

LMP 110

Findynamica
drive and control products



Maximum pressure 80 bar
Flow rates to 160 l/min

Filter housing (Materials)

- Head: Aluminium
- Housing: Cataphoresis Painting
- Bypass valve: Brass - Aluminium

Pressure

LMP 110 length: 1 - 2 - 3 - 4

- Working pressure: 80 bar (8 MPa)
- Test pressure: 120 bar (12 MPa)
- Burst pressure: 290 bar (29 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 80 bar (8 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Δp Elements type

- Series N and W elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length

- LMP110 - 1 1,6
- LMP110 - 2 1,8
- LMP110 - 3 2,1
- LMP110 - 4 2,6

Volumes (dm³)

Length

- LMP110 - 1 0,75
- LMP110 - 2 0,81
- LMP110 - 3 1,11
- LMP110 - 4 1,53

Connections

- Inlet/Outlet In-Line LMP 110
- Inlet/Outlet In-Line + second inlet port 90° LMP 112
- Inlet/Outlet In-Line + second outlet port 90° LMP 116
- Inlet/Outlet In-Line + outlet bypass port 90° LMP 118
- Inlet/Outlet In-Line + outlet safety valve 90° LMP 119

Compatibility (to ISO 2943)

- Housings compatible with: Mineral oils, synthetic fluids. Aqueous emulsions, water and glycol (series W required).
- The filter elements are compatible with: Mineral oils, synthetic fluids. Aqueous emulsions, water and glycol (series W required).

- NBR seals series A, compatible with: Mineral oils, synthetic fluids, aqueous emulsions and water and glycol.
- FPM seals series V, compatible with: Synthetic fluids type HS-HFDR-HFDS-HFDU

Recommended maximum flow rate => see page 35

Filter Element Area

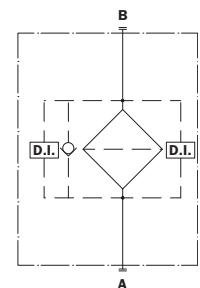
Filter element in stainless steel mesh
Length

Type	1	2	3	4
CU 110	1302	1764	2464	3864
Values expressed in cm ²				

LMP 110



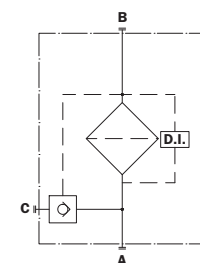
Style LMP 110



LMP 118



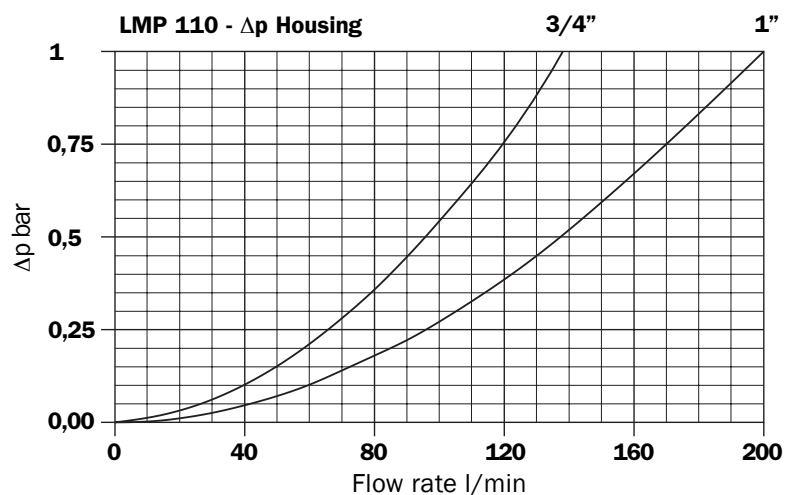
Style LMP 118



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.



LMP 112



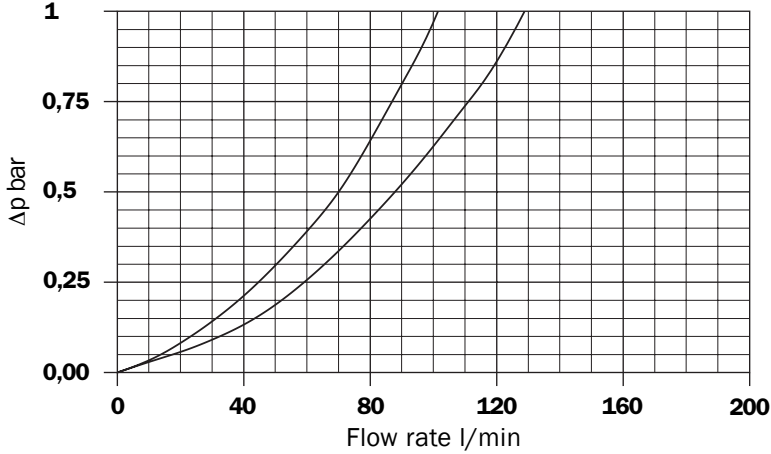
**LMP 112
(plug not included)**



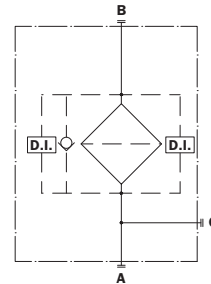
**LMP 116
(plug not included)**



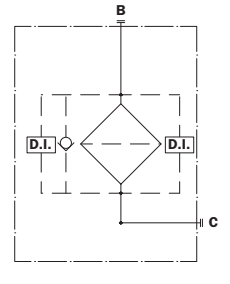
LMP 112 - Δp Housing OUT 3/4" OUT 1"



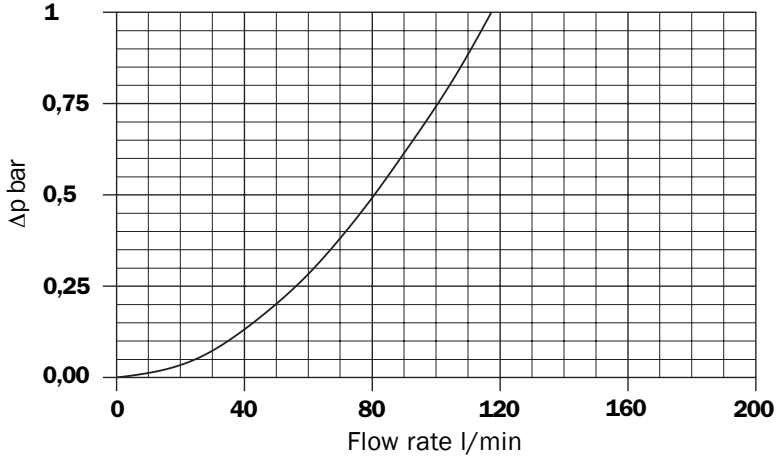
Style
LMP 112



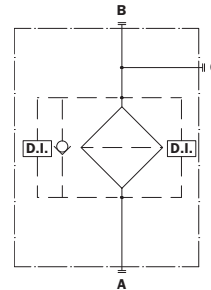
Style
LMP 112



LMP 116 - Δp Housing IN 3/4" - 1"



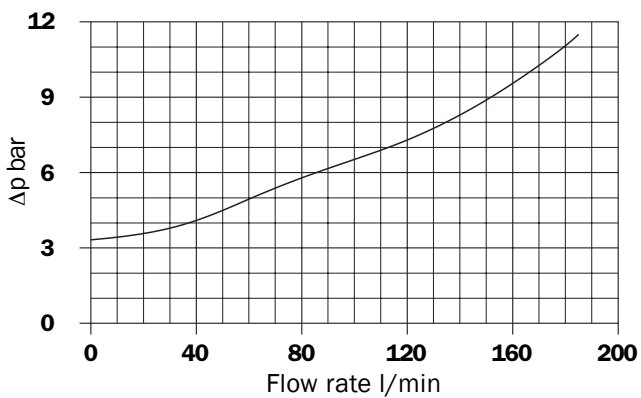
Style
LMP 116



Valves

Bypass valve pressure drop

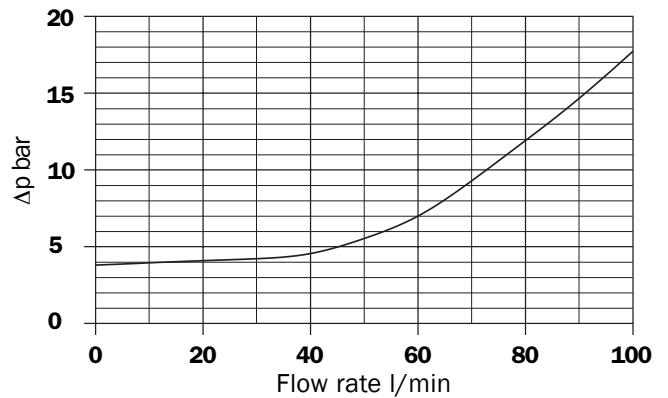
LMP 110 - LMP 112 - LMP 116 - 119



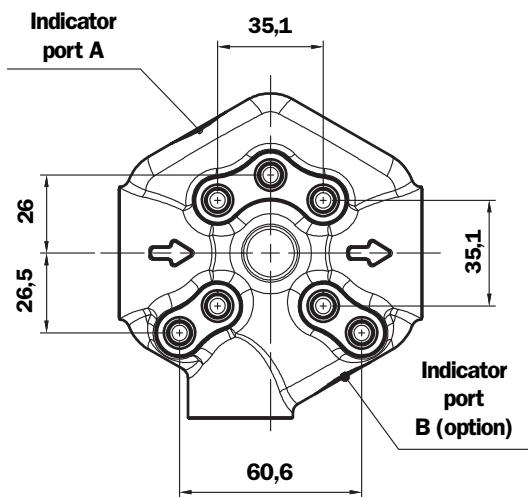
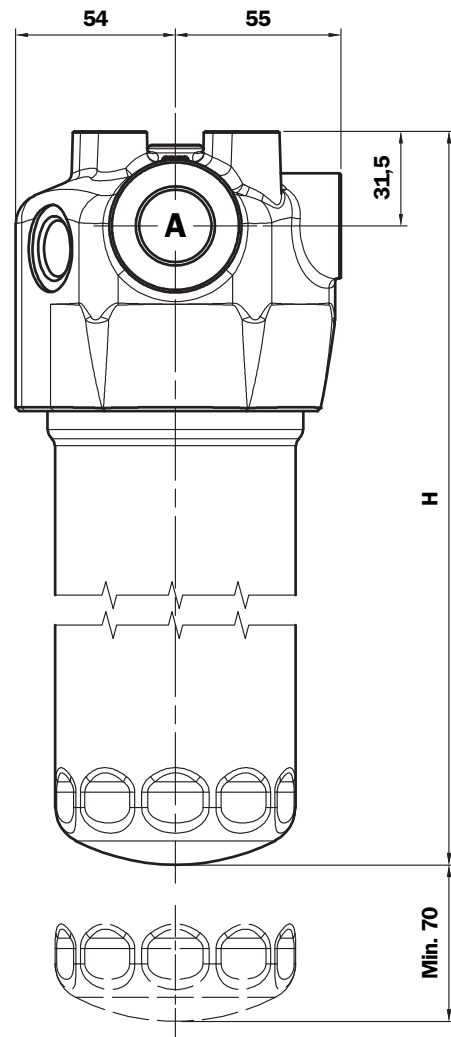
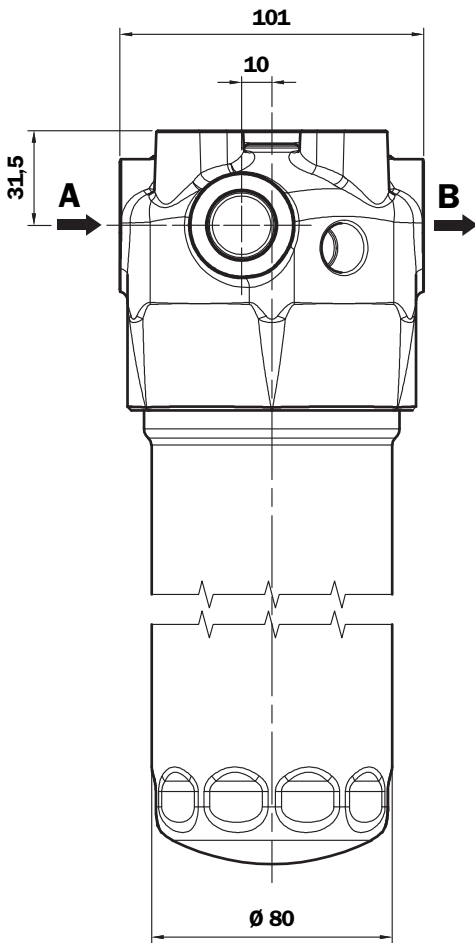
Valves

Bypass valve pressure drop

LMP 118



LMP 110

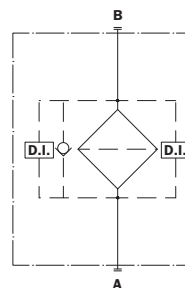


Filter fixing holes LMP 110 - 112 - 116 - 118 - 119

Double filter fixing holes

D 3/8" UNC x depth 12 mm

E M10 x depth 12 mm

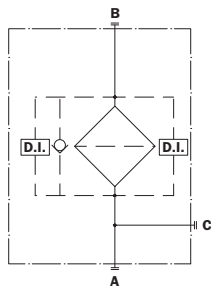
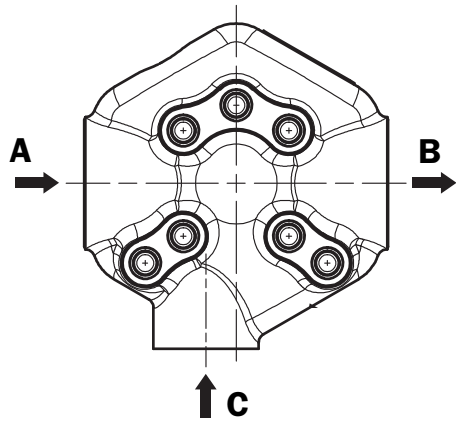


LMP 110

Length Filter	H mm
1	182
2	215
3	265
4	365

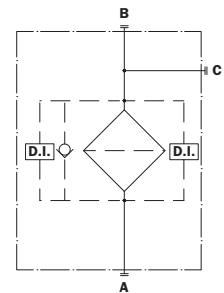
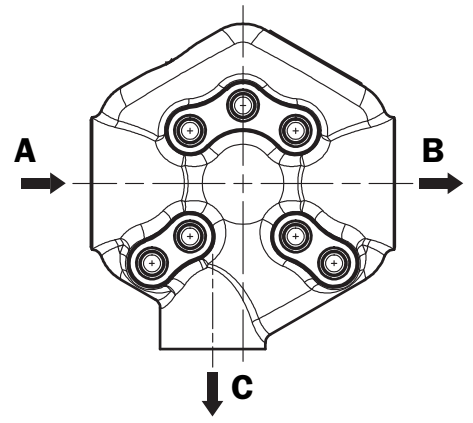
St.	Connections A - B
A	G 3/4"
B	G 1"
C	3/4" NPT
D	1" NPT
E	SAE 12
F	SAE 16

LMP 112

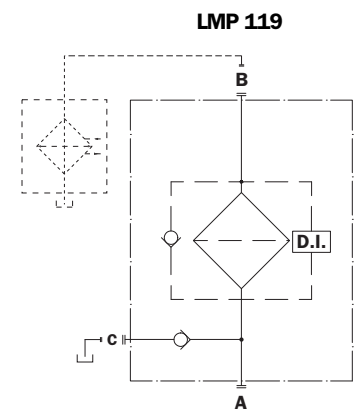
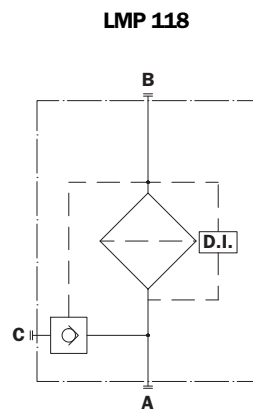
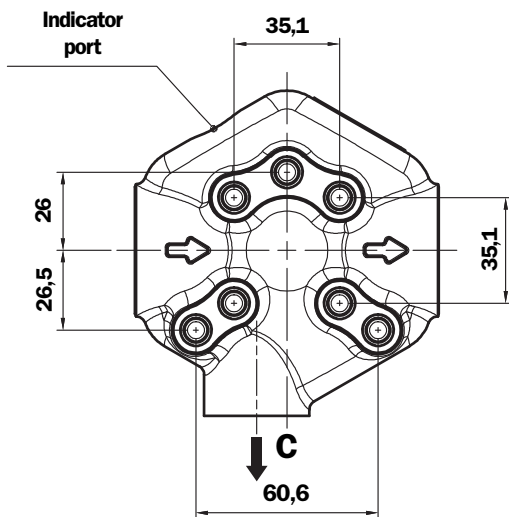
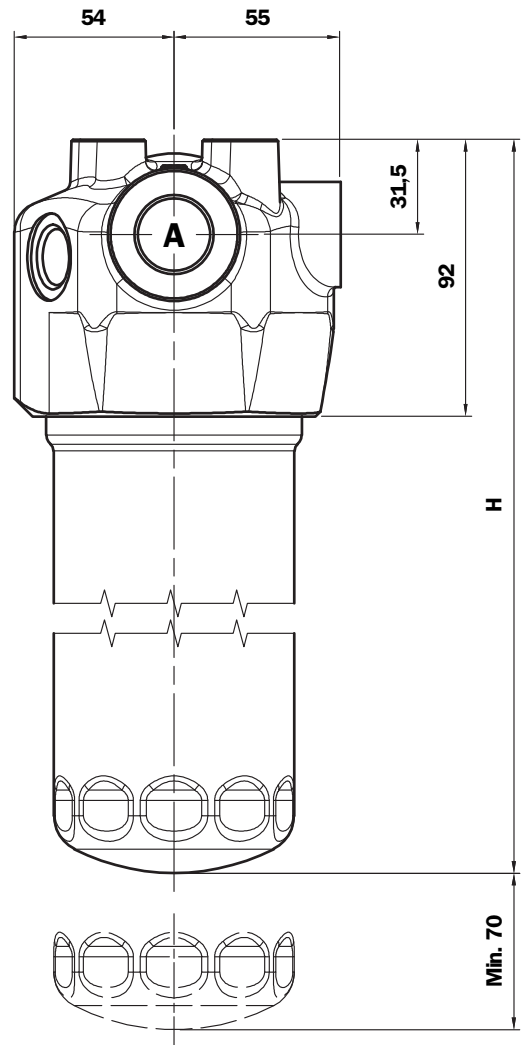
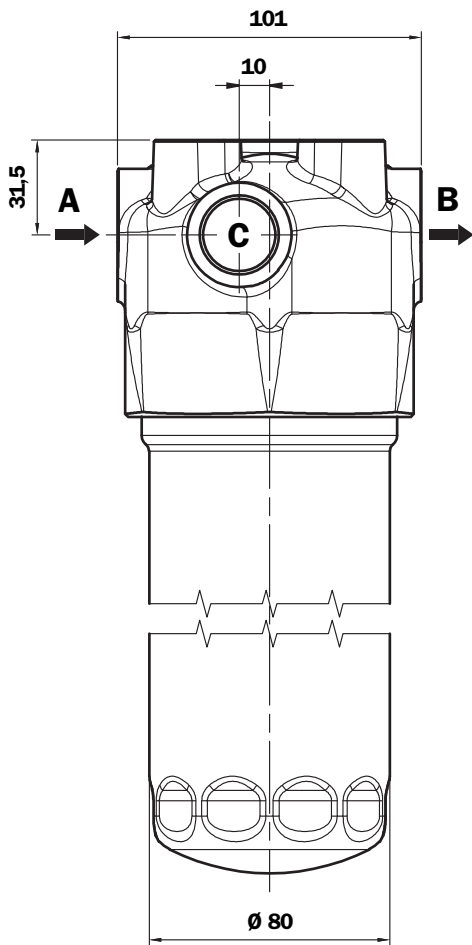


St.	Connections A - B	Lateral connections C
A	G 3/4"	G 3/4"
B	G 1"	G 3/4"
C	3/4" NPT	3/4" NPT
D	1" NPT	3/4" NPT
E	SAE 12	SAE 12
F	SAE 16	SAE 12

LMP 116



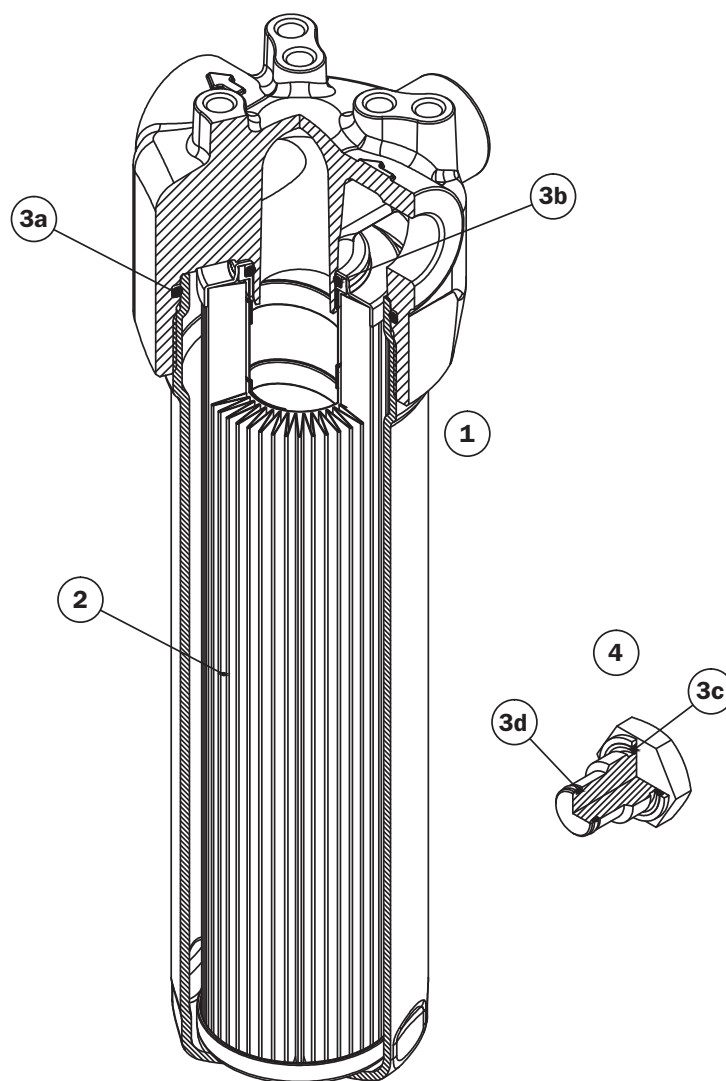
LMP 118 - 119



LMP 118 - 119

Length Filter	H mm
1	182
2	215
3	265
4	365

St.	Connections A - B	Lateral connection C
A	G 3/4"	G 3/4"
B	G 1"	G 3/4"
C	3/4" NPT	3/4" NPT
D	1" NPT	3/4" NPT
E	SAE 12	SAE 12
F	SAE 16	SAE 12



Item	Description	Q.ty	FILTER Series	
			LMP 110 - 112 - 116 - 118 - 119	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seals Kit	1	NBR 02050478	FPM 02050479
3a	O-Ring for housing	1	O-R 4312 Ø 78,97 x 3,53	
3b	O-Ring for filter element	1	O-R 4125 Ø 31,34 x 3,53	
3c	Seal for indicator	1	NBR 01030058	FPM 01030046
3d	O-Ring for indicator	1	O-R 2050 Ø 12,42 x 1,78	
4	Indicator connection plug	1	T2H	T2V
-	Indicators	1	See order table	

Ordering information LMP 110 - 119

Filter assembly **LMP**

	1	2	3	4	5	6	7	8	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LMP	110	2	B	A	B	3	A10	N	P01

Filter element **CU110**

	2	7	4	8	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: CU110	2	A10	A	N	P01

1 - Style

Filter	Filter element
110	110
112	110
116	110
118	110
119	110

2 - Filter length

1
2
3
4

3 - Valves

S	Without bypass (excluded LMP 118 - 119)
B	With bypass
<input type="checkbox"/>	With bypass Opening pressure: on request

4 - Filter seals

A	NBR
V	FPM
W	NBR (Compatible with fluid HFA, HFB, HFC)
<input type="checkbox"/>	On request

5 - Connection

Type	MULTIPOINT
A	G 3/4"
B	G 1"
C	3/4" NPT
D	1" NPT
E	SAE 12
F	SAE 16

6 - Indicator port

1	No
2	A
3	B (excluded LMP 118 - 119)
6	A+B (excluded LMP 118 - 119)

7 - Filter element

A01	Inorganic microfibre* 1 µ	} Absolute filtration βx (c) ≥ 1000
A03	Inorganic microfibre 3 µ	
A06	Inorganic microfibre 6 µ	
A10	Inorganic microfibre 10 µ	
A16	Inorganic microfibre 16 µ	
A25	Inorganic microfibre 25 µ	

* On request

M25	Wire mesh	} Nominal Filtration
M60	Wire mesh	
M90	Wire mesh	
P10	Resin impregnated paper	} Nominal Filtration
P25	Resin impregnated paper	

8 - Max filter element differential pressure

N	Δp 20 bar
----------	-----------

9 - Option

P01	MP Filtri standard
Pxx	On request

LMP 120



Findynamica
drive and control products



Maximum pressure 80 bar
Flow rates to 200 l/min

Filter housing (Materials)

- Head: Aluminium
- Housing: Cathaphoresis Painting
- Bypass valve: Brass - Aluminium

Pressure

LMP 120/122/123 length: 1 - 2 - 3 - 4

- Working pressure: 80 bar (8 MPa)
- Test pressure: 120 bar (12 MPa)
- Burst pressure: 380 bar (38 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 80 bar (8 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Δp Elements type

- Series N and W elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length

- LMP120 - 1 1,9
- LMP120 - 2 2,1
- LMP120 - 3 2,4
- LMP120 - 4 2,9

Volumes (dm³)

Length

- LMP120 - 1 0,75
- LMP120 - 2 0,81
- LMP120 - 3 1,11
- LMP120 - 4 1,53

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids.
Aqueous emulsions, water and glycol (series W required).
- The filter elements are compatible with:
Mineral oils, synthetic fluids.
Aqueous emulsions, water and glycol (series W required).
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions and water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFUD

Recommended maximum flow rate => see page 35

Filter Element Area

Filter element in stainless steel mesh

Type	Length			
	1	2	3	4
CU 110	1302	1764	2464	3864
Values expressed in cm²				

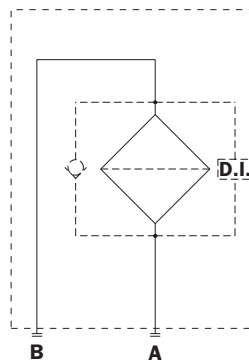
LMP 120



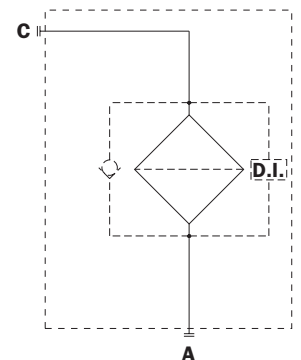
LMP 122



Style
LMP 120



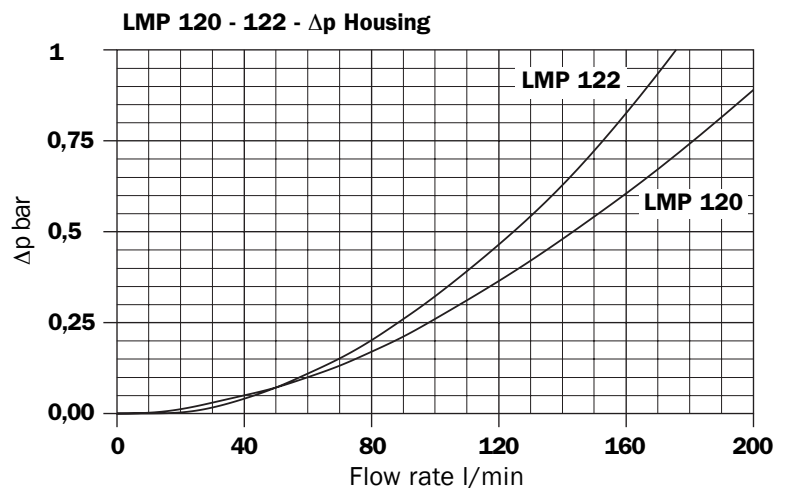
Style
LMP 122



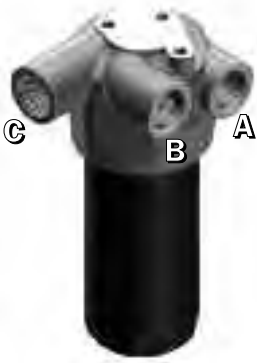
Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

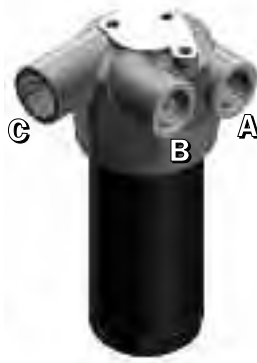
Δp varies proportionally with density.



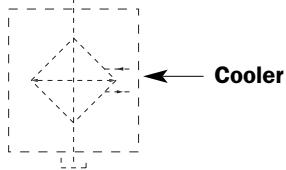
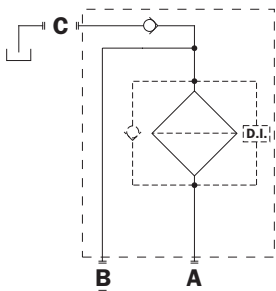
**LMP 123
Type 1**



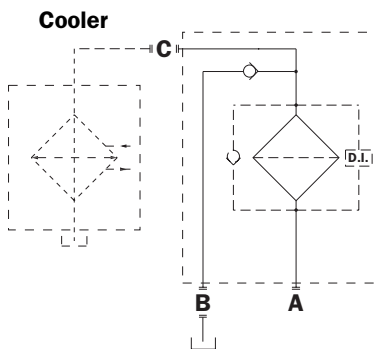
**LMP 123
Type 2**



Style
**LMP 123
Type 1**

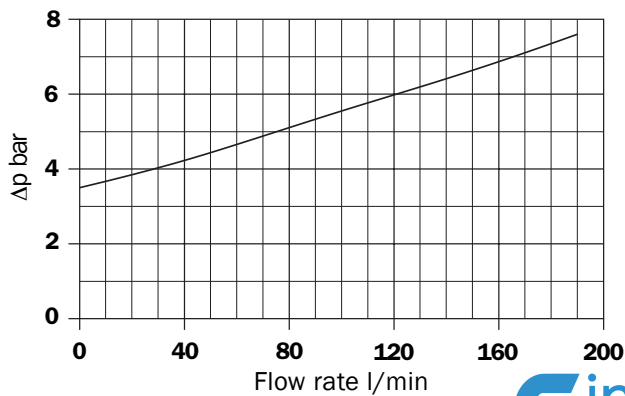


Style
**LMP 123
Type 2**



Valves

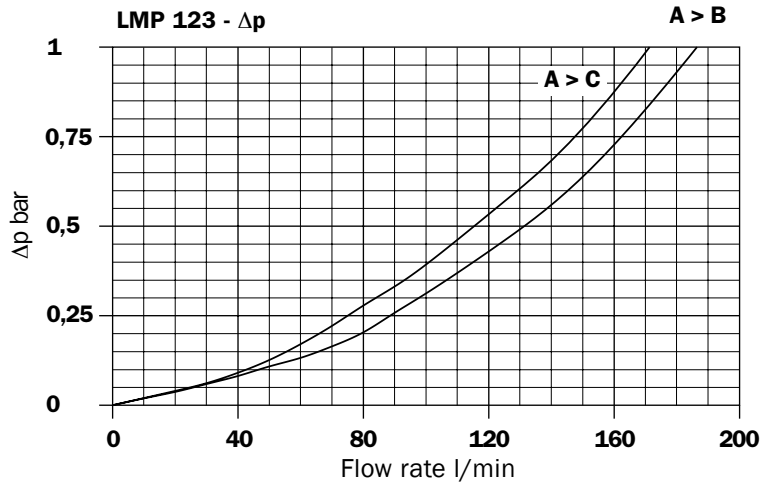
**Bypass valve pressure drop
LMP 120/LMP 123**



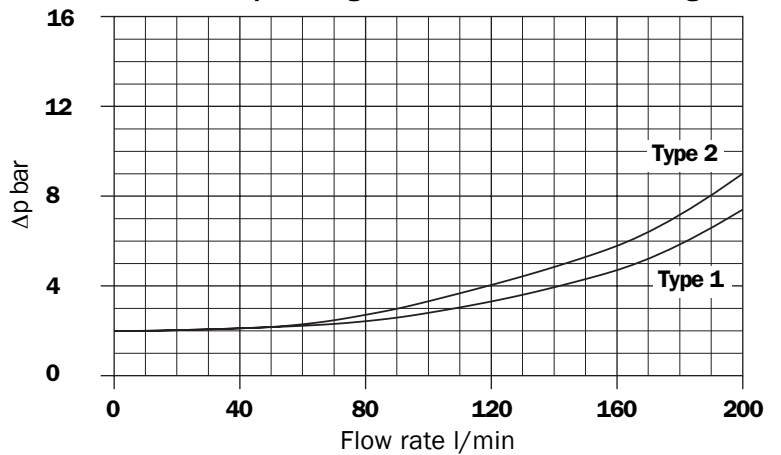
Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

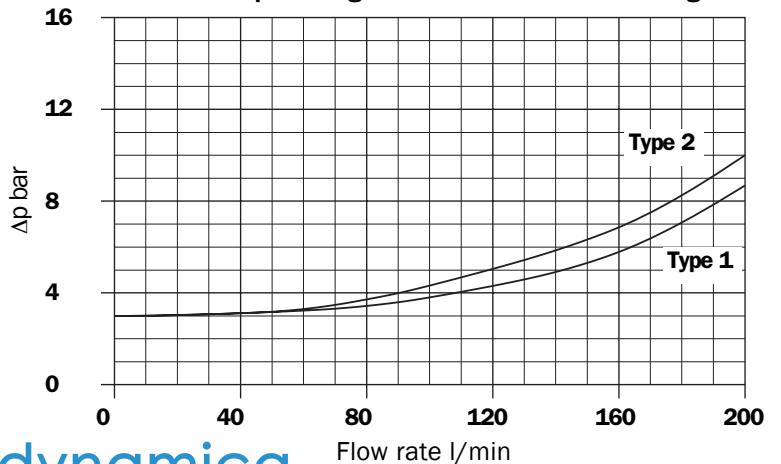
Δp varies proportionally with density.



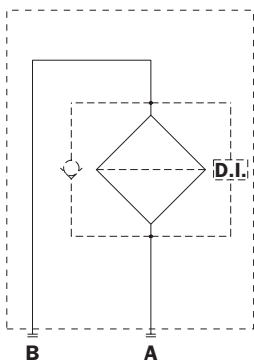
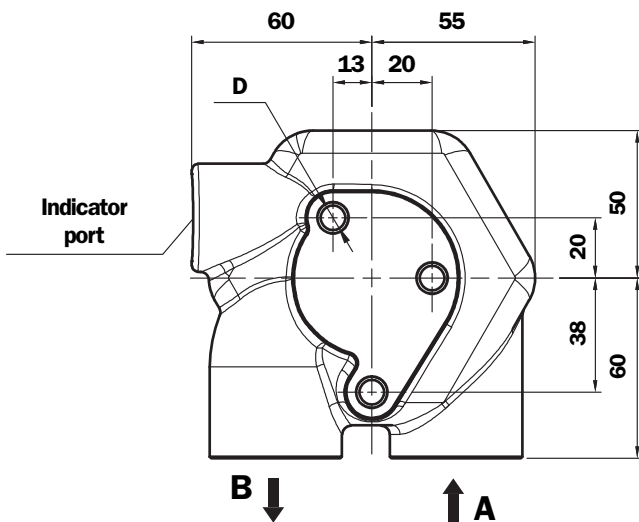
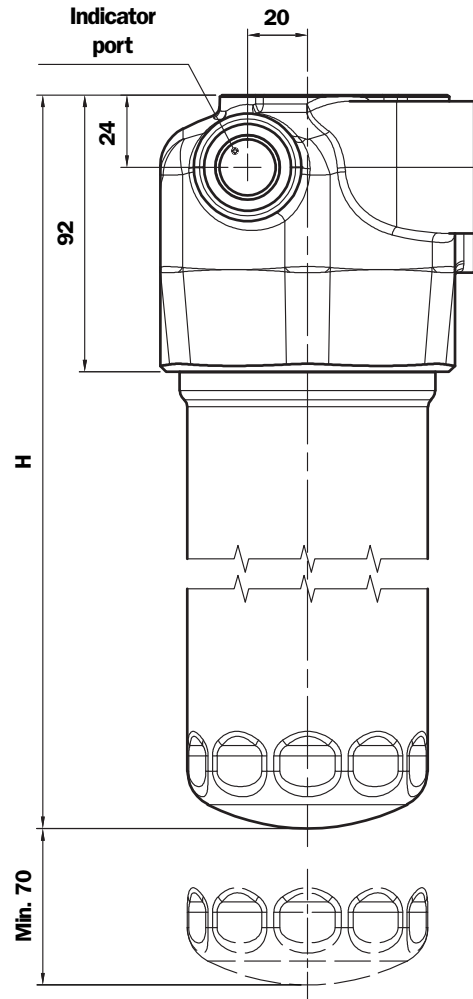
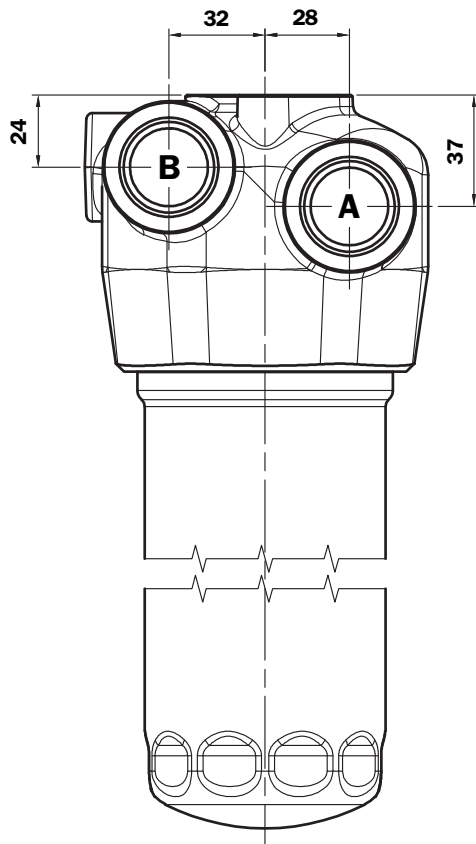
LMP 123 - Δp Housing with check valve 2 bar setting



LMP 123 - Δp Housing with check valve 3 bar setting



LMP 120

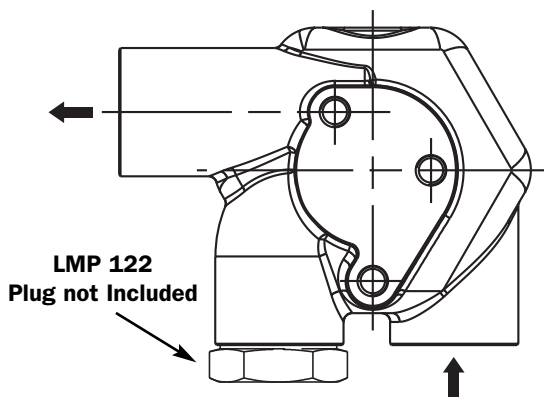
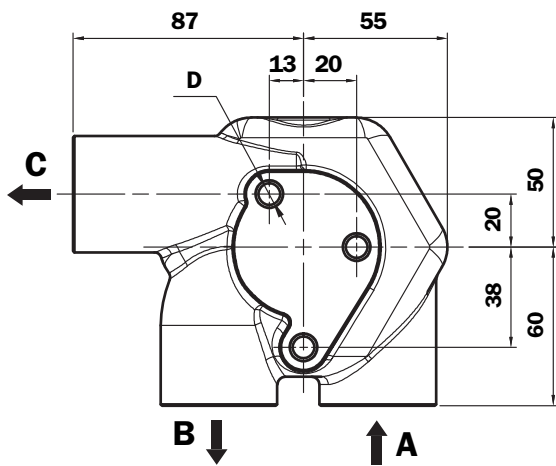
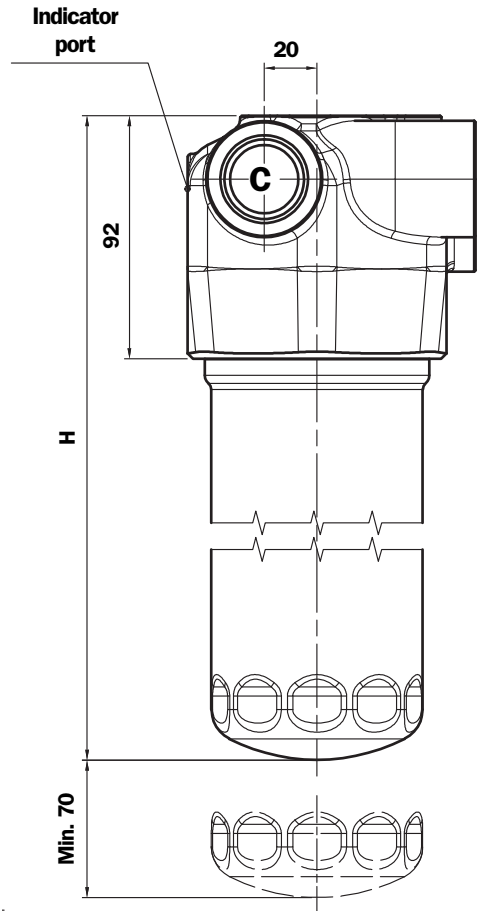
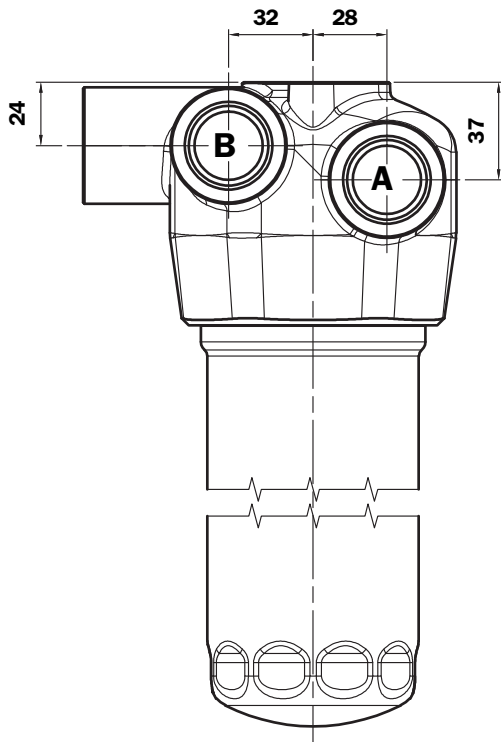


LMP 120

Length Filter	H mm
1	182
2	215
3	265
4	365

St.	Connections A - B	Fixing holes D
A	G 3/4"	M10 x depth 12 mm
B	G 1"	M10 x depth 12 mm
C	3/4" NPT	3/8" UNC x depth 12 mm
D	1" NPT	3/8" UNC x depth 12 mm
E	SAE 12	3/8" UNC x depth 12 mm
F	SAE 16	3/8" UNC x depth 12 mm

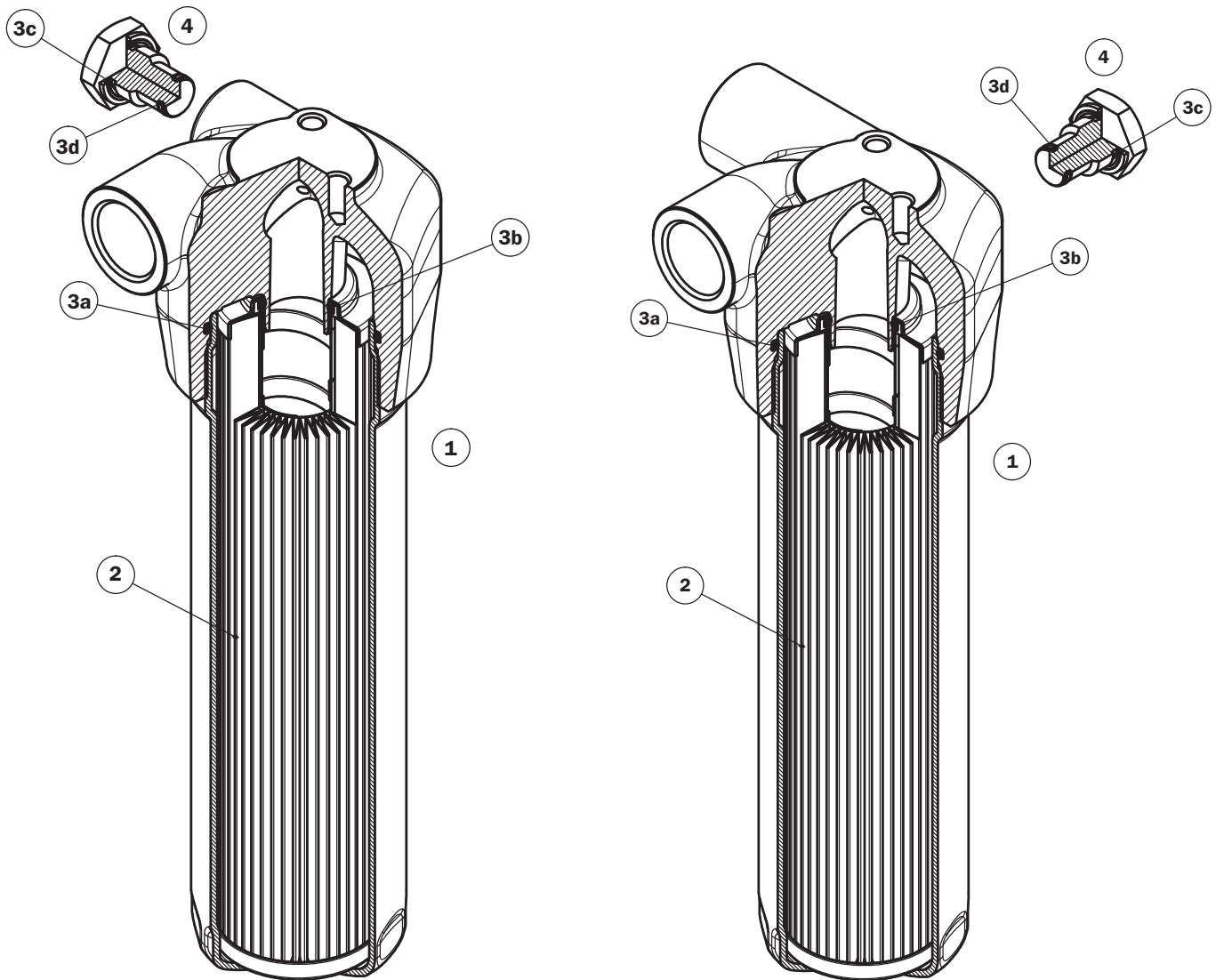
LMP 122 - 123



LMP 122 - 123

Length Filter	H mm
1	182
2	215
3	265
4	365

St.	Connection A - B - C	Fixing holes D
B	G 1"	M10 x depth 12 mm
D	1" NPT	3/8" UNC x depth 12 mm
F	SAE 16	3/8" UNC x depth 12 mm



Item	Description	Q.ty	FILTER Series LMP 120 - 122 - 123	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seals Kit	1	NBR 02050478	FPM 02050479
3a	O-Ring for housing	1	O-R 4312 Ø 78,97 x 3,53	
3b	O-Ring for filter element	1	O-R 4125 Ø 31,34 x 3,53	
3c	Seal for indicator	1	NBR 01030058	FPM 01030046
3d	O-Ring for indicator	1	O-R 2050 Ø 12,42 x 1,78	
4	Indicator connection plug	1	T2H	T2V
-	Indicators	1	See order table	

Ordering information LMP 120 - 122

Filter assembly

LMP

Example: LMP

1	2	3	4	5	6	7	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
122	2	B	A	B	2	A10	N	P01

Filter element

CU110

Example: CU110

2	7	4	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A10	A	N	P01

1 - Style

Filter

120
122

Filter element

110
110

2 - Filter length

1
2
3
4

3 - Valve

S	Without by-pass
B	With bypass
<input type="checkbox"/>	With by-pass Opening pressure: on request

4 - Filter seals

A	NBR
V	FPM
W	NBR (Compatible with fluid HFA, HFB, HFC)
<input type="checkbox"/>	On request

5 - Connection

Type	MULTIPORT
A	G 3/4" (not for LMP 122)
B	G 1"
C	3/4" NPT (not for LMP 122)
D	1" NPT
E	SAE 12 (not for LMP 122)
F	SAE 16

6 - Indicator port

1	Without indicator port
2	With indicator port

7 - Filter element

A01	Inorganic microfibre* 1 µ	} Absolute filtration βx (c) ≥ 1000
A03	Inorganic microfibre 3 µ	
A06	Inorganic microfibre 6 µ	
A10	Inorganic microfibre 10 µ	
A16	Inorganic microfibre 16 µ	
A25	Inorganic microfibre 25 µ	

* On request

M25	Wire mesh	} Nominal Filtration
M60	Wire mesh	
M90	Wire mesh	

P10	Resin impregnated paper	} Nominal Filtration
P25	Resin impregnated paper	

8 - Max filter element differential pressure

N	Δp 20 bar
----------	-----------

9 - Option

P01	MP Filtri standard
Pxx	On request

indynamica
drive and control products

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

Filter assembly

LMP

Example: LMP

1	2	3	4	5	6	7	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
123	2	C	A	B	2	A10	N	P01

Filter element

CU110

Example: CU110

2	7	4	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A10	A	N	P01

1 - Style

Filter

123

Filter element

110

2 - Filter length

- 1**
- 2**
- 3**
- 4**

3 - Valves

Type 1 - Without bypass

- C** Check valve 2 bar
- D** Check valve 3 bar

Type 2 - Without bypass

- G** Check valve 2 bar
- H** Check valve 3 bar

Type 1 - With bypass

- M** Check valve 2 bar
- N** Check valve 3 bar

Type 2 - With bypass

- Q** Check valve 2 bar
- R** Check valve 3 bar

4 - Filter seals

- A** NBR
- V** FPM
- W** NBR (Compatible with fluid HFA, HFB, HFC)
- On request

5 - Connection

Type	MULTIPORT
B	G 1"
F	SAE 16

6 - Indicator port

- 1** Without indicator port
- 2** With indicator port

7 - Filter element

A01	Inorganic microfibre* 1 µ	} Absolute filtration βx (c) ≥ 1000
A03	Inorganic microfibre 3 µ	
A06	Inorganic microfibre 6 µ	
A10	Inorganic microfibre 10 µ	
A16	Inorganic microfibre 16 µ	
A25	Inorganic microfibre 25 µ	

* On request

M25	Wire mesh	} Nominal Filtration
M60	Wire mesh	
M90	Wire mesh	

P10	Resin impregnated paper	} Nominal Filtration
P25	Resin impregnated paper	

8 - Max filter element differential pressure

- N** Δp 20 bar

9 - Option

- P01** MP Filtri standard
- Pxx** On request

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

LMP 124



In-Line Suction and Return Filter

Findynamica
drive and control products



Maximum pressure 80 bar
Flow rates to 160 l/min

Filter housing (Materials)

- Head: Aluminium
- Housing: Cataphoresis Painting
- Bypass valve: Brass - Aluminium

Pressure

LMP 124 length: 1 - 2 - 3 - 4

- Working pressure: 80 bar (8 MPa)
- Test pressure: 120 bar (12 MPa)
- Burst pressure: 380 bar (38 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 80 bar (8 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 2.5 bar ±10%
- Other opening pressures on request.

