

FRIC series

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 2500 l/min



Description

Technical data

Return filter

Maximum working pressure up to 2 MPa (20 bar)
Flow rate up to 2500 l/min

FRIC 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 2500 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

Filter housing materials

- Filter body: Aluminium: FRIC 255
Anodized Aluminium: FRIC 025-040-100-250-630
Phosphatized Steel: FRIC 850
- Cover: Polyamide, GF reinforced: FRIC 255
Anodized Aluminium: FRIC 025-040-100-250-630-850
- Valve: Polyamide, GF reinforced - Steel

Pressure

- Test pressure: 3 MPa (30 bar)
- Min. Burst pressure: 6 MPa (60 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 2 MPa (20 bar)

Bypass valve

Opening pressure 0.24 MPa (2.4 bar) ±10%

Filter element features

Filter FRIC	Filter element CUC		
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From OUT to IN

Seals

- Standard NBR series A (or W only for FRIC850)
- Optional FPM series V (or Z only for FRIC850)

Temperature

From -25 °C to +110 °C

Note

FRIC filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]		Volumes [dm ³]	
	Length	10	Length	10
FRIC 025		1.0		0.28
FRIC 040		2.0		0.70
FRIC 100		3.8		1.09
FRIC 250		6.3		2.60
FRIC 255		4.2		3.20
FRIC 630		13.8		7.05
FRIC 850		48.0		21.50

Flow rates [l/min]

Filter series	Length	Filter element design - D Series							
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
FRIC 025	10	6	10	17	19	43	122	43	47
FRIC 040	10	19	23	43	45	94	155	94	102
FRIC 100	10	32	34	89	92	187	260	187	206
FRIC 250	10	144	179	271	300	448	645	448	490
FRIC 255	10	144	179	271	300	448	645	448	490
FRIC 630	10	242	279	508	577	834	1446	834	911
FRIC 850	10	440	541	971	1143	1705	2528	1705	1880

Maximum flow rate for a complete return filter with a pressure drop $\Delta p = 0.5$ bar.

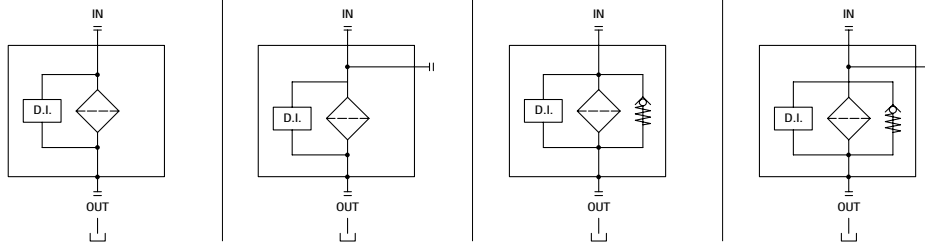
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

Filter series	00 - without bypass		24 - with bypass 2.4 bar	
	without additional connection	with additional connection	without additional connection	with additional connection
FRIC 025	-	•	-	•
FRIC 040	-	•	-	•
FRIC 100	-	•	-	•
FRIC 250	-	•	-	•
FRIC 255	•	-	•	-
FRIC 630	-	•	-	•
FRIC 850	•	-	•	-

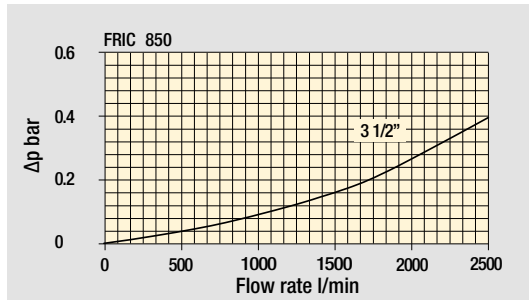
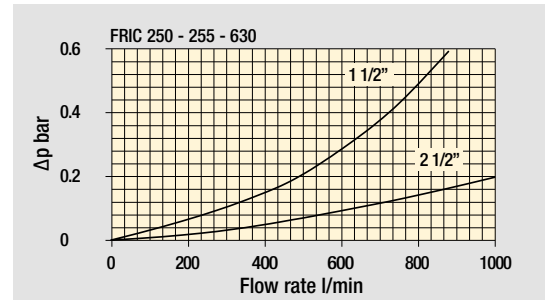
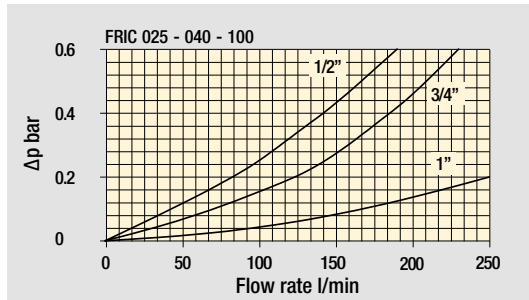
Hydraulic diagram



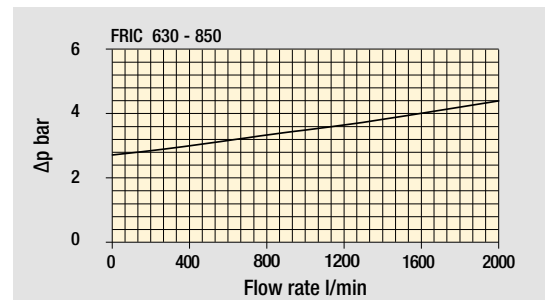
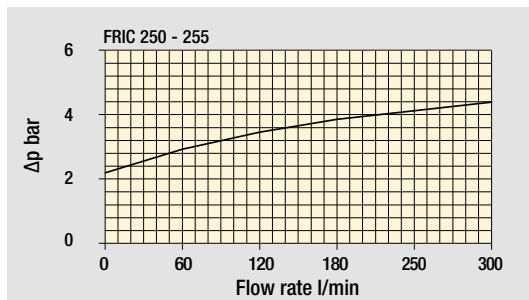
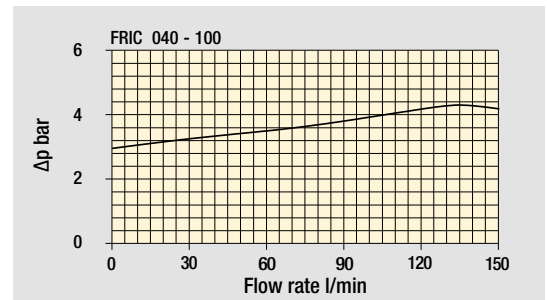
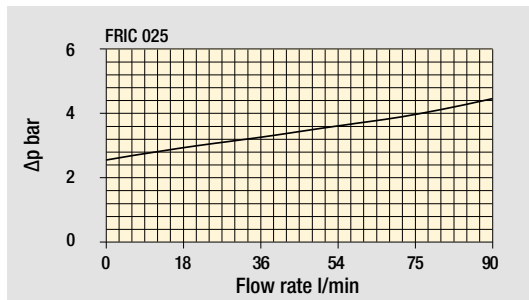
FRIC GENERAL INFORMATION

Pressure drop

Filter housings Δp pressure drop



Bypass valve 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.

