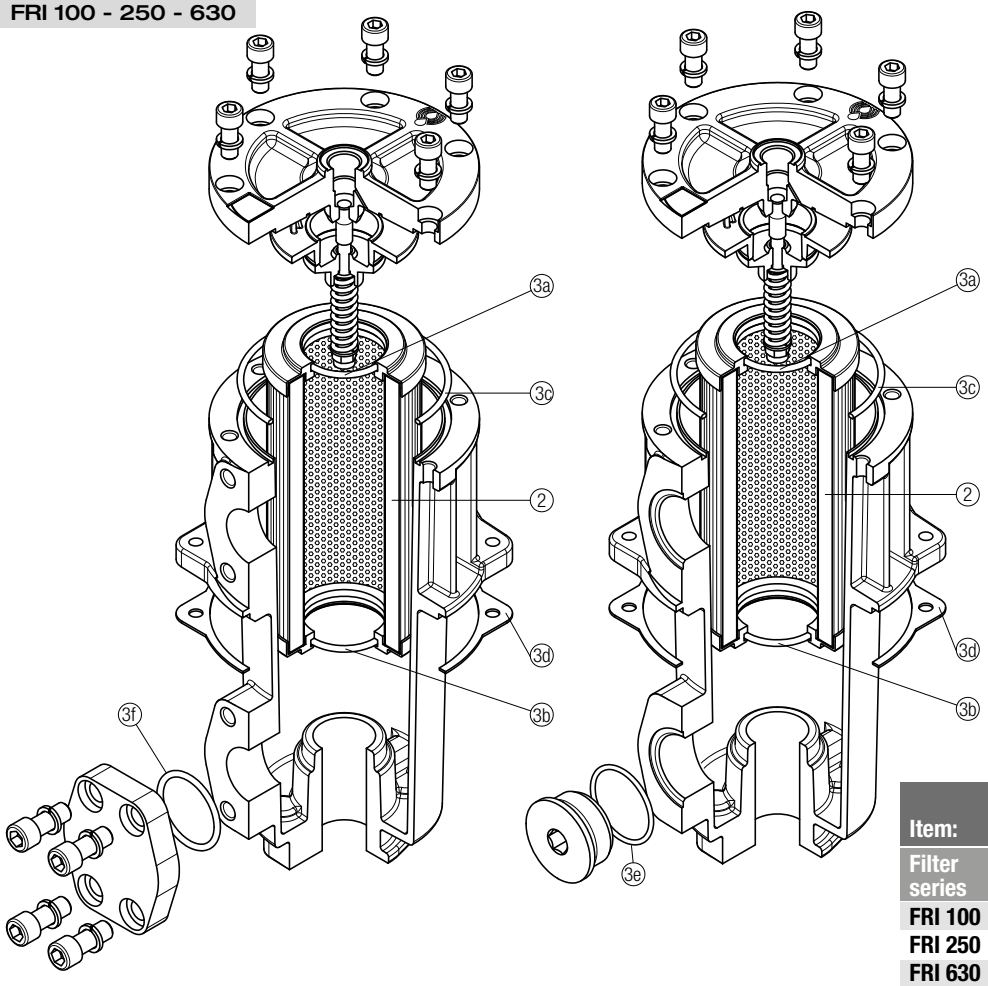
Order number for spare parts

FRI 025 - 040



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
FRI 025	See order table	02050213	02050220
FRI 040		02050214	02050221

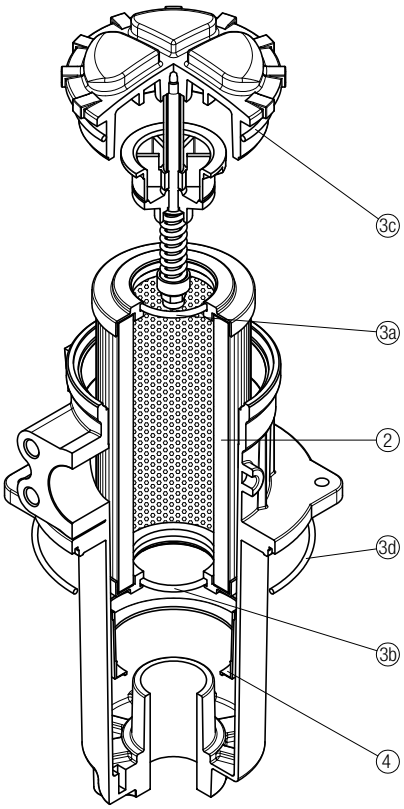
FRI 100 - 250 - 630



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3f)	
Filter series	Filter element	Seal Kit code number NBR	FPM
FRI 100	See order table	02050215	02050222
FRI 250		02050216	02050223
FRI 630		02050217	02050224

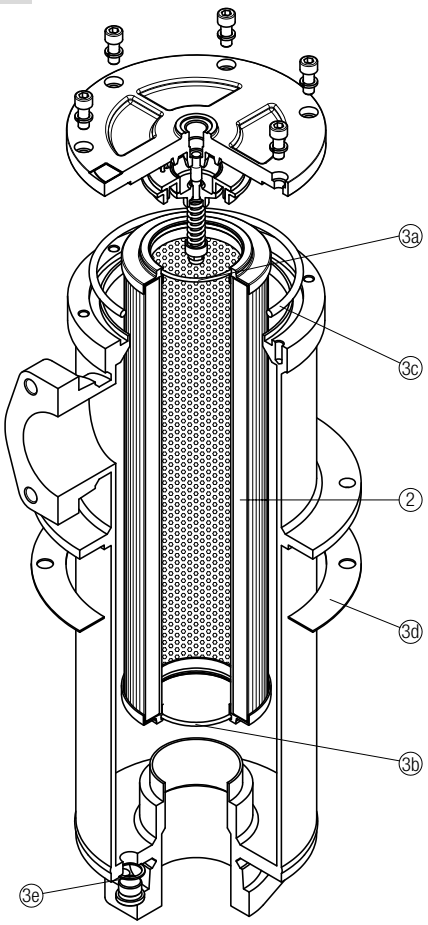
Order number for spare parts

FRI 255



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)		Q.ty: 1 pc. 4
Filter series	Filter element	Seal Kit code number NBR	FPM	Contamination retainer binder
FRI 255	See order table	02050013	02050014	01060301

FRI 850



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
FRI 850	See order table	02050218	02050225