Δp Elements type

- Series N and W elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

length

- LMP124 - 1 1,7
- LMP124 - 2 1,9
- LMP124 - 3 2,2
- LMP124 - 4 2,7

Volumes (dm³)

length

- LMP124 - 1 0,75
- LMP124 - 2 0,81
- LMP124 - 3 1,11
- LMP124 - 4 1,53

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids.
Aqueous emulsions, water and glycol (series W required).
- The filter elements are compatible with:
Mineral oils, synthetic fluids.
Aqueous emulsions, water and glycol (series W required).
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

Filter element in stainless steel mesh

Type	Length			
	1	2	3	4
CU 110	1302	1764	2464	3864
Values expressed in cm ²				

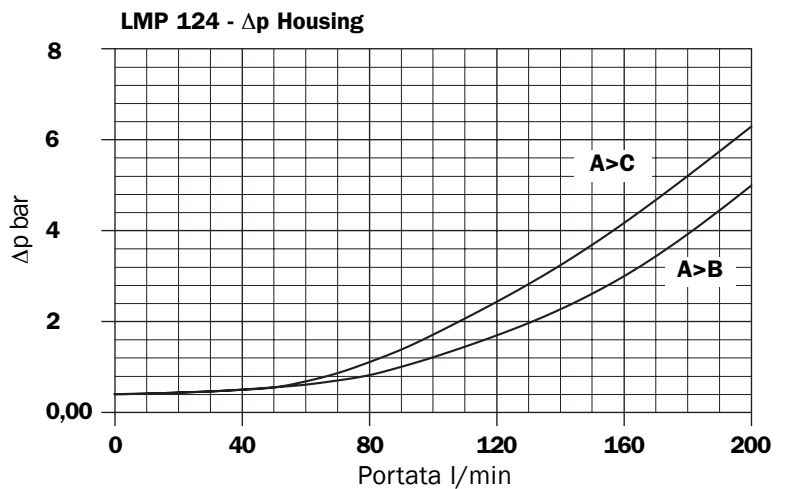
LMP 124



Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

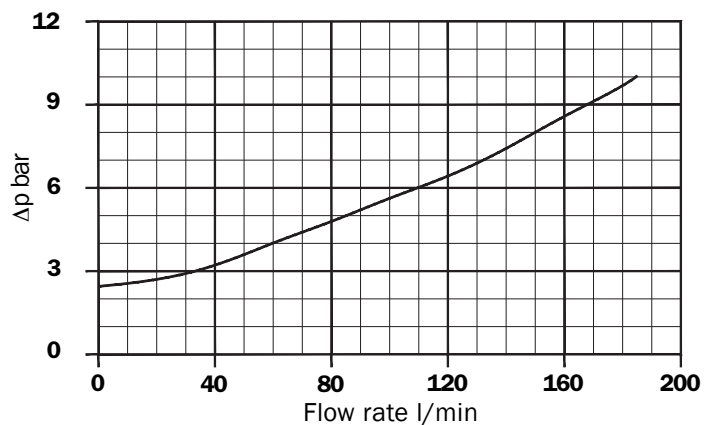
Δp varies proportionally with density.



Valves

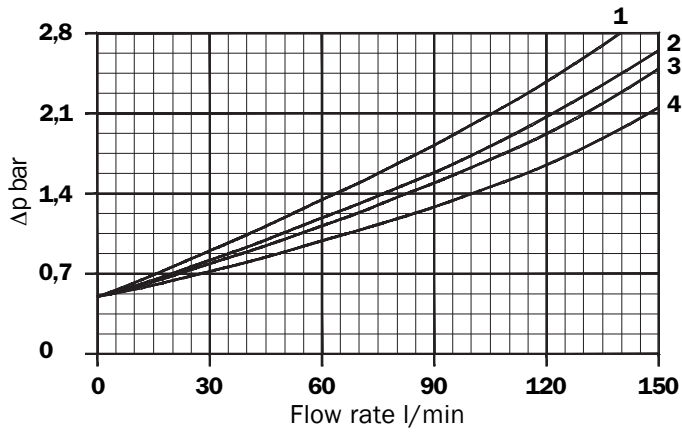
Bypass valve pressure drop

LMP 124

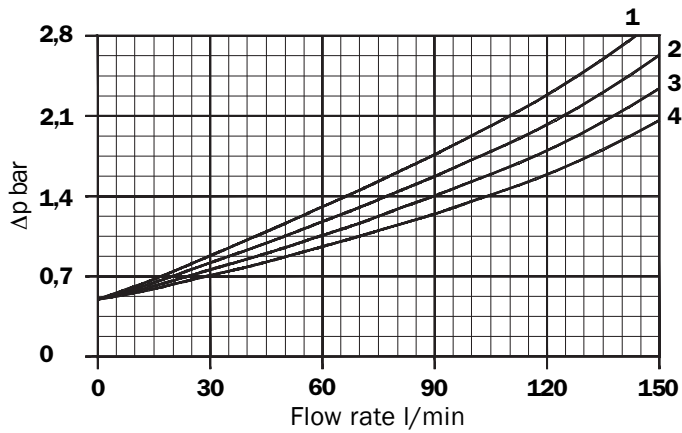


Style C - D - E - F

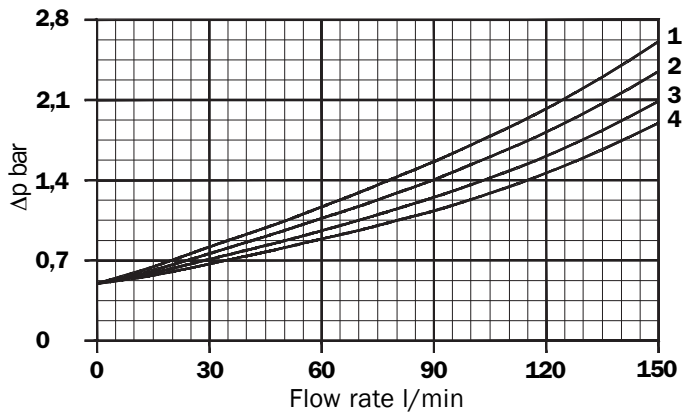
Absolute filtration A10



Absolute filtration A16

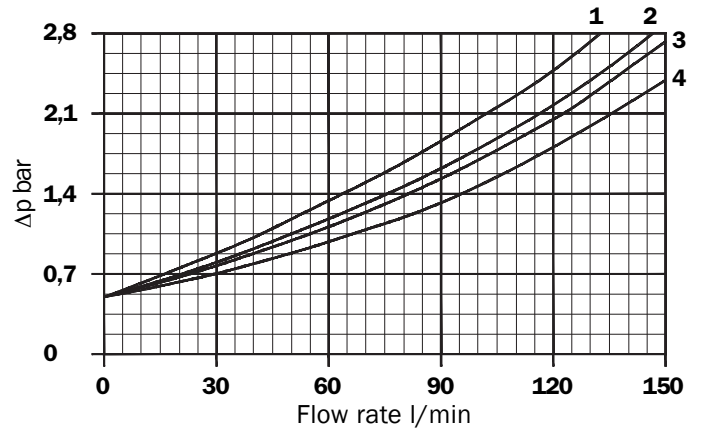


Absolute filtration A25

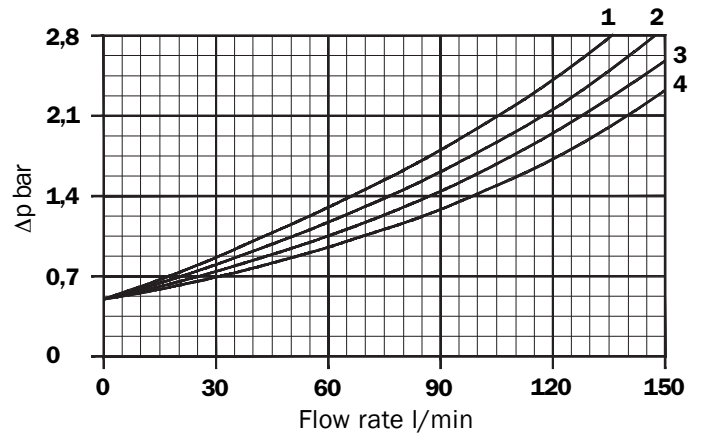


Style G - H

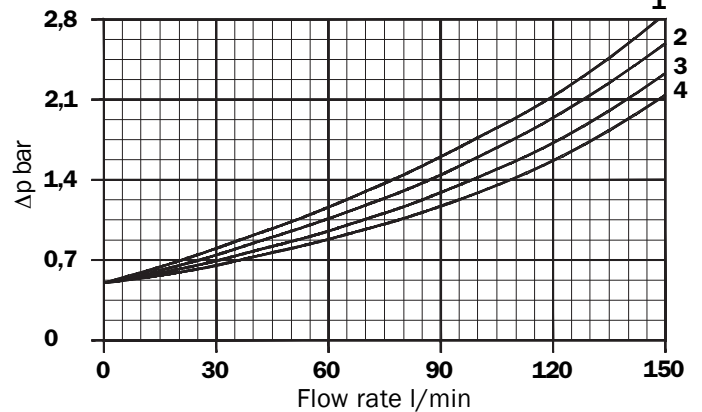
Absolute filtration A10



Absolute filtration A16



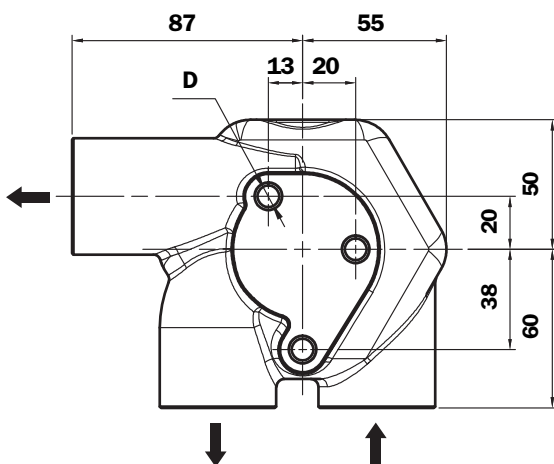
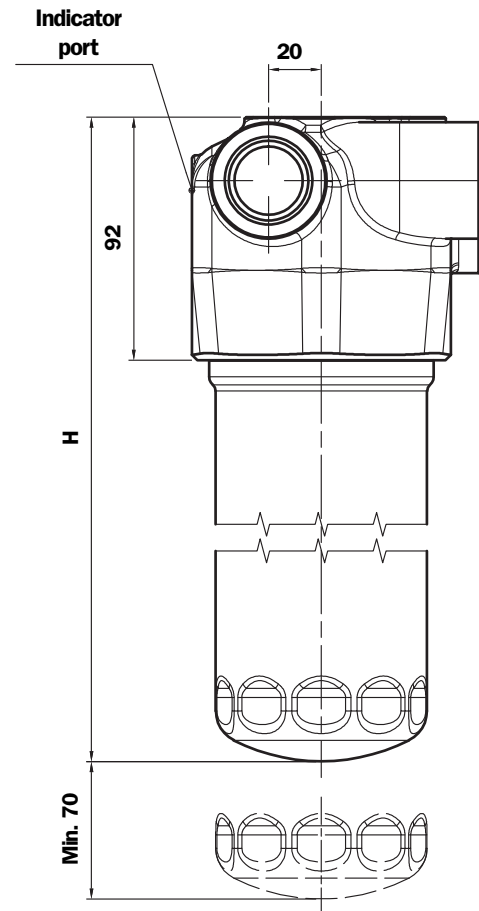
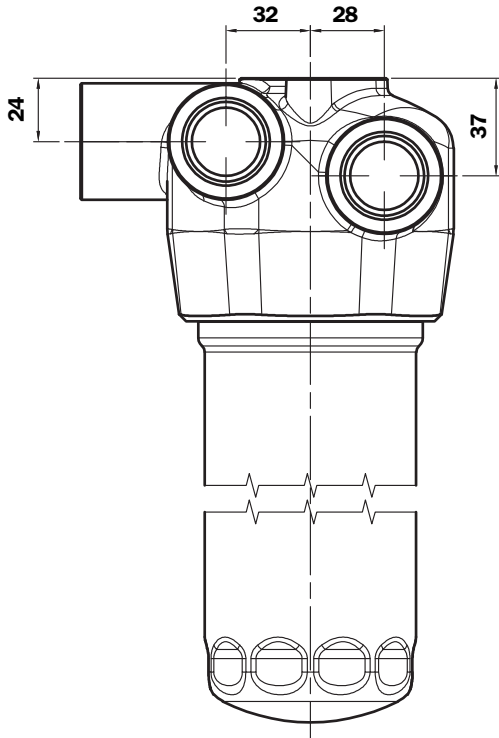
Absolute filtration A25



Filter length

- 1
- 2
- 3
- 4

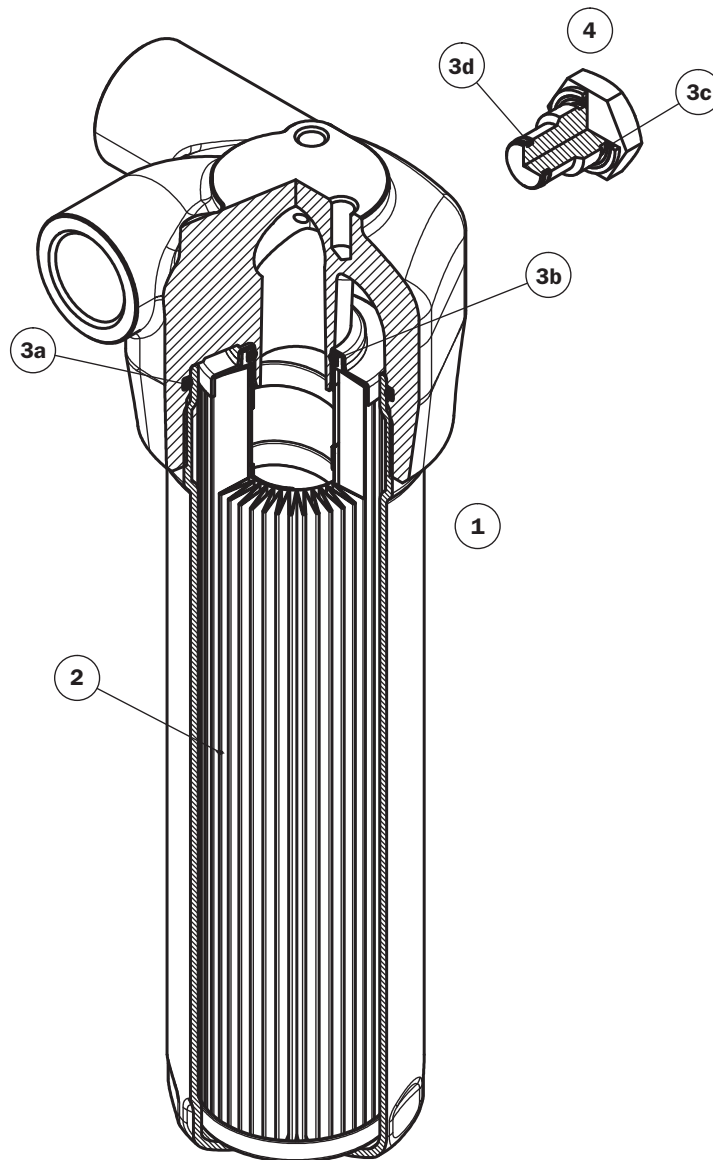
LMP 124



LMP 124

Length Filter	H mm
1	182
2	215
3	265
4	365

St.	Connection A - B - C	Fixing holes D
B	G 1"	M10 x depth 12 mm
F	SAE 16	3/8" UNC x depth 12 mm



Item	Description	Q.ty	FILTER Series LMP 124	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seals Kit	1	NBR 02050478	FPM 02050479
3a	O-Ring for housing	1	O-R 4312 Ø 78,97 x 3,53	
3b	O-Ring for filter element	1	O-R 4125 Ø 31,34 x 3,53	
3c	Seal for indicator	1	NBR 01030058	FPM 01030046
3d	O-Ring for indicator	1	O-R 2050 Ø 12,42 x 1,78	
4	Indicator connection plug	1	T2H	T2V
-	Indicators	1	See order table	

LMP 124
Style C - D - E - F

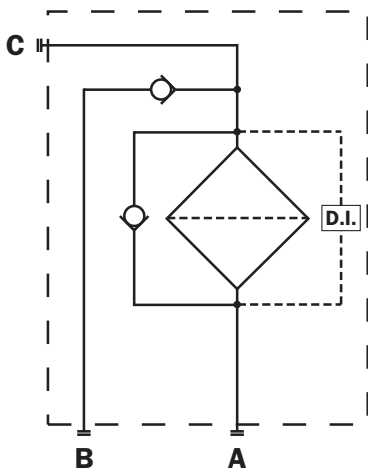


LMP 124
Style G - H

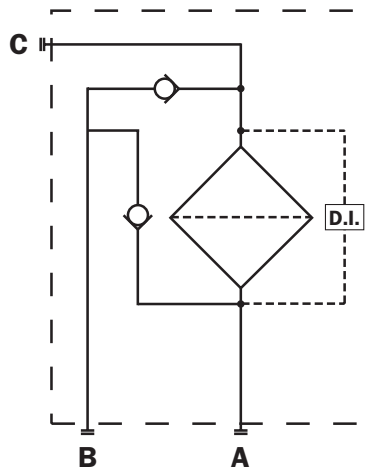


Symbols

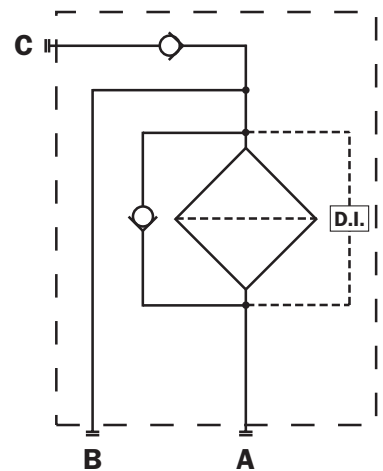
Style C
LMP 124



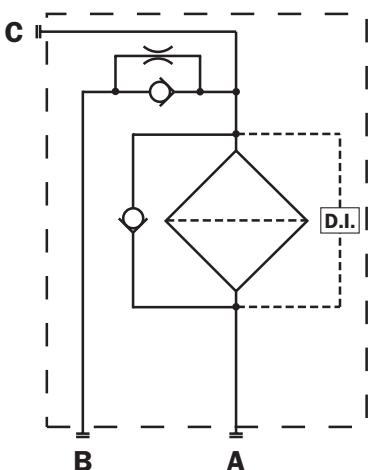
Style E
LMP 124



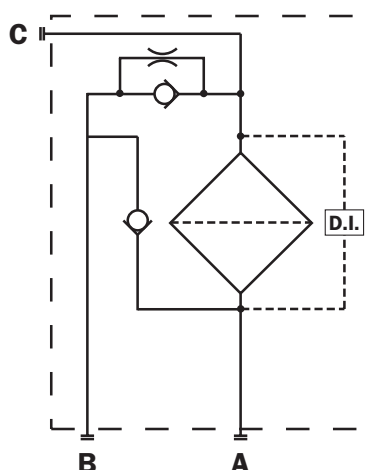
Style G
LMP 124



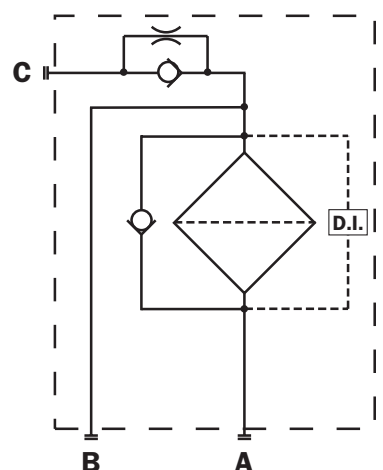
Style D
LMP 124



Style F
LMP 124



Style H
LMP 124



Ordering information LMP 124

Filter assembly **LMP**

Example: LMP

1	2	3	4	5	6	7	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
124	2	C	A	B	2	A10	N	P01

Filter element **CU110**

Example: CU110

2	7	4	8	9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A10	A	N	P01

1 - Style

Filter

124

Filter element

110

2 - Filter length

- 1**
- 2**
- 3**
- 4**

3 - Valves

- C**
- D**
- E**
- F**
- G**
- H**

see "SYMBOLS" (ref. to page 32)

4 - Filter seals

- A** NBR
- V** FPM
- W** NBR (Compatible with fluid HFA, HFB, HFC)
- On request

5 - Connection

Type	MULTIPOINT
B	G 1"
F	SAE 16

6 - Indicator port

- 1** No
- 2** Port G 1/8" switch
For pressure switch
- 3** Port G 1/4"
For pressure switch
- 4** Differential indicator port

7 - Filter element

- A10** Inorganic microfibre 10 μ } Absolute filtration
- A16** Inorganic microfibre 16 μ } $\beta_x(c) \geq 1000$
- A25** Inorganic microfibre 25 μ }

8 - Max filter element differential pressure

- N** Δp 20 bar

9 - Option

- P01** MP Filtri standard
- Pxx** Customer request

Findynamica
drive and control products

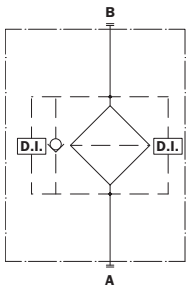
DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

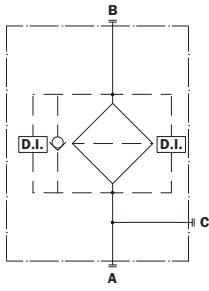
Symbols "MULTIPOINT"

Style
LMP 110



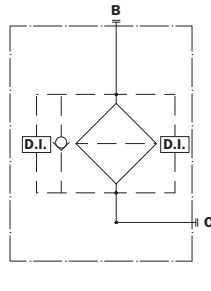
In-Line filter

Style
LMP 112



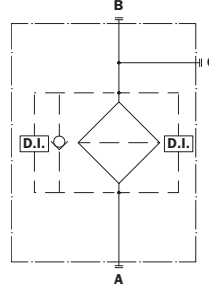
In-Line filter
Double IN port

Style
LMP 112



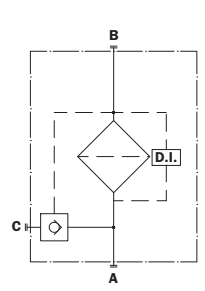
In-Line filter
Lateral IN port

Style
LMP 116



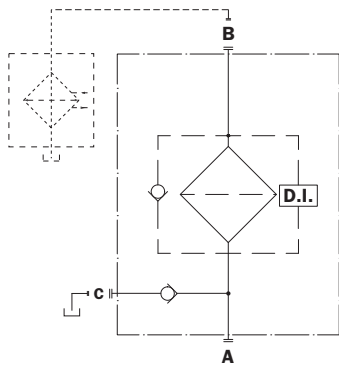
In-Line filter
Lateral OUT port

Style
LMP 118



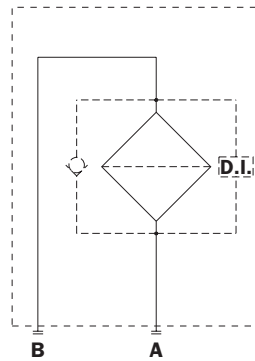
In-Line filter
Bypass lateral.
Always cleaning fluid in OUT port

Style
LMP 119



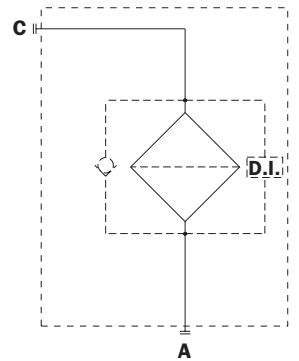
In-Line filter
Safety valve 6 bar
for heat exchanger

Style
LMP 120



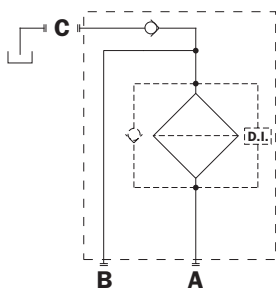
In-Line filter
Port IN-OUT on the
same side

Style
LMP 122



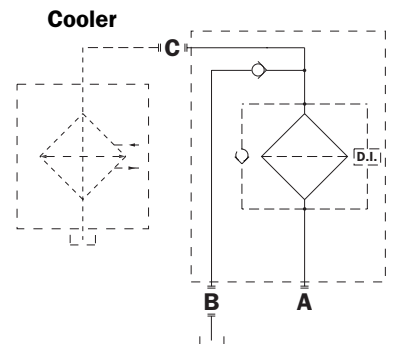
In-Line filter
Lateral OUT port
high flow

Style
**LMP 123
Type 1**



In-Line filter
Bypass valve for heat
exchanger high flow

Style
**LMP 123
Type 2**



Cooler

Cooler

Recommended maximum flow rate

"MULTIPOINT"



Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.7 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.

Filtration

	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMP 110 - 119	1	40	42	63	68	83	114	153	111
	2	49	57	80	82	97	130	155	128
	3	45	69	88	98	118	135	158	133
	4	66	98	112	117	136	140	160	140

Flow rate l/min

Filtration

	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMP 112	1	36	37	55	57	65	85	112	83
	2	43	49	65	67	75	94	114	93
	3	54	58	70	76	87	96	115	95
	4	66	76	87	88	96	98	115	98

Flow rate l/min

Filtration

	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMP 116	1	36	37	53	56	64	80	95	77
	2	43	47	64	65	72	87	96	86
	3	55	56	67	73	83	89	97	88
	4	63	72	79	83	87	92	98	90

Flow rate l/min

Filtration

	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMP 120	1	39	42	66	69	87	129	187	126
	2	48	57	86	88	108	153	187	150
	3	67	72	97	110	136	161	188	158
	4	88	108	128	135	162	170	190	168

Flow rate l/min

Filtration

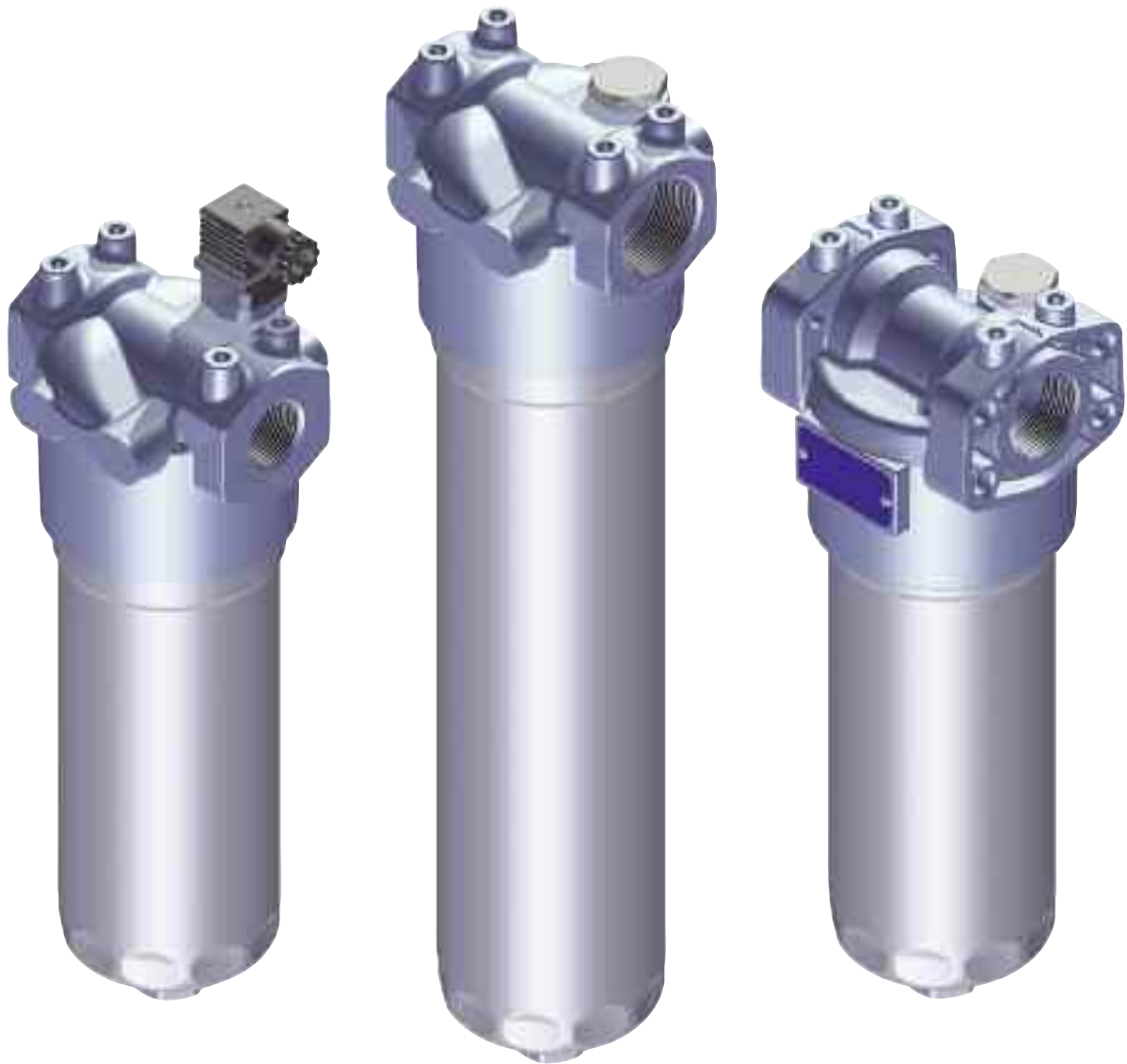
	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMP 122	1	42	44	70	74	92	137	205	132
	2	52	61	90	91	115	163	205	159
	3	72	77	100	113	141	173	208	169
	4	93	113	133	143	172	180	215	178

Flow rate l/min



LMP 211 - 210

LDP DIN 24550



Maximum pressure 60 bar
Maximum flow to 330 l/min

Technical data

Filter housing (Materials)

- Head: Aluminium
- Bowl: Cataphoresis Painted Steel
- Bypass valve: AISI 304 - Nylon

Pressure

- Working pressure: 60 bar (6 MPa)
- Test pressure: 90 bar (9 MPa)
- Burst pressure: 210 bar (21 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 60 bar (6 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar \pm 10%
- Other opening pressures on request.

Δp Elements type

- Microfibre filter elements series N: 20 bar
- Fluid flow through the filter element from OUT to IN.

Seals

- Standard NBR series A
- Optional FPM series V

LMP 210/211 - LDP FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

Weights (kg)

Length	1	2	3
• LMP210-211	3.10	4.80	6.40
• LDP016	2.90		
• LDP025	3.10		
• LDP040	4.90		

Volumes (dm³)

Length	1	2	3
• LMP210-211	1.60	2.10	2.80
• LDP016	1.10		
• LDP025	1.60		
• LDP040	2.30		

Connections

- LMP 210/211 - LDP: Inlet/Outlet In-Line

Compatibility (to ISO 2943)

- Housings compatible with: Mineral oils, synthetic fluids, aqueous emulsions, water and glycol. (series W required)
- The filter elements are compatible with: Mineral oils, synthetic fluids. Aqueous emulsions, water and glycol. (series W required)
- NBR seals series A, compatible with: Mineral oils, synthetic fluids, aqueous emulsions and water and glycol.
- FPM seals series V, compatible with: Synthetic fluids type HS-HFDR-HFDS-HFDU

Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.
- Connections of filter under test G 1 1/2" SAE 3000 PSI/M.

Filtration

Leng.	A03	A06	A10	A16	A25	P10	P25	M25
LMP 210	1	98	110	190	200	220	275	300
	2	140	155	225	235	260	275	290
	3	175	200	245	250	270	290	300

Flow rate l/min

Filtration

Leng.	A03	A06	A10	A16	A25	P10	P25	M25
LMP 211	1	100	110	190	210	230	275	290
	2	140	155	230	245	270	290	300
	3	175	210	250	260	285	310	320

Flow rate l/min

Filtration

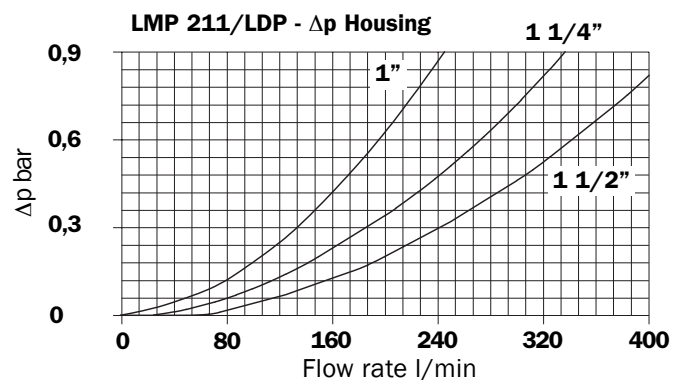
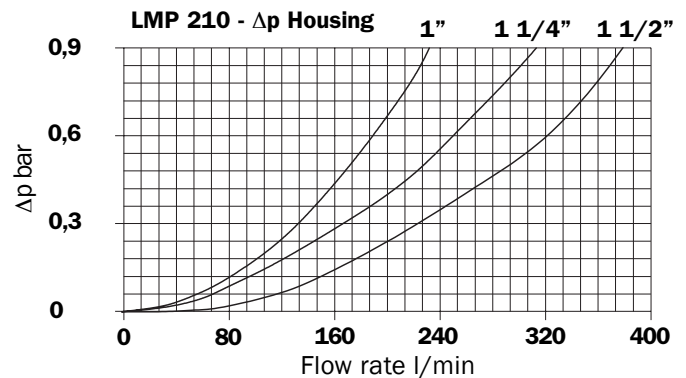
Leng.	A03	A06	A10	A16	A25	P10	P25	M25
LDP	016	70	75	150	165	200	255	300
	025	100	115	195	210	230	280	295
	040	150	165	235	250	275	295	305

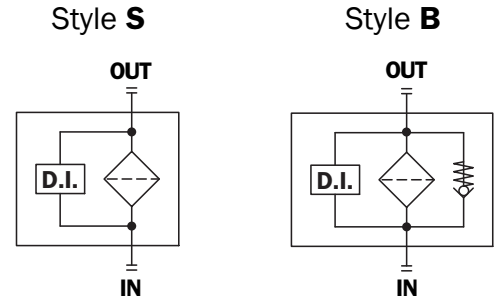
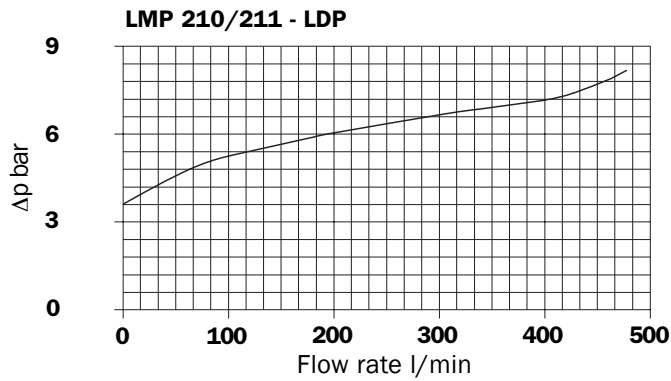
Flow rate l/min

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.





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

Reference viscosity 30 mm²/s

Filter Element	Absolute Filtration					Nominal Filtration		Nominal Filtration
	N - W Series					N Series		N Series
	A 0 3	A 0 6	A 1 0	A 1 6	A 2 5	P 1 0	P 2 5	M 2 5
CU 210								
1	5,3	4,8	2,0	1,66	1,32	0,56	0,43	0,12
2	3,44	2,95	1,24	1,09	0,7	0,42	0,35	0,09
3	2,4	1,7	0,94	0,84	0,54	0,33	0,23	0,05
DN								
016	7,95	7,20	3,00	2,49	1,98	0,84	0,65	0,18
025	5,00	4,53	1,89	1,57	1,25	0,53	0,41	0,11
040	3,13	2,66	1,12	0,98	0,63	0,38	0,32	0,08

Filter sizing

Sizing data for single cartridge, head at top

- Δp Tot.
- Δpc Filter housing
- Δpe Filter element
- Y Multiplication factor (see above)
- 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 = 60 bar
- Flow rate = 200 l/min
- Viscosity = 46 mm²/s (cSt)
- Density = 0,86 Kg/dm³
- Filtration = 10 μ absolute
- With bypass valve

Practical example

- Δpe Filter housing
- Q = 200 l/min
- V₂ = 46 mm²/s (cSt)
- P_{max} = 60 bar
- Filtration = 10 μ absolute
- Δp Tot. max = **0,6 bar** (max. recommended value)
- Δpe = (0,94 : 1000) x 200 x (46/30) = **0,29 bar**

Δpc Filter housing = 0,24 bar

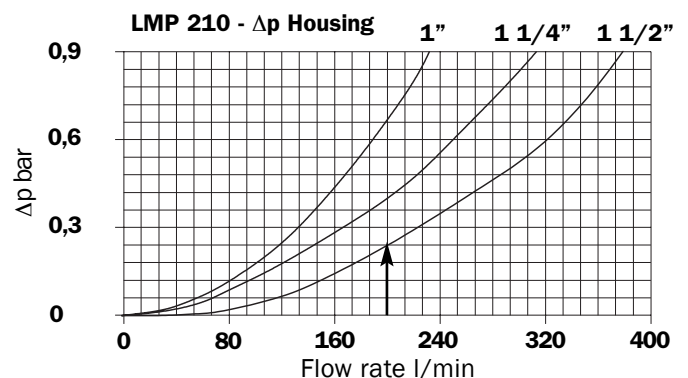
Δp Tot. max 0,6 bar = Δpc + Δpe
Δp Tot. = **0,29 + 0,24 = 0,53 bar**

Sized filter type:
LMP 210 3 B A F6 A10 N P01

Filter housings Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

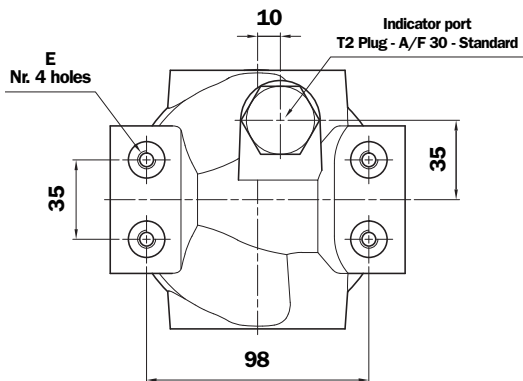
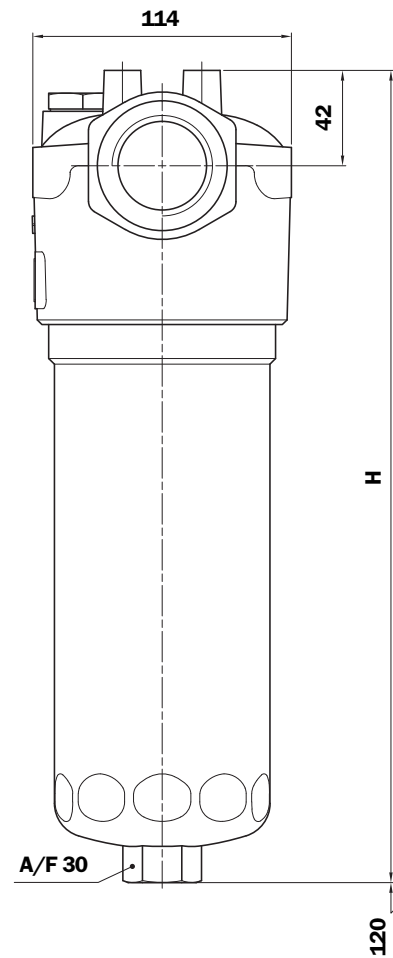
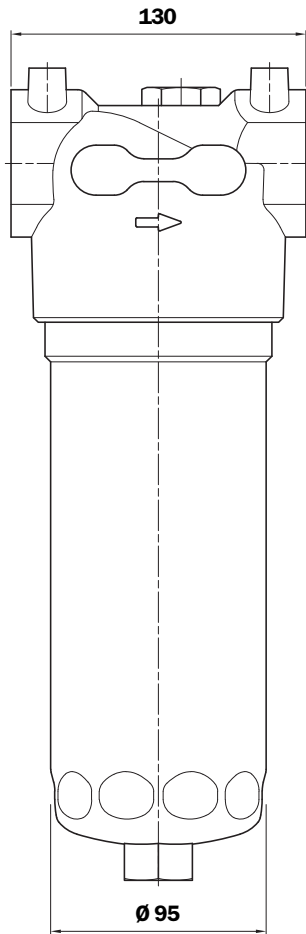
Δp varies proportionally with density.



