

MRSX series

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



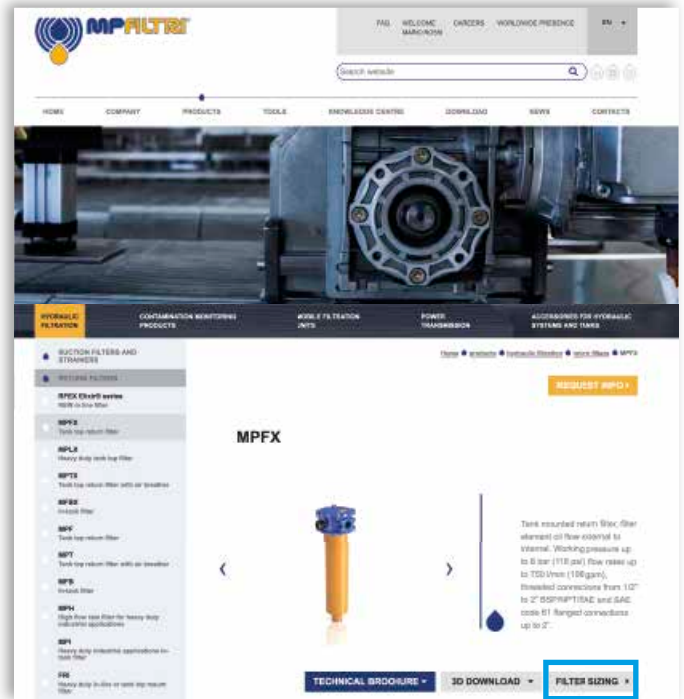
TYPICAL FILTER SIZING Selection Software

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.

PRODUCT SELECTION POWER TRANSMISSION SOFTWARE **FILTER SIZING SOFTWARE**

SUCTION LOW & MEDIUM PRESSURE HIGH PRESSURE
RETURN/SUCTION **RETURN** STAINLESS STEEL HIGH PRESSURE

Working Pressure (bar) * 8 Flow rate (l/min) * 90 DP max of the project (bar) * 0.5 Fluid Working Temperature (°C) * 40

Fluid * HLP - Mineral oils Fluid type * ISO VG 46 (SUS 216) Viscosity (cst) * 46 Viscosity (SUS) * 216

Filtration * A20 - 20 µm absolute inorganic microfibre Connection Type * G 1"

CALCULATE

PRODUCT SELECTION POWER TRANSMISSION SOFTWARE **FILTER SIZING SOFTWARE**

SUCTION LOW & MEDIUM PRESSURE HIGH PRESSURE
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Product: MPFX Working Pressure (bar) * 8 Flow rate (l/min) * 90 DP max of the project (bar) * 0.5 Fluid Working Temperature (°C) * 40

Fluid * HLP - Mineral oils Fluid type * ISO VG 46 (SUS 216) Viscosity (cst) * 46 Viscosity (SUS) * 216

Filtration * A20 - 20 µm absolute inorganic microfibre Connection Type * G 1"

CALCULATE

Step ③

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

Working Pressure 8 (bar) Fluid HLP
Flow rate 90 (l/min) Fluid type ISO VG 46 (SUS 216)
DP max of the project 0.5 (bar) Seal A - NBR
Working Temperature 40 (°C) Working Temperature with options -25 + 110 (°C)
Filtration 25 µm absolute inorganic microfibre Working Temperature with options -20 + 110 (°C)
Connection Type G 1" Viscosity 46 (cst) - 216 (SUS)

NEW SEARCH

Filter type MPFX: Tank top mounting - (Pmax) = B: 1.75 bar Systems Seal A: NBR **X-RESET**

Option1 Single or duplex DIN Standard NOT APPLICABLE Indicator Visual

CSV Excel Show 10 entries Search:

Image	Code	Press	Qmax	DP	Housing DP	Element DP	Connection	Seal	Link					
		bar	psi	l/min	bar	psi	bar	psi						
	MPFX-100-3-A-G3-A20-HBPS1	8	116	95.74	25.3	0.47	7	0.12	2	0.35	5	G 1"	A	Adjustment Report
	MPFX-100-3-A-G3-A20-HBPS1	8	116	95.74	25.3	0.47	7	0.12	2	0.35	5	G 1"	A	Adjustment Report

TYPICAL FILTER SIZING

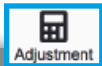
Step 4

Choose the most suitable filter from the proposed list.

