

MPT series

Maximum working pressure up to 0.8 MPa (8 bar) - Flow rate up to 300 l/min



Description

Return filter

Maximum working pressure up to 0.8 MPa (8 bar)
Flow rate up to 300 l/min

MPT is a range of return filters with integrated breather filter, for protection of the reservoir against the system contamination. They are directly fixed to the reservoir, in immersed or semi-immersed position. 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 1 1/4", for a maximum flow rate of 300 l/min
- Multiple connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve integrated into the filter element, to relieve excessive pressure drop across the filter media
- 2, 3 or 6 fixing holes for installation, to suit a variety of reservoir surfaces
- O-ring or Flat Seal to suit a variety of reservoir surfaces
- Screw-in cover with a special shape, to allow the filter element replacement without the use of specific tools
- Oil dipstick, to easily check the level of the fluid into the reservoir (sold as separate item)
- Extension tube, to be used in deep reservoirs (sold as separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise (sold as separate item)
- Integrated breather filter, to clean the air that moves into the reservoir as result of the oil level fluctuation
- Integrated breather filter with pressurization valve, to clean the air that moves into the reservoir as result of the oil level fluctuation and to guarantee the pressurization into the reservoir
- Visual, electrical and electronic clogging indicators

Common applications:

- Light industrial equipment
- Mobile application

Technical data

Filter housing materials

- Head: Aluminium
- Cover: Polyamide
- Bowl: Polyamide

Pressure

- Test pressure: 1.2 MPa (12 bar)
- Min. Burst pressure: 2.4 MPa (24 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 0.8 MPa (8 bar)

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar) $\pm 10\%$
- Opening pressure 0.3 MPa (3 bar) $\pm 10\%$

Filter element features

Filter MPT		Filter element MF	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	H	10 bar
M - Wire mesh	Standard	N	10 bar
P - Paper	Standard	N	10 bar
<i>Please see ordering code tables to check element Δp series availability based on filter features.</i>			
Flow direction 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

MPT filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm ³]				
	Length	1	2	3	4	Length	1	2	3	4
MPT 025		0.41	0.45	0.50	-		0.24	0.35	0.42	-
MPT 027		0.44	0.48	0.55	-		0.24	0.35	0.42	-
MPT 110		1.00	1.05	1.15	1.40		0.72	0.93	1.28	1.74
MPT 114		1.10	1.15	1.25	1.50		0.72	0.93	1.28	1.74
MPT 116		1.10	1.15	1.25	1.50		0.72	0.93	1.28	1.74
MPT 120		1.00	1.05	1.15	1.40		0.72	0.93	1.28	1.74

Flow rates [l/min]

Filter series	Length	Filter element design - H series					Filter element design - N series		
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
MPT 025-027	1	7	10	23	28	42	59	51	54
	2	17	20	45	48	56	72	64	67
	3	21	24	50	55	59	76	74	75
MPT 110-114 116-120	1	18	20	53	56	65	153	87	96
	2	28	38	65	75	95	158	111	123
	3	48	55	125	135	169	289	224	251
	4	79	89	180	185	198	306	264	289

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

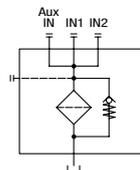
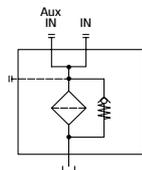
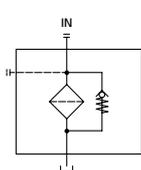
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

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.

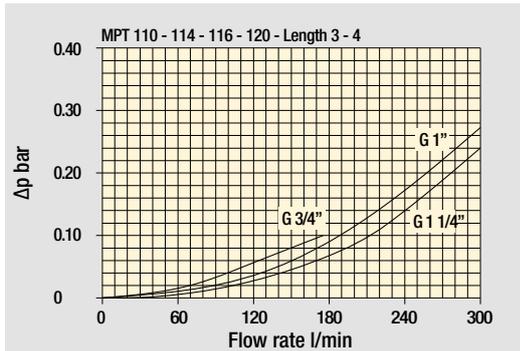
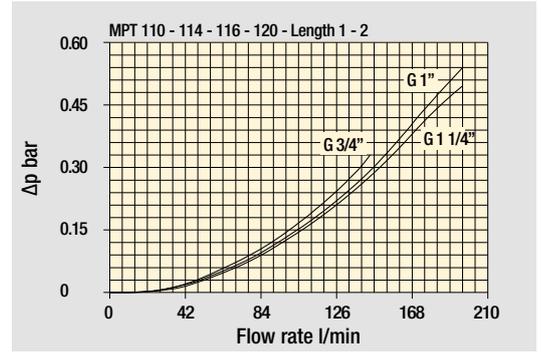
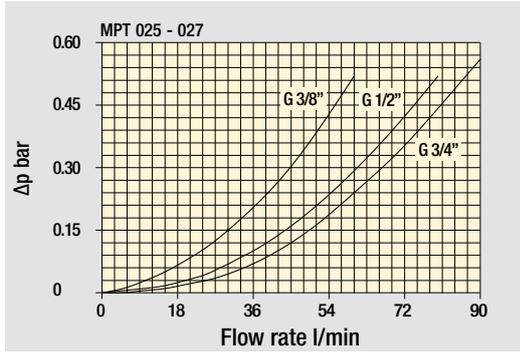
Hydraulic symbols