LMP 211

LDP DIN 24550

Threaded connections



LMP 211

Length Filter	H mm
1	357
2	487
3	625

LDP - DIN 24550

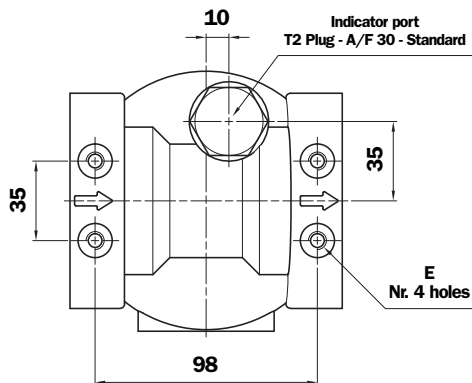
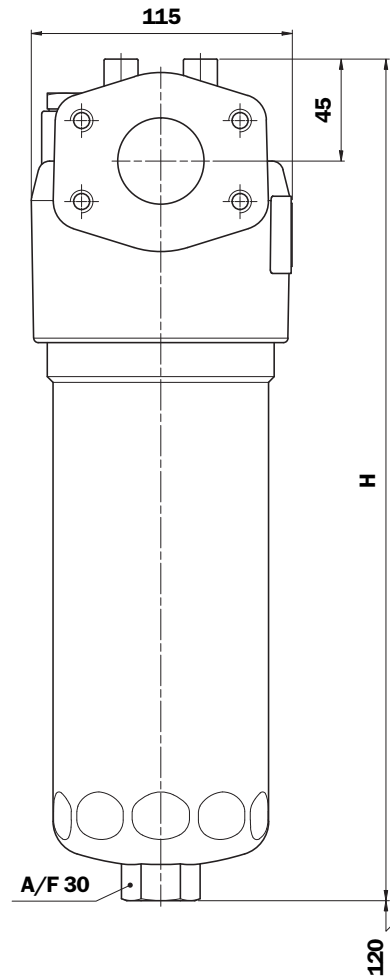
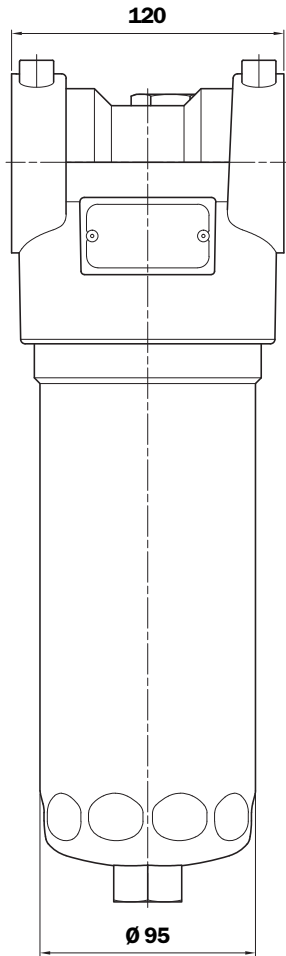
Length Filter	H mm
016	267
025	357
040	507

LMP 211 - LDP Thread connections

Type	Size	E Depth 12 mm
A	G 1"	M8
B	G 1 1/4"	M8
C	G 1 1/2"	M8
D	1" NPT	5/16" UNC
E	1 1/4" NPT	5/16" UNC
F	1 1/2" NPT	5/16" UNC
G	SAE 16 - 1 5/16" - 12 UN	5/16" UNC
H	SAE 20 - 1 5/8" - 12 UN	5/16" UNC
I	SAE 24 - 1 7/8" - 12 UN	5/16" UNC

LMP 210

Flanged connections

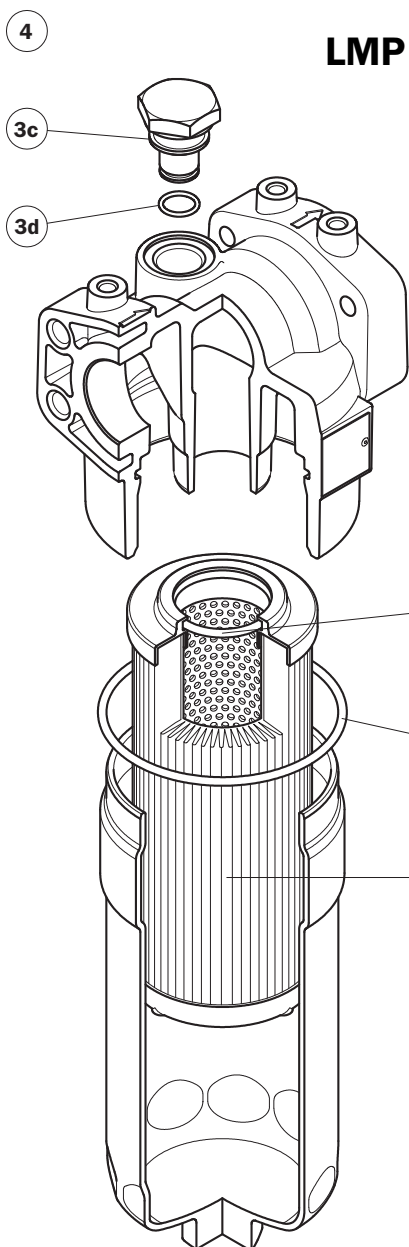


LMP 210

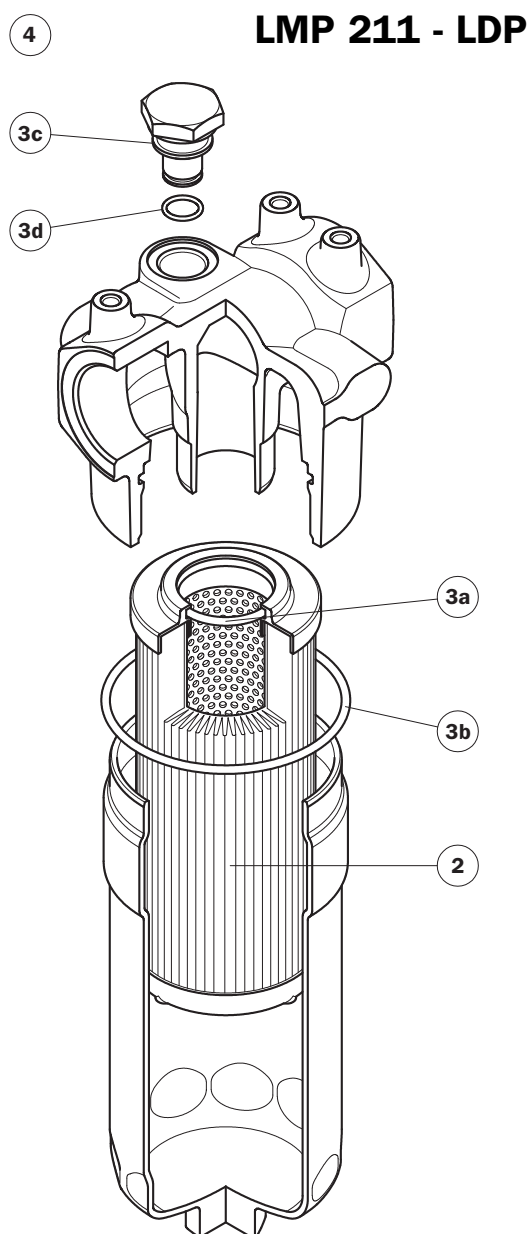
Length Filter	H mm
1	360
2	492
3	630

LMP 210 Flange connections

Type	Size	E Depth 12 mm
F1	1" SAE 3000 psi/M	M8
F2	1 1/4" SAE 3000 psi/M	M8
F3	1 1/2" SAE 3000 psi/M	M8
F4	1" SAE 3000 psi/UNC	5/16" UNC
F5	1 1/4" SAE 3000 psi/UNC	5/16" UNC
F6	1 1/2" SAE 3000 psi/UNC	5/16" UNC



LMP 210



LMP 211 - LDP

Item	Description	Q.ty	FILTER Series LMP 210/211 - LDP	
1	Filter assembly	1	See order table	
2	Filter element	1	See order table	
3	Seal Kit	1	NBR 02050435	FPM 02050436
3a	O-Ring filter element	1	O-R 144 Ø 39,69 x 3,53	
3b	O-Ring housing	1	O-R 4375 Ø 94,84 x 3,53	
3c	Seal for indicator	1	NBR 01030058	FPM 01030046
3d	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
4	Indicator connection plug	1	T2H	T2V
-	Indicator	1	See order table	

Filter assembly

LMP

	1	2	3	4	5	6	7	8	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example 1: LMP	210	2	B	A	F1	-	A10	N	P01
Example 2: LMP	211	2	B	A	A	6	A10	N	P01

Filter element

CU

	1	2	7	4	8	9
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example 1: CU	210	2	A10	A	N	P01
Example 2: CU	210	2	A10	A	N	P01

1 - Style

Filter	Filter element
<input type="checkbox"/> 210	<input type="checkbox"/> 210
<input type="checkbox"/> 211	<input type="checkbox"/> 210

2 - Filter length

<input type="checkbox"/> 210	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
<input type="checkbox"/> 211	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

3 - Valves

<input type="checkbox"/> S	Without bypass
<input type="checkbox"/> B	With bypass Opening pressure: 3,5 bar
<input type="checkbox"/>	With bypass Opening pressure: on request

4 - Filter seals

<input type="checkbox"/> A	NBR
<input type="checkbox"/> V	FPM
<input type="checkbox"/>	On request

5 - Connections

Flange		Threaded	
LMP 210		LMP 211	
Type	Size	Type	Size
F1	1" SAE 3000 psi/M	A	G 1"
F2	1 1/4" SAE 3000 psi/M	B	G 1 1/4"
F3	1 1/2" SAE 3000 psi/M	C	G 1 1/2"
F4	1" SAE 3000 psi/UNC	D	1" NPT
F5	1 1/4" SAE 3000 psi/UNC	E	1 1/4" NPT
F6	1 1/2" SAE 3000 psi/UNC	F	1 1/2" NPT
		G	SAE 16 - 1.5/16" - 12 UN
		H	SAE 20 - 1.5/8" - 12 UN
		I	SAE 24 - 1.7/8" - 12 UN

6 - Indicator port (only for LMP 211)

<input type="checkbox"/> 6	With plugged indicator port
-----------------------------------	-----------------------------

7 - Filter element

<input type="checkbox"/> A03	Inorganic microfibre 3 μ	} Absolute filtration βx (c) ≥ 1000
<input type="checkbox"/> A06	Inorganic microfibre 6 μ	
<input type="checkbox"/> A10	Inorganic microfibre 10 μ	
<input type="checkbox"/> A16	Inorganic microfibre 16 μ	
<input type="checkbox"/> A25	Inorganic microfibre 25 μ	
<input type="checkbox"/> M25	Wire mesh	} Nominal Filtration
<input type="checkbox"/> M60	Wire mesh	
<input type="checkbox"/> M90	Wire mesh	
<input type="checkbox"/> P10	Resin impregnated paper	} Nominal Filtration
<input type="checkbox"/> P25	Resin impregnated paper	

8 - Max filter element differential pressure

<input type="checkbox"/> N	Δp 20 bar
-----------------------------------	-----------

9 - Option

<input type="checkbox"/> P01	MP Filtri standard
<input type="checkbox"/> Pxx	Customer request

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

**Filter assembly
LDP**

	1	2	3	4	5	6	7	8
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LDP	016	B	A	A	6	A10	N	P01

**Filter element
DN**

	1	6	3	7	8
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: DN	016	A10	A	N	P01

1 - Style

Filter

016

025

040

Filter element

016 Filter element in according to:
DIN 24550 - T3 DN160

025 Filter element in according to:
DIN 24550 - T3 DN250

040 Filter element in according to:
DIN 24550 - T3 DN400

2 - Valves

S

Without bypass

B

With bypass
Opening pressure: 3,5 bar

With bypass
Opening pressure: on request

3 - Filter seals

A

NBR

V

FPM

On request

4 - Connections

Threaded

LDP

Type	Size
A	G 1"
B	G 1 1/4"
C	G 1 1/2"
D	1" NPT
E	1 1/4" NPT
F	1 1/2" NPT
G	SAE 16 - 1.5/16" - 12 UN
H	SAE 20 - 1.5/8" - 12 UN
I	SAE 24 - 1.7/8" - 12 UN

5 - Indicator port

6

With plugged indicator port

6 - Filter element

A03

Inorganic microfibre 3 μ

A06

Inorganic microfibre 6 μ

A10

Inorganic microfibre 10 μ

A16

Inorganic microfibre 16 μ

A25

Inorganic microfibre 25 μ

Absolute filtration

β_X (c) ≥ 1000

M25

Wire mesh

M60

Wire mesh

M90

Wire mesh

Nominal Filtration

P10

Resin impregnated paper

P25

Resin impregnated paper

Nominal Filtration

7 - Max filter element differential pressure

N

Δp 20 bar

8 - Option

P01

MP Filtri standard

Pxx

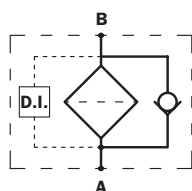
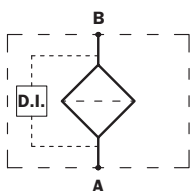
Customer request

LMP 400 - 401 430 - 431



Style S

Style B



Findynamica
drive and control products

Maximum pressure 60 bar
Flow rates to 740 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Bypass valve: Steel

Pressure

LMP 400 length: 2 - 3 - 4

- Working pressure: 60 bar (6 MPa)
- Test pressure: 90 bar (9 MPa)
- Burst pressure: 180 bar (18 MPa)
- Pulsed pressure fatigue test: 1.000.000 cycles with pressure from 0 to 60 bar (6 MPa)

LMP 400 length: 5 - 6

- Working pressure: 50 bar (5 MPa)
- Test pressure: 75 bar (7,5 MPa)
- Burst pressure: 150 bar (15 MPa)
- Pulsed pressure fatigue test: 1.000.000 cycles with pressure from 0 to 50 bar (5 MPa)

Temperature

- From -25°C to +110°C

Bypass valve

- Opening pressure 3.5 bar \pm 10%
- Other opening pressures on request.

Δp Elements type

- Series N and W elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

	Length
• LMP400 -2	7.2
• LMP400 -3	8.1
• LMP400 -4	8.8
• LMP400 -5	11.9
• LMP400 -6	14.4

Volumes (dm³)

	Length
• LMP400 -2	3.5
• LMP400 -3	5
• LMP400 -4	6.5
• LMP400 -5	9.5
• LMP400 -6	13.5

Connections

In-Line Inlet-Outlet LMP 400 - 430
90° Inlet-outlet LMP 401 - 431

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids, aqueous emulsions, water and glycol
- The filter elements are compatible with:
Mineral oils, synthetic fluids.
Aqueous emulsions, water and glycol (series W required).
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

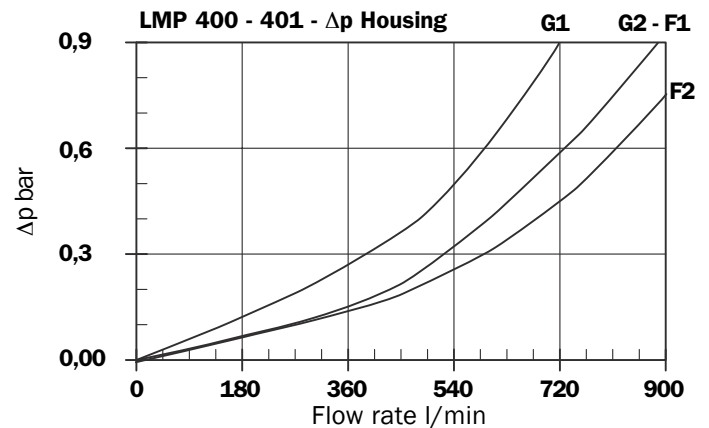
Filter element in stainless steel mesh

Type	Length				
	2	3	4	5	6
CU 400	3300	4950	6550	10200	15300
Values expressed in cm²					

Filter housing Δp pressure drop

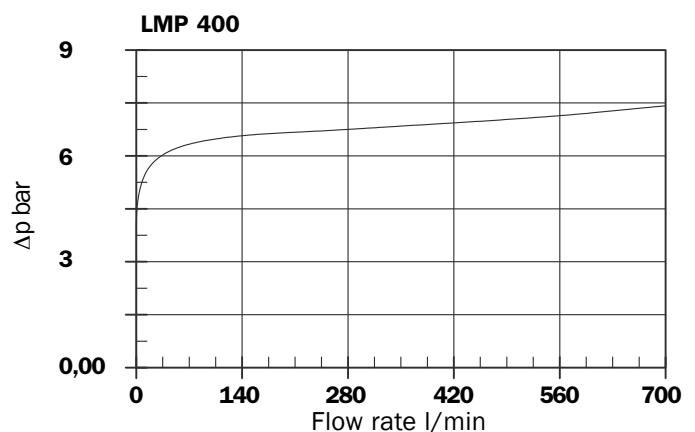
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



Valves

Bypass valve pressure drop





Option P02 "Internal tube for reduced flow rate" is recommended for flow rate values below 100/150 l/min. The use of option P02 makes it easier to fill the housing with the operating fluid.

P02 "Internal tube for reduced flow rates"

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections. For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
Return or in-line filter, max oil velocity 5 m/sec.

Oil velocity	Connections		
	1 1/2"	2"	2 1/2"
2,5 m/sec.	120	300	500
5 m/sec.	240	600	1000

Flow rate l/min

Off-Line filter, filter element recommended maximum pressure drop must be equal to Δp 0.2 ÷ 0.3 bar.

Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.
- Connections of filter under test G 2 1/2".

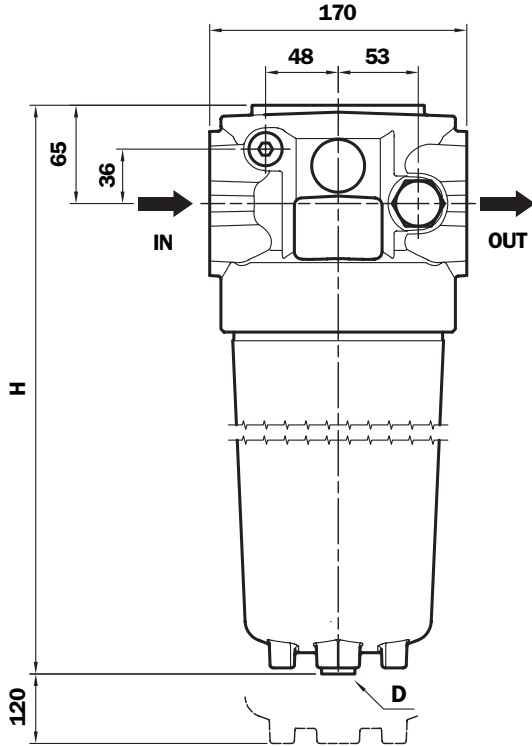
Filtration

	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMP 400 - 401	2	180	215	325	360	460	470	500	660
430 - 431	3	245	295	420	460	540	580	600	700
	4	305	350	480	510	575	600	630	720
	5	405	445	550	600	660	640	670	740
	6	450	520	610	630	670	650	670	740

Flow rate l/min

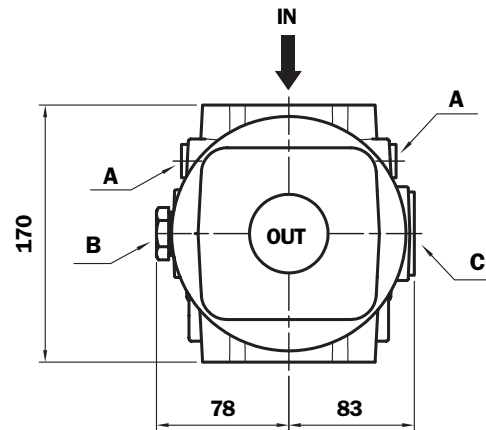
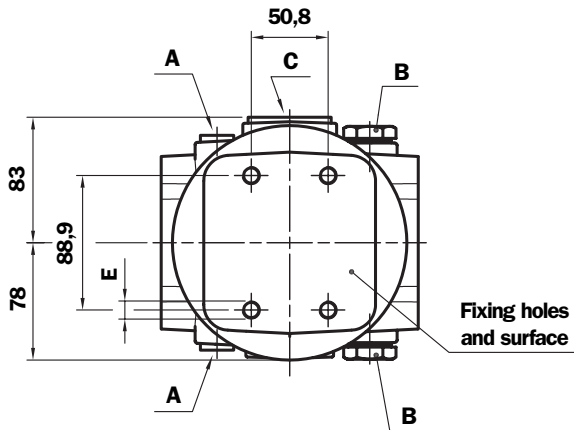
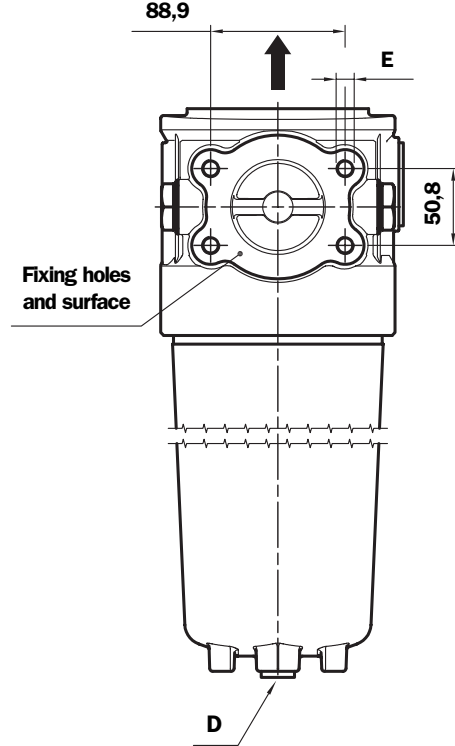
LMP 400

Length 2 - 3 - 4



LMP 401

Length 2 - 3 - 4



A - Breather plug - G 3/8" - A/F 8

B - Indicator port - Plug T2 - A/F 30

C - Bypass valve - A/F 17

D - Oil drain plug - G 3/8" - A/F 8

LMP 400 - 401

Length Filter	H mm
2	378
3	478
4	578

Flanged IN - OUT connections

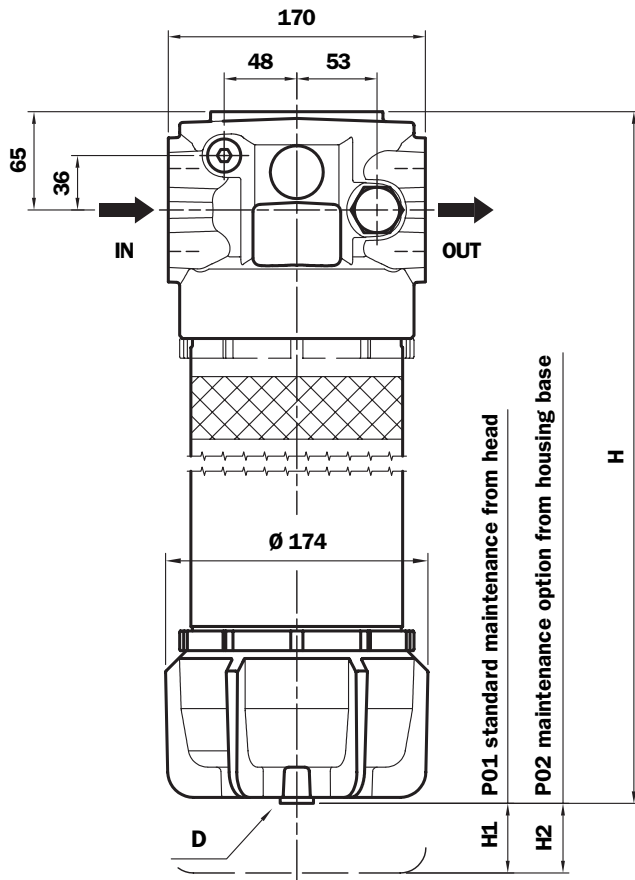
St.	A	E Depth 20 mm
F1	2" SAE - 3000 psi/M	M12
F2	2 1/2" SAE - 3000 psi/M	M12
F3	2" SAE - 3000 psi/UNC	1/2" UNC
F4	2 1/2" SAE - 3000 psi/UNC	1/2" UNC

Thread IN - OUT connections

St.	A	E Depth 20 mm
G1	G 1 1/2"	M12
G2	G 2"	M12
G3	1 1/2" NPT	1/2" UNC
G4	2" NPT	1/2" UNC
G5	SAE 24 - 1 7/8" - 12 UN	1/2" UNC
G6	SAE 35 - 2 1/2" - 12 UN	1/2" UNC

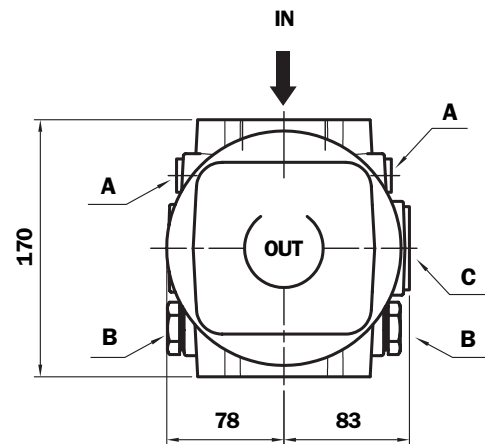
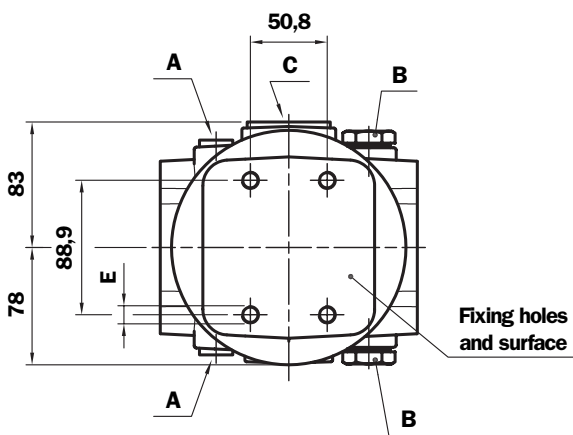
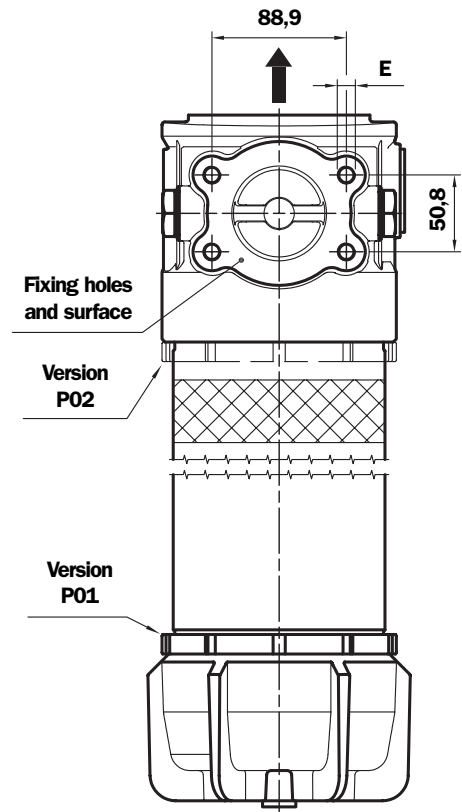
LMP 400

Length 5 - 6



LMP 401

Length 5 - 6



LMP 400 - 401

Length Filter	H mm	H1 mm	H2 mm
5	828	120	660
6	1158	120	990

A - Breather plug - G 3/8" - A/F 8

B - Indicator connection - Plug T2 - A/F 30

C - Bypass valve - A/F 17

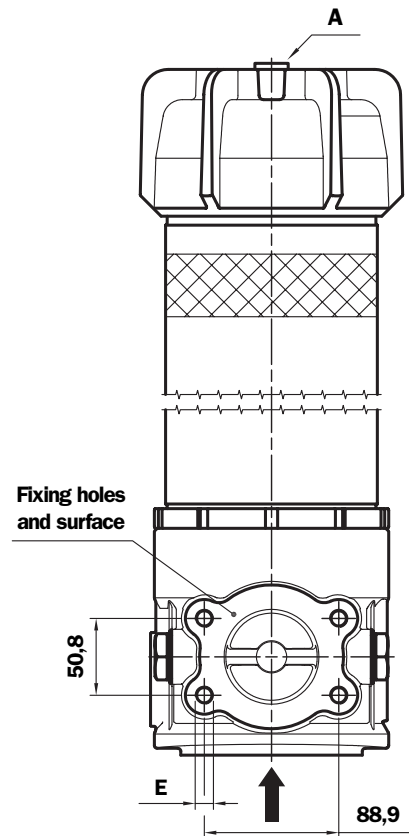
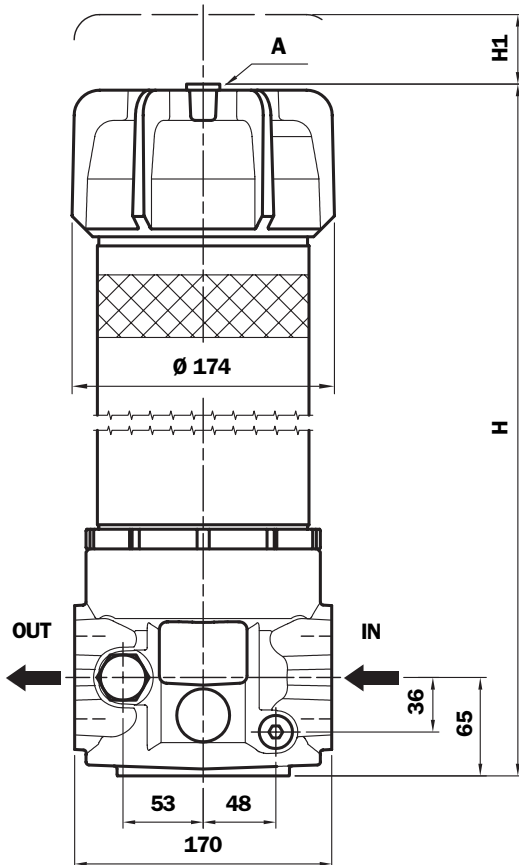
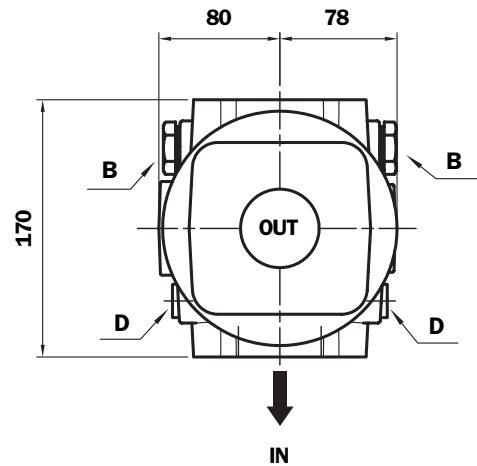
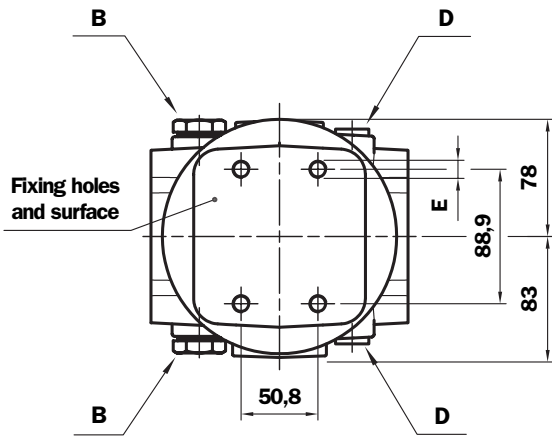
D - Oil drain plug - G 3/8" - A/F 8

LMP 430

Length 5 - 6

LMP 431

Length 5 - 6



A - Breather plug - G 3/8" - A/F 8

B - Indicator port - Plug T2 - A/F 30

D - Oil drain plug - G 3/8" - A/F 8

LMP 430 - 431

Length Filter	H mm	H1 mm
5	828	660
6	1158	990

Flanged IN - OUT connections

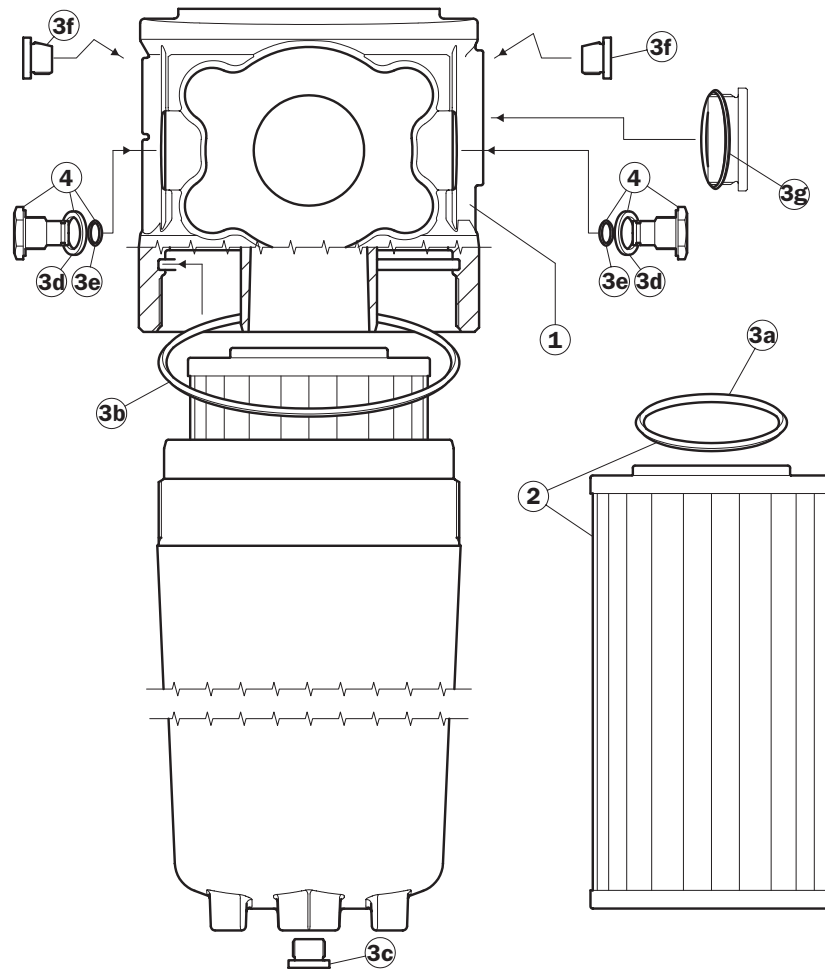
St.	A	E Depth 20 mm
F1	2" SAE - 3000 psi/M	M12
F2	2 1/2" SAE - 3000 psi/M	M12
F3	2" SAE - 3000 psi/UNC	1/2" UNC
F4	2 1/2" SAE - 3000 psi/UNC	1/2" UNC

Thread IN - OUT connections

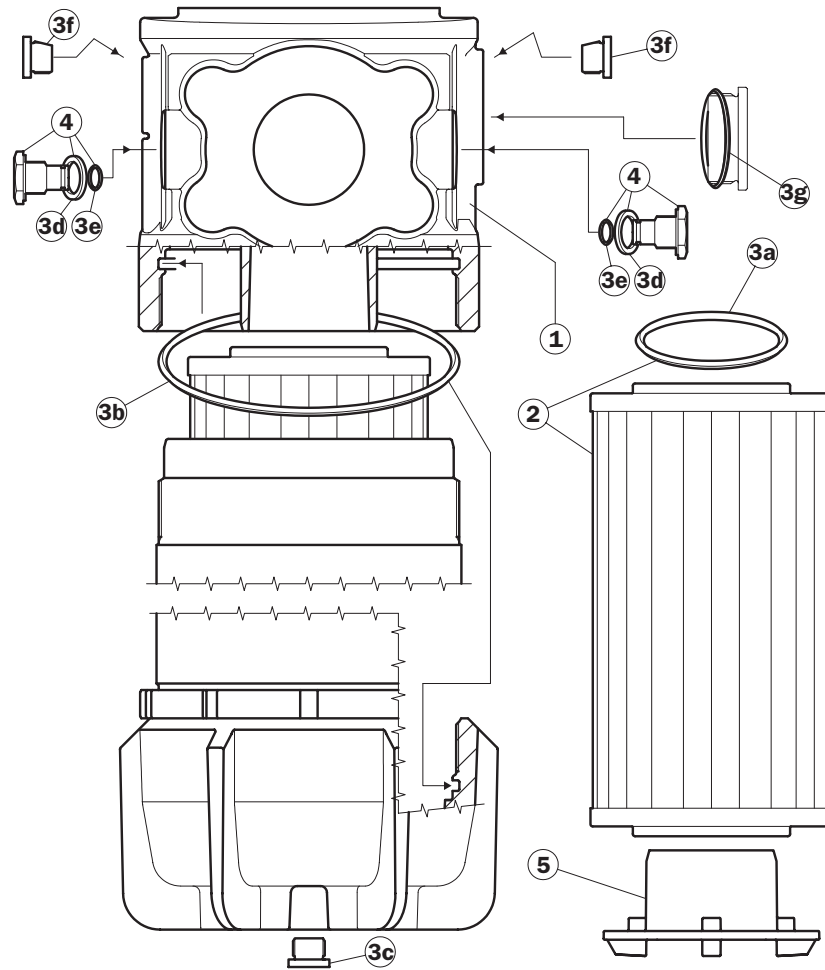
St.	A	E Depth 20 mm
G1	G 1 1/2"	M12
G2	G 2"	M12
G3	1 1/2" NPT	1/2" UNC
G4	2" NPT	1/2" UNC
G5	SAE 24 - 1 7/8" - 12 UN	1/2" UNC
G6	SAE 35 - 2 1/2" - 12 UN	1/2" UNC

Spare parts

Length 2 - 3 - 4



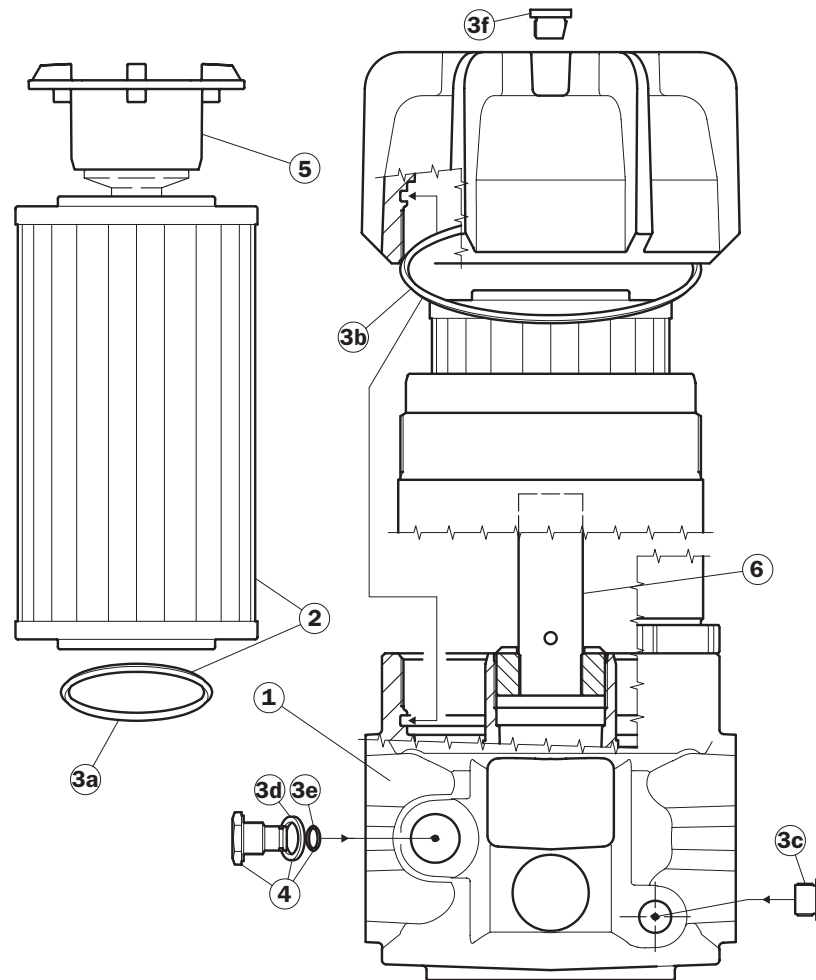
Item	Description	Q.ty	FILTER Series LMP 400 - 401	
1	Filter assembly	1	See order table	
2	Filter Element	1	See order table	
3	Seals kit	1	NBR 02050391	FPM 02050392
3a	Filter element O-Ring	1	O-R 3237 Ø 59,99 x 2,62	
3b	O-Ring for housing	1	O-R 4525 Ø 132,95 x 3,53	
3c	Oil drain plug	1	G 3/8" with seal	
3d	Bonded seal for indicator	2	01030058	01030046
3e	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
3f	Breather plug	2	01029436	
3g	By-pass plug O-Ring	1	O-R 3193 Ø 48,90 x 2,62	
4	Indicator connection plug	2	T2H	T2V
-	Indicators	1	See order table	



Item	Description	Q.ty	FILTER Series LMP 400 - 401	
1	Filter assembly	1	See order table	
2	Filter Element	1	See order table	
3	Seals kit	1	NBR 02050393	FPM 02050394
3a	Filter element O-Ring	2	O-R 3237 Ø 59,99 x 2,62	
3b	O-Ring for housing	2	O-R 4525 Ø 132,95 x 3,53	
3c	Oil drain plug	1	G 3/8" with seal	
3d	Bonded seal for indicator	2	01030058	01030046
3e	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
3f	Breather plug for indicator	2	01029436	
3g	By-pass plug O-Ring	1	O-R 3193 Ø 48,90 x 2,62	
4	Indicator connection plug	2	T2H	T2V
5	Housing spigot	1	01044108	
-	Indicators	1	See order table	

Spare parts

Length 5 - 6



Item	Description	Q.ty	FILTER Series LMP 430 - 431	
1	Filter assembly	1	See order table	
2	Filter Element	1	See order table	
3	Seals kit	1	NBR 02050393	FPM 02050394
3a	Filter element O-Ring	2	O-R 3237 Ø 59,99 x 2,62	
3b	O-Ring for housing	2	O-R 4525 Ø 132,95 x 3,53	
3c	Oil drain plug	2	G 3/8" with seal	
3d	Seal for indicator	2	01030058	01030046
3e	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
3f	Breather plug	1	01029436	
4	Indicator connection plug	2	T2H	T2V
5	Housing spigot	2	Spigot no by-pass 01044108 Spigot with by-pass 02001414	
6	Tube assembly	1	Length 5 - 02025041 Length 6 - 02025042	
-	Indicators	1	See order table	

Ordering information LMP 400 - 431

Filter assembly

LMP

Example: LMP

1	2	3	4	5	6	7	8a
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
400	4	B	A	G3	A10	N	P01

Filter element

CU400

Example: CU400

2	6	4	7	8b
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	A10	A	N	P01

1 - Style

Filter	Filter element
<input type="checkbox"/> 400	<input type="checkbox"/> 400
<input type="checkbox"/> 401	<input type="checkbox"/> 400
<input type="checkbox"/> 430	<input type="checkbox"/> 400
<input type="checkbox"/> 431	<input type="checkbox"/> 400

2 - Filter length

<input type="checkbox"/> 2] LMP 430 - 431 excluded
<input type="checkbox"/> 3	
<input type="checkbox"/> 4	
<input type="checkbox"/> 5	
<input type="checkbox"/> 6	

3 - Valve

<input type="checkbox"/> S	Without by-pass
<input type="checkbox"/> B	With bypass
<input type="checkbox"/>	With by-pass Opening pressure: on request

4 - Filter seals

<input type="checkbox"/> A	NBR
<input type="checkbox"/> V	FPM
<input type="checkbox"/> W	NBR (Compatible with fluid HFA, HFB, HFC)
<input type="checkbox"/>	On request

5 - Connections

Threaded

Type	LMP 400 - 431
G1	G 1 1/2"
G2	G 2"
G3	1 1/2" NPT
G4	2" NPT
G5	SAE 24 - 1 7/8" - 12 UN
G6	SAE 32 - 2 1/2" - 12 UN

Flanged

Type	LMP 400 - 431
F1	2" SAE 3000 psi/M
F2	2 1/2" SAE 3000 psi/M
F3	2" SAE 3000 psi/UNC
F4	2 1/2" SAE 3000 psi/UNC

6 - Filter element

<input type="checkbox"/> A01	Inorganic microfibre* 1 μ] Absolute filtration $\beta_x (c) \geq 1000$
<input type="checkbox"/> A03	Inorganic microfibre 3 μ	
<input type="checkbox"/> A06	Inorganic microfibre 6 μ	
<input type="checkbox"/> A10	Inorganic microfibre 10 μ	
<input type="checkbox"/> A16	Inorganic microfibre 16 μ	
<input type="checkbox"/> A25	Inorganic microfibre 25 μ	

* On request

<input type="checkbox"/> M25	Wire mesh] Nominal Filtration
<input type="checkbox"/> M60	Wire mesh	
<input type="checkbox"/> M90	Wire mesh	

<input type="checkbox"/> P10	Resin impregnated paper] Nominal Filtration
<input type="checkbox"/> P25	Resin impregnated paper	

7 - Max filter element differential pressure

<input type="checkbox"/> N	Δp 20 bar
-----------------------------------	-------------------

8 - Option

a - Filter

<input type="checkbox"/> P01	MP Filtri standard
<input type="checkbox"/> P02	LMP 400 - 401 Maintenance from base housing (only length 5 and 6)
<input type="checkbox"/> P02	LMP 430 - 431 With internal tube for reduced flow rate
<input type="checkbox"/> Pxx	Customer request

b - Filter element

<input type="checkbox"/> P01	MP Filtri standard
<input type="checkbox"/> Pxx	Customer request

Findynamica
drive and control products

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

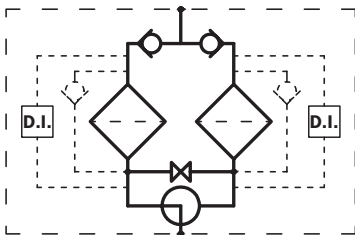
The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

LMD 400 - 401 - 431

Findynamica
drive and control products



LMD 400 - 401 - 431
Double filter



Maximum pressure 16 bar
Flow rates to 590 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Manifolds: Steel - Painted black
- Bypass valve: Steel
- 3-way ball valve: Steel housings - Stainless Steel ball
- Valve: Phosphated Steel - Stainless Steel

Pressure

- Working pressure: 16 bar (1.6 MPa)
- Test pressure: 25 bar (2.5 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Δp Elements type

- Series N and W elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard FPM series V

Weights (kg)

Length

- LMD400 - 401 4 60
- LMD400 - 401 5 65
- LMD400 - 401 6 72
- LMD431 5 68
- LMD431 6 75

Volumes (dm³)

Length

- LMD400 - 401 - 431 4 18
- LMD400 - 401 - 431 5 24
- LMD400 - 401 - 431 6 32

Connections

Inlet-Outlet

- Twin vertically mounted (excluded version LMD 400)
- In-Line

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol
- The filter elements are compatible with:
Mineral oils, synthetic fluids.
Aqueous emulsions, water and glycol
(series W required).
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and
water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

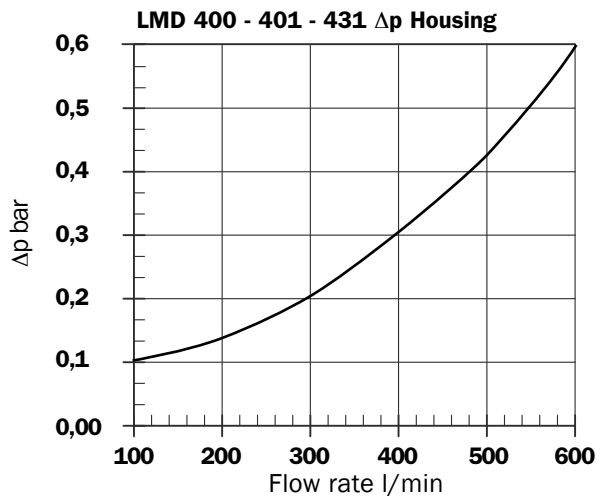
Filter element in stainless steel mesh

Type	Length		
	4	5	6
CU 400	6550	10200	15300
Values expressed in cm²			

Filter housing Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

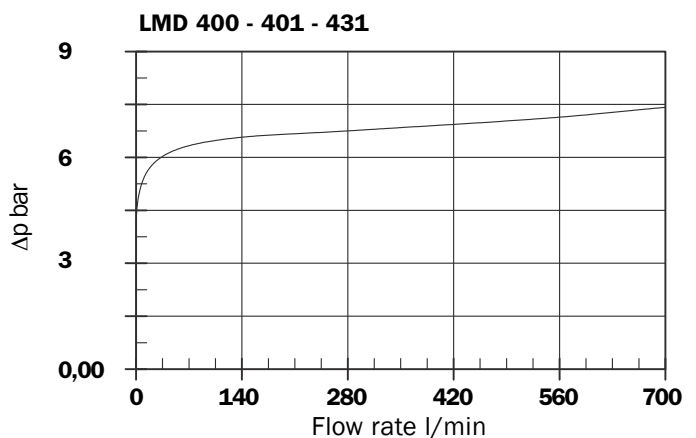
Δp varies proportionally with density.