Designation & Ordering code

COMPLETE FILTER

Series	Example 1:	FRIC	025	10	A0025	D	A	00	FG012	1	1N	NN	P01	NN
FRIC	Example 2:	FRIC	630	10	M0025	D	V	00	FF212	1	1N	NN	P01	NN

Size		
025	250	
040	630	Length
100		10

Filtration rating (filter media)		
A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp	
D	10 bar

Seals and treatments	
W	NBR with filter and components surface treatment
Z	FPM with filter and components surface treatment

By-pass valve	
00	Without bypass
24	With bypass 2.4 bar

Connections	025	040	100	250	630	Connections	025	040	100	250	630
FG012 G 1/2"	•	-	-	-	-	FE100 1" SAE 3000 psi/M	-	-	•	-	-
FG034 G 3/4"	-	•	-	-	-	FE112 1 1/2" SAE 3000 psi/M	-	-	-	•	-
FG100 G 1"	-	-	•	-	-	FE212 2 1/2" SAE 3000 psi/M	-	-	-	-	•
FG112 G 1 1/2"	-	-	-	•	-	FF100 1" SAE 3000 psi/UNC	-	-	•	-	-
FG212 G 2 1/2"	-	-	-	-	•	FF112 1 1/2" SAE 3000 psi/UNC	-	-	-	•	-
FN012 1/2" NPT	•	-	-	-	-	FF212 2 1/2" SAE 3000 psi/UNC	-	-	-	-	•
FN034 3/4" NPT	-	•	-	-	-						
FN100 1" NPT	-	-	•	-	-						
FN112 1 1/2" NPT	-	-	-	•	-						
FN212 2 1/2" NPT	-	-	-	-	•						
FS008 SAE 8 - 3/4" - 16 UNF	•	-	-	-	-						
FS012 SAE 12 - 1 1/16" - 12 UN	-	•	-	-	-						
FS016 SAE 16 - 1 5/16" - 12 UN	-	-	•	-	-						
FS024 SAE 24 - 1 7/8" - 12 UN	-	-	-	•	-						
FS032 SAE 32 - 2 1/2" - 12 UN	-	-	-	-	•						

Additional connections	
1	With additional connection

Connections for clogging indicator	
1N	With top indicator connection

Additional features	
NN	Without additional features

Execution	
P01	Standard catalogue item

Certificates	
NN	None

CLOGGING INDICATORS

See pages 776-777

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator

DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

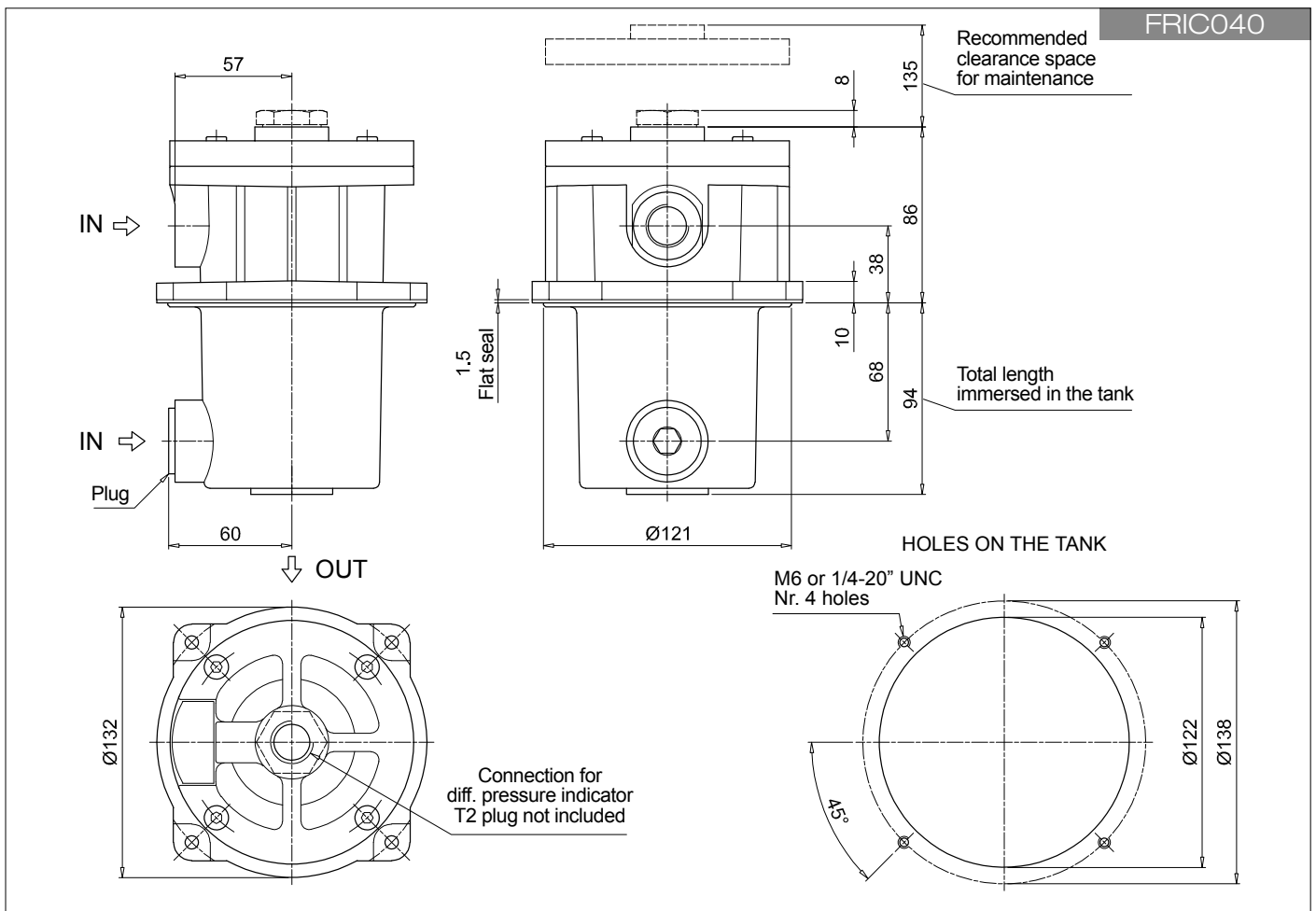
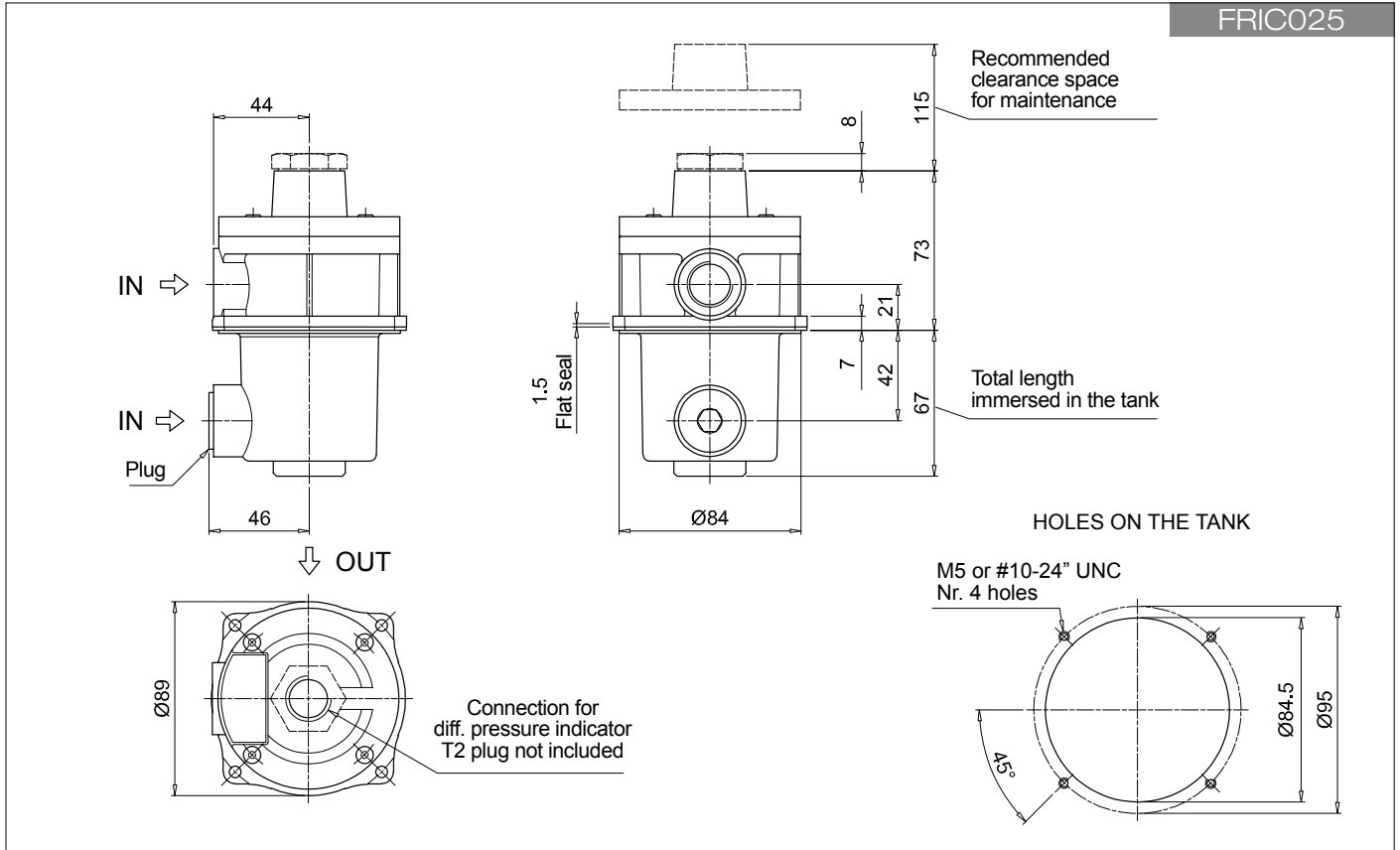
See page 807

