

MRSX series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 250 l/min



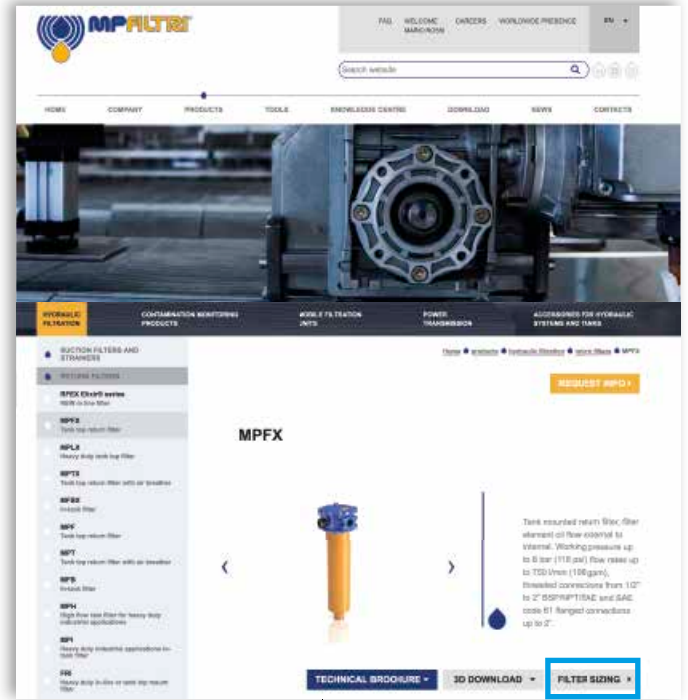
TYPICAL FILTER SIZING Selection Software

Step ①

Select "FILTER SIZING SOFTWARE" after login

OR

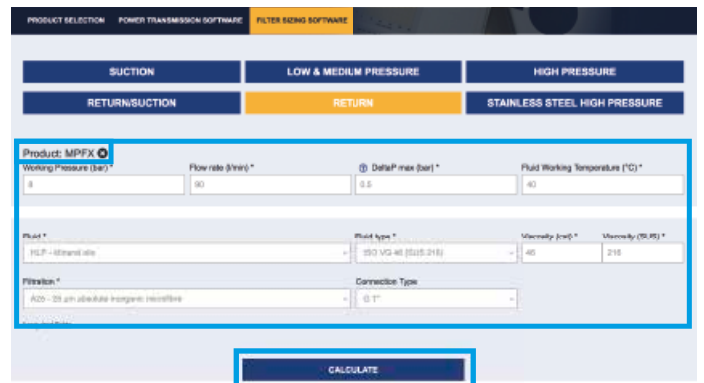
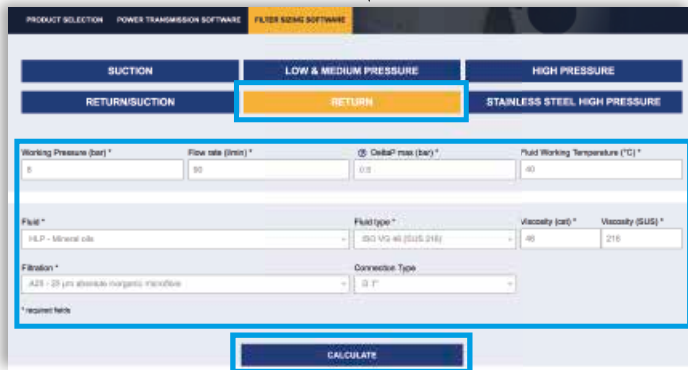
Select "FILTER SIZING" after login from a product page



Choose the type of filter family.
Enter the main data for sizing the filter
then push CALCULATE.

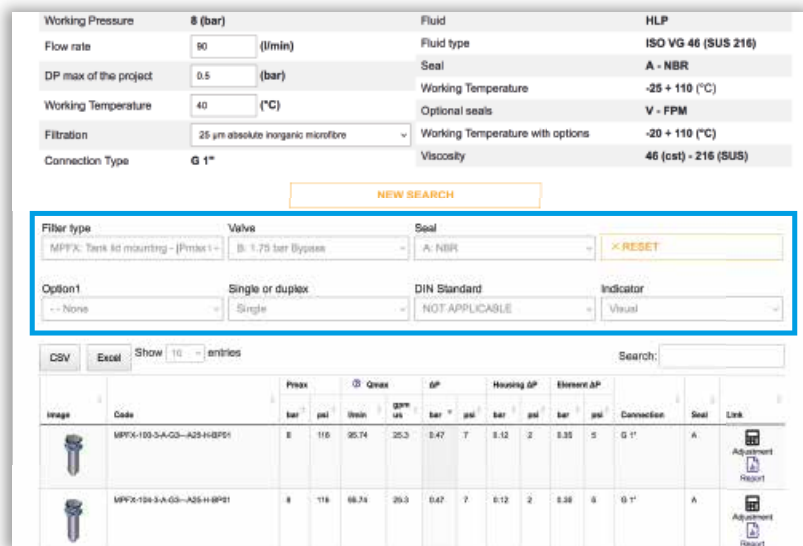
Step ②

Enter the main data for sizing the filter
then push CALCULATE.



Step ③

Select the desired options to choose the appropriate filter type for the application.



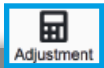
Step 4

Choose the most suitable filter from the proposed list.