Valves

Bypass valve pressure drop

For individual filter body



Option P02 for LMD 431



Option P02 “Internal tube for reduced flow rate” is recommended for flow rate values below: 150 l/min. The use of option P02 makes it easier to fill the housing with the operating fluid.

P02 “Internal tube for reduced flow rates”

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections. For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
Return or in-line filter, max oil velocity 5 m/sec.

Oil velocity	Connections
	2 1/2"
2,5 m/sec.	500
5 m/sec.	1000

Flow rate l/min

Off-Line filter, filter element recommended maximum pressure drop must be equal to Δp 0.2 ÷ 0.3 bar.

Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.

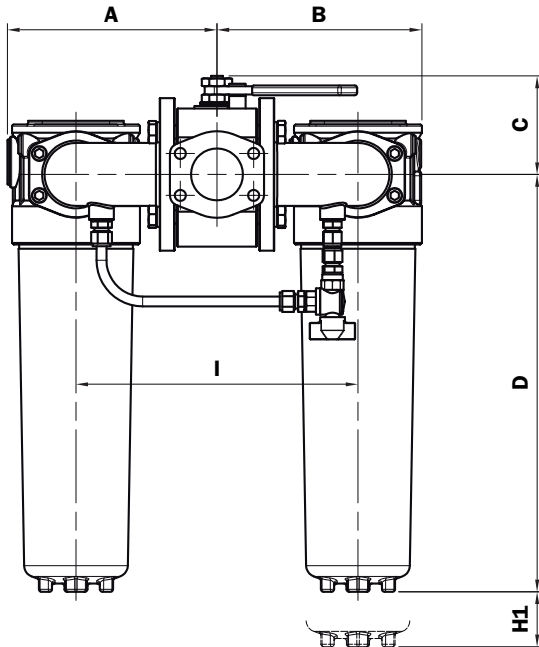
Filtration

	Length	A03	A06	A10	A16	A25	P10	P25	M25
LMD 400 - 401	4	265	310	410	430	485	500	520	570
431	5	355	385	465	500	540	530	540	580
	6	390	440	510	520	560	540	555	590

Flow rate l/min

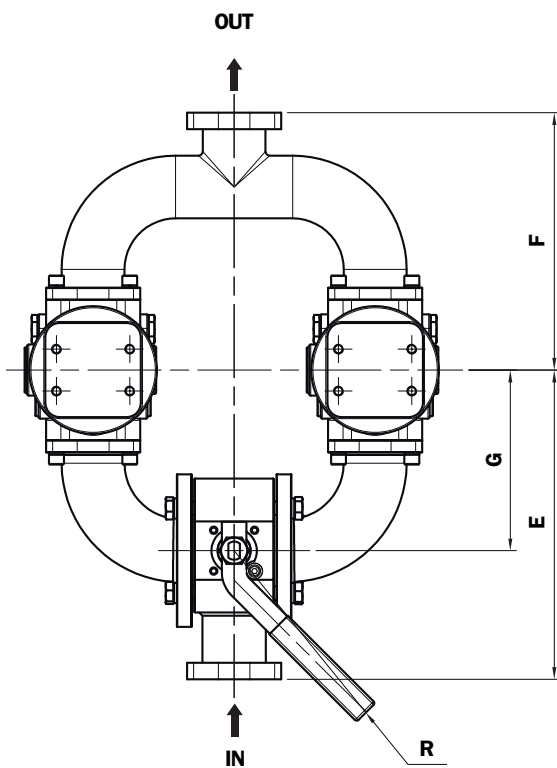
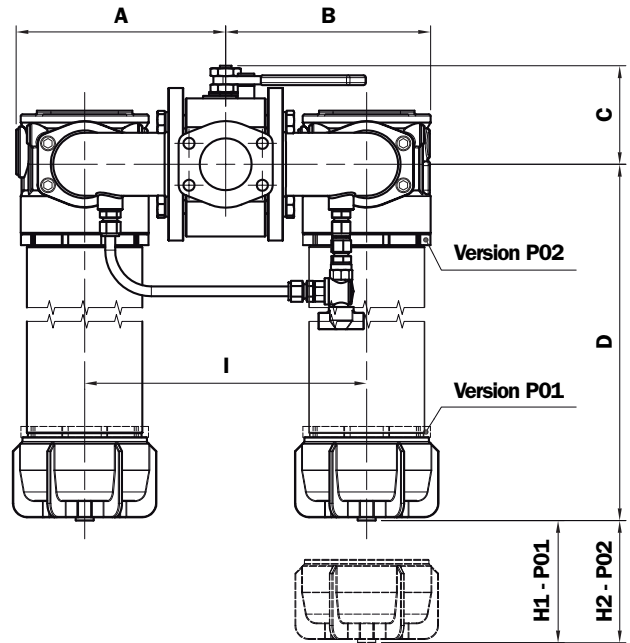
LMD 400

Length 4

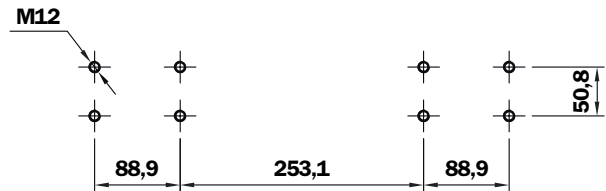


LMD 400

Length 5 - 6



Filter fixing holes LMD 400

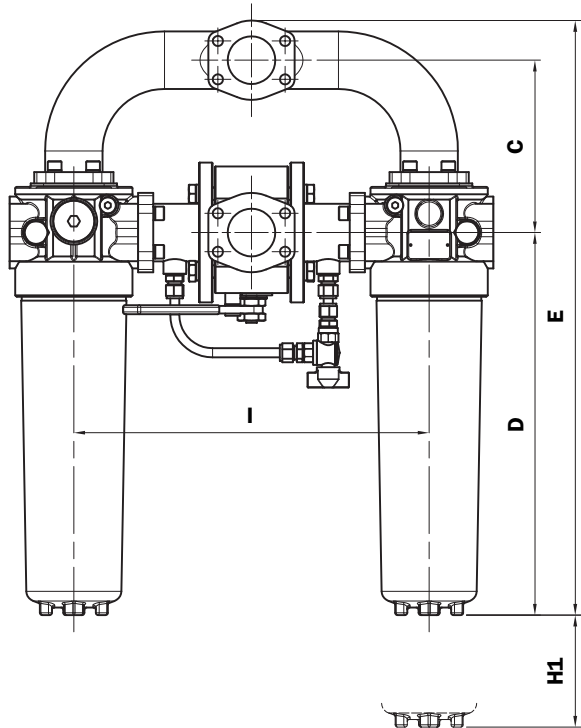


LMD 400

Length Filter	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H1 mm	H2 mm	I mm	R mm
4	255	255	120	513	351	285	195	120	-	342	255
5	255	255	120	765	351	285	195	120	660	342	255
6	255	255	120	1095	351	285	195	120	990	342	255

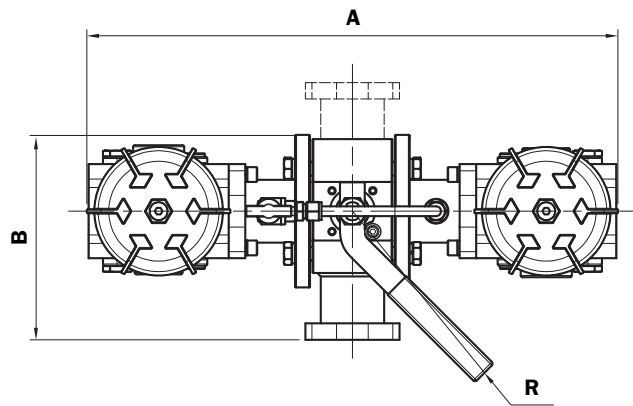
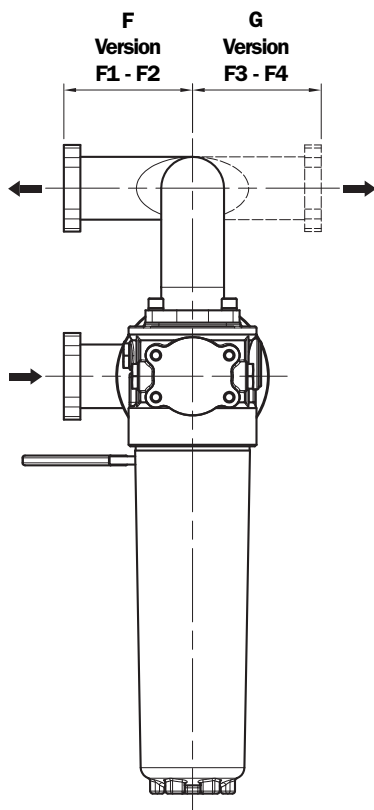
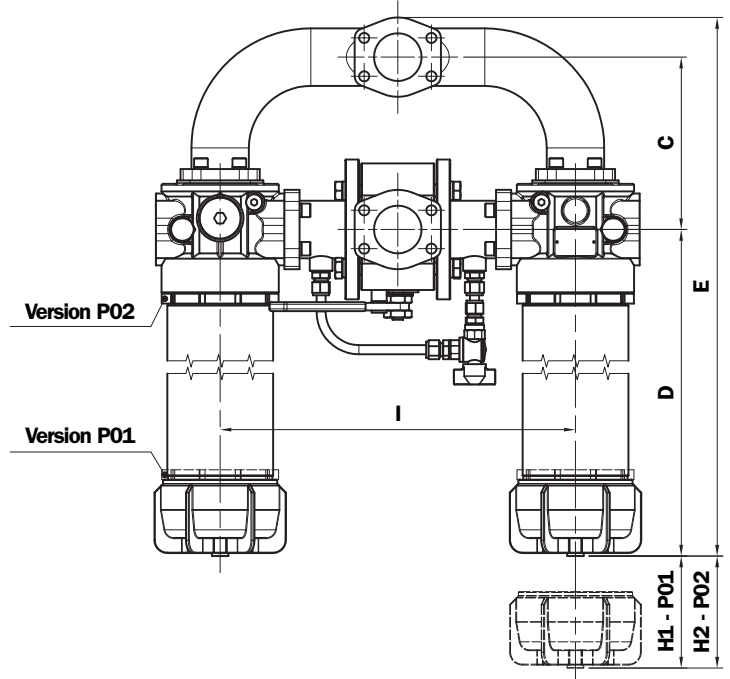
LMD 401

Length 4



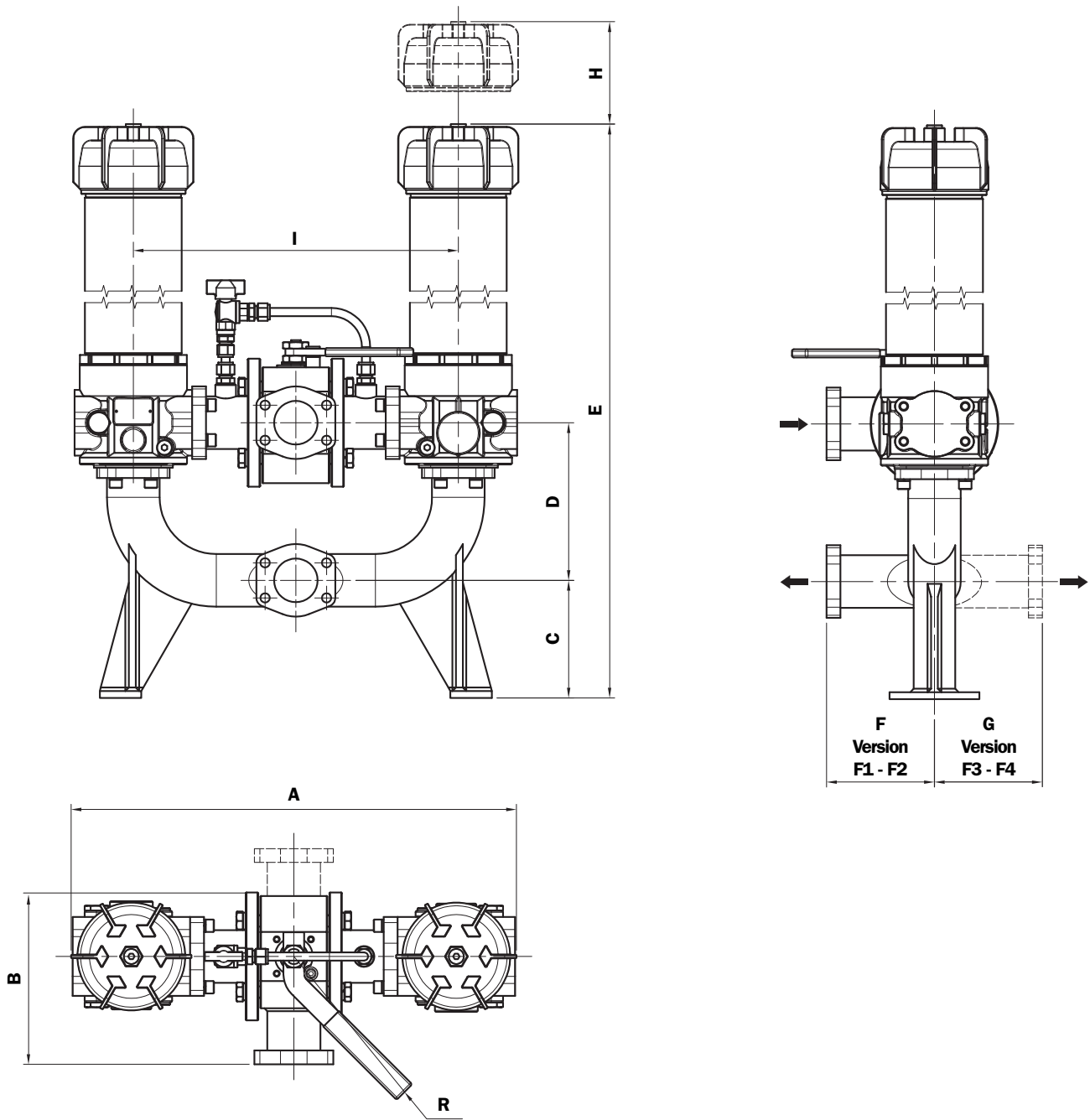
LMD 401

Length 5 - 6

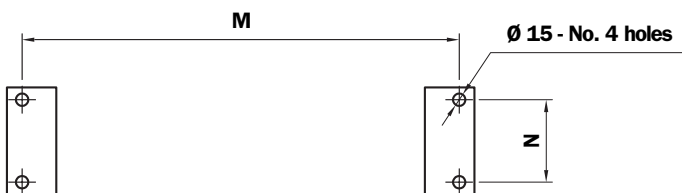


LMD 401

Length Filter	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H1 mm	H2 mm	I mm	R mm
4	640	250	228	513	796	156	156	120	-	470	255
5	640	250	228	765	1048	156	156	120	660	470	255
6	640	250	228	1095	1378	156	156	120	990	470	255



Filter fixing holes LMD 431

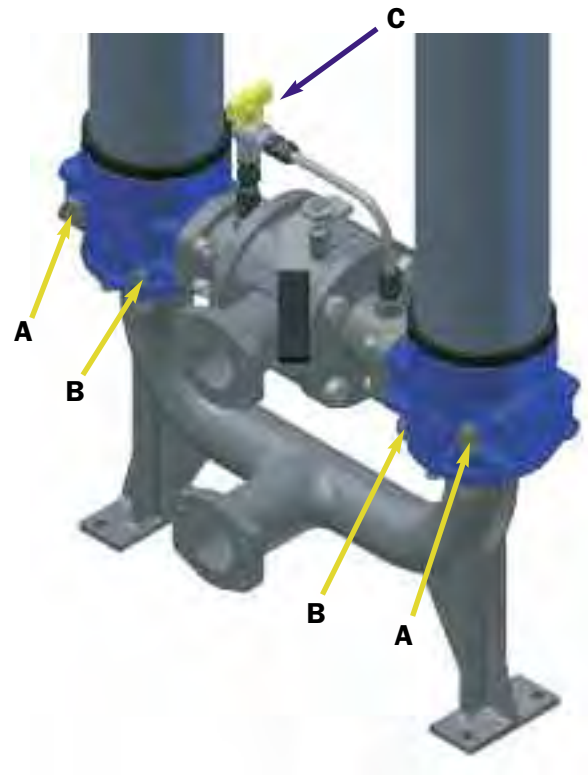
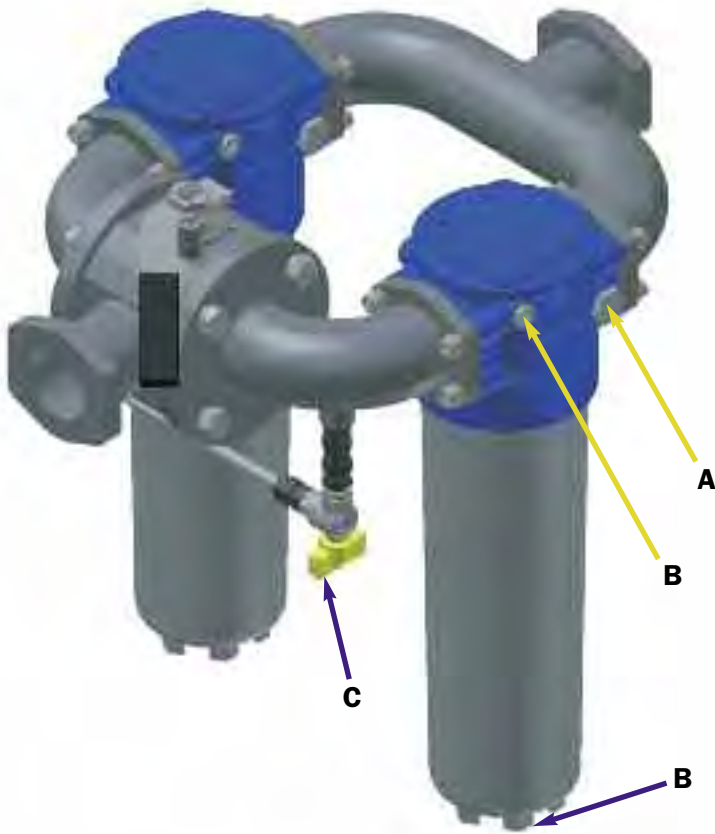


LMD 431

Length Filter	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	M mm	N mm	R mm
5	640	250	170	228	1165	156	156	660	470	530	100	255
6	640	250	170	228	1495	156	156	990	470	530	100	255

LMD 400

LMD 431



A - Indicator port - Plug T2 - A/F 30

B - Oil drain plug - G 1/2" - A/F 10

C - Compensation valve

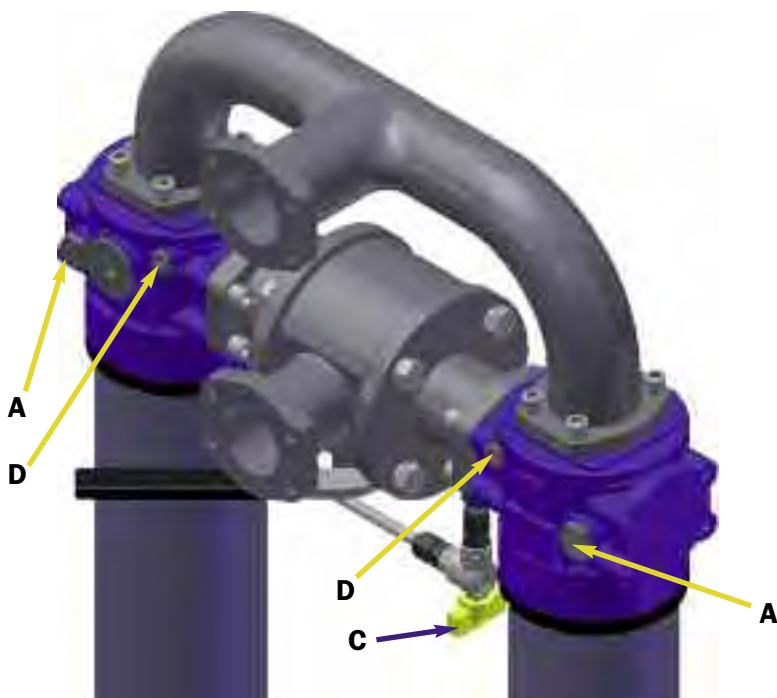
D - Breather plug - G 1/2" - A/F 10

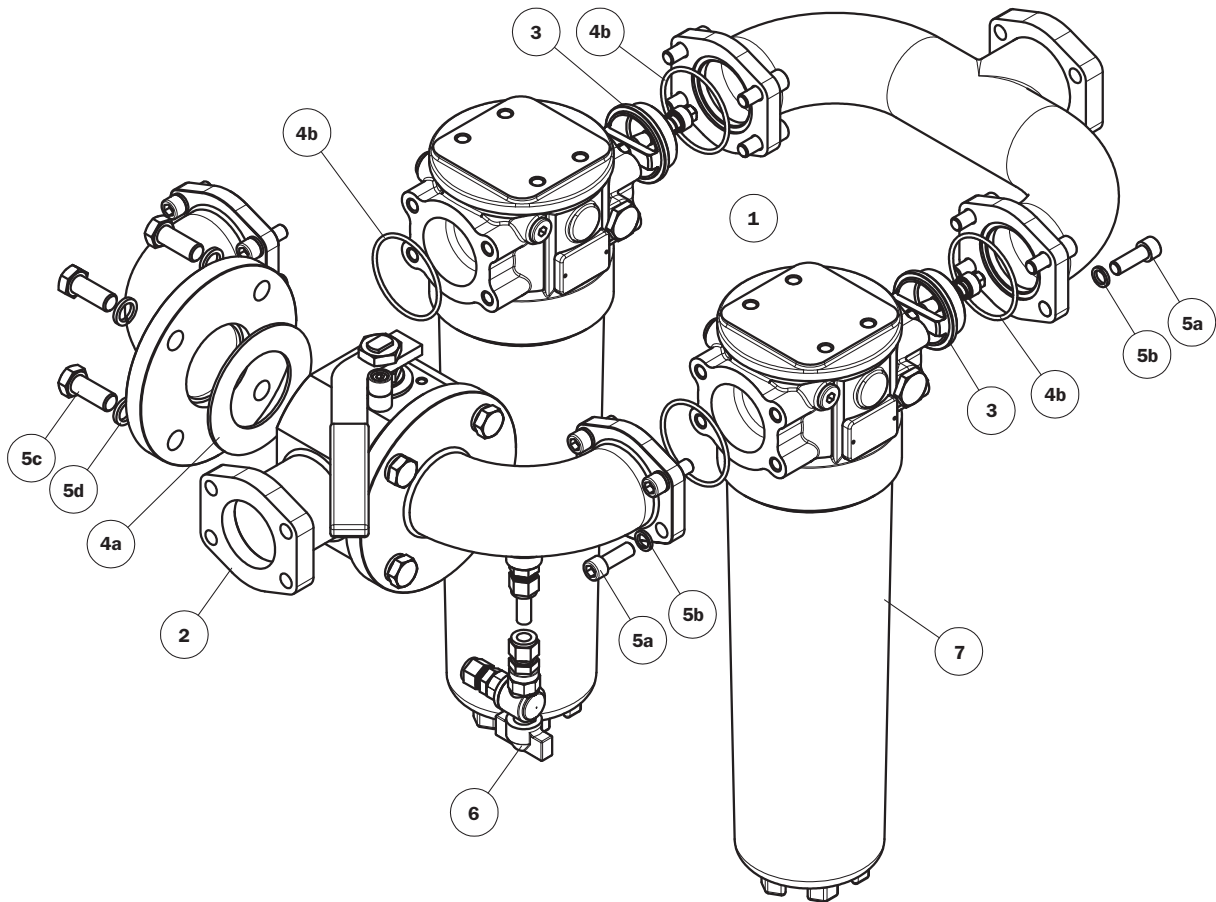
Differential indicator:

LMD 400 - 401 - 431 - Fit one indicator for individual filter assembly

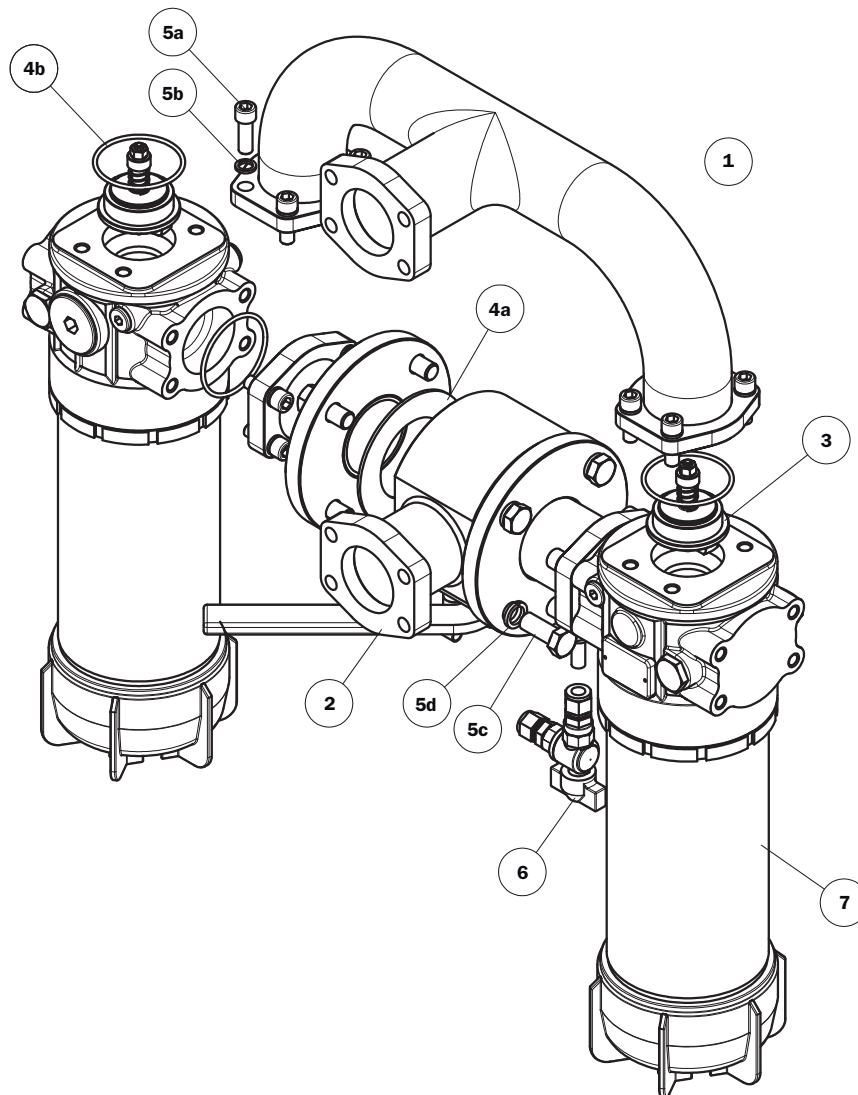


LMD 401

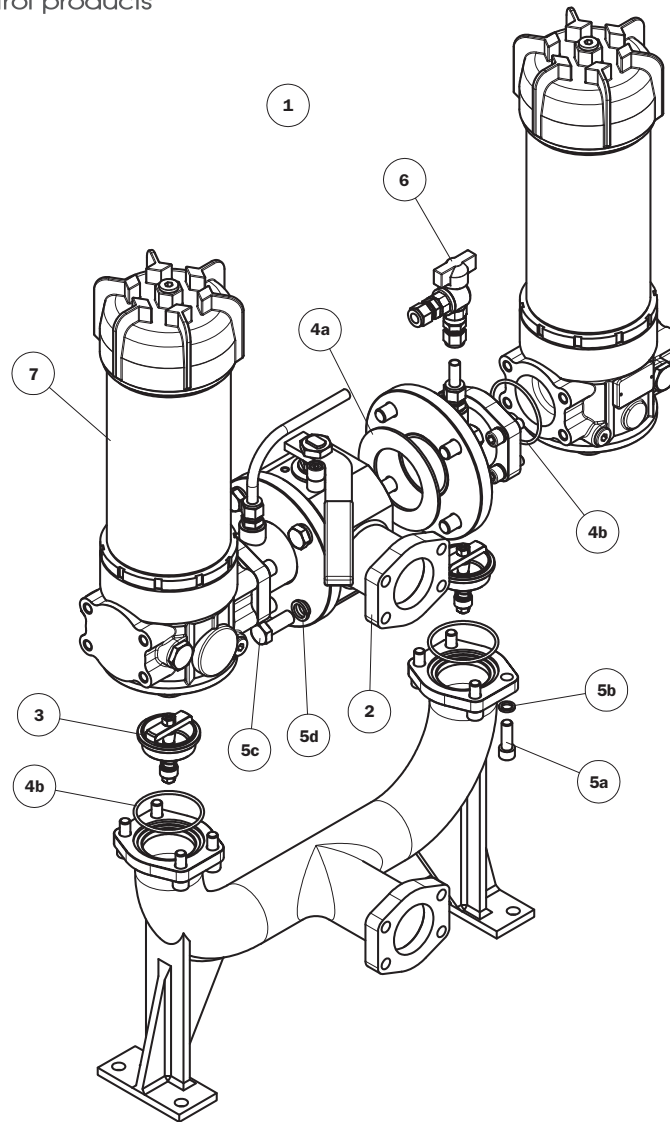




Item	Description	Q.ty	FILTER Series LMD 400
1	Filter assembly	1	See order table
2	3-way ball valve PN 16	1	2 1/2" SAE 3000 psi/M 02001440 2 1/2" SAE 3000 psi/UNC 02001441
3	One-way valve	2	02001429
4	Seal kit	1	02050399
4a	Flat seal	2	In according to DN65
4b	IN-OUT O-Ring	4	O-R 4287 Ø 72,62 x 3,53
5	Threaded fasteners kit	1	02049062
5a	Hexagon socket screws	16	UNI 5931 - M12 x 35 - 10.9
5b	Spring washers	16	UNI 1751-B 12
5c	Exagon bolt screws	8	UNI EN 24017 - M16 x 40 - 10.9
5d	Spring washers	8	UNI 1751-B 16
6	Kit ball valve with hose fitting	1	02025043
7	Filter	2	See order table LMP400xF2..... page 51
-	Indicators	2	See order table



Item	Description	Q.ty	FILTER Series LMD 401
1	Filter assembly	1	See order table
2	3-way ball valve PN 16	1	2 1/2" SAE 3000 psi/M 02001440 2 1/2" SAE 3000 psi/UNC 02001441
3	One-way valve	2	02001429
4	Seal kit	1	02050399
4a	Flat seal	2	In according to DN65
4b	IN-OUT O-Ring	4	O-R 4287 Ø 72,62 x 3,53
5	Threaded fasteners kit	1	02049062
5a	Hexagon socket screws	16	UNI 5931 - M12 x 35 - 10.9
5b	Spring washers	16	UNI 1751-B 12
5c	Exagon bolt screws	8	UNI EN 24017 - M16 x 40 - 10.9
5d	Spring washers	8	UNI 1751-B 16
6	Kit ball valve with hose fitting	1	02025043
7	Filter	2	See order table LMP401xF2..... page 51
-	Indicators	2	See order table



Item	Description	Q.ty	FILTER Series LMD 431
1	Filter assembly	1	See order table
2	3-way ball valve PN 16	1	2 1/2" SAE 3000 psi/M 02001440 2 1/2" SAE 3000 psi/UNC 02001441
3	One-way valve	2	02001429
4	Seal kit	1	02050399
4a	Flat seal	2	In according to DN65
4b	IN-OUT O-Ring	4	O-R 4287 Ø 72,62 x 3,53
5	Threaded fasteners kit	1	02049062
5a	Hexagon socket screws	16	UNI 5931 - M12 x 35 - 10.9
5b	Spring washers	16	UNI 1751-B 12
5c	Exagon bolt screws	8	UNI EN 24017 - M16 x 40 - 10.9
5d	Spring washers	8	UNI 1751-B 16
6	Kit ball valve with hose fitting	1	02025043
7	Filter	2	See order table LMP431xF2..... page 51
-	Indicators	2	See order table

Ordering information LMD 400 - 401 - 431

Filter assembly

LMD

Example: LMD

1	2	3	4	5	6	7	8a
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
400	5	B	V	F1	A10	N	P01

Filter element

CU400

Example: CU400

2	6	4	7	8b
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	A10	A	N	P01

1 - Style

Filter

400
401
431

Filter element

400
400
400

2 - Filter length

4	LMD 431 excluded
5	
6	

3 - Valve

S	Without by-pass
B	With bypass
<input type="checkbox"/>	With by-pass Opening pressure: on request

4 - Filter seals

a - Filter

V	FPM
W	FPM (Compatible with fluid HFA, HFB, HFC)

b - Filter element

A	NBR
W	NBR (Compatible with fluid HFA, HFB, HFC)
<input type="checkbox"/>	On request

5 - Connections

Flanged

Type	LMD 400 - 401 - 431
F1	2 1/2" SAE 3000 psi/M
F2	2 1/2" SAE 3000 psi/UNC
F3	= F1 In-Line connections (only LMD 401 - 431)
F4	= F2 In-Line connections (only LMD 401 - 431)

6 - Filter element

A01	Inorganic microfibre* 1 µ	Absolute filtration βx (c) ≥ 1000
A03	Inorganic microfibre 3 µ	
A06	Inorganic microfibre 6 µ	
A10	Inorganic microfibre 10 µ	
A16	Inorganic microfibre 16 µ	
A25	Inorganic microfibre 25 µ	

* On request

M25	Wire mesh	Nominal Filtration
M60	Wire mesh	
M90	Wire mesh	

P10	Resin impregnated paper	Nominal Filtration
P25	Resin impregnated paper	

7 - Max filter element differential pressure

N	Δp 20 bar
W	FPM (Compatible with fluid HFA, HFB, HFC)

8 - Option

a - Filter

P01	MP Filtri standard
P02	LMD 400 - 401 Maintenance from base housing (only length 5 and 6)
P02	LMD 431 With internal tube for reduced flow rate
Pxx	Customer request

b - Filter element

P01	MP Filtri standard
Pxx	Customer request

Findynamica
drive and control products

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

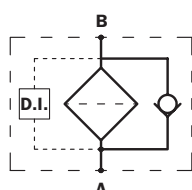
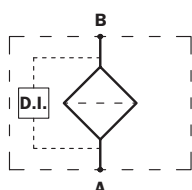
LMP 900 - 901

Filter element in according to DIN 24550



Style S

Style B



Findynamica
drive and control products

Maximum pressure 30 bar
Flow rates to 2000 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Manifolds: Anodised Aluminium
- Bypass valve: Steel

Pressure

- Working pressure: 30 bar (3 MPa)
- Test pressure: 45 bar (4.5 MPa)
- Burst pressure: 120 bar (12 MPa)
- Pulsed pressure fatigue test: 1.000.000 cycles with pressure from 0 to 30 bar (3 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Number of filter elements

- LMP 900-1: 1 filter element CU900
- LMP 900-2: 2 filter elements CU900

Filter elements

- Filter element in according to with DIN 24550
Size: 1000

Δp Elements type

- Series N elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length

- LMP900 -1 19.2
- LMP900 -2 30.4

Volumes (dm³)

Length

- LMP900 -1 16
- LMP900 -2 24

Connections

In-Line Inlet-Outlet LMP 900

90° Inlet-Outlet LMP 901

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol.
- The filter elements are compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol.
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and
water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

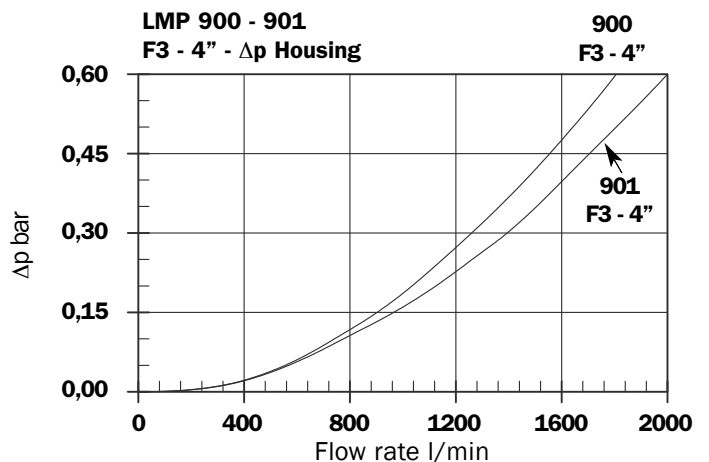
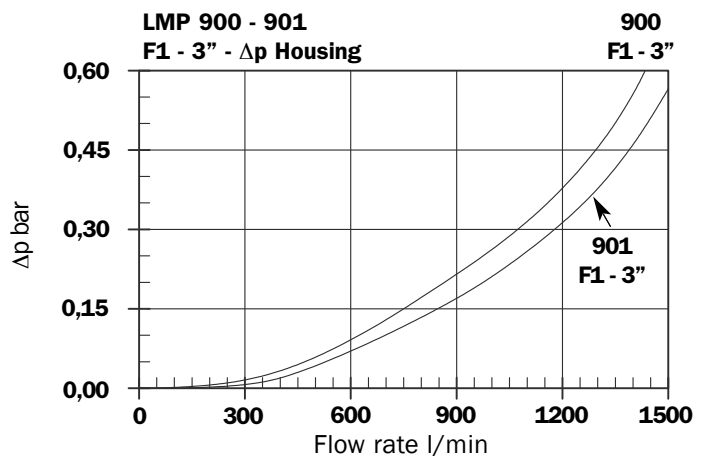
Filter element in stainless steel mesh

Type	Length	
	1	2
CU 900	13000	26000
Values expressed in cm ²		

Filter housing Δp pressure drop

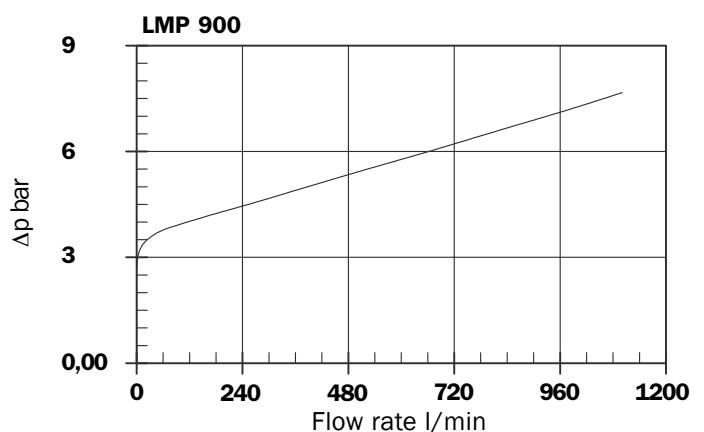
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



Valves

Bypass valve pressure drop



LMP 900



LMP 900 - 901 filters are equipped with two 1000 size cartridges in compliance with DIN 24550 standard, connected by means of a removable coupling spigot.

Coupling spigot

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections.

For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
Return or in-line filter, max oil velocity 5 m/sec.

Oil velocity	Connections	
	3"	4"
2,5 m/sec.	750	1200
5 m/sec.	1500	2400

Flow rate l/min

Off-Line filter, filter element recommended maximum pressure drop must be equal to Δp 0.2 ÷ 0.3 bar.

Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.