Image	Code	Pressure	Flow rate	AP	Housing AP	Element AP	Connection	Seal	Link
	MPTX-100-5-A-Q3-A25-H-BPFI	8 bar	116 l/min	25.3	0.47	0.12	G 1"	A	Adjustment
	MPTX-104-5-A-Q3-A25-H-BPFI	8 bar	116 l/min	25.3	0.47	0.12	G 1"	A	Adjustment

Step 5

It is possible to change the filter modifying every parameter.



A SAVE YOUR FILTER'S REPORT



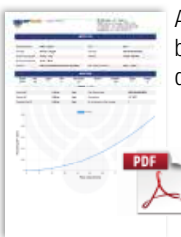
B MANUAL EDIT



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

A new
browser window
displays the pdf

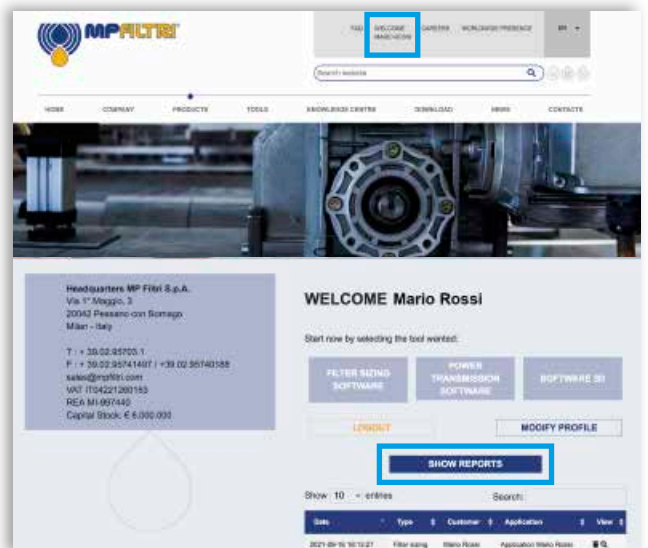
see **A**



Close the report window



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





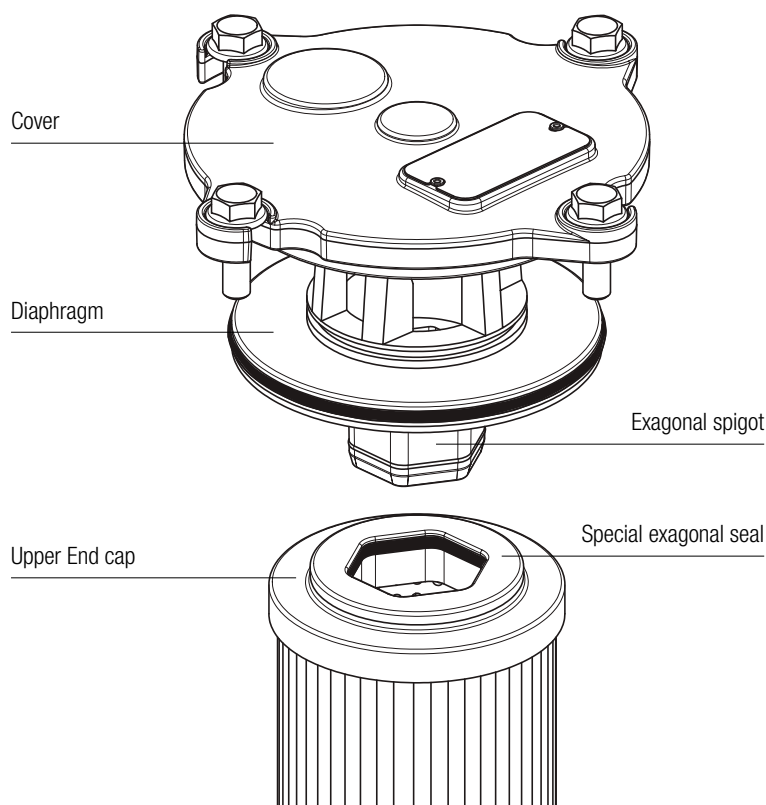
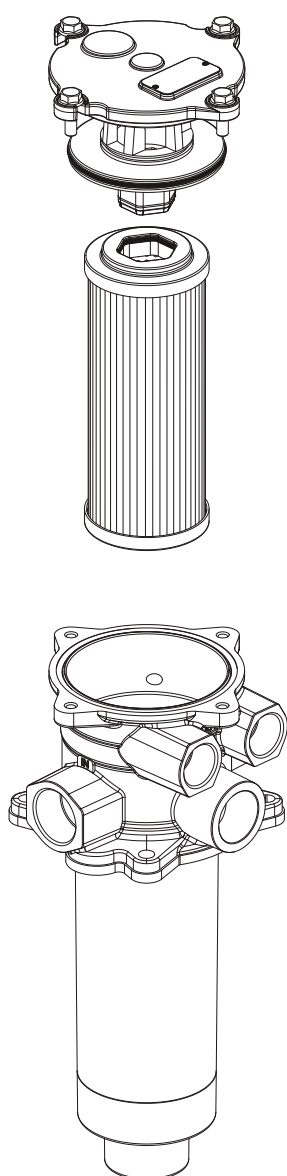
THE NEW FILTER CONCEPT