Filter series	Style 1 connection	Style 2 connections	Style 3 connections
MPT 025	•	-	-
MPT 027	•	-	-
MPT 110	-	•	-
MPT 114	•	-	-
MPT 116	•	-	-
MPT 120	-	-	•

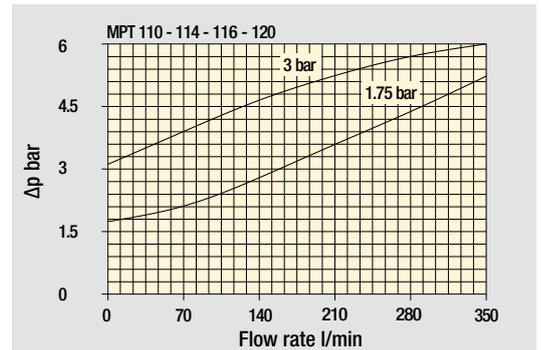
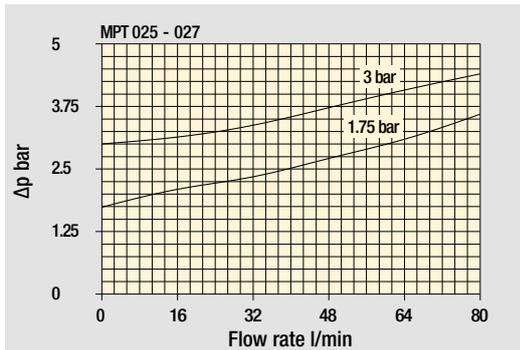


Pressure drop

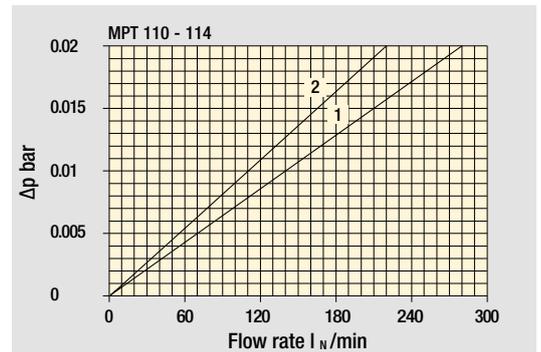
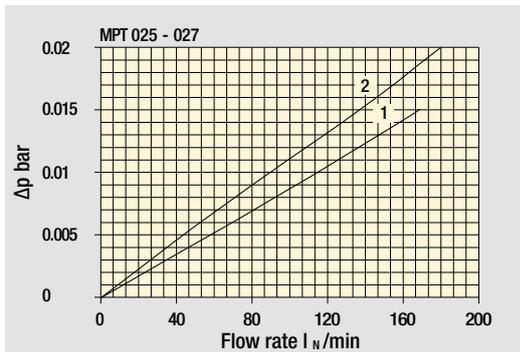
Filter housings Δp pressure drop



Bypass valve pressure drop



Air breather pressure drop



- 1 C With air breather 10 μ m
- 2 D With anti-splash and SAP50 10 μ m

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

MPT 025 -027		
Air breather port plugged Indicator port	Air breather standard Indicator port	Anti-splash air breather & pressurized Double indicator port
		

Multiport - Multifunction

MPT 110	
Standard - Single IN Port	Double IN Port - Double indicator port
	
Double IN Port Option: double drain port	Double IN Port - Indicator port Option: drain port
	

MPT 120

Triple IN port
Option: double drain port



MPT MPT025 - MPT027

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example 1:		MPT025	1	S	A	G3	A10	E	P01		
MPT025	MPT027	Filter element with standard spigot		Configuration example 2:		MPT027	3	C	W	G6	A03	B	P01
Length													
1		2		3									
Air breather													
S		Without air breather											
C		With air breather 10 µm											
D		With anti-splash and air breather SAP050 10 µm											
P		With anti-splash and air breather SAP050 10 µm, pressurization 0.5 bar											
Seals and treatments		Filtration rating											
		Axx		Mxx		Pxx							
A		NBR		•		•		•					
V		FPM		•		•		•					
W		NBR head anodized		•		•		-					
Z		FPM head anodized		•		•		-					
Connections													
G1		G 3/8"		G6		3/4" NPT							
G2		G 1/2"		G7		SAE 6 - 9/16" - 18 UNF							
G3		G 3/4"		G8		SAE 8 - 3/4" - 16 UNF							
G4		3/8" NPT		G9		SAE 12 - 1 1/16" - 12 UN							
G5		1/2" NPT											
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							
										Bypass valve		Execution	
										E		P01	
										3 bar		MP Filtri standard	
										B		Pxx	
										1.75 bar		Customized	

FILTER ELEMENT

Element series and size		Configuration example 1:		MF020	1	A10	H	B	E	P01	
MF020	Filter element with standard spigot		Configuration example 2:		MF020	3	A03	N	B	P01	
Element length											
1		2		3							
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		Filter media									
		Axx		Mxx		Pxx					
N		10 bar		-		•		•			
H		10 bar		•		-		-			
										Seals	
										B	
										NBR	
										V	
										FPM	
										Bypass valve	
										E	
										3 bar	
										Pxx	
										1.75 bar	
										Execution	
										P01	
										MP Filtri standard	
										Pxx	
										Customized	