Image	Code	Peak bar	Qmax psi	Qmax m³/min	Qmax gpm us	AP bar	AP psi	Housing AP bar	Housing AP psi	Element AP bar	Element AP psi	Connection	Seal	Link
	MPFX-103-3-A-Q3-A25-H-BPFI	8	116	25.74	25.3	0.47	7	0.12	2	0.33	5	G 1"	A	Adjustment Report
	MPFX-104-3-A-Q3-A25-H-BPFI	8	116	25.74	25.3	0.47	7	0.12	2	0.33	5	G 1"	A	Adjustment Report

Step 5

It is possible to change the filter modifying every parameter.



A SAVE YOUR FILTER'S REPORT



B MANUAL EDIT



SAVE IN YOUR ARCHIVE
typing your reference data and then SAVE AS PDF



A new browser window displays the pdf

see **A**

Close the report window



By clicking your WELCOME button, the SHOW REPORTS is displayed: select it to see your filters list.



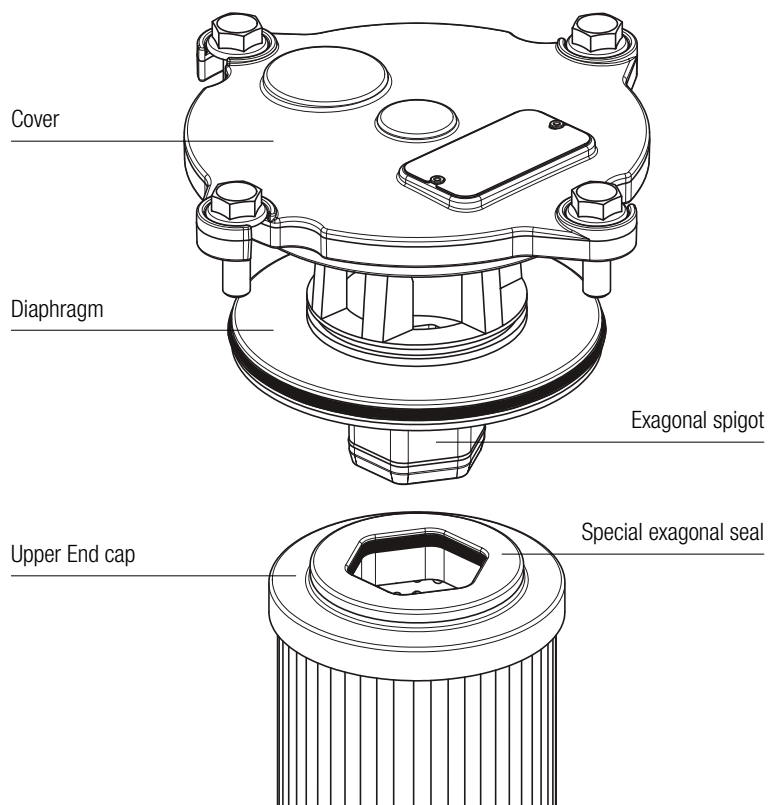
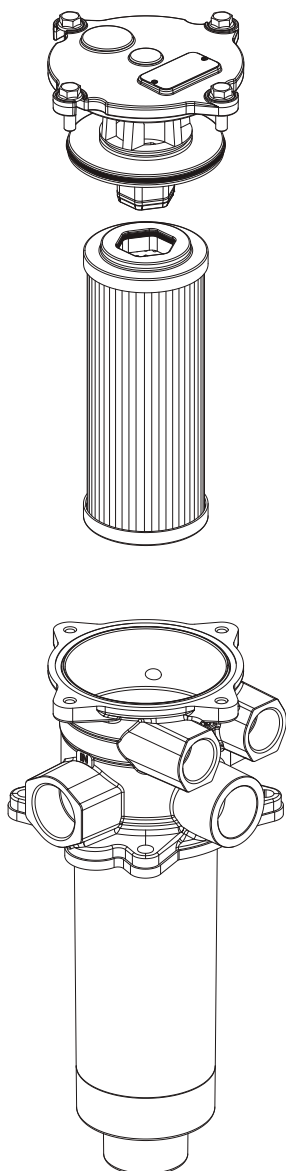
THE NEW FILTER CONCEPT

MRSX
RSX
series

NEW FILTER ELEMENT WITH EXCLUSIVE INTERFACE CONNECTION

- ◆ **Protects the machine from improper use of non-original products.**
- ◆ **Safety of constant quality protection & reliability**

With exclusive filter element you are sure that only MP Filtri filter elements can be used, ensuring the best cleaning level of the oil due to the use of originals filter elements.



The products identified as MRSX and RSX are protected by:

- ◆ Italian Patent n° 102014902261205
- ◆ Canadian Patent n° 2,937,258
- ◆ European Patent n° 16181725.9
- ◆ US Patent n° 15/224,337

Description

Technical data

Return / Suction filter

Tank mounted

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 250 l/min

MRSX is a range of suction/return filters for hydraulic systems with two or more circuits (both open and closed loops). They are able to provide pressurized oil cleaned by fine filtration to the feed pump of the hydrostatic systems.