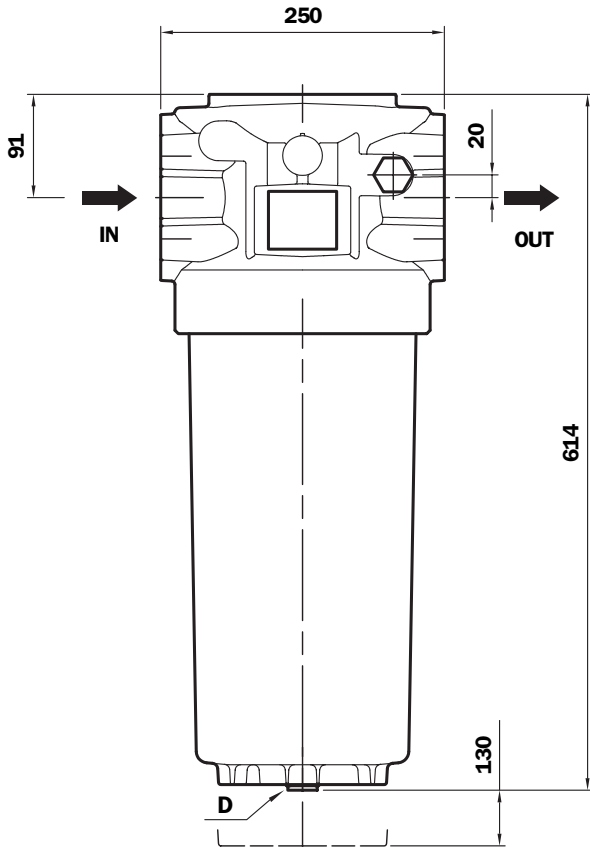
Filtration

	Length	A03	A06	A10	A16	A25	M25
LMP 900	1	600	750	1100	1150	1250	1500
Connection: Flange SAE 3000 3"	2	950	1100	1300	1350	1400	1500
LMP 900	1	650	800	1200	1250	1400	1900
Connection: Flange SAE 3000 4"	2	1000	1200	1550	1550	1650	2000

Flow rate l/min

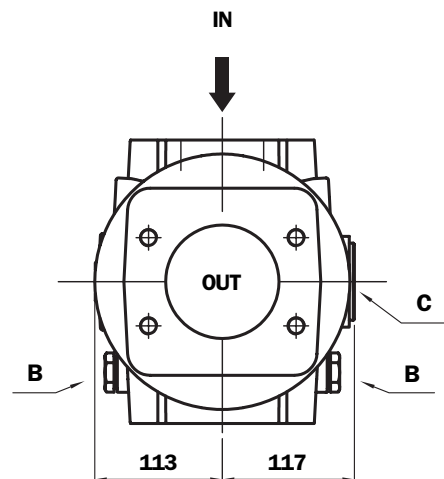
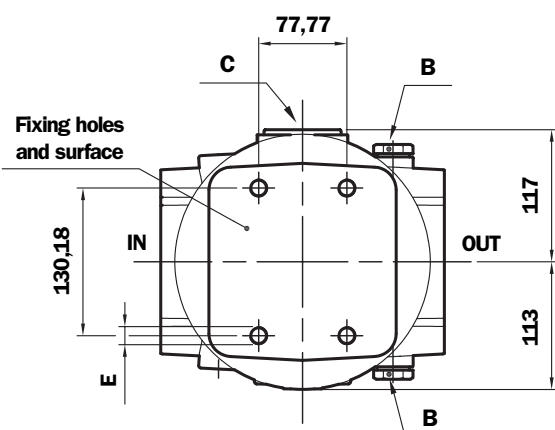
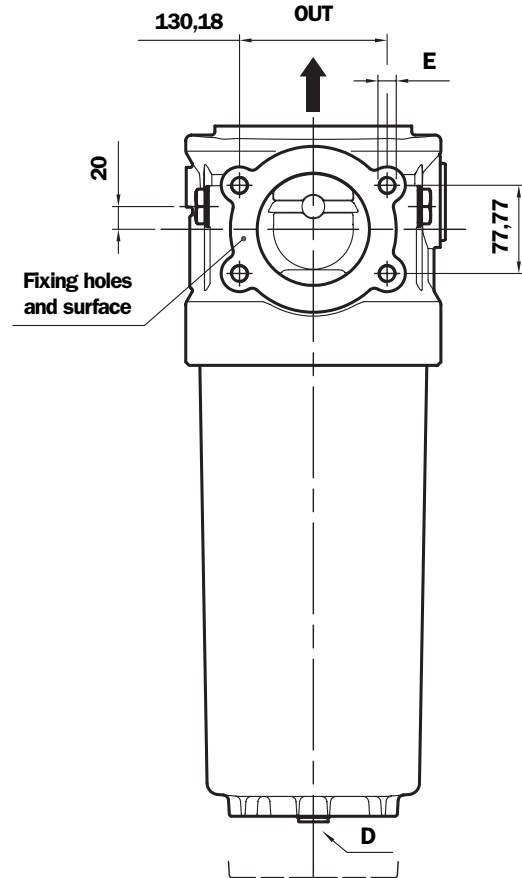
LMP 900

Length 1



LMP 901

Length 1



- B** - Indicator port - Plug T2 - A/F 30
- C** - Bypass valve - A/F 17
- D** - Oil drain plug - G 1/2" - A/F 8

Flanged IN - OUT connections

St.	A	E Depth 25 mm
F1	3" SAE - 3000 psi/M	M16
F2	3" SAE - 3000 psi/UNC	M16
F3	4" SAE - 3000 psi/M	5/8" UNC
F4	4" SAE - 3000 psi/UNC	5/8" UNC

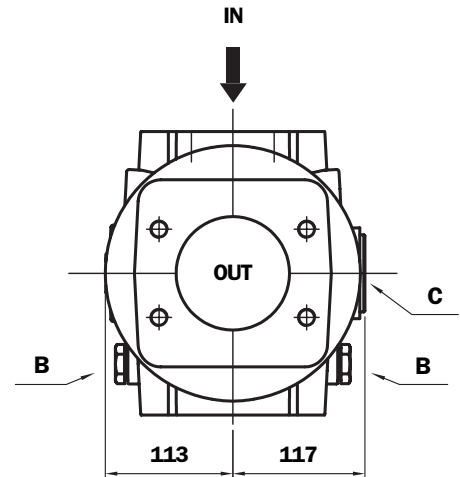
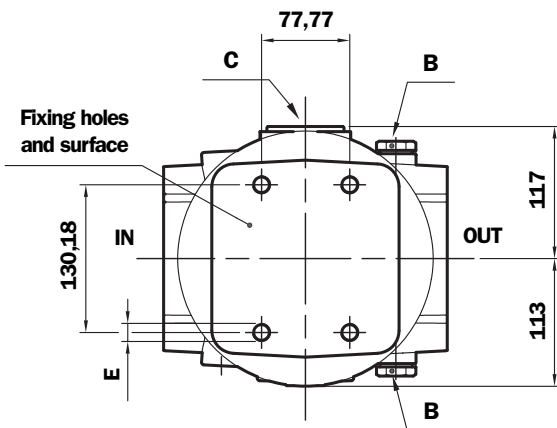
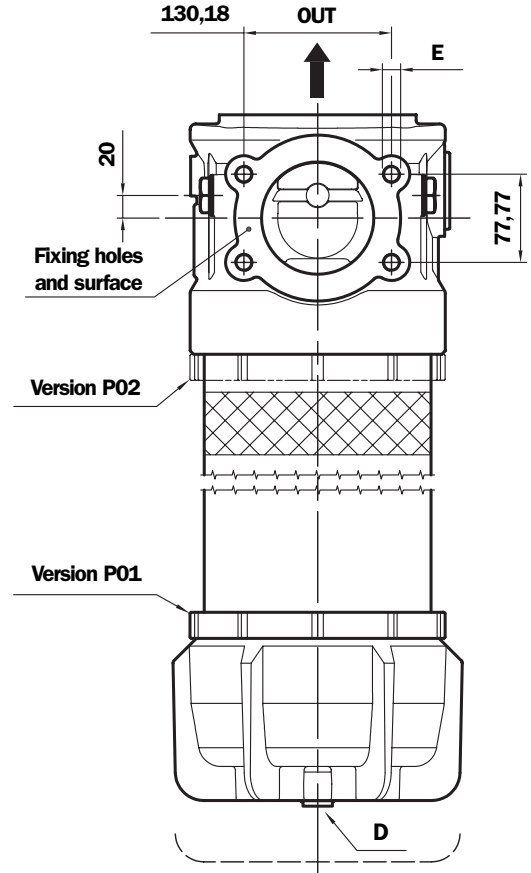
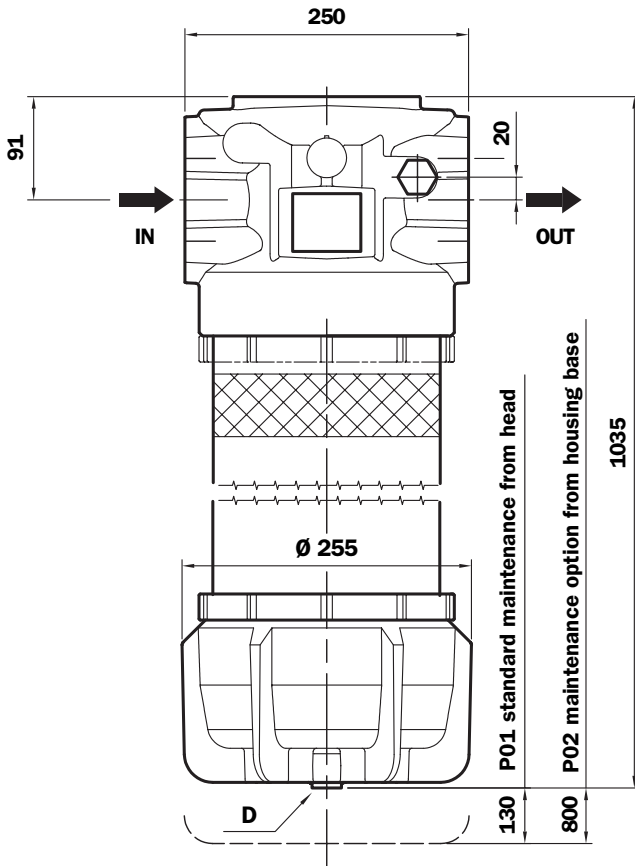
LMP 900

Length 2



LMP 901

Length 2



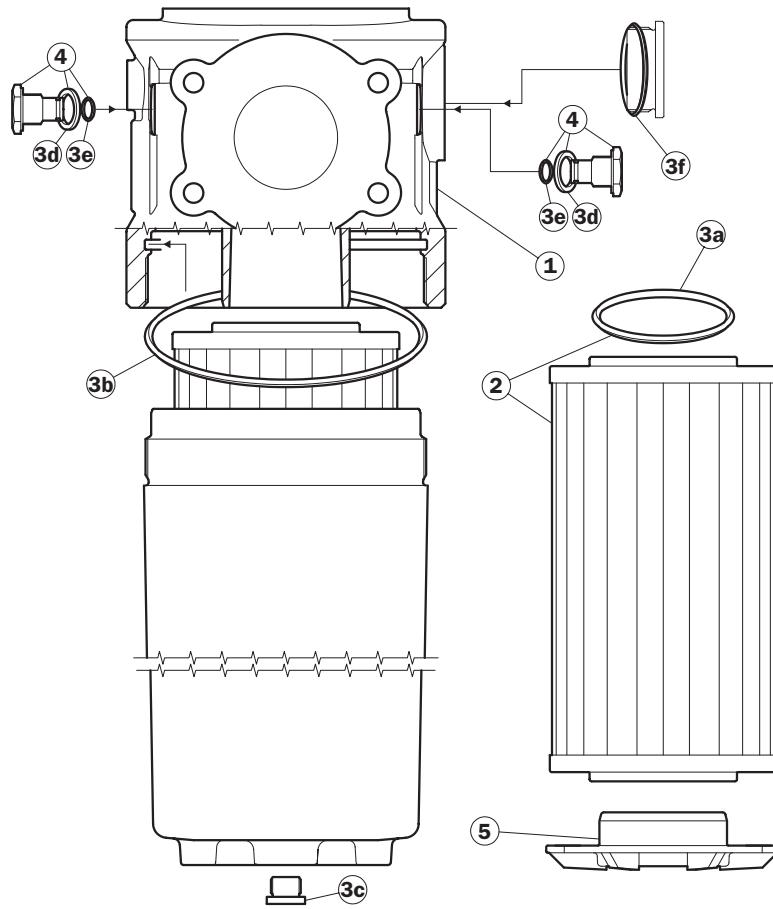
Flanged IN - OUT connections

St.	A	E Depth 25 mm
F1	3" SAE - 3000 psi/M	M16
F2	3" SAE - 3000 psi/UNC	M16
F3	4" SAE - 3000 psi/M	5/8" UNC
F4	4" SAE - 3000 psi/UNC	5/8" UNC

B - Indicator port - Plug T2 - A/F 30

C - Bypass valve - A/F 17

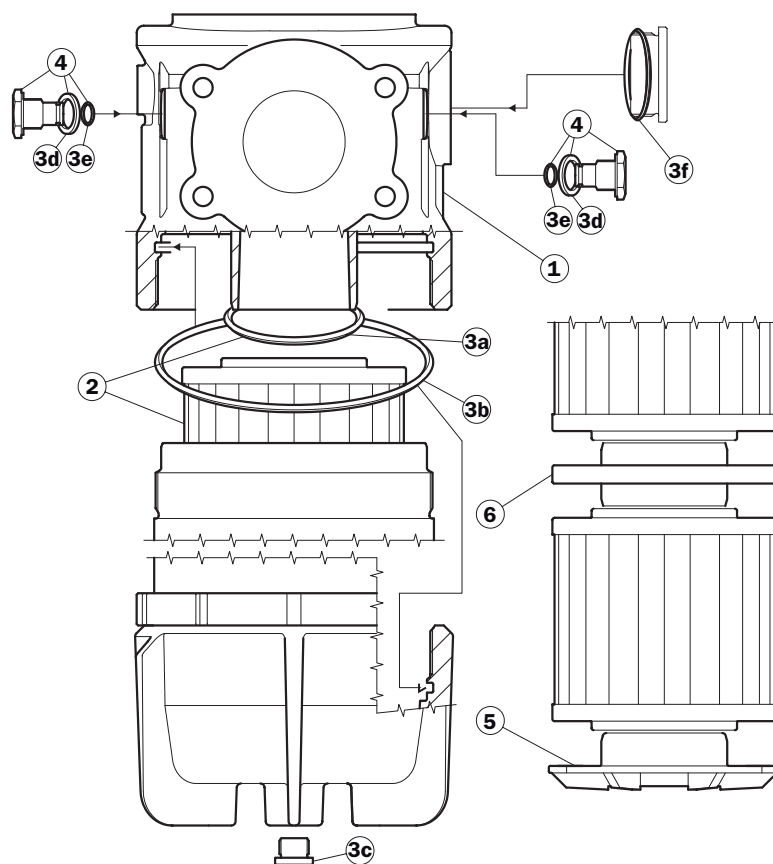
D - Oil drain plug - G 1/2" - A/F 8



Item	Description	Q.ty	FILTER Series LMP 900 - 901	
1	Filter assembly	1	See order table	
2	Filter Element	1	See order table	
3	Seals kit	1	NBR 02050363	FPM 02050364
3a	Filter element O-Ring	2	O-R 185 Ø 89,69 x 5,33	
3b	O-Ring for housing	1	O-R 6745 Ø 189,86 x 5,34	
3c	Oil drain plug	1	G 1/2" with seal	
3d	Seal for indicator	2	01030058	01030046
3e	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
3f	By-pass plug O-Ring	1	O-R 3243 Ø 61,6 x 2,62	
4	Indicator connection plug	2	T2H	T2V
5	Housing spigot	1	01044104	
-	Indicators	1	See order table	

Spare parts

Length 2



Item	Description	Q.ty	FILTER Series LMP 900 - 901	
1	Filter assembly	1	See order table	
2	Filter Element	2	See order table	
3	Seals kit	1	NBR 02050365	FPM 02050366
3a	Filter element O-Ring	4	O-R 185 Ø 89,69 x 5,33	
3b	O-Ring for housing	2	O-R 6745 Ø 189,86 x 5,34	
3c	Oil drain plug	1	G 1/2" with seal	
3d	Seal for indicator	2	01030058	01030046
3e	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
3f	By-pass plug O-Ring	1	O-R 3243 Ø 61,6 x 2,62	
4	Indicator connection plug	2	T2H	T2V
5	Housing spigot	1	01044104	
6	Coupling spigot	1	01044099	
-	Indicators	1	See order table	

Ordering information LMP 900 - 901

Filter assembly LMP

	1	2	3	4	5	6	7	8a
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LMP	900	2	B	A	F1	A10	N	P01

Filter element CU900

	6	4	7	8b
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: CU900	A10	A	N	P01 (2 cartridges required)

1 - Style

Filter	Filter element
<input type="checkbox"/> 900	<input type="checkbox"/> 900
<input type="checkbox"/> 901	<input type="checkbox"/> 900

2 - Filter length

<input type="checkbox"/> 1	With 1 CU 900 cartridge
<input type="checkbox"/> 2	With 2 CU 900 cartridges

3 - Valve

<input type="checkbox"/> S	Without by-pass
<input type="checkbox"/> B	With bypass
<input type="checkbox"/>	With by-pass Opening pressure: on request

4 - Filter seals

<input type="checkbox"/> A	NBR
<input type="checkbox"/> V	FPM
<input type="checkbox"/>	On request

5 - Connections

Flanged

Type	LMP 900 - 901
F1	3" SAE 3000 psi/M
F2	3" SAE 3000 psi/UNC
F3	4" SAE 3000 psi/M
F4	4" SAE 3000 psi/UNC

6 - Filter element

<input type="checkbox"/> A01	Inorganic microfibre* 1 µ	} Absolute filtration βx (c) ≥ 1000
<input type="checkbox"/> A03	Inorganic microfibre 3 µ	
<input type="checkbox"/> A06	Inorganic microfibre 6 µ	
<input type="checkbox"/> A10	Inorganic microfibre 10 µ	
<input type="checkbox"/> A16	Inorganic microfibre 16 µ	
<input type="checkbox"/> A25	Inorganic microfibre 25 µ	

* On request

<input type="checkbox"/> M25	Wire mesh	} Nominal Filtration
<input type="checkbox"/> M60	Wire mesh	
<input type="checkbox"/> M90	Wire mesh	

7 - Max filter element differential pressure

<input type="checkbox"/> N	Δp 20 bar
-----------------------------------	-----------

8 - Option

a - Filter

<input type="checkbox"/> P01	MP Filtri standard
<input type="checkbox"/> P02	LMP 900 - 901 Maintenance from base housing (length 2 only)
<input type="checkbox"/> Pxx	Customer request

b - Filter element

<input type="checkbox"/> P01	MP Filtri standard
<input type="checkbox"/> Pxx	Customer request



DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

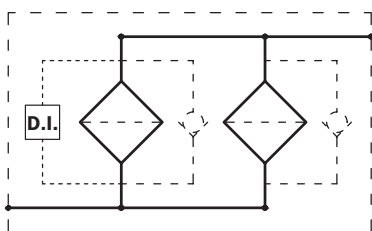
LMP 902 - 903

Filter element in according to DIN 24550

Findynamica
drive and control products



LMP 902 - 903
Mounting on manifold



Maximum pressure 25 bar
Flow rates to 3000 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Manifolds: Welded - Phosphated Steel
- Bypass valve: Steel
- 1000 size filter elements complying with DIN 24550 standard

Pressure

- Working pressure: 25 bar (2.5 MPa)
- Test pressure: 35 bar (3.5 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Number of filter elements

- LMP 902: 4 filter elements CU900
- LMP 903: 6 filter elements CU900

Filter elements

- Filter element in compliance with DIN 24550 standard
Size: 1000

Δp Elements type

- Series N elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length

- LMP902 89.6
- LMP903 129.2

Volumes (dm³)

Length

- LMP902 58
- LMP903 87

Connections

In-Line Inlet-Outlet

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol
- The filter elements are compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol.
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and
water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

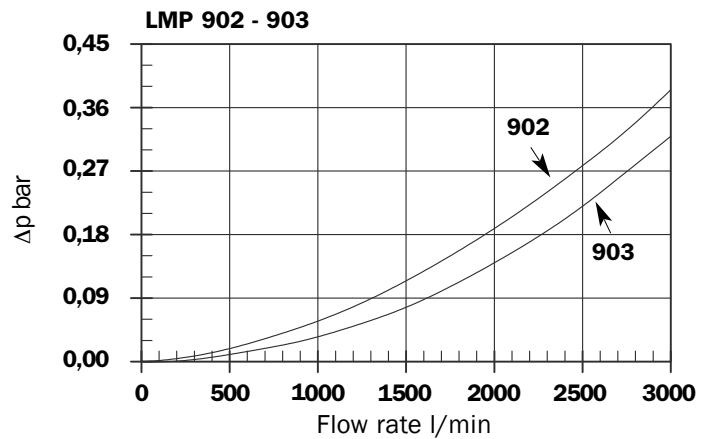
Filter element in stainless steel mesh

Type	Length	
	902	903
CU 900	52000	78000
Values expressed in cm ²		

Filter housing Δp pressure drop

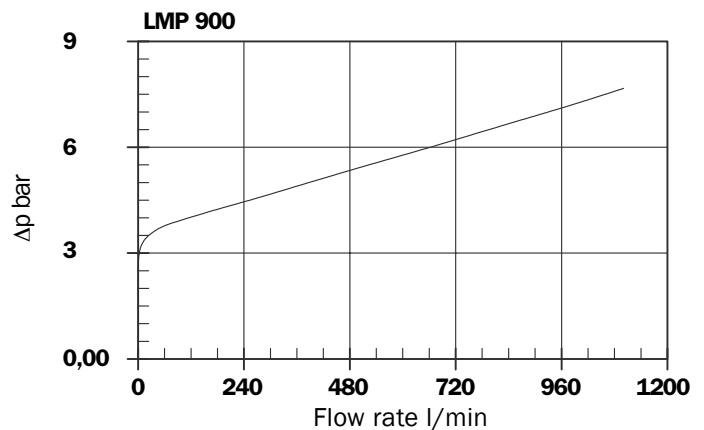
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



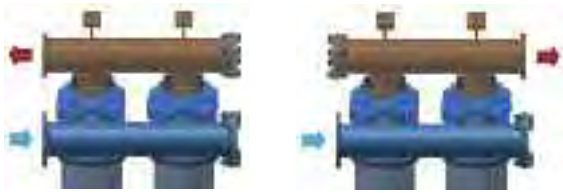
Valves

Bypass valve pressure drop



Manifolds

Position of manifolds IN - OUT connections



FA

FB



FC

FD

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections.

For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
Return or in-line filter, max oil velocity 5 m/sec.

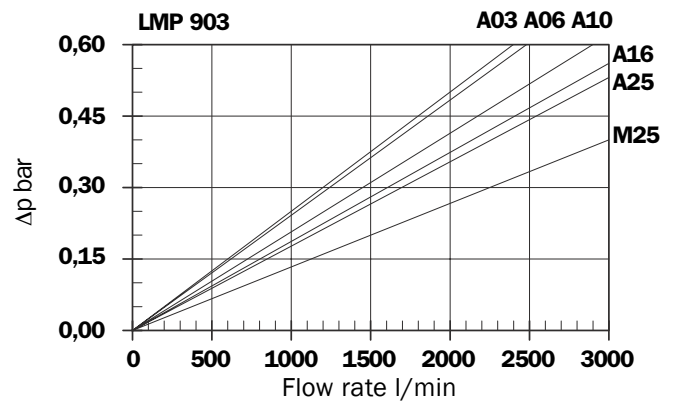
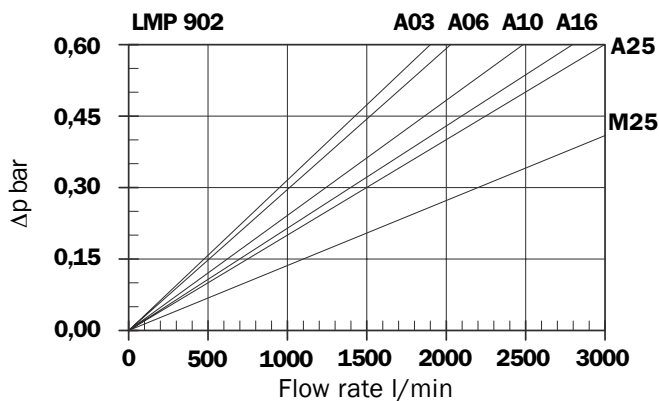
Oil velocity	Connections
	4"
2,5 m/sec.	1200
5 m/sec.	2400

Flow rate l/min

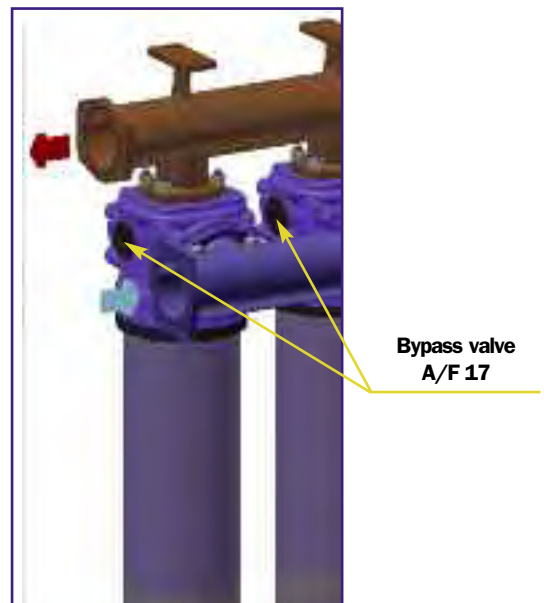
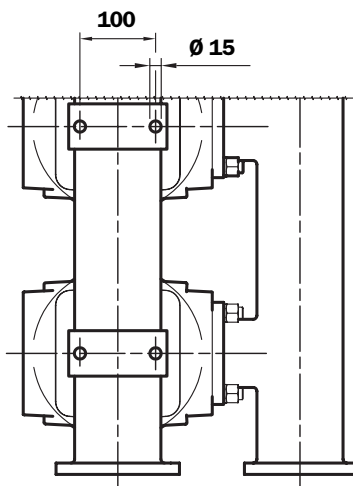
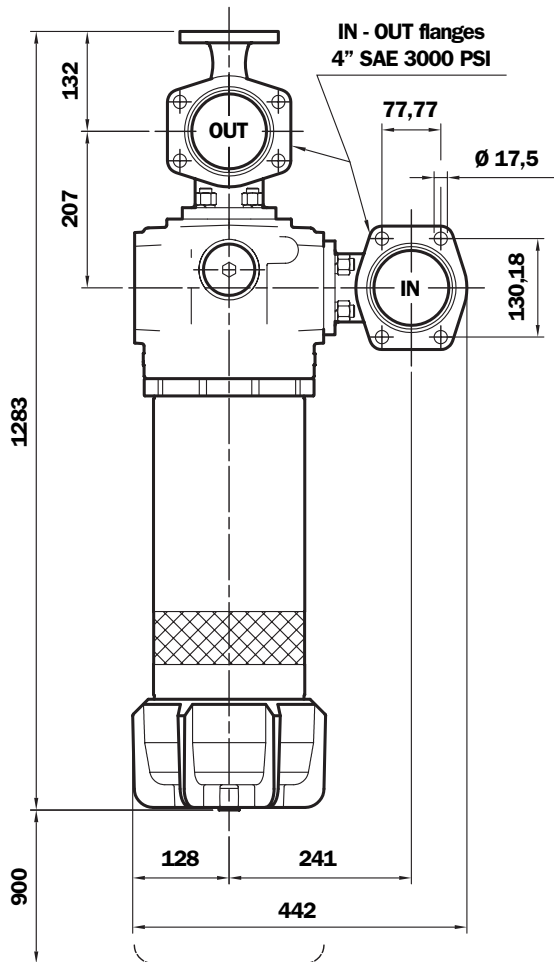
Off-Line filter, filter element recommended maximum pressure drop must be equal to Δp 0.2 ÷ 0.3 bar.

Recommended maximum flow rate

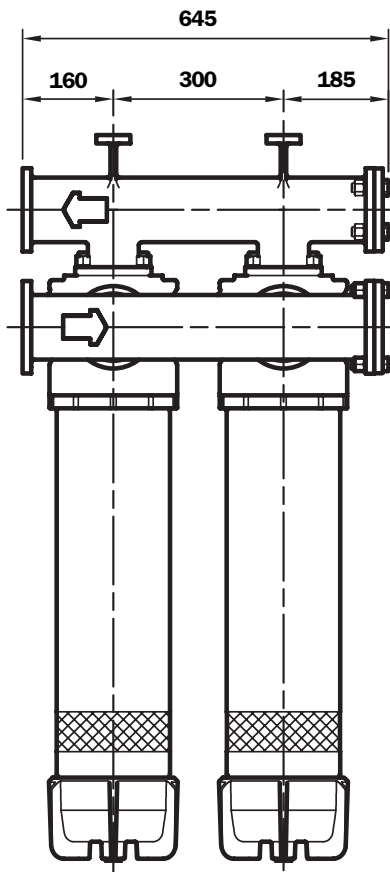
- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.
- Connections of filter under test G 4".



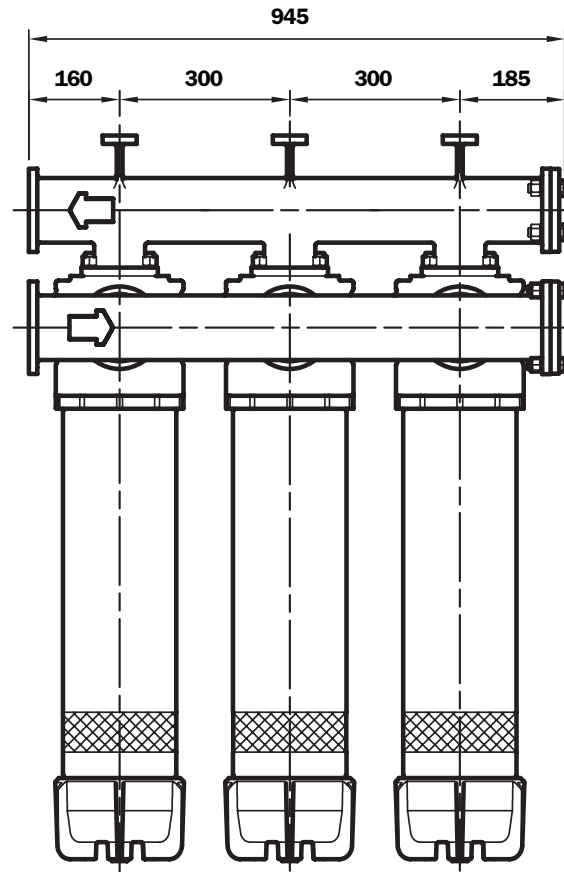
LMP 902 - 903



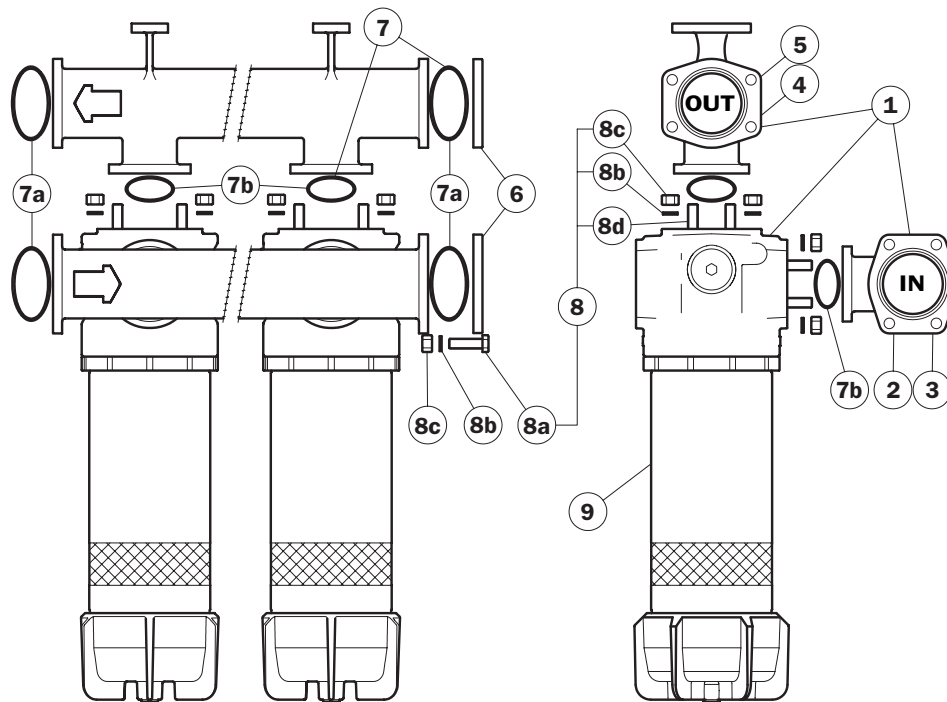
LMP 902



LMP 903



Findynamica
drive and control products



Item	Description	Q.ty - LMP 90*		FILTER Series	
		*2	*3	LMP 902 - 903	
1	Filter assembly	1	1	See order table	
2	IN manifold with 2 filter connections	1	-	01039270	
3	IN manifold with 3 filter connections	-	1	01039272	
4	OUT manifold with 2 filter connections	1	-	01039271	
5	OUT manifold with 3 filter connections	-	1	01039273	
6	4" SAE 3000 psi plugged flange	2	2	01042020	
7	Manifolds seal kit	1	1	NBR 020503404	FPM 02050405
7a	IN-OUT O-Ring	4	4	O-R 4437 Ø 110.7 x 3.53	
7b	Manifolds/filter O-Ring	4	6	O-R 4337 Ø 85.32 x 3.53	
8	Threaded fasteners kit	1	1	LMP902 - 02049051 LMP903 - 02049052	
8a	Hexagon bolt screws	8	8	UNI-EN 24017 M16 x 55-10.9	
8b	Spring washers	24	32	UNI 1751 - B16	
8c	Nuts	24	32	UNI-EN 24032-M16-10.9	
8d	Studs	16	24	M16 x 40 - 10.9	
9	Filter	2	3	See order table LMP 9012F1.....P02 page 71	
-	Filter spare parts Item 9	2	3	See table spare parts LMP 9012F1.....P02 page 70	
-	Filter seals kit Item 9	2	3	See table spare parts LMP 9012F1.....P02 page 70	
-	Indicators	1	1	See order table	

Ordering information LMP 902 - 903

Filter assembly LMP

	1	2	3	4	5	6	7	8
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LMP	903	2	B	A	FB	A10	N	P01

Filter element CU900

	6	4	7	8
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: CU900	A10	A	N	P01 (6 cartridges required)

1 - Style

Filter

902
 903

Filter element

900 With 4 cartridges
 900 With 6 cartridges

2 - Filter length

2

3 - Valve

S Without by-pass
 B With bypass
 With by-pass
Opening pressure: on request

4 - Filter seals

A NBR
 V FPM
 On request

5 - Connections

Type	LMP 902 - 903
FA	See page 74
FB	
FC	
FD	

6 - Filter element

<input type="checkbox"/> A01	Inorganic microfibre* 1 µ	}	Absolute filtration βx (c) ≥ 1000
<input type="checkbox"/> A03	Inorganic microfibre 3 µ		
<input type="checkbox"/> A06	Inorganic microfibre 6 µ		
<input type="checkbox"/> A10	Inorganic microfibre 10 µ		
<input type="checkbox"/> A16	Inorganic microfibre 16 µ		
<input type="checkbox"/> A25	Inorganic microfibre 25 µ		

* On request

<input type="checkbox"/> M25	Wire mesh	}	Nominal Filtration
<input type="checkbox"/> M60	Wire mesh		
<input type="checkbox"/> M90	Wire mesh		

7 - Max filter element differential pressure

N Δp 20 bar

8 - Option

P01 MP Filtri standard
 Pxx Customer request

Findynamica
drive and control products

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

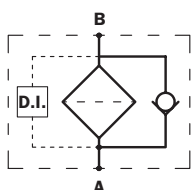
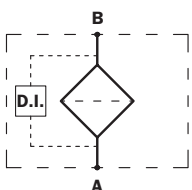
The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

LMP 950 - 951



Style S

Style B



Findynamica
drive and control products

Maximum pressure 30 bar
Flow rates to 2400 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Bypass valve: Anodised Aluminium

Pressure

- Working pressure: 30 bar (3 MPa)
- Test pressure: 45 bar (4.5 MPa)
- Burst pressure: 120 bar (12 MPa)
- Pulsed pressure fatigue test: 1.000.000 cycles with pressure from 0 to 30 bar (3 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar \pm 10%
- Other opening pressures on request.

Δp Elements type

- Series N elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length

- LMP950 -2 25,1
- LMP950 -3 33,5

Volumes (dm³)

Length

- LMP950 -2 15
- LMP950 -3 28

Connection

In-Line Inlet-Outlet LMP 950

90° Inlet-Outlet LMP 951

Compatibility (to ISO 2943)

- Housings compatible with: Mineral oils, synthetic fluids, aqueous emulsions, water and glycol
- The filter elements are compatible with: Mineral oils, synthetic fluids, aqueous emulsions, water and glycol.
- NBR seals series A, compatible with: Mineral oils, synthetic fluids, aqueous emulsions and water and glycol.
- FPM seals series V, compatible with: Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

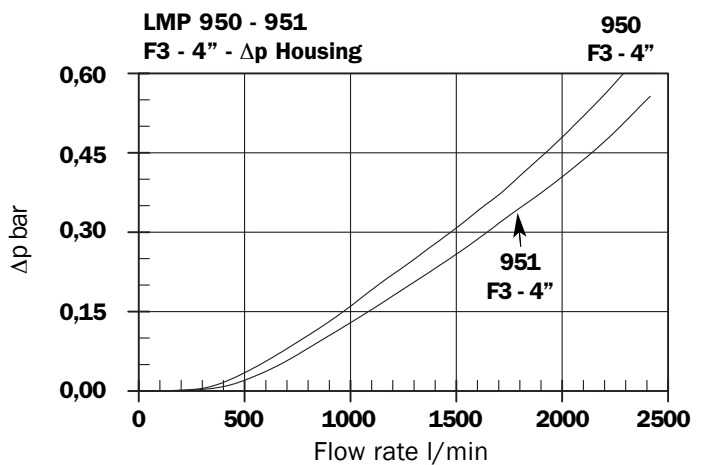
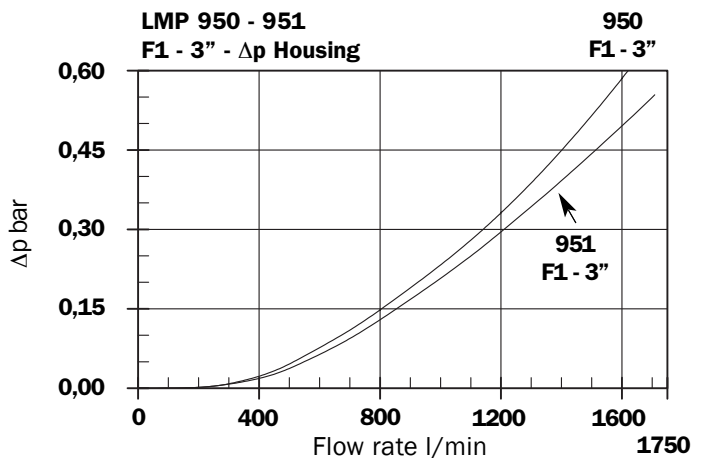
Filter element in stainless steel mesh

Type	Length	
	2	3
CU 900	10950	25100
Values expressed in cm ²		

Filter housing Δp pressure drop

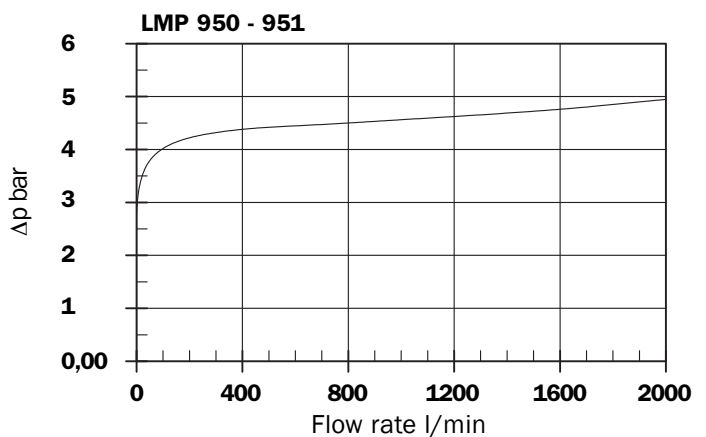
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



Valves

Bypass valve pressure drop





Option P02 "Internal tube for reduced flow rate" recommended for flow rate values below 100/150 l/min. The use of option P02 makes it easier to fill the housing with the operating fluid.

P02 "Internal tube for reduced flow rates"

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections. For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
Return or in-line filter, max oil velocity 5 m/sec.

Oil velocity	Connections	
	3"	4"
2,5 m/sec.	750	1200
5 m/sec.	1500	2400

Flow rate l/min

Off-Line filter, filter element recommended maximum pressure drop must be equal to Δp 0.2 ÷ 0.3 bar.

Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 0.6 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0.86 kg/dm³.

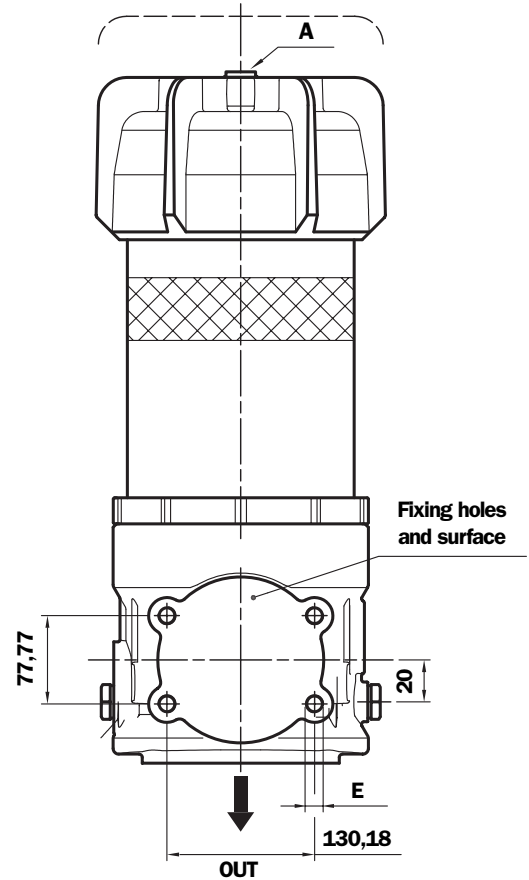
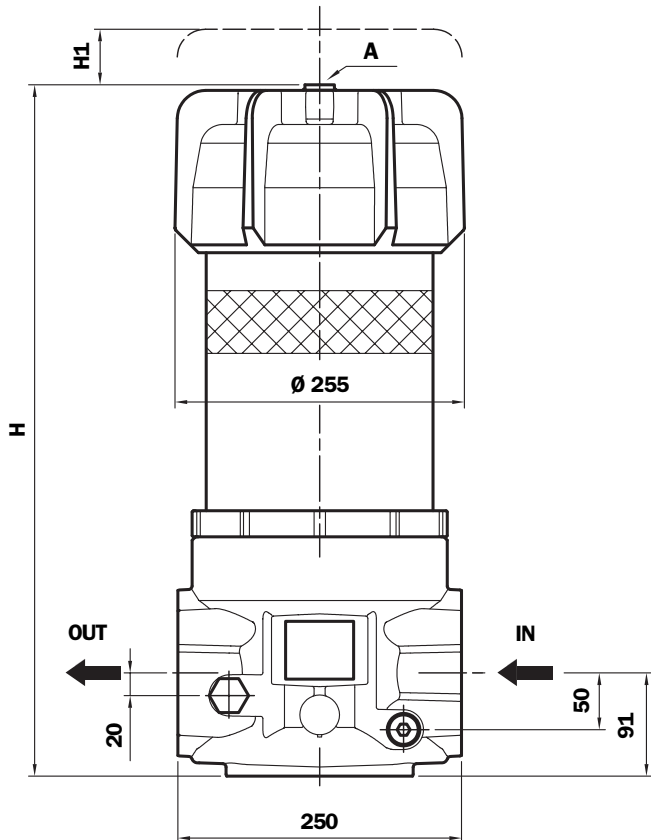
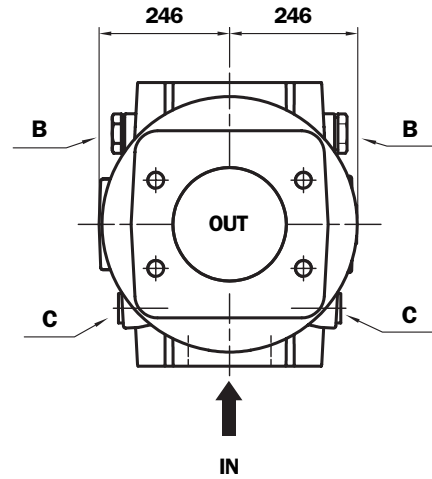
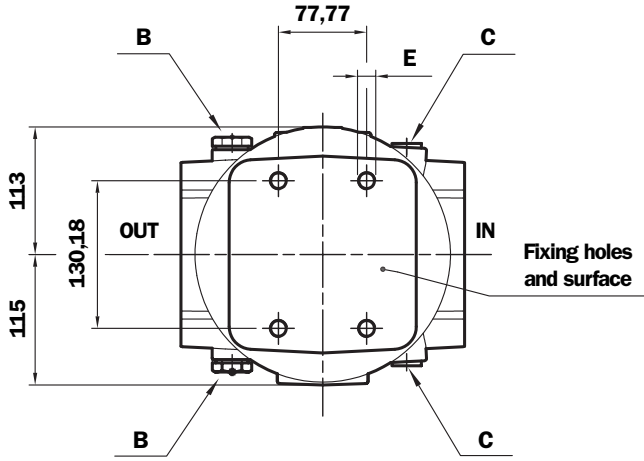
Filtration

	Length	A03	A06	A10	A16	A25	M25
LMP 950	2	550	650	800	1000	1200	1700
Connection: Flange SAE 3000 3"	3	950	1000	1200	1350	1400	1700
LMP 951	2	550	700	850	1100	1400	2300
Connection: Flange SAE 3000 4"	3	1000	1100	1400	1600	1800	2400

Flow rate l/min

LMP 950

LMP 951



LMP 950 - 951

Length Filter	H mm	H1 mm
2	680	350
3	1230	900

A - Breather plug - G 1/2" - A/F 10

B - Indicator port - Plug T2 - A/F 30

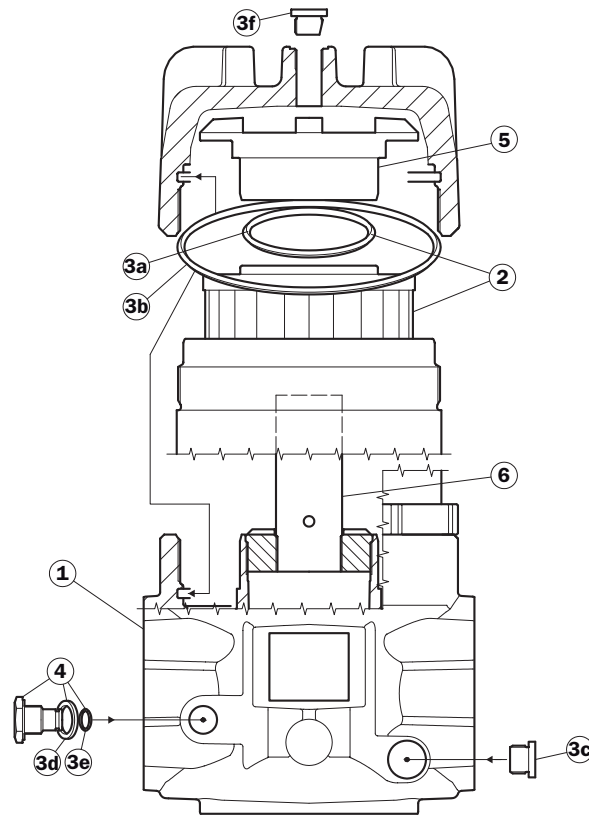
C - Oil drain plug - G 1/2" - A/F 10

Flanged IN - OUT connections

St.	A	E Depth 25 mm
F1	3" SAE - 3000 psi/M	M16
F2	3" SAE - 3000 psi/UNC	M16
F3	4" SAE - 3000 psi/M	5/8" UNC
F4	4" SAE - 3000 psi/UNC	5/8" UNC

Spare parts

Length 2 - 3



Item	Description	Q.ty	FILTER Series LMP 950 - 951	
1	Filter assembly	1	See order table	
2	Filter Element	1	See order table	
3	Seals kit	1	NBR 02050367	FPM 02050368
3a	Filter element O-Ring	2	O-R 4412 Ø 104,37 x 3,53	
3b	O-Ring for housing	2	O-R 6745 Ø 189,86 x 5,33	
3c	Oil drain plug	2	G 1/2" with seal	
3d	Seal for indicator	2	01030058	01030046
3e	O-Ring for indicator	2	O-R 2050 Ø 12,42 x 1,78	
3f	Air breather plug	1	01029444	
4	Indicator connection plug	2	T2H	T2V
5	Housing spigot	1	Spigot without By-pass 01044106 Spigot with By-pass 02001379	
6	Tube assembly	1	For length 2: 02025032 For length 3: 02025033	
-	Indicators	1	See order table	

Ordering information LMP 950 - 951

Filter assembly LMP

	1	2	3	4	5	6	7	8a
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LMP	950	2	B	A	F1	A10	N	P01

Filter element CU950

	2	6	4	7	8b
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: CU950	2	A10	A	N	P01

1 - Style

Filter

- 950**
- 951**

Filter element

- 950** In-Line IN-OUT
- 950** 90° IN-OUT

2 - Filter length

- 2**
- 3**

3 - Valve

- S** Without by-pass
- B** With bypass
- Without by-pass
Opening pressure: on request

4 - Filter seals

- A** NBR
- V** FPM
- On request

5 - Connections

Flanged

Type	LMP 950 - 951
F1	3" SAE 3000 psi/M
F2	3" SAE 3000 psi/UNC
F3	4" SAE 3000 psi/M
F4	4" SAE 3000 psi/UNC

6 - Filter element

- A01** Inorganic microfibre* 1 μ
 - A03** Inorganic microfibre 3 μ
 - A06** Inorganic microfibre 6 μ
 - A10** Inorganic microfibre 10 μ
 - A16** Inorganic microfibre 16 μ
 - A25** Inorganic microfibre 25 μ
- } Absolute filtration
} $\beta_x(c) \geq 1000$