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

and by the following patent applications:
European Patent n° 16181725.9
US Patent Pending 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

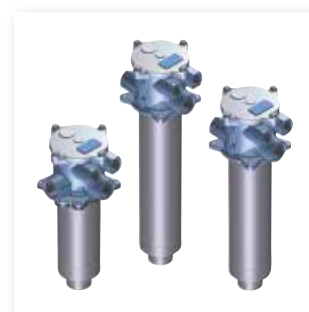
- RSX: 10 bar
- Oil flow from exterior to interior.

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.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.

Valves A option	Valves B option	Valves C option	Valves D option	Valves E option	Filter series
					MRSX 116
Valves F option	Valves G option	Valves H option	Valves I option	Valves M option	Suitable only for tank side-wall mounting

Valves A option	Valves B option	Valves C option	Valves D option	Valves E option	Filter series
					MRSX 165-166
Valves F option	Valves G option	Valves H option	Valves I option	Valves M option	Suitable only for tank side-wall mounting

LEGEND

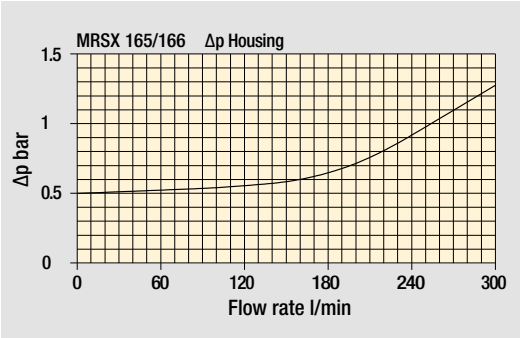
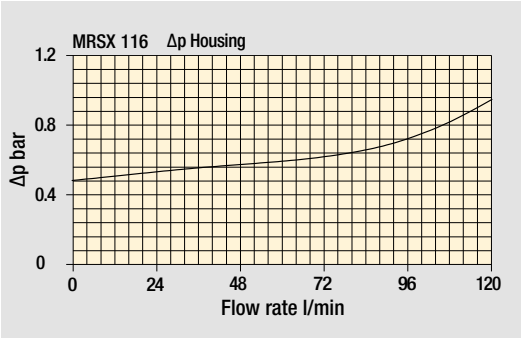
- 1 - Filter element
- 2 - Back-Pressure valve: opening pressure 0.5 bar \pm 10%
- 3 - Bypass valve: opening pressure 2.5 bar \pm 10%
- 4 - Depressurization valve

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

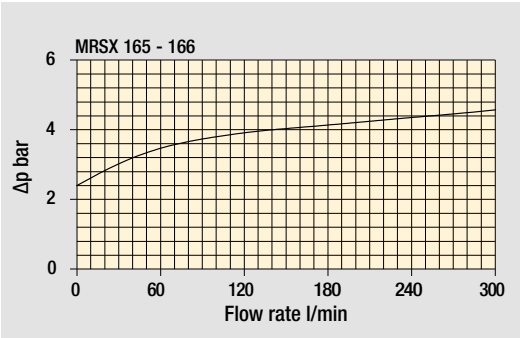
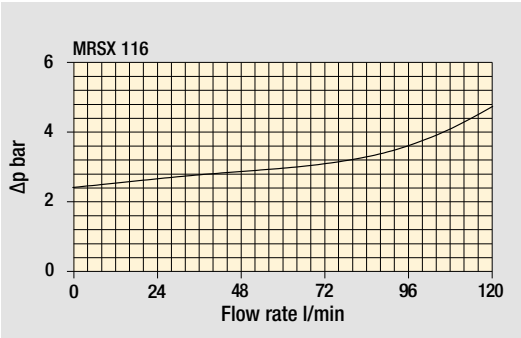
MRSX GENERAL INFORMATION