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 return connections up to 1 1/4", for a maximum return flow rate of 300 l/min
- Multiple connections, to connect several return and suction lines
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve to the tank, to relieve excessive pressure drop across the filter media when the return flow is enough higher than the suction flow
- Bypass valve to the suction line with additional suction filter element, to relieve excessive pressure drop across the filter media when the return flow is not enough higher than the suction flow
- De-pressurization valve, to reduce the pressure inside the filter during the maintenance operations
- Anti-cavitation valve with additional suction filter element, to ensure fluid to the feed pump of the hydrostatic systems during cold starts or initial filling
- O-ring or Flat Seal to suit a variety of reservoir surfaces
- Reservoir side mounting, to save space in the machines
- Visual, electrical and electronic clogging indicators
- MYclean interface connection, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

Mobile machines with hydrostatic systems on board
 (i.e. skid steer loaders, telehandlers, dumpers, road sweepers)

Filter housing materials

- Head: Aluminium
- Cover
 Nylon: MRSX 116
 Aluminium: MRSX 165-166
- Bowl: Nylon

Δp element type

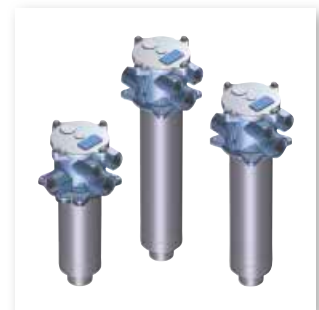
- RSX: 10 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C



FILTER ASSEMBLY SIZING

Flow rates [l/min]

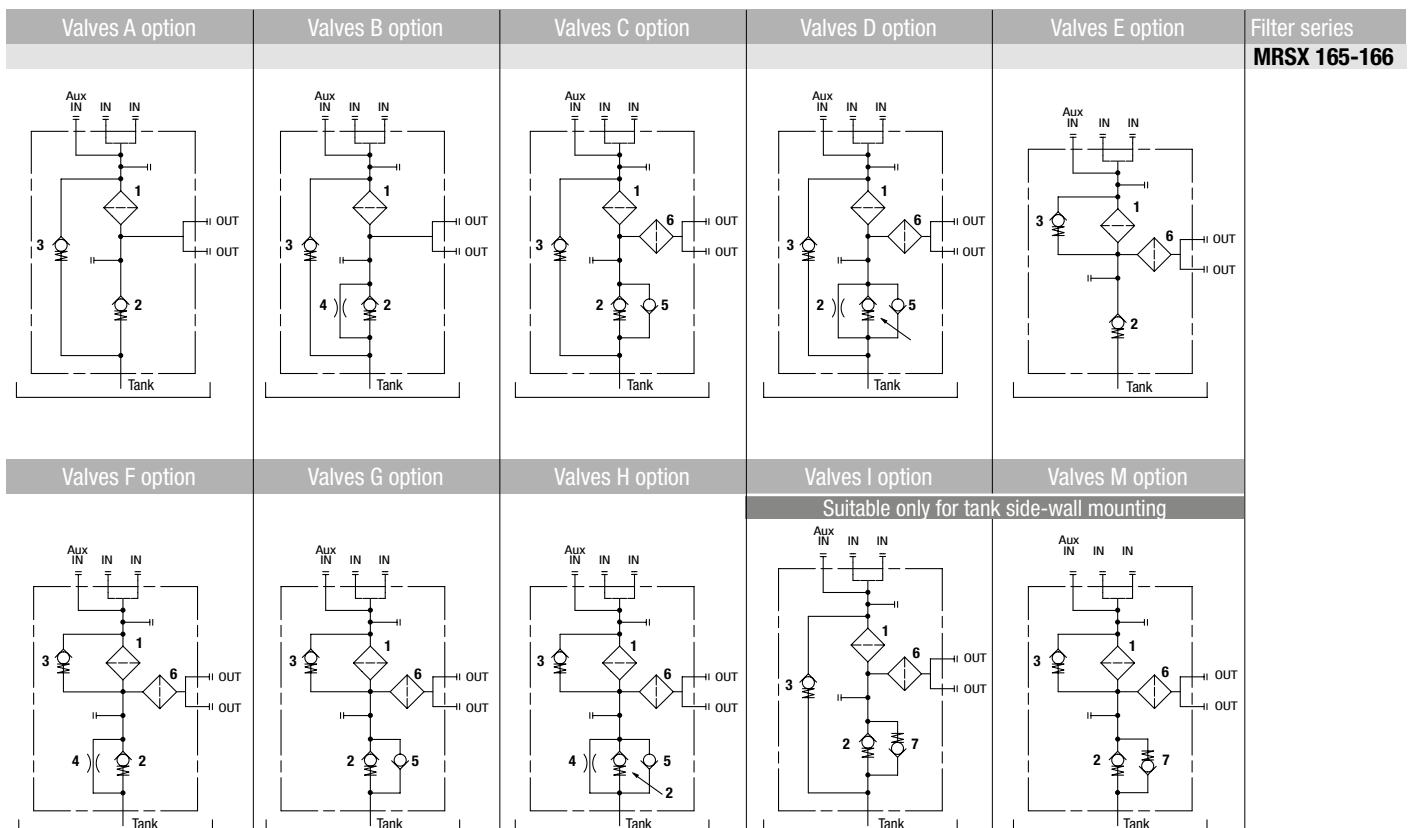
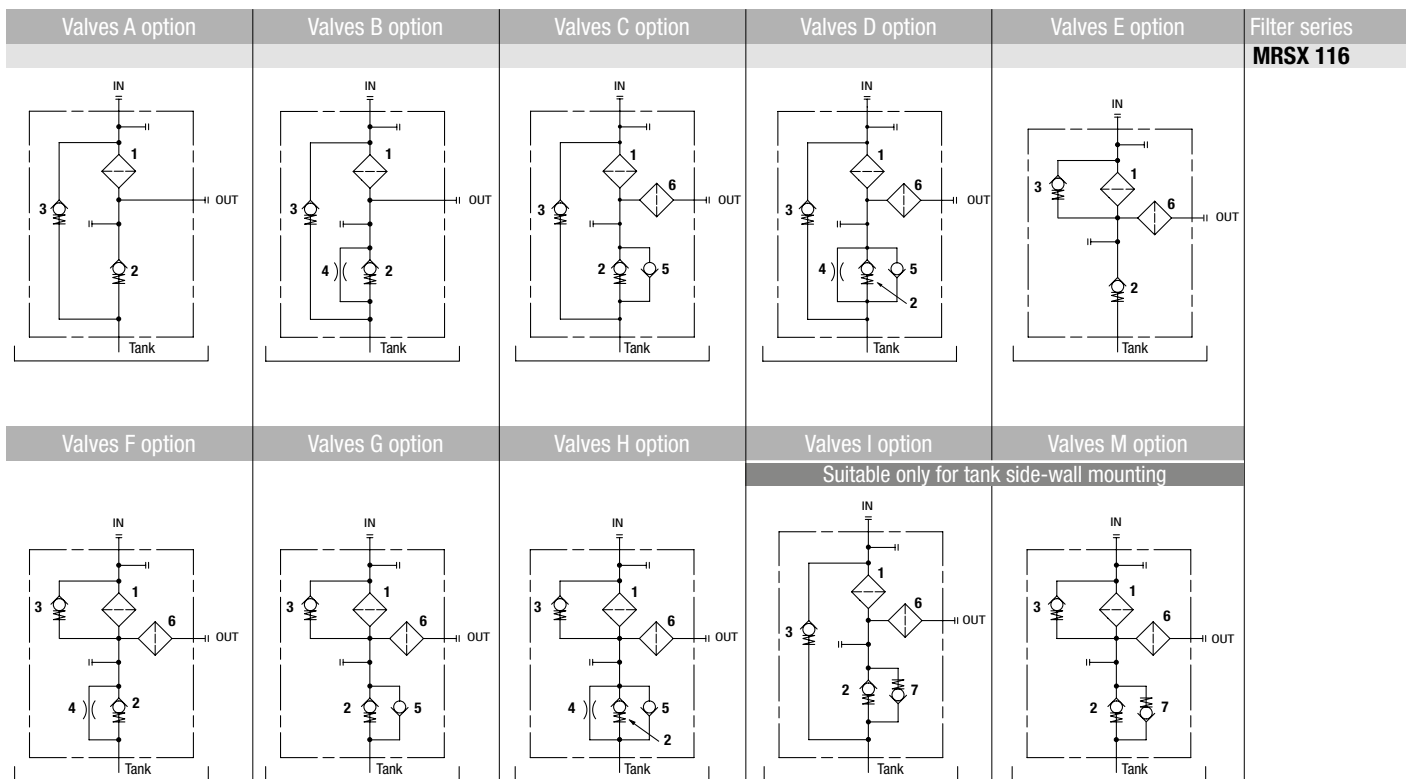
Filter series	Length	A10	A16	A25
MRSX 116	1	74	82	87
	2	108	113	124
MRSX 165 - 166	1	155	166	178
	2	187	196	200
	3	201	205	217

