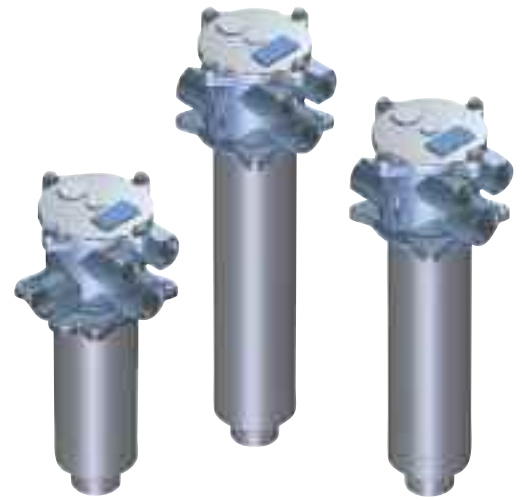


MRSX

Return/Suction

Maximum pressure 10 bar
Flow rates to 300 l/min



Technical data

Filter housing (Materials)

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

Pressure

- Working pressure: 10 bar (1 MPa)

Temperature

- From -25 °C to +110 °C

Δp Elements type

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

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length	1	2	3
• MRSX 116	1,30	1,40	-
• MRSX 165	3,40	3,80	4,10
• MRSX 166	3,40	3,80	4,10

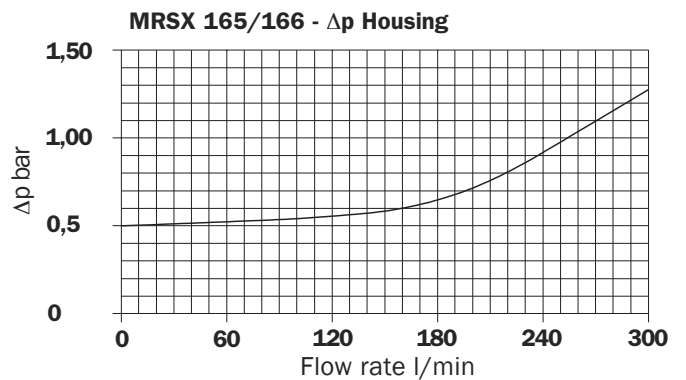
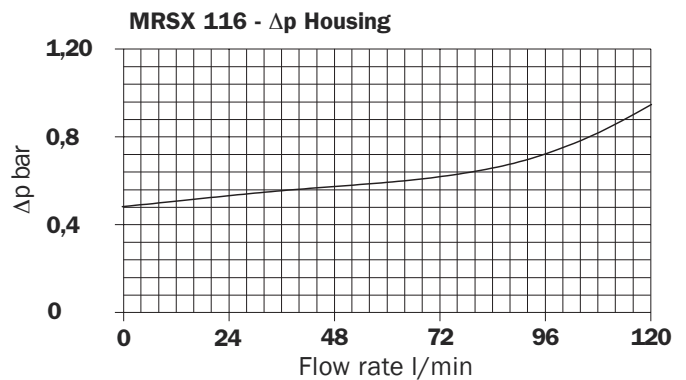
Volumes (dm³)

Length	1	2	3
• MRSX 116	0,80	1,00	-
• MRSX 165	2,00	2,60	3,00
• MRSX 166	2,00	2,60	3,00

Filter housings Δp pressure drop

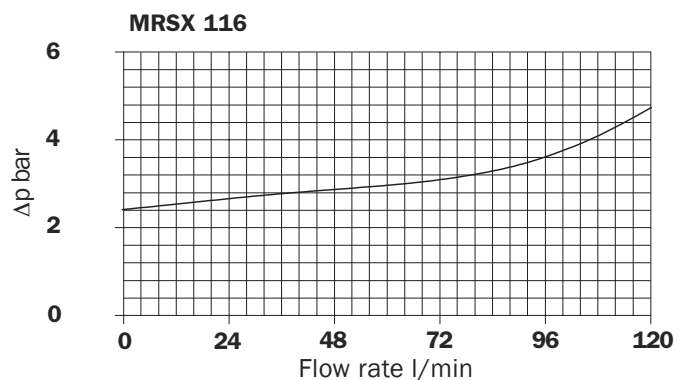
The curves are plotted utilising mineral oil with density of 0,86 kg/dm³ to ISO 3968.

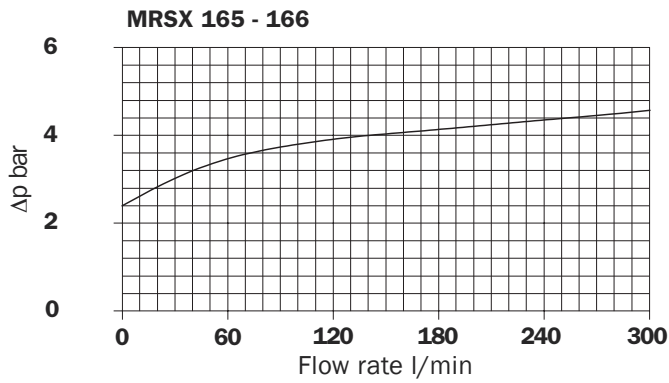
Δp varies proportionally with density.



Valves

Bypass valve pressure drop





Multiplication factor "Y" for definition of the pressure drop of filter elements.

Reference viscosity 30 mm²/s

Filter Element	Absolute Filtration		
	A 1 0	A 1 6	A 2 5
RSX 116 1	5,12	4,33	3,85
2	2,22	1,87	1,22
RSX 165 1	2,06	1,75	1,46
2	1,24	1,05	0,96
3	0,94	0,86	0,61

Filter sizing

Sizing data for single cartridge, head at top

- Δp Tot.
- Δpc Filter housing
- Δpe Filter element
- Y Multiplication factor
- Q l/min = flow rate
- V1 = reference viscosity 30 mm²/s (cSt)
- V2 = operating viscosity in mm²/s (cSt)
- Δp Tot. = Δpc + Δpe
- Δpe = Y : 1000 x Q x (V2/V1)

Calculation example with HLP Mineral Oil Variation in viscosity

- Data:
- Filter with in-line connections
- Pressure = 6 bar
- Flow rate = 200 l/min
- Viscosity = 46 mm²/s (cSt)
- Density = 0,86 Kg/dm³
- Filtration = 10 μm absolute
- With bypass valve