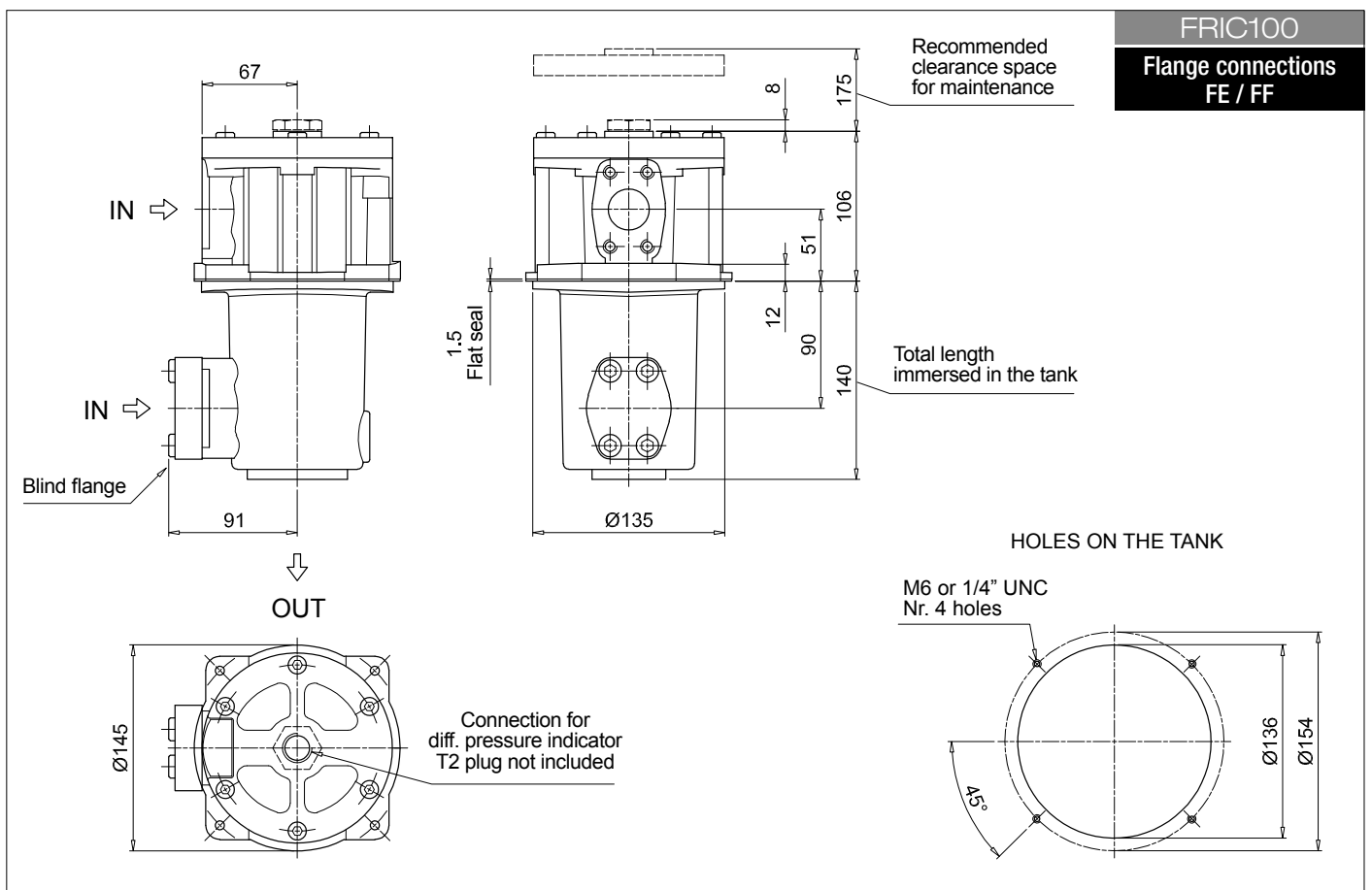
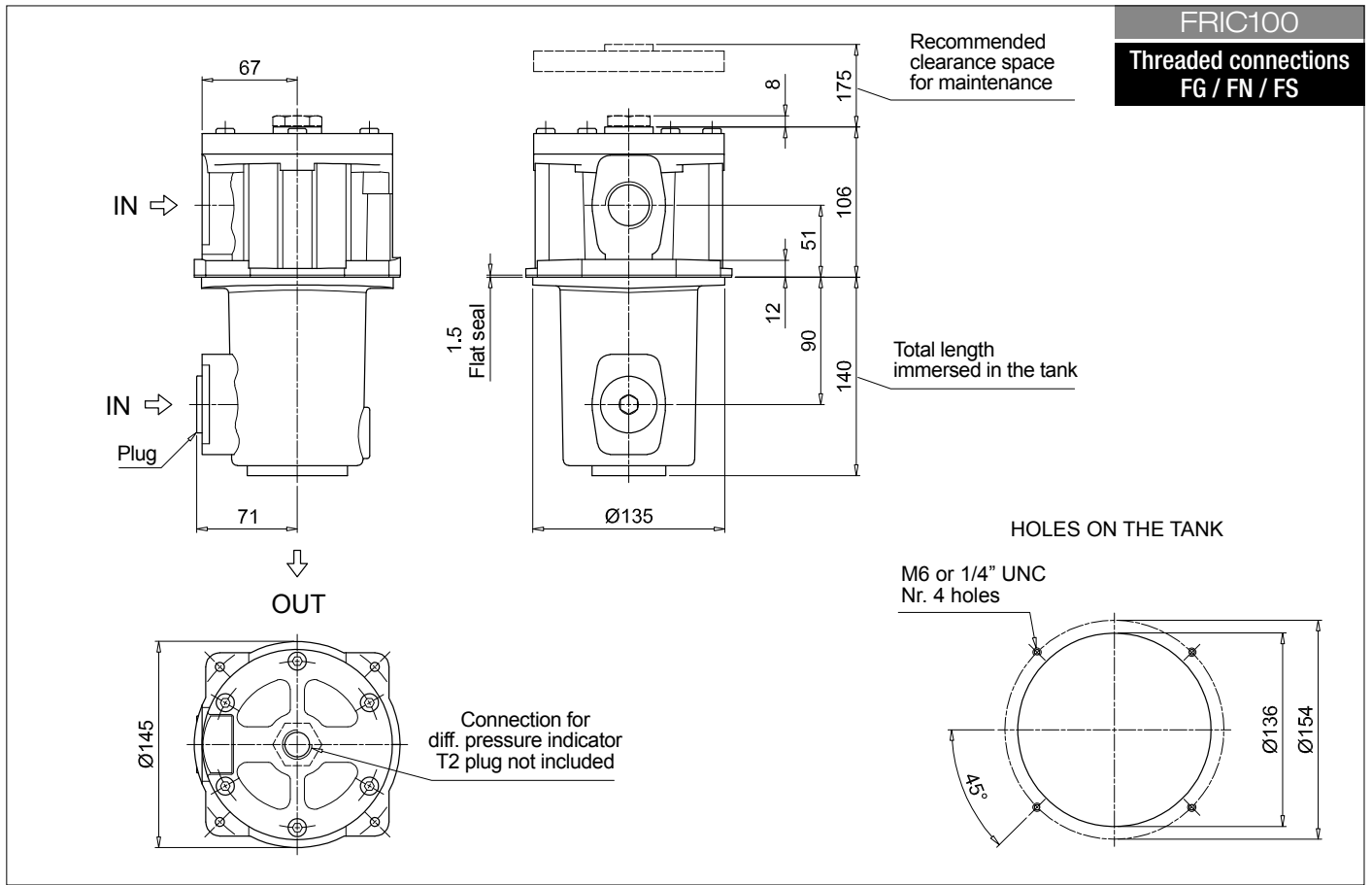
T2	Plug (not included)
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FILTER ELEMENT										
Series	Example 1: CUC 025 10 A0025 D A 00 NN P01 NN									
CUC	Example 2: CUC 630 10 M0025 D V 00 NN P01 NN									
Size										
025	250									
040	630									
100										
Length										
10										
Filtration rating (filter media)										
A0003	Inorganic microfiber	3 µm								
A0006	Inorganic microfiber	6 µm								
A0010	Inorganic microfiber	10 µm								
A0016	Inorganic microfiber	16 µm								
A0025	Inorganic microfiber	25 µm								
M0025	Wire mesh	25 µm								
M0060	Wire mesh	60 µm								
M0090	Wire mesh	90 µm								
P0010	Resin impregnated paper	10 µm								
P0025	Resin impregnated paper	25 µm								
Element Δp										
D	10 bar									
Seals and treatments										
A	NBR									
V	FPM									
Bypass										
00	Without bypass									
Additional features										
NN	Without additional features									
Execution										
P01	Standard catalogue item									
Certificates										
NN	None									