* On request

- M25** Wire mesh
 - M60** Wire mesh
 - M90** Wire mesh
- } Nominal Filtration

7 - Max filter element differential pressure

- N** Δp 20 bar

8 - Option

a - Filter

- P01** MP Filtri standard
- P02** With internal tube for reduced flow rate
- Pxx** Customer request

b - Filter element

- P01** MP Filtri standard
- Pxx** Customer request

Findynamica
drive and control products

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

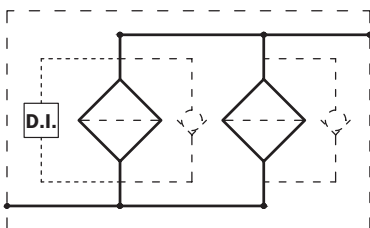
The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

LMP 952 - 956

Findynamica
drive and control products



LMP 952 - 956
Mounting on manifold



Maximum pressure 25 bar
Flow rates to 3000 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Manifolds: Welded - phosphated steel
- Bypass valve: Anodised Aluminium

Pressure

- Working pressure: 25 bar (2.5 MPa)
- Test pressure: 35 bar (3,5 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Number of filter elements

- LMP 952: 2 filter elements CU950-3
- LMP 953: 3 filter elements CU950-3
- LMP 954: 4 filter elements CU950-3
- LMP 955: 5 filter elements CU950-3
- LMP 956: 6 filter elements CU950-3

Δp Elements type

- Series N elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard NBR series A
- Optional FPM series V

Weights (kg)

Length

- LMP952 96
- LMP953 138
- LMP954 192
- LMP955 234
- LMP956 277

Volumes (dm³)

Length

- LMP952 66
- LMP953 99
- LMP954 132
- LMP955 165
- LMP956 198

Connections

In-Line Inlet-Outlet

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol
- The filter elements are compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol.
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and
water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFDU

Filter Element Area

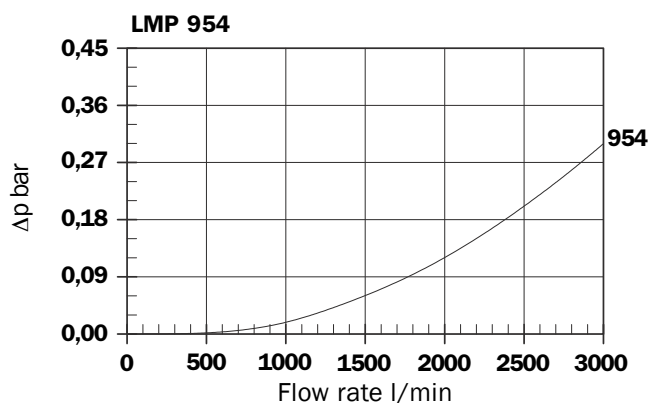
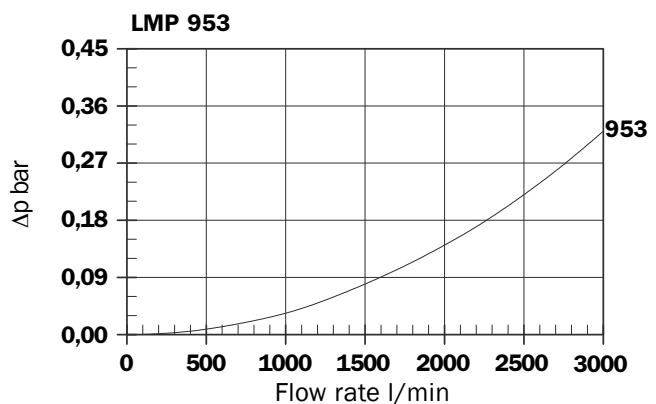
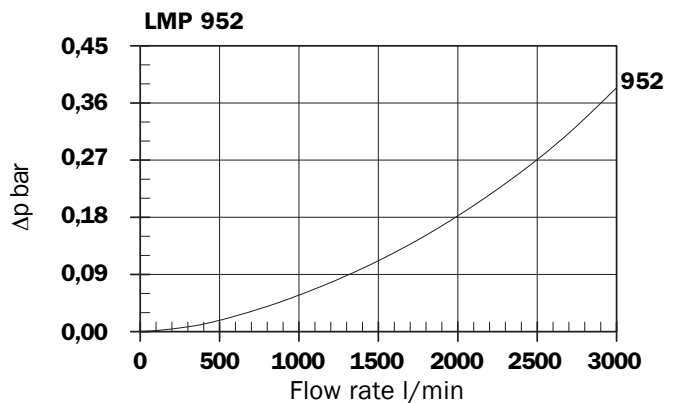
Filter element in stainless steel mesh

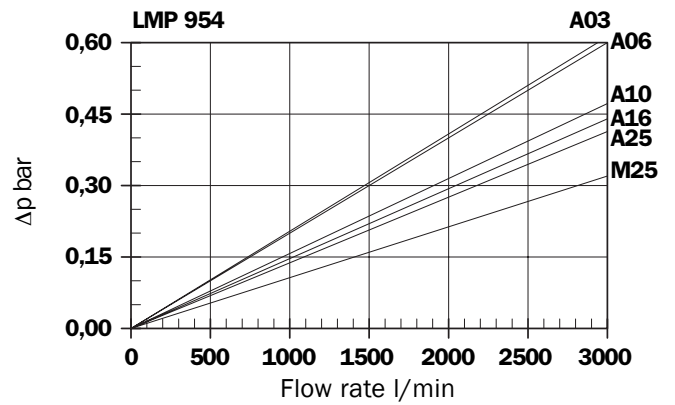
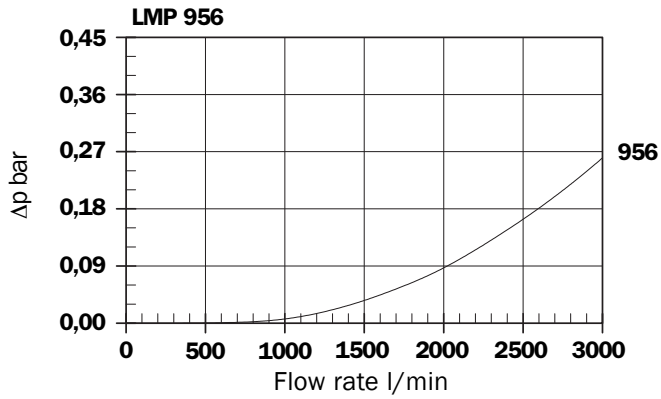
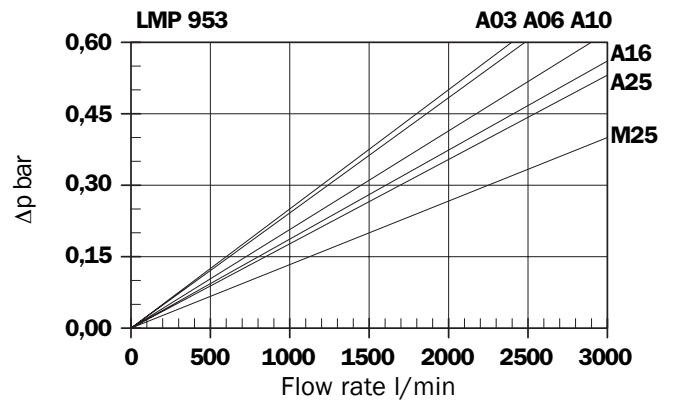
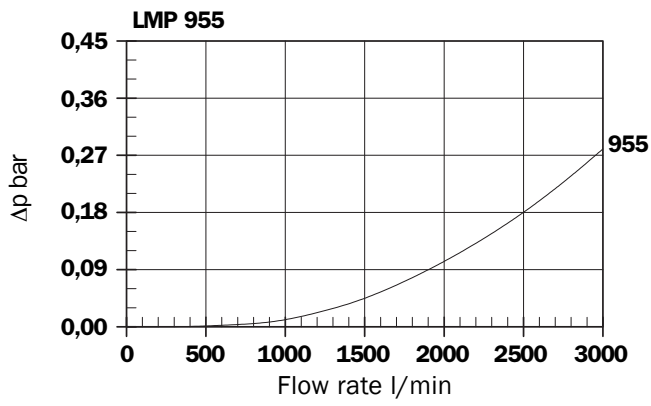
Type	Length				
	952	953	954	955	956
CU950 - 3	50200	75300	100400	125500	150600
Values expressed in cm²					

Filter housing Δp pressure drop

The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

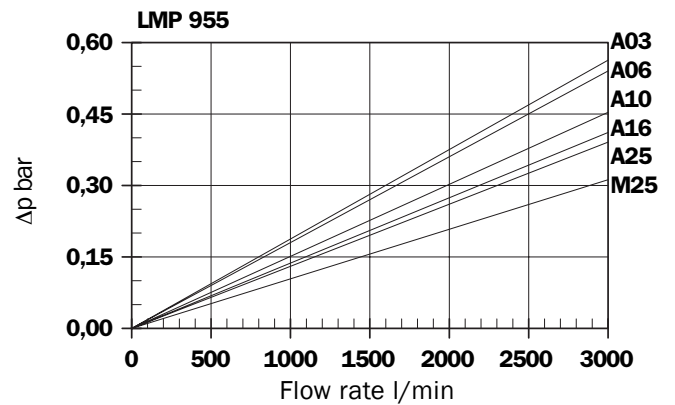
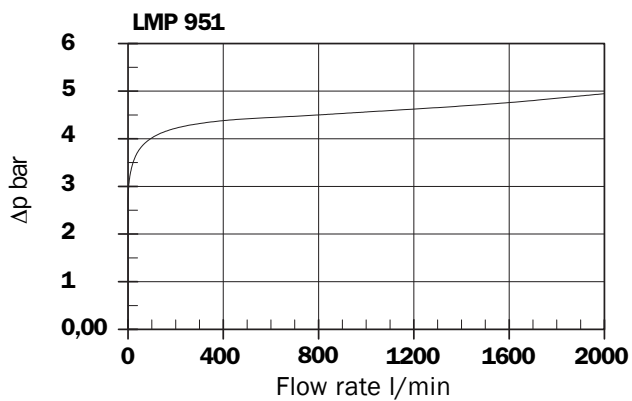
Δp varies proportionally with density.



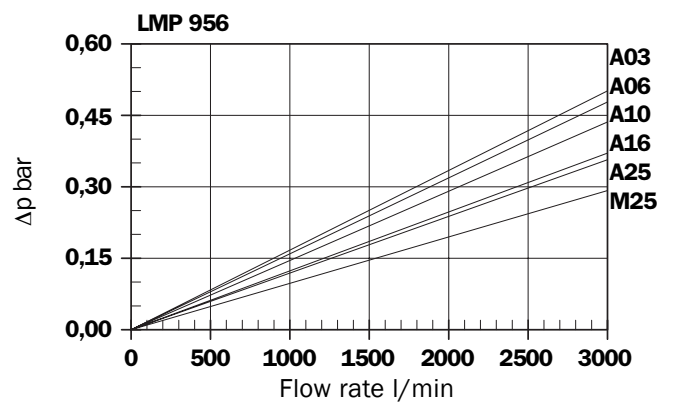
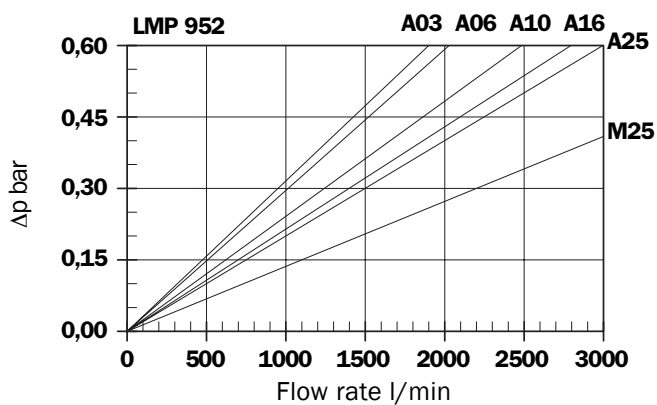


Valves

Bypass valve pressure drop



**Pressure drop of filter complete with cartridge,
oil viscosity 30 mm²/s (cSt)**



Option P02 for LMP 952 - 956



Option P02 "Internal tube for reduced flow rate" is recommended for flow rate values below:
 LMP 952 - 300 l/min
 LMP 953 - 450 l/min
 LMP 954 - 600 l/min
 LMP 955 - 750 l/min
 LMP 956 - 900 l/min
 The use of option P02 makes it easier to fill the housing with the operating fluid.

P02 "Internal tube for reduced flow rates"

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections.

For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
 Return or in-line filter, max oil velocity 5 m/sec.

Oil velocity	Connection
	4"
2,5 m/sec.	1200
5 m/sec.	2400

Flow rate l/min

Off-Line filter, filter element recommended maximum pressure drop must be equal to Δp 0.2 ÷ 0.3 bar.

Manifolds

Position of manifolds IN - OUT connections



FA



FB

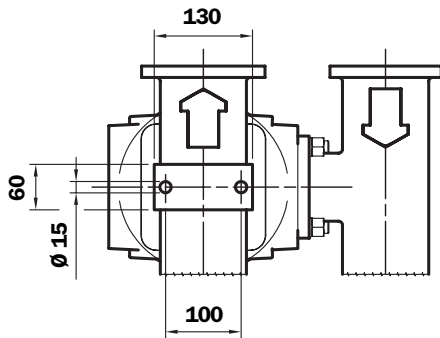


FC



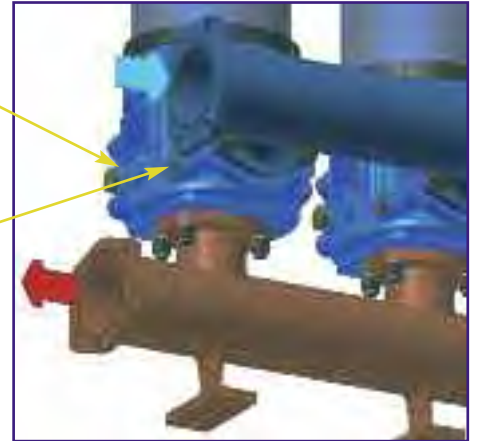
FD

LMP 95x



Indicator port
Plug T2 - A/F 30

Oil drain plug
G 1/2" - A/F 10

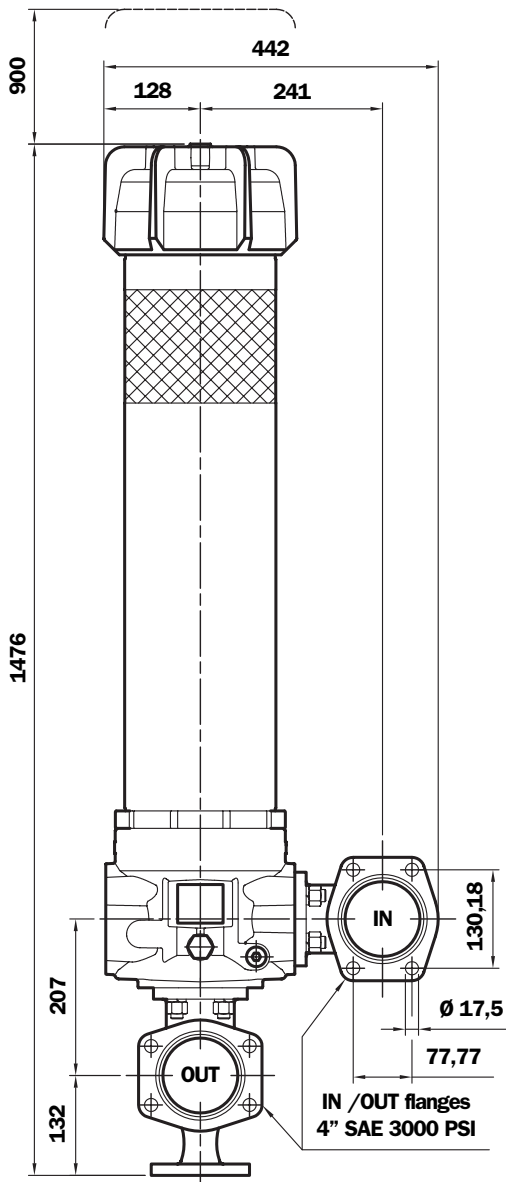


Breather plug
G 1/2" - A/F 10

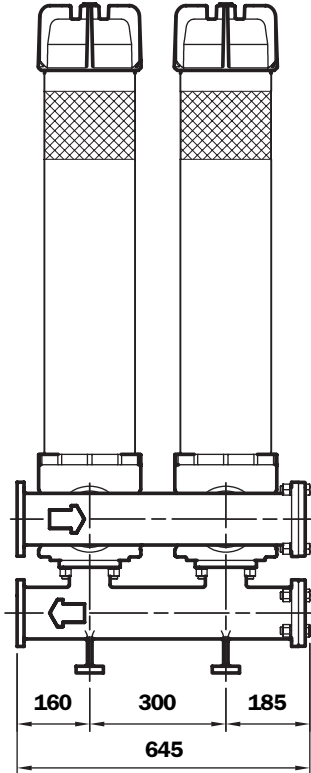


Oil drain plug
G 1/2" - A/F 10

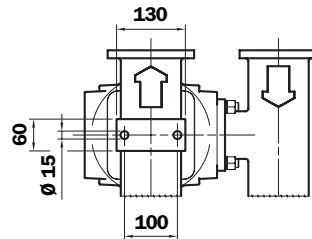
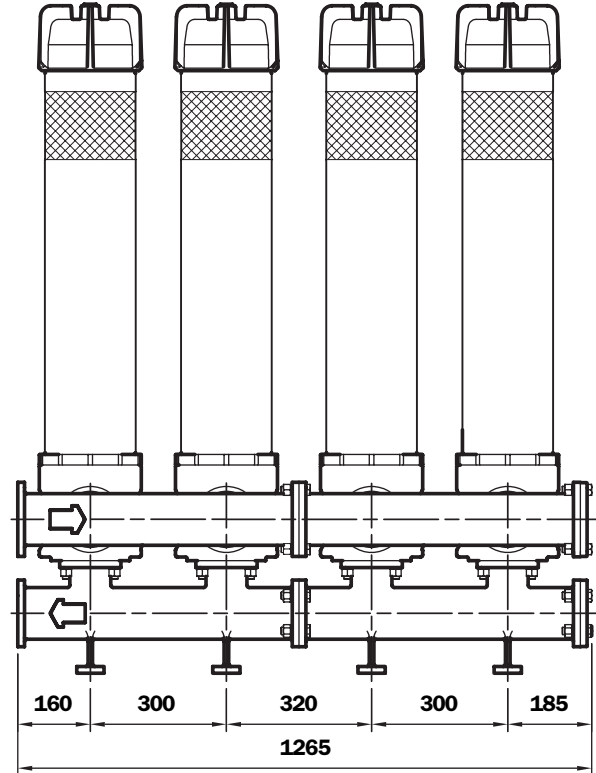
Indicator port
Plug T2 - A/F 30



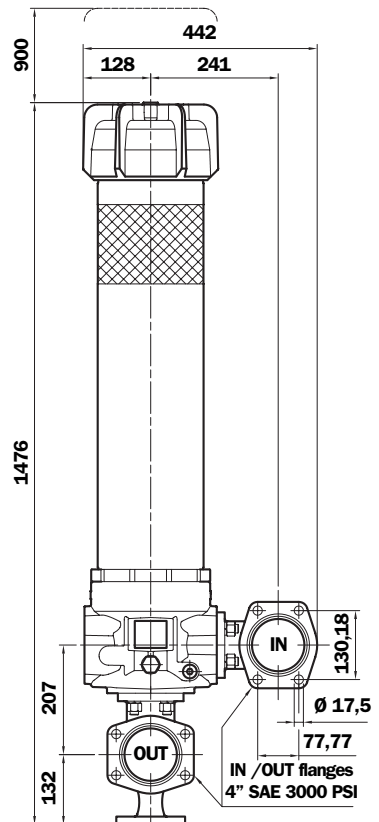
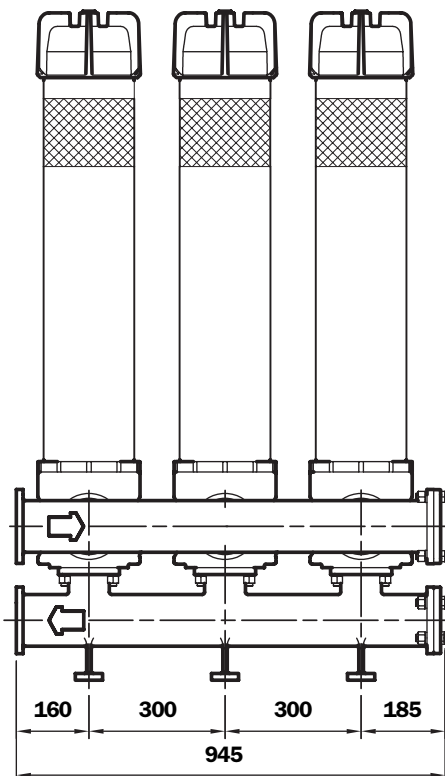
LMP 952



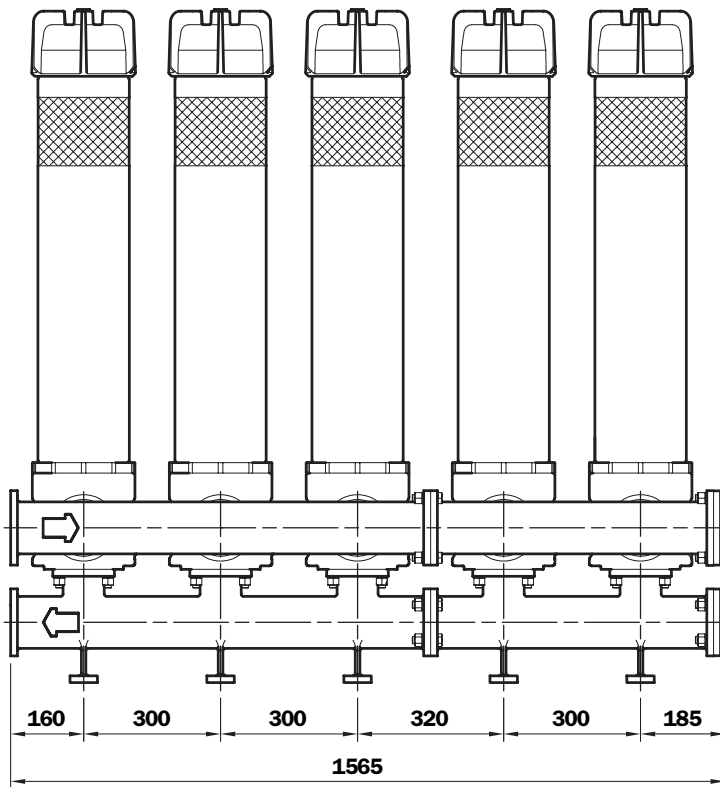
LMP 954



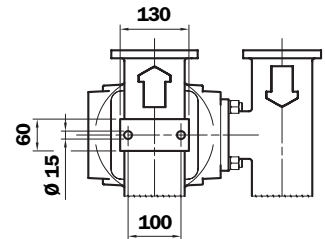
LMP 953



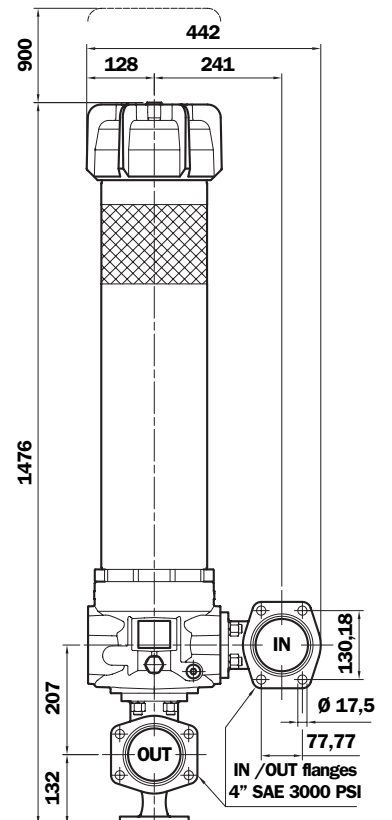
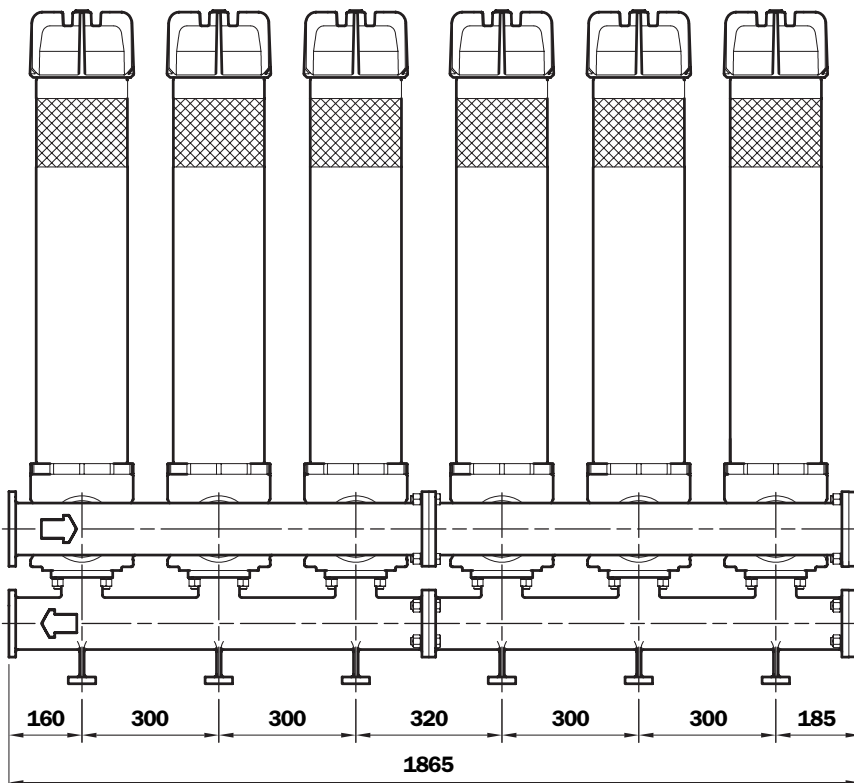
LMP 955



Findynamica
drive and control products

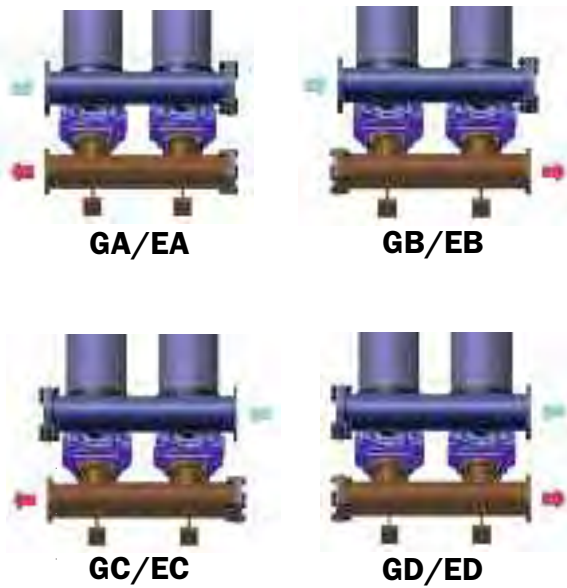


LMP 956



Manifolds

Position and designation of manifolds IN - OUT connections



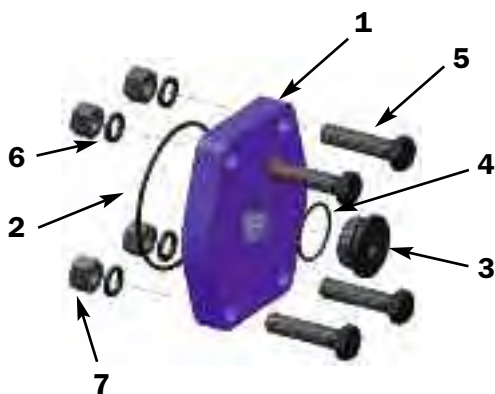
Option

Flange with oil drain plug for rapid discharge



Order code:

CMV4 CUV4



CMV4

Bill of materials:

- 1 4" SAE flange
- 2 O-R 4437 (FPM) for flange
- 3 Plug G 1-1/4"
- 4 O-R 3168 for plug (FPM)
- 5 No. 4 Hexagon bolt screws UNI-EN 24017 M16 x 65-10.9
- 6 No. 4 Spring washers UNI 1751-B 16
- 7 No. 4 Nuts UNI 5587 - M16

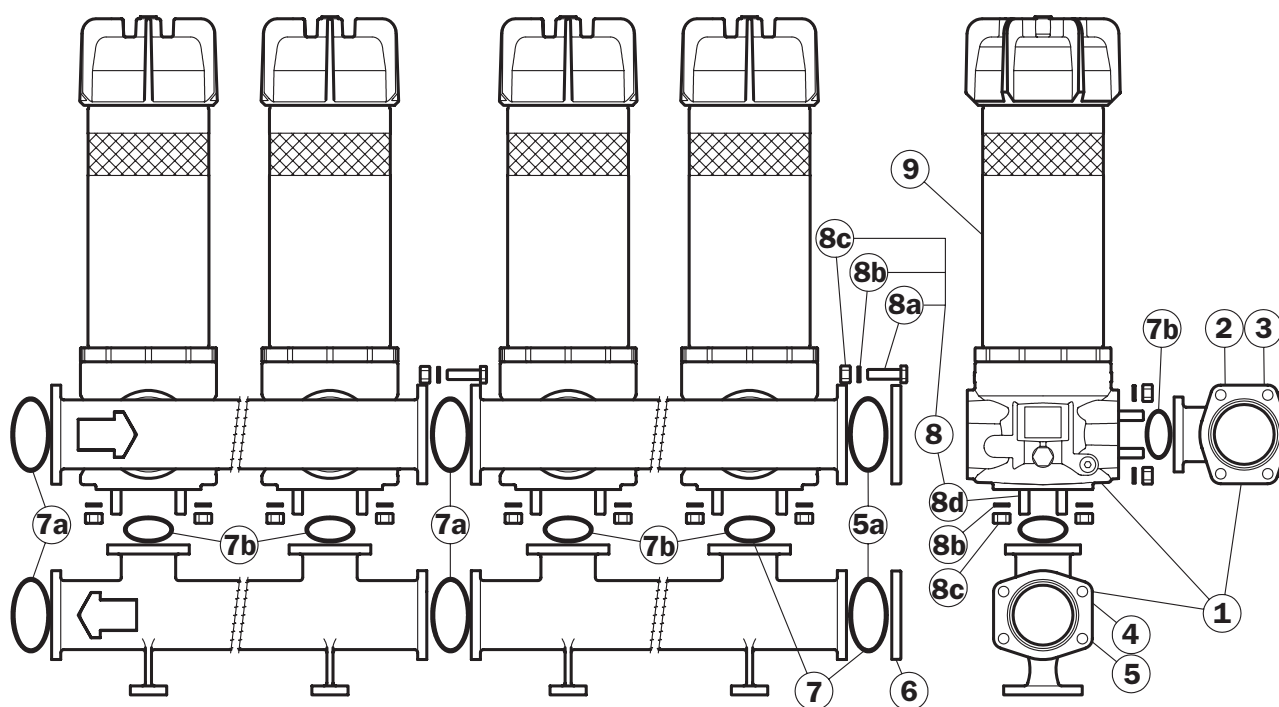
CUV4

Bill of materials:

- 1 4" SAE flange
- 2 O-R 4437 (FPM) for flange
- 3 Plug SAE 20 1 5/8" - 12 UN
- 4 1147 O-R for plug (FPM)
- 5 No. 4 Hexagon bolt screws 5/8" UNC x 2 1/2"
- 6 No. 4 Spring washers UNI 1751-B 16
- 7 No. 4 Nuts 5/8" UNC

Oil drain plug

Code	CMV4	CUV4
	A	A
Thread	G 1 1/4"	SAE 20
	GA	EA
	GB	EB
	GC	EC
	GD	ED



Item	Description	Q.ty / LMP 95*					FILTER Series				
		*2	*3	*4	*5	*6	LMP 952 - 953 - 954 - 955 - 956				
1	Filter assembly	1					See order table				
2	IN manifold with 2 filter connections	1	-	2	1	-	01039270				
3	IN manifold with 3 filter connections	-	1	-	1	2	01039272				
4	OUT manifold with 2 filter connections	1	-	2	1	-	01039271				
5	OUT manifold with 3 filter connections	-	1	-	1	2	01039273				
6	4" SAE 3000 psi plugged flange	2					01042020				
7	Manifolds seal kit	1					LMP 952 - 953 NBR 02050404 FPM 02050405		LMP 954 - 955 - 956 NBR 02050406 FPM 02050407		
7a	IN-OUT O-Ring	4	4	6	6	6	O-R 4437 Ø 110,7 x 3,53				
7b	Manifolds/filter O-Ring	4	6	8	10	12	O-R 4337 Ø 85,32 x 3,53				
8	Threaded fasteners kit for manifolds	1					*2F... 02049051	*3F... 02049052	*4F... 02049053	*5F... 02049054	*6F... 02049055
8a	Hexagon bolt screws	8	8	16	16	16	UNI-EN 24017 M16 x 55-10.9				
8b	Spring washers	24	32	48	56	64	UNI 1751 - B16				
8c	Nuts	24	32	48	56	64	UNI-EN 24032 M16 10.9				
8d	Studs	16	24	32	40	48	UNI 5911 - M16 x 40 - 10.9				
9	Filter	2	3	4	5	6	See order table LMP 9513F1.....PO* page 85				
-	Filter spare parts item 9	2	3	4	5	6	See table spare parts LMP 9513F1.....PO* page 84				
-	Filter seals kit item 9	2	3	4	5	6	See table spare parts - NBR 02050367 LMP 9513F1.....PO* page 84 - FPM 02050368				
-	Indicators	1					See order table				

Ordering information LMP 952 - 956

Filter assembly LMP

	1	2	3	4	5	6	7	8a
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LMP	953	3	B	A	FB	A10	N	P01

Filter element CU950

	2	6	4	7	8b
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: CU950	3	A10	A	N	P01 (3 cartridges required)

1 - Style

Filter

952
953
954
955
956

Filter element

950 - 3 2 filter element
950 - 3 3 filter element
950 - 3 4 filter element
950 - 3 5 filter element
950 - 3 6 filter element

6 - Filter element

A01 Inorganic microfibre* 1 µ	} Absolute filtration βx (c) ≥ 1000
A03 Inorganic microfibre 3 µ	
A06 Inorganic microfibre 6 µ	
A10 Inorganic microfibre 10 µ	
A16 Inorganic microfibre 16 µ	
A25 Inorganic microfibre 25 µ	

* On request

M25 Wire mesh	} Nominal Filtration
M60 Wire mesh	
M90 Wire mesh	

2 - Filter length

3

3 - Valve

S Without by-pass
B With bypass
<input type="checkbox"/> With by-pass Opening pressure: on request

4 - Filter seals

A NBR
V FPM
<input type="checkbox"/> On request

5 - Connections

Standard	Rapid discharge oil drain	
FA	GA	EA
FB	GB	EB
FC	GC	EC
FD	GD	ED

See page 89

See page 93

7 - Max filter element differential pressure

N Δp 20 bar

8 - Option

a - Filter

P01 MP Filtri standard
P02 With internal tube for reduced flow rate
Pxx Customer request

b - Filter element

P01 MP Filtri standard
Pxx Customer request

Findynamica
drive and control products

Option:

Flange with rapid discharge oil drain plug

See page 93

CMV4 Plug G 1 1/4"
CUV4 Plug SAE 20

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

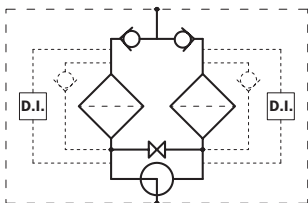
The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

LMD 951

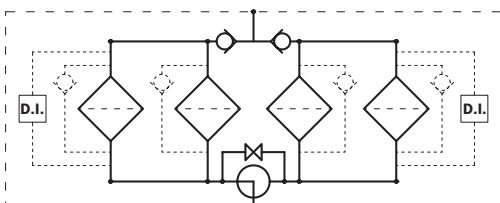
Findynamica
drive and control products



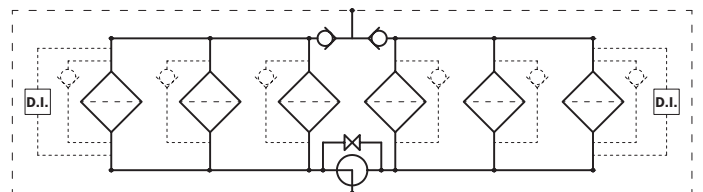
LMD 951
Double filter



LMD 952
Double filter with manifolds for 2 filters



LMD 952
Double filter with manifolds for 3 filters



Maximum pressure 16 - 25 bar
Flow rates to 1200 l/min

Filter housing (Materials)

- Head: Anodised Aluminium
- Housing: Anodised Aluminium
- Manifolds: Welded - Painted black
- Bypass valve: Nylon - Steel
- 3-way ball valve: Steel body - Stainless steel ball
- Check valve: Cast iron body - AISI 304 leaf

Pressure

- SAE + DIN Flange
- Working pressure: 16 bar (1.6 MPa)
- Test pressure: 25 bar (2.5 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 3.5 bar ±10%
- Other opening pressures on request.

Number of filter elements

- LMD 951: 2 filter elements CU950-3
- LMD 952: 4 filter elements CU950-3
- LMD 953: 6 filter elements CU950-3

Δp Elements type

- Series N elements: 20 bar
- Oil flow from exterior to interior.

Seals

- Standard FPM series V

Weights (kg)

Length

- LMD951 102 (DN 80) - 130 (DN 100)
- LMD952 207 (DN 80) - 235 (DN 100)
- LMD953 312 (DN 80) - 340 (DN 100)

Volumes (dm³)

Length

- LMD951 62
- LMD952 138
- LMD953 232

Connections

Inlet-Outlet
Over and under
In-Line

Compatibility (to ISO 2943)

- Housings compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol
- The filter elements are compatible with:
Mineral oils, synthetic fluids,
aqueous emulsions, water and glycol.
- NBR seals series A, compatible with:
Mineral oils, synthetic fluids, aqueous emulsions and
water and glycol.
- FPM seals series V, compatible with:
Synthetic fluids type HS-HFDR-HFDS-HFD

Filter Element Area

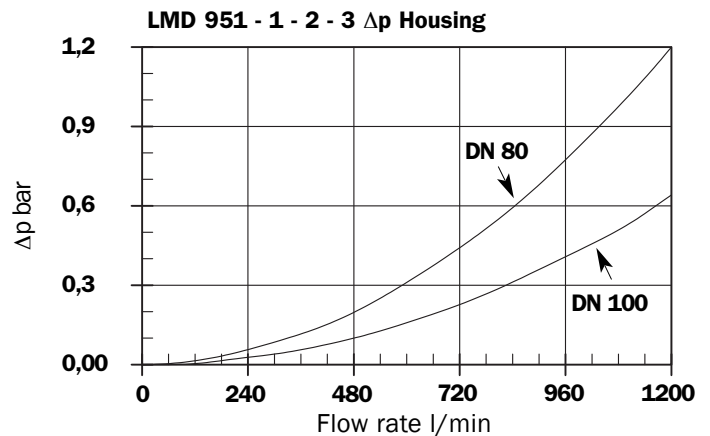
Filter element in stainless steel mesh

Type	Length		
	951	952	953
CU950 - 3	25100	50200	75300
Values expressed in cm²			

Filter housing Δp pressure drop

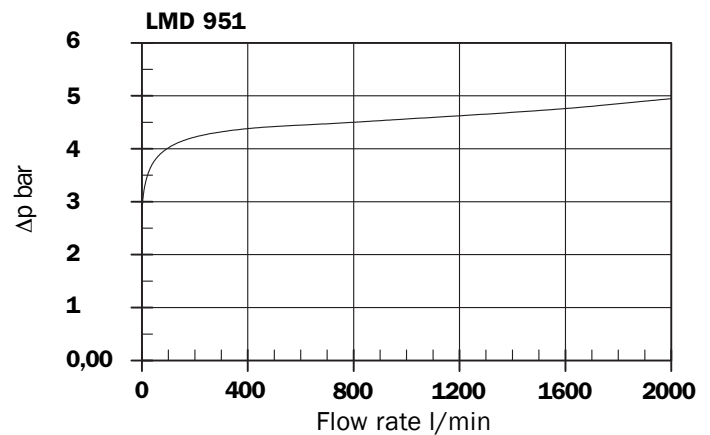
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



Valves

Bypass valve pressure drop





Option P02 “Internal tube for reduced flow rates” is recommended for flow rates lower than:
 LMD 951 - 150 l/min
 LMD 952 - 300 l/min
 LMD 953 - 450 l/min
 The use of option P02 allows the operating fluid to fill the filter housing completely.

P02 “Internal tube for reduced flow rates”

Recommended maximum flow rate

Recommended maximum flow rate for filters installed on lubrication lines, return or in-line filters is defined by the maximum oil velocity in the connections.

For filters mounted on Off-Line lines the maximum recommended flow rate is defined by the pressure drop of the filter element.

Filter for pressurised lubrication, max. oil velocity 2.5 m/sec.
 Return or in-line filter, max oil velocity 5 m/sec.

Oil velocity	Connections	
	3"	4"
2,5 m/sec.	750	1200
5 m/sec.	1500	2400

Flow rate l/min

Off-Line filter, filter element recommended maximum pressure drop must be equal to $\Delta p \ 0.2 \div 0.3 \text{ bar}$.

Recommended maximum flow rate

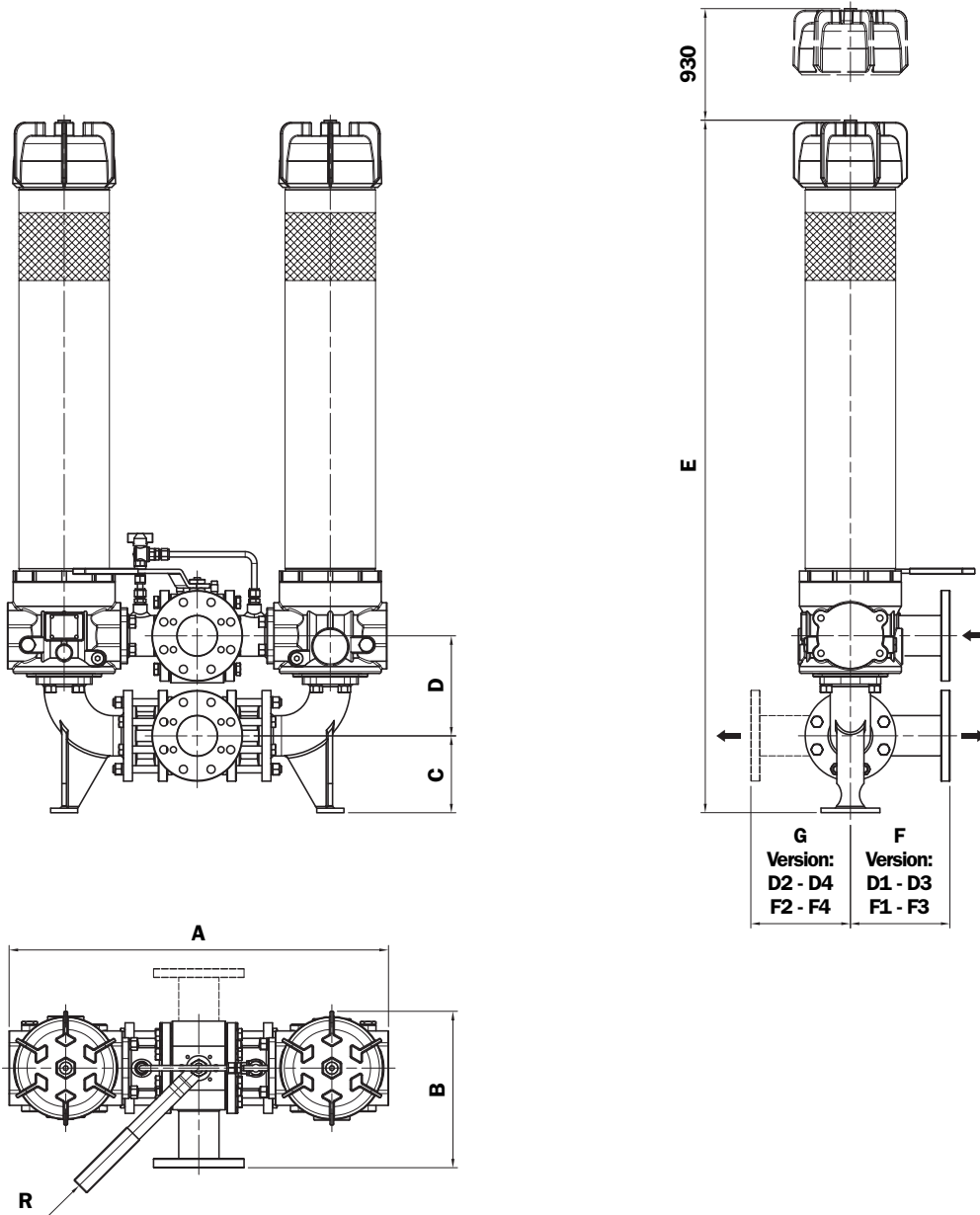
- Pressure drop of filter assembly equal to $\Delta p \ 0.6 \text{ bar}$.
- Oil kinematic viscosity $30 \text{ mm}^2/\text{s}$ (cSt).
- Density $0.86 \text{ kg}/\text{dm}^3$.