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		Configuration example: MRSX116									
MRSX116 Filter element with private spigot		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											
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

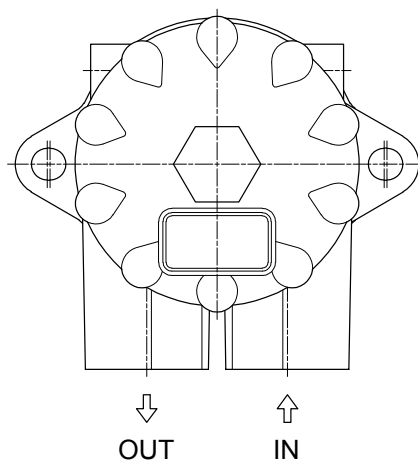
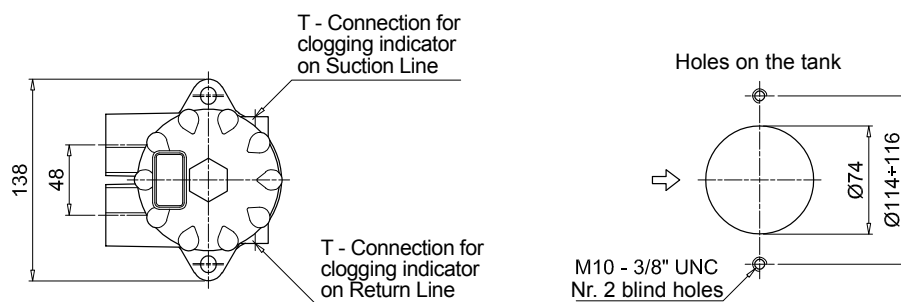
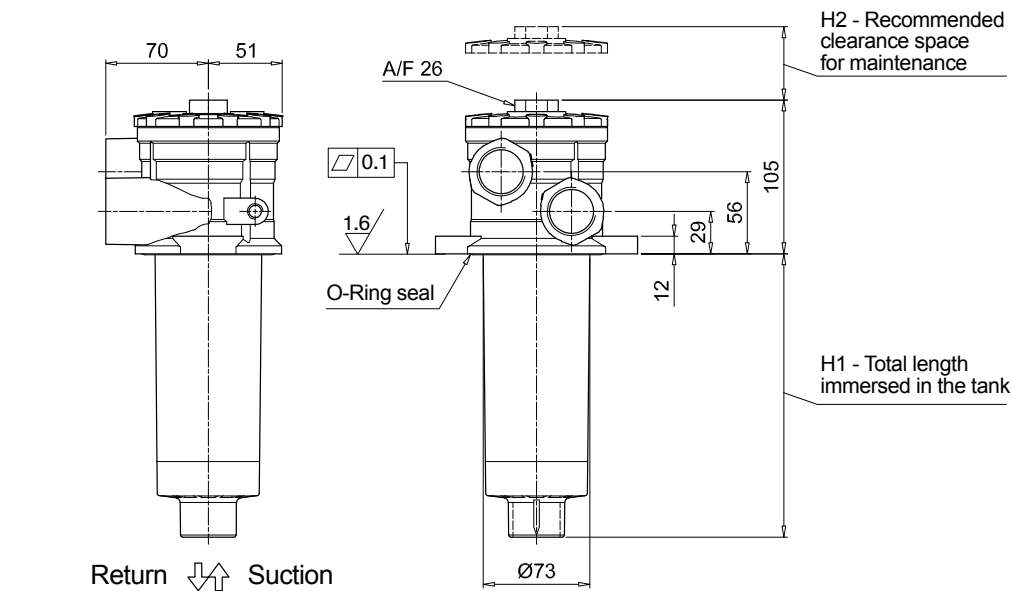
Element series and size		Configuration example: RSX116			
RSX116 Filter element with private spigot		1	A16	A	P01
Element length					
1 2					
Filtration rating (filter media)					
A10 Inorganic microfiber 10 µm					
A16 Inorganic microfiber 16 µm					
A25 Inorganic microfiber 25 µm					
		Seals		Execution	
		A NBR		P01 MP Filtri standard	
		V FPM		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