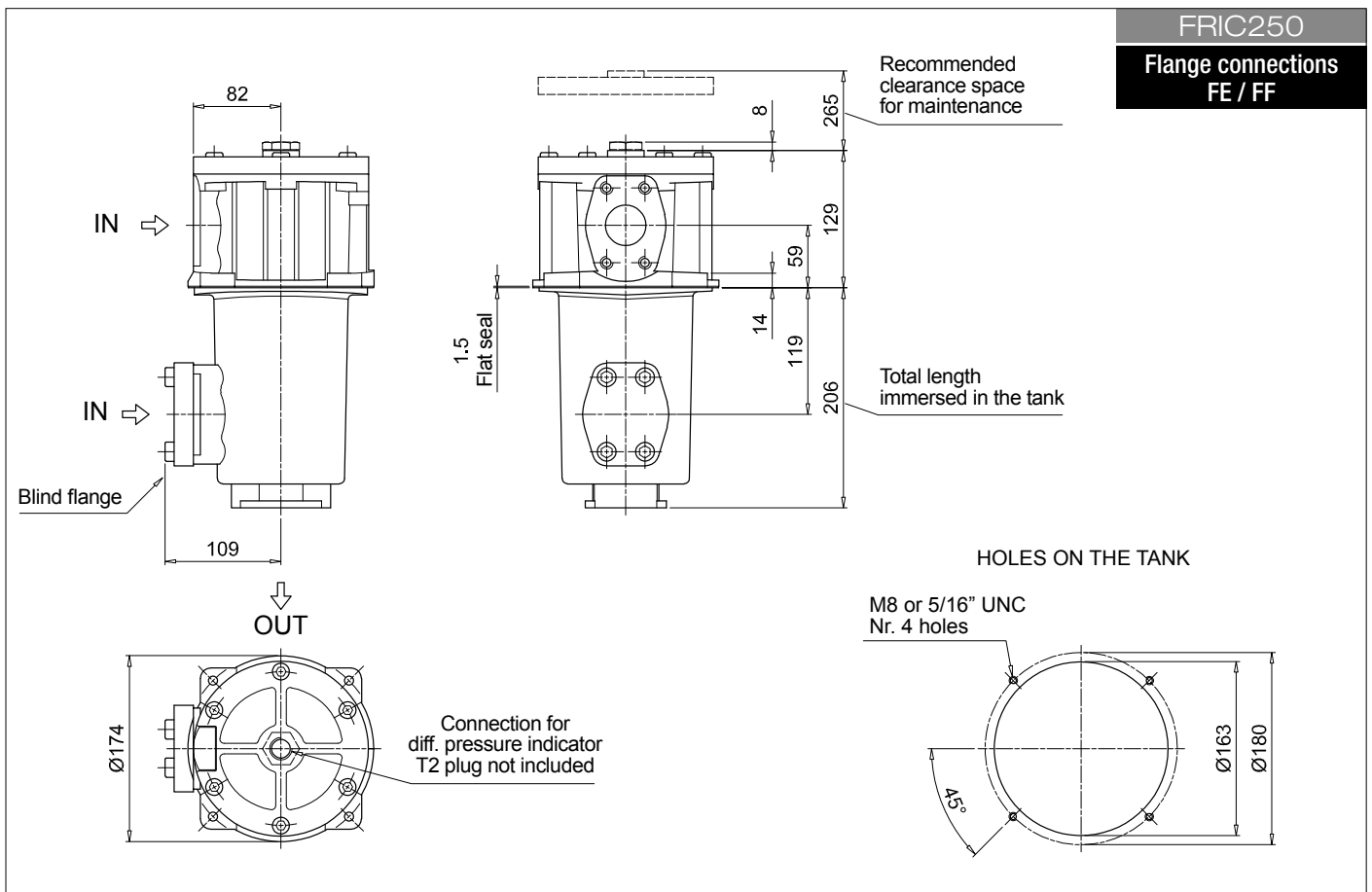
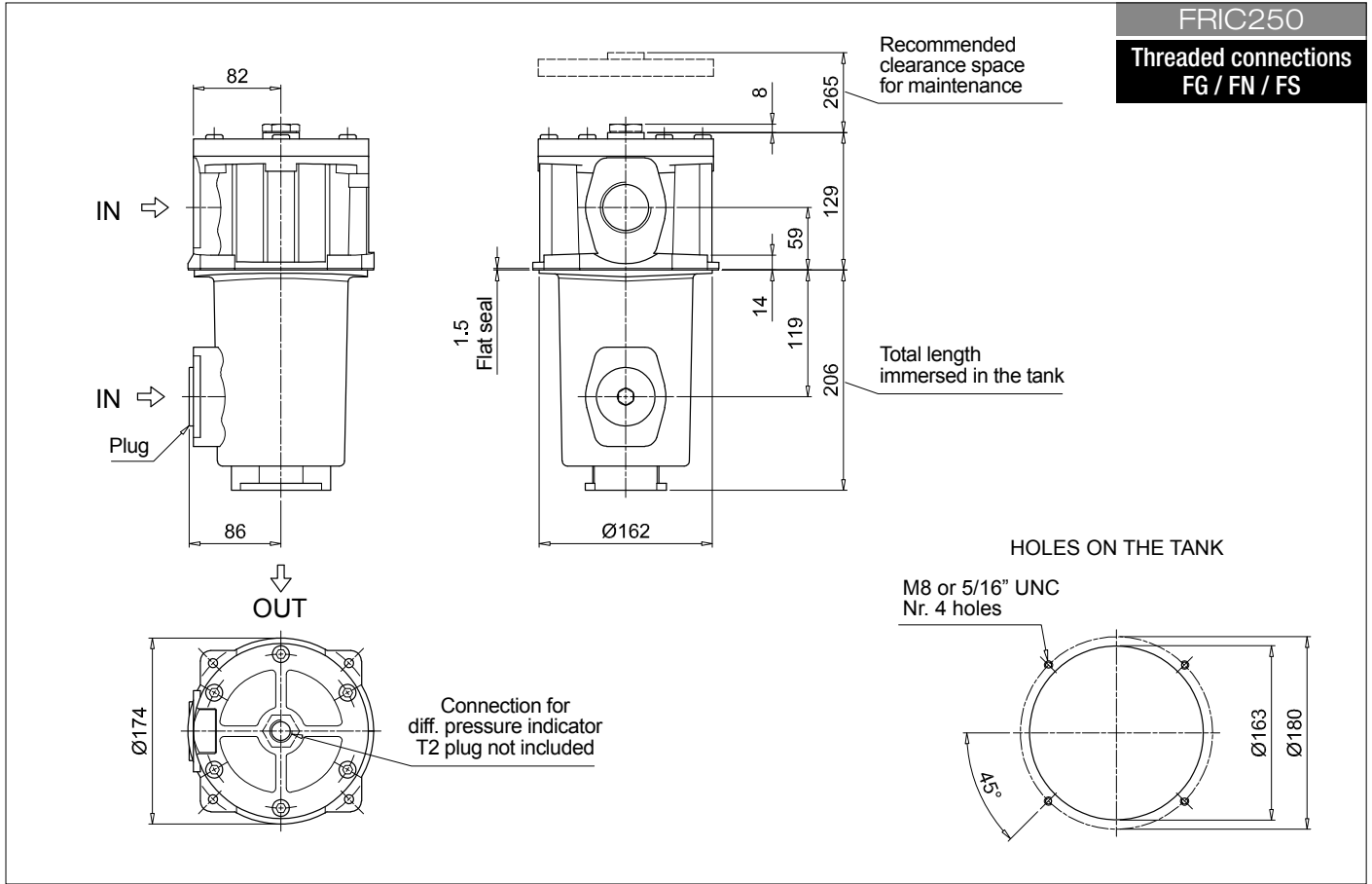
FRIC FRIC025 - FRIC040