CLOGGING INDICATORS

See pages 712-713

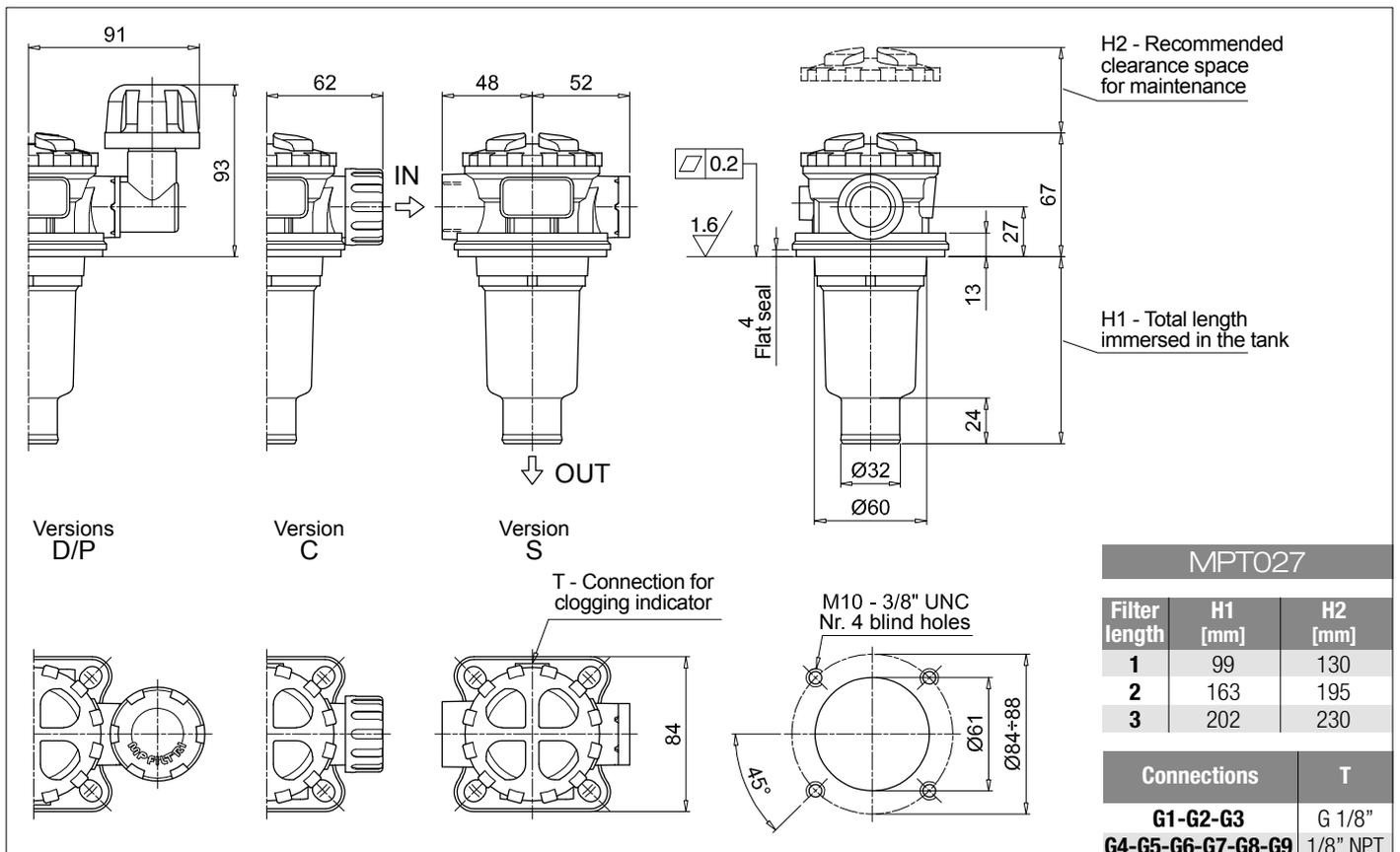
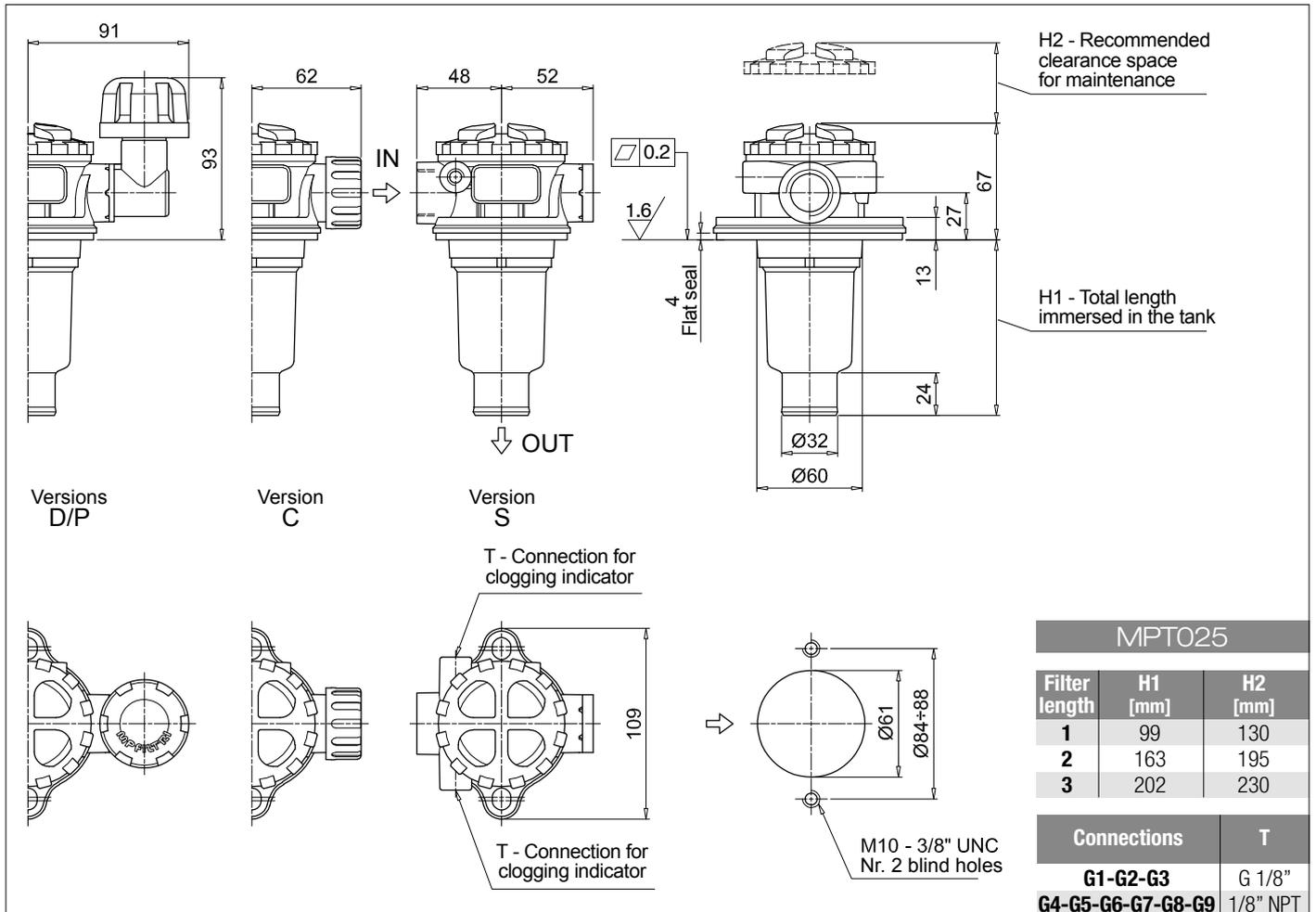
BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset

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

ADDITIONAL FEATURES

See pages 268-269

TE	Extension tube
DPT	Dipstick



Designation & Ordering code

COMPLETE FILTER

Series and size			Configuration example 1: MPT110 1 S A G1 0 A06 E P01								
MPT110 Filter element with standard spigot			Configuration example 2: MPT110 3 P V G4 1 M25 B P01								
Length											
1 2 3 4											
Air breather											
S Without air breather											
C With air breather 10 µm											
D With anti-splash and air breather SAP050 10 µm											
P With anti-splash and air breather SAP050 10 µm, pressurization 0.5 bar											
Seals and treatments			Filtration rating								
			Axx	Mxx	Pxx						
A NBR			•	•	•						
V FPM			•	•	•						
W NBR head anodized			•	•	-						
Z FPM head anodized			•	•	-						
Main Connections		Aux size 1	Aux size 2	Main Connections		Aux size 1	Aux size 2				
G1 G 3/4"		G 3/8"	G 1/2"	G6 1 1/4" NPT		3/8" NPT	1/2" NPT				
G2 G 1"				G7 SAE 12 - 1 1/16" - 12 UN		SAE 6 - 9/16" - 18 UNF	SAE 8 - 3/4" - 16 UNF				
G3 G 1 1/4"				G8 SAE 16 - 1 5/16" - 12 UN							
G4 3/4" NPT		3/8" NPT	1/2" NPT	G9 SAE 20 - 1 5/8" - 12 UN							
G5 1" NPT											
Aux connection - see previous table											
0 Not machined 1 Aux size 1 2 Aux size 2											
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								
						Bypass valve		Execution			
						E 3 bar		P01 MP Filtri standard			
						B 1.75 bar		Pxx Customized			

FILTER ELEMENT

Element series and size			Configuration example 1: MF100 1 A06 H B E P01								
MF100 Filter element with standard spigot			Configuration example 2: MF100 3 M25 N V P01								
Element length											
1 2 3 4											
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			Filter media			Seals		Bypass valve		Execution	
			Axx	Mxx	Pxx						
N 10 bar			-	•	•	B NBR		E 3 bar		P01 MP Filtri standard	
H 10 bar			•	-	-	V FPM		- 1.75 bar		Pxx Customized	

CLOGGING INDICATORS

See pages 712-713

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

ADDITIONAL FEATURES

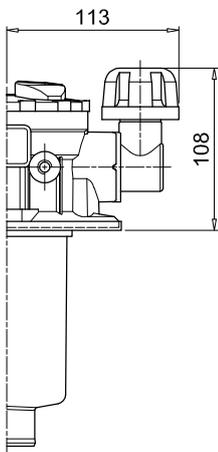
See pages 268-269

TE Extension tube
DFS Diffuser with fast lock connection

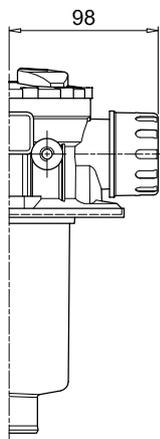
DPT Dipstick

MPT110				
Filter length	H1 [mm]	H2 [mm]	D [mm]	I [mm]
1	97	120	38	4
2	144	170	38	4
3	222	250	47	-
4	324	350	47	2.5