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											
		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 (size 165)		IN (size 166)		Aux IN		OUT					
G1 G 1 1/4"		G1 G 1"		G1 G 1 1/4"		G1 G 1"					
G2 1 1/4" NPT		G2 1" NPT		G2 1 1/4" NPT		G2 1" NPT					
G3 SAE 20 - 1 5/8" - 12 UN		G3 SAE 16 - 1 5/16" - 12 UN		G3 SAE 20 - 1 5/8" - 12 UN		G3 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		Execution			
A NBR		P01 MP Filtri standard			
V FPM		Pxx Customized			

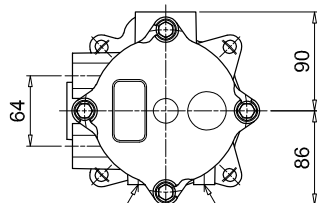
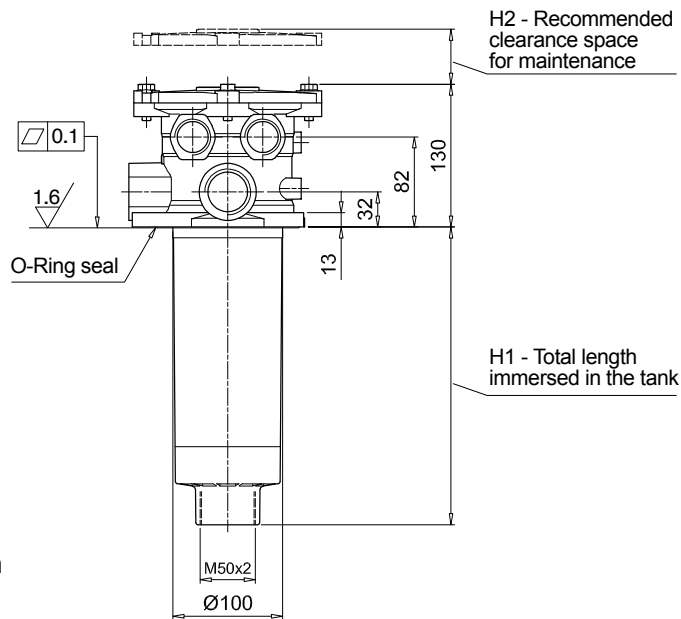
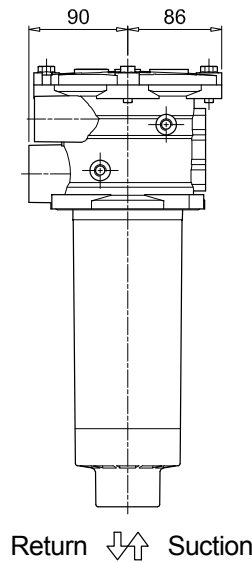
ACCESSORIES

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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

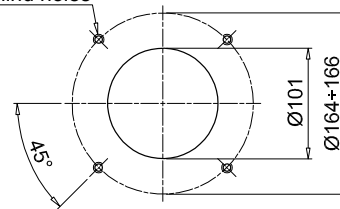


T - Connection for clogging indicator on Return Line

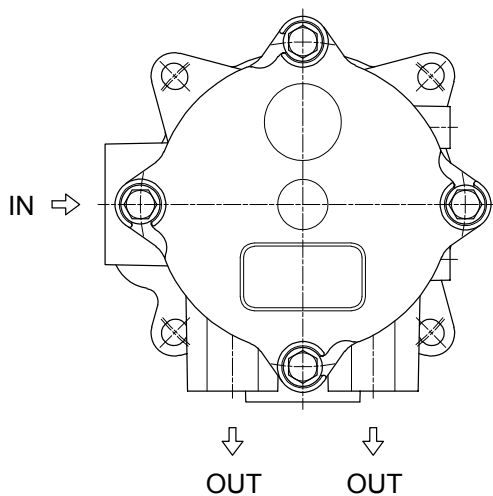
T - Connection for clogging indicator on Suction Line