Practical example

- Δpe Filter housing
- Q = 200 l/min
- V₂ = 46 mm²/s (cSt)
- Pmax = 6 bar
- Filtration = 10 μm absolute
- Δp Tot. max = **0,4 bar** (max. recommended value)
- Δpe = (1,24 : 1000) x 200 x (46/30) = **0,37 bar**

- Δpc Filter housing
- Q tot = 200 l/min
- Q1 to the tank = 150 l/min
- Q2 to the pump = 50 l/min

Filter type - MRSX 165 (see housings pressure drop)

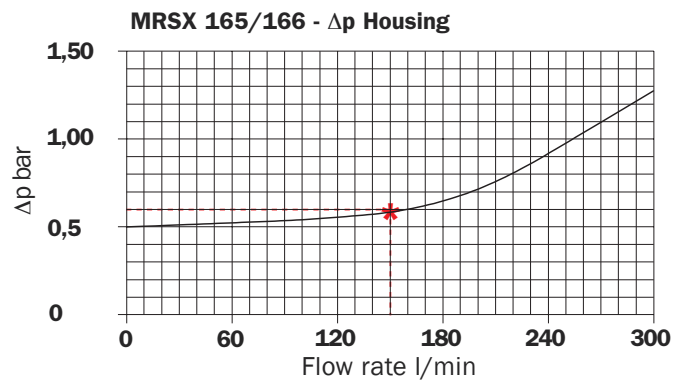
- Δp Tot. max 1 - 1,6 bar = Δpc + Δpe
- Δp Tot. = **0,59 (Q1) + 0,37 = 0,96 bar**

Sized filter type:
MRSX 165 2 F A G1 0 A10 S P01

Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0,86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



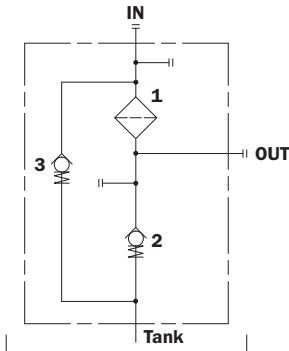
Hydraulic symbols

LEGEND

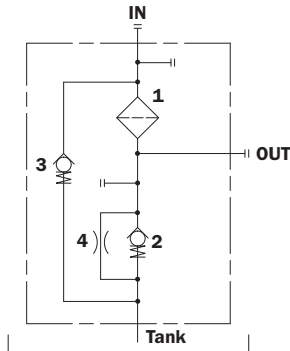
- | | |
|---|--|
| 1 - Filter element | 4 - Depressurization valve |
| 2 - Back-Pressure valve: opening pressure 0,5 bar \pm 10% | 5 - Anti-Cavitation valve |
| 3 - Bypass valve: opening pressure 2,5 bar \pm 10% | 6 - Safety filter element (wire mesh 60 μ m) |
| | 7 - Anti-Cavitation valve / Anti-Emptying valve |