Maximum flow rate for a complete return/suction filter with a pressure drop Δp = 1 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.mpfiltr.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.



LEGEND

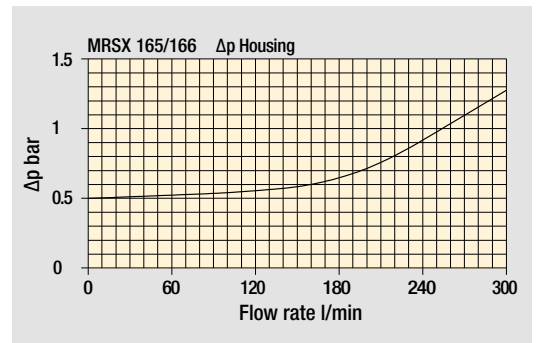
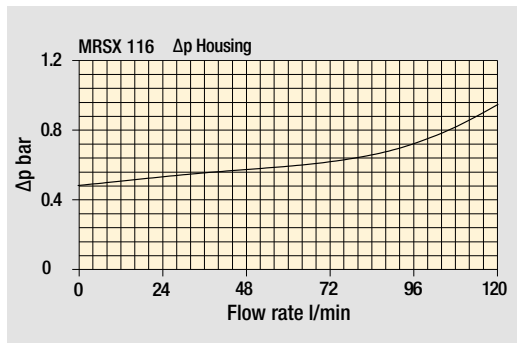
- 1 - Filter element
- 2 - Back-Pressure valve: opening pressure 0.5 bar \pm 10%
- 3 - Bypass valve: opening pressure 2.5 bar \pm 10%
- 4 - Depressurization valve

- 5 - Anti-Cavitation valve
- 6 - Safety filter element (wire mesh 60 μ m)
- 7 - Anti-Cavitation valve / Anti-Emptying valve

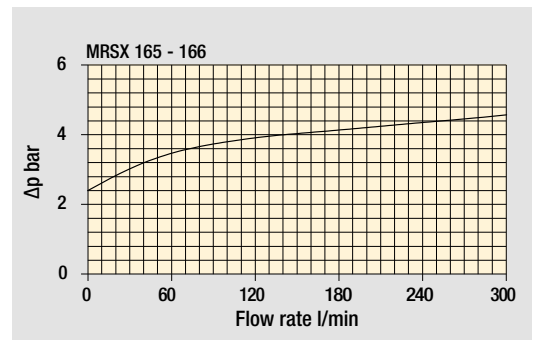
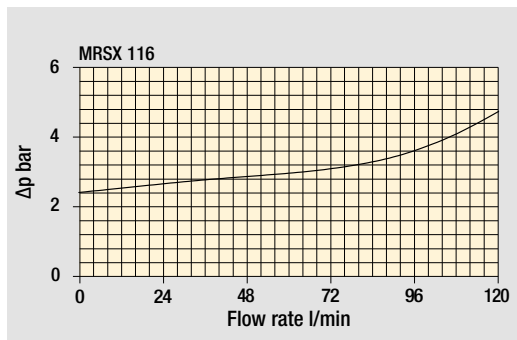
MRSX GENERAL INFORMATION

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.

