



MP Filter  
MRSX Series



 HYDRAULIC  
COMPONENTS  
& FLUID CONTAMINATION  
CONTROL

# MRSX series

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



## 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 250 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  
Polyamide: MRSX 116  
Aluminium: MRSX 165-166

- Bowl: Polyamide

### Pressure

- Test pressure: 1.5 MPa (15 bar)
- Min. Burst pressure: 3 MPa (30 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1 MPa (10 bar)

### Filter element features

Filter <b>MRSX</b>		Filter element <b>RSX</b>
<b>Δp Element type</b>		
Element media	Construction	Δp
A - Microfiber	Standard	10 bar
<i>Please see ordering code tables to check element Δp series availability based on filter features.</i>		
<b>Flow direction through the filter element:</b>		
From OUT to IN		

### Seals

- Standard NBR series A
- Optional FPM series V

### Temperature

From -25 °C to +110 °C

## Flow rates [l/min]

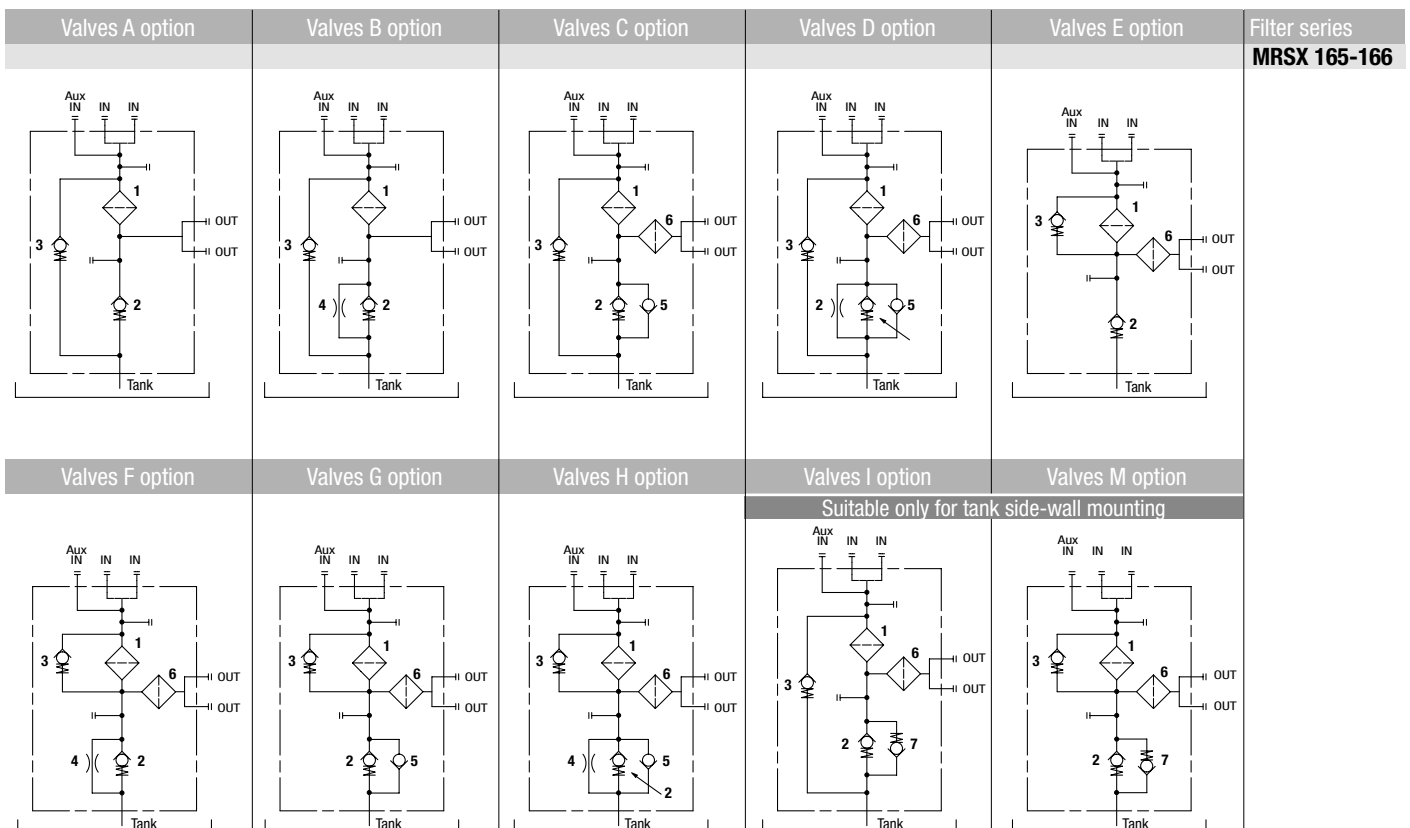
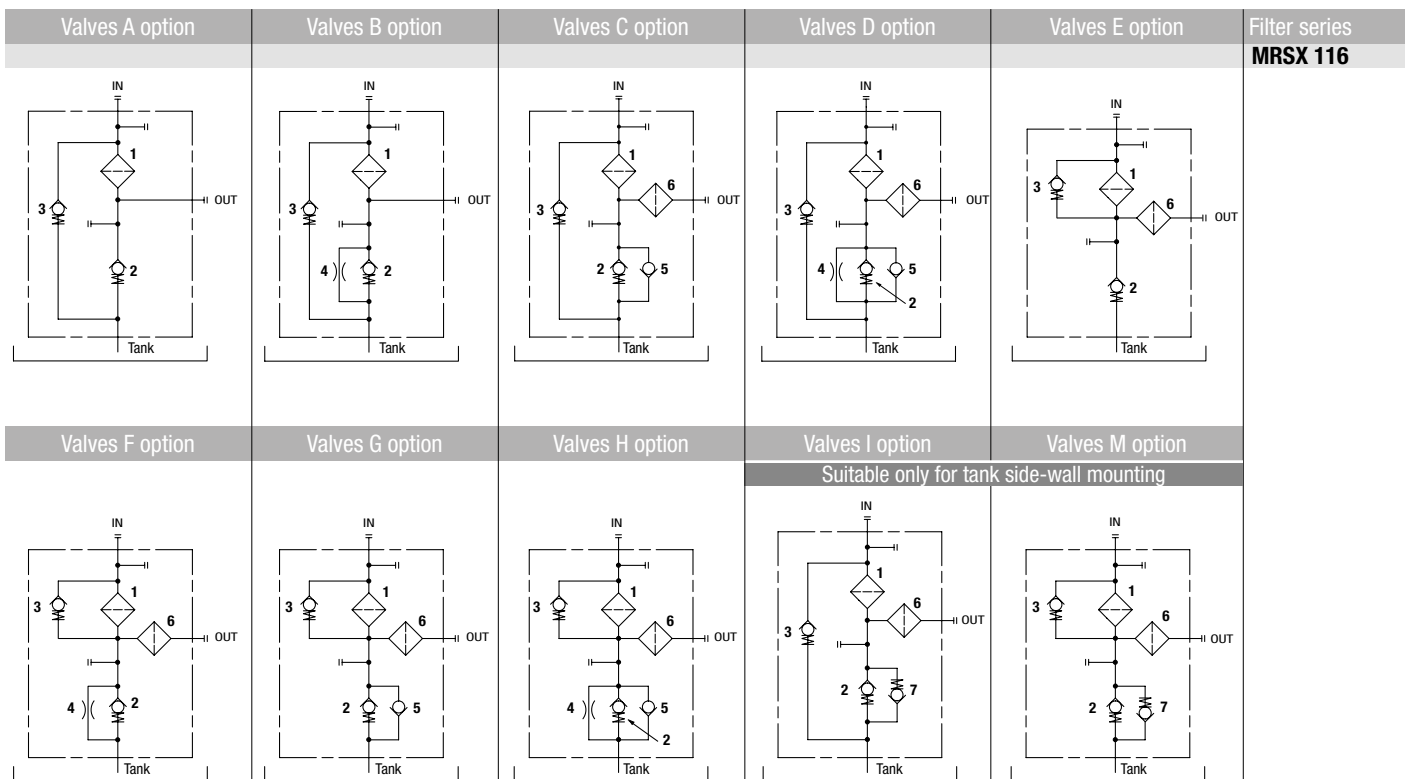
Filter series	Length	A10	A16	A25
<b>MRSX 116</b>	<b>1</b>	74	82	87
	<b>2</b>	108	113	124
<b>MRSX 165 - 166</b>	<b>1</b>	155	166	178
	<b>2</b>	187	196	200
	<b>3</b>	201	205	217