M10 - 3/8" UNC
Nr. 4 blind holes

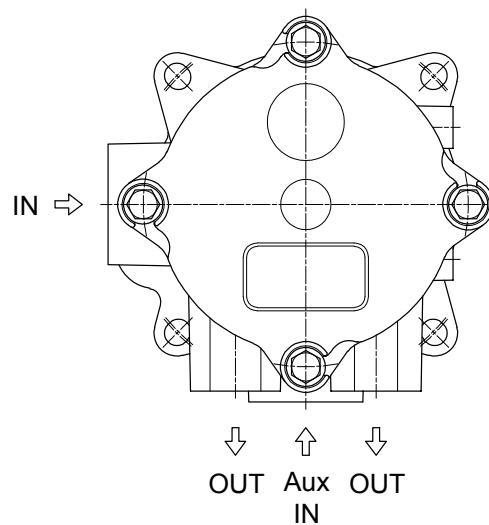
Holes on the tank



Without
Aux IN connection

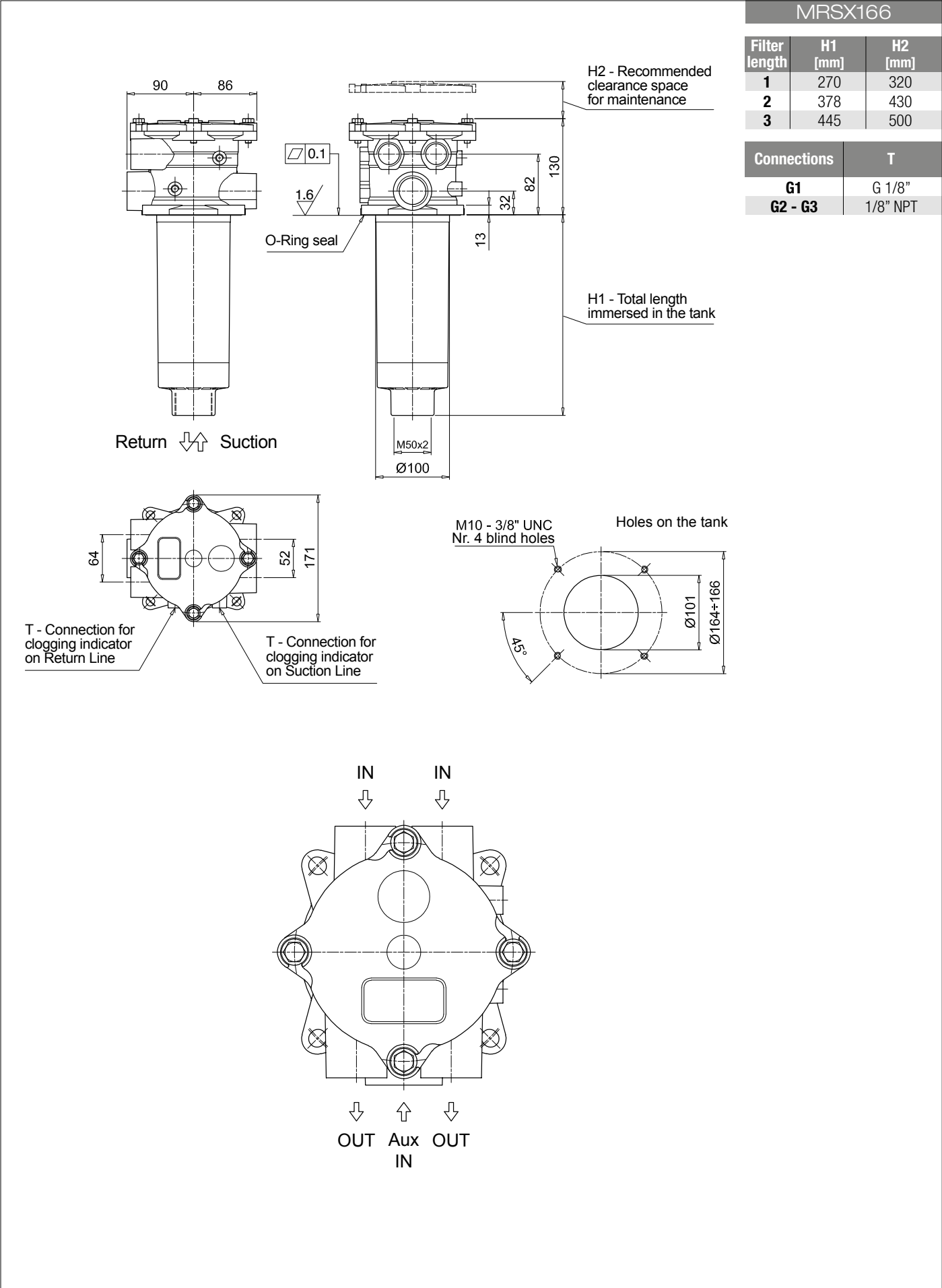


With
Aux IN connection

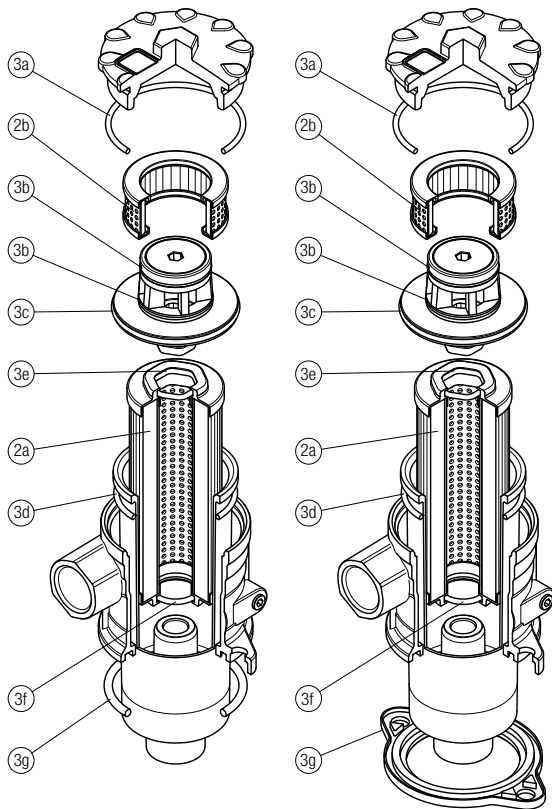