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm ³]				
	Length	1	2	3	Length	1	2	3
MRSX 116		1.30	1.40	-		0.80	1.00	-
MRSX 165		3.40	3.80	4.10		2.00	2.60	3.00
MRSX 166		3.40	3.80	4.10		2.00	2.60	3.00

Designation & Ordering code

COMPLETE FILTER

Series and size **MRSX116** Filter element with private spigot Configuration example: **MRSX116** | **1** | **B** | **A** | **G1** | **0** | **A16** | **B** | **P01**

Length **1** | **2**

Hydraulic diagram configuration - see page 257

Bypass valve to tank				Bypass valve to OUT			
A	B	C	D				
E	F	G	H				
I							
M							

Seals and treatments

A NBR, O-Ring on head	B NBR, flat seal on head
V FPM, O-Ring on head	D FPM, flat seal on head

Connections IN	Connections OUT
G1 G 3/4"	G 3/4"
G2 G 1"	G 1"
G3 3/4" NPT	3/4" NPT
G4 1" NPT	1" NPT
G5 SAE 12 - 1 1/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN
G6 SAE 16 - 1 5/16" - 12 UN	SAE 16 - 1 5/16" - 12 UN
D1 G 1"	G 3/4"
D2 1" NPT	3/4" NPT
D3 SAE 16 - 1 5/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN

Aux IN connection **0** Without aux IN connection

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm

A16 Inorganic microfiber 16 µm

A25 Inorganic microfiber 25 µm

Mounting position	Valves configuration									
	A	B	C	D	E	F	G	H	I	M
S Standard	•	•	•	•	•	•	•	•		
B Tank side-wall mounting	•	•			•	•			•	•

Execution

P01 MP Filtri standard

Pxx Customized

FILTER ELEMENT

Element series and size **RSX116** Filter element with private spigot Configuration example: **RSX116** | **1** | **A16** | **A** | **P01**

Element length **1** | **2**

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm

A16 Inorganic microfiber 16 µm

A25 Inorganic microfiber 25 µm

Seals

A NBR

V FPM

Execution

P01 MP Filtri standard

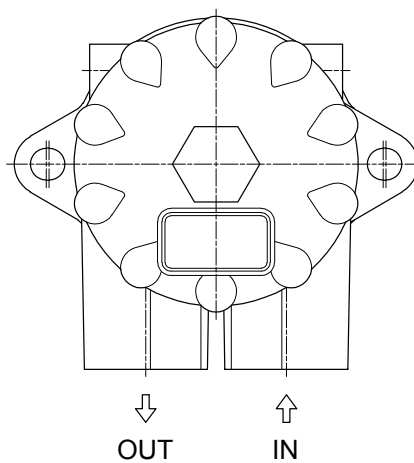
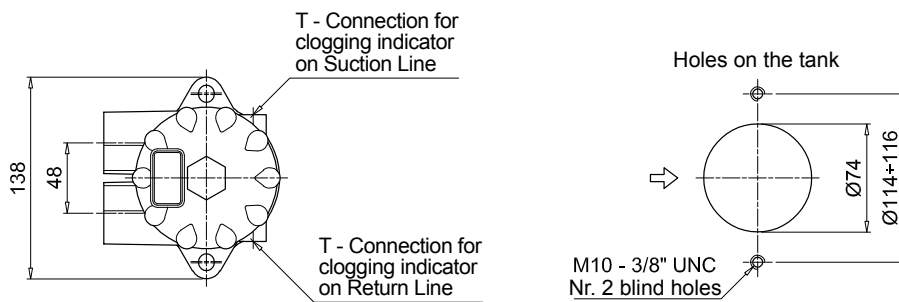
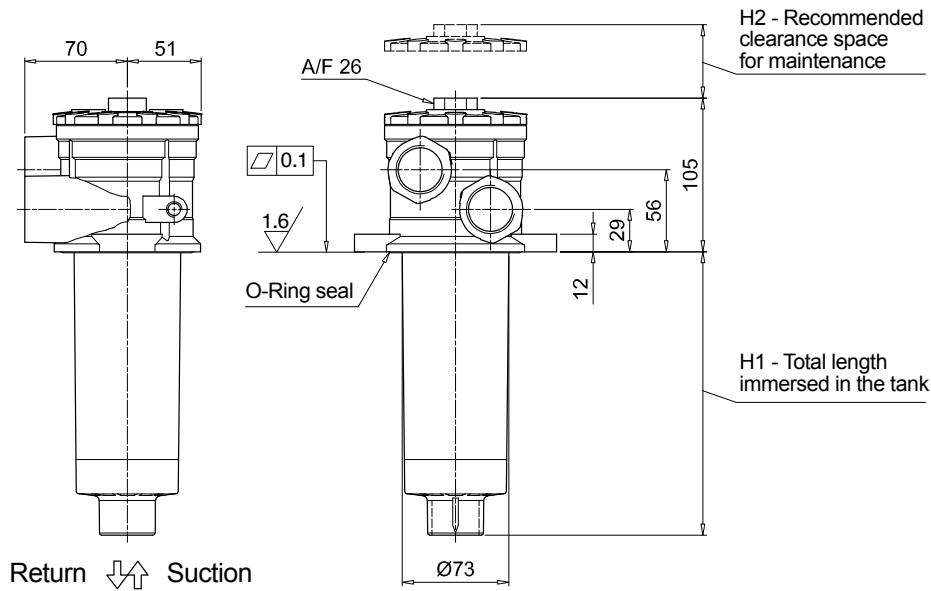
Pxx Customized

