



THE **X** CONCEPT FOR OUR FILTERS

Protect the performance of your system with MYclean.
 Quality and efficiency are fundamental for MP Filtri:
 this exclusive new filter element possesses polygon shape geometry and specific seal
 that ensures only original spare parts can be used - ensuring correct operation and
 higher system reliability.

MRS**X** series

with **MYCLEAN** RS**X** Filter Element

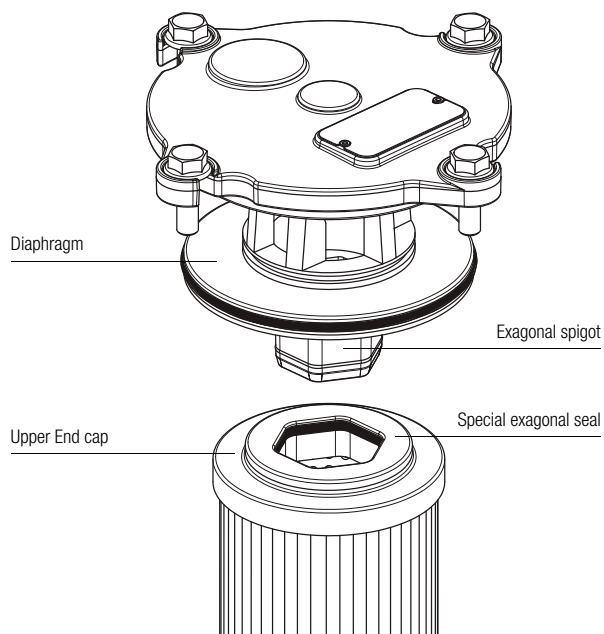
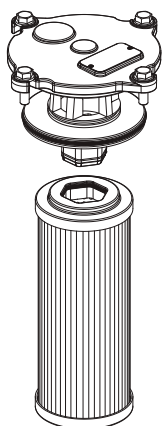
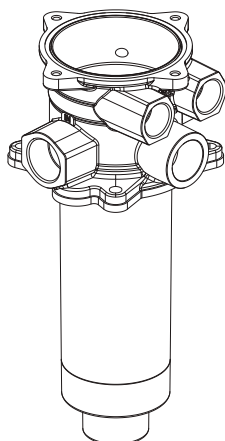


- ◆ **Protects the machine from improper use of non-original products.**
- ◆ **Safety of constant quality protection & reliability**

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 are protected by:

- ◆ Italian Patent n° 102014902261205
- ◆ Canadian Patent n° 2,937,258
- ◆ European Patent n° 3 124 092 B1
- ◆ US Patent n° 20170030384 A1



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

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

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

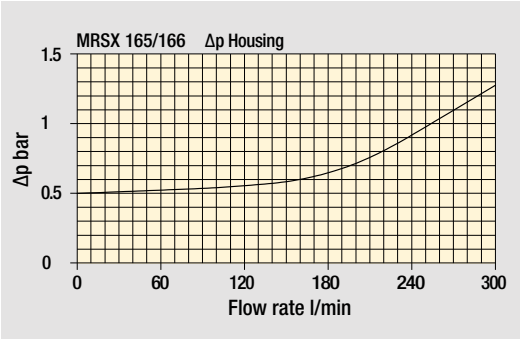
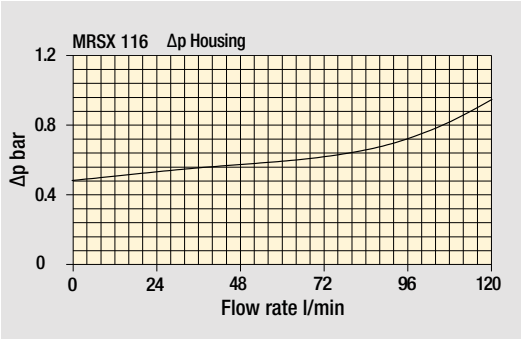
- 1 - Filter element
- 2 - Back-Pressure valve: opening pressure 0.5 bar $\pm$ 10%
- 3 - Bypass valve: opening pressure 2.5 bar $\pm$ 10%
- 4 - Depressurization valve