### 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 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltr.com](http://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

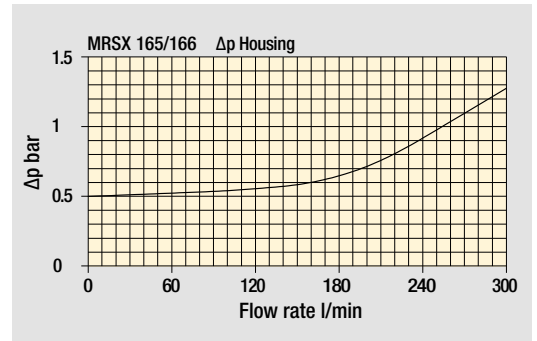
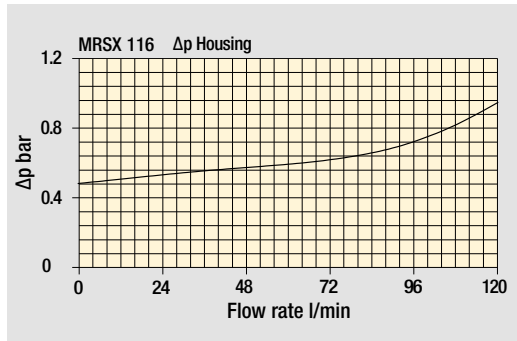
- 1 - Filter element
- 2 - Back-Pressure valve: opening pressure 0.5 bar  $\pm$ 10%
- 3 - Bypass valve: opening pressure 2.5 bar  $\pm$ 10%
- 4 - Depressurization valve

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

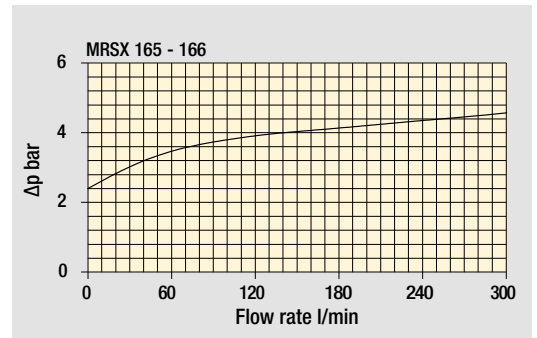
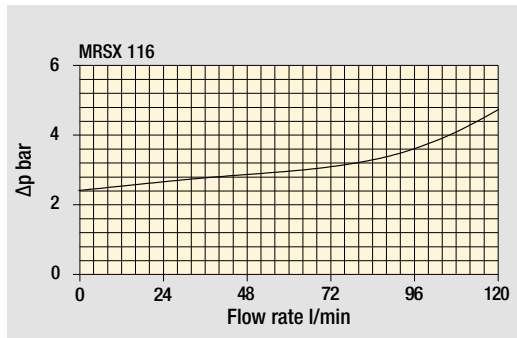
# MRSX GENERAL INFORMATION

## Pressure drop

### Filter housings $\Delta p$ pressure drop



### Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

### Weights [kg] and volumes [dm<sup>3</sup>]

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



## Designation & Ordering code

### COMPLETE FILTER

Series and size Configuration example: **MRSX116** | **1** | **B** | **A** | **G1** | **0** | **A16** | **B** | **P01**

**MRSX116** Filter featuring **MY CLEAN** Filter Element

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

Hydraulic diagram configuration - see page 275

				Bypass valve to tank		Bypass valve to OUT	
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	•	-	-	-
<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	-	-	•	-
<b>I</b>				•	-	-	-
<b>M</b>				-	-	•	-