ACCESSORIES

Indicators on Return Line		page	Indicators on Suction Line		page
BVA Axial pressure gauge		278	BEA Electrical pressure indicator		276
BVR Radial pressure gauge		278	BEM Electrical pressure indicator		276
BVP Visual pressure indicator with automatic reset		279	BET Electrical pressure indicator		276-277
BVQ Visual pressure indicator with manual reset		279	BLA Electrical / visual pressure indicator		277-278
VVB Axial vacuum gauge		275	VEB Electrical vacuum indicator		274
VVS Radial vacuum gauge		275	VLB Electrical / visual vacuum indicator		274

MRSX116		
Filter length	H1 [mm]	H2 [mm]
1	203	240
2	263	300

Connections	T
G1 - G2	G 1/8"
G3 - G4	1/8" NPT
G5 - G6	1/8" NPT
D1	G 1/8"
D2 - D3	1/8" NPT



MRSX MRSX165 - MRSX166

Designation & Ordering code

COMPLETE FILTER

Series and size Configuration example: **MRSX166** | **2** | **C** | **V** | **G3** | **1** | **A10** | **S** | **P01**

MRSX165 | **MRSX166** Filter element with private spigot

Length **1** | **2** | **3**

Hydraulic diagram configuration - see page 257

A	B	C	D	Bypass valve to tank	Bypass valve to OUT
				•	
E	F	G	H		•
I				•	
M					•

Seals and treatments

A	B
NBR, O-Ring on head	NBR, flat seal on head
FPM, O-Ring on head	FPM, flat seal on head

Connections

	IN (size 165)	IN (size 166)	Aux IN	OUT
G1	G 1 1/4"	G 1"	G 1 1/4"	G 1"
G2	1 1/4" NPT	1" NPT	1 1/4" NPT	1" NPT
G3	SAE 20 - 1 5/8" - 12 UN	SAE 16 - 1 5/16" - 12 UN	SAE 20 - 1 5/8" - 12 UN	SAE 16 - 1 5/16" - 12 UN

Aux IN connection

	MRSX 165	MRSX 166
0 Without aux IN connection	•	-
1 With aux IN connection - see previous table	•	•

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm

A16 Inorganic microfiber 16 µm

A25 Inorganic microfiber 25 µm

Valves configuration

Mounting position	A	B	C	D	E	F	G	H	I	M
S Standard	•	•	•	•	•	•	•	•		
B Tank side-wall mounting	•	•			•	•			•	•

Execution

P01 MP Filtri standard

Pxx Customized

FILTER ELEMENT

Element series and size Configuration example: **RSX165** | **2** | **A10** | **V** | **P01**

RSX165 Filter element with private spigot

Element length **1** | **2** | **3**

Filtration rating (filter media)

A10 Inorganic microfiber 10 µm

A16 Inorganic microfiber 16 µm

A25 Inorganic microfiber 25 µm

Seals

A	V
NBR	
FPM	

Execution

P01 MP Filtri standard

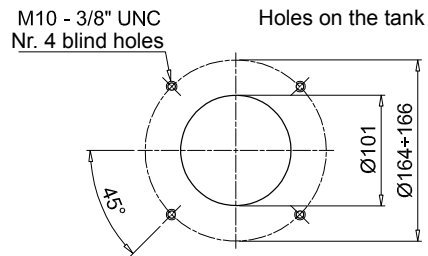
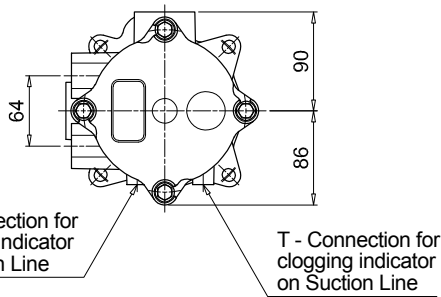
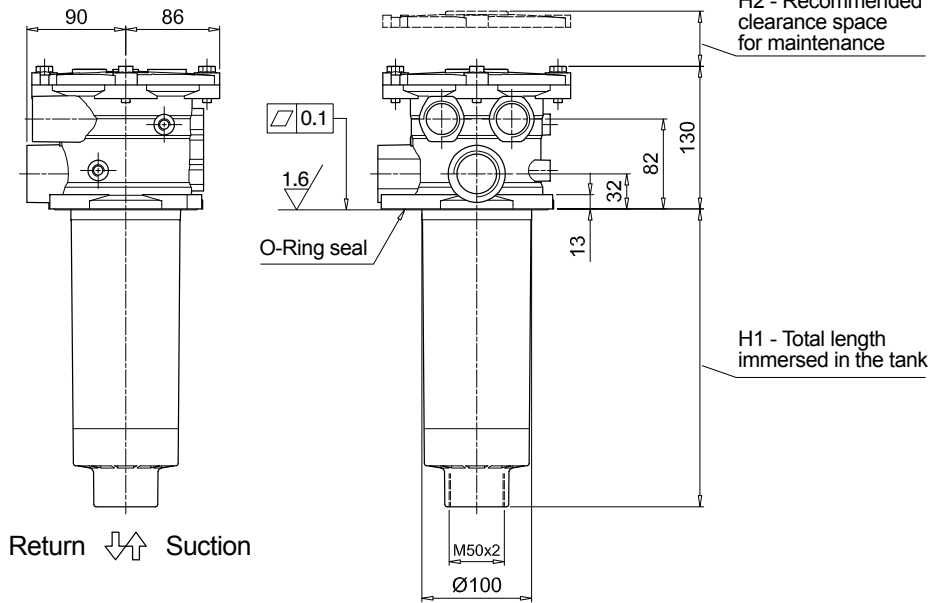
Pxx Customized