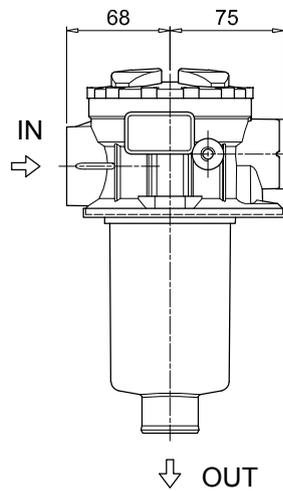
Connections	T
G1-G2-G3	G 1/8"
G4-G5-G6-G7-G8-G9	1/8" NPT



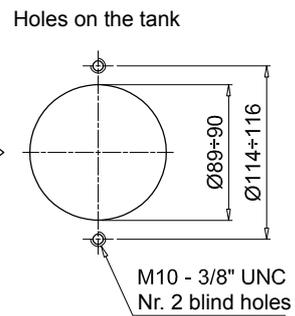
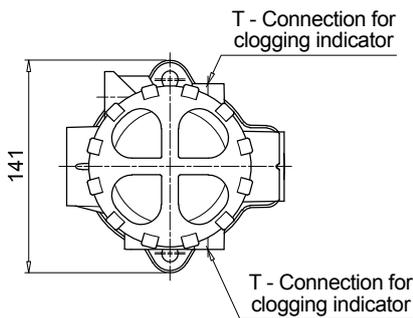
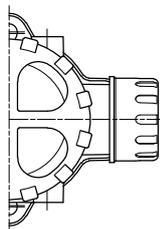
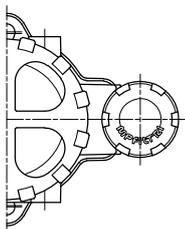
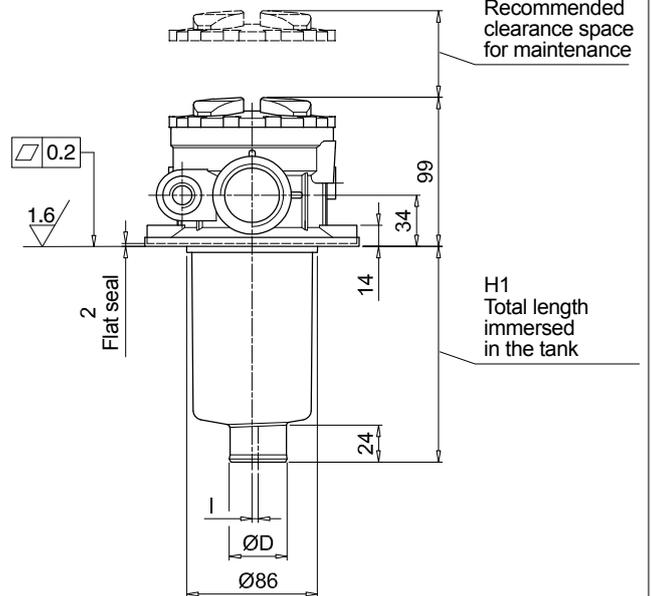
Versions D/P



Version C

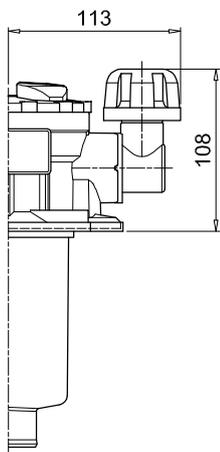


Version S

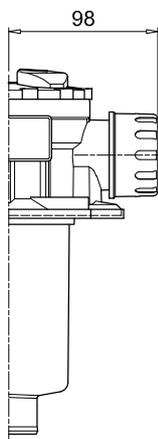


MPT114				
Filter length	H1 [mm]	H2 [mm]	D [mm]	I [mm]
1	97	120	38	4
2	144	170	38	4
3	222	250	47	-
4	324	350	47	2.5

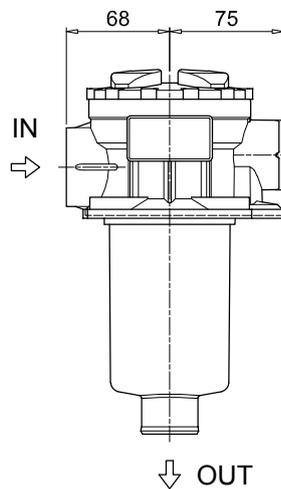
Connections	T
G1-G2-G3	G 1/8"
G4-G5-G6-G7-G8-G9	1/8" NPT