Seals and treatments

<b>A</b> NBR, O-Ring on head	<b>B</b> NBR, flat seal on head
<b>V</b> FPM, O-Ring on head	<b>D</b> FPM, flat seal on head

Connections IN

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

<b>A10</b> Inorganic microfiber 10 µm
<b>A16</b> Inorganic microfiber 16 µm
<b>A25</b> Inorganic microfiber 25 µm

Valves configuration

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

Execution

**P01** MP Filtri standard

**Pxx** Customized

### FILTER ELEMENT

Element series and size

**RSX116** Filter Element with **MY CLEAN** feature

Configuration example: **RSX116** | **1** | **A16** | **A** | **P01**

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

Filtration rating (filter media)

<b>A10</b> Inorganic microfiber 10 µm
<b>A16</b> Inorganic microfiber 16 µm
<b>A25</b> Inorganic microfiber 25 µm

Seals

**A** NBR

**V** FPM

Execution

**P01** MP Filtri standard

**Pxx** Customized

### CLOGGING INDICATORS

See pages 714-716

Indicators on Return Line

<b>BVA</b> Axial pressure gauge
<b>BVR</b> Radial pressure gauge
<b>BVP</b> Visual pressure indicator with automatic reset
<b>BVQ</b> Visual pressure indicator with manual reset

<b>BEA</b> Electrical pressure indicator
<b>BEM</b> Electrical pressure indicator
<b>BET</b> Electrical pressure indicator
<b>BLA</b> Electrical / visual pressure indicator

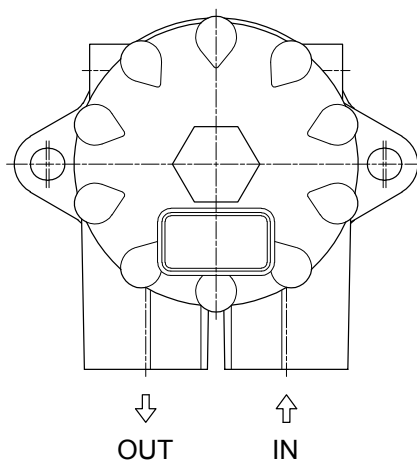
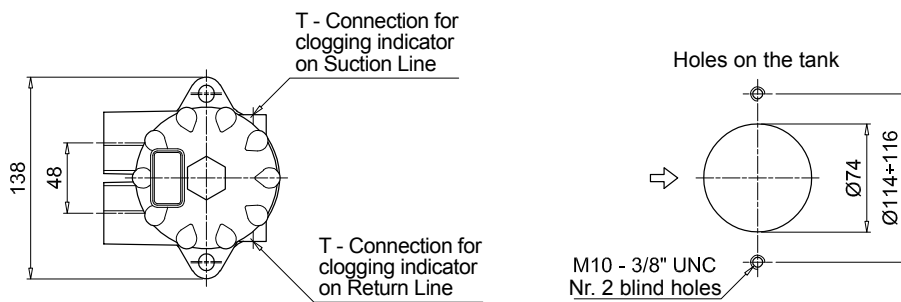
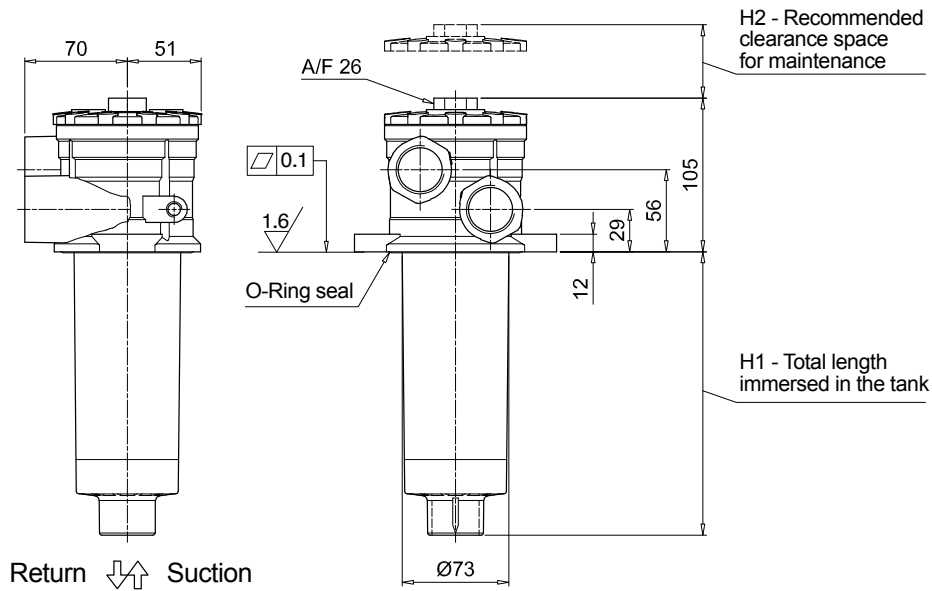
Indicators on Suction Line