ACCESSORIES

Indicators on Return Line	page		page
BVA Axial pressure gauge	278	BEA Electrical pressure indicator	276
BVR Radial pressure gauge	278	BEM Electrical pressure indicator	276
BVP Visual pressure indicator with automatic reset	279	BET Electrical pressure indicator	276-277
BVQ Visual pressure indicator with manual reset	279	BLA Electrical / visual pressure indicator	277-278
Indicators on Suction Line	page		page
VVB Axial vacuum gauge	275	VEB Electrical vacuum indicator	274
VVS Radial vacuum gauge	275	VLB Electrical / visual vacuum indicator	274

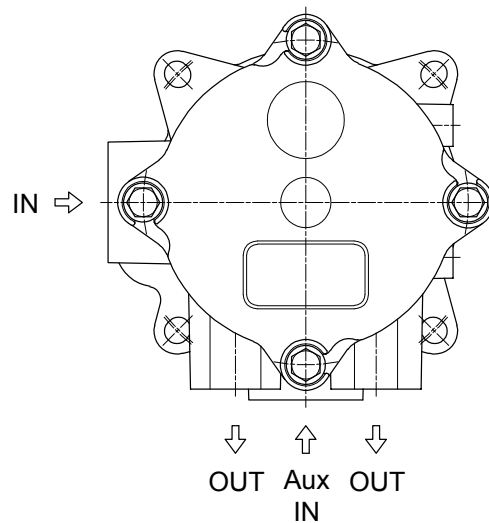
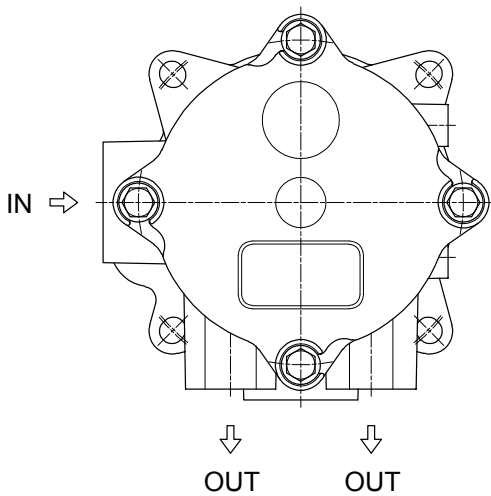
MRSX165		
Filter length	H1 [mm]	H2 [mm]
1	270	320
2	378	430
3	445	500