MRSX 116

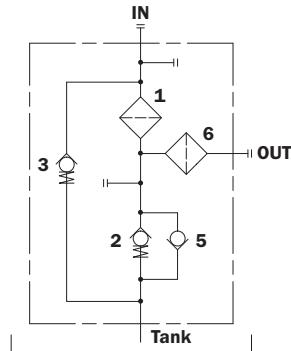
Valves "A" option



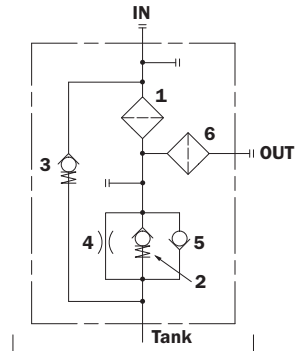
Valves "B" option



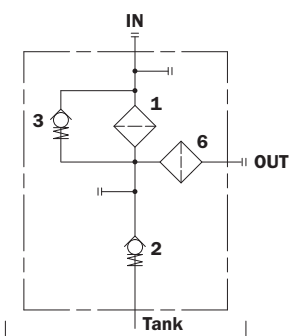
Valves "C" option



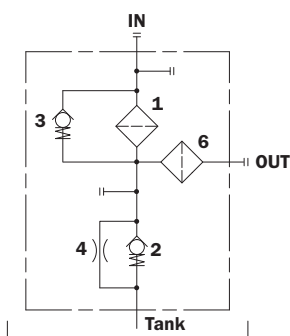
Valves "D" option



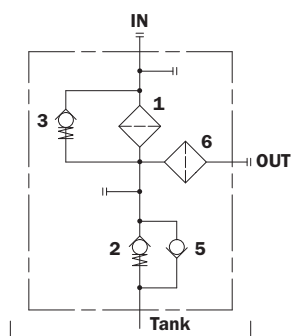
Valves "E" option



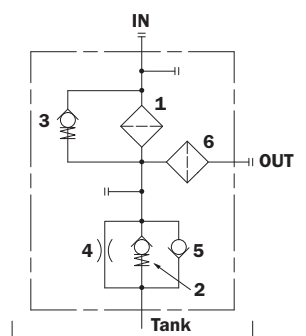
Valves "F" option



Valves "G" option

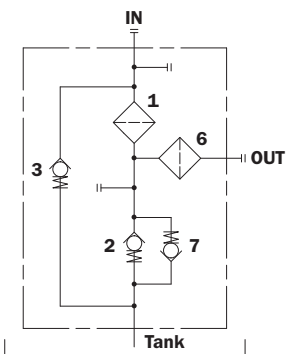


Valves "H" option

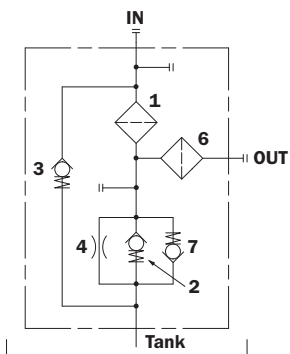


Suitable only for tank side-wall mounting

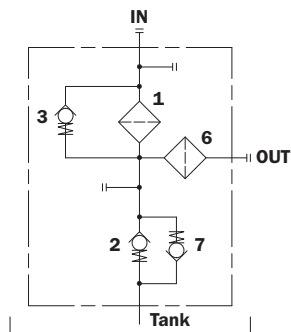
Valves "I" option



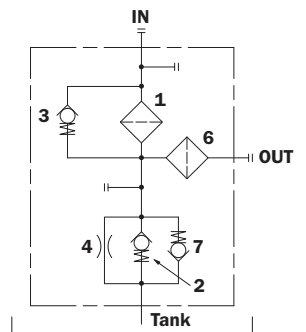
Valves "L" option



Valves "M" option

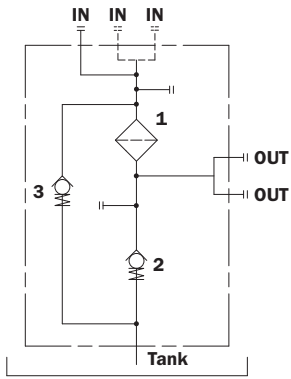


Valves "N" option

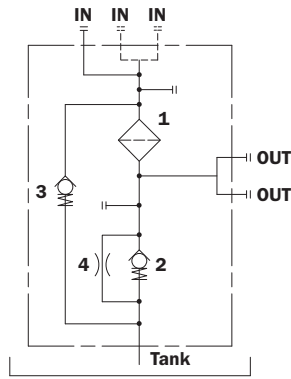


MRSX 165 - 166

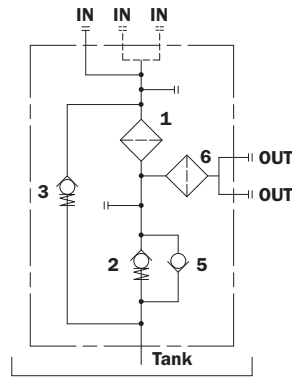
Valves "A" option



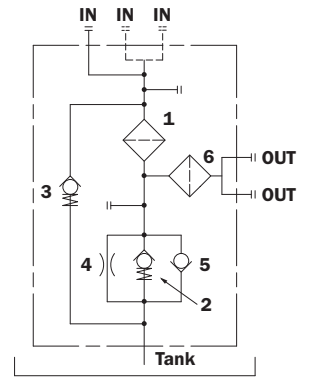
Valves "B" option



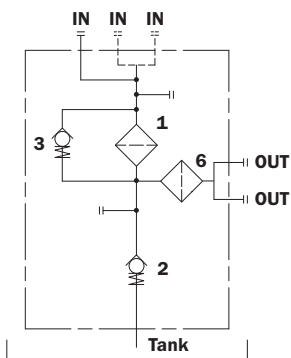
Valves "C" option



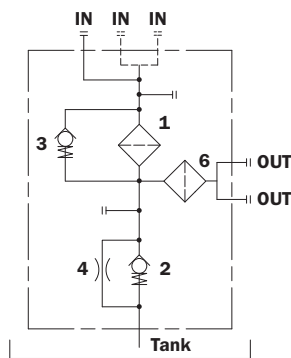
Valves "D" option



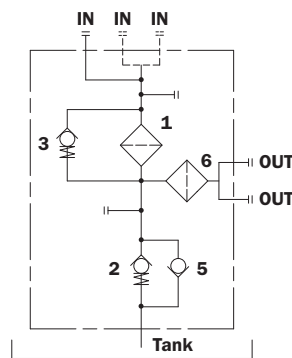
Valves "E" option



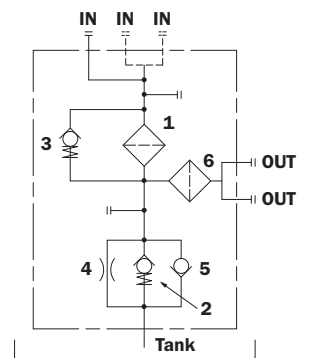
Valves "F" option



Valves "G" option

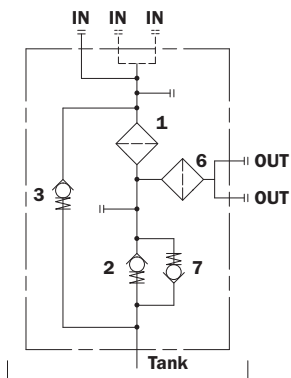


Valves "H" option

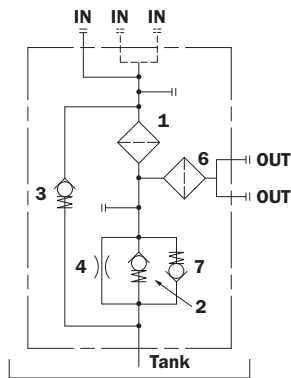


Suitable only for tank side-wall mounting

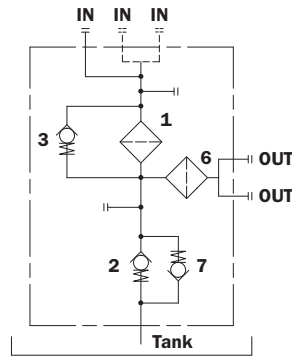
Valves "I" option



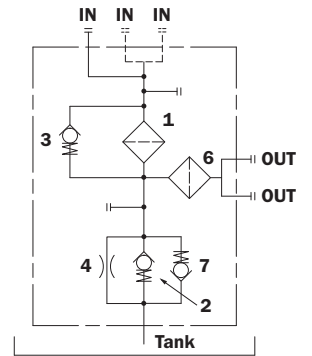
Valves "L" option



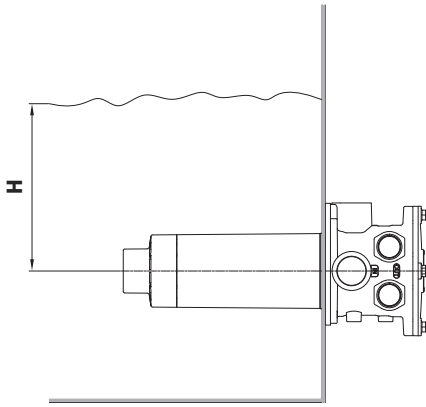
Valves "M" option



Valves "N" option



Tank side-wall mounting application



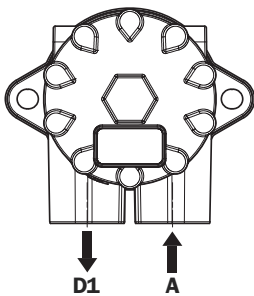
H= max. 800 mm

Only for hydraulic schemes:

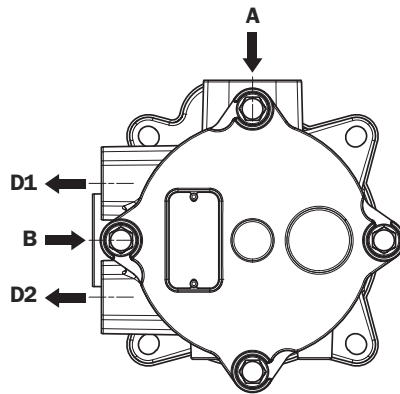
A - B - E - F - I - L - M - N

Port configuration

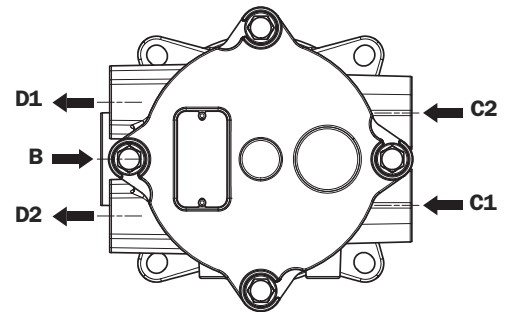
MRSX 116



MRSX 165



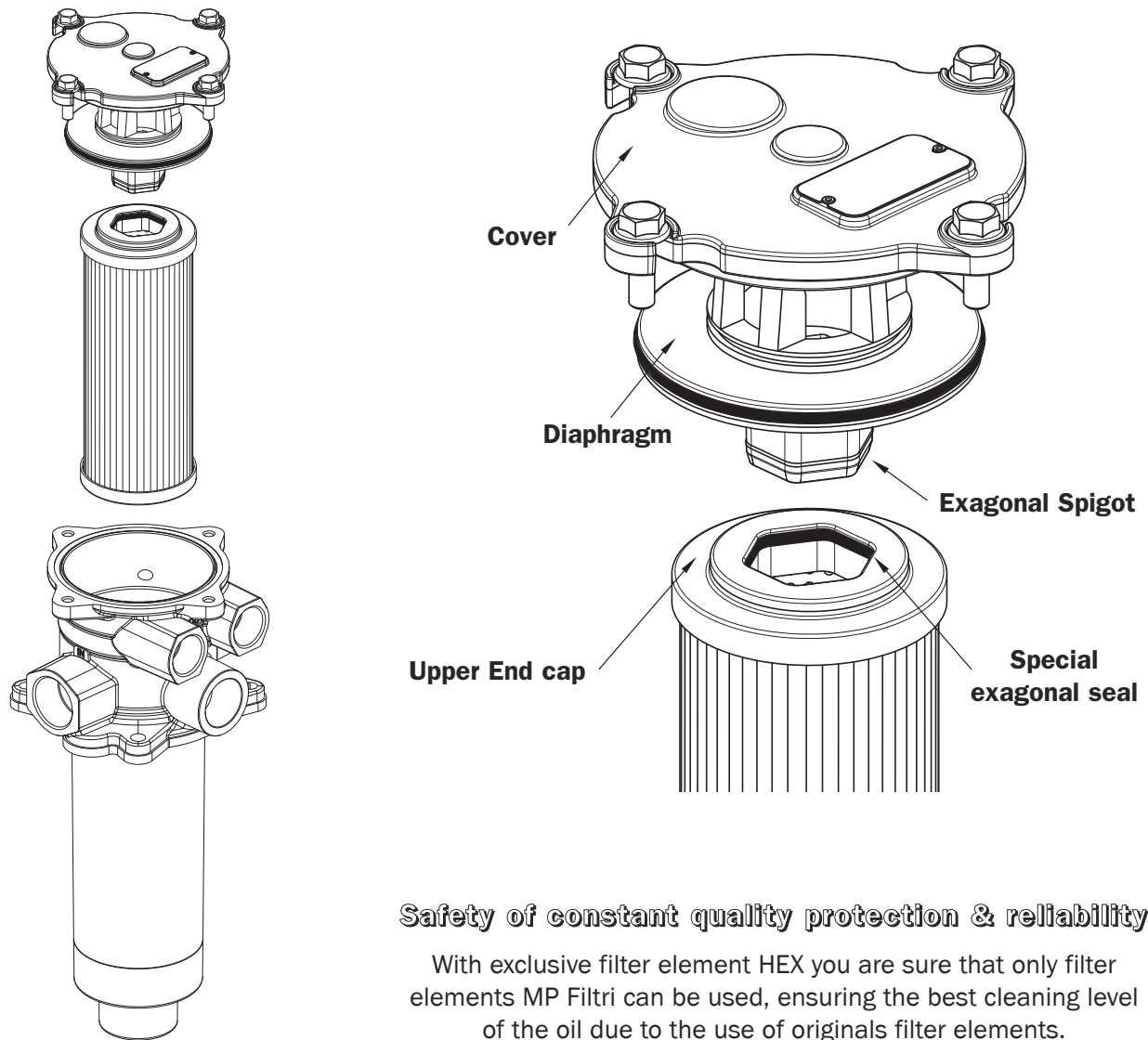
MRSX 166



Thread connections

Code	A (IN)	B (IN)	C1 (IN)	C2 (IN)	D1 (OUT)	D2 (OUT)	T (Indicator port)
MRSX 116 x x G1 0 xxx x P01	G 3/4"	-	-	-	G 3/4"	-	G 1/8"
MRSX 116 x x G2 0 xxx x P01	G 1"	-	-	-	G 1"	-	G 1/8"
MRSX 116 x x G3 0 xxx x P01	3/4" NPT	-	-	-	3/4" NPT	-	1/8" NPT
MRSX 116 x x G4 0 xxx x P01	1" NPT	-	-	-	1" NPT	-	1/8" NPT
MRSX 116 x x G5 0 xxx x P01	SAE 12	-	-	-	SAE 12	-	1/8" NPT
MRSX 116 x x G6 0 xxx x P01	SAE 16	-	-	-	SAE 16	-	1/8" NPT
MRSX 116 x x D1 0 xxx x P01	G 1"	-	-	-	G 3/4"	-	G 1/8"
MRSX 116 x x D2 0 xxx x P01	1" NPT	-	-	-	3/4" NPT	-	1/8" NPT
MRSX 116 x x D3 0 xxx x P01	SAE 16	-	-	-	SAE 12	-	1/8" NPT
MRSX 165 x x G1 0 xxx x P01	G 1 1/4"	-	-	-	G 1"	G 1"	G 1/8"
MRSX 165 x x G2 0 xxx x P01	1 1/4" NPT	-	-	-	1" NPT	1" NPT	1/8" NPT
MRSX 165 x x G3 0 xxx x P01	SAE 20	-	-	-	SAE 16	SAE 16	1/8" NPT
MRSX 165 x x G1 1 xxx x P01	G 1 1/4"	G 1 1/4"	-	-	G 1"	G 1"	G 1/8"
MRSX 165 x x G2 1 xxx x P01	1 1/4" NPT	1 1/4" NPT	-	-	1" NPT	1" NPT	1/8" NPT
MRSX 165 x x G3 1 xxx x P01	SAE 20	SAE 20	-	-	SAE 16	SAE 16	1/8" NPT
MRSX 166 x x G1 1 xxx x P01	-	G 1 1/4"	G 1"	G 1"	G 1"	G 1"	G 1/8"
MRSX 166 x x G2 1 xxx x P01	-	1 1/4" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1/8" NPT
MRSX 166 x x G3 1 xxx x P01	-	SAE 20	SAE 16	SAE 16	SAE 16	SAE 16	1/8" NPT