MRSX MRSX165 - MRSX166

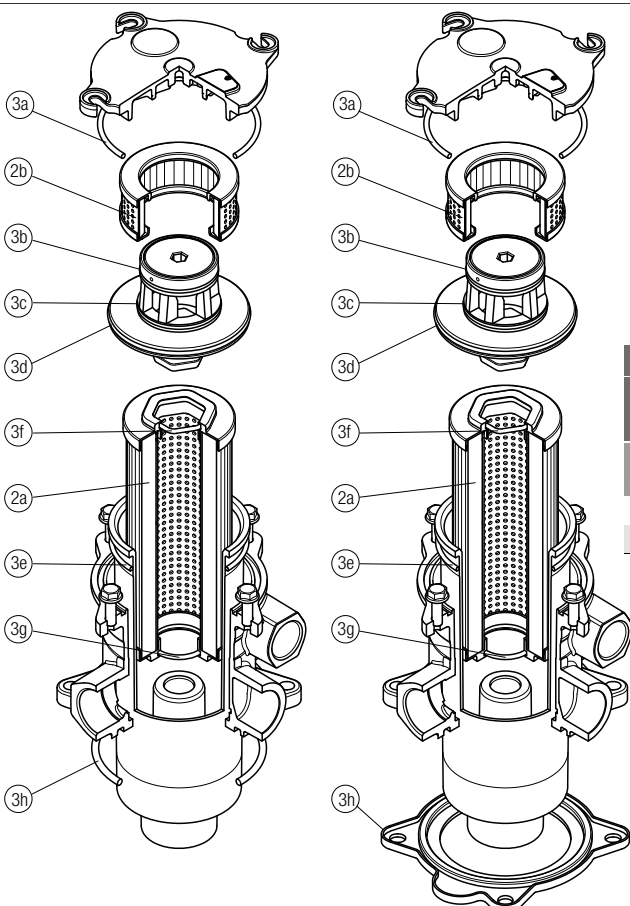
Dimensions



MRSX 116



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



MRSX 165 - 166

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