Connections	T
G1	G 1/8"
G2 - G3	1/8" NPT



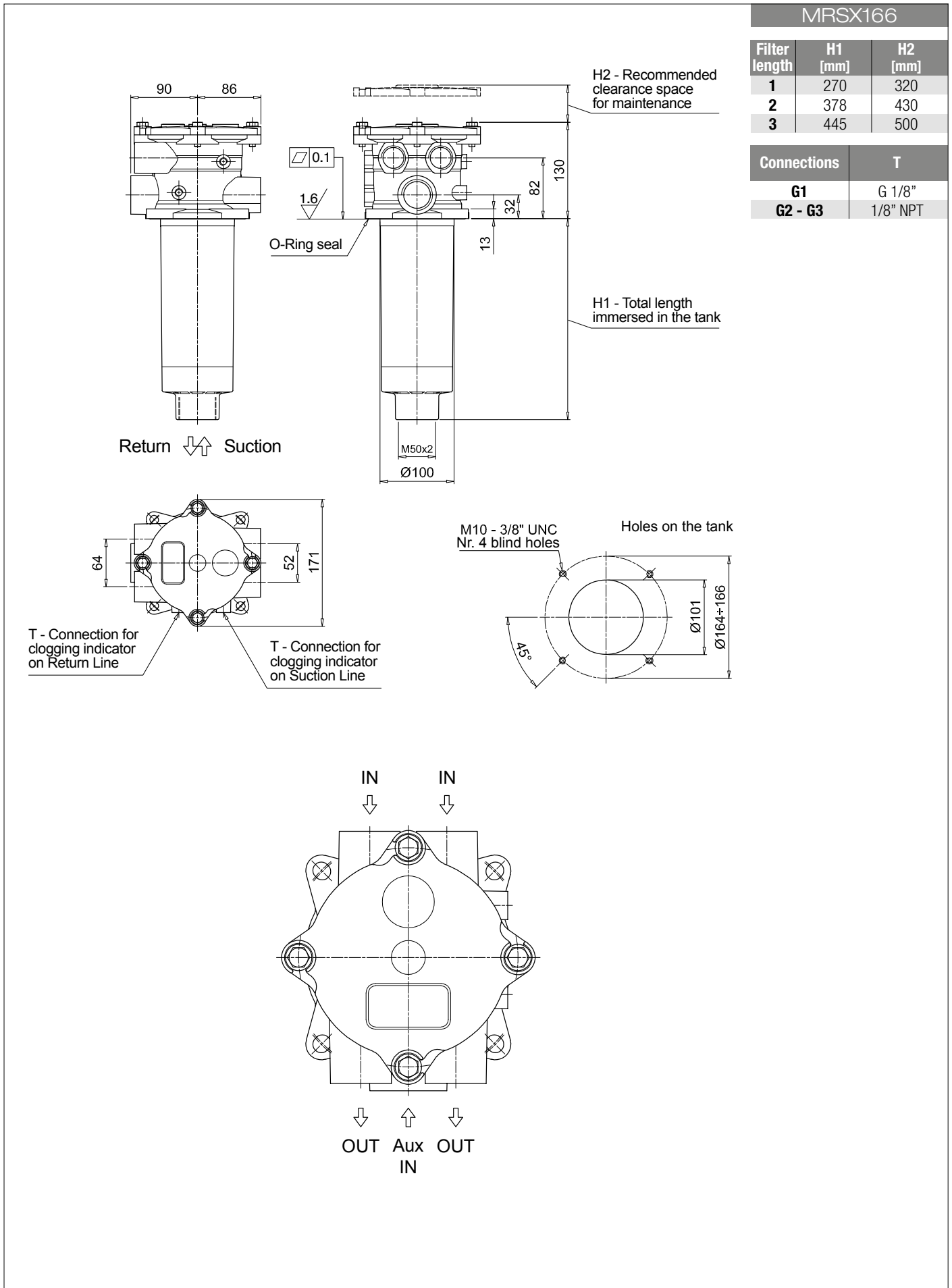
Without Aux IN connection

With Aux IN connection

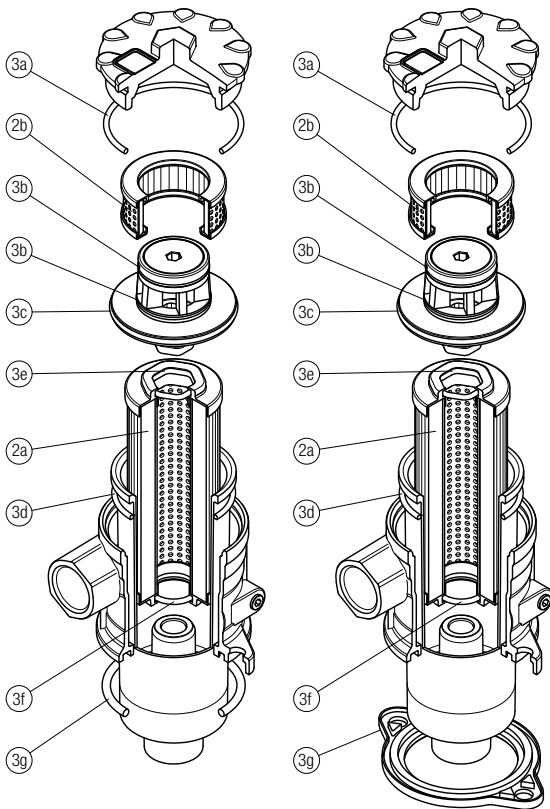


MRSX MRSX165 - MRSX166

Dimensions

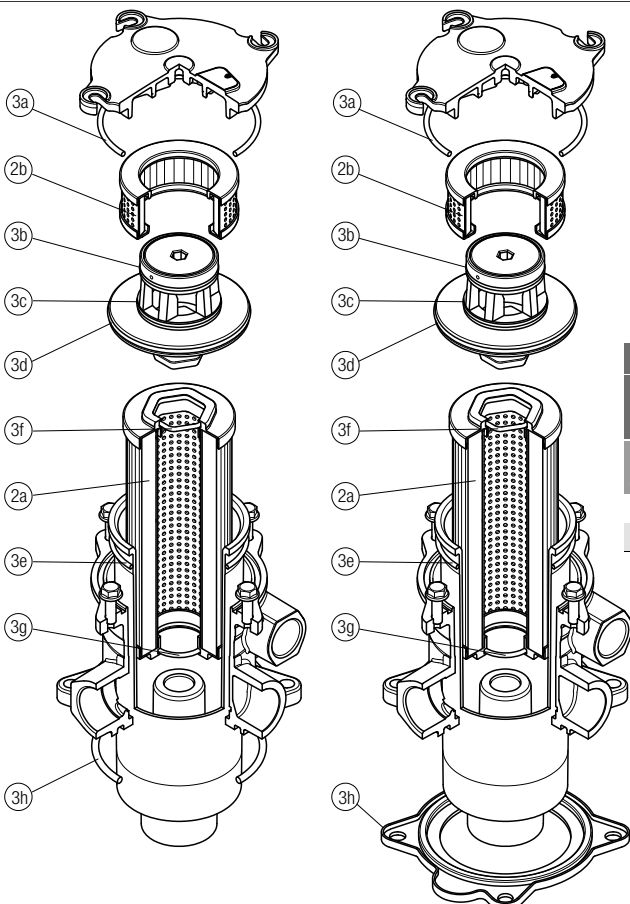


MRSX 116



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	O-RING SEAL		FLAT SEAL	
	2a	2b	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 3 (3a ÷ 3g)	
Filter series	Filter element	Safety filter element	Seal Kit code number		Seal Kit code number	
MRSX 116	See order table	S116M60P01	NBR	FPM	NBR	FPM
			02050617	02050619	02050618	02050620

MRSX 165 - 166



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	O-RING SEAL		FLAT SEAL	
	2a	2b	Q.ty: 1 pc. 3 (3a ÷ 3h)		Q.ty: 1 pc. 3 (3a ÷ 3h)	
Filter series	Filter element	Safety filter element	Seal Kit code number		Seal Kit code number	
MRSX 165	See order table	S165M60P01	NBR	FPM	NBR	FPM
MRSX 166			02050627	02050630	02050628	02050631
			02050627	02050630	02050629	02050632