<b>VVB</b> Axial vacuum gauge
<b>VVS</b> Radial vacuum gauge

<b>VEB</b> Electrical vacuum indicator
<b>VLB</b> Electrical / visual vacuum indicator

MRSX116		
Filter length	H1 [mm]	H2 [mm]
<b>1</b>	203	240
<b>2</b>	263	300

Connections	T
<b>G1 - G2</b>	G 1/8"
<b>G3 - G4</b>	1/8" NPT
<b>G5 - G6</b>	1/8" NPT
<b>D1</b>	G 1/8"
<b>D2 - D3</b>	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 featuring **MYCLEAN** Filter Element

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

Hydraulic diagram configuration - see page 275

				Bypass valve to tank		Bypass valve to OUT	
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	•	-	-	-
<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	-	-	•	-
<b>I</b>				•	-	-	-
<b>M</b>				-	-	•	-

Seals and treatments

<b>A</b>	NBR, O-Ring on head	<b>B</b>	NBR, flat seal on head
<b>V</b>	FPM, O-Ring on head	<b>D</b>	FPM, flat seal on head

Connections

	IN (size 165)	IN (size 166)	Aux IN	OUT
<b>G1</b>	G 1 1/4"	G 1"	G 1 1/4"	G 1"
<b>G2</b>	1 1/4" NPT	1" NPT	1 1/4" NPT	1" NPT
<b>G3</b>	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	
<b>0</b>	Without aux IN connection	•	-
<b>1</b>	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
<b>S</b> Standard	•	•	•	•	•	•	•	•	-	-
<b>B</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 **MYCLEAN** feature