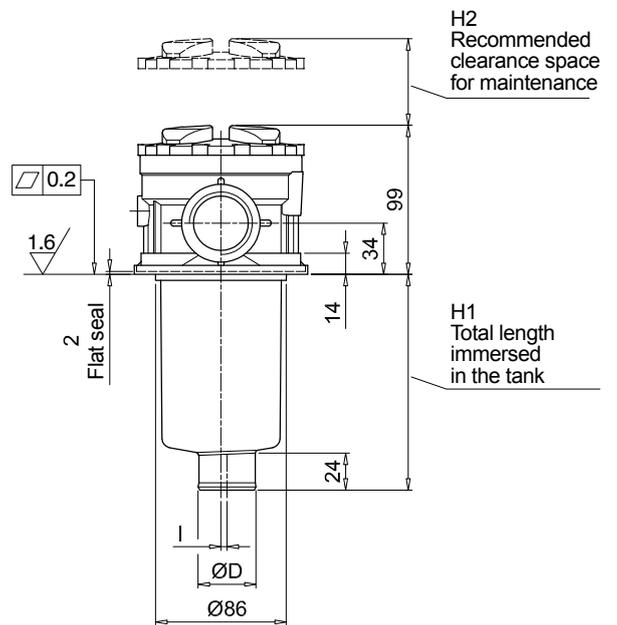
Versions D/P



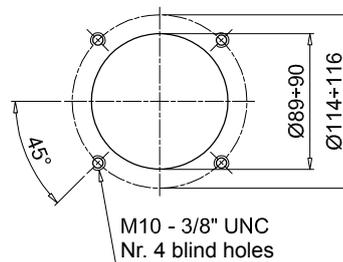
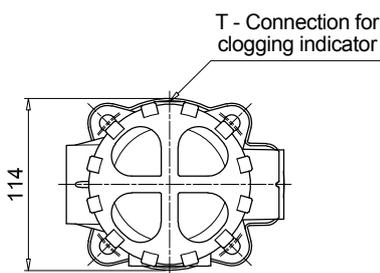
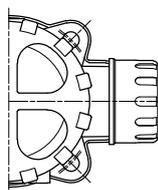
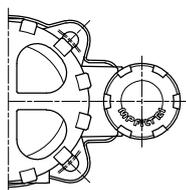
Version C



Version S



Holes on the tank



Designation & Ordering code

COMPLETE FILTER

Series and size	Configuration example 1:	MPT116	1	S	A	G1	M90	E	P01
MPT116 Filter element with standard spigot	Configuration example 2:	MPT116	2	S	Z	G9	A03	B	P01
Length									
1 2 3 4									
Air breather									
S Without air breather									
Seals and treatments	Filtration rating								
	Axx	Mxx	Pxx						
A NBR	•	•	•						
V FPM	•	•	•						
W NBR head anodized	•	•	-						
Z FPM head anodized	•	•	-						
Flat seal on the head on request									
Connections									
G1 G 3/4"	G6	1 1/4" NPT							
G2 G 1"	G7	SAE 12 - 1 1/16" - 12 UN							
G3 G 1 1/4"	G8	SAE 16 - 1 5/16" - 12 UN							
G4 3/4" NPT	G9	SAE 20 - 1 5/8" - 12 UN							
G5 1" NPT									
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							
	Bypass valve	Execution							
	E 3 bar	P01 MP Filtri standard							
	B 1.75 bar	Pxx Customized							

FILTER ELEMENT

Element series and size	Configuration example 2:	MF100	1	M90	N	B	E	P01
MF100 Filter element with standard spigot	Configuration example 1:	MF100	2	A03	H	V		P01
Element length								
1 2 3 4								
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	Filter media							
	Axx	Mxx	Pxx					
N 10 bar	-	•	•					
H 10 bar	•	-	-					
	Seals	Bypass valve		Execution				
	B NBR	E 3 bar		P01 MP Filtri standard				
	V FPM	- 1.75 bar		Pxx Customized				