New filter element **HEX series**
with exclusive interface connection

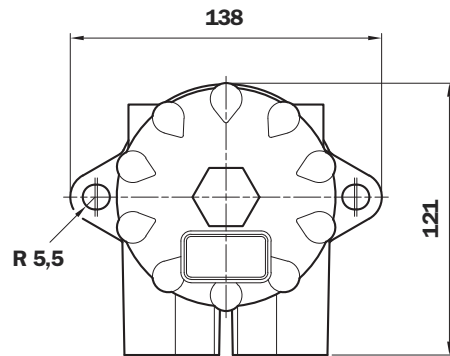
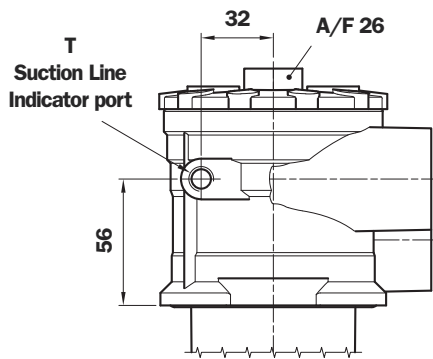
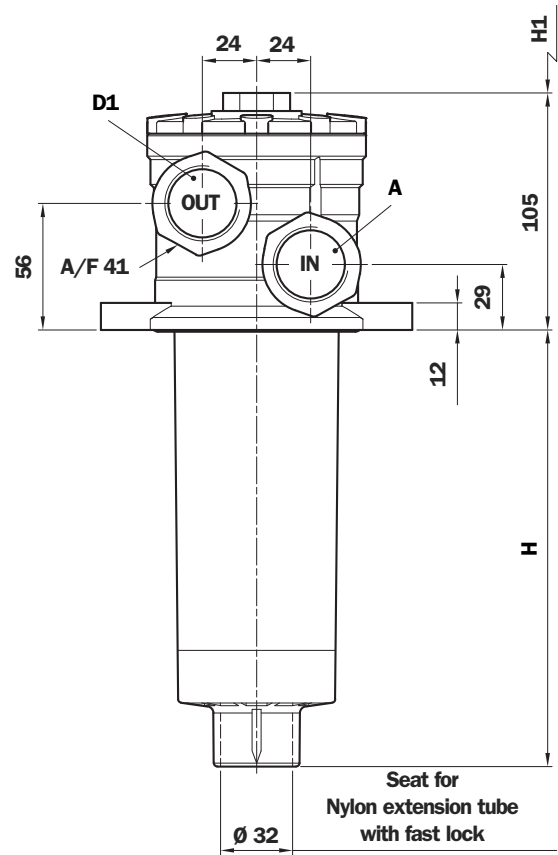
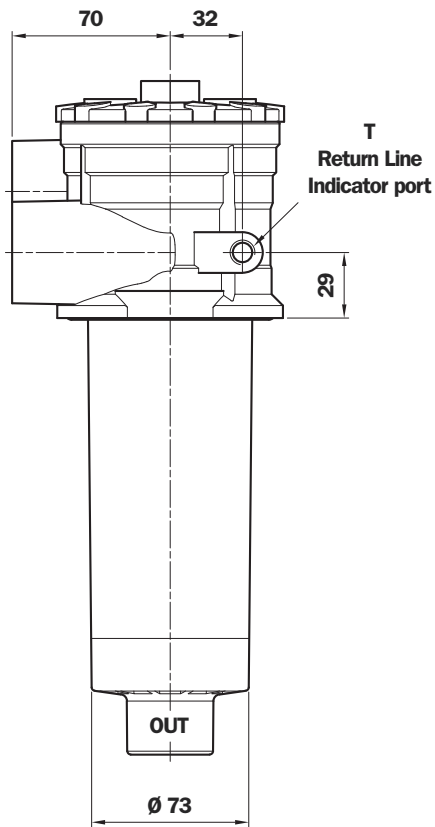


Safety of constant quality protection & reliability

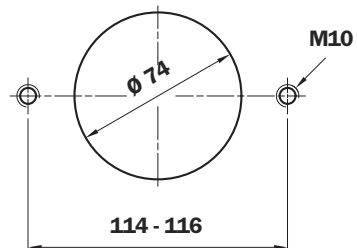
With exclusive filter element HEX you are sure that only filter elements MP Filtri can be used, ensuring the best cleaning level of the oil due to the use of originals filter elements.

Note:
Available on request filter series MRS diaphragm with cylindrical spigot, element RS with standard O-Ring on the upper end cap.