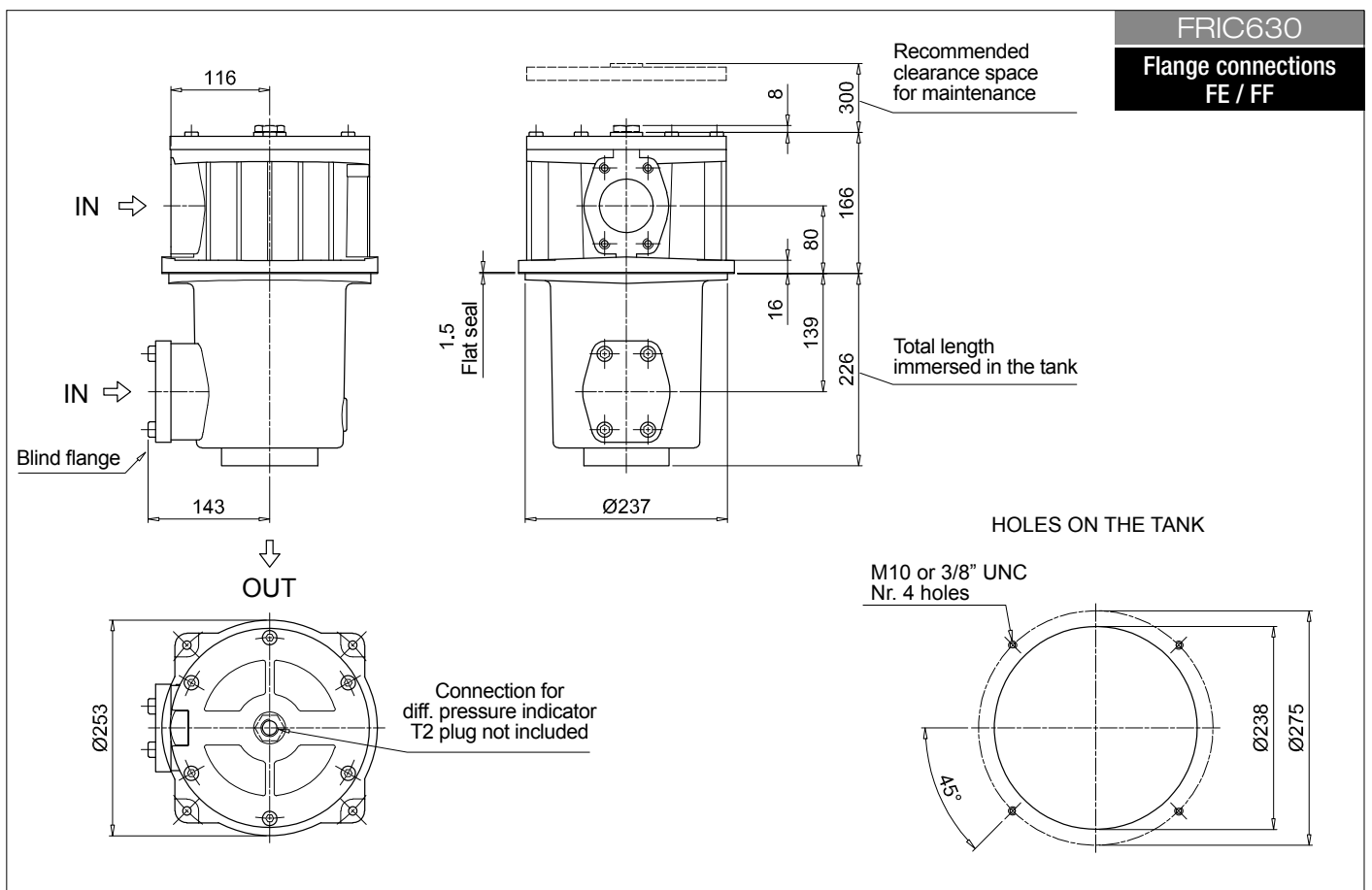
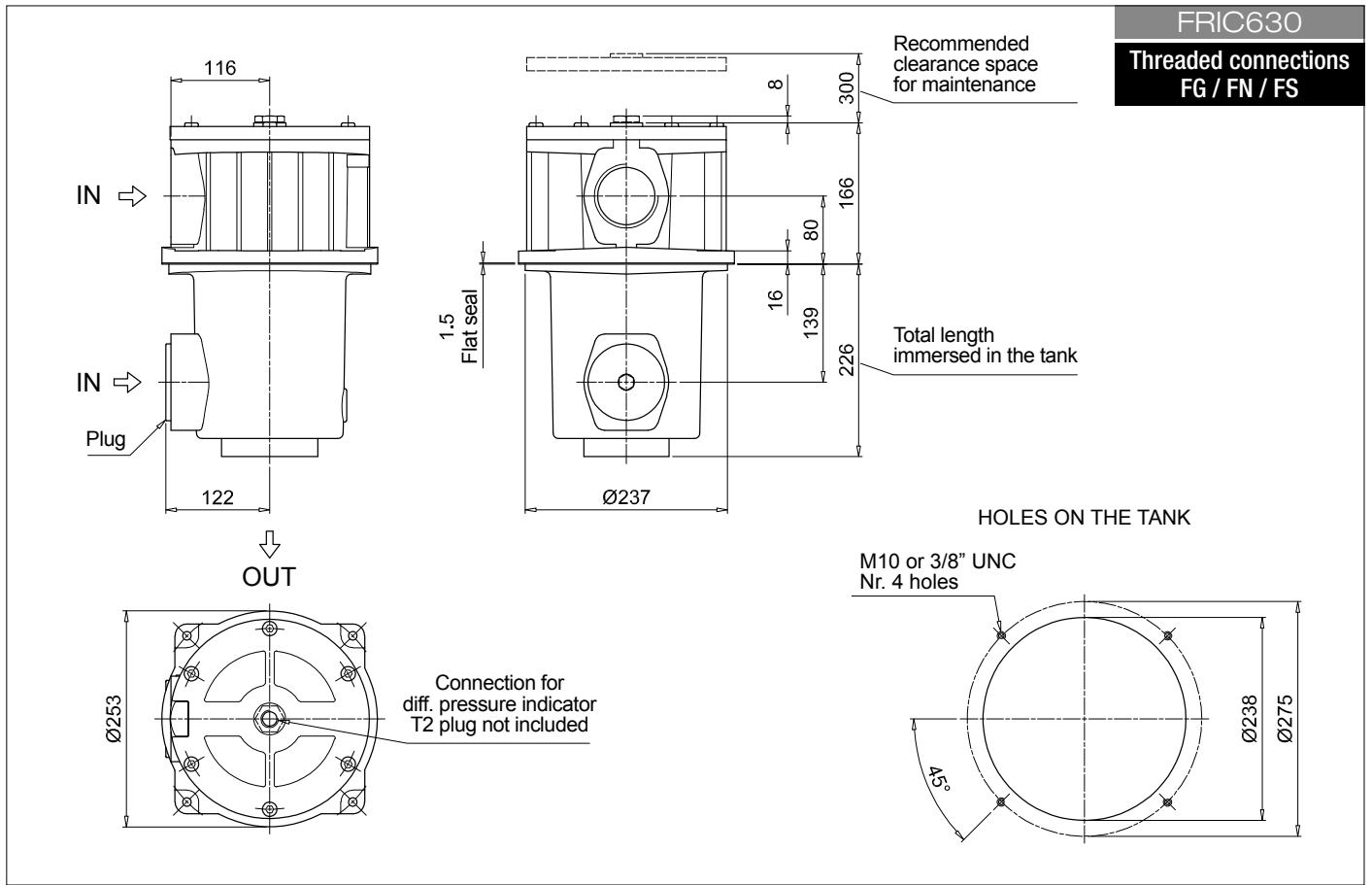
Dimensions