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

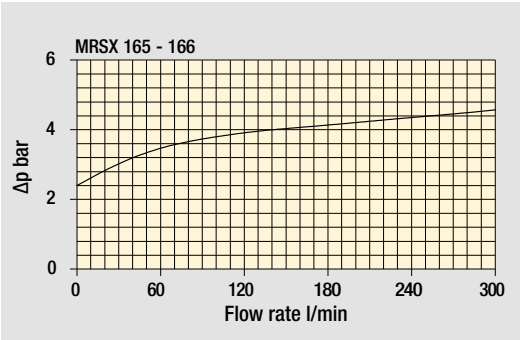
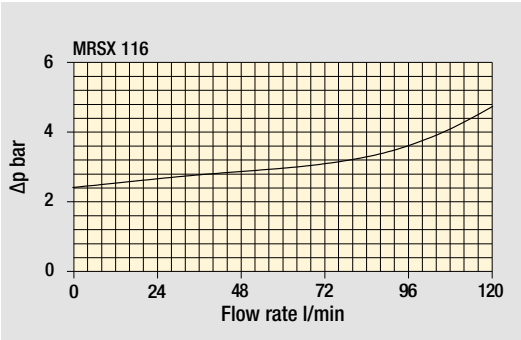
MRSX GENERAL INFORMATION

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 [dm³]			
	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 1 B A G1 0 A16 B P01									
MRSX116 Filter featuring  Filter Element											
Length											
1 2											
Hydraulic diagram configuration - see page 275											
		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											

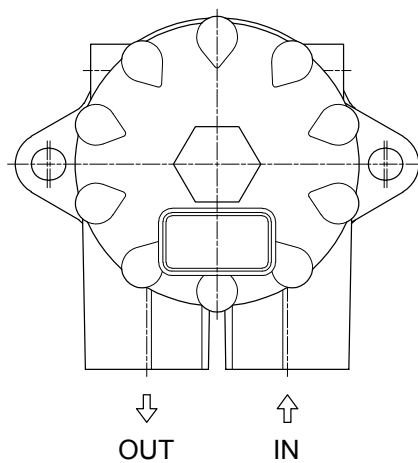
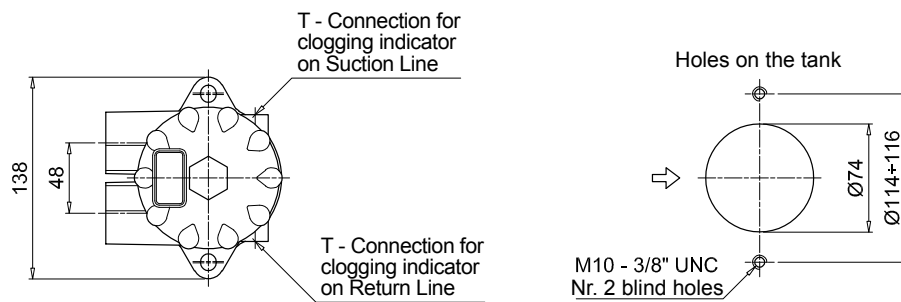
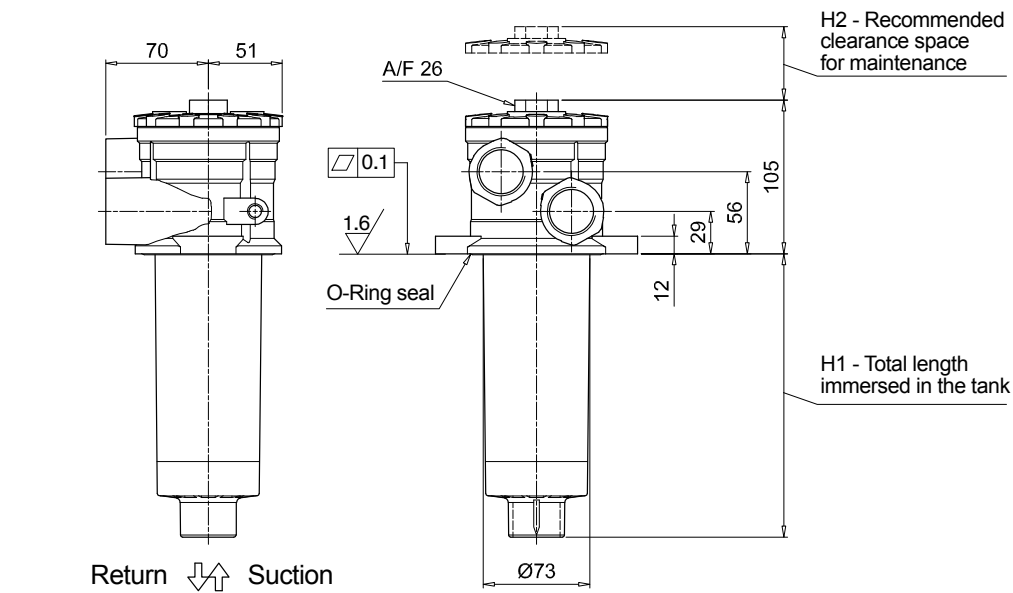
FILTER ELEMENT