MRSX 116



Holes on the tank

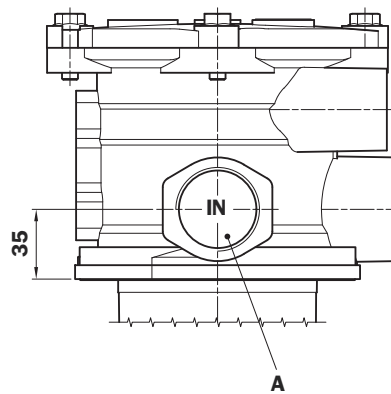
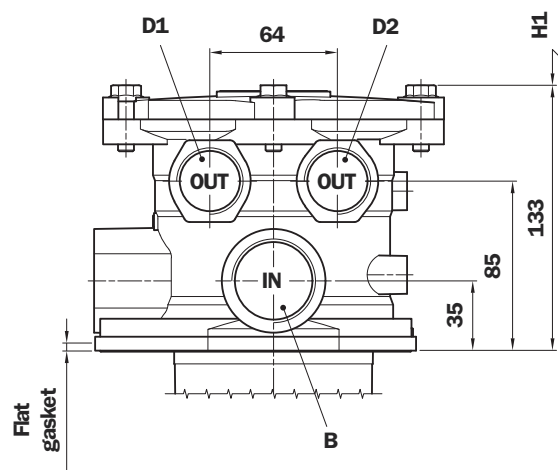
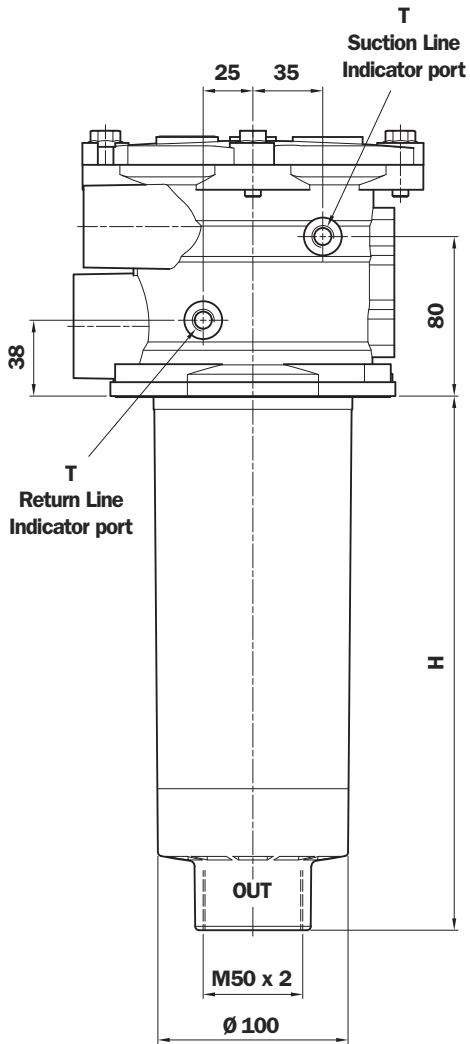


MRSX 116

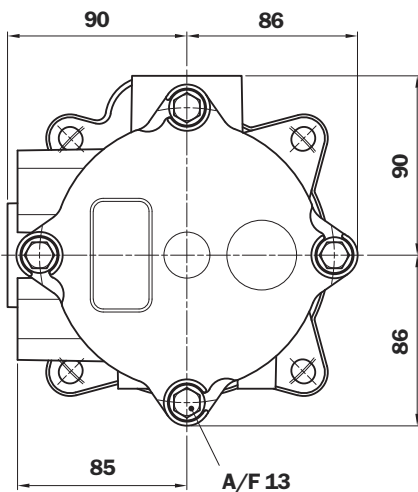
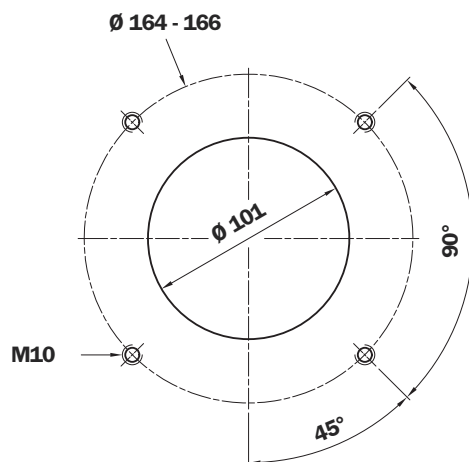
Filter Length	H mm	H1 mm
1	203	240
2	263	300

See page 282 thread connections

MRSX 165



Holes on the tank

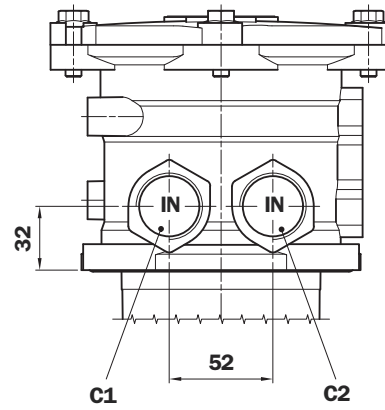
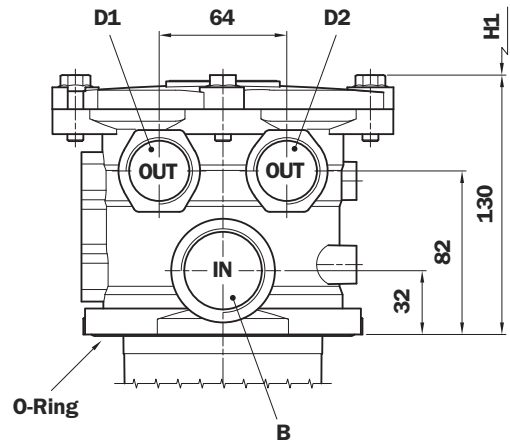
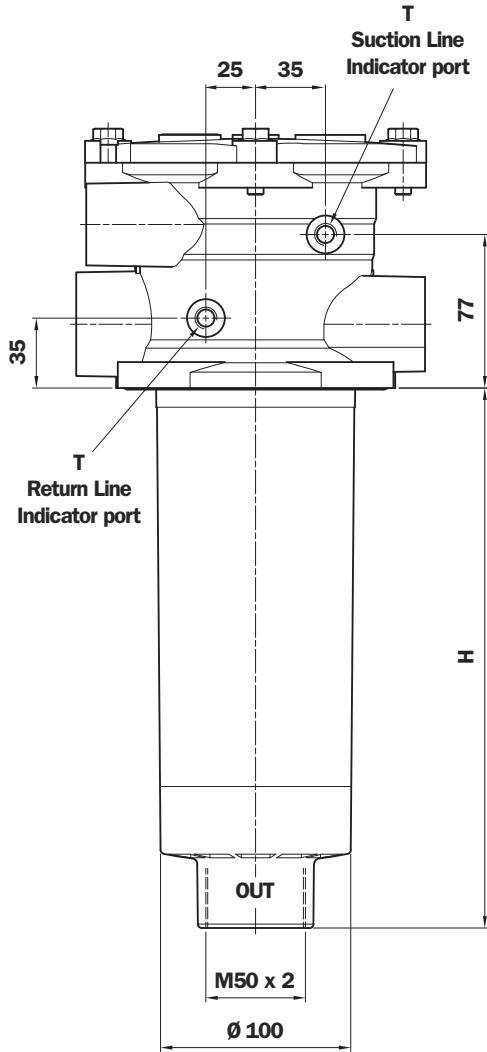