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

<b>A</b>	NBR
<b>V</b>	FPM

Execution

**P01** MP Filtri standard

**Pxx** Customized

### CLOGGING INDICATORS

See pages 714-716

#### Indicators on Return Line

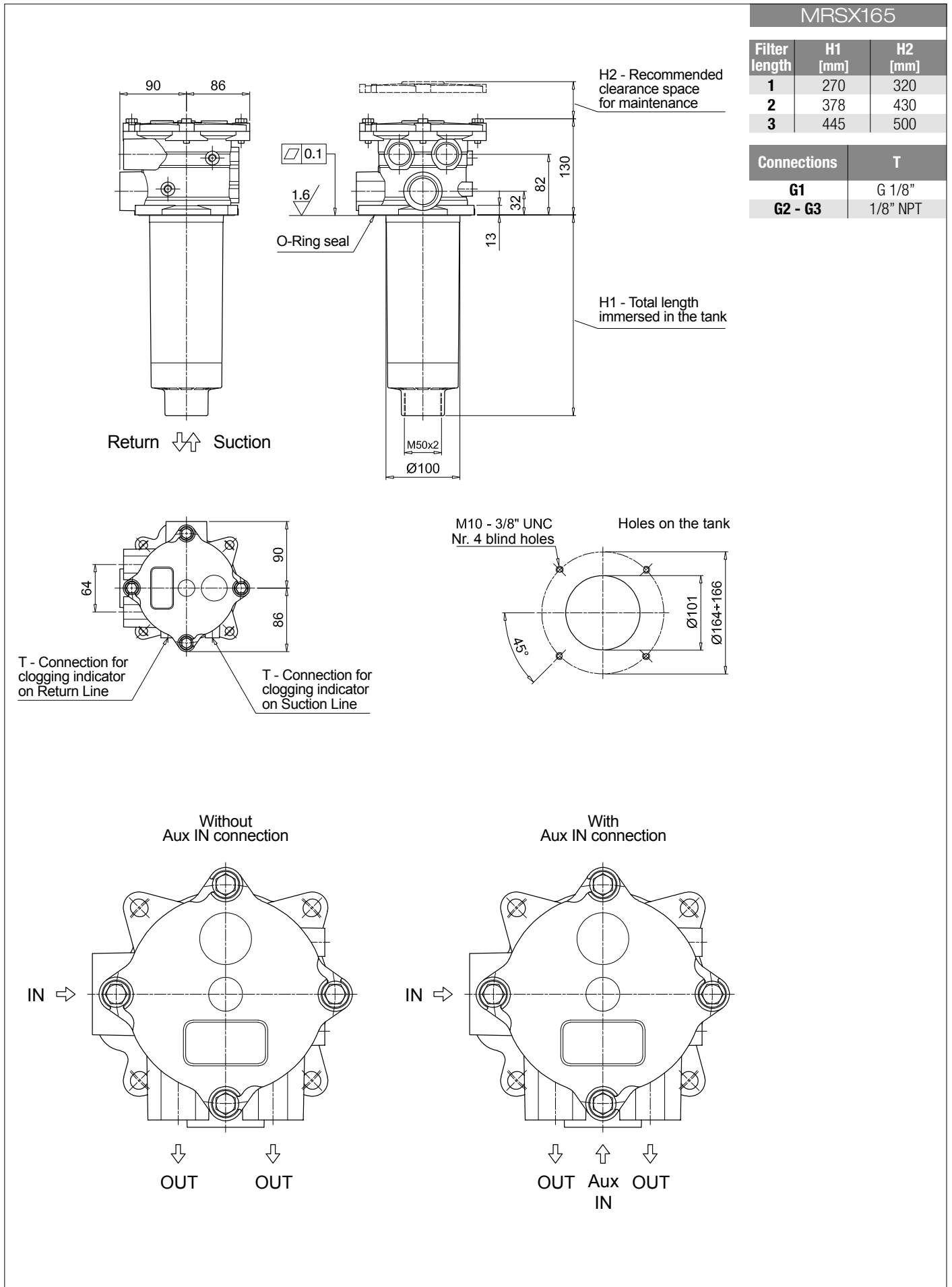
<b>BVA</b>	Axial pressure gauge
<b>BVR</b>	Radial pressure gauge
<b>BVP</b>	Visual pressure indicator with automatic reset
<b>BVQ</b>	Visual pressure indicator with manual reset

<b>BEA</b>	Electrical pressure indicator
<b>BEM</b>	Electrical pressure indicator
<b>BET</b>	Electrical pressure indicator
<b>BLA</b>	Electrical / visual pressure indicator