Element series and size		Configuration example: RSX116 1 A16 A P01			
RSX116 Filter Element with  feature					
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	

CLOGGING INDICATORS

See page 722-723

Indicators on Return Line		Indicators on Suction Line	
BVA Axial pressure gauge		BEA Electrical pressure indicator	
BVR Radial pressure gauge		BEM Electrical pressure indicator	
BVP Visual pressure indicator with automatic reset		BET Electrical pressure indicator	
BVQ Visual pressure indicator with manual reset		BLA Electrical / visual pressure indicator	
Indicators on Suction Line		Indicators on Suction Line	
VVB Axial vacuum gauge		VEB Electrical vacuum indicator	
VVS Radial vacuum gauge		VLB Electrical / visual vacuum indicator	



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 featuring **MY CLEAN** Filter Element

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

Hydraulic diagram configuration - see page 275

A	B	C	D	Bypass valve to tank	Bypass valve to OUT
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"	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 **MY CLEAN** 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

A NBR

V FPM

Execution

P01 MP Filtri standard

Pxx Customized

CLOGGING INDICATORS

See page 722-723

Indicators on Return Line

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
BET	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

Indicators on Suction Line

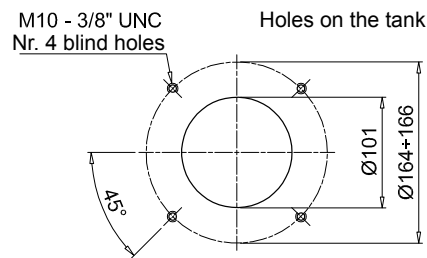
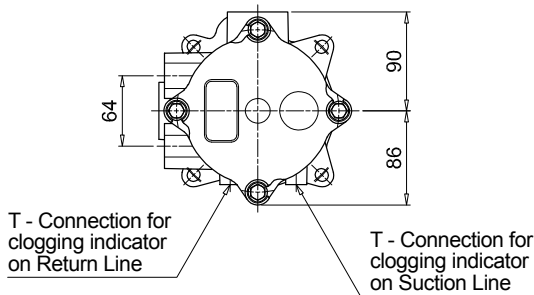
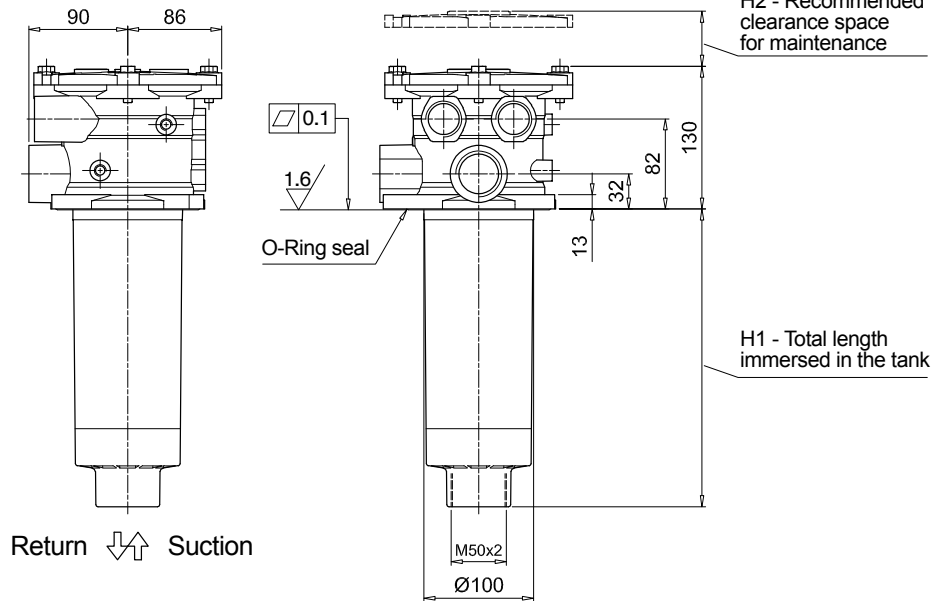
VVB	Axial vacuum gauge
VVS	Radial vacuum gauge