CLOGGING INDICATORS

See pages 712-713

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

ADDITIONAL FEATURES

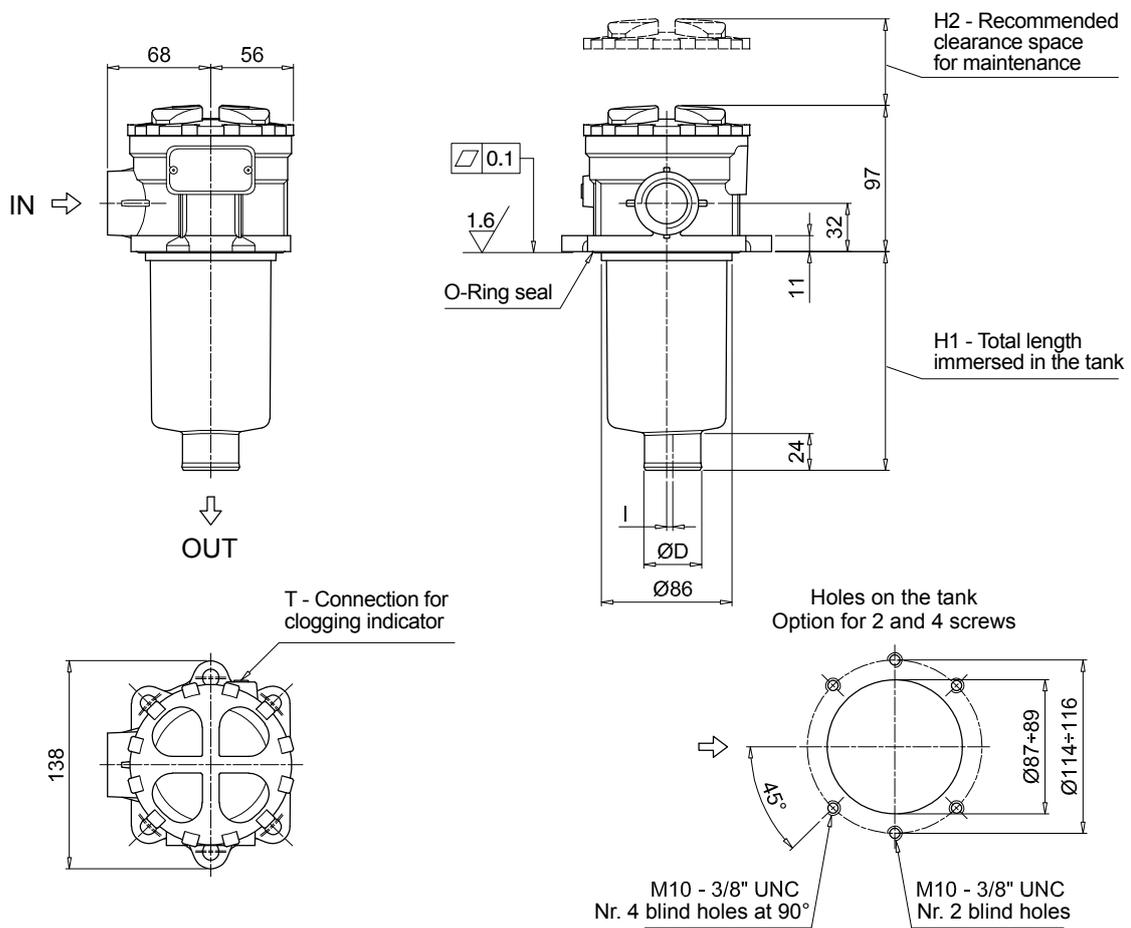
See pages 268-269

TE Extension tube
DFS Diffuser with fast lock connection

DPT Dipstick

MPT116				
Filter length	H1 [mm]	H2 [mm]	D [mm]	I [mm]
1	99	120	38	4
2	146	170	38	4
3	224	250	47	-
4	326	350	47	2.5

Connections	T
G1-G2-G3	G 1/8"
G4-G5-G6-G7-G8-G9	1/8" NPT



Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example 1: MPT120 1 A G1 0 A06 E P01											
MPT120 Filter element with standard spigot		Configuration example 2: MPT120 3 V G4 1 M25 B P01											
Length		1 2 3 4											
Seals and treatments		Filtration rating											
		Axx	Mxx	Pxx									
A	NBR	•	•	•									
V	FPM	•	•	•									
W	NBR head anodized	•	•	-									
Z	FPM head anodized	•	•	-									
Main Connections		Rear connections		Aux size 1		Aux size 2							
G1	G 3/4"	G 3/4"		G 3/8"		G 1/2"							
G2	G 1"	G 1"											
G3	G 1 1/4"	G 3/4"		3/8" NPT		1/2" NPT							
G4	3/4" NPT	3/4" NPT											
G5	1" NPT	1" NPT		SAE 6 - 9/16" - 18 UNF		SAE 8 - 3/4" - 16 UNF							
G6	1 1/4" NPT	3/4" NPT											
G7	SAE 12 - 1 1/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN		SAE 6 - 9/16" - 18 UNF		SAE 8 - 3/4" - 16 UNF							
G8	SAE 16 - 1 5/16" - 12 UN	SAE 16 - 1 5/16" - 12 UN											
G9	SAE 20 - 1 5/8" - 12 UN	SAE 12 - 1 1/16" - 12 UN											
Aux connection - see previous table													
0	Not machined	1	Aux size 1	2	Aux size 2								
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									
		Bypass valve		Execution									
		E		3 bar									
		B		1.75 bar									
				P01 MP Filtri standard									
				Pxx Customized									

FILTER ELEMENT

Element series and size		Configuration example 1: MF100 1 A06 H B E P01								
MF100 Filter element with standard spigot		Configuration example 2: MF100 3 M25 N V P01								
Element length		1 2 3 4								
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		Filter media			Seals		Bypass valve		Execution	
N	10 bar	Axx	Mxx	Pxx	B		E		P01	
		-	•	•	NBR		3 bar		MP Filtri standard	
H	10 bar	•	-	-	V		- 1.75 bar		Pxx	
					FPM				Customized	

CLOGGING INDICATORS

See pages 712-713

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

ADDITIONAL FEATURES

See pages 268-269

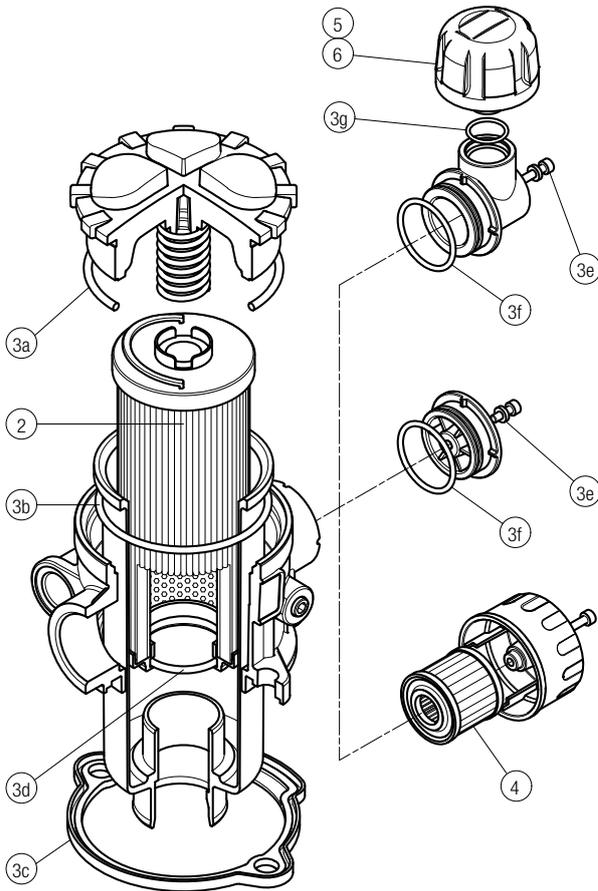
TE	Extension tube
DFS	Diffuser with fast lock connection