#### Indicators on Suction Line

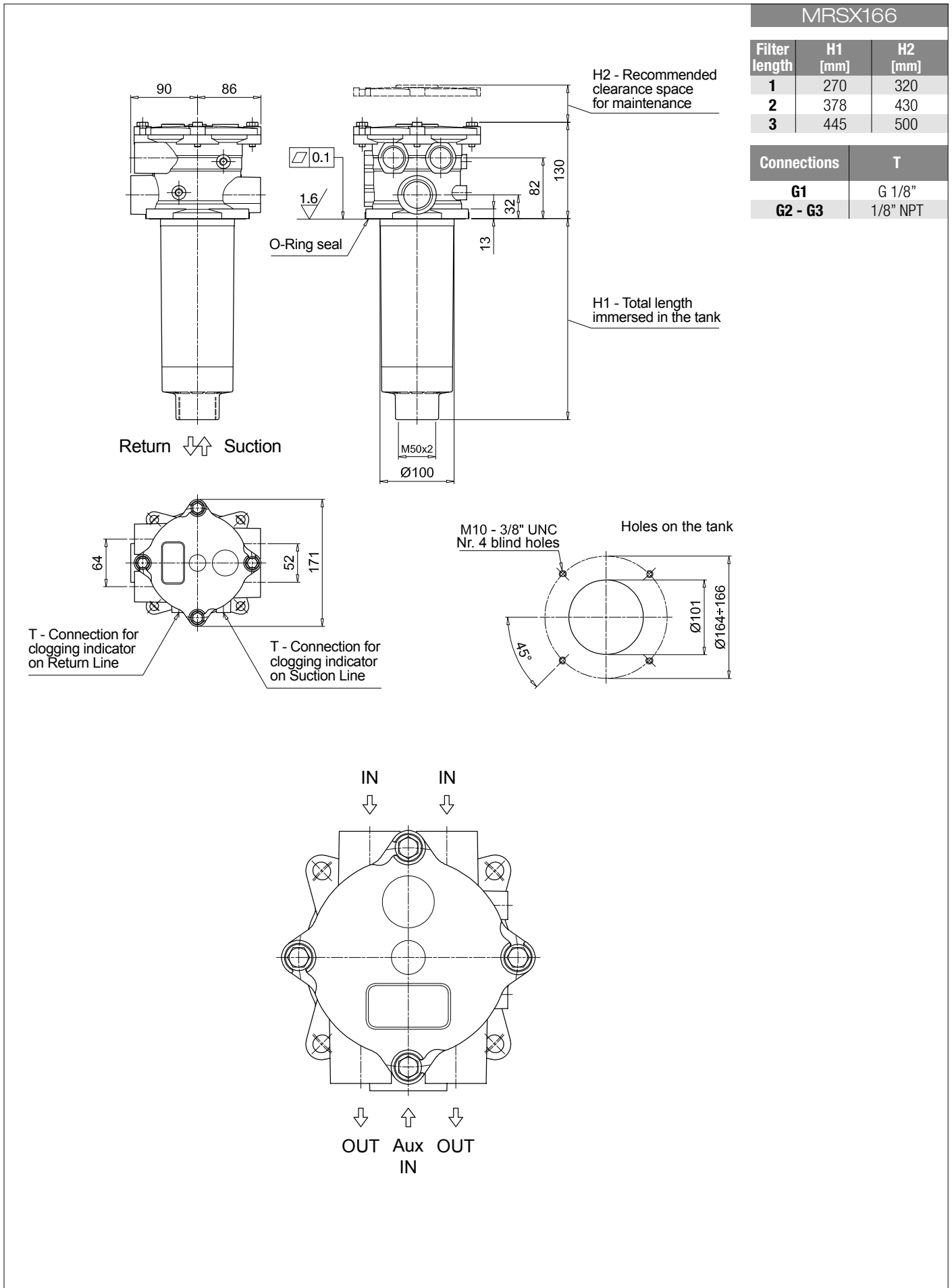
<b>VVB</b>	Axial vacuum gauge
<b>VVS</b>	Radial vacuum gauge

<b>VEB</b>	Electrical vacuum indicator
<b>VLB</b>	Electrical / visual vacuum indicator