Dimensions





Designation & Ordering code

COMPLETE FILTER

Series	Example: FRIC	255	10	A0025	D	A	24	FF112	0	5T	NN	P01	NN
FRIC													
Size													
255													
Length													
10													
Filtration rating (filter media)													
A0003	Inorganic microfiber	3 µm											
A0006	Inorganic microfiber	6 µm											
A0010	Inorganic microfiber	10 µm											
A0016	Inorganic microfiber	16 µm											
A0025	Inorganic microfiber	25 µm											
M0025	Wire mesh	25 µm											
M0060	Wire mesh	60 µm											
M0090	Wire mesh	90 µm											
P0010	Resin impregnated paper	10 µm											
P0025	Resin impregnated paper	25 µm											
Seals and treatments													
W	NBR with filter and components surface treatment												
Z	FPM with filter and components surface treatment												
By-pass valve													
00	Without bypass												
24	With bypass 2.4 bar												
Connections													
FG114	G 1 1/4"	FN114	1 1/4" NPT	FS020	SAE 20 - 1 5/8" - 12 UN	FE112	1 1/2" SAE 3000 psi/M						
FG112	G 1 1/2"	FN112	1 1/2" NPT	FS024	SAE 24 - 1 7/8" - 12 UN	FF112	1 1/2" SAE 3000 psi/UNC						
Additional connections													
0	Without additional connections												
Connections for clogging indicator													
5T	With rear indicator connection, with metal plug												
Additional features													
NN	Without additional features												
Execution													
P01	Standard catalogue item												
Certificates													
NN	None												

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset

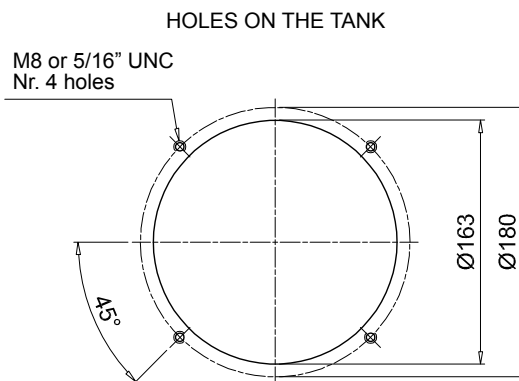
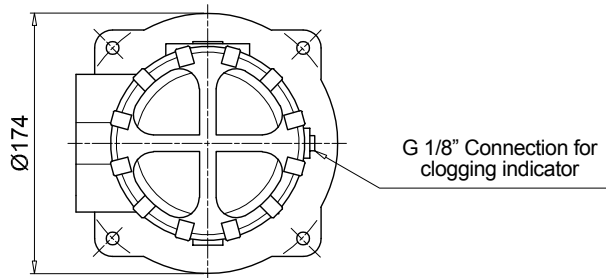
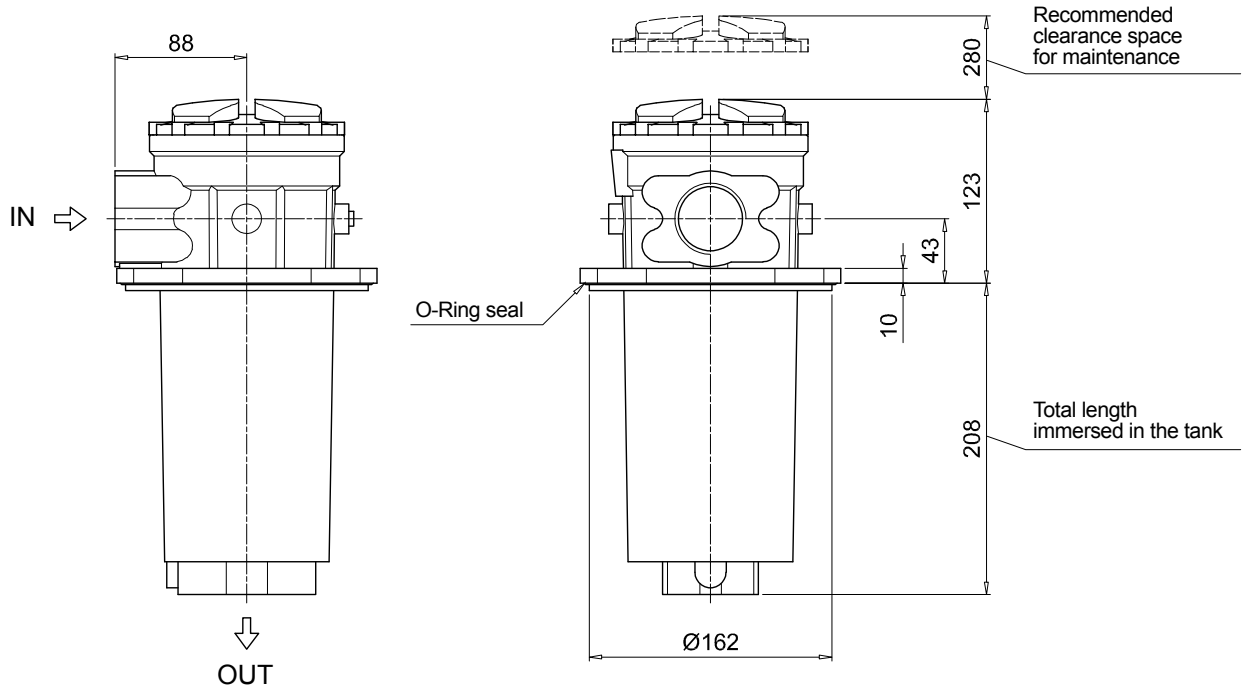
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