VEB	Electrical vacuum indicator
VLB	Electrical / visual vacuum indicator

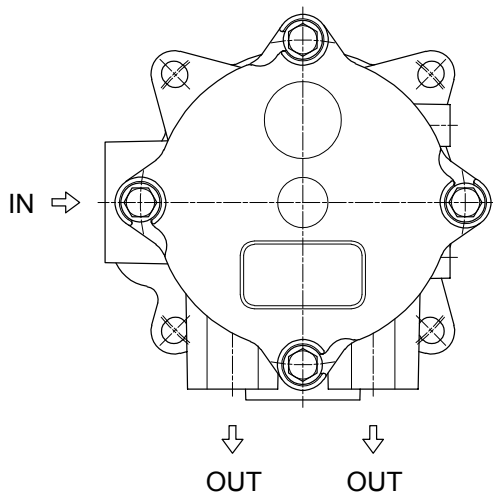
MRSX165

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

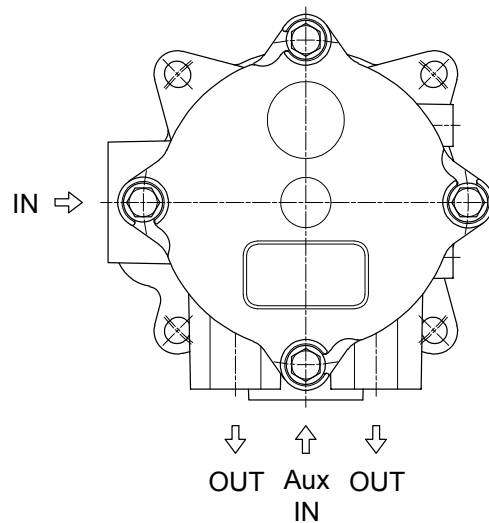
Connections	T
G1	G 1/8"
G2 - G3	1/8" NPT