Filtration

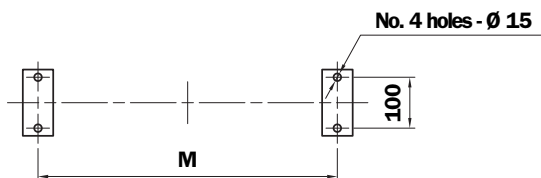
	Length	A03	A06	A10	A16	A25	M25
LMD 951 Connection: Flange SAE 3000 3"	3	625	650	700	760	780	830
LMD 952 Connection: Flange SAE 3000 3"	3	720	750	800	800	820	850
LMD 953 Connection: Flange SAE 3000 3"	3	780	800	800	850	850	880
LMD 951 Connection: Flange SAE 3000 4"	3	780	820	900	1000	1050	1150
LMD 952 Connection: Flange SAE 3000 4"	3	950	980	1050	1100	1100	1180
LMD 953 Connection: Flange SAE 3000 4"	3	1000	1050	1100	1150	1150	1200

Flow rate l/min

LMD 951

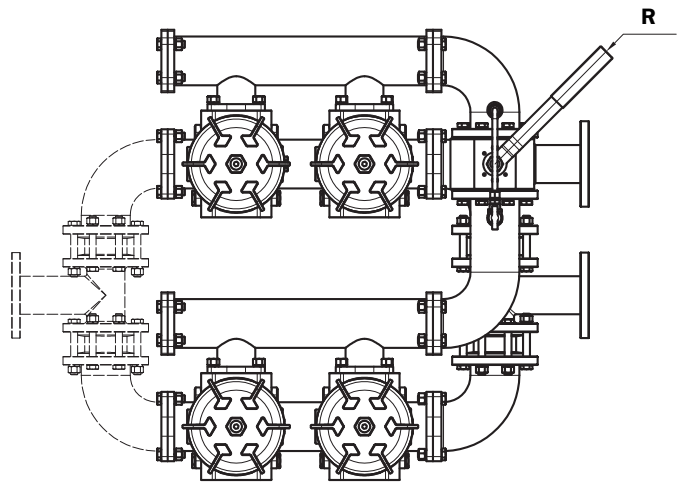
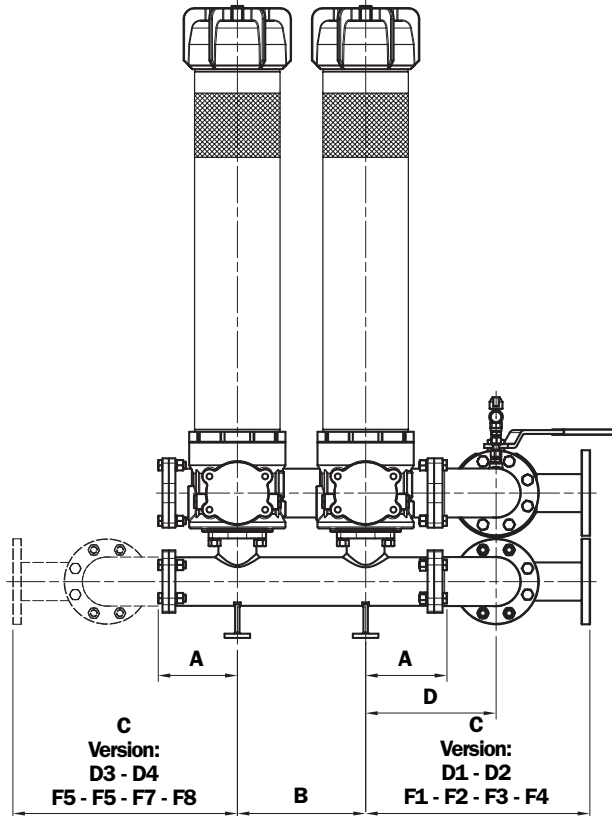
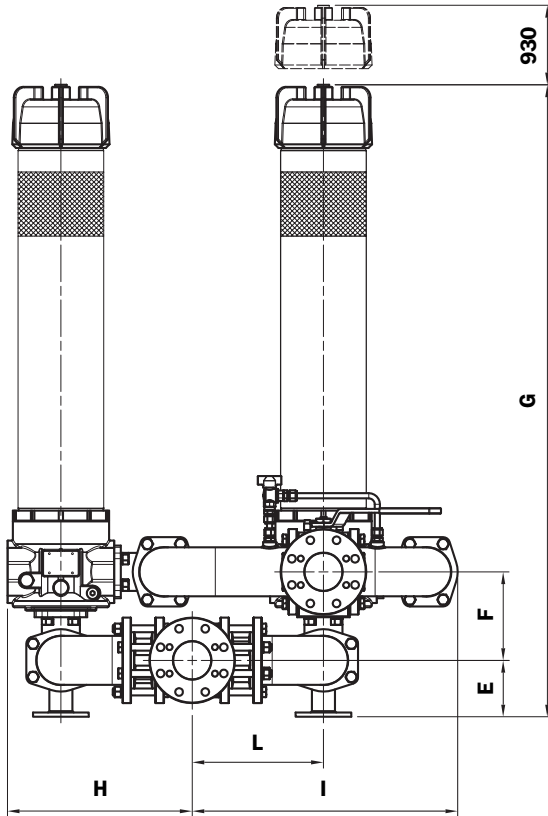


Filter fixing holes LMD 951

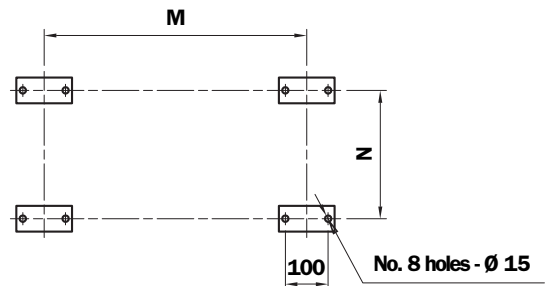


LMD 951

Length Filter	A mm	B mm	C mm	D mm	E mm	F mm	G mm	M mm	R mm
3 - 3" SAE DN 80	838	346	170	221	1530	220	220	588	370
3 - 4" SAE DN 100	932	346	170	268	1577	220	220	682	650

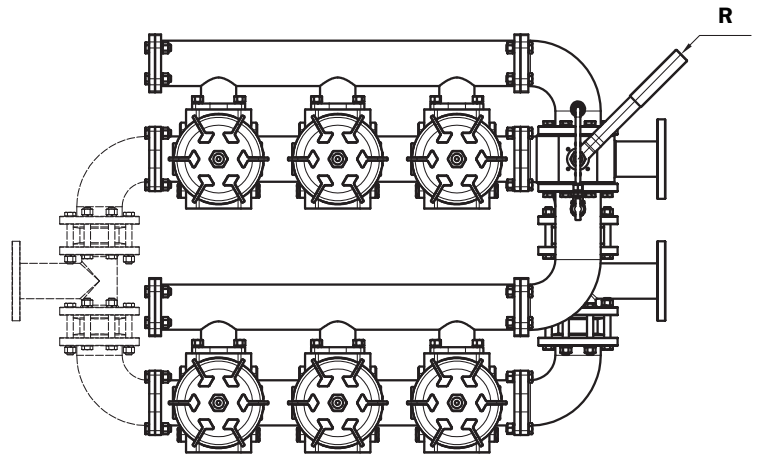
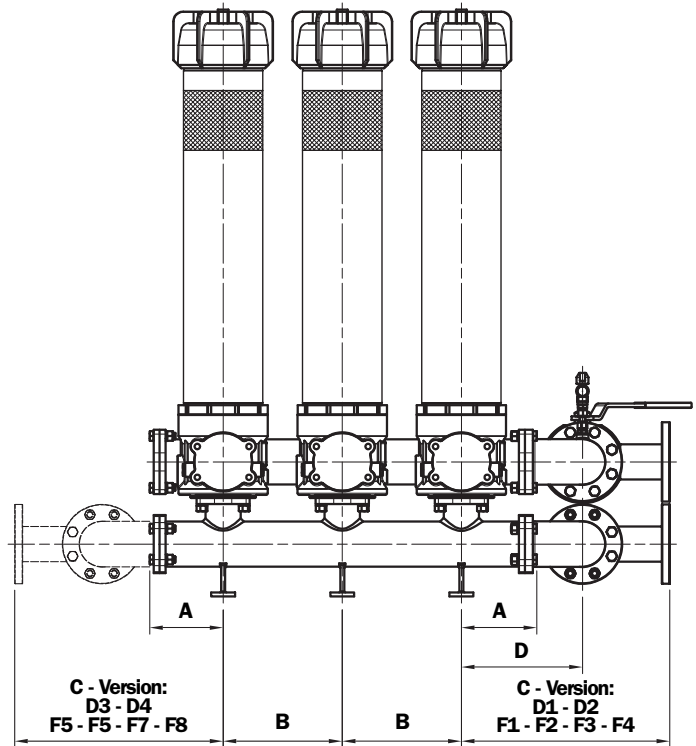
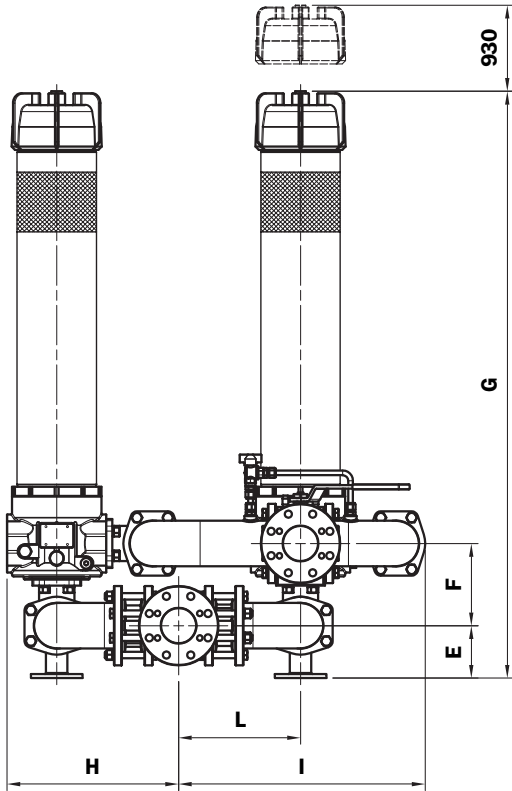


LMD 952 filter fixing holes

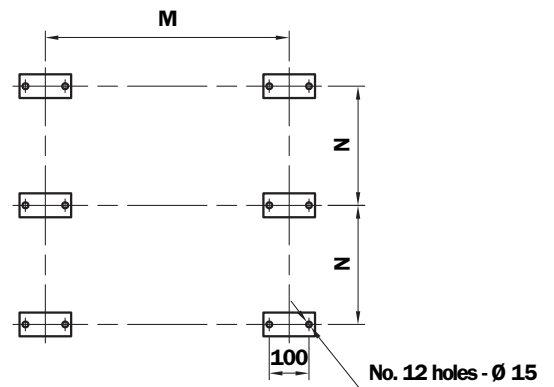


LMD 952

Length Filter	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	L mm	M mm	N mm	R mm
3 - 3" SAE DN 80	190	300	552	332	132	207	1478	432	621	269	614	300	370
3 - 4" SAE DN 100	190	300	552	332	132	207	1478	456	647	278	662	300	650



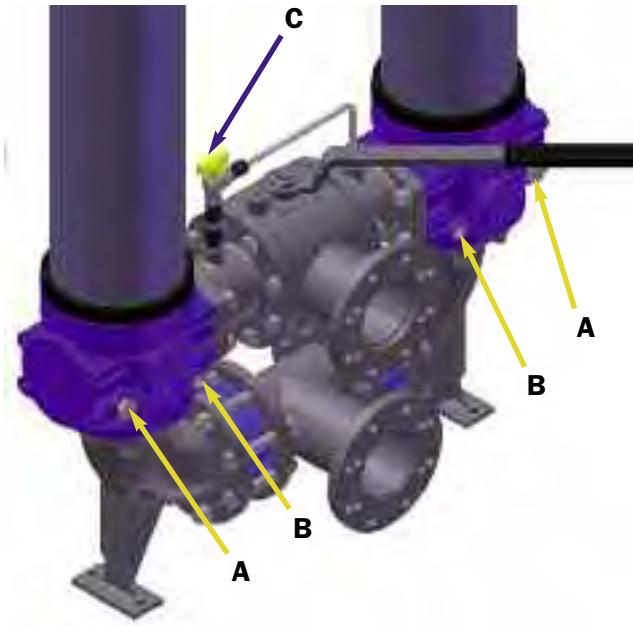
LMD 953 filter fixing holes



LMD 953

Length Filter	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	L mm	M mm	N mm	R mm
3 - 3" SAE DN 80	190	300	552	332	132	207	1478	432	621	269	614	300	370
3 - 4" SAE DN 100	190	300	552	332	132	207	1478	456	647	278	662	300	650

LMD 951



A - Indicator port - Plug T2 - A/F 30

B - Oil drain plug - G 1/2" - A/F 10

C - Compensation valve

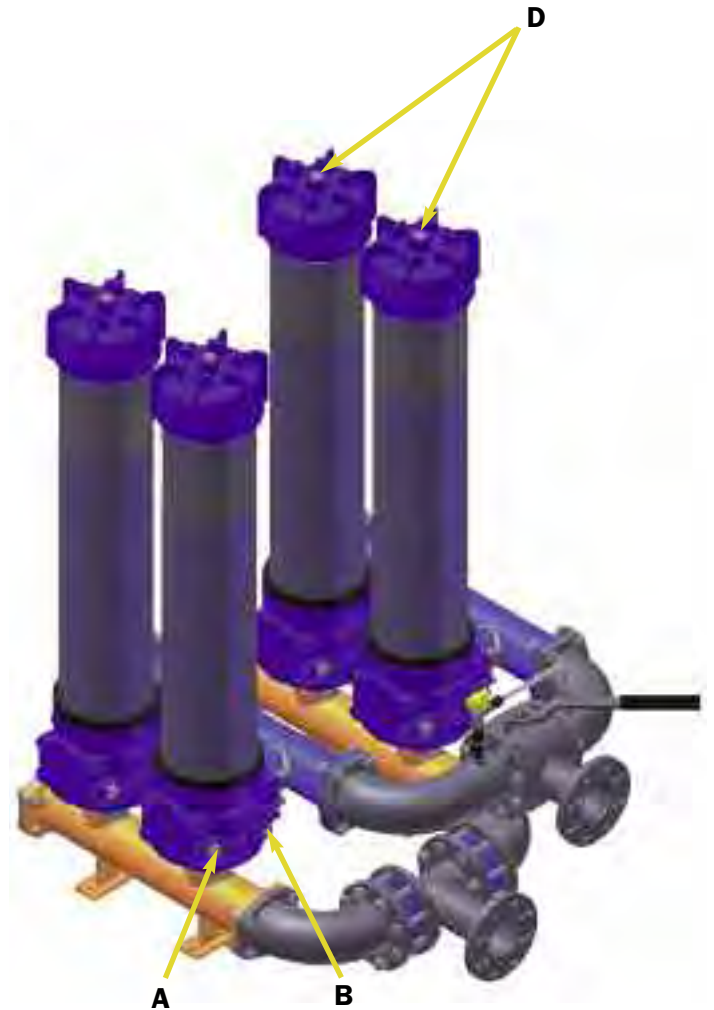
D - Breather plug - G 1/2" - A/F 10

Differential indicator:

LMD 951 - Fit one indicator for filter housing

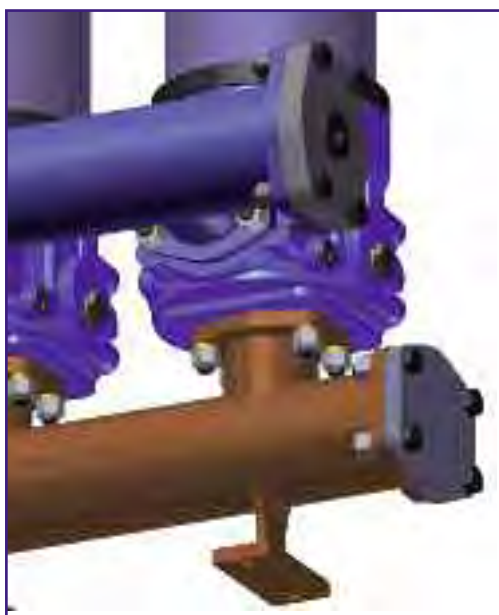
LMD 951 - 953 - Fit one indicator for individual filter assembly

LMD 952 - 953



Option

Flange with oil drain plug for rapid discharge LMD 952 - 953



Order code:

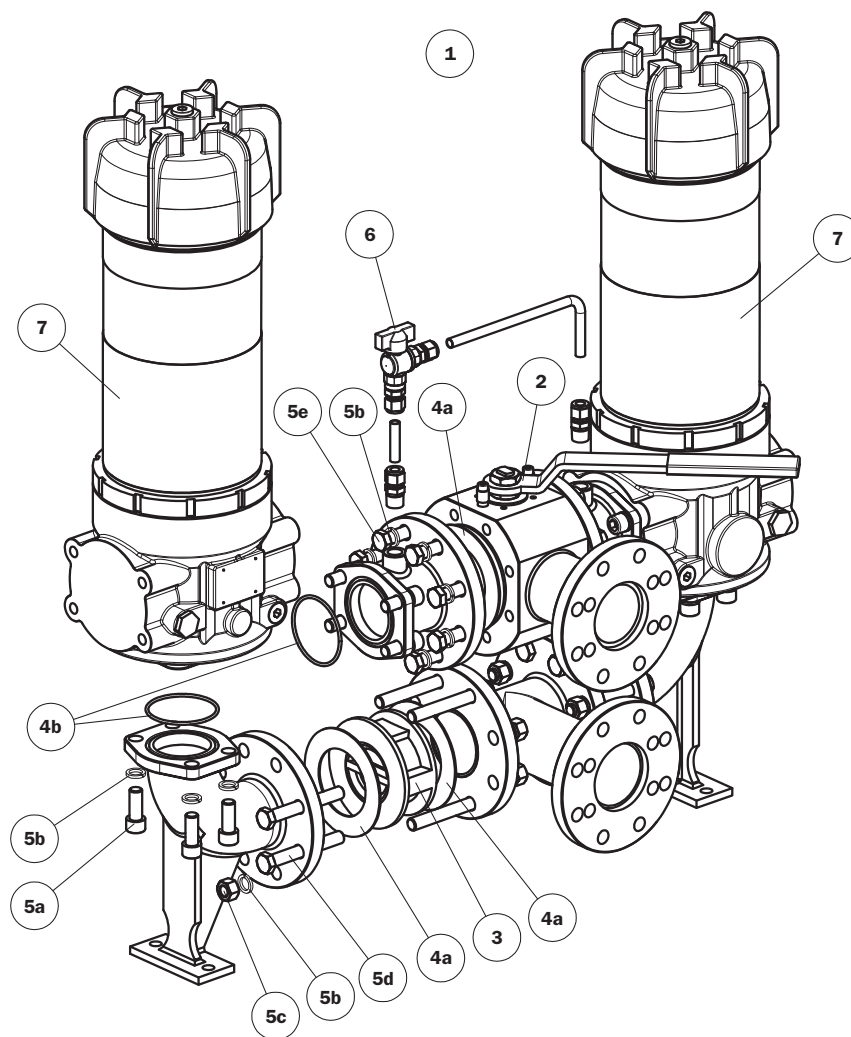
Oil drain plug

Code	CMV4	CUV4
	A	A
Thread	G 1 1/4"	SAE 20

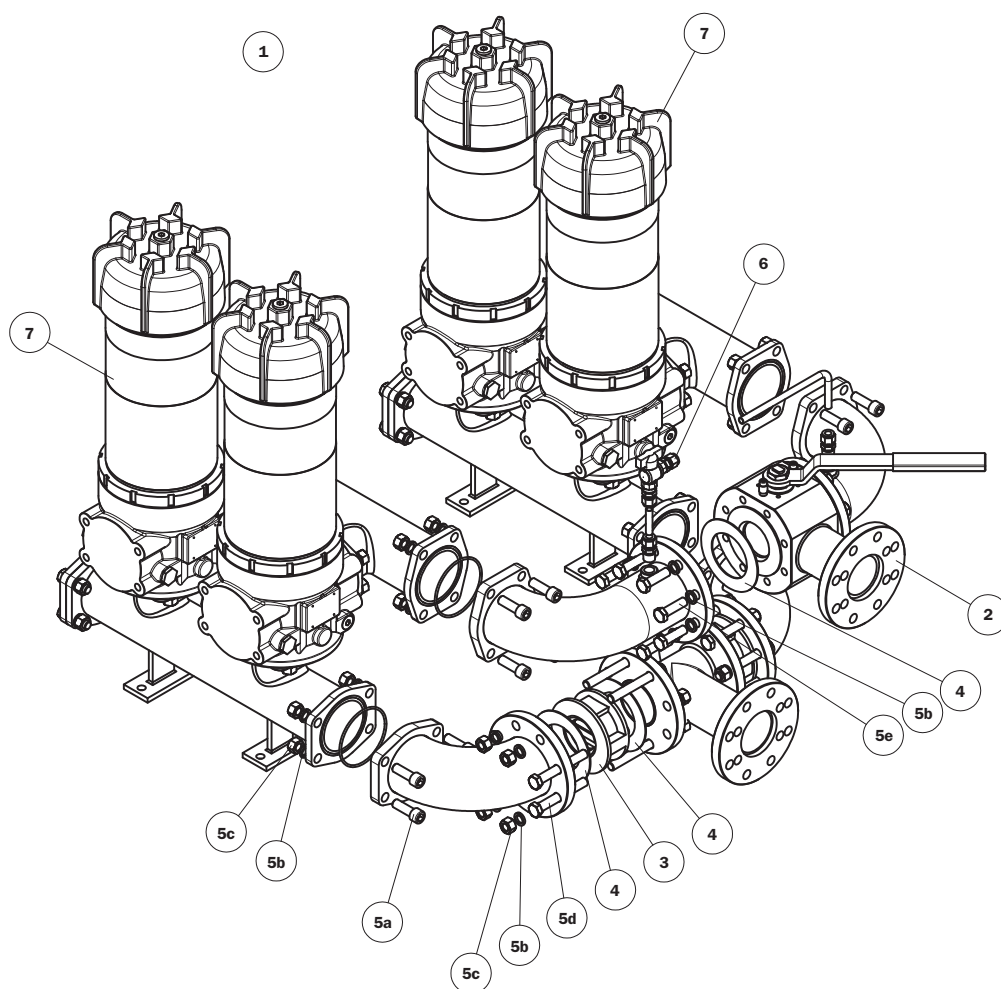
The order code includes:

- FLANGE
- SCREWS
- NUTS
- SEALS
- OIL DRAIN PLUG





Item	Description	Q.ty	FILTER Series	
			F1 - F2 - F5 - F6 / D1 - D3 (3" SAE / DIN PN16 DN 80)	F3 - F4 - F7 - F8 / D2 - D4 (4" SAE / DIN PN16 DN 100)
1	Filter assembly	1	See order table	
2	3-way ball valve PN 16	1	3" SAE 3000 psi/M 02001135 3" SAE 3000 psi/UNC 02001438	4" SAE 3000 psi/M 02001162 4" SAE 3000 psi/UNC 02001439
3	One-way valve	2	02001418	02001419
4	Seals kit	1	02050388	02050389
4a	Flat seal	6	In according to DN 80	In according to DN 100
4b	IN-OUT O-Ring	4	O-R 4337 Ø85,32 x 3,53 FPM	O-R 4437 Ø110,7 x 3,53 FPM
5	Threaded fasteners kit	1	02049056	02049057
5a	Hexagon socket screws	16	UNI 5931 - M16 x 40 10.9	
5b	Spring washers	48	UNI 1751-B 16	
5c	Nuts	16	UNI - EN 24032 - M16 10.9	
5d	Hexagon bolt screws	16	UNI-EN 24014 - M16 x 120 - 10.9	UNI-EN 24014 - M16 x 130 10.9
5e	Hexagon bolt screws	16	UNI-EN 24017 - M16 x 55 - 10.9	
6	G 1/2" Ball Valve Kit with straight fittings	1	02025043	
7	Filter	2	See order table LMP9513F.....PO* page 85	
-	Indicators	2	See order table	



Item	Description	Q.ty	FILTER Series	
			F1 - F2 - F5 - F6 / D1 - D3 (3" SAE / DIN PN16 DN 80)	F3 - F4 - F7 - F8 / D2 - D4 (4" SAE / DIN PN16 DN 100)
1	Filter assembly	1	See order table	
2	3-way ball valve PN 16	1	3" SAE 3000 psi/M 02001135 3" SAE 3000 psi/UNC 02001438	4" SAE 3000 psi/M 02001162 4" SAE 3000 psi/UNC 02001439
3	One-way valve	2	02001418	02001419
4	Flat seals	6	In according to DN 80	In according to DN 100
5	Threaded fasteners kit	4	02049058	02049059
5a	Hexagon socket screws	16	UNI 5931 - M16 x 55 10.9	
5b	Spring washers	48	UNI 1751-B 16	
5c	Nuts	32	UNI - EN 24032 - M16 10.9	
5d	Hexagon bolt screws	16	UNI-EN 24014 - M16 x 110 - 10.9	UNI-EN 24014 - M16 x 120 10.9
5e	Hexagon bolt screws	16	UNI-EN 24017 - M16 x 55 - 10.9	
6	G 1/2" Ball Valve Kit with straight fittings	1	02025043	
7	Filter	2	See order table LMP9523F.....PO* page 95 See order table LMP9533F.....PO* page 95	
-	Indicators	2	See order table	

Ordering information LMD 951 - 952 - 953

Filter assembly	1	2	3	4	5	6	7	8a
LMD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: LMD	951	3	B	V	F1	A10	N	P01

Filter element	2	6	4	7	8b
CU950	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example: CU950	3	A10	V	N	P01

1 - Style

Filter	Filter element
<input type="checkbox"/> 951	<input type="checkbox"/> 950 - 3 1+1 filter elements
<input type="checkbox"/> 952	<input type="checkbox"/> 950 - 3 2+2 filter elements
<input type="checkbox"/> 953	<input type="checkbox"/> 950 - 3 3+3 filter elements

2 - Filter length

3

3 - Valve

- S Without by-pass
 B With bypass
 Without by-pass
 Opening pressure: on request

4 - Filter seals

a - Filter

V FPM

a - Filter element

A NBR
 On request

5 - Connections

Type	LMD 951 - 952 - 953
D1	PN 16 DN 80
D2	PN 16 DN 100
D3	= D1 In-Line connections
D4	= D2 In-Line connections

Type	LMD 951 - 952 - 953
F1	3" SAE 3000 psi/M
F2	3" SAE 3000 psi/UNC
F3	4" SAE 3000 psi/M
F4	4" SAE 3000 psi/UNC
F5	= F1 In-Line connections
F6	= F2 In-Line connections
F7	= F3 In-Line connections
F8	= F4 In-Line connections

6 - Filter element

<input type="checkbox"/> A01	Inorganic microfibre* 1 µ	} Absolute filtration βx (c) ≥ 1000
<input type="checkbox"/> A03	Inorganic microfibre 3 µ	
<input type="checkbox"/> A06	Inorganic microfibre 6 µ	
<input type="checkbox"/> A10	Inorganic microfibre 10 µ	
<input type="checkbox"/> A16	Inorganic microfibre 16 µ	
<input type="checkbox"/> A25	Inorganic microfibre 25 µ	

* On request

<input type="checkbox"/> M25	Wire mesh	} Nominal Filtration
<input type="checkbox"/> M60	Wire mesh	
<input type="checkbox"/> M90	Wire mesh	

7 - Max filter element differential pressure

N Δp 20 bar

8 - Option

a - Filter

- P01 MP Filtri standard
 P02 With internal tube for reduced flow rate
 Pxx Customer request

b - Filter element

- P01 MP Filtri standard
 Pxx Customer request

indynamica
drive and control products

Option exclusively for LMD 952 - 953: Flange with rapid oil drain plug

See page 102

CMV4 Plug G 1 1/4"

CUV4 Plug SAE 20

Order 2 kits per filter

DIFFERENTIAL INDICATORS (see page 120)

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

Fixing system for:

LMP 400 - 900

LMP 430 - 950

LMD 400 - 401



Fixing brackets

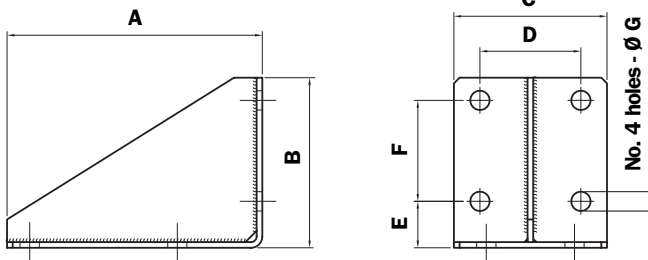
Materials

- Bracket: Welded steel - Phosphated
- 4 M12 x 35 screws - Filter LMP 400 (fixing of bracket to filter head)
- 4 M16 x 35 screws - Filter LMP 900 (fixing of bracket to filter head)

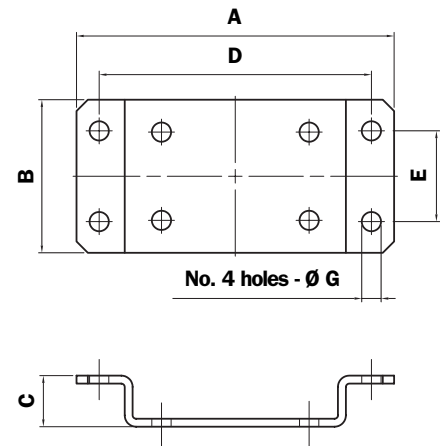
Ordering code

Bracket Code	Filter type
CFL 40 A P01	LMP 400
CFL 90 A P01	LMP 900
CFS 40 A P01	LMP 430
CFS 90 A P01	LMP 950

CFL



CFS



Dimension

Type	A mm	B mm	C mm	D mm	E mm	F mm	Ø G mm
CFL 40	165	120	115	70	35	70	13
CFL 90	225	150	135	89	41	89	17
CFS 40	260	115	45	220	60	-	13
CFS 90	280	135	45	240	80	-	17

Fixing with CFS bracket

LMP 400-900



Fixing with CFL bracket

LMP 400-900



Fixing with CFS bracket

LMP 430-950



Fixing with CFL bracket

LMP 430-950



**Fixing with CFS
bracket**

LMD 400



**Fixing with CFL
bracket**

LMD 400



**Fixing with CFS
bracket**

LMD 401



**Fixing with CFL
bracket**

LMD 401



Fixing system for: LMP 950

Fixing collar

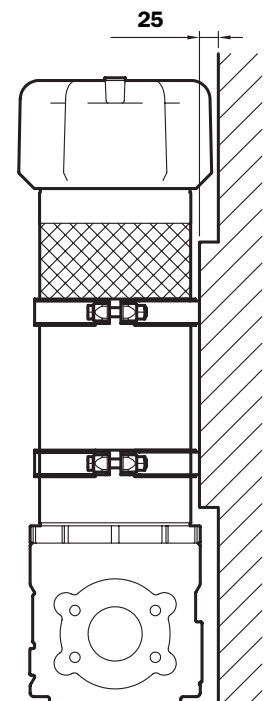
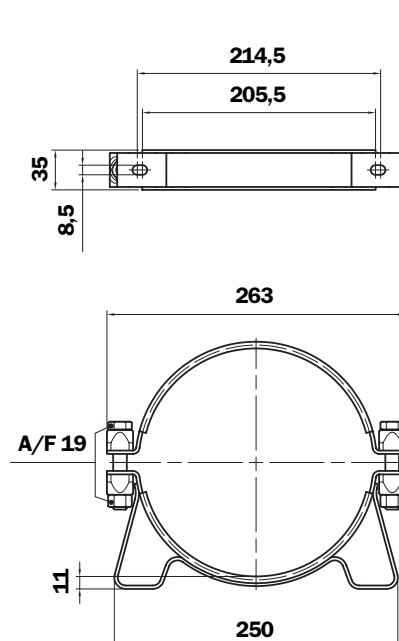
Materials

- Collar: Galvanised Steel
- Seal: NBR
- Hexagon bolt screws DIN-EN 24017 M12x65
- Nuts UNI-EN 24032 M12

Ordering code

CFA 20 M P01

CFA 20



SERIES

CLOGGING INDICATORS



Production summary



Contamination monitoring products

- Calibrated on test rigs manufactured and certified to ISO 11943 based on methods from ISO 11171
- On-line and In-line counting to 400 bar
- Bottle sampler options
- Mobile designs RS 232 - RS 485 digital bus interface



Suction filters

- Flow rates to 620 l/min
- Mounting:
- Tank immersed
 - In-Line
 - In tank with shut off valve
 - In tank with flooded suction



Return filters

- Flow rates to 3000 l/min
 - Pressure to 20 bar
- Mounting:
- In-Line
 - Tank top
 - In single and duplex designs



Pressure filters

- Flow rates to 700 l/min
 - Pressure from 110 bar to 560 bar
- Mounting:
- In-Line
 - Manifold
 - In single and duplex designs



Spin-On filters

- Flow rates to 300 l/min
 - Pressure to 35 bar
- Mounting:
- In-Line
 - Tank top

Production summary



Stainless Steel Pressure filters

- Flow rates to 100 l/min
- Pressure from 350 bar to 700 bar

Mounting:

- In-Line
- Manifold
- In single and duplex designs



In-Line filters

- Flow rates to 3000 l/min
- Pressure to 80 bar

Mounting:

- In-Line
- Parallel manifold version
- In single and duplex designs



Filtration units

- Flow rates from 15 l/min to 200 l/min
- In static and mobile style



Accessories

- Oil filler and air breather plugs
- Optical and electrical level gauges
- Pressure gauge valve selectors
- Pipe fixing brackets
- Pressure gauges

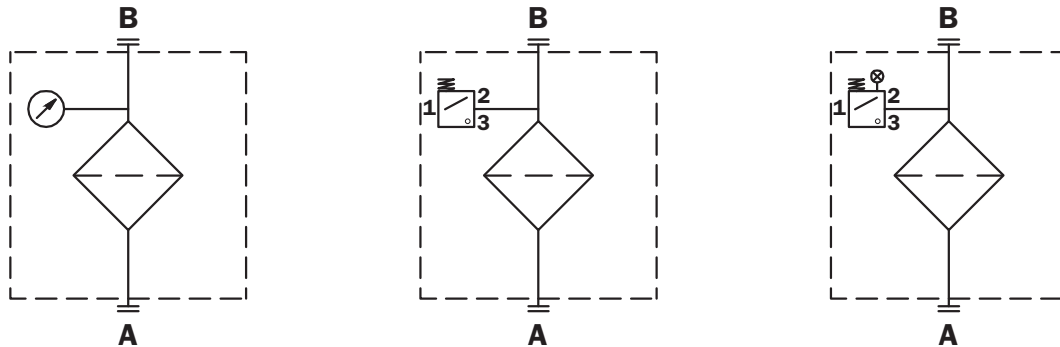


Mechanical Products

- Aluminium bell housings for motors from 0.12 kW to 400 kW
- Couplings in Aluminium - Cast Iron - Steel
- Damping rings
- Support feet
- Aluminium tanks
- Inspection doors

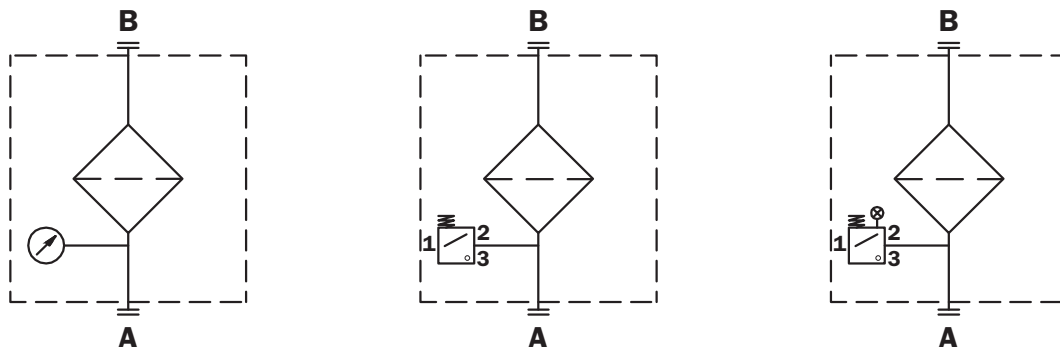
VACUUM INDICATORS

Vacuum indicators are used on the Suction line to check the efficiency of the filter element. They measure the pressure downstream of the filter element. Standard items are produced with R 1/4" EN 10226 connection. Available products with R 1/8" EN 10226 to be fitted on MPS series.



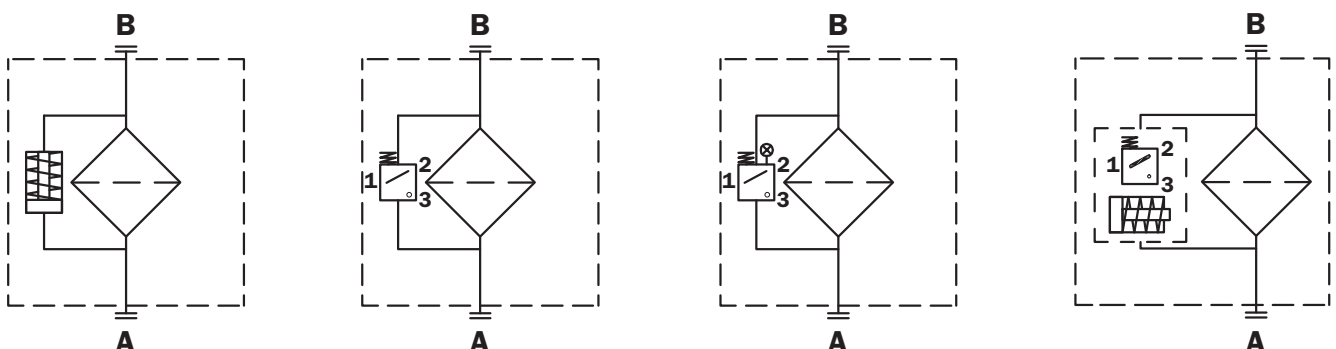
BAROMETRIC INDICATORS

Pressure indicators are used on the Return line to check the efficiency of the filter element. They measure the pressure upstream of the filter element. Standard items are produced with R 1/8" EN 10226 connection.



DIFFERENTIAL INDICATORS

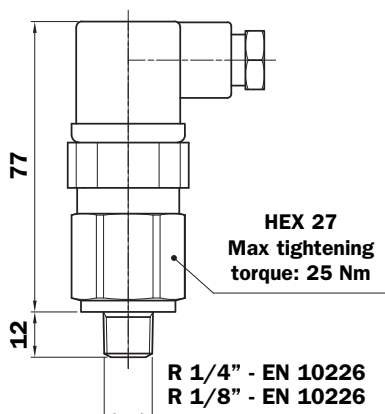
Differential indicators are used on the Pressure line to check the efficiency of the filter element. They measure the pressure upstream and downstream of the filter element (differential pressure). Standard items are produced with special connection G 1/2" size. Also available in Stainless Steel models.



Filter series	VISUAL INDICATOR	ELECTRICAL INDICATOR	ELECTRICAL/VISUAL INDICATOR	ELECTRONIC INDICATOR
Suction filters				
SF2 250 - 251 - 350 SF2 500 - 501 - 502 - 503 - 504 - 505 SF2 510 - 535 - 540 FAS	VVA16P01 VVR16P01	VEA21AA50P01	VLA21AA51P01 VLA21AA52P01 VLA21AA53P01 VLA21AA71P01	
Return filters				
MPF - MPT with bypass 1,75 bar MPH with bypass 1,75 bar	BVA14P01 BVR14P01 BVP15HAP01 BVP15HMP01	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01	
MPF - MPT with bypass 3 bar MPH with bypass 2,5 bar FRI 255 RF2 250	BVA25P01 BVR25P01 BVP20HAP01 BVP20HMP01	BEA20HA50P01 BEM20HA41P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01	
FRI 025 - 040 - 100 - 250 - 630 - 850	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xAxxP01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01
Suction/Return filters				
MRS 116 - 165 - 166 Suction line	VVB16P01 VVS16P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01	
MRS 116 - 165 - 166 Return line	BVA14P01 BVR14P01 BVP15HAP01 BVP15HMP01	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01	
Spin-On filters				
MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350 Suction line	VVB16P01 VVS16P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01	
MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350 MST 050 - 070 - 100 - 150 Return line	BVA14P01 BVR14P01 BVP15HAP01 BVP15HMP01	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01	
MPS 051 - 071 - 101 - 151 MPS 301 - 351 MSH 050 - 070 - 100 - 150 In-line	DVA12xP01 DVM12xP01	DEA12xA50P01 DEM12xAxxP01	DLA12xA51P01 DLA12xA52P01 DLA12xA71P01 DLE12xA50P01 DLE12xF50P01	

Filter series	VISUAL INDICATOR	ELECTRICAL INDICATOR	ELECTRICAL/VISUAL INDICATOR	ELECTRONIC INDICATOR
Low Pressure In-Line filters				
LMP 110 - 112 - 116 - 118 - 119 LMP 120 - 122 - 123 LMP 210 - 211 LMP 400 - 401 - 430 - 431 LMP 900 - 901 - 950 - 951 LMD 400 - 401 - 431 - 951 With bypass valve	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xAxxP01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01
LMP 110 - 112 - 116 - 118 - 119 LMP 120 - 122 - 123 LMP 210 - 211 LMP 400 - 401 - 430 - 431 LMP 900 - 901 - 950 - 951 LMD 400 - 401 - 431 - 951 MPD 250 - 251 Without bypass valve	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01
High Pressure In-Line filters				
FMP 039 - 065 - 135 - 320 FMM 050 FHP 010 - 011 - 065 - 135 - 320 - 500 FHB 050 - 135 - 320 FHM 006 - 007 - 010 - 050 - 135 - 320 - 500 FHF 325 FHD 021 - 051 - 326 - 333 With bypass valve	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01
FMP 039 - 065 - 135 - 320 FMM 050 FHP 010 - 011 - 065 - 135 - 320 - 500 FHB 050 - 135 - 320 FHM 006 - 007 - 010 - 050 - 135 - 320 - 500 FHF 325 FHD 021 - 051 - 326 - 333 Without bypass valve	DVA70xP01 DVM70xP01	DEA70xA50P01 DEM70xAxxP01	DLA70xA51P01 DLA70xA52P01 DLA70xA71P01 DLE70xA50P01 DLE70xF50P01	DTA70xF70P01
Stainless Steel High Pressure In-Line filters				
FZB 039 FZP 039 - 136 FZH 010 - 011 - 039 With bypass valve	DVX50xP01 DVY50xP01	DEX50xA50P01	DLX50xA51P01 DLX50xA52P01 DLY50xA50P01	
FZB 039 FZP 039 - 136 FZH 010 - 011 - 039 Without bypass valve	DVX70xP01 DVY70xP01	DEX70xA50P01	DLX70xA51P01 DLX70xA52P01 DLY70xA50P01	

VEA - VEB



Available connections:
R 1/4" EN 10226 (VEA21AA50P01)
R 1/8" EN 10226 (VEB21AA50P01)

Electrical Vacuum Indicator


Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

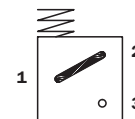
Technical data:

- Indicator type: Electrical vacuum indicator
- Setting pressure: -0,21 bar \pm 10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

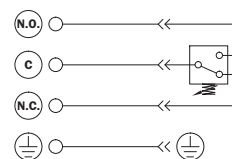
Electrical data:

- Resistive load: 5 A / 14 Vdc
4 A / 30 Vdc
5 A / 125 VAc
5 A / 250 VAc
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529
- Available ATEX product  II 1GD Ex ia IIC Tx Ex ia IIIC Tx °C X

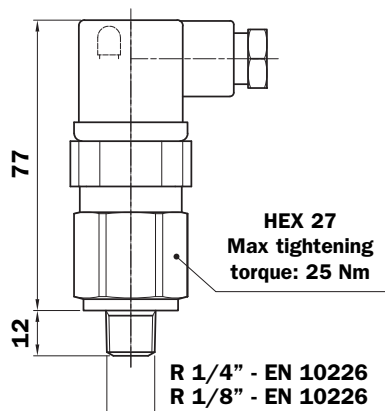
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



VLA - VLB



Available connections:
R 1/4" EN 10226 (VLA21AAxxP01)
R 1/8" EN 10226 (VLB21AAxxP01)

Electrical/Visual Vacuum Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

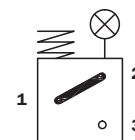
Technical data:

- Indicator type: Electrical/Visual vacuum indicator
- Setting pressure: -0,21 bar \pm 10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

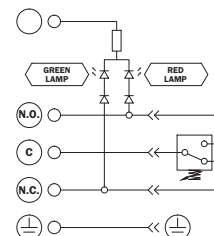
Electrical data:

- Resistive load: 51: 0,8 A / 24 Vdc
52: 0,2 A / 115 Vdc
53: 4 A / 230 Vdc
- Electrical connections: 51 - EN 175301-803 (24 Vdc lamps)
52 - EN 175301-803 (110 Vdc lamps)
53 - EN 175301-803 (230 VAc lamps)
- Protection degree: IP 65 in according to EN 60529

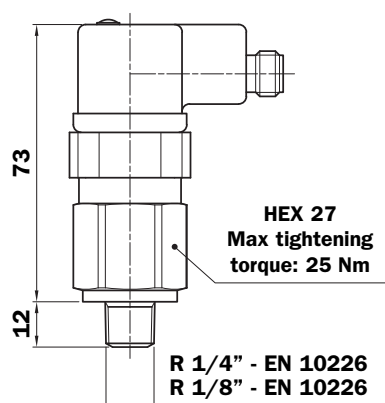
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



VLA - VLB



Available connections:
R 1/4" EN 10226 (VLA21AA71P01)
R 1/8" EN 10226 (VLB21AA71P01)

Electrical/Visual Vacuum Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

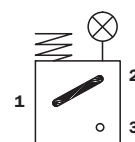
Technical data:

- Indicator type: Electrical/Visual vacuum indicator
- Setting pressure: -0,21 bar \pm 10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

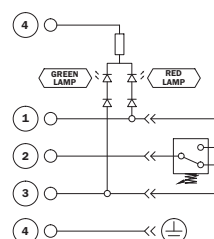
Electrical data:

- Resistive load: 0,4 A / 24 Vdc
- Electrical connections: 71 - M12 IEC 61076-2-101 (24 Vdc lamps)
- Protection degree: IP 65 in according to EN 60529

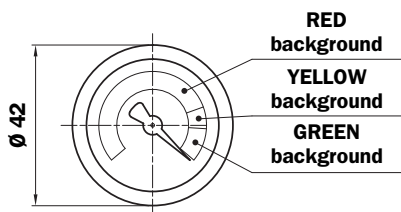
HYDRAULIC SYMBOL



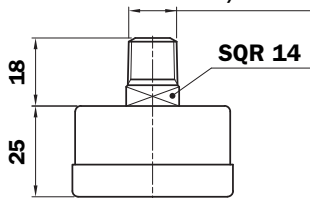
ELECTRICAL SYMBOL



VVA - VVB



R 1/4" - EN 10226
R 1/8" - EN 10226



Available connections:
R 1/4" EN 10226 (VVA16P01)
R 1/8" EN 10226 (VVB16P01)

Axial Vacuum Gauge

Materials:

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tub Cu-alloy soft soldered

Technical data:

- Indicator type: Axial vacuum gauge
- Max working pressure: Static: 7 bar
Fluctuating: 6 bar
Short time: 10 bar
- Working temperature: From -40°C to +60°C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943
- Accuracy class: cl. 2.5
- Protection degree: IP 31 in according to EN 60529

HYDRAULIC SYMBOL



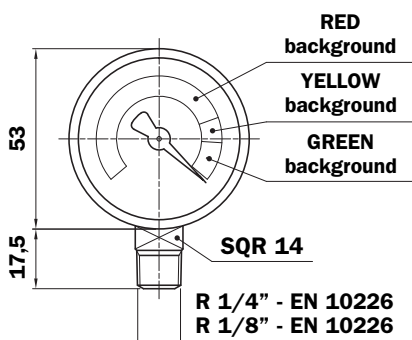
GRADUATED DISPLAY

GREEN BACKGROUND
(from 0 to -12 cmHg)
Clean filter element

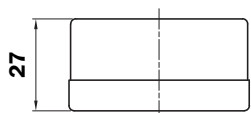
YELLOW BACKGROUND
(from -12 to -18 cmHg)
Warning

RED BACKGROUND
(from -18 to -76 cmHg)
Bypass

VVR - VVS



R 1/4" - EN 10226
R 1/8" - EN 10226



Available connections:
R 1/4" EN 10226 (VVR16P01)
R 1/8" EN 10226 (VVS16P01)

Radial Vacuum Gauge

Materials:

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tub Cu-alloy soft soldered

Technical data:

- Indicator type: Radial vacuum gauge
- Max working pressure: Static: 7 bar
Fluctuating: 6 bar
Short time: 10 bar
- Working temperature: From -40°C to +60°C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943
- Accuracy class: cl. 2.5
- Protection degree: IP 31 in according to EN 60529

HYDRAULIC SYMBOL



GRADUATED DISPLAY

GREEN BACKGROUND
(from 0 to -12 cmHg)
Clean filter element

YELLOW BACKGROUND
(from -12 to -18 cmHg)
Warning

REDBACKGROUND
(from -18 to -76 cmHg)
Bypass

Series	1	2	3	4	5	6	7
VE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	VE	A	21	A	A	50	P01

Series	1	2	3	4	5	6	7
VL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	VL	A	21	A	A	52	P01

Series	1	2	3	7
VV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	VV	A	16	P01

1 - Series

- VE** Electrical indicator
- VL** Electrical/Visual indicator
- VV** Visual indicator

2 - Type

VE - VL series

- A** R 1/4" EN 10226 connection
- B** R 1/8" EN 10226 connection

VV series

- A** Axial vacuumeter
R 1/4" EN 10226 connection
- B** Axial vacuumeter
R 1/8" EN 10226 connection
- R** Radial vacuumeter
R 1/4" EN 10226 connection
- S** Radial vacuumeter
R 1/8" EN 10226 connection

3 - Setting pressure

VEA - VLA series

- 21** -0,21 bar

VVA - VVR series

- 16** -0,16 bar

4 - Seals (excluded for VV)

- A** NBR
- On request

5 - Thermostat (excluded for VV)

- A** Without thermostat

6 - Electrical connection (excluded for VV)

VEA series

- 50** EN 175301-803 connector

VLA series

- 51** EN 175301-803 clear connector with 24 V lamps
- 52** EN 175301-803 clear connector with 110 V lamps
- 53** EN 175301-803 clear connector with 230 V lamps
- 71** M12 IEC 61076-2-101 clear connector with 24 V lamps

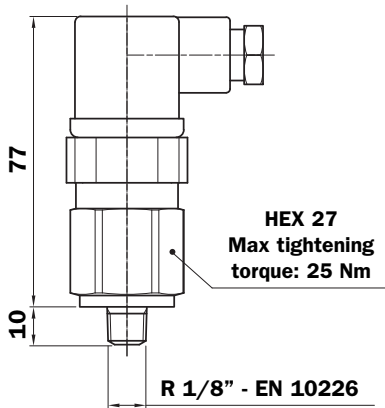
7 - Option

- P01** MP Filtri standard
- Pxx** Customer request

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

BEA



Available setting:
1,5 bar $\pm 10\%$ (BEA15HA50P01)
2 bar $\pm 10\%$ (BEA20HA50P01)

Electrical Pressure Indicator


Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

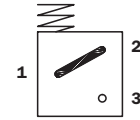
Technical data:

- Indicator type: Electrical pressure indicator
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

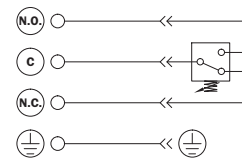
Electrical data:

- Resistive load: 5 A / 14 VDC
4 A / 30 VDC
5 A / 125 VAC
5 A / 250 VAC
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529
- Available Atex product  II 1GD Ex ia IIC Tx Ex ia IIC Tx °C X

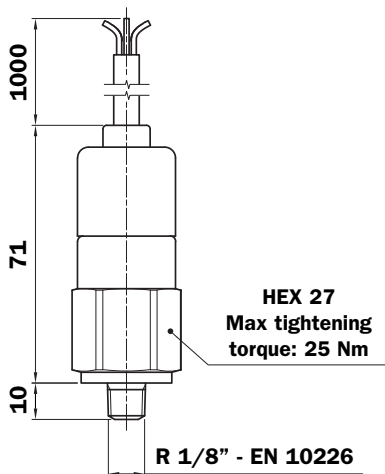
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



BEM



Available setting:
1,5 bar $\pm 10\%$ (BEM15HA50P01)
2 bar $\pm 10\%$ (BEM20HA50P01)

Electrical Pressure Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR

Technical data:

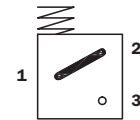
- Indicator type: Electrical pressure indicator
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

Electrical data:

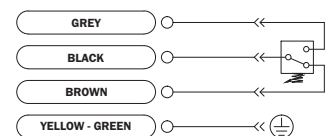
- Resistive load: 5 A / 14 VDC
4 A / 30 VDC
5 A / 125 VAC
5 A / 250 VAC
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 67 in according to EN 60529

On request this indicator can be provided with main connectors in use for wirings.