PLUGS

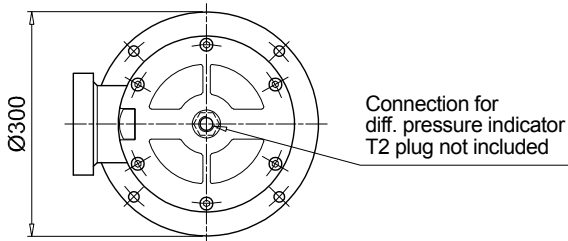
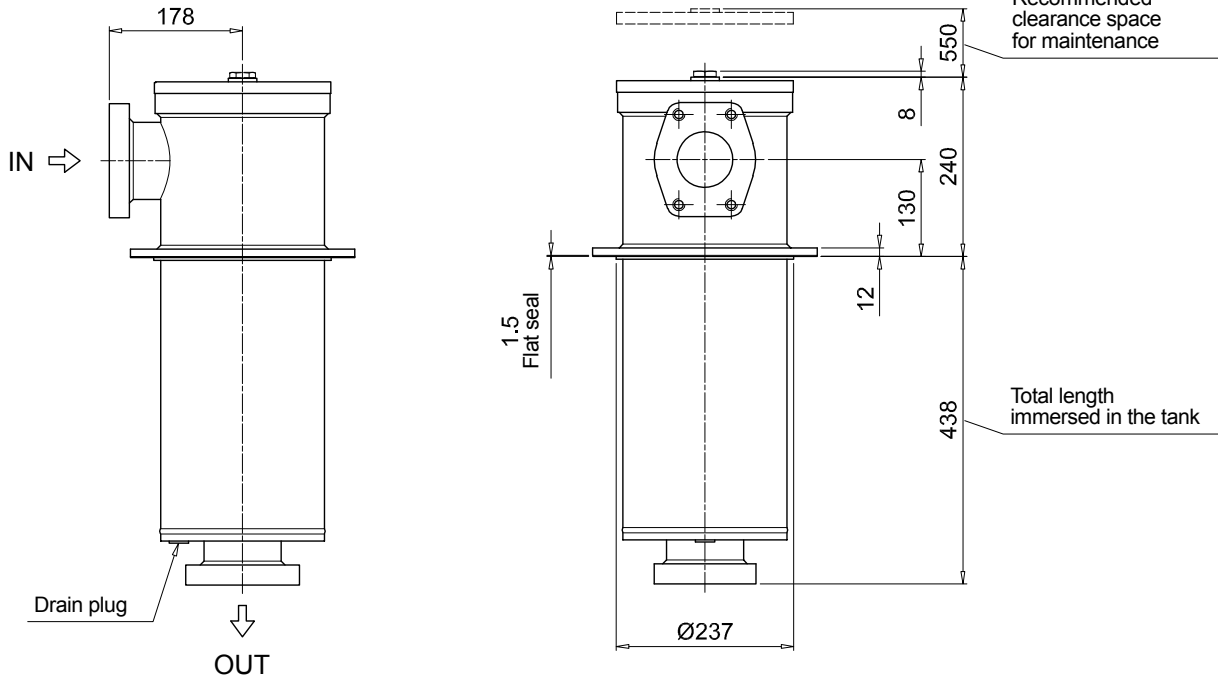
See page 807

T2 Plug (not included)

FILTER ELEMENT		
Series CUC	Example 1: CUC	250
Size 250		10
Length 10		A0025
Filtration rating (filter media)		D
A0003 Inorganic microfiber 3 µm		A
A0006 Inorganic microfiber 6 µm		00
A0010 Inorganic microfiber 10 µm		NN
A0016 Inorganic microfiber 16 µm		P01
A0025 Inorganic microfiber 25 µm		NN
M0025 Wire mesh 25 µm		
M0060 Wire mesh 60 µm		
M0090 Wire mesh 90 µm		
P0010 Resin impregnated paper 10 µm		
P0025 Resin impregnated paper 25 µm		
Element Δp D 10 bar		
Seals and treatments		
A NBR		
V FPM		
Bypass 00 Without bypass		
Additional features NN Without additional features		
Execution P01 Standard catalogue item		
Certificates NN None		

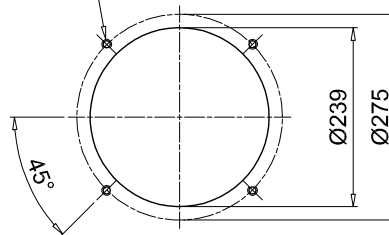


FILTER ELEMENT		
Series CUC	Example: CUC	850 10 A0025 D A 00 NN P01 NN
Size 850		
Length 10		
Filtration rating (filter media)		
A0003 Inorganic microfiber	3 µm	
A0006 Inorganic microfiber	6 µm	
A0010 Inorganic microfiber	10 µm	
A0016 Inorganic microfiber	16 µm	
A0025 Inorganic microfiber	25 µm	
M0025 Wire mesh	25 µm	
M0060 Wire mesh	60 µm	
M0090 Wire mesh	90 µm	
P0010 Resin impregnated paper	10 µm	
P0025 Resin impregnated paper	25 µm	
Element Δp D 10 bar		
Seals and treatments		
A NBR		
V FPM		
W NBR with tinned tube		
Z FPM with tinned tube		
Bypass 00 Without bypass		
Additional features NN Without additional features		
Execution P01 Standard catalogue item		
Certificates NN None		