Without
Aux IN connection

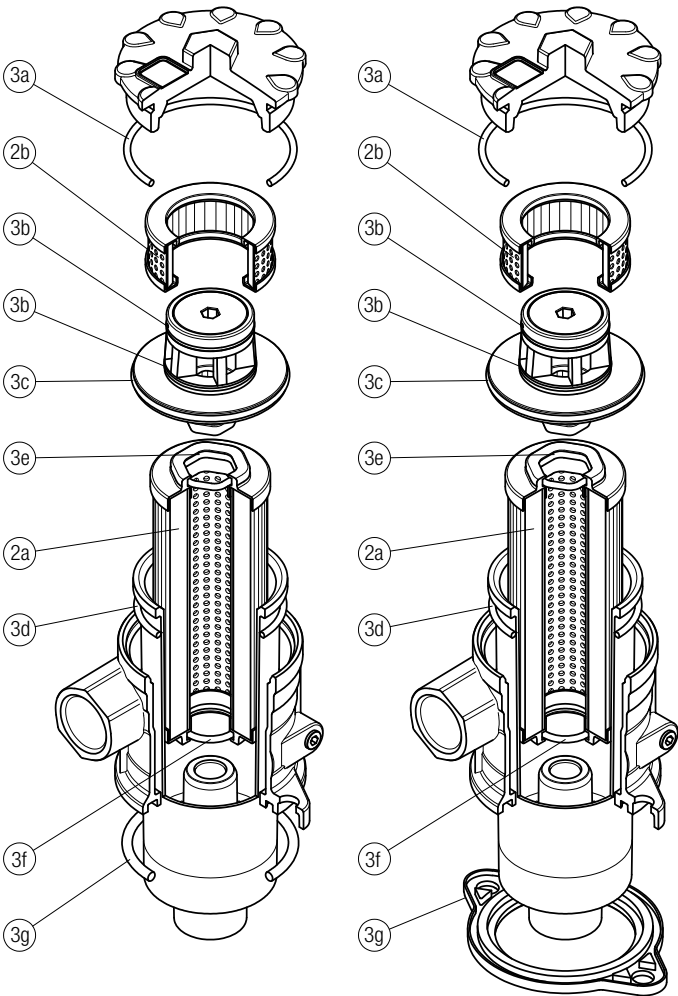


With
Aux IN connection



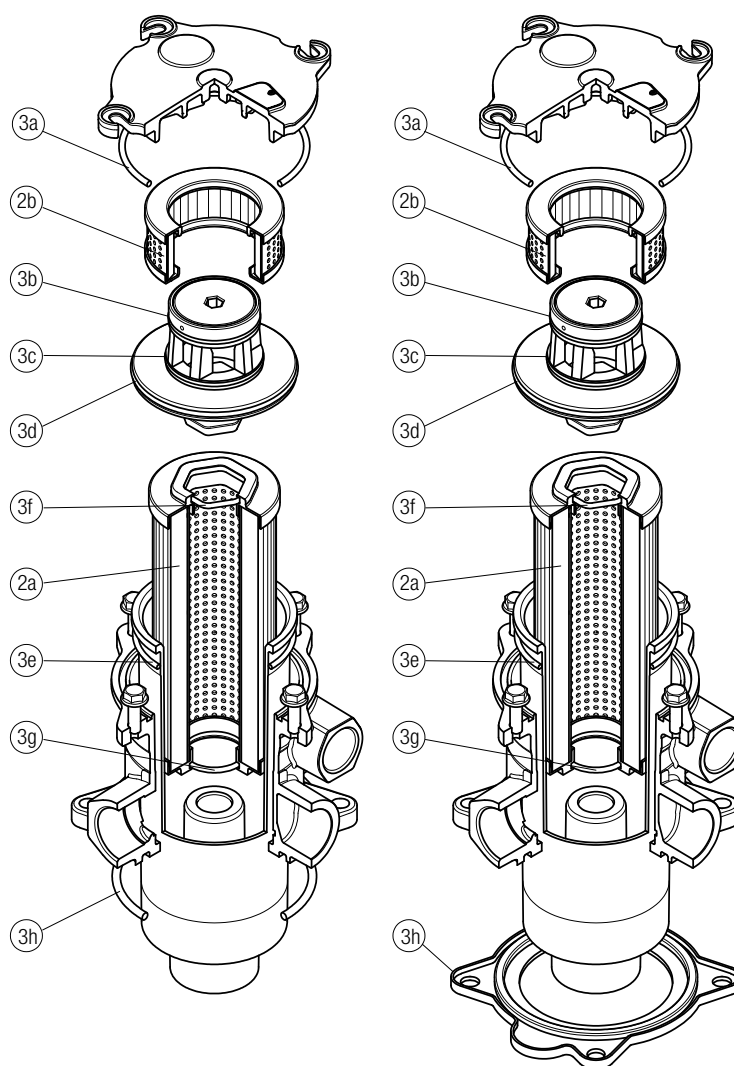
Order number for spare parts

MRSX 116



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

MRSX 165 - 166



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

Designation & Ordering code

VACUUM INDICATORS

Series	Configuration example 1:	VE	A	21	V	A	50	P01	EX
VE Electrical vacuum indicator	Configuration example 2:	VL	B	21	A	A	71	P01	
VL Electrical/Visual vacuum indicator	Configuration example 3:	VV	R	20				P01	
VV Vacuum gauge									
Type VE - VL	Type VV								
A Connection EN 10226 - R1/4"	A Axial connection EN 10226 - R1/4"								
B Connection EN 10226 - R1/8"	B Axial connection EN 10226 - R1/8"								
	R Radial connection EN 10226 - R1/4"								
	S Radial connection EN 10226 - R1/8"								
Vacuum setting	VE	VL	VV						
20 -0.16 bar	-	-	•						
21 -0.21 bar	•	•	-						
Seals	VEA - VLA	VEB - VLB							
A NBR	•	•							
V FPM	•	-							
Thermostat	VE	VL							
A Without thermostat	•	•							
Electrical connections	VE	VL							
50 Connection EN 175301-803	•	-							
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	•							
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	•							
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	•							
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	•							
Option									
P01 MP Filtri standard									
Pxx Customized									
Certifications	VEA21A	VEA21V	VEB	VL	VV				
Without	•	•	•	•	•				
EX ATEX certification	•	•	•	-	-				
UL UL certification	•	-	-	-	-				

BAROMETRIC (PRESSURE) INDICATORS

Series	Configuration example 1:	BE	M	15	H	A	41	P01	EX
BE Electrical pressure indicator	Configuration example 2:	BL	A	20	H	A	71	P01	
BL Electrical/Visual pressure indicator	Configuration example 3:	BV	R	14				P01	
BV Visual pressure indicator	Configuration example 4:	BV	P	20	H			P01	