# MRSX MRSX165 - MRSX166

## Dimensions

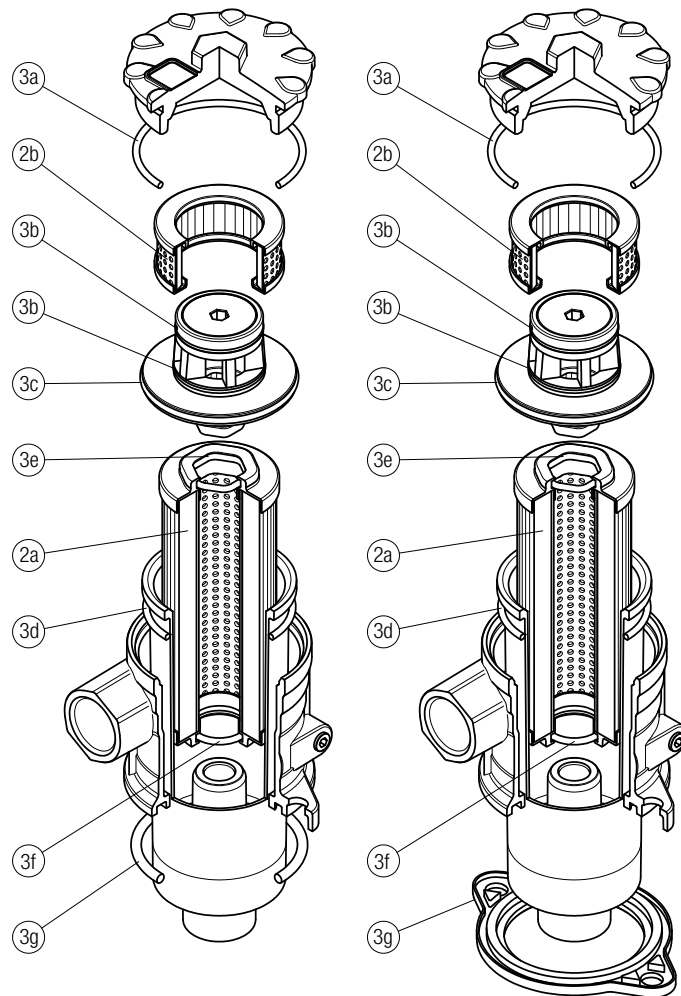




# MRSX SPARE PARTS

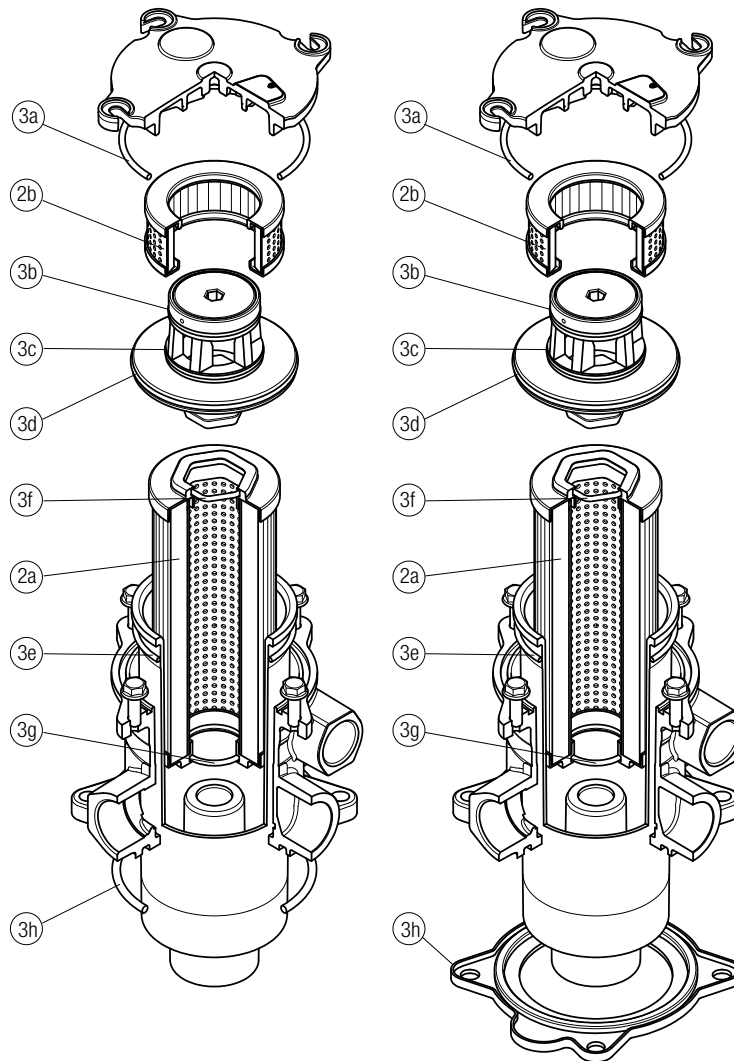
Order number for spare parts

## MRSX 116



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

## MRSX 165 - 166



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

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