HOLES ON THE TANK

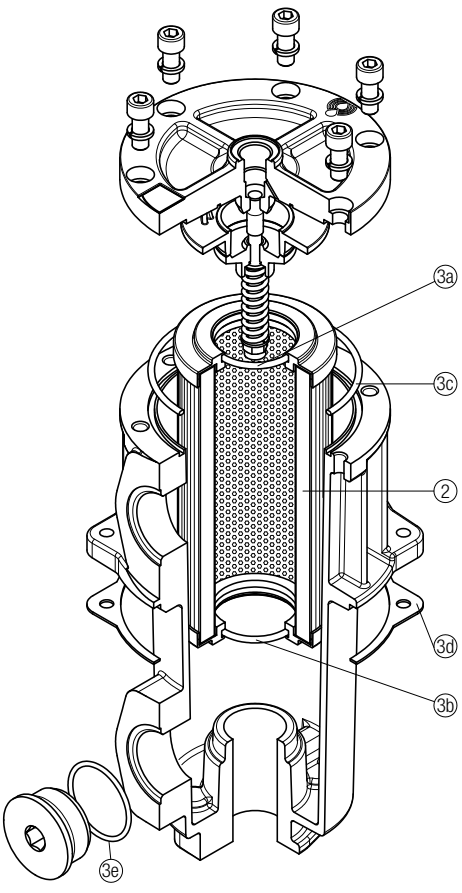
M14 or 1/2" UNC
Nr. 4 holes



FRIC SPARE PARTS

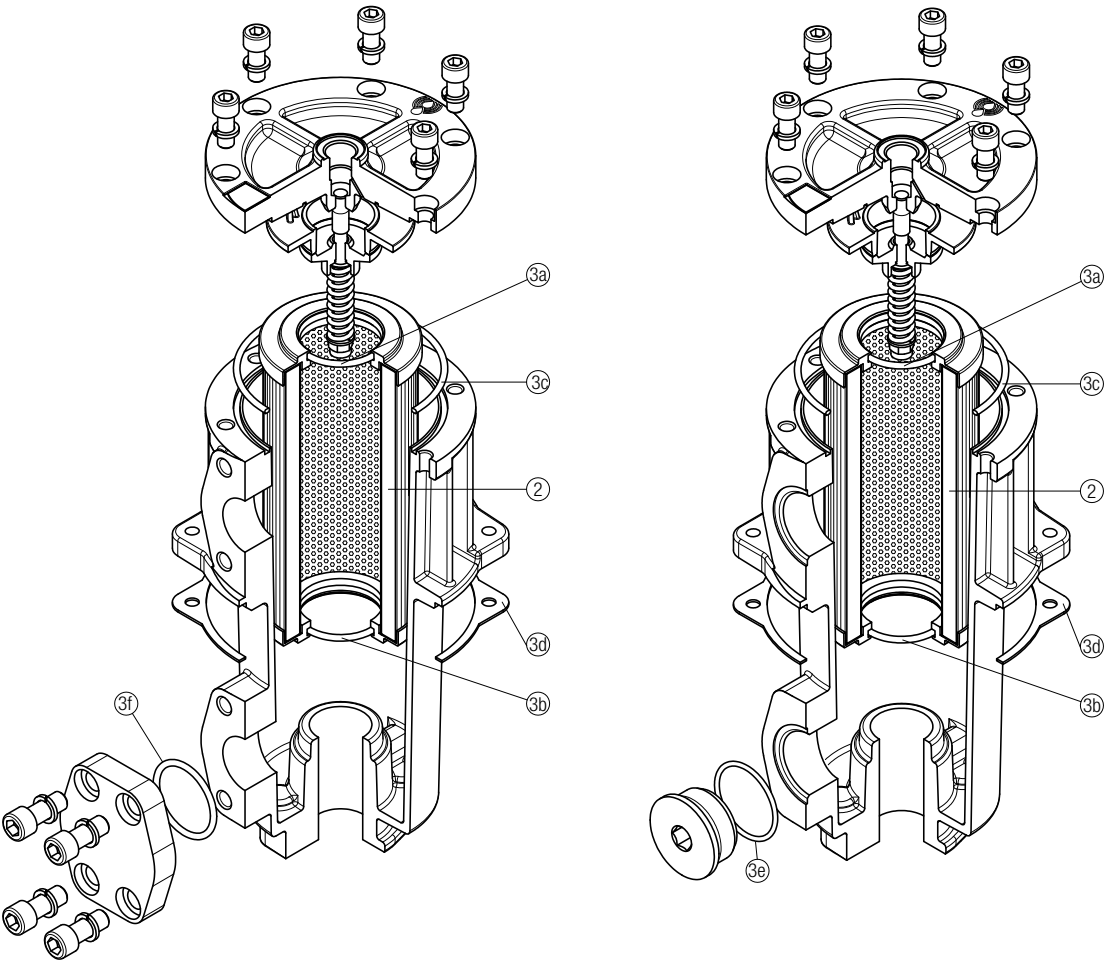
Order number for spare parts

FRIC 025 - 040



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number	
		NBR	FPM
FRIC 025	See order table	02050213	02050220
FRIC 040	See order table	02050214	02050221

FRIC 100 - 250 - 630

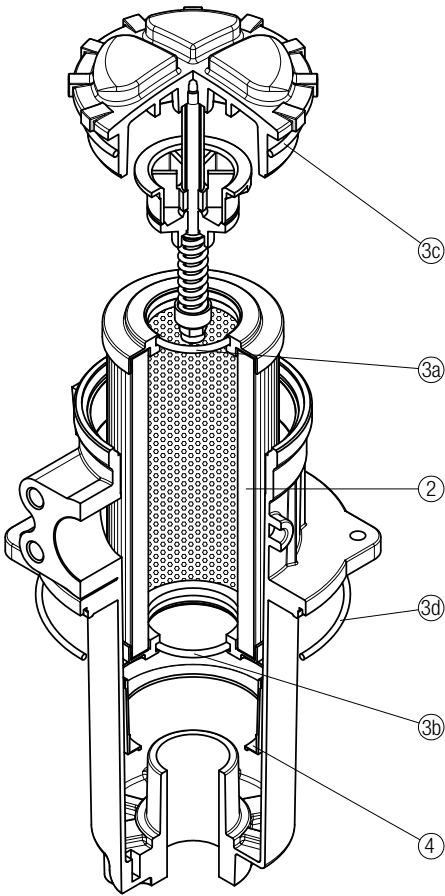


Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	2	3 (3a - 3f)	
Filter series	Filter element	Seal Kit code number	
		NBR	FPM
FRIC 100	See order table	02050215	02050222
FRIC 250		02050216	02050223
FRIC 630		02050217	02050224

FRIC SPARE PARTS

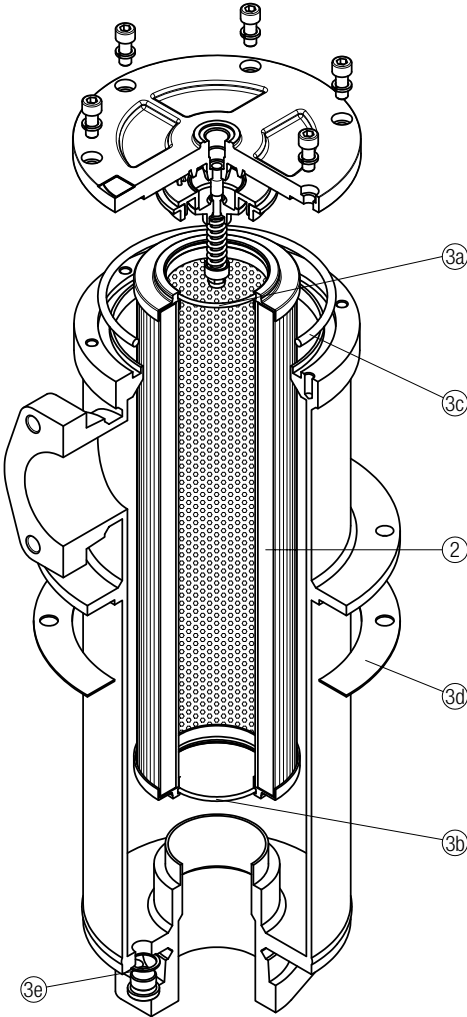
Order number for spare parts

FRIC 255



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 1 pc.
Filter series	Filter element	Seal Kit code number		Contamination retainer binder
		NBR	FPM	
FRIC 255	See order table	02050013	02050014	01060301

FRIC 850



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