Type	BE	BL	BV						
A Standard type	•	•	A Axial connection pressure gauge						
M With wired electrical connection	•	-	R Radial connection pressure gauge						
T With thermal switch	•	-	P Visual indicator with automatic reset						
			Q Visual indicator with manual reset						
Pressure setting	BEA-BEM	BET	BLA	BVA-BVR	BVP-BVQ				
14 1.4 bar	-	-	-	•	-				
15 1.5 bar	•	-	•	-	-				
20 2.0 bar	•	•	•	-	•				
25 2.5 bar	-	•	-	•	-				
Seals	BE	BLA	BVP-BVQ						
H HNBR	•	•	•						
Thermostat	BEA-BEM	BET	BLA						
A Without thermostat	•	-	•						
F With thermostat	-	•	-						
Electrical connections	BEA	BEM	BET	BL					
10 Connection AMP Superseal series 1.5	-	-	•	-					
30 Connection Deutsch DT-04-2-P	-	-	•	-					
41 Connection via four-core cable	-	•	-	-					
50 Connection EN 175301-803	•	-	•	-					
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•					
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•					
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	-	-	•					
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•					
Option									
P01 MP Filtri standard									
Pxx Customized									
Certifications	BEA	BEM-BET	BL	BV					
Without	•	•	•	•					
EX ATEX certification	•	-	-	-					
UL UL certification	•	-	-	-					

DIFFERENTIAL PRESSURE INDICATORS

Series	Configuration example 1:										
DE Electrical differential pressure indicator	Configuration example 2:										
DL Electrical/Visual differential pressure indicator	Configuration example 3:										
DT Electronic differential pressure indicator	Configuration example 4:										
DV Visual differential pressure indicator	Configuration example 5:										
	DE	DL	DT	DV	M	12	H	F	50	P01	UL
	DE	DL	DT	DV	E	20	V	A	71	P01	
	DE	DL	DT	DV	A	50	H	F	70	P01	
	DE	DL	DT	DV	M	70	V			P01	

PLUGS

Series	Configuration example T2 H	
T2 Plug		
Seals		
H HNBR		
V FPM		