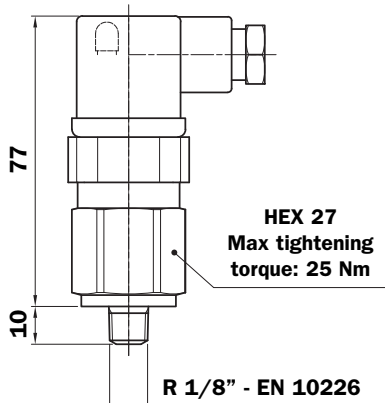
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



BLA



Available setting:
1,5 bar $\pm 10\%$ (BLA15HAxxP01)
2 bar $\pm 10\%$ (BLA20HAxxP01)

Electrical/Visual Pressure Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

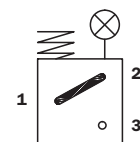
Technical data:

- Indicator type: Electrical/Visual pressure indicator
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

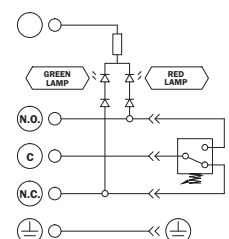
Electrical data:

- Resistive load: 51: 0,8 A / 24 VDC
52: 0,2 A / 115 VDC
53: 4 A / 230 VDC
- Electrical connections: 51 - EN 175301-803 (24 VDC lamps)
52 - EN 175301-803 (110 VDC lamps)
53 - EN 175301-803 (230 VAC lamps)
- Protection degree: IP 65 in according to EN 60529

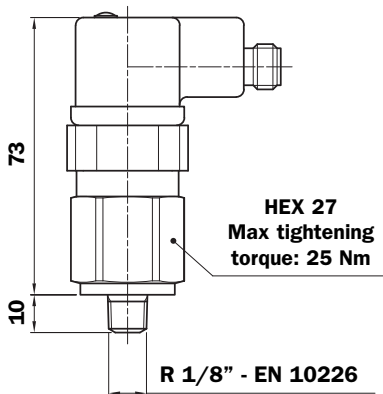
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



BLA



Available setting:
1,5 bar ±10% (BLA15HA71P01)
2 bar ±10% (BLA20HA71P01)

Electrical/Visual Pressure Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

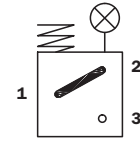
Technical data:

- Indicator type: Electrical/Visual pressure indicator
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

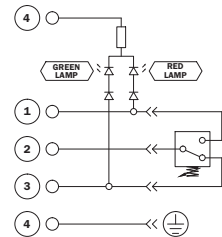
Electrical data:

- Resistive load: 0,4 A / 24 VDC
- Electrical connections: 71 - M12 IEC 61076-2-101 (24 VDC lamps)
- Protection degree: IP 65 in according to EN 60529

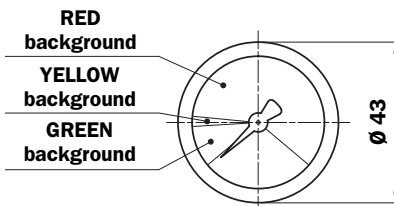
HYDRAULIC SYMBOL



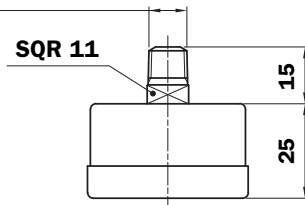
ELECTRICAL SYMBOL



BVA



R 1/8" - EN 10226



Available setting:
1,4 bar ±10% (BVA14P01)
2,5 bar ±10% (BVA25P01)

Axial Pressure Gauge

Materials:

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tub cu-alloy soft soldered

Technical data:

- Indicator type: Axial pressure gauge
- Max working pressure: Static: 7 bar
Fluctuating: 6 bar
Short time: 10 bar
- Working temperature: From -40 °C to +60 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943
- Accuracy class: cl. 2.5
- Protection degree: IP 31 in according to EN 60529

HYDRAULIC SYMBOL

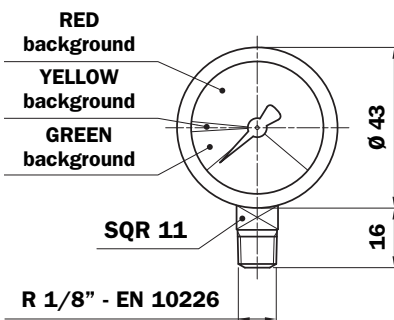


GRADUATED DISPLAY

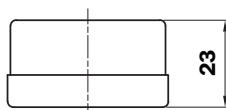
BVA14P01
GREEN BACKGROUND (from 0 to 1,4 bar)
Clean filter element
YELLOW BACKGROUND (from 1,4 to 1,7 bar)
Warning
RED BACKGROUND (from 1,7 to 10 bar)
Bypass

BVA25P01
GREEN BACKGROUND (from 0 to 2,5 bar)
Clean filter element
YELLOW BACKGROUND (from 2,5 to 3 bar)
Warning
RED BACKGROUND (from 3 to 10 bar)
Bypass

BVR



R 1/8" - EN 10226



Available setting:
1,4 bar ±10% (BVR14P01)
2,5 bar ±10% (BVR25P01)

Radial Pressure Gauge

Materials:

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tub cu-alloy soft soldered

Technical data:

- Indicator type: Radial pressure gauge
- Max working pressure: Static: 7 bar
Fluctuating: 6 bar
Short time: 10 bar
- Working temperature: From -40 °C to +60 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943
- Accuracy class: cl. 2.5
- Protection degree: IP 31 in according to EN 60529

HYDRAULIC SYMBOL

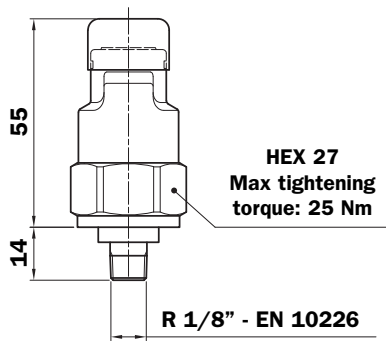


GRADUATED DISPLAY

BVR14P01
GREEN BACKGROUND (from 0 to 1,4 bar)
Clean filter element
YELLOW BACKGROUND (from 1,4 to 1,7 bar)
Warning
RED BACKGROUND (from 1,7 to 10 bar)
Bypass

BVR25P01
GREEN BACKGROUND (from 0 to 2,5 bar)
Clean filter element
YELLOW BACKGROUND (from 2,5 to 3 bar)
Warning
RED BACKGROUND (from 3 to 10 bar)
Bypass

BVP - BVQ



Available setting:
1,5 bar $\pm 10\%$ (BVP15AP01 - BVQ15AP01)
2 bar $\pm 10\%$ (BVP20AP01 - BVQ20AP01)

Visual Pressure Indicator

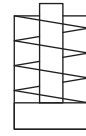
Materials:

- Body: Brass
- Internal parts: Nylon
- Seals: NBR

Technical data:

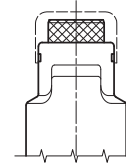
- Indicator type: Visual pressure indicator
- Reset: BVP - Automatic reset
BVQ - Manual reset
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25°C to $+80^{\circ}\text{C}$
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943
- Protection degree: IP 45 in according to EN 60529

HYDRAULIC SYMBOL

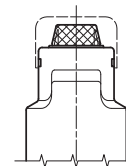


SIGNALS

GREEN BUTTON: INLET PRESSURE



RED BUTTON: CLOGGED FILTER ELEMENT



Series	1	2	3	4	5	6	7
BE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	BE	A	20	H	A	50	P01

Series	1	2	3	4	5	6	7
BL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	BL	A	20	H	A	52	P01

Series	1	2	3	4	7
BV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	BV	P	20	H	P01

Series	1	2	3	7
BV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	BV	A	14	P01

1 - Series

- BE** Electrical indicator
- BL** Electrical/Visual indicator
- BV** Visual indicator

2 - Type

BE series

- A** Standard type
- M** With wired connector

BL series

- A** Standard type

BV series

- A** Axial manometer
- R** Radial manometer
- P** Visual pressure indicator - Automatic reset
- Q** Visual pressure indicator - Manual reset

3 - Setting pressure

BEA - BEM - BLA - BVP series

- 15** 1,5 bar
- 20** 2 bar

BVA - BVR series

- 14** 1,4 bar
- 25** 2,5 bar

4 - Seals (excluded for BVA - BVR)

- H** HNBR
- On request

5 - Thermostat (excluded for BV)

- A** Without thermostat

6 - Electrical connection (excluded for BV)

BEA series

- 50** EN 175301-803 connector

BEM series

- 41** Four core cable
- On request

BLA series

- 51** EN 175301-803 clear connector with 24 V lamps
- 52** EN 175301-803 clear connector with 110 V lamps
- 53** EN 175301-803 clear connector with 230 V lamps
- 71** M12 IEC 61076-2-101 clear connector with 24 V lamps

7 - Option

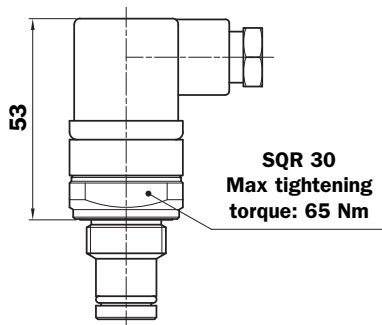
- P01** MP Filtri standard
- Pxx** Customer request

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

DIFFERENTIAL INDICATORS

DEA



Available setting:
 1,2 bar ±10% (DEA12xA50P01)
 2 bar ±10% (DEA20xA50P01)
 5 bar ±10% (DEA50xA50P01)
 7 bar ±10% (DEA70xA50P01)
 9,5 bar ±10% (DEA95xA50P01)

Electrical Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

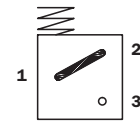
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

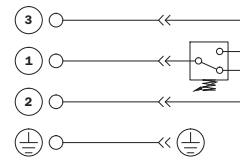
Electrical data:

- Resistive load: 0,2 A / 115 Vdc
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 66 in according to EN 60529
IP 69K in according to ISO 20653

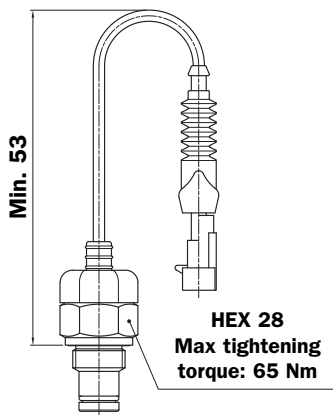
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DEM



Available setting:
 1,2 bar ±10% (DEM12xx10P01)
 2 bar ±10% (DEM20xx10P01)
 5 bar ±10% (DEM50xx10P01)
 7 bar ±10% (DEM70xx10P01)
 9,5 bar ±10% (DEM95xx10P01)

Electrical Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

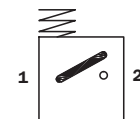
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

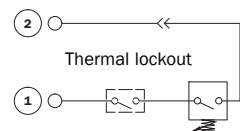
Electrical data:

- Resistive load: 0,2 A / 115 Vdc
- Electrical connections: 10 - AMP Superseal series 1,5
- Switching type: Normally open contacts (N.C. on request)
- Thermal lockout: Normally open up to 30 °C (F option)
- Protection degree: IP 66 in according to EN 60529

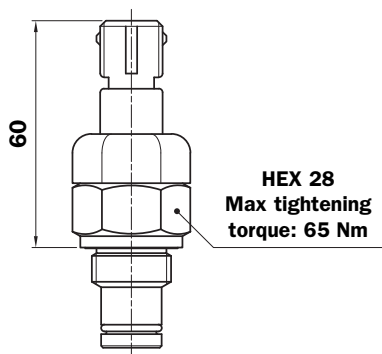
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DEM



Available setting:
 1,2 bar ±10% (DEM12xx20P01)
 2 bar ±10% (DEM20xx20P01)
 5 bar ±10% (DEM50xx20P01)
 7 bar ±10% (DEM70xx20P01)
 9,5 bar ±10% (DEM95xx20P01)

Electrical Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

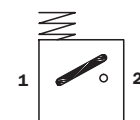
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

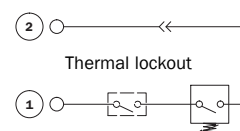
Electrical data:

- Resistive load: 0,2 A / 115 Vdc
- Electrical connections: 20 - AMP Time junior
- Switching type: Normally open contacts (N.C. on request)
- Thermal lockout: Normally open up to 30 °C (F option)
- Protection degree: IP 66 in according to EN 60529

HYDRAULIC SYMBOL

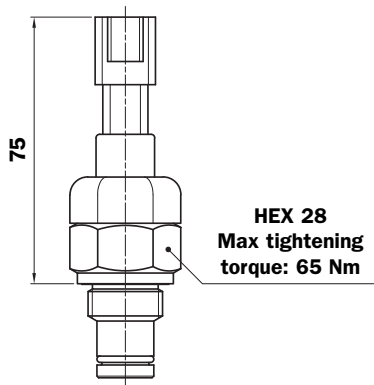


ELECTRICAL SYMBOL



DIFFERENTIAL INDICATORS

DEM



Available setting:
 1,2 bar ±10% (DEM12xx30P01)
 2 bar ±10% (DEM20xx30P01)
 5 bar ±10% (DEM50xx30P01)
 7 bar ±10% (DEM70xx30P01)
 9,5 bar ±10% (DEM95xx30P01)

Electrical Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

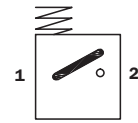
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

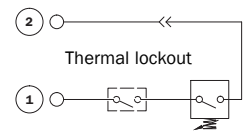
Electrical data:

- Resistive load: 0,2 A / 115 Vdc
- Electrical connections: 30 - Deutsch DT-04-2-P
- Switching type: Normally open contacts (N.C. on request)
- Thermal lockout: Normally open up to 30 °C (F option)
- Protection degree: IP 66 in according to EN 60529

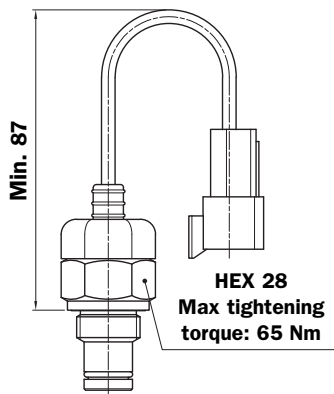
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DEM



Available setting:
 1,2 bar ±10% (DEM12xx35P01)
 2 bar ±10% (DEM20xx35P01)
 5 bar ±10% (DEM50xx35P01)
 7 bar ±10% (DEM70xx35P01)
 9,5 bar ±10% (DEM95xx35P01)

Electrical Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

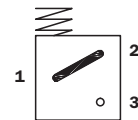
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

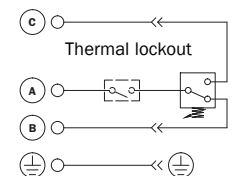
Electrical data:

- Resistive load: 0,2 A / 115 Vdc
- Electrical connections: 35 - Deutsch DT-04-3-P
- Switching type: SPDT contact
- Thermal lockout: Normally open up to 30 °C (F option)
- Protection degree: IP 66 in according to EN 60529

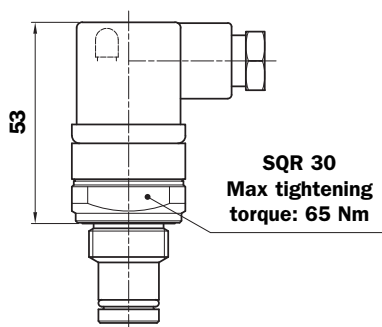
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DLA



Available setting:
 1,2 bar ±10% (DLA12xAxxP01)
 2 bar ±10% (DLA20xAxxP01)
 5 bar ±10% (DLA50xAxxP01)
 7 bar ±10% (DLA70xAxxP01)
 9,5 bar ±10% (DLA95xAxxP01)

Electrical/Visual Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

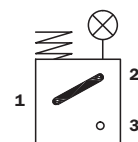
Technical data:

- Indicator type: Electrical/Visual differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

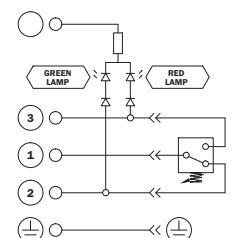
Electrical data:

- Resistive load: 51: 0,8 A / 24 Vdc
52: 0,2 A / 115 Vdc
- Electrical connections: 51 - EN 175301-803 (24 Vdc lamps)
52 - EN 175301-803 (110 Vdc lamps)
- Protection degree: IP 66 in according to EN 60529
IP 69K in according to ISO 20653

HYDRAULIC SYMBOL

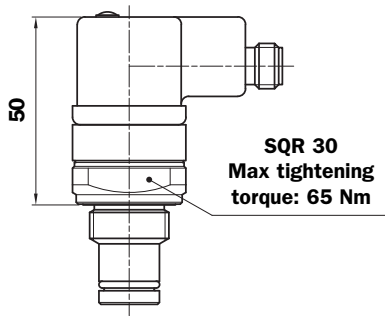


ELECTRICAL SYMBOL



DIFFERENTIAL INDICATORS

DLA



Available setting:

- 1,2 bar ±10% (DLA12xA71P01)
- 2 bar ±10% (DLA20xA71P01)
- 5 bar ±10% (DLA50xA71P01)
- 7 bar ±10% (DLA70xA71P01)
- 9,5 bar ±10% (DLA95xA71P01)

Electrical/Visual Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

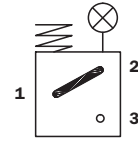
Technical data:

- Indicator type: Electrical/Visual differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

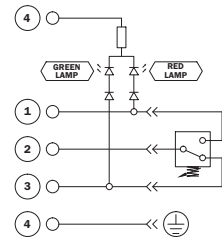
Electrical data:

- Resistive load: 0,4 A / 24 Vdc
- Electrical connections: 71 - M12 IEC 61076-2-101 (24 Vdc lamps)
- Protection degree: IP 65 in according to EN 60529
IP 69K in according to ISO 20653

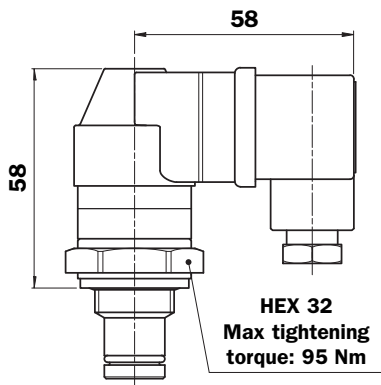
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DLE



Available setting:

- 1,2 bar ±10% (DLE12VA50P01)
- 2 bar ±10% (DLE20VA50P01)
- 5 bar ±10% (DLE50VA50P01)
- 7 bar ±10% (DLE70VA50P01)
- 9,5 bar ±10% (DLE95VA50P01)

Electrical/Visual Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: FPM

Technical data:

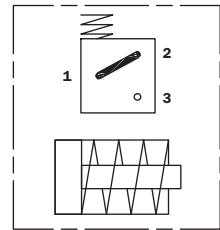
- Indicator type: Electrical/Visual differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

Electrical data:

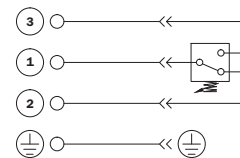
- Resistive load: 5 A / 250 VAC
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529

Available the connector with lamps

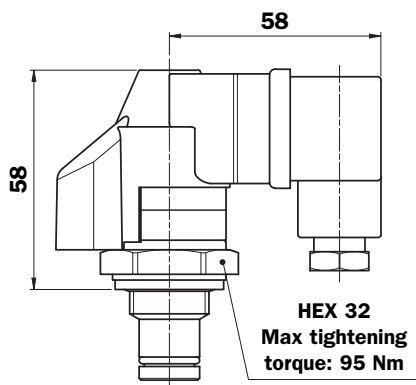
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DLE



Available setting:

- 1,2 bar ±10% (DLE12VF50P01)
- 2 bar ±10% (DLE20VF50P01)
- 5 bar ±10% (DLE50VF50P01)
- 7 bar ±10% (DLE70VF50P01)
- 9,5 bar ±10% (DLE95VF50P01)

Electrical/Visual Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: FPM

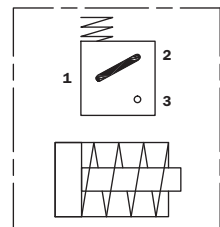
Technical data:

- Indicator type: Electrical/Visual differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

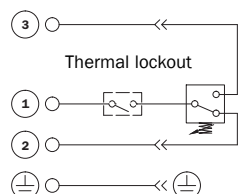
Electrical data:

- Resistive load: 5 A / 250 VAC
- Thermal lockout setting: +30 °C
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529

HYDRAULIC SYMBOL

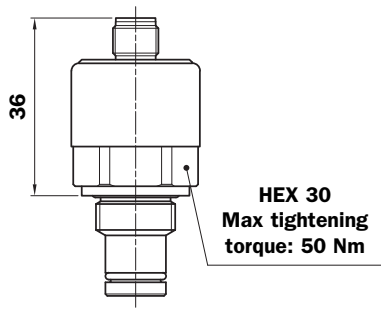


ELECTRICAL SYMBOL



DIFFERENTIAL INDICATORS

DTA



Available setting:
 1,2 bar ±10% (DTA12xF70P01)
 2 bar ±10% (DTA20xF70P01)
 5 bar ±10% (DTA50xF70P01)
 7 bar ±10% (DTA70xF70P01)
 9,5 bar ±10% (DTA95xF70P01)

Electronic Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: NBR

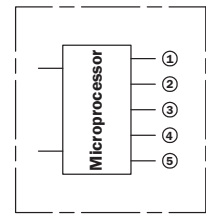
Technical data:

- Indicator type: Electronic differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

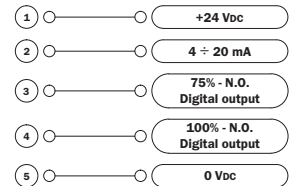
Electrical data:

- Power supply: 24 VDC
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)
- Protection degree: IP 67 in according to EN 60529

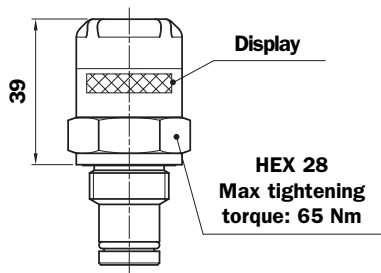
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DVA



Available setting:
 1,2 bar ±10% (DVA12xP01)
 2 bar ±10% (DVA20xP01)
 5 bar ±10% (DVA50xP01)
 7 bar ±10% (DVA70xP01)
 9,5 bar ±10% (DVA95xP01)

Visual Differential Indicator

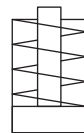
Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

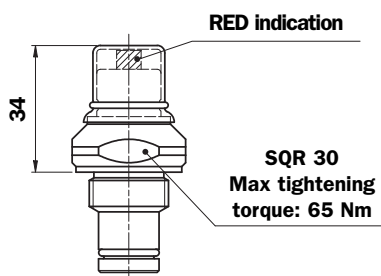
Technical data:

- Indicator type: Visual differential indicator
- Reset: Automatic reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

HYDRAULIC SYMBOL



DVM



Available setting:
 1,2 bar ±10% (DVM12xP01)
 2 bar ±10% (DVM20xP01)
 5 bar ±10% (DVM50xP01)
 7 bar ±10% (DVM70xP01)
 9,5 bar ±10% (DVM95xP01)

Visual Differential Indicator

Materials:

- Body: Brass
- Internal parts: Brass - Nylon
- Seals: HNBR - FPM

Technical data:

- Indicator type: Visual differential indicator
- Reset: Manual reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

HYDRAULIC SYMBOL



Series	1	2	3	4	5	6	7
DE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Example: **DE A 20 H A 50 P01**

Series	1	2	3	4	5	6	7
DL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Example: **DL A 20 H A 52 P01**

Series	1	2	3	4	5	6	7
DT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Example: **DT A 20 H F 70 P01**

Series	1	2	3	4	7
DV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Example: **DV A 20 H P01**

1 - Series

- DE** Electrical indicator
- DL** Electrical/Visual indicator
- DT** Electronic indicator
- DV** Visual indicator

2 - Type

DE series

- A** Standard type
- M** With wired connector

DL series

- A** Standard type
- E** Standard type for High power supply

DT series

- A** Standard type

DV series

- A** Automatic reset
- M** Manual reset

3 - Setting pressure

- 12** 1,5 bar
- 20** 2 bar
- 50** 5 bar
- 70** 7 bar
- 95** 9,5 bar

4 - Seals

- H** HNBR
- On request

5 - Thermostat (excluded for DV)

- A** Without thermostat
- F** With thermostat (Normally open up to 30°C)
Option available only for DEM-DTA series

6 - Electrical connection (excluded for BV)

DEA - DLE series

- 50** EN 175301-803 connector

DEM series

- 10** AMP Superseal series 1,5
(Normally open contacts)
- 20** AMP Timer Junior
(Normally open contacts)
- 30** Deutsch DT-04-2-P
(Normally open contacts)
- 35** Deutsch DT-04-3-P
(Change over contacts)
- On request

DLA series

- 51** EN 175301-803 clear connector
with 24 V lamps
- 52** EN 175301-803 clear connector
with 110 V lamps
- 71** M12 IEC 61076-2-101 clear
connector with 24 V lamps

DTA series

- 70** M12 IEC 61076-2-101 connector

7 - Option

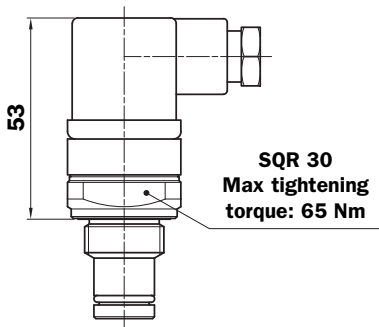
- P01** MP Filtri standard
- Pxx** Customer request

MP Filtri - The filter functions as described in this bulletin are valid exclusively for original MP Filtri filter elements and replacement parts. All rights reserved

The data in this publication are purely guideline. MP Filtri reserves the right to make changes to the models described herein at any time it deems fit in relation to technical or commercial requirements. The colours of the products shown on the cover are purely guideline. Copyright. All rights reserved.

STAINLESS STEEL DIFFERENTIAL INDICATORS

DEX



Available setting:
 1,2 bar $\pm 10\%$ (DEX12xA50P01)
 2 bar $\pm 10\%$ (DEX20xA50P01)
 5 bar $\pm 10\%$ (DEX50xA50P01)
 7 bar $\pm 10\%$ (DEX70xA50P01)
 9,5 bar $\pm 10\%$ (DEX95xA50P01)

Electrical Differential Indicator

Materials:

- Body: AISI 316L
- Internal parts: AISI 316L - Nylon
- Seals: HNBR - MFQ

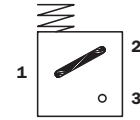
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

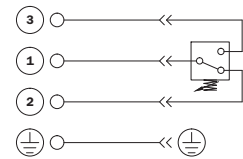
Electrical data:

- Resistive load: 0,2 A / 115 Vdc
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 66 in according to EN 60529
IP 69K in according to ISO 20653

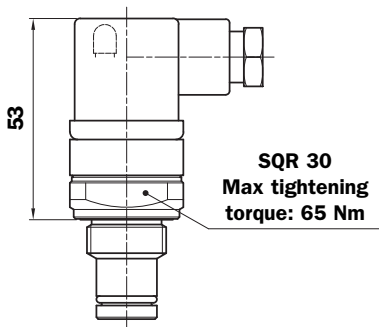
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DLX



Available setting:
 1,2 bar $\pm 10\%$ (DLX12xAxxP01)
 2 bar $\pm 10\%$ (DLX20xAxxP01)
 5 bar $\pm 10\%$ (DLX50xAxxP01)
 7 bar $\pm 10\%$ (DLX70xAxxP01)
 9,5 bar $\pm 10\%$ (DLX95xAxxP01)

Electrical/Visual Differential Indicator

Materials:

- Body: AISI 316L
- Internal parts: AISI 316L - Nylon
- Seals: HNBR - MFQ

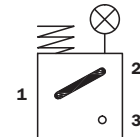
Technical data:

- Indicator type: Electrical differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

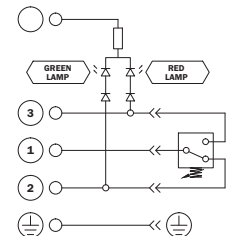
Electrical data:

- Resistive load: 51: 0,8 A / 24 VDC
52: 0,2 A / 115 VDC
- Electrical connections: 51 - EN 175301-803 (24 VDC lamps)
52 - EN 175301-803 (110 VDC lamps)
- Protection degree: IP 66 in according to EN 60529
IP 69K in according to ISO 20653

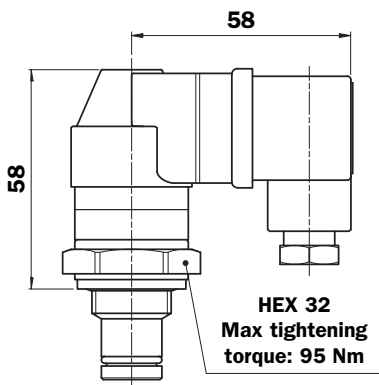
HYDRAULIC SYMBOL



ELECTRICAL SYMBOL



DLY



Available setting:
 1,2 bar $\pm 10\%$ (DLY12VA50P01)
 2 bar $\pm 10\%$ (DLY20VA50P01)
 5 bar $\pm 10\%$ (DLY50VA50P01)
 7 bar $\pm 10\%$ (DLY70VA50P01)
 9,5 bar $\pm 10\%$ (DLY95VA50P01)

Electrical/Visual Differential Indicator

Materials:

- Body: AISI 316L
- Internal parts: AISI 316L - Nylon
- Seals: FPM

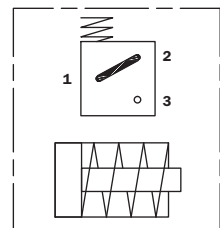
Technical data:

- Indicator type: Electrical/Visual differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

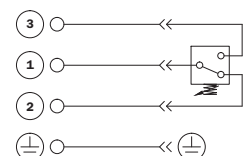
Electrical data:

- Resistive load: 5 A / 250 VAC
- Electrical connections: 50 - EN 175301-803
- Protection degree: IP 65 in according to EN 60529

HYDRAULIC SYMBOL

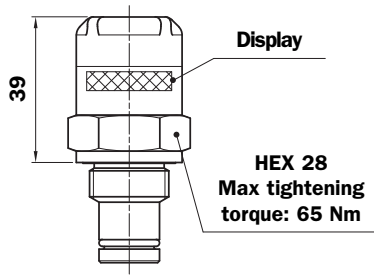


ELECTRICAL SYMBOL



STAINLESS STEEL DIFFERENTIAL INDICATORS

DVX



Available setting:
 1,2 bar ±10% (DVX12xP01)
 2 bar ±10% (DVX20xP01)
 5 bar ±10% (DVX50xP01)
 7 bar ±10% (DVX70xP01)
 9,5 bar ±10% (DVX95xP01)

Visual Differential Indicator

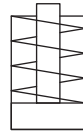
Materials:

- Body: AISI 316L
- Internal parts: AISI 316L - Nylon
- Seals: HNBR - MFQ

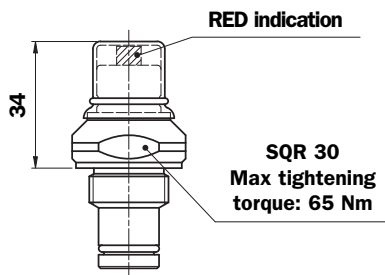
Technical data:

- Indicator type: Visual differential indicator with automatic reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

HYDRAULIC SYMBOL



DVY



Available setting:
 1,2 bar ±10% (DVY12xP01)
 2 bar ±10% (DVY20xP01)
 5 bar ±10% (DVY50xP01)
 7 bar ±10% (DVY70xP01)
 9,5 bar ±10% (DVY95xP01)

Visual Differential Indicator

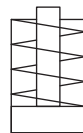
Materials:

- Body: AISI 316L
- Internal parts: AISI 316L - Aluminium
- Seals: HNBR - MFQ

Technical data:

- Indicator type: Visual differential indicator
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
HFA, HFB, HFC fluids in according to ISO 2943

HYDRAULIC SYMBOL



Series	1	2	3	4	5	6	7
DE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	DE	X	20	H	A	50	P01

Series	1	2	3	4	5	6	7
DL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	DL	X	20	H	A	52	P01

Series	1	2	3	4	7
DV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example:	DV	X	20	H	P01

1 - Series

- DE** Electrical indicator
- DL** Electrical/Visual indicator
- DV** Visual indicator

2 - Type

- X** Standard type
- Y** Optional type

3 - Setting pressure

- 12** 1,5 bar
- 20** 2 bar
- 50** 5 bar
- 70** 7 bar
- 95** 9,5 bar

4 - Seals

- H** HNBR
- F** MFQ
- On request

5 - Thermostat (excluded for DV)

- A** Without thermostat

6 - Electrical connection (excluded for DV)

DEX series

- 50** EN 175301-803 connector

DLA series

- 51** EN 175301-803 clear connector with 24 V lamps
- 52** EN 175301-803 clear connector with 110 V lamps
- 71** M12 IEC 61076-2-101 clear connector with 24 V lamps

7 - Option

- P01** MP Filtri standard
- Pxx** Customer request

VACUUM INDICATORS

Old code	New code
E0	VED20AA50P01
E0P01	VEB21AA50P01
E1	VEC20AA50P01
E1P01	VEA21AA50P01
E1P02	VEA21AA05P01
-	-
-	VVS16P01
VP01	VVR16P01
VOP01	VVA16P01
VSP01	WVB16P01

BAROMETRIC INDICATORS

Old code	New code	Old code	New code
FE08H1AP01	BEA08HA50P01	VP15AMP01	BVQ15HP01
FE08H1BP01	BLA08HA51P01	VP20AAP01	BVP20HP01
FE15H1AP01	BEA15HA50P01	VP20AMP01	BVQ20HP01
FE15H1BP01	BLA15HA51P01	-	-
FE15H1DP01	BLA15HA53P01	VRP01	BVA14P01
FE15H1EP01	BEM15HA41P01	VR25P01	BVA25P01
FE20H1AP01	BEA20HA50P01	V1P01	BVR14P01
FE20H1BP01	BLA20HA51P01	-	BVR25P01
FE20H1CP01	BLA20HA52P01		
FE20H1DP01	BLA20HA53P01		
FE20H1EP01	BEM20HA41P01		
FE25H1AP01	BEA25HA50P01		
FE25H1BP01	BLA25HA51P01		
VP15AAP01	BVP15HP01		

STAINLESS STEEL DIFFERENTIAL INDICATORS

Old code	New code	Old code	New code
1EX	DLY12HA50P01 - DLY12VA50P01	VB6FP01	DVY20FP01
E6X	DLY20HA50P01 - DLY20VA50P01	VB6HP01	DVY20HP01
E6XE	DLY20EA50P01	VB7FP01	DVY50FP01
E7X	DLY50HA50P01 - DLY50VA50P01	VB7HP01	DVY50HP01
E8X	DLY70HA50P01 - DLY70VA50P01	VB7VP01	DVY50VP01
-	-	VB8EP01	DVY70EP01
K7X1HP01	DLX50HA51P01	VB8FP01	DVY70FP01
K8X1HP01	DLX70HA51P01	VB8HP01	DVY70HP01
-	-	-	-
N7X	DEX50HA50P01	1VX	DVX12HP01 - DVX12VP01
N7XEP01	DEX50EA50P01	V6X	DVX20HP01 - DVX20VP01
N8X	DEX70HA50P01	V7X	DVX50HP01 - DVX50VP01
N8XEP01	DEX70EA50P01	V7XE	DVX50EP01
		V8X	DVX70HP01 - DVX70VP01
		V8XE	DVX70EP01

DIFFERENTIAL INDICATORS

Old code	New code	Old code	New code
1E	DLE12HA50P01 - DLE12VA50P01	NM6HA11P01	DEM20HA10P01
E6	DLE20HA50P01 - DLE20VA50P01	NM6HA31P01	DEM20HA30P01
E6E	DLE20EA50P01	NM6HA36P01	DEM20HA31P01
E6H	DLE20HA50P01	NM7HA11P01	DEM50HA10P01
E7	DLE50HA50P01 - DLE50VA50P01	NM7HA21P01	DEM50HA20P01
E7E	DLE50EA50P01	NM7HA31P01	DEM50HA30P01
E7H	DLE50HA50P01	NM7HA32P01	DEM50HA35P01
E8	DLE70HA50P01 - DLE70VA50P01	NM7HC32P01	DEM50HF35P01
E8E	DLE70EA50P01	NM7VA11P01	DEM50VA10P01
E8H	DLE70HA50P01	NM7VC11P01	DEM50VF10P01
E9	DLE95HA50P01 - DLE95VA50P01	NM8HA11P01	DEM70HA10P01
E9E	DLE95EA50P01	NM8HA31P01	DEM70HA30P01
E9H	DLE95HA50P01	NM8HA36P01	DEM70HA32P01
-	-	-	-
J1	DLE12HF50P01 - DLE12VF50P01	NR2HP01	DEA12HA50P01
J6	DLE20HF50P01 - DLE20VF50P01	NR2VP01	DEA12VA50P01
J7	DLE50HF50P01 - DLE50VF50P01	NR6EP01	DEA20EA50P01
J8	DLE70HF50P01 - DLE70VF50P01	NR6HP01	DEA20HA50P01
J9	DLE95HF50P01 - DLE95VF50P01	NR6VP01	DEA20VA50P01
-	-	NR7HP01	DEA50HA50P01
KR21HP01	DLA12HA51P01	NR7VP01	DEA50VA50P01
KR21VP01	DLA12VA51P01	NR8EP01	DEA70EA50P01
KR31HP01	DLA30HA51P01	NR8HP01	DEA70HA50P01
KR61HP01	DLA20HA51P01	NR8VP01	DEA70VA50P01
KR61VP01	DLA20VA51P01	NR9HP01	DEA95HA50P01
KR62HP01	DLA20HA52P01	NR9VP01	DEA95VA50P01
KR62VP01	DLA20VA52P01	-	-
KR71HP01	DLA50HA51P01	U3HP01	DVM30HP01
KR71VP01	DLA50VA51P01	U6HP01	DVM20HP01
KR72HP01	DLA50HA52P01	U6VP01	DVM20VP01
KR72VP01	DLA50VA52P01	U7HP01	DVM50HP01
KR81HP01	DLA70HA51P01	U7VP01	DVM50VP01
KR81VP01	DLA70VA51P01	U8VP01	DVM70VP01
KR82HP01	DLA70HA52P01	-	-
KR91HP01	DLA95HA51P01	1V	DVA12HP01 - DVA12VP01
-	-	V6	DVA20HP01 - DVA20VP01
NE2HTP01	DTA12HF70P01	V6E	DVA20EP01
NE2VSP01	DTA12VF70P01	V6H	DVA20HP01
NE6HSP01	DTA20HF70P01	V7	DVA50HP01 - DVA50VP01
NE6HTP01	DTA20HF70P01	V7E	DVA50EP01
NE6VSP01	DTA20VF70P01	V7H	DVA50HP01
NE6VTP01	DTA20VF70P01	V8	DVA70HP01 - DVA70VP01
NE7HSP01	DTA50HF70P01	V8E	DVA70EP01
NE7HTP01	DTA50HF70P01	V9	DVA95HP01 - DVA95VP01
NE7VSP01	DTA50VF70P01	V9E	DVA95EP01
NE7VTP01	DTA50VF70P01	-	-
NE8HSP01	DTA70HF70P01	Z2HP01	DVM12HP01
NE8HTP01	DTA70HF70P01	Z2VP01	DVM12VP01
NE8VSP01	DTA70VF70P01	Z6EP01	DVM20EP01
NE8VTP01	DTA70VF70P01	Z6HP01	DVM20HP01
NE9VTP01	DTA95VF70P01	Z6VP01	DVM20VP01
-	-	Z7HP01	DVM50HP01
NE9VTP01	DTA95VF70P01	Z7VP01	DVM50VP01
-	-	Z7XHP01	DVY70HP01
-	-	Z8EP01	DVM70EP01
-	-	Z8HP01	DVM70HP01
-	-	Z8VP01	DVM70VP01
-	-	Z9HP01	DVM95HP01