MRSX 165

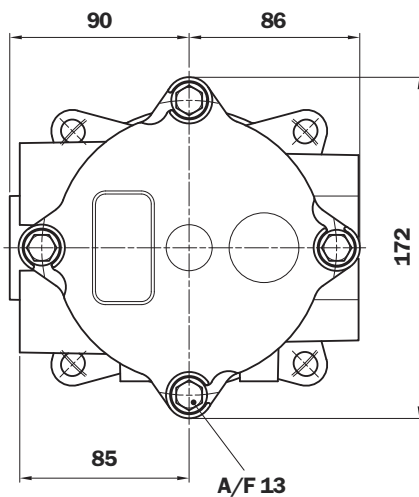
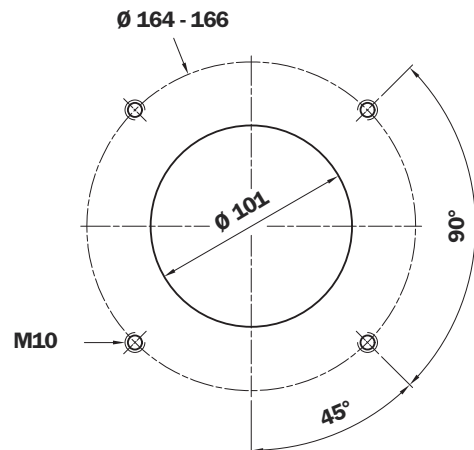
Filter Length	H mm	H1 mm
1	267	320
2	375	430
3	442	500

See page 282 thread connections

MRSX 166



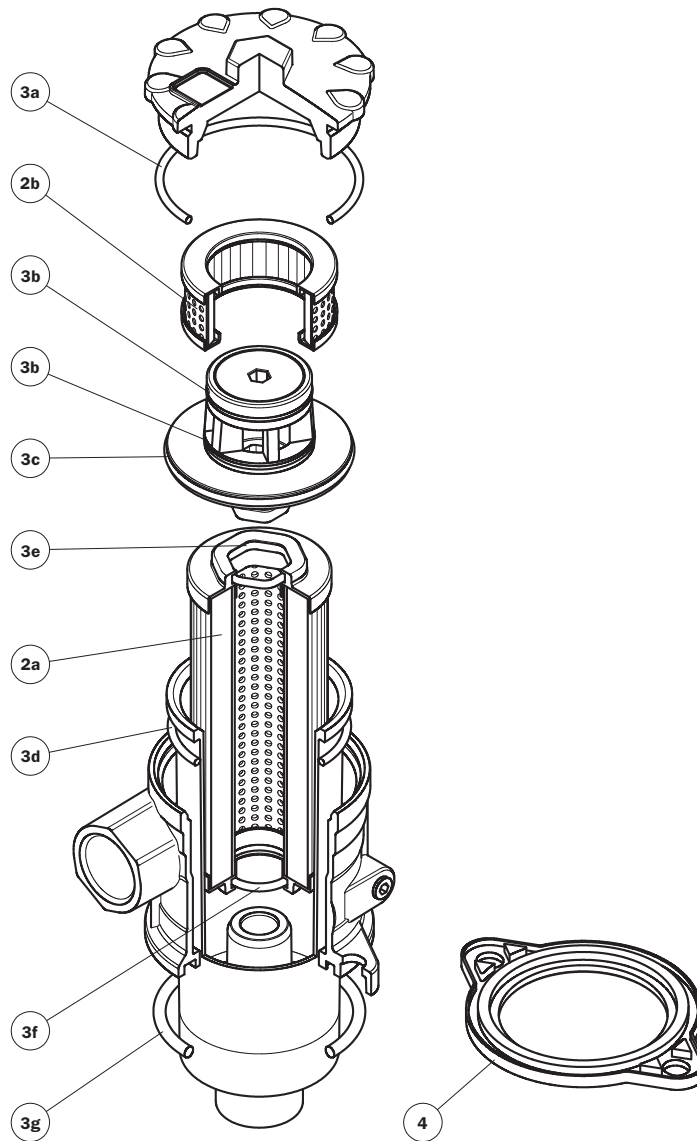
Holes on the tank



MRSX 166

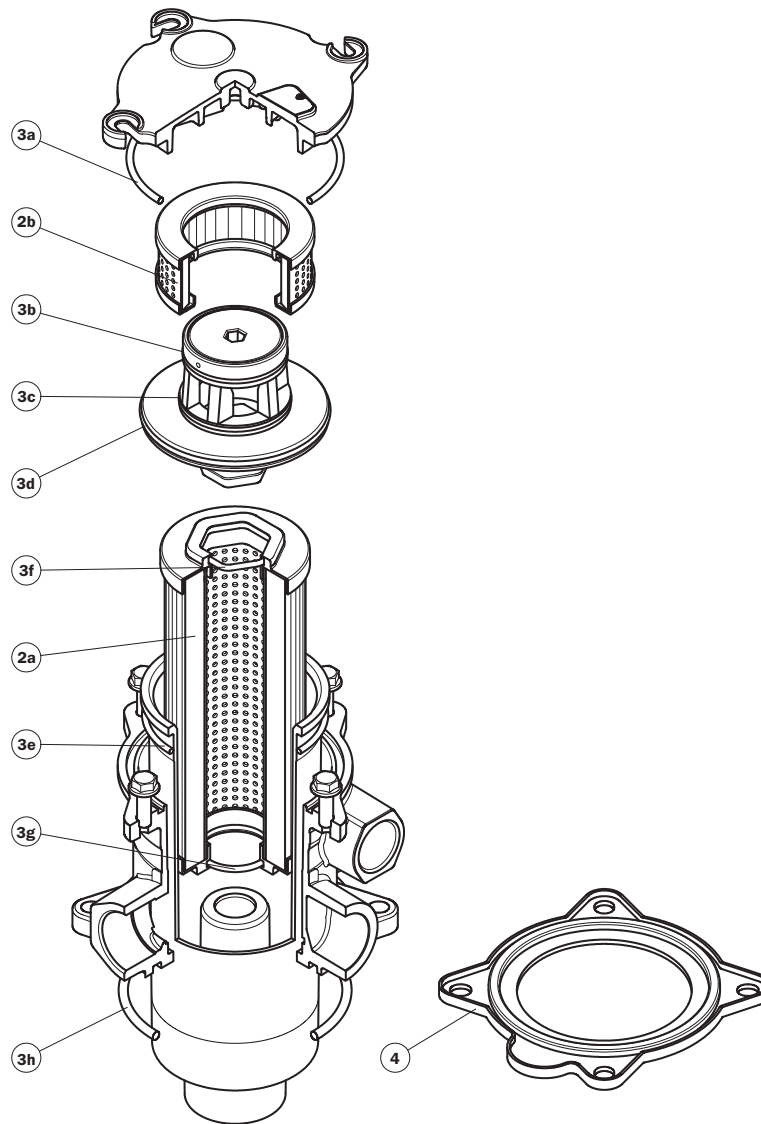
Filter Length	H mm	H1 mm
1	270	320
2	378	430
3	445	500