DPT	Dipstick
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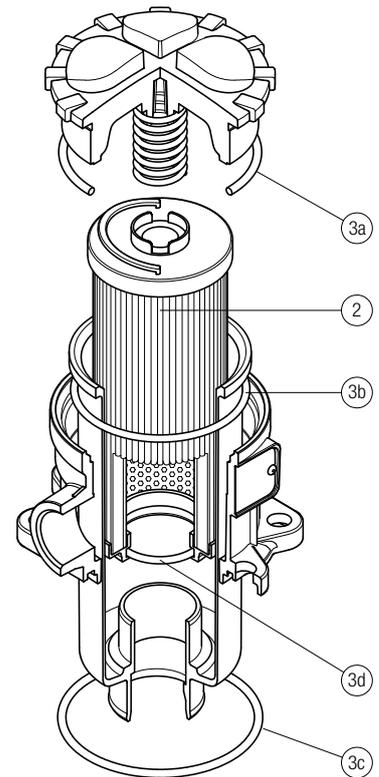
MPT SPARE PARTS

Order number for spare parts

MPT 025 - 027 - 110



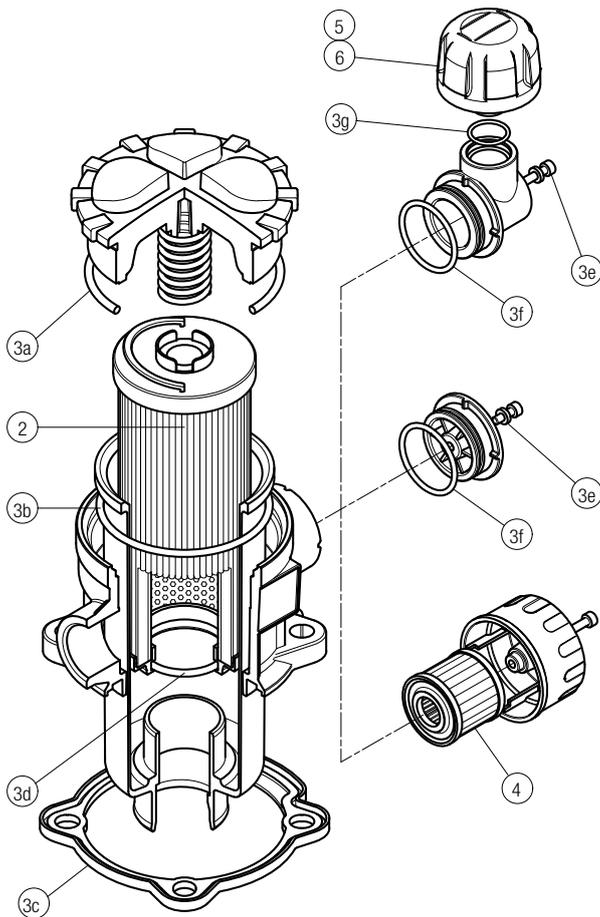
MPT 116



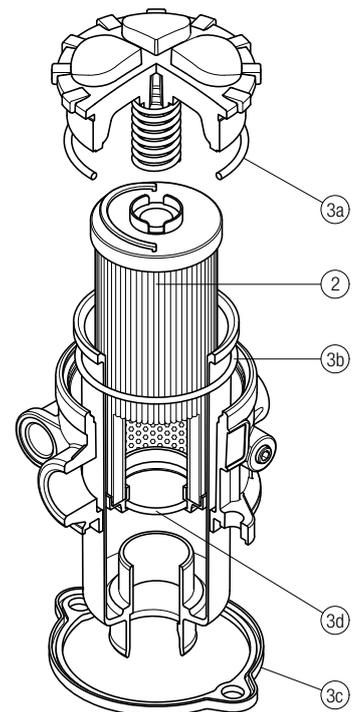
Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		C	D	P
		NBR	FPM			
MPT 025	See order table	02050557	02050558	10 µm A3L03	10 µm SAP50G3L03A0P01	10 µm SAP50G3L03A1P01
MPT 027		02050559	02050560	10 µm A3L03	10 µm SAP50G3L03A0P01	10 µm SAP50G3L03A1P01
MPT 110		02050561	02050562	10 µm A5L03	10 µm SAP50G3L03A0P01	10 µm SAP50G3L03A1P01

Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number	
		NBR	FPM
MPT 116	See order table	02050466	02050467

MPT 114



MPT 120



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.
	2	3 (3a ÷ 3g)	4	5	6
Filter series	Filter element	Seal Kit code number		Air breather filter element - version:	
		NBR	FPM	C	D
MPT 114	See order table	02050580	02050581	10 µm A5L03	10 µm SAP50G3L03A0P01
					10 µm SAP50G3L03A1P01

Item:	Q.ty: 1 pc.	Q.ty: 1 pc.
	2	3 (3a ÷ 3d)
Filter series	Filter element	Seal Kit code number
		NBR
		FPM
MPT 120	See order table	02050563
		02050564