See page 282 thread connections



Item	Description	Q.ty	FILTER Series MRSX 116	
1	Filter assembly	1	See order table	
2a	Filter element	1	See order table	
2b	Safety filter element	1	S116M60P01	
3	Seal Kit	1	NBR 02050617	FPM 02050619
3a	Cover seal	1	O-R 4312 Ø 78,87 x 3,53	
3b	Diaphragm seal for safety filter element	2	O-R 2162 Ø 41 x 1,78	
3c	Diaphragm external seal	1	O-R 177 Ø 74,61 x 3,53	
3d	Bowl seal	1	O-R 4287 Ø 72,62 x 3,53	
3e	Filter element top seal	1	01026397	01026398
3f	Filter element bottom seal	1	O-R 4112 Ø 28,17 x 3,53	
3g	Head seal	1	O-R 6325 Ø 81,92 x 5,34	
4	Optional head seal (Molded gasket)	1	01026593	01026598

Spare parts



Item	Description	Q.ty	FILTER Series			
			MRSX 165		MRSX 166	
1	Filter assembly	1	See order table			
2a	Filter element	1	See order table			
2b	Safety filter element	1	S165M60P01			
3	Seal Kit	1	NBR 02050627	FPM 02050630	NBR 02050627	FPM 02050630
3a	Cover seal	1	O-R Metric Ø 177 x 4			
3b	Diaphragm seal for safety filter element (top)	1	O-R 3218 Ø 55,25 x 2,62			
3c	Diaphragm seal for safety filter element (bottom)	1	O-R 3231 Ø 58,42 x 2,62			
3d	Diaphragm external seal	1	O-R Metric Ø 100 x 4			
3e	Bowl seal	1	O-R 4387 Ø 98,02 x 3,53			
3f	Filter element top seal	1	01026376	01026377	01026376	01026377
3g	Filter element bottom seal	1	O-R 144 Ø 39,69 x 3,53			
3h	Head seal	1	O-R 6485 Ø 123,19 x 5,34			
4	Optional head seal (Molded gasket)	1	01026621	01026622	01026626	01026627

Ordering information MRSX 116 - 165 - 166

Filter assembly	1	2	3	4a	5	6	7	8	9
MRSX	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Example 1: MRSX	116	1	B	A	G1	0	A16	B	P01
Example 2: MRSX	165	2	C	B	G3	0	A10	S	P01
Example 3: MRSX	166	3	G	V	G2	1	A25	S	P01

Filter element	1	2	7	4b	9
RSX	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Example 1: RSX	116	1	A16	A	P01
Example 2: RSX	165	2	A10	A	P01
Example 3: RSX	165	3	A25	V	P01

1 - Size

Filter	Filter element
<input type="text" value="116"/>	<input type="text" value="116"/>
<input type="text" value="165"/>	<input type="text" value="165"/>
<input type="text" value="166"/>	<input type="text" value="165"/>

2 - Filter length

<input type="text" value="116"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	
<input type="text" value="165"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>
<input type="text" value="166"/>	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>

3 - Valves option

<input type="text" value="A"/>	<input type="text" value="E"/>	See pages 280-281 for "Hydraulic schemes"
<input type="text" value="B"/>	<input type="text" value="F"/>	
<input type="text" value="C"/>	<input type="text" value="G"/>	
<input type="text" value="D"/>	<input type="text" value="H"/>	
<input type="text" value="I"/>	<input type="text" value="M"/>	Only for tank side-wall mounting applications (see point "8 - Style", option "B")
<input type="text" value="L"/>	<input type="text" value="N"/>	

4 - Seals

4a - Filter assembly

<input type="text" value="A"/>	NBR - O-Ring on head
<input type="text" value="B"/>	NBR - Flat gasket on head
<input type="text" value="V"/>	FPM - O-Ring on head
<input type="text" value="D"/>	FPM - Flat gasket on head

4b - Filter element

<input type="text" value="A"/>	NBR
<input type="text" value="V"/>	FPM

5 - Standard connections

MRSX 116

<input type="text" value="G1"/>	<input type="text" value="G4"/>	<input type="text" value="D1"/>	See page 6 threaded connections
<input type="text" value="G2"/>	<input type="text" value="G5"/>	<input type="text" value="D2"/>	
<input type="text" value="G3"/>	<input type="text" value="G6"/>	<input type="text" value="D3"/>	

MRSX 165 - 166

<input type="text" value="G1"/>	See page 6 threaded connections
<input type="text" value="G2"/>	
<input type="text" value="G3"/>	

6 - Additional IN connection

MRSX 116

<input type="text" value="0"/>	Without additional IN connection
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MRSX 165

<input type="text" value="0"/>	Without additional IN connection
<input type="text" value="1"/>	With additional IN connection "B" (see page 6 threaded connections)

MRSX 166

<input type="text" value="1"/>	With additional IN connection "B" (see page 6 threaded connections)
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7 - Filter element

<input type="text" value="A10"/>	Inorganic microfibre 10 µm	Absolute filtration Inorganic Microfibre β _x (c) ≥ 1000
<input type="text" value="A16"/>	Inorganic microfibre 16 µm	
<input type="text" value="A25"/>	Inorganic microfibre 25 µm	

8 - Style

<input type="text" value="S"/>	Standard
<input type="text" value="B"/>	For tank side-wall mounting applications. Only for valves: A - B - E - F - I - L - M - N

9 - Option

<input type="text" value="P01"/>	MP Filtri standard
<input type="text" value="Pxx"/>	On request

Vacuum indicator:

VVB + VEB: See pages 322 - 323

Barometric optical indicator:

BVA25: See page 328

Barometric electrical indicator:

BEA25: See page 326

BET25: See page 327

For Clogging Indicator